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Response to Comments by Organizations, Environmental Groups, and Local Businesses

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Table 2. Comments by organizations, environmental groups, and local businesses.

Organization	Commenter	Letter Number
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Organization	Commenter	Letter Number
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Business and Organization Letters and Responses

Com-ment	Letter #390	Response
1	WGFP 390 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Helena Powell MS. POWELL: Hi, my name is Helena Powell, P-o-w-e-l-l. I'm representing my business, Adventures in White Water Rafting. I am also the director from the Headwaters Institute for the Colorado River headwaters. I would love to stand here this evening on my soap box and talk about the environment, but I think everybody has done that much more eloquently that I possibly could. Since the Front Range focuses on their dollars, and the dollar seems to drive our economy, let's talk about money this evening. In front of me from the Colorado River Rafting Association, I have statistics on economic impacts of commercial river rafting in Colorado. Our statistics actually go up to the year 2007. I would like to make a proposal that you all well should deal with your hydrological data and your sociological economic impacts up to this current year, if at all possible. I do not believe that, in only addressing the time period up to 1996, that you can adequately deal with what we're dealing with. Especially because those of us around here know in 2002 was the worst drought year that we have probably ever seen in many decades up here. So as far as our economic impact, right now in the year 2007, direct expenditures for river rafting in the entire state of Colorado was almost $60 million. I know we have talked a lot about economic impact and the multiplier factor, but nobody has had any statistics. To give you an idea, on $60 million, our economic impact for last year was $153 million-plus dollars. Basically, that's all sorts of tourism dollars coming in, and we don't even have any kind of say in this EIS statement. So I would like you to take into consideration that, as well. For the section of water that we are dealing with right here, the Upper Colorado River, last year we had 32,000 river users days for commercial use only. That was direct expenditures of $3.4 million on our little section of river alone, which led to an economic impact multiplier of $8,725,000. You know, that's a huge, huge standing. I mean, there are 52 river outfitters, including myself,	1. The 47-year hydrologic study period provides a reasonable estimate of the range of likely future hydrologic conditions from which to evaluate the potential effects of the WGFP alternatives. Expanding the hydrologic period to 2002 was considered, but data were not available at the time the modeling was conducted. Regardless, the WGFP would have no impact in drought years like 2002 because Windy Gap water rights did not come into priority in 2002 and there were no Windy Gap diversions in 2002. The Socioeconomics section of the FEIS quantifies impacts on commercial boating from the alternatives using the best available data.

Com-ment	Letter #390	Response
	that are permanent through the Bureau of Land Management on the Upper Colorado headwaters. That's a lot of businesses. We're looking at -- you know, in 2002, when we had a drought -- which was basically we're looking at just below minimum flows of what you guys are looking at -- in 2002, the river rafting industry, which is the number one tourism industry in the summertime in the state of Colorado, we dropped 40 percent in total user days. That's 206,000 people that didn't come down the river with us that year. Why? Because there is no water. Who wants to take their family out into the wilderness when there is no water? So, basically, I'm saying, you know, if this firming project goes through and we wind up without water here, there is half my industry. Not just me, not just the 52 up here on the Colorado, but it has a massive impact on our state and our industry as a whole. So I would ask that you take that into your consideration.	
2	I also see some additional flaws in there, as far as socioeconomic study. You know, the rafting prices per day that you guys are looking at through commercial outfitters are completely outdated. You know, looking at the $72 average trip through Gore Canyon, if you go ahead and look at river outfitters throughout the state, it's two to three times more than that for present-day dollar.	2. The economic value of boating differs from the prices rafting companies charge their customers because some of the costs incurred by the rafting company are not captured in the local economy. A recent study was used to estimate the economic value of boating (Loomis 2005), which was indexed to 2007 levels.
3	Another thing that I had an issue with was minimum flows on the Colorado for a sustainable business. 400 CFS is not a river to float on, I'm sorry. 800 was the next level. That's barely skimming the bottom.	3. The development of "preferred flow" and "minimum preferred flow" standards for boating on the Colorado River was based on previous studies, published guidebooks, and personal communications with raft guides and BLM staff. The 400 cfs minimum flow reported in the DEIS was not used in calculation of impacts. After review of the Grand County Stream Management Plan and additional conversations with BLM staff, the preferred flow ranges for boating were changed and simplified to use a preferred flow of 850 to 1,250 cfs in Gore Canyon and 1,100 to 2,200 cfs for Pumphouse. The Recreation section of the FEIS includes these changes.
	I appreciate the time, and I especially appreciate everybody who stayed for the entire meeting. I would recommend a 60-day extension as well. Thank you.	

Comment	Letter #125	Response
1	RECLAMATION *Managing Water in the West* Granby **We Invite Your Comments!** Granby **Windy Gap Firming Project** **Draft Environmental Impact Statement** Name* Paul Renfro | Date Company /Organization Adventures In Whitewater Street Address Po Box 3708 Winter Park, CO City, State, Zip E-mail paul@adventuresinwhitewater.com Our practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address from public disclosure, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity from public disclosure, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety. *Would like your name and address withheld from public disclosure*? YES X NO* Please check (√) below if you would like to be *added* to the project's mailing list: X Yes, add my name to the mailing list ☐ No, I do not want to be on the mailing list Comments are considered substantive if they: • Question, with reasonable basis, the accuracy of the information in the document • Question, with reasonable basis, the adequacy of the environmental analysis • Present reasonable alternatives other than those presented in the Environmental Impact Statement • Cause changes or revisions in the alternatives • Provide new or additional information relevant to the analysis **Comments:** I feel that the minimum flow for Rafting + KayaKing are to low for a longterm sustainable baisness. 400 cfs is [redacted] way to low + even 800 cfs is fairly low estimate for longterm effects to a baisness. If Flows are below the fun factor I will not have return customers *Please continue on reverse side* U.S. Department of the Interior Bureau of Reclamation	1. The development of "preferred flow" and "minimum preferred flow" standards for boating on the Colorado River was based on previous studies, published guidebooks, and personal communications with raft guides and BLM staff. After review of the Grand County Stream Management Plan and additional conversations with BLM staff, the preferred flow ranges for boating were changed and simplified to use a preferred flow of 850 to 1,250 cfs in Gore Canyon and 1,100 to 2,200 for Pumphouse. The Recreation Section in Chapter 3 of the FEIS includes these changes.

Com-ment	Letter #1052	Response
1	WGFP 1052 BAR LAZY J GUEST RANCH Mr. Will Tully Bureau of Reclamation 11056 W CR 18E Loveland, CO 80537 Mr. Chandler J. Peter U.S. Army Corps of Engineers Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128-6901 Re: Windy Gap Firming Project Draft EIS Mr. Tully & Mr. Peter: As business owners and managers, we write to share our serious concerns with the proposed Windy Gap Firming Project (WGFP) and its potential impacts on the Colorado River and, by extension, on the regional economy. The Colorado River and its tributaries are the lifeblood of western slope communities, supporting economic drivers from recreation and tourism to agriculture. For example, in Grand County, every tourist activity relies directly on the natural flow of water – and visitor expenditures account for a majority of retail sales countywide. Maintaining a healthy Colorado River is not only essential to local ecosystems, but to the economic future of our region. Protection of the Colorado River should be a basic expectation for WGFP before any federal approvals are granted. Indeed, the Bureau of Reclamation has a legal responsibility to operate the Colorado-Big Thompson Project in a manner that furthers the primary purposes of the project. Those primary purposes include preservation of the Colorado River's fisheries and recreation opportunities. Accordingly, unless strict conditions are imposed on WGFP that will ensure that no harm will result, Reclamation must not approve the project.	1. Reclamation will continue to operate the C-BT Project in accordance with the requirements of Senate document 80. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.
2	Unfortunately, the Draft Environmental Impact Statement fails to reasonably assess the impacts of the WGFP on the Colorado River's natural resources and the local economies that rely on them. In many places, the DEIS makes leaps that strain believability. For example, the DEIS anticipates that WGFP is "unlikely to noticeably affect recreation use" at Granby – despite information showing that the project would result in additional periods when boat ramps at Granby Reservoir would be inaccessible due to lower reservoir levels. The DEIS downplays consideration of cumulative effects of WGFP alongside historic operations so as to suggest that there will be little effect on fisheries or fishing – despite information showing that periods of lower flow will become more common and that state water quality standards for temperature will be violated. As local businesses, it seems to us that the DEIS is asking our communities to take a leap of faith that WGFP is benign despite – not because of – the evidence.	2. As a result of operation of the C-BT Project, Granby Reservoir water levels have fluctuated widely in the past and would continue to do so in the future. To minimize adverse effects of the WGFP on Granby Reservoir water levels, mitigation has been proposed that modifies the way prepositioning is implemented as discussed in Section 3.5.4 of the FEIS. Hydrologic modeling indicates that prepositioning of C-BT water in Chimney Hollow would likely be curtailed when Granby Reservoir storage reaches about 340,000 AF (8,250 feet in elevation). Additional information has been added to the FEIS to better correlate drawdowns during consecutive dry years with reservoir surface area in Section 3.19.2—Recreation. See Section 3.8.4 for a description of temperature mitigation measures associated with the WGFP that would reduce the potential for impacts to fish.
3	Perhaps the most serious flaw is the DEIS' failure to consider the broad-based economic effects of reduced recreation and the ripple effects through the regional economy. The DEIS excludes from consideration many key aspects of the recreation economy by limiting IE DUDE RANCHERS' ASSOCIATION Established 1926 P.O. Box N • 447 County Road 3 • Parshall, CO 80468 • www.barlazyj.com toll free: 800.396.6279 • phone: 970.725.3437 • fax: 970.725.0121 • info@barlazyj.com COLORADO DUDE & GUES RANCH ASSOCIATIO	

Comment	Letter #1052	Response
3 4 5 6 7 8	consideration to active recreation where there is public access. This narrow analysis fails to include many key economic factors for the west slope: - potential failure of irrigation systems due to reduced streamflow; - ranchers who rely on fishing leases along the Colorado River; - real estate and resort developments where a healthy Colorado River is a primary or sole asset; - lakefront and riverfront properties whose value is directly related to reservoir water clarity and water quality; and - numerous summer recreation-oriented and visitor-oriented businesses including private marinas, local motels, restaurants, recreation-oriented retailers, et cetera. In light of these major deficiencies, we ask that Reclamation and the Corps develop a Supplemental Environmental Impact Statement that offers a more thorough and accurate consideration of the environmental and economic effects of WGFP – to inform your decision-making and to allow the public the opportunity to review and comment on the analyses that were inadequate in the current DEIS. In this Supplemental EIS, we request that you: - Analyze the cumulative impacts of all trans-basin diversion from the Colorado River, including existing impacts from the Colorado-Big Thompson Project and Moffat Collection System. - More rigorously assess fishery flow needs so that a determination can be made of whether WGFP is consistent with the Colorado-Big Thompson Project primary purpose of preserving the Colorado River's fisheries. - Conduct a more complete assessment of the socioeconomic impacts of the WGFP, including the impacts described above that were omitted from consideration in the DEIS. - Consider alternatives for water supply to the WGFP participants that would not require further significant depletions of the Colorado River. As businesspeople, our livelihoods depend on preservation of a viable Colorado River. We urge you to take the steps necessary to protect this vital resource for our environment, communities, and economy. Thank you for the opportunity to comment. Sincerely, Jerry Helmicki President Bar Lazy J Guest Ranch OFFICIAL FILE COPY RECLAMATION Date DEC 23 2008 Code 1340 · Surname · Date 1/9/09 Copy to Tally Official File Copy Code ENV-6.00 Project 245 Control No. Folder I.D.	3. The Subdistrict would comply with state water law for all diversions. Windy Gap cannot divert when downstream senior water rights are calling for water. In addition, the WGFP would comply with Colorado River bypass flow requirements established by the Agreement Concerning the Windy Gap Project and the Azure Reservoir and Power Project (Azure Agreement) completed April 30, 1980 as part of the original Windy Gap Project. This agreement requires the Windy Gap Project to curtail diversions if streamflow drops below 90 cfs below Windy Gap Reservoir, 135 cfs below the Williams Fork, or 150 cfs below Troublesome Creek. The Windy Gap Project cannot divert if the agreed minimum flows are not met, even if Windy Gap water rights are in priority. Colorado River flows may fall below the minimum streamflow volumes when the WGFP is not pumping, particularly in the late summer. The Subdistrict has no control over Colorado River flow when the Windy Gap Project is not pumping. The EIS points out that water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law, and any municipal or agricultural diversions downstream from Windy Gap Reservoir, per Colorado water law (C.R.S. § 37-92-102(2)(b)), would remain responsible for developing a reasonable means of diversion for their water. Per the Azure Agreement, the Subdistrict funded $500,000 in improvements for ranches downstream from Windy Gap Reservoir to maintain their diversion structures on the Colorado River. Anticipated diversions of the original Windy Gap Project were greater than those in the WGFP. Effects were quantified where data on use and impacts are available. Effects of the proposed alternatives on recreation experiences and aesthetics is qualitatively described wherever possible, recognizing that these effects vary widely by individual user. Reductions in preferred boating flows and boating days are described in the Recreation and Socioeconomics sections. This analysis focuses primarily on commercial boating, for which baseline use data exists. As described in the Aquatic Resources section of the FEIS, projected effects to fish habitat are not anticipated to translate to a loss in fishing opportunities or fishing success. Based on the hydrologic analysis and anticipated changes, the DEIS correctly states that hydrological changes are unlikely to adversely impact sport fishing under any of the alternatives, and that changes to the visual quality of the Colorado River would not be discernable to most viewers, and would remain similar to existing conditions. It is therefore reasonable to assume that the proposed hydrological changes would not impact private development along the Colorado River.

Com-ment	Letter #1052	Response
		We were unable to find any information to quantify the incremental impacts on property value for changes in lake levels in a high elevation western water storage reservoir where water levels fluctuate widely like Granby Reservoir. As described in response to Comment No. 1, modified prepositioning for the Preferred Alternative would reduce Granby Reservoir water level drawdowns in average and dry years. 4. No supplemental EIS is required to address the comments received on the DEIS. The FEIS includes additional information and clarifications on project impacts, as well as more specific mitigation measures. 5. The WGFP FEIS considered past, present, and reasonably foreseeable future actions in the cumulative effects assessment. The C-BT Project is a past action that was included in the baseline hydrology and also was used in the evaluation of cumulative hydrologic impacts and cumulative impacts to other resources. The WGFP FEIS fully considered the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP. 6. Additional discussion, figures, and tables to illustrate potential effects to fisheries were added in Section 3.9.2 of the FEIS. The FEIS also includes additional mitigation measures for aquatic resources in Sections 3.8.4 and 3.9.4 per the development of a Fish and Wildlife Mitigation Plan in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). These measures include nutrient reduction to improve water quality in the Fraser River, Willow Creek, and Colorado River. Please see additional text added at the beginning of the Responses to Comments Section of the FEIS Appendix F explaining legal issues related to the proposed WGFP and the C-BT Project. 7. The socioeconomic evaluation was conducted using the best information available. See response to Comment No. 3.

Com-ment	Letter #1052	Response
		8. The WGFP was initiated by the Participants because the original Windy Gap Project failed to deliver the yield from Participant water rights that were anticipated in the 1981 EIS for the reasons discussed in more detail in Section 1.5 of the FEIS, including insufficient storage. To address the shortcomings of the Windy Gap Project, Participants determined that a cooperative project with shared storage in a new reservoir(s) would be the most efficient way to collectively firm their Windy Gap water supply. Windy Gap water represented a source of existing water available to the Participants, but required additional infrastructure to provide reliable deliveries. Thus, the purpose of the WGFP is to fix a broken project using existing water rights, not to search for new sources of water. Many of the WGFP Participants have additional future water needs beyond what the WGFP would supply and will be investigating other sources of water to meet those needs; the WGFP is only functional as a collaborative effort on the part of Windy Gap Project unit holders.

Com-ment	Letter #51	Response
	WGFP 51 **From:** LAURA EMERSON [lemerson@frii.com] **Sent:** Thursday, October 09, 2008 10:24 AM **To:** wtully@gp.usbr.gov **Subject:** Comment RE: Chimney Hollow Reservoir Project	
1	According to the October 8, 2008 the impact on fishing in the Colorado River was considered as part of the environmental impact of the Chimney Hollow Reservoir project, but no mention was made of the impact on fishing in the Big Thompson River. I live on the Big Thompson River and lease fishing rights, limiting the number of fishermen to two at a time to preserve the river and make for a better experience for them. An earlier Reporter Hearald article about the Chimney Hollow project mentioned that when the reservoir is completed, the water flow in the Big Thompson will increase by 5%. I don't know what has been going on this year with the water, but we have had an all-summer run-off season continuing into October, so my fishing income this year is a few hundred dollars instead of about $3600. I use that money to pay the property taxes and maintain the river banks on our land.	1. As indicated in Section 3.9.2.4 of the FEIS, the small increases in flow projected for the Big Thompson River below Lake Estes could increase fish habitat slightly, but is unlikely to measurably affect fish populations or fishing.
2	My official comment is that raised water levels in the Big Thompson River are going to adversely affect the trout fishing in the river. This affects all of the people who rent vacation cabins along the river, fishing guides, fishing shops, and landowners who lease fishing rights. Thank you, Laura Emerson Bein Mountain Ranch LLC 173 Brown Trout Lane Drake, CO 80515 970-586-3267	2. See response to Comment No. 1 above. The modest flow increases in the Big Thompson River are anticipated to have a negligible effect on an angler's ability to wade in the stream. Flow increases are small (generally less than 10 cfs) when flows are usually in the range of 35 cfs to 40 cfs. The increases occur in summer. Flow increases of this type should benefit both the invertebrates and fish without impacting the ability to fish the river.

Com-ment	Letter #1059	Response

WGFP 1059

Porzak Browning & Bushong LLP

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December 29, 2008

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Copy to 100

Tully

VIA EMAIL WTULLY@gp.usbr.gov and U.S. MAIL
Mr. Will Tully
Bureau of Reclamation
11056 West County Road 18E
Loveland, CO 80537-9711

Re: Windy Gap Firming Project Draft Environmental Impact Statement

Dear Mr. Tully,

We are writing on behalf of Chimney Rock Ranch to express our serious concerns with the sufficiency of the Windy Gap Firming Project Draft Environmental Impact Statement.

Ranch Description.

Chimney Rock Ranch ("CRR") begins about one mile downstream of the existing Windy Gap Reservoir on the Colorado River. The ranch owns land on both sides of the river for about 5 miles. As currently configured, the ranch is a combination of other historic ranches. The priority dates for the earliest irrigation water rights for the ranch are more than 100 years old. The historic irrigation and cattle ranching operations continue at CRR.

The Colorado River is the heart of the ranch. It is the source of the irrigation water, an extraordinary aesthetic asset, and, importantly, is designated a "Gold Medal" trout stream by the Colorado Division of Wildlife ("CDOW") in the vicinity of the ranch. The "Gold Medal" designation is reserved for "the highest quality cold water habitats that have the capability to produce many quality size (14 inches or longer) trout."[1]

There is no question that the proposed Windy Gap Firming Project ("WGFP") will adversely effect the Colorado River, the trout fishery and the environment in the vicinity of CRR. Some of that impact is acknowledged in the DEIS. For example, even using the suspect assumptions and analysis in the DEIS, the preferred alternative will result in a 21,283 AF decrease in average annual flows below Windy Gap (DEIS Table 3-2). The preferred alternative will cause flow levels in the river below Windy Gap to be at

[1] COLORADO WILDLIFE COMMISSION POLICY: "Wild and Gold Medal Trout Management," September 18, 1992, rev'd June 12, 2008.

Com-ment	Letter #1059	Response

or below 100 CFS more often (DEIS Table 3-7), and will raise the water temperature at those critical low flow levels by up to 4.0° C. (DEIS 3-96, 97, Fig. 3-38). The WGFP will decrease the amount of dissolved oxygen in the water at the ranch (DEIS Fig. 3-42), and increase both ammonia and inorganic phosphorous. (DEIS Fig. 3-44, 45, 46). It will cause a 24% loss of habitat for adult rainbow trout in 4 out of 10 years. (DEIS 3-137).

In short, CRR is at ground zero for the impacts of the WGFP. As the DEIS explains, the "greatest effect to fish habitat [from the WGFP] would occur in the reach between Windy Gap Reservoir and the Williams Fork River." (DEIS 3-145). Even with the foregoing admissions, however, as we demonstrate below, the DEIS grossly underestimates the full range and magnitude of the environmental and economic damage that the WGFP will cause.

CRR is particularly concerned with the WGFP because it has already suffered the devastating impact of the whirling disease ("WD") epidemic and the associated complete loss of the Colorado River rainbow trout fishery in the vicinity of the ranch. The existing Windy Gap Reservoir was a primary cause of that epidemic. In response to the WD crisis, CRR has worked extensively with CDOW and Colorado State University on numerous studies and programs to address WD and habitat issues in the Colorado River in the vicinity of the ranch. Most recently, CRR is working with CDOW on the introduction of a new strain of rainbow trout with greater resistance to the disease. CDOW hopes to use this new strain as brood stock in the rest of the State to replace the rainbow trout lost to WD.

CRR Comments on DEIS

The purpose of an EIS prepared under NEPA is to accurately inform both the public and federal decision makers concerning the environmental impacts of any proposed federal action. *See Baltimore Gas & Elec. Co. v. Natural Resources Defense Council,* 462 U.S. 87, 97 (1983); *Sierra Club v. United States Dep't of Energy,* 287 F.3d 1256, 1262 (10th Cir. 2002). CRR is concerned that the WGFP DEIS serves neither of these purposes.

Our comments below are organized around the issues that cause the greatest concern for CRR, as follows:

1. Failure of the DEIS to discuss a real "no-action" alternative that characterizes the status quo and can serve as an accurate baseline against which the impacts of the WGFP can be measured.

2. Failure of the DEIS to address Senate Document 80 and the protections for the West Slope in that document.

3. Failure of the DEIS to sufficiently address proposals to mitigate the impact of the WGFP, in particular the lack of any discussion of the benefits that would result from making Windy Gap an off-channel reservoir.

27655 2

Com-ment	Letter #1059	Response
1	4. Failure of the DEIS to sufficiently address the serious cumulative environmental impacts that the Colorado Big-Thompson Project, Windy Gap, and other transmountain diversion projects have or will cause. 5. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the most recent period of record. 6. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the science on climate change. 7. Failure of the DEIS to address the negative impact of the preferred alternative on private fishing, and private property values in the most impacted reach below Windy Gap. **DISCUSSION** **1. Failure of the DEIS to discuss an actual "no-action" alternative.** The consideration of alternatives to the preferred action is the "heart" of every NEPA analysis. 40 C.F.R. § 1502.14. As part of the "reasonable range of alternatives" that must be discussed, an EIS must "include the alternative of no-action." 40 C.F.R. § 1502.14(d). The consideration of a "no-action" alternative is intended to require that "agencies compare the potential impacts of the proposed major federal action to the known impacts of maintaining the status quo." *Custer County Action Assoc. v. Garvey,* 256 F.3d 1024, 1040 (10th Cir. 2001). For the "no-action" alternative, "the current level of activity is used as a benchmark." *Id.* In contrast to the clear direction from the Tenth Circuit, and the NEPA regulations cited above, Reclamation's DEIS contains no genuine "no action" alternative. Rather, where an explanation of the status quo is required, the DEIS offers the increased depletions that would result from the possible construction of Ralph Price Reservoir by the City of Longmont. Whether or not this reservoir will be built is purely speculative, particularly in the current economic climate. It is wrong for the DEIS to use this artificial baseline as the starting point to analyze the impacts of the WGFP. The effect of including the increased diversions that would result from the construction of Ralph Price within the "no action" alternative in the DEIS is that the real incremental impacts of the WGFP as measured against the status quo are not documented. We are similarly concerned that the DEIS misrepresents the current level of Windy Gap diversions. In its comment letter, Grand County explains that the annual average diversions by Windy Gap have been closer to the 11,080 AF reported in the Water Resources Technical Appendix to the DEIS (Table 3, at 22) than the over 36,000 AF that are used to describe the existing condition in the DEIS analysis. (See DEIS Table 3-2, at 3-19). Again, the effect of this inflated baseline is to diminish the impacts of the WGFP postulated in the DEIS. 27655 3	1. The No Action Alternative presents what WGFP Participants would do if Reclamation does not allow the proposed connection to C-BT facilities. Consistent with CEQ guidance on what should be considered in a No Action alternative, it does not mean that agencies stop what they are doing. In the case of existing agreements, prior court decisions and CEQ guidance would define No Action as no change to existing agreements. For Windy Gap and the WGFP this means that Reclamation would continue operation under the existing agreement between Reclamation and the Subdistrict for conveyance of WG water through the C-BT Project system. (See CEQ 40 Questions, No. 3) This also includes foreseeable actions by the participants. For most Participants, this includes continuing to take Windy Gap deliveries and increasing those deliveries as water demand increases within the capacity of the existing Windy Gap Project facilities and available storage in Granby Reservoir. One Participant would drop out of the WGFP. The City of Longmont would pursue enlargement of Ralph Price Reservoir to store its Windy Gap water. While there is no guarantee that enlargement of Ralph Price Reservoir would acquire all of the regulatory authorizations, it is reasonable action for the City of Longmont and no fatal flaws were discovered in review of this alternative in the WGFP EIS. The majority of the hydrologic impacts, included under the No Action alternative entail increased Windy Gap diversions by participants which they can currently do without any infrastructure changes or additional authorizations or approvals from Reclamation. It is unreasonable to assume that Windy Gap diversions would remain status quo under the No Action Alternative or that the No Action alternative should be no diversions.

Com-ment	Letter #1059	Response
		Windy Gap diversions for the last 10 years (1999 through 2008) averaged 22,158 AF/yr, which is significantly higher than the average diversion of 11,080 AF/yr for the period from 1985 through 2005, as presented in Table 3 of the Water Resources Technical Report. Windy Gap diversions were made in accordance with the project's water rights, the same water rights that would be used to effect diversions with a WGFP. Recent diversions represents the Participants' need for water to meet increasing water demands, which is supported by information presented in Chapter 1 on the Participants' water demands and needs. Modeled Windy Gap diversions under existing conditions reflect the recent Windy Gap Participant demands. Windy Gap pumping for the 8-year period from 2001 through 2008 since Granby Reservoir last filled averaged 27,450 AF/yr. That average includes 2002 and 2004 when almost no Windy Gap water was pumped. Therefore, estimated pumping under existing conditions is much closer to recent operations than suggested in the comment. The comment asserts that potential impacts of additional Windy Gap diversions under the Proposed Action are minimized or underestimated based on a comparison against existing conditions. Reclamation does not believe that to be the case. The average decrease in Colorado River flows below Windy Gap between the Proposed Action and existing conditions is 21,283 AF/yr, which is the estimated increase in net depletions to the Colorado River. This reflects the net effect of additional Windy Gap diversions from the Colorado River and the difference in spills from Granby Reservoir. A considerable portion of Windy Gap water diverted from the Colorado River is delivered back to the river via a spill under the existing conditions scenario. Windy Gap operations were simulated in this manner to present the amount of water than could be diverted with the project's current water rights to meet demands even if a portion of the water is subsequently spilled from Granby Reservoir back to the Colorado River. Table 3-9 was added to the FEIS to better illustrate the water balance associated with the Proposed Action. In summary, Reclamation believes the effects assessments based on net depletions to the Colorado River below Windy Gap, as presented in the FEIS, are appropriate. Windy Gap diversions under existing conditions reasonably reflect recent operations and diversions, which are much higher than the 20-year average from 1985 through 2005. In addition, this issue does not affect Windy Gap diversions in dry years; therefore, Windy Gap pumping, net depletions to the Colorado River, and associated impacts are appropriately estimated in dry years, which are typically more critical for aquatics, water quality, and other flow-related resources.

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1	The lack of an accurate baseline from which to measure the impacts of the WGFP is a deficiency that infects the entire document. Thus, even the very serious impacts that are explained in the DEIS to the average annual river flow, the water quality and temperature, and the fish habitat are all grossly underestimated. Until a new DEIS with an analysis of the impacts of the WGFP against an accurate baseline is presented, federal decision-makers and the interested public have no basis to understand the actual environmental impacts of the WGFP. *See Half Moon Bay Fishermans' Mktg Ass'n v.* Carlucci, 875 F.2d 505, 510 (9th Cir. 1988)("Without establishing the base line conditions which exist, there is simply no way to comply with NEPA."). Reclamation cannot fulfill its fundamental obligations under NEPA based on the information in the current DEIS. A new NEPA document is required.	
2	**2. Failure of the DEIS to address Senate Document 80 and the protections for the West Slope in that document.** Because the WGFP will rely on Colorado-Big Thompson ("CBT") facilities, Reclamation must determine whether the WGFP complies with Senate Document 80, the federal statute that authorized construction of the CBT project. Senate Document 80 contains requirements for use of CBT water on the East Slope, use of Green Mountain Reservoir for West Slope beneficiaries, and a number of provisions that specifically protect the headwaters of the Colorado River system in Grand County. Recognizing that CBT would "change the regimen of the Colorado River below Granby Reservoir[,]" Senate Document 80 sets out "primary purposes" for the operation and management of the CBT project, as follows (1) to preserve the vested and future rights in irrigation; (2) to preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and Rocky Mountain National Park; 3) to preserve the present surface elevations of the water in Grand Lake and to prevent a variation in these elevations greater than their normal fluctuations ….; 5) to maintain conditions of river flow for the benefit of domestic and sanitary uses of this water. The DEIS recognizes the obligation to consider Senate Document 80, but with respect to the ability of the WGFP to comply, states: "This determination will be made available at a later time and is not part of this EIS." (DEIS at 1-42). This is backwards. No aspect of the WGFP, including any further environmental review, should occur until there is a determination concerning whether WGFP can comply with Senate Document 80. *See* 40 CFR §§ 1508.27, 1502.16(c), 1506.2(d)(requiring an EIS to discuss any inconsistency between the proposed project and any federal, state or local plan or law). Moreover, compliance with Senate Doc. 80 may require mitigation for the West Slope. Those mitigation measures would be part of this project, and would need to be specified and studied in this EIS for Reclamation to satisfy NEPA. The Department of the Interior's recent NEPA regulations specify that the mitigation section of an EIS must 27655 4	2. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.

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2	address any mitigation measures "required to make [a] proposal conform to applicable legal requirements, as well as any voluntary ameliorative design elements(s)." 73 Fed. Reg. 61317 (to be codified 43 CFR § 46.130). With respect to this DEIS, Reclamation appears to be moving ahead in violation of its own regulations. As discussed in the next section below, the mitigation measures identified in the DEIS are insufficiently discussed. Worse, the mitigation that could be achieved by taking Windy Gap Reservoir off-channel - - the measure that would provide the best protection from the environmental problems created by that facility for CRR and everyone else downstream - - is not even discussed.	
3	**3. Failure of the DEIS to sufficiently address proposals to mitigate the impact of the WGFP, in particular the lack of any discussion concerning the benefits of making Windy Gap an off-channel reservoir.** The DEIS effectively treats mitigation as a laundry list with minimally described possibilities, but no meaningful analysis. (DEIS 3-292-295). For many of the listed items, even the mitigation proposed is vague and speculative, including things that "might be" done if deemed appropriate by the proponent of the project. For example, on the critical question of low flows, the DEIS states that "the Subdistrict will work with Grand County, the Colorado Division of Wildlife, and others to determine if increasing bypass flows in the Colorado River from the existing minimum flow of 90 cfs to 135 cfs while Windy Gap is pumping during July and August would result in temperature reductions downstream of Windy Gap that would measurably benefit the trout fishery. If studies indicate that increased bypass flows would be effective, the Subdistrict would consider increasing required bypass flows under certain water supply conditions." (DEIS 3-292). The DEIS does not explain what studies are planned or underway to determine the effectiveness of increased bypass flows, nor what, if any, commitment the Subdistrict has made to actually increase bypass flows if the fishery experts find measurable benefits. This is not the meaningful or informative analysis of mitigation required in a NEPA document. *See, Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 353, (1989)). Without real mitigation proposals, and a discussion of the extent to which they actually would or would not effectively mitigate WGFP impacts, there is very little in this section that can be said to inform either federal decision-makers or the public. The primary mitigation proposal that should be considered in the supplemental EIS is the possibility of making Windy Gap an off-channel reservoir. This proposal was frequently discussed as a possible solution to WD and the many other negative environmental impacts already caused by Windy Gap. (See Meyers, "Creating a river bypass might be the solution", attached hereto as Exhibit A; see also Nehring and Thompson, North American Journal of Fisheries Management 23:376-384, 2003 ("This fishery might benefit greatly if a means could be devised to sequester actinospores produced in the Windy Gap Reservoir within the lake.")). Even if Reclamation is able to demonstrate the Windy Gap is not still exacerbating the WD problem, taking this 27655 5	3. Additional mitigation measures were defined and developed to avoid or minimize adverse effects from implementation of the proposed project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25. The Subdistrict developed a Fish and Wildlife Mitigation Plan (FWMP) in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP includes measures to mitigate exceedance of the temperature standard. These measures are a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). Relocating Windy Gap Reservoir to an off-channel location was not considered as a component of the project. Other mitigation measures to reduce nutrient loading in the Colorado River would reduce aquatic impacts. Because of the short residence time in Windy Gap Reservoir, substantial warming does not occur. The existing conditions include the past effects of streamflow temperature regimes and factors such as whirling disease. Whirling disease in particular is widespread across the State of Colorado and has resulted in the loss or reduction of rainbow trout populations in most of the State's rivers. The CDOW is actively researching ways to counteract whirling disease within the river systems, including stocking alternate species that are less susceptible to whirling disease. The statement attributing lower whirling disease pathogens comes from Mr. Barry Nehring of CDOW. The FEIS was edited to reference the source of that statement. The lower number of pathogens may be due in part to a shift in the species composition of tubifex worms in Windy Gap Reservoir. Additional discussion has been added to the FEIS to provide more recent information from the Division of Wildlife on the tubiflex worms. In a presentation made on the Colorado River fishery, Jon Ewert, CDOW biologist, stated that the nonhost tubifex species was becoming more prevalent in the reservoir and was part of the reason for the lower incidence of whirling disease pathogens (Jon Ewert, CDOW, July 14, 2009).

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3	reservoir off-channel by means of a bypass would mitigate the temperature increases, nutrient loading, and oxygen depletion that are caused by this facility. CRR believes that taking Windy Gap off-channel is the most certain mitigation to alleviate the problems from this facility, and it should be evaluated in the supplemental EIS. The DEIS should also address the Grand County Stream Management Plan in its mitigation section, and there is no discussion of the carefully crafted flow recommendations in that document. The new DOI NEPA regulations direct Reclamation to "consult, coordinate, and cooperate with relevant State, local and tribal governments . . . concerning the environmental effects of any Federal action within the jurisdictions or related to the interests of these entities." 73 Fed. Reg. 61317 (to be codified at 43 CFR § 46.155). In light of that direction, the County's Stream Management Plan should be the guiding document in evaluating proposed mitigation.	The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP is to develop preferred and recommended streamflows, water quality, and available water supplies for water users in the basin. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures have been identified or will be developed to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. However, mitigation measures included in the FEIS might help meet some of the goals of the SMP.
4	**4. Failure of the DEIS to sufficiently address the cumulative environmental impacts that the CBT project, Windy Gap, and other transmountain diversion projects have or will cause.** The DEIS contains an insufficient discussion of the serious environmental impacts that CBT, Windy Gap, and other transmountain diversion projects have already had on the Colorado River and its environs. The direct cumulative impact of those many existing projects includes serious reduction in water quantity and quality (including temperature), exacerbation of the whirling disease epidemic, and other environmental problems. These past impacts should be thoroughly discussed in the "cumulative impacts" section of the analysis. *See* 40 CFR 1508.7 ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . .); *see also Lands Council v. U.S. Forest Service*, 395 F.3d 1019, 1028 (9th Cir. 2004). According to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and Denver Water's planned Moffat Collection System expansion are implemented. [2] CRR has already suffered adverse environmental impacts that are directly attributed to these lower river flows, including high temperatures resulting in fish mortality, increased nutrient loading, didmyo (or "rock snot" – a nonnative algae creating thick, slippery mats on what was formerly a rock and gravel river bottom), and the spread of WD. CRR joins other commentators in noting that the impacts of Denver Water's planned expansion of its Moffat Collection System Project should be considered in detail, and in connection with the WGFP. A single EIS evaluating the impacts of both projects is the only way to guarantee a complete understanding of the combined impact these projects will have on stream flow and the environment in the vicinity of CRR. [2] Grand County has prepared and submitted the graph that is also attached here as Exhibit A. It compares the historic Colorado River hydrograph at Hot Sulpher Springs against the impact of various transmountain diversion projects, including Windy Gap. 27655 6	4. The Affected Environment section for each of the resources discussed in the FEIS defines the condition of resources based on past and present actions and activities in the Colorado River basin. The cumulative effects analysis then adds in the incremental effects of the Proposed Action with other reasonably foreseeable future actions to assess likely effects. Reasonably foreseeable actions included the Moffat Project and the hydrologic and associated changes that would come with operation of that project and other projected changes in the basin as identified in Section 3.5.3 of the FEIS. The same level of analysis was conducted for cumulative effects as for direct project effects. As mentioned in response to Comment No. 3, a number of additional mitigation measures are included in the FEIS including a commitment avoid additional nutrients inputs to the Three Lakes system from the WGFP. The WGFP FEIS fully considered the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.

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4	A complete analysis of the past cumulative impacts of other water projects on the river must include an honest assessment of the central role that Windy Gap Reservoir has played in the spread of WD. Where such a discussion might reasonably be expected in the subject DEIS, the document states instead, "[t]he existing habitat conditions are generally favorable for all the fish species collected." (DEIS at 3-130). In light of the complete destruction of the Colorado River rainbow trout fishery below Windy Gap, and the continuing presence of WD in the river, this comment must be changed. The science is irrefutable: "The fishery in the upper Colorado River downstream from Windy Gap Dam continues to suffer the ill effects of the whirling disease epizootic, with the rainbow trout population in particular exhibiting much lower levels of abundance and biomass than a decade ago."[3] As Charlie Meyers, the Outdoor writer for the Denver Post, summarized in the column that is attached as Exhibit B, "Windy Gap has been identified as the principal culprit in the infestation of the upper river where it pours from the water diversion project 3 miles west of Granby."[4] In contrast to the many published scientific papers documenting the central role of Windy Gap reservoir in spreading WD, the DEIS simply states, without citing any supporting authority, that "Windy Gap is no longer considered a major source of TAM [the worm that releases the WD parasite] in the upper Colorado River." (DEIS at 3-133). In a similarly conclusory and unsupported statement, the DEIS asserts: "None of the alternatives are expected to increase the development conditions for the spread of WD in the Windy Gap Reservoir . . .". (DEIS at 3-142). Given the documented devastation of the rainbow trout fishery caused by the WD spread from Windy Gap, this is a grossly insufficient analysis of a critical environmental issue. More is required. The DEIS should be revised to add a thorough analysis of the direct and cumulative impacts of the WGFP in combination with historic operations of the CBT and other transbasin diversions, including the planned Moffat expansion. Only with an honest assessment of the cumulative impact of all of these projects can appropriate mitigation measures be developed.	See response to Comment No. 3 on whirling disease.
5	**5. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the most recent period of record.** Reclamation appears to have "cherry-picked" the period of record it analyzes. The study period that is used between 1950-1996 begins and ends with wet years. The most	We are aware of the whirling disease studies that were conducted in Windy Gap Reservoir and downstream of Windy Gap Reservoir in the Colorado River. The discussion on Windy Gap Reservoir in Section 3.9.1.4 of the FEIS includes additional discussion citing CDOW references on whirling disease, which indicate that whirling disease is still present, but there appears to be a shift in the species of tubifex worms in the reservoir. The current species are not carriers of whirling disease in the same number as previously sampled in Windy Gap Reservoir. Studies concluded that habitat modifications did not result in significantly lower infection rates, as shown by the prevalence of whirling disease myxospores in young trout. The WGFP FEIS and associated hydrologic modeling and resource evaluation fully considered the cumulative impacts of the Moffat Collection System Project, C-BT Project; and other past, present, and reasonably foreseeable actions. 5. The modeling effort for the WGFP began in 2000. At that time, the decision was made to end the study period in 1996 because data required for the model (e.g., flow, diversion, evaporation, and precipitation) was readily available through that year, and the State's CDSS model study period also ended in 1996. The need to extend the WGFP model study period was evaluated to determine whether a study period that includes recent hydrology and in particular 2002, would change conclusions regarding WGFP yields and associated hydrologic changes. The period from 1997 through 2003 was analyzed in a spreadsheet exercise using Excel. A copy of the technical memorandum, *Significance of 2002 Hydrology to WGFP Modeling, (Meg Frantz September 27, 2004)*, which summarizes that analysis, was provided Grand County at a meeting on March 4, 2005. At Grand County's request, the analysis was subsequently updated to take

[3] Nehring and Thompson, North American Journal of Fisheries Management 23:376-384, 2003; *see also* "Colorado's Cold Water Fisheries: Whirling Disease Case Histories and Insights for Risk Management", Colorado Division of Wildlife, Aquatic Wildlife Research, Special Report No. 79, Nehring 2006.

[4] Mr. Meyers went on to explain the magnitude of the loss: "The loss cut even deeper because these are no ordinary trout. Specifically noted as the Colorado River strain, these rainbows evolved over the years as a kind of super trout. DOW identified them as the cornerstone of a hatchery program aimed at spreading these highly successful river fish to many other streams around the state. Now the very source of the program was being lost."

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		into account the "relaxation" of the Shoshone call. Key conclusions of that analysis are: o The addition of a WGFP reservoir would not change Colorado River flows in a year like 2002. Windy Gap water rights did not come into priority in 2002 and the addition of a WGFP reservoir would not change that condition. Therefore, Windy Gap would not divert in a dry year like 2002, with or without a WGFP reservoir, because Windy Gap diversions would be limited by the amount physically and legally available as opposed to available storage capacity. o The WGFP firm yield would not change if the model period was extended through 2002. A comparison of model output for the 1950–1996 study period with the period from 1997–2003 shows there are other sequences of years within the 1950–1996 study period that are more critical with respect to Windy Gap yield than 2002. The current model study period also addressed the carry-over or recovery effects of additional Windy Gap diversions in wet years following dry years like 2002 and 2003. The current model study period from 1950 through 1996 includes several series of dry years followed by wet years, which illustrates the effects of increased diversions to refill Windy Gap firming storage. For example, the existing study period includes the mid-1950s drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980s. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years.

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5	recent 12 years (1997 – 2008) should have been included. The past twelve years have been generally dry years, and are certainly significant for modeling the impacts of the WGFP into the future. By ignoring the last 12 years, Reclamation has ignored both the record drought year in 2002, and also the year of the greatest diversion under the Windy Gap water rights, which occurred in 2003. The limited period of study also ignores the change in the Colorado River call regime resulting from the 2003 Shoshone call agreement. The greatest diversions to the Front Range have occurred after this agreement was entered. The full available period of record should be studied.	The Shoshone call agreement was sufficiently analyzed as a reasonably foreseeable action for cumulative effects. The hydrologic effects of the Shoshone call agreement are discussed in Section 3.5.3.2 of the DEIS under the subsection Colorado River, and in more detail in Section 8.4.2.6 of the Water Resources Technical Report. While Windy Gap diversions may increase under a Shoshone call reduction, diversions with or without the firming project would be the same since available storage capacity in Granby Reservoir would not be a limiting factor in dry years when the call reduction would be invoked.
6	**6. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the science on climate change.** The DEIS cites an outdated 2001 report from the Intergovernmental Panel on Climate Change (IPCC) for the proposition that "predictions on changes in precipitation in the Colorado River Basin range from substantial increases to substantial decreases" to conclude that potential impacts of climate change should not be included in the analysis due to uncertainty. (DEIS 2-44). The DEIS has not, but must consider the best and most recent science on climate change. Including the following: • The IPCC's 2008 Technical Paper on Climate Change and Water states with "high confidence" that "many semi-arid and arid areas (e.g., . . . the western USA . . .) are particularly exposed to the impacts of climate change and are projected to suffer a decrease of water resources due to climate change." • On October 6, 2008, scientists from NOAA, the University of Colorado, and Colorado State University released a report on behalf of the Colorado Water Conservation Board for the benefit of state water planners. The report synthesizes the most current climate science, and projects decreases in runoff for the Upper Colorado due to climate change ranging from 6% to 20% by 2050. It cites one streamflow model that projects a 45% decline by 2050. • The October 2007 EIS for the "Colorado River Interim Guidelines" prepared by the Bureau of Reclamation's Lower Colorado office contained a 100-page appendix evaluating the state of climate science, potential impacts of climate change on the Colorado River Basin, and options for evaluating the effects of climate change on reservoir operations. In contrast, the WGFP DEIS dismisses the potential impacts of climate change in relation to the preferred alternative in a single page. • Starting October 8, 2008, Governor Ritter hosted a three day conference on drought and climate change. The stated purpose of the event was to "help water providers, manager and planners from the public and private sectors prepare for the effects of drought and climate change by sharing the latest research, lessons and best practices." In short, there is scientific consensus that Colorado water resources will be altered by climate change. Reclamation must consider the best and most recent science, some of 27655 8	6. The discussion of climate change in Section 2.8.2—Reasonably Foreseeable Actions was revised in the FEIS. This section includes updated information from recent publications on climatic change trends in the upper Colorado River basin and possible future changes. Potential environmental impacts from climate change are qualitatively evaluated as part of the cumulative effects evaluation discussed for applicable resources in Chapter 3 of the FEIS.

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6	which is noted above, and take a much harder look at climate change in relation to the impacts of the proposed WGFP.	
7	**7. Failure of the DEIS to address the negative impact of the preferred alternative on private fishing, and private property values in the most impacted reach below Windy Gap reservoir.** Finally, the DEIS completely fails to consider the economic consequences that the environmental impacts of the WGFP will have on CRR and other private lands along the Colorado River below Windy Gap. Water is generally an essential component of the tourist/agricultural/recreation economy in Grand County, but also a major component of the value of the private ranches like CRR on the Colorado River. While the DEIS documents the negative economic impacts of the WGFP on boating and many forms of public recreation, it is completely silent on the impact to private property values. The DEIS must honestly address those impacts, including whether the proposal will effect the "Gold Medal" trout fishery designation, and discuss what impact that would have for private property values, and tax revenues in Grand County. Those possible economic effects are directly related to the environmental impact of the project and should be studied. 40 CFR § 1508.14. **CONCLUSION** The DEIS does not contain a sufficient analysis of the environmental impacts of the proposed WGFP. It is silent on some very important points, such as the impact of the WGFP on private property values, and the mitigation that could be made by taking Windy Gap off-channel. Worse, in other critical respects, the DEIS is affirmatively misleading, as with the use of an artificially high baseline from which to measure the impacts of the new proposed project. The document we have reviewed simply does not comply with the basic informational purpose of NEPA. These problems and omissions can only be cured by a new DEIS or supplemental EIS, with adequate opportunity for federal decision makers and the impacted public to review and comment on the new document. Thank you for the opportunity to comment. CRR looks forward to continued involvement in the EIS process to make sure the environmental impacts of the WGFP are accurately addressed. CHIMNEY ROCK RANCH By: _____ Fritz Holleman, Attorney for CRR. cc: Vernon A. Isaacs, Jr. 27655 9	7. Potential effects of hydrological changes on commercial and private fishing opportunities are described in the FEIS. The aquatic resources analysis determined that the projected effects to fish habitat would not result in a loss of angling opportunities or success. As reported in the Recreation section, effects of the proposed alternatives on land-based recreation activities and aesthetics in Grand County are not expected to be measurable. Thus, there should not be a corresponding decrease in property values along the Colorado River below the WGFP. The "Gold Medal" trout fishery policy was adopted in 1992 by the Colorado Wildlife Commission. This designation is limited to "waters of the State accessible for fishing to the general angling public." Only public waters are designated as Gold Medal; private waters are excluded by the above requirement. To be eligible for designation, the water must consistently produce a minimum standing stock of 60 pounds of trout per acre and a minimum of 12 quality trout (>14 inches long) per acre. The Colorado River public waters currently designated as Gold Medal meet these criteria (The current population estimates are 131 pounds per acre and 51 fish greater than 14 inches.). It is assumed that CDOW management of the river will continue as it has in the past, and the Gold Medal designation will remain in place. Mitigation for potential impacts to aquatic resources from the WGFP are addressed the Fish and Wildlife Mitigation Plan as described in response to Comment No. 3. As a result, no adverse impact to the Gold Medal designation is expected.

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December 29, 2008

VIA EMAIL WTULLY@gp.usbr.gov and U.S. MAIL

Tully

Mr. Will Tully
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Re: Windy Gap Firming Project Draft Environmental Impact Statement.

Dear Mr. Tully:

This firm represents the Clinton Ditch and Reservoir Company and the Eagle Park Reservoir Company (collectively, the "Reservoir Companies"). As detailed below, the Reservoir Companies are concerned about the impacts of the Windy Gap Firming Project ("WGFP") on West Slope water supplies. On behalf of the principal shareholders and the boards of directors of the Reservoir Companies, we submit the following comments on the WGFP Draft Environmental Impact Statement ("DEIS").

The Clinton Ditch and Reservoir Company is the owner and operator of Clinton Gulch Reservoir, and the water rights thereto. The current shareholders consist of the Town of Breckenridge; Copper Mountain Metropolitan District; Copper Mountain Resort, Inc.; the Town of Dillon; Dundee Realty U.S.A., Inc. d/b/a Arapahoe Basin Ski Area; the Town of Silverthorne; the Board of County Commissioners of Summit County; Vail Summit Resorts, Inc. d/b/a Breckenridge Ski Resort; Vail Summit Resorts, Inc. d/b/a Keystone Resort; and Winter Park Recreational Association. These shareholders represent every major water user and water provider in Summit County and the largest ski resort in Grand County.

The Eagle Park Reservoir Company is the owner and operator of Eagle Park Reservoir, and the water rights thereto. The principal shareholders consist of the Eagle River Water and Sanitation District; the Upper Eagle Regional Water Authority; and Vail Associates, Inc. The Eagle River Water and Sanitation District and Upper Eagle Regional Water Authority comprise the second largest municipal water provider on the West Slope, serving approximately 60,000 customers in Eagle County, with a service area that extends from the Town of Vail to Wolcott.

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	Vail Associates, Inc., is a wholly owned subsidiary of Vail Resorts, Inc. which, in turn, owns and operates the Vail, Beaver Creek and Arrowhead ski areas and related resort properties. The Reservoir Companies and their shareholders collectively own hundreds of decreed water rights and water storage and conveyance facilities throughout the Colorado River basin. Our overriding concern is that the WGFP DEIS has inappropriately limited its analysis of West Slope impacts to the direct impacts felt in Grand County, and has not adequately considered the intricate physical and legal relationships that cause the impacts of any increased transmountain diversions from the Colorado River to ripple through all of the watersheds in the Upper Colorado basin. In short, any additional transmountain diversion out of the Colorado River will put additional pressure on West Slope water supplies and adversely impact the West Slope's important recreation economy. We believe the DEIS must more thoroughly study those broader impacts. Our comments below are organized around the issues that cause the greatest concern for the Reservoir Companies, as follows: 1. Failure of the DEIS to address Senate Document 80 and the protections for the West Slope in that document. 2. Failure of the DEIS to address Colorado water rights law and the proposed expansion of the Windy Gap water rights that is apparent in the proposed action. 3. Failure of the DEIS to sufficiently address the serious cumulative environmental impacts that the Colorado Big-Thompson Project, Windy Gap, and other transmountain diversion projects have already caused, and that the WGFP and Denver Water's planned Moffat Collection System expansion will exacerbate. 4. Failure of the DEIS to discuss a real "no-action" alternative that characterizes the status quo and can serve as an accurate baseline against which the impacts of the WGFP can be measured. 5. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the most recent period of record. 6. Failure of the DEIS to adequately discuss mitigation for the West Slope. **DISCUSSION** The purpose of an EIS prepared under NEPA is to accurately inform both the public and federal decision makers concerning the environmental impacts of any proposed federal action. *See Baltimore Gas & Elec. Co. v. Natural Resources Defense Council,* 462 U.S. 87, 97 (1983); *Sierra Club v. United States Dep't of Energy,* 287 F.3d 1256, 1262 (10th Cir.2002). We are concerned that the WGFP DEIS serves neither of these purposes. 27842 2	

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1	**1. Failure of the DEIS to address Senate Document 80 and the protections for the West Slope in that document.** Because the WGFP will rely on Colorado-Big Thompson ("CBT") facilities, Reclamation must determine whether the WGFP complies with Senate Document 80, the federal statute that authorized construction of the CBT project. Senate Document 80 contains requirements for use of CBT water on the East Slope, use of Green Mountain Reservoir for West Slope beneficiaries, and a number of provisions that specifically protect the headwaters of the Colorado River system in Grand County. Recognizing that CBT would "change the regimen of the Colorado River below Granby Reservoir[,]" Senate Document 80 sets out "primary purposes" for the operation and management of the CBT project, as follows (1) to preserve the vested and future rights in irrigation; (2) to preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and Rocky Mountain National Park; 3) to preserve the present surface elevations of the water in Grand Lake and to prevent a variation in these elevations greater than their normal fluctuations ….; 5) to maintain conditions of river flow for the benefit of domestic and sanitary uses of this water. The DEIS recognizes the obligation to consider Senate Document 80, but with respect to the ability of the WGFP to comply, states: "This determination will be made available at a later time and is not part of this EIS." (DEIS at 1-42). This is backwards. No aspect of the WGFP, including any further environmental review, should occur until there is a determination concerning whether WGFP can comply with Senate Document 80, and the "primary purposes" set out above. See 40 CFR §§ 1508.27, 1502.16(c), 1506.2(d)(requiring an EIS to discuss any inconsistency between the proposed project and any federal, state or local plan or law).	1. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.
1a	The failure to consider the protections in Senate Document 80 is of particular concern at present, because, as you are undoubtedly aware, the Bureau of Reclamation has placed a moratorium on issuing new contracts for Green Mountain Reservoir water. In other words, the facility that was built to mitigate the impacts of the CBT project transmountain diversions is not presently available for West Slope water users. There should not be any new transmountain diversions for WGFP or any other plan until this situation is resolved.	1a. The purpose of the WGFP EIS is to disclose the effects of implementing the proposed WGFP. As part of the evaluation discussed in the response to Comment No. 1, Reclamation will assure that the proposed project will not adversely affect operation of the C-BT Project.
2	**2. Failure of the DEIS to address Colorado water rights law and the proposed expansion of the Windy Gap water rights that is apparent in the proposed action.** The Reservoir Companies are concerned that the "pre-positioning" concept for the exchange of Windy Gap and CBT water rights exceeds what is allowed by the relevant water right decrees. The DEIS explains this "prepositioning" as follows: Prepositioning would involve the use of available Adams Tunnel capacity to deliver CBT water into [the newly constructed] Chimney Hollow Reservoir to occupy storage space that is not occupied by Windy Gap water. The delivery of CBT water from Granby Reservoir into Chimney Hollow Reservoir would create space for Windy Gap water in Granby Reservoir. When Windy Gap water is 27842 3	2. C-BT water rights issues: The Subdistrict is not proposing an expansion of the Windy Gap water rights. All diversions after the WGFP is constructed will be in accordance with the current water rights for the Windy gap project. Whether or not prepositioning requires a change of the Windy Gap water rights will be part of the evaluation discussed in the response to Comment No. 1. This evaluation will also include an analysis of the effects on C-BT Project water rights to assure that they are not adversely affected.

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2	diverted into Granby Reservoir, the CBT water in Chimney Hollow Reservoir would be exchanged for a like amount of Windy Gap water in Granby Reservoir. (DEIS ES-6). The Reservoir Companies share the concern expressed by Grand County, the Colorado River Water Conservation District ("CRWCD"), Trout Unlimited and others that this proposal violates important principles of state water law. First, the Windy Gap water rights are not decreed for storage in Chimney Hollow or Granby. Second, the CBT water is not decreed for storage in Chimney Hollow. The water rights cannot be stored as planned without a change of water rights under Colorado water law to ensure that there is no expansion of use, and no injury to other water users as a result of this new proposal. The DEIS does not address this issue, except to cite a comment by the previous State Engineer concerning administration. (DEIS at 3-7). There is no point in further analyzing a project that cannot be implemented under state law. See 40 CFR §§ 1508.27, 1502.16(c), 1506.2(d).	
3	**3. Failure of the DEIS to sufficiently address the serious cumulative environmental impacts that CBT, Windy Gap, and other transmountain diversion projects have already caused, and that the WGFP and Denver Water's planned Moffat Collection System expansion will exacerbate.** As Grand County has clearly communicated, the peak of the historic hydrograph represented by the annual high-spring snowmelt runoff has already been taken from the Colorado River system. According to Grand County, on average, 65% of the total water in the headwaters of the Colorado River System is already diverted to the East Slope by existing transmountain projects, and that percentage will increase to 85% if both the WGFP and Denver Water's planned Moffat Collection System expansion are implemented. Those massive diversions have had serious environmental impacts on the West Slope, and put additional pressure on water rights and water supply in the entire Upper Colorado basin. These past impacts should be thoroughly discussed in the "cumulative impacts" section of the analysis. *See* 40 CFR 1508.7 ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . .); *see also Lands Council v. U.S. Forest Service*, 395 F.3d 1019, 1028 (9th Cir. 2004). With respect to the future impacts of the WGFP in connection with Denver's planned Moffat Collection System expansion, we believe that a single EIS evaluating the impacts of both projects, as additive depletions on top of the many transmountain diversions that already impact this river system, is the only way to guarantee a complete understanding of the combined impact these projects will have on the environment and the water rights regime in the entire Upper Colorado River basin. We join those other West Slope entities asking that you seriously consider a new NEPA document that analyzes the combined impact of these two projects.	3. The Affected Environment section for each of the resources discussed in the EIS defines the condition of resources based on past and present actions and activities in the Colorado River basin. The cumulative effects analysis then adds the incremental effects of the Proposed Action with other reasonably foreseeable future actions to assess likely effects. Reasonably foreseeable actions include the Moffat Project and the hydrologic and associated changes that would come with operation of that project, and other projected changes in the basin. (See Section 2.8 of the EIS) The same level of analysis was conducted for cumulative effects as for direct project effects. The WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis includes hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.
4	**4. Failure of the DEIS to discuss a real "no-action" alternative that characterizes the status quo and can serve as an accurate baseline against which the impacts of the WGFP can be measured.** The consideration of alternatives to the preferred action is the "heart" of every NEPA analysis. 40 C.F.R. § 1502.14. As part of the "reasonable range of alternatives" that must be 27842 4	4. The No Action Alternative presents what WGFP Participants would do if Reclamation does not allow the proposed connection to C-BT facilities. Consistent with CEQ guidance on what should be considered in a No Action alternative, it does not mean that agencies stop what they are doing. In the case of existing agreements, prior court decisions and CEQ guidance would define No Action as no change to existing agreements. For WG and the WGFP this means that Reclamation would continue operation under the existing agreement between Reclamation and the Subdistrict for conveyance of WG water through the C-BT

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4	discussed, an EIS must "include the alternative of no-action." 40 C.F.R. § 1502.14(d). The consideration of a "no-action" alternative is intended to require that "agencies compare the potential impacts of the proposed major federal action to the known impacts of maintaining the status quo." *Custer County Action Assoc. v. Garvey,* 256 F.3d 1024, 1040 (10th Cir.2001). For the "no-action" alternative, "the current level of activity is used as a benchmark." *Id.* The Reservoir Companies share the concern of other commentators that the DEIS uses an artificial baseline as the starting point to analyze the impacts of the WGFP. In particular, there is no basis to include the increased diversions that would result from the speculative expansion of Ralph Price Reservoir by the City of Longmont within the "no action" alternative. We are similarly concerned that the DEIS misrepresents the current level of Windy Gap diversions. In its comment letter, Grand County explains that the existing annual average diversions by Windy Gap have been closer to the 11,080 AF reported in the Water Resources Technical Appendix to the DEIS (Table 3, at 22) than the over 36,000 AF that are used to describe the existing condition in the DEIS analysis. (See DEIS Table 3-2, at 3-9). The lack of an accurate baseline from which to measure the impacts of the WGFP is a deficiency that infects the entire document. Until a new DEIS with an analysis of the impacts of the WGFP against an accurate baseline is presented, federal decision-makers and the interested public have no basis to understand the actual impacts of the WGFP. *See Half Moon Bay Fishermans' Mktg Ass'n v. Carlucci*, 875 F.2d 505, 510 (9th Cir. 1988)("Without establishing the base line conditions which exist, there is simply no way to comply with NEPA."). A new NEPA document is required.	Project system. (See CEQ 40 Questions, No. 3) This also includes foreseeable actions by the participants. For most Participants, this includes continuing to take Windy Gap deliveries and increasing those deliveries as water demand increases within the capacity of the existing Windy Gap Project facilities and available storage in Granby Reservoir. One Participant would drop out of the WGFP. The City of Longmont would pursue enlargement of Ralph Price Reservoir to store its Windy Gap water. While there is no guarantee that enlargement of Ralph Price Reservoir would acquire all of the regulatory authorizations, it is reasonable action for the City of Longmont and no fatal flaws were discovered in review of this alternative in the WGFP EIS. The majority of the hydrologic impacts, included under the No Action alternative entail increased Windy Gap diversions by participants which they can currently do without any infrastructure changes or additional authorizations or approvals from Reclamation. It is unreasonable to assume that Windy Gap diversions would remain status quo under the No Action Alternative or that the No Action alternative should be no diversions.
5	**5. Failure of the DEIS to address the likely environmental impacts of the preferred alternative in light of the most recent period of record.** Reclamation appears to have "cherry-picked" the period of record it analyzes. The study period that is used between 1950-1996 begins and ends with wet years. The most recent 12 years (1997 – 2008) should have been included. The past twelve years have been generally dry years, and are certainly significant for modeling the impacts of the WGFP into the future. By ignoring the last 12 years, Reclamation has ignored both the record drought year in 2002, and also the year of the greatest diversion under the Windy Gap water rights, which occurred in 2003. The limited period of study also ignores the change in the Colorado River call regime resulting from the 2003 Shoshone call agreement. The greatest diversions to the Front Range have occurred after this agreement was entered. The full available period of record should be studied.	Windy Gap diversions for the last 10 years (1999 through 2008) averaged 22,158 AF/yr, which is significantly higher than the average diversion of 11,080 AF/yr for the period from 1985 through 2005, as presented in Table 3 of the Water Resources Technical Report. Windy Gap diversions were made in accordance with the project's water rights, the same water rights that would be used to effect diversions with a WGFP. The increase in recent diversions represents the Participants' need for additional water to meet increasing water demands, which is supported by information presented in Chapter 1 on the Participants' water demands and needs. Modeled Windy Gap diversions under existing conditions reflect the recent increases in Windy Gap Participant demands. Windy Gap pumping for the 8-year period from 2001 through 2008, since Granby Reservoir last filled, averaged 27,450 AF/yr. That average includes 2002 and 2004 when almost no Windy Gap water was pumped. Therefore, estimated pumping under existing conditions is much closer to recent operations than suggested in the comment.
6	**6. Failure of the DEIS to adequately discuss mitigation for the West Slope.** The DEIS effectively treats mitigation as a laundry list with minimally described possibilities, but no meaningful analysis. (DEIS 3-292-295). For many of the listed items, even the mitigation proposal is vague and speculative, including things that "might be" done if deemed appropriate by the proponent of the project. This is not the meaningful or informative analysis of mitigation required in a NEPA document. *See, Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 353, (1989)). Without real mitigation proposals, and a discussion of the 27842 5	The comment indicates that potential impacts of additional Windy Gap diversions under the Proposed Action are minimized or underestimated based on a comparison against existing conditions. The average decrease in Colorado River flows below Windy Gap between the Proposed Action and existing conditions is 21,283 AF/yr, which is the estimated increase in net depletions to the Colorado River. This reflects the net effect of additional Windy Gap diversions from the Colorado River and the difference in spills from Granby Reservoir. A considerable portion of Windy Gap water diverted from the Colorado River is delivered back to the river via a spill under the existing conditions scenario. Windy Gap operations were simulated in this manner to present the amount of

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		water than could be diverted with the project's current water rights to meet demands even if a portion of the water is subsequently spilled from Granby Reservoir back to the Colorado River. Table 3-9 was added to the FEIS to better illustrate the water balance associated with the Proposed Action. In summary, Reclamation believes the effects assessments based on net depletions to the Colorado River below Windy Gap, as presented in the FEIS, are appropriate. Windy Gap diversions under existing conditions reasonably reflect recent operations and diversions, which are much higher than the 20-year average from 1985 through 2005. In addition this issue does not affect Windy Gap diversions in dry years; therefore, Windy Gap pumping, net depletions to the Colorado River, and associated impacts are appropriately estimated in dry years, which are typically more critical for aquatics, water quality, and other flow-related resources. 5. The modeling effort for the WGFP began in 2000. At that time, the decision was made to end the study period in 1996 because data required for the model (e.g., flow, diversion, evaporation, and precipitation) were readily available through that year, and the State's CDSS model study period also ended in 1996. The need to extend the WGFP model study period was evaluated to determine whether a study period that includes recent hydrology, and in particular 2002, would change conclusions regarding WGFP yields and associated hydrologic changes. The period from 1997 through 2003 was analyzed in a spreadsheet exercise using Excel. A copy of the technical memorandum, *Significance of 2002 Hydrology to WGFP Modeling (Meg Frantz September 27, 2004)*, which summarizes that analysis, was provided to Grand County at a meeting on March 4, 2005. At Grand County's request, the analysis was subsequently updated to take into account the "relaxation" of the Shoshone call. Key conclusions of that analysis are: o The addition of a WGFP reservoir would not change Colorado River flows in a year like 2002. Windy Gap water rights did not come into priority in 2002 and the addition of a WGFP reservoir would not change that condition. Therefore, Windy Gap would not divert in a dry year like 2002, with or without a WGFP reservoir, because Windy Gap diversions would be limited by the amount physically and legally available as opposed to available storage capacity.

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		o The WGFP firm yield would not change if the model period was extended through 2002. A comparison of model output for the 1950–1996 study period with the period from 1997–2003 shows there are other sequences of years within the 1950–1996 study period that are more critical than 2002 with respect to Windy Gap yield. The current model study period also addressed the carry-over or recovery effects of additional Windy Gap diversions in wet years following dry years like 2002 and 2003. The current model study period from 1950 through 1996 includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill Windy Gap firming storage. For example, the existing study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980s. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. The Shoshone call agreement was sufficiently analyzed as a reasonably foreseeable action for cumulative effects. The hydrologic effects of the Shoshone call agreement are discussed in Section 3.5.3.2 of the DEIS under the subsection Colorado River, and in more detail in Section 8.4.2.6 of the Water Resources Technical Report. While Windy Gap diversions may increase under a Shoshone call reduction, diversions with or without the WGFP would be the same since available storage capacity in Granby Reservoir would not be a limiting factor in dry years when the call reduction would be invoked.

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6	extent to which they actually would or would not effectively mitigate WGFP impacts, there is very little in this section that can be said to inform either federal decision-makers or the public. Among other mitigation proposals that should be addressed, the DEIS should consider the Grand County Stream Management Plan. There is no discussion of the carefully crafted flow recommendations in that document in the mitigation section. The new DOI NEPA regulations direct Reclamation to "consult, coordinate, and cooperate with relevant State, local and tribal governments . . . concerning the environmental effects of any Federal action within the jurisdictions or related to the interests of these entities." 73 Fed. Reg. 61317 (to be codified at 43 CFR § 46.155). In light of that direction, the County's Stream Management Plan should be the guiding document in evaluating proposed mitigation. Although the DEIS rejects water conservation as an alternative, it does not explain why water conservation by the Front Range communities that would receive this additional Windy Gap water should not be added as an additional mitigation measure. The DEIS does, after all, recognize that "[t]o meet future water requirements will require continued improvements in water conservation in addition to the proposed WGFP." (DEIS 1-18). Similarly, the DEIS does not, but should have discussed in the mitigation section a requirement that WGFP participants reuse to extinction all or a significant portion of their Windy Gap water. **CONCLUSION** The DEIS does not contain a sufficient analysis of the environmental impacts of the proposed WGFP. The problems and omissions can only be cured by a new DEIS or supplemental EIS, with adequate opportunity for federal decision makers and the impacted public to review and comment on the new document. Thank you for the opportunity to comment. The Reservoir Companies looks forward to continued involvement in the EIS process to make sure the impacts of the WGFP are accurately addressed. CLINTON DITCH & RESERVOIR COMPANY EAGLE PARK RESERVOIR COMPANY By: _____ for GEP Glenn E. Porzak, General Counsel cc: Eagle Park Reservoir Company Board of Directors Clinton Ditch and Reservoir Company Board of Directors 27842 6	6. Additional mitigation measures were defined and developed to avoid or minimize adverse effects from implementing the Proposed Action. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25. Mitigation includes the Fish and Wildlife Mitigation Plan (FWMP) developed by the Subdistrict in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop preferred and recommended streamflows, water quality, and available water supplies for water users in the basin. The focus of the EIS is to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to avoid or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. However, mitigation measures included in the FEIS, may help meet some of the goals of the SMP. The WGFP Participants have committed to and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict. Reclamation cannot require how an entity uses its water rights. As mentioned in Chapter 1 of the FEIS, Participants would be reusing their Windy Gap water as best suited for their specific circumstances. For some Participants, this includes a capture and reuse program for nonpotable irrigation; for others, a second use of Windy Gap water is used to augment other depletions. When Windy Gap water deliveries become reliable through a firming project, Participants can better plan the most efficient way to reuse this water.

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	WGFP 381 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Becky Long MS. LONG: Thank you. My name is Becky. L-o-n-g, on the last name, as you might imagine. And I am here today on behalf of the Colorado Environmental Coalition. We are a state-based citizens group including about 4,500-and-counting individual members and approximately 100 member organizations. We work statewide to advocate for Colorado's clean air, plains and water. The Colorado River is one I particularly hold near and dear, as I was born just down the road from Kremmling, by Dr. Ceriani, as I imagine several people in this room were. Our vision on water is to develop and advocate for a sustainable water supply and management decisions that both sustain the environment and the economy of Colorado in order to conserve, protect, and restore Colorado's rivers. In 2005, CC, along with Western Resource Advocates and Trout Unlimited, released a report entitled "Facing Our Future," which presents a compilation of communities' vision for a balanced water future. This looks at several methods that the Front Range, specifically the South Platte and Arkansas Basin on the Front Range, could utilize for new supplies. This ranges from conservation and efficiency measures all the way up to new supplies. That's right, environmental groups advocating for building new supply. Essentially, this report says maybe that there is potential for certain projects to do better. And one of the projects we highlighted with that report was the Windy Gap Firming Project. I have a few requests tonight, and I'll try to be brief, as additional written comments will be forthcoming. First of all, I would like to underscore our previous written request for a comment extension. We feel it appropriate and would provide significant public review and then more thorough review of the public comment process and of the DEIS. Secondly, I would like to speak a little about the Front Range conservation measures. I was able to attend the meeting in Loveland the other night, as	

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1	well, and heard quite a bit about what is being done on the Front Range for conservation. Unfortunately, there wasn't a lot of discussions about what is not being done, so I assume they are doing quite a bit, as we heard Greeley saying. Not all of the participants in the Windy Gap Firming process are. In fact, there is no single standard that all participants meet to comply with this project, when it comes to conservation. Some have very good water rate structures that send a strong conservation signal to their customers. Others, like the City of Broomfield or the City of Loveland, have a flat-rate structure, which means you use as much water as you want and pay the same, whether you are using a thousand gallons a month or whether you are using 60,000 gallons a month. So there is big difference between some of the water conservation methods outlined by participants in this project. Next, I would like to speak a little about the West Slope impacts that we have some strong concerns with. As I noted earlier, we work on both economic sustainability as well as environmental sustainability. The economic analysis in the DEIS specifically regarding recreation has some figures that are a little short, perhaps.	1. The WGFP Participants have committed to and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.
2	Currently, the DEIS uses figures for an average day of fishing in the area and then uses that information to determine the average day of commercial fishing. There is quite a bit of difference between myself coming up to fish on the Colorado River, the Fraser River, as myself, or if I'm going out on a professionally guided service. I imagine I'm paying significantly more than $50 for a high-end guided tour. Additional studies and assessments are needed to look at what those figures really ought to be. That goes for both recreation and fishing. Additionally, the cumulative impact and need for corporation amongst the Front Range diversion on that stretch are important.	2. Economic values for fishing are not reported in the EIS because although reduction in Colorado River fish habitat is projected with reduced streamflow in some years, this is not expected to translate to an adverse impact to fish populations and fishing success, as discussed in the Recreation section. Commercial fishing visitor days are reported in the Recreation section of the FEIS.
3	Next, the impacts on maintaining the outstanding, remarkable values of the stream segments below Windy Gap Firming that have been highlighted for a while for an eligibility and suitability study.	3. Evaluation and potential designation of portions of the Colorado River as Wild and Scenic is a separate and ongoing process being pursued by the BLM. Recreational values are among the outstanding remarkable values identified for segments of the river. The Wild and Scenic designation process is described in the Recreation section of the FEIS. While the effects to river recreation described in the FEIS could relate to the recreational values along the Colorado River, the decision on Wild and Scenic River status is a determination made by the BLM as part of the planning process and is not part of the evaluation for the WGFP EIS.
4	And, finally, the environmental impact of fisheries which will be impacted via a reduction of flows and temperature increases.	4. Potential impacts to fish due to changes in habitat, stream channel morphology, and water quality are described in Section 3.9.2 of the FEIS. The Subdistrict developed a Fish and Wildlife Mitigation Plan (FWMP) in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). The FWMP was developed to address adverse effects to fisheries from the WGFP, but some of the measures may help meet some of the goals of the Stream Management Plan.

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		Additional discussion clarifying potential impacts to fish was added to the Aquatic Resource section of the FEIS. Aquatic resource mitigation measures are described in Sections 3.8.4 and 3.9.4 of the FEIS.
5	Until meaningful conservation measures are in place in all the participant cities and until mitigation plans for the specific impacts are in place, and, finally, until the Grand County Stream Management Plan phase three is complete and those recommendations can be taken into account, we would ask you to not approve this permit.	5. See response to Comment No. 1.
6		6. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop preferred and recommended streamflows, water quality, and available water supplies for water users in the basin. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. However, mitigation measures included in the FEIS and detailed in the FWMP (FEIS Appendix E) might help meet some of the goals of the SMP.

Com-ment	Letter #883	Response
1	COLORADO ENVIRONMENTAL COALITION Colorado's voice for conservation since 1965 DENVER 1536 Wynkoop Street, 5C Denver, CO 80202 303.534.7066 GRAND JUNCTION 546 Main Street, #402 Grand Junction, CO 81501 970.243.0002 CRAIG 11 W. Victory Way, #208 Craig, CO 81625 970.824.5241 December 23, 2008 VIA EMAIL: WTULLY@gp.usbr.gov Mr. Will Tully Bureau of Reclamation Eastern Colorado Area 11056 West County Road 18E Loveland, CO 80537-9711 VIA EMAIL: chandler.j.peter@usace.army.mil Mr. Chandler Peter, P.E. Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 **Re: Windy Gap Firming Project Comments Draft Environmental Impact Statement CWA § 404 Permit Application** Dear Mr. Tully and Mr. Peters, We are pleased to offer the following comments on the Windy Gap Firming Project Draft Environmental Impact Statement (DEIS) and on the U.S. Army Corps of Engineers (USACE) notice of CWA § 404 permit application. The undersigned organizations represent thousands of Coloradoans statewide, and share a collective vision to work towards the adoption of water supply and management decisions that are environmentally and economically sustainable in order to conserve, protect and restore Colorado's rivers. In addition to these comments, these organizations join the separate comments provided by Trout Unlimited, Western Resource Advocates, National Wildlife Federation, and Grand County. Our organizations have been following this project for several years, we continue to have a number of concerns. Our concerns as they relate to the DEIS follow. 1. The Purpose and Need Statement is too narrow, thereby improperly limiting the range of alternatives analyzed and precluding the Corps' required selection of the least environmentally damaging alternative: a. Early on, in the Public Scoping phase of this project, numerous groups, including ours submitted comments noting that the Purpose and Need Statement for this project is very narrow. This narrow statement has created an artificial comparison of this project to other alternatives. There cannot be a fair analysis of this project as it stands because many suitable alternatives have been cast aside due to this flawed and narrow Purpose and Need Statement. www.ourcolorado.org	1. The WGFP was initiated by the Participants because the original Windy Gap Project failed to deliver the yield from Participant water rights that were anticipated in the 1981 EIS for the reasons discussed in more detail in Section 1.5 of the WGFP FEIS, including insufficient storage. To address the shortcomings of the Windy Gap Project, Participants determined that a cooperative project with shared storage in a new reservoir(s) would be the most efficient way to collectively firm their Windy Gap water supply. Windy Gap water represented a source of existing water available to the Participants, but required additional infrastructure to provide reliable deliveries. Thus, the purpose of the WGFP was to fix a broken project, not to search for other sources of water. Many of the WGFP Participants have additional future water needs beyond what will be available from the Windy Gap project after construction of the WGFP, and

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1	b. Many of the rejected alternatives would have provided less damaging alternatives to meet water supply needs and serve the public interest. c. The Supplemental EIS and should look at non-structural alternatives to WGFP, such as water conservation programs and dry-year leasing of irrigation water, which would not deplete the Colorado. These types of alternatives were filtered out under the narrow Purpose and Need statements, but could be viable alternatives to meet future demands.	will be investigating other sources of water to meet those needs. The WGFP is only functional as a collaborative effort on the part of Windy Gap Project unit holders.
2	2. Conservation and Efficiency Measures have not be adequately assessed or implemented by project participants: a. Like other issues addressed in this letter, we have had many concerns about the lack of conservation and efficiency since early on in this project. Currently there is no meaningful discussion of conservation and efficiency in this DEIS. Conservation and efficiency measures do require an investment of time and resources to be successful, these investments however would be far less than the money to be spent (and spent to-date in many cases) on the Windy Gap Firming Project. b. Many of the participants are doing the bare minimum for conservation, some less than that. Only one community, Greeley, seems to have actively sought to implement strong measures towards conservation and efficiency, and they too could see increases in success with additional investments. Many communities on both the West Slope and Front Range would appreciate having additional water supplies, such as those potentially gained from this project. Ensuring responsible and efficient use of those supplies should be a top priority for Northern, the individual participants and the permitting agencies. c. In a recent presentation, the Colorado Water Conservation Board assumed a 25% reduction in average per capita water use between 2000 and 2030. WGFP communities must adopt, at a minimum, the State's conservation objectives. With this level of reduction, the project participants' existing supplies will meet demand through 2030. When the other proposed projects in the region are considered – NISP and its alternatives, Broomfield Reservoir, and Halligan/Seaman Reservoir expansion – firm supplies could exceed participants' demands through 2050, alleviating the need for the Windy Gap Firming Project.	2. Water conservation is a component of each of the Participant's operations. Each participant has committed to, and will be required to maintain a state-approved conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. These conservation measures help conserve available water supplies and reduce demand, and as a result, can delay the timing of future water needs, but would not eliminate the need for the project. Additional discussion on Participant water conservation practices was added to Sections 1.6.2.3 and 1.7 of the FEIS.
3	3. Socio Economic and Recreation impacts inadequately assessed: 2	

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3	a. The Colorado River and tributaries provide not only recreational and cultural amenities to the western slope but also sustain the local communities and economies. These local economies ebb and flow with the River. Impacts felt on the stream will also be felt in economic terms. which are not only felt at the local level but at the state level as well. Tourism in Colorado generates more than $8 Billion annually, according to conservative estimates of the Colorado Tourism Board. In 2003 tourism generated $170 Million to Grand County alone. Significant amounts of tourism dollars, especially during summer months come from whitewater based recreation, these funds are vital for our entire state. b. The DEIS falls short of adequately assessing what these impacts will look like, and in many cases underestimates the impacts by using average figures not specific to the area or in some cases to the sector of the economy in question- as is the case with the assessment of impacts to commercially guided fishing.	3. The water rights in question were initially issued by the State of Colorado in 1980 as conditional rights and made absolute by Colorado in 1990 in Case No. 89CW298. No new water rights are being sought to implement the WGFP. The socioeconomic analysis (Section 3.22) quantifies the impacts to whitewater-based recreation using the best available information. Revisions to the Socioeconomic section were made to better refine estimates of impacts to boating from occasional decreases in preferred flows. Impacts to private or commercially guided fishing are not anticipated based on the assessment of aquatic resource impacts and with implementation of mitigation measures in the Fish and Wildlife Mitigation Plan developed by the Subdistrict in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). See Sections 3.8.4 and 3.9.4 of the FEIS for aquatic resource mitigation.
4	4. Lack of assessment on impacts to downstream environments: a. There is little information in the DEIS on what the impacts of the project will be on the Colorado River below the confluence with the Blue River. . How will the Windy Gap Firming Project impact federal agencies abilities to manage areas which are eligible for designation under the Wild and Scenic River Act?	4. Colorado River hydrologic, water quality, aquatic, and recreation impacts were evaluated downstream of the Blue River based on data from the Kremmling gage. Hydrologic and other impacts diminish below the Blue River confluence because the Preferred Alternative would have less than a 7 percent impact on average monthly flows and less than a 3 percent impact on annual flows. The percent of flow reduction continues to diminish downstream with input from other tributaries. Section 7 consultation was completed on February 12, 2010 addressing effects of the WGFP on the Colorado River endangered fish species. Adverse effects are being mitigated in accordance with the requirements of the Programmatic Biological Opinion. Evaluation and potential designation of portions of the Colorado River as Wild and Scenic is a separate and ongoing process being pursued by the BLM. Recreational values are among the outstanding remarkable values identified for segments of the river. This process is described in the Recreation section of the FEIS. While the effects to river recreation described in the FEIS could relate to the recreational values along the Colorado River, the decision on Wild and Scenic River status is made by the BLM as part of their planning process and is not part of the evaluation for the WGFP EIS.
5	5. Incomplete assessment of direct, indirect and cumulative impacts: a. The DEIS fails to adequately assess the cumulative impacts of multiple projects relying on the same river. The DEIS fails to evaluate the impacts projects like the Colorado Big Thompson (CB-T) and Moffat Tunnel, which currently take over 50% of the river flows, have already had on the river resources. An analysis of the impacts of past water diversion projects is needed to understand whether the additional diversions of WGFP will push the river system over the brink, irreversibly damaging its resources.	5. The WGFP FEIS considered past, present, and reasonably foreseeable future actions in the cumulative effects assessment. The C-BT Project is a past action that was included in the baseline hydrology, and was also used in the evaluation of cumulative hydrologic impacts and cumulative impacts to other resources. As described in response to Comment No. 6, the Moffat Project was evaluated in detail in the cumulative effects assessment.
6	b. The DEIS should look closely at how WGFP and the anticipated Denver Water's Moffat Collection system expansion will change the river's hydrology and what impacts the change will have on its resources. These projects will reduce peak flows, extend periods of low flows, and create more drought-like conditions. The DEIS does not look at the extent and frequency of these changes, or at how these changes will impact the river's resources.	
7	c. The DEIS models anticipated stream conditions based on averages that mask important changes that could have a devastating effect on aquatic resources. Using a daily-step hydrological model would have 3	

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7	prevented this problem. Such model is used by Denver Water. Scoping comments and EPA letters strongly recommended that WGFP and the anticipated Moffat project be reviewed together in a single DEIS. Failure to do so results in a deficient WGFP analysis. Moreover, the DEIS' model significantly overestimates existing Windy Gap project diversions, as reflected by the Colorado State Engineer's records. In doing so, projected stream depletions and impacts associated with WGFP are grossly underestimated. d. The DEIS also fails to adequately assess the impacts on water quality of Lake Granby, Shadow Mountain Reservoir, and Grand Lake. Nutrient concentrations into the Three lakes are underestimated in the DEIS. As these concentrations contribute to high levels of algae growth, which also coincides with the pumping of Colorado River water into the Three Lakes, significant impacts will be seen. The DEIS under estimates these impacts, by using annual averages rather than a seasonal, monthly or daily average. The DEIS should evaluate impacts of the WGFP on Three Lakes by weighted by pumping schedules rather than averages.	6. The WGFP FEIS fully considered the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. Hydrologic impacts of the Moffat Project are actually overstated in the WGFP analysis by 30,000 AF because Denver changed their estimate after the hydrologic modeling for the WGFP was completed. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP.
8		7. The comment has three parts and the response is organized accordingly.
9	6. Disregard of anticipated state stream temperature standards violation a. The DEIS acknowledges that operation of WGFP will cause violation of stream temperature standards established by the state to protect aquatic life. However, it proposes no firm mitigation measures to prevent such violations.	a. <u>Need for a daily-step hydrologic model</u>: Two sets of daily data were developed from monthly model output by disaggregating monthly values using historical gage records. Daily data were developed for the entire study period for the USGS gages on the Colorado River below Lake Granby, below Windy Gap, at Hot Sulphur Springs, near Kremmling, and the gage on Willow Creek below Willow Creek Reservoir. In addition to the daily data developed for the entire study period at the locations listed above, average, wet, and dry monthly flows were disaggregated to daily values to develop average, wet, and dry daily hydrographs. A combination of daily and monthly hydrologic data were used for evaluations of resources dependent on flows or reservoir storage contents and levels. Section 3.5.2.2 of the FEIS was revised to include information related to the use of daily data for resource evaluations, including fisheries and water quality that are sensitive to daily flow variations.
10	7. Mitigation of impacts and inclusion of the Grand County Stream Management Plan: a. The DEIS discussion of mitigation measures is insufficient. Mitigation for identified impacts is not offered and where it is, the benefits are not explained and commitments to implement them are not made.	Because of its relatively junior water rights, the Windy Gap Project is not in priority and is precluded from diverting water from the Colorado River during droughts and low-flow periods with or without the alternatives assessed to provide firming storage. During low-flow periods, the Windy Gap Project would operate the same whether there is a firming project online or not. In these low-flow conditions, downstream Colorado River flows, whether they are viewed on a monthly or daily basis, are the same for existing conditions, for the No Action Alternative, and for each of the alternatives. Because there are no hydrologic impacts due to the WGFP during low-flow and drought periods, a daily model is not needed to assess effects for these low-flow periods, and the disaggregation of monthly data to daily data is sufficient for the assessment of effects for non-drought conditions.
11	b. Grand County has developed a Stream Management Plan that identifies flows needed to preserve the Colorado River's fisheries and recreational values. The DEIS fails to evaluate information provided in the plan to assess impacts on those resources or to consider it for mitigation purposes. We appreciate the opportunity to comment on this project, though overall are dissatisfied with the DEIS analysis and believe it fails to provide critical information needed for the Bureau of Reclamation and the USACE to make their respective decisions. A great deal more work needs to be done before this project should move forward. The fact that the Bureau of Reclamation's first duty is to operate the C-BT Project so as to accomplish its primary goals, including preservation of the Colorado River fisheries and recreational value, should be carefully weighed before 4	b. <u>The WGFP EIS is deficient because the WGFP and Moffat Collection System Project were not reviewed in a single EIS</u>: The cumulative effects analysis for the WGFP considered future diversions by the Moffat Project. The lead federal agencies for each EIS shared hydrologic data so that the model simulations of the

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		WGFP and Moffat Project were consistent and in appropriate detail for each EIS. Additional text has been added to Section 3.5.2.2 of the FEIS on model simulations for the WGFP and the Moffat Project and discusses coordination of those modeling efforts. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps has coordinated on the assessment of cumulative effects and mitigation for the two projects. c. Windy Gap existing diversions are overestimated: Windy Gap diversions for the last 10 years (1999 through 2008) averaged 22,158 AF/yr, which is significantly higher than the average diversion of 11,080 AF/yr for the period from 1985 through 2005, as presented in Table 3 of the Water Resources Technical Report. Windy Gap diversions were estimated based on the project's existing water rights, which are the same water rights that would be used to effect diversions after the WGFP is constructed. Recent diversions represent the Participants' need for water to meet water demands, which is supported by information presented in Chapter 1 on the Participants' water demands and needs. Estimated Windy Gap diversions used in the model reflect recent Windy Gap Participant demands. Windy Gap pumping for the 8-year period from 2001 through 2008 (since Granby Reservoir last filled) averaged 27,450 AF/yr. That average includes 2002 and 2004 when almost no Windy Gap water was pumped. Therefore, Reclamation believes that estimated pumping under existing conditions is accurate. The comment indicates that potential impacts of additional Windy Gap diversions under the Proposed Action are minimized or underestimated based on a comparison against existing conditions. The average decrease in Colorado River flows below Windy Gap between the Proposed Action and existing conditions is 21,283 AF/yr, which is the estimated increase in net depletions to the Colorado River. This reflects the net effect of additional Windy Gap diversions from the Colorado River and the difference in spills from Granby Reservoir. A considerable portion of Windy Gap water diverted from the Colorado River is delivered back to the river via a spill under the existing conditions scenario. Windy Gap operations were simulated in this manner to present the amount of water than could be diverted with the project's current water rights to meet demands even if a portion of the water is subsequently spilled from Granby Reservoir back to the Colorado River. Table 3-9 was added to the FEIS to better illustrate the water balance associated with the Proposed Action.

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		Reclamation believes that the effects assessments based on net depletions to the Colorado River below Windy Gap are appropriate. Windy Gap diversions under existing conditions reasonably reflect recent operations and diversions, which are much higher than the 20-year average from 1985 through 2005. In addition this issue does not affect Windy Gap diversions in dry years; therefore, Windy Gap pumping, net depletions to the Colorado River and associated impacts are appropriately estimated in dry years, which are typically more critical for aquatics, water quality, and other flow-related resources. 8. Nutrient concentrations in the Three Lakes were estimated in the DEIS using daily flow data from the hydrologic model and daily nutrient data based on measured data—data collected by the USGS, NCWCD, and USBR. The model was run on a daily basis. The results are summarized on an annual average and are also shown graphically on a daily basis in the WGFP Lake and Reservoir Water Quality Technical Report (AMEC 2007). Daily pumping schedules were accounted for in the model. 9. Additional stream temperature and climatic data became available following the initial analysis of temperature impacts for the DEIS. Subsequently, a dynamic temperature model (Hydros 2011) was developed with input and review by EPA to simulate weekly average temperatures and daily maximums for the Colorado River between Windy Gap Reservoir and the Williams Fork for existing conditions and the alternatives. The model simulations were conducted for the months of June through September using the very warm observed climatic data from 2007. Results of this analysis indicated that increased exceedance of the chronic MWAT and acute DM standards would occur in July and August of some years. Specifically, temperature standard exceedances were simulated to increase from existing conditions in 4 out of the 15 years evaluated with additional WGFP diversions. For these years, the dynamic modeling indicated that the MWAT standard would be exceeded for several consecutive days or weeks and the DM would be exceeded up to several additional days, when simulated with the very warm 2007 meteorology. Mitigation for temperature impacts is included in the Fish and Wildlife Mitigation Plan developed by the Subdistrict. See Section 3.8.4.2 for further discussion of temperature mitigation. Temperature mitigation measures would reduce the potential for exceedance of the temperature standards and impacts to fish associated with operation of the WGFP. Other factors including low precipitation, diversions by others, and WWTP discharges also contribute to elevated stream temperatures, whether the WGFP is pumping or not.

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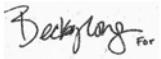
	decisions that will have impacts on those values are made. The upper Colorado River is truly a resource for all, and it is crucial for our state to ensure that we are protecting it and balancing the needs of its environment in the face of demands for additional water is crucial for our state. Sincerely,  Becky Long Colorado Environmental Coalition Bart Miller Western Resource Advocates Robyn Fugett Rocky Mountain Chapter of the Sierra Club Gary Wockner Clean Water Action Nathan Fey American Whitewater Cc: Honorable Senator Ken Salazar Honorable Senator-Elect Mark Udall Honorable Governor Bill Ritter Harris Sherman, DNR Jim Martin, CDPHE Larry Svoboda, EPA Region 8 Gene Reetz, EPA Region 8	10. Additional mitigation measures were defined and developed to avoid and minimize potential adverse effects of implementing the proposed project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures is also included in Section 3.25 of the FEIS. 11. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop preferred and recommended streamflows, water quality, and available water supplies for water users in the basin. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP but could help meet some of the goals of the SMP.

Com-ment	Letter #121	Response
	WGFP 121 **From:** helena powell [helenapaddles@yahoo.com] **Sent:** Thursday, October 16, 2008 5:01 PM **To:** wtully@gp.usbr.gov **Subject:** Windy Gap Firming - Economic impacts rafting industry **Attachments:** 2007_Commercial_Rafting_Use_Report.pdf Hi Will- Thank you for giving me the opportunity to speak at the public hearing in Granby. I have attached the Colorado River Outfitter Association Commercial Use report from 2007 (2008 season statistics will be available starting Feb. 2009). I made reference to some of these statistics in my brief presentation. You can look at the direct economic impacts and the multiplier effect from the rafting industry alone that would be jeopardized by the Windy Gap firming project. Points of note: 1. The Upper Colorado River alone had 31,997 **commercial** river user days which is over $3.4 million directly to the industry and an economic impact multiplier of **$8,725,809** in the Upper Colorado River tourist area.	
1	This is a large economic impact to our rural area! It has no data on the ADDITIONAL PRIVATE USERS and their economic impact, which should be considered as well.	1. The Socioeconomics section of the FEIS (Section 3.22.2.4) quantifies impacts on commercial boating from the alternatives. Impacts on private boating were quantified where estimates were available (e.g., Byers Canyon) and are at least partially covered by using a worst-case assumption of the complete loss of all boating when flows are less than the preferred range. Per CEQ guidance and regulations implementing the provisions of the National Environmental Policy Act, agencies are required to use the best available information and there is currently no reliable data for private boating use on the Upper Colorado, and most commercial use is downstream of Kremmling.
2	2.The CROA study dates range from 1988-2007. I urge you please take more recent data into your EIS. The drought year of 2002 saw a loss of 40.1% overall in the rafting industry. Lesson: no water=no business. There are 52 commercial river outfitters permitted on this stretch that will be DIRECTLY NEGATIVELY affected by Windy Gap Firming.	2. See response to Comment No. 1. The most recent commercial use data available from the Colorado River Outfitters Association (2007) at the time of the analysis were used. The available data for 2008 is not substantially different. In most dry years and drought years like 2002, Windy Gap water rights are not in priority and there would be no diversions.
	These are a few economic speaking points. I will be sending an additional email on environmental impacts. **Please extend the comment period 60 days.** **Please look at the impacts of this project in conjunction with the Moffat project.** Thank you for your time and attention in this matter. Helena Helena Powell PO Box 495 Tabernash, CO 80478 Helena Powell *ski all winter* *paddle all summer* _____ Do You Yahoo!? Tired of spam? Yahoo! Mail has the best spam protection around http://mail.yahoo.com	

Com-ment	Letter #118	Response
1	WGFP 118 To: Will Tully Bureau of Reclamation 11056 West County Road 18E Loveland, Colorado 80537 OCT 2 9 2008 From: Pete and Carol Petersen Colorado River Ranch P. O. Box 832 Kremmling, Colorado 80459 Tully 1340 C-BT 11/5/08 Subject: Windy Gap Draft EIS Comment Date: October 27, 2008 Dear Mr. Tully: We are irrigators on the Colorado River below Williams Fork Dam and a few miles east of Kremmling. We have electric pumps with stationary in-lets to irrigate our hay medows.When the flows in the river are low and our inlets are not covered at all or barely covered the pumps will not work, or at the least do not work efficiently. Also with low flows the moss is a problem plugging the in-lets, and with the water table so low it is harder to get the meows covered with the irrigation water. The time each of us irrigates with these pumps will vary a little, but our season is beginning of May to late fall, turning of irrigation water long enough to dry the meows for haying and get the hay put up. The water is turned back on for fall irrigation. One of your points of mitigation I read is, The Subdidtrict will curtail Colorado River diversions during the annual Big Gore Race, typically the third week in August, if flows at the Kremmling gage are below 2,200 cubic feet per second. Surely, Mr. Tully, for those of us in agriculture our livelihood is equally important as the recreation. As you move forward with your plans for the Windy Gap Firming Project, it is our hope you will consider the negative effects and impact it will have on those of us in Agriculture. Thank you in advance for considering our comments. Sincerely, Pete Petersen Carol J Petersen Official File Copy ENV-6.00 WGFP 245	1. The Subdistrict would comply with state water law for all diversions. Windy Gap cannot divert when downstream senior water rights are calling for water. In addition, the WGFP would comply with Colorado River bypass flow requirements established by the Agreement Concerning the Windy Gap Project and the Azure Reservoir and Power Project (Azure Agreement) completed April 30, 1980 as part of the original Windy Gap Project. This agreement requires the Windy Gap Project to curtail diversions if streamflow drops below 90 cfs below Windy Gap Reservoir, 135 cfs below the Williams Fork, or 150 cfs below Troublesome Creek. The Windy Gap Project cannot divert if the agreed minimum flows are not met, even if Windy Gap water rights are in priority. Colorado River flows may fall below the minimum streamflow volumes when the WGFP is not pumping, particularly in late summer. The Subdistrict has no control over Colorado River flows when the Windy Gap Project is not pumping. The EIS points out in Section 3.18.2.3 that water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law, and any municipal or agricultural diversions downstream from Windy Gap Reservoir, per Colorado water law (C.R.S. § 37-92-102(2)(b)), would remain responsible for developing a reasonable means of diversion for their water. Per the Azure Agreement, the Subdistrict funded $500,000 in improvements for ranches downstream from Windy Gap Reservoir to maintain their diversion structures on the Colorado River. The original Windy Gap Project included diversions greater than those in the WGFP. The Azure Agreement was developed to mitigate and address all objections to the Windy Gap Project. The Azure Agreement was signed by 30 ranchers. The WGFP will have no effect on how irrigators downstream of the C-BT Project are treated with respect to the requirements of Senate Document 80.

Com-ment	Letter #1063	Response
1	WGFP 1063 December 26, 2008 Mr. Will Tully Bureau of Reclamation Eastern Colorado Area 11056 West County Road 18E Loveland CO 80537-9711 WTULLY@gp.usbr.gov Mr. Chandler Peter, PE Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton CO 80126-6901 chandler.j.peter@usace.army.mil RE: Windy Gap Firming Project Draft Environmental Impact Statement Transmitted by Email Dear Mr. Tully and Mr. Peters: Thank you for the opportunity to provide comment on the draft Environmental Impact Statement (DEIS). The Colorado Wildlife Federation has decided to endorse and join with Trout Unlimited in its comments and those of the Colorado Environmental Coalition, reflected in the attached letter. Our discussions with wildlife and fisheries biologists are in accord with those comments. We are deeply concerned with the future of the upper Colorado River and believe that the water needs of the Front Range populations must achieve a balanced outcome that accommodates the needs of fish and wildlife, as they are valued by Coloradans, contribute to the economy and are a fragile resource. In our view, the parties must reach an outcome that reflects the unique character of Colorado, our increasingly scarce water resource and importance of fish and wildlife. The DEIS fails to achieve such balance. We hope that by continuing serious work to shape the outcome, the process and result can serve as a model. Sincerely, Suzanne O'Neill Executive Director, Colorado Wildlife Federation 1410 Grant Street, Suite C-313, Denver, Colorado 80203 (303) 987-0400x1 Fax (303) 987-0200 www.coloradowildlife.org cwfed@coloradowildlife.org	1. Thank you for your comment. See responses to the Colorado Environmental Coalition (Comment Letter No. 883) and Colorado Trout Unlimited letters (Comment letter 1126).

Com-ment	Letter #1110	Response
1 2 3	Mr. Will Tully Bureau of Reclamation 11056 W CR 18E Loveland, CO 80537 Mr. Chandler J. Peter U.S. Army Corps of Engineers Denver Regulatory Office 9307 S. Wadsworth Blvd. Littleton, CO 80128-6901 Re: Windy Gap Firming Project Draft EIS Mr. Tully & Mr. Peter: As business owners and managers, we write to share our serious concerns with the proposed Windy Gap Firming Project (WGFP) and its potential impacts on the Colorado River and, by extension, on the regional economy. The Colorado River and its tributaries are the lifeblood of western slope communities, supporting economic drivers from recreation and tourism to agriculture. For example, in Grand County, every tourist activity relies directly on the natural flow of water – and visitor expenditures account for a majority of retail sales countywide. Maintaining a healthy Colorado River is not only essential to local ecosystems, but to the economic future of our region. Protection of the Colorado River should be a basic expectation for WGFP before any federal approvals are granted. Indeed, the Bureau of Reclamation has a legal responsibility to operate the Colorado-Big Thompson Project in a manner that furthers the primary purposes of the project. Those primary purposes include preservation of the Colorado River's fisheries and recreation opportunities. Accordingly, unless strict conditions are imposed on WGFP that will ensure that no harm will result, Reclamation must not approve the project. Unfortunately, the Draft Environmental Impact Statement fails to reasonably assess the impacts of the WGFP on the Colorado River's natural resources and the local economies that rely on them. In many places, the DEIS makes leaps that strain believability. For example, the DEIS anticipates that WGFP is "unlikely to noticeably affect recreation use" at Granby – despite information showing that the project would result in additional periods when boat ramps at Granby Reservoir would be inaccessible due to lower reservoir levels. The DEIS downplays consideration of cumulative effects of WGFP alongside historic operations so as to suggest that there will be little effect on fisheries or fishing – despite information showing that periods of lower flow will become more common and that state water quality standards for temperature will be violated. As local businesses, it seems to us that the DEIS is asking our communities to take a leap of faith that WGFP is benign despite – not because of – the evidence. Perhaps the most serious flaw is the DEIS' failure to consider the broad-based economic effects of reduced recreation and the ripple effects through the regional economy. The DEIS excludes from consideration many key aspects of the recreation economy by limiting consideration to active recreation where there is public access. This narrow analysis fails to include many key economic factors for the west slope: - potential failure of irrigation systems due to reduced streamflow; - ranchers who rely on fishing leases along the Colorado River; - real estate and resort developments where a healthy Colorado River is a primary or sole asset;	1. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS. 2. Granby Reservoir water levels have fluctuated widely in the past and would continue to do so in the future. In average years, all boat ramps would remain accessible in the summer under the action alternatives, except for Arapaho Bay in May. In dry years, the Arapaho Bay boat ramp would be affected in August. None of the other boat ramps would be affected during the summer recreation season. It is reasonable to assume that a 6 percent reduction in surface area and the loss of use of one boat ramp in 1 month of the 5-month recreation season in a water storage reservoir that regularly fluctuates under existing conditions would not substantially affect recreation use or the quality of the recreation experience. As a mitigation measure, the Subdistrict has proposed to modify prepositioning operations to moderate Granby Reservoir water level fluctuations. C-BT water would not be delivered and stored in Chimney Hollow Reservoir in any year when elevations in Granby are anticipated to fall below elevation 8,250 feet. Additional discussion of the effects of modified prepositioning is found in Section 3.5.4 of the FEIS. Additional information also was added to the FEIS to better correlate severe drawdowns during consecutive dry years with reservoir surface area. Dry years and low water levels have occurred in the past and will continue to occur in the future. During successive dry years, the modified prepositioning would minimize impacts to boat ramp accessibility. Also see response to Comment No. 3.

Com-ment	Letter #1110	Response
3	- lakefront and riverfront properties whose value is directly related to reservoir water clarity and water quality; and - numerous summer recreation-oriented and visitor-oriented businesses including private marinas, local motels, restaurants, recreation-oriented retailers, et cetera.	3. The DEIS points out that water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law, and any municipal or agricultural diversions downstream from Windy Gap Reservoir, per Colorado water law (C.R.S. § 37-92-102(2)(b)), would remain responsible for developing a reasonable means of diversion for their water. Socioeconomic effects were quantified where data on use and impacts are available. Effects of the Proposed Alternative on recreation experiences and aesthetics is qualitatively described wherever possible, recognizing that these effects vary widely by individual users. As described in the Aquatic Resources section, projected effects to fish habitat are not anticipated to translate to a loss in fishing opportunities or fishing success. Reductions in preferred boating flows and boating days are described in the Recreation and Socioeconomics section of the EIS. This analysis focuses primarily on commercial boating, for which baseline use data exist.
4	In light of these major deficiencies, we ask that Reclamation and the Corps develop a Supplemental Environmental Impact Statement that offers a more thorough and accurate consideration of the environmental and economic effects of WGFP – to inform your decision-making and to allow the public the opportunity to review and comment on the analyses that were inadequate in the current DEIS. In this Supplemental EIS, we request that you:	
5	- Analyze the cumulative impacts of all trans-basin diversion from the Colorado River, including existing impacts from the Colorado-Big Thompson Project and Moffat Collection System.	
6	- More rigorously assess fishery flow needs so that a determination can be made of whether WGFP is consistent with the Colorado-Big Thompson Project primary purpose of preserving the Colorado River's fisheries.	
7	- Conduct a more complete assessment of the socioeconomic impacts of the WGFP, including the impacts described above that were omitted from consideration in the DEIS.	The DEIS states that hydrological changes are unlikely to adversely impact sport fishing under any of the alternatives, and that changes to the visual quality of the Colorado River would not be discernable to most viewers, and would remain similar to existing conditions. It is therefore reasonable to assume that the proposed hydrological changes would not impact private development along the Colorado River. Considering development that has occurred along the shoreline in the last several decades and the lack of sufficient baseline data that would correlate changing water levels to property values, we were unable to quantify the incremental impacts on property values from changes in lake levels for a high elevation reservoir where water levels fluctuate widely such as Granby Reservoir.
8	- Consider alternatives for water supply to the WGFP participants that would not require further significant depletions of the Colorado River.	4. No supplemental EIS is required to address the comments received on the DEIS. The FEIS includes additional information and clarifications on project impacts, as well as more specific mitigation measures.
	As businesspeople, our livelihoods depend on preservation of a viable Colorado River. We urge you to take the steps necessary to protect this vital resource for our environment, communities, and economy. Thank you for the opportunity to comment. Sincerely, Bob Streb, Owner Fly Fishing Outfitters 1060 West Beaver Creek Blvd. Avon, CO 81620 Jonathan Kahn, Owner Confluence Kayaks 1615 Platte Street Denver, CO 80202 Chris Hall, Manager Cutthroat Anglers PO Box 2540 Silverthorne, CO 80498 Scott Linn, Owner Winter Park Optical 45 County Road 804, Suite 150 Fraser, CO 80442 Seth Martin, Assistant General Manager Devil's Thumb Ranch PO Box 750 Tabernash, CO 80478	5. The WGFP FEIS considered past, present, and reasonably foreseeable future actions in the cumulative effects assessment. The C-BT Project is a past action that was included in the baseline hydrology, and was used in the evaluation of cumulative hydrologic impacts and cumulative impacts to other resources. The WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions that are discussed in Section 2.8 of the DEIS and FEIS. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impacts of the WGFP.

Com-ment	Letter #1110	Response
		6. Additional information on potential effects on fisheries was added in Section 3.9.2 of the FEIS. The Subdistrict developed a Fish and Wildlife Mitigation Plan (FWMP) in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 8, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS. 7. The socioeconomic evaluation was conducted using the best information available. See response to Comment No. 3. 8. The WGFP was initiated by the Participants because the original Windy Gap Project failed to deliver the yields that were anticipated in the 1981 EIS for the reasons discussed in more detail in Section 1.5 of the WGFP FEIS, including insufficient storage. To address the shortcomings of the Windy Gap Project, Participants determined that a cooperative project with shared storage in a new reservoir(s) would be the most efficient way to collectively firm their Windy Gap water supply. Existing absolute Windy Gap water rights represent an existing source of water available to the However, additional infrastructure is necessary to provide reliable deliveries. Thus, the purpose of the WGFP is to fix a broken project, not to develop new sources of water. Many of the WGFP Participants have additional future water needs beyond what the WGFP would supply, and will be investigating other sources of water to meet those needs. The WGFP is only functional as a collaborative effort on the part of Windy Gap Project unit holders.

Com-ment	Letter #240	Response
1	WGFP 240 **From:** Paul Prentiss **To:** wtully@gp.usbr.gov; chandler.j.peter@usace.army.mil; **Subject:** Windy Gap Firming Project **Date:** Saturday, December 13, 2008 3:27:34 PM Please be advised of my serious concern concerning impact the Windy Gap Firming Project will have on the Colorado River particularly in the summer months. I don't understand how such a protect can be considered reasonable when meaningful conservation measures are not even in place in the communities that are expected to benefit. I believe that proceeding with this plan, as defined, will degrade the the Colorado River eco-system. Paul Prentiss Front Range Anglers ~ Boulder, CO Fly Fishing Exchange ~ Boulder, CO 303-444-0270 270-394-1115 peprentiss@gmail.com	1. The WGFP Participants have committed and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended, (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with Subdistrict. Additionally, other mitigation measures, as summarized in Section 3.25 and in each resource section of Chapter 3 of the FEIS, will avoid or minimize adverse effects of the proposed project on the Colorado River.

Com-ment	Letter #256	Response
1 2 3	GEO TOURS/Whitewater Raft Trips WGFP 256 December 18, 2008 VIA EMAIL: WTULLY@gp.usbr.gov Mr. Will Tully Bureau of Reclamation Eastern Colorado Area 11056 West County Road 18E Loveland, CO 80537-9711 VIA EMAIL: chandler.j.peter@usace.army.mil Mr. Chandler Peter, P.E. Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 **Re: Windy Gap Firming Project Draft Environmental Impact Statement** Dear Mr. Tully and Mr. Peters, As a rafting outfitter that has operated on the Upper Colorado River for over 27 years and whose business relies upon the beauty and recreational opportunities that the Colorado River System provides. I submit the following comments on the Windy Gap Firming Project (WGFP) Draft Environmental Impact Statement (DEIS). • Water resources and my business as a river outfitter on the Upper Colorado River are inextricably linked. The WGFP impacts the environmental quality of the Colorado River. These impacts directly affect the tourist and recreation industry, creating adverse effects on river outfitters. Despite these consequences very few of these environmental or socioeconomic impacts are measured in the DEIS – and those that are measured are underestimated through use of an inaccurate measure of "existing conditions," an inaccurate measure of the "No Action Alternative," inappropriate modeling techniques, false assumptions, outdated data, lack of quantification and omission of critical considerations and impacts. Environmental and socioeconomic impacts need to be further evaluated and addressed in the DEIS. • Recreation analysis only considers commercial boating and commercial fishing on one reach of the Colorado River. The visual quality analysis excludes consideration of the Colorado River as a scenic asset that attracts and extends the stay of visitors. • The DEIS excludes economic impacts of recreational activities on guides, outfitters and businesses that support the outfitters and guides. *GEO TOURS, 229 Hwy 8, P O Box 483, Morrison, CO 80465-0483* *Local: 303-756-6070, Toll Free: 800-660-7238, FAX 303-756-9532* *E-mail: Bruce@georafting.com Website: www.georafting.com*	1. The FEIS includes an assessment of impacts to a range of resources, including detailed assessment of potential effects to boating in the Colorado River. The Recreation and Socioeconomic sections of the FEIS were revised to better describe potential recreation impacts and the economic effect of changes in available boating flows. The analysis was based on a comparison of future hydrologic conditions for each of the alternative actions and existing hydrologic conditions. The No Action Alternative represents what WGFP Participants would do if Reclamation does not allow the proposed connections to C-BT facilities. For most Participants, this includes continuing to take Windy Gap deliveries and increasing those deliveries as water demand increases within the capacity of the existing Windy Gap Project facilities and available storage in Granby Reservoir. 2. The recreation analysis focuses on commercial boating and fishing data for the Gore Canyon/Pumphouse reach of the Colorado River because that is the reach from which most of the boating activity in the upper Colorado River occurs and for which there is accurate data available from the BLM. The economic effects on commercial uses are described in the Socioeconomics section. The Visual Quality section discusses potential effects of Colorado River hydrological changes on visual quality (finding that the scenic character would remain similar to existing conditions). Effects of the alternatives on recreation experiences and aesthetics is

Com-ment	Letter #256	Response
4	GEO TOURS/Whitewater Raft Trips • In the visual, land use, recreation and socioeconomic impacts, the DEIS provides very few mitigation solutions because it quantifies very few impacts.	qualitatively described wherever possible, recognizing that these effects vary widely by individual user. 3. The Socioeconomic analysis details the potential economic effects of Colorado River flow changes in terms of the loss or gain of visitor days (and the monetary value of those days). Available information was used in the analysis and the methods are described in Section 3.22.2.2 of the FEIS. This section also describes the value of the recreation impact, which was defined as the willingness to pay unit-day, expressed in terms of dollars per visitor day, multiplied by the estimated gain or loss in visitors. Also, because the analysis conservatively assumes a total loss of boating user days when preferred flows are not met, no additional estimates of indirect economic impacts were made. It is unlikely that all boating activities would cease if flows were not in the preferred range, as long as flows were above minimum values. Thus, the analysis provides a reasonable estimation of economic impacts from changes in the amount of preferred boating days, although the estimate does not segregate impacts specifically to outfitters.
5	• The presentation and use of data in average monthly statistics is not helpful as visitors view and use the Upper Colorado River on a daily basis. Fish require adequate water daily, not in averages. Average monthly statistics might mask the more realistic impacts. If the conditions are unfavorable on the day that a visitor is present, that visitor is likely to go elsewhere the next time.	
6	• Prior to diverting west slope water away from the people and environment that need it, the east slope receivers should be required to maximize water conservation. Some municipalities in the arid west have decreased water consumption by as much as 30%. The burden of water scarcity should at least be shared – not borne solely by the people and ecosystems of the West Slope.	
7	• Grand County is preparing a comprehensive scientific study and analysis, the Grand County Stream Management Plan, to identify a preferred flow regimen for streams and rivers in Grand County. This Plan will take into consideration cumulative impacts of past, present and future projects that have effected the Upper Colorado River System. It will view the river system as a whole and it will seek to avoid the worst impacts of further diversions. The end result is a compilation of scientific data identifying stream flow needs that will protect aquatic life and the environment, while meeting the needs of both the East Slope and West Slope water supply needs. The DEIS fails to acknowledge this Plan. If the WGFP is approved, the Plan should be used to define the mitigation needed for the project, and compliance should be monitored.	4. The Recreation resources analysis focuses on the potential effects of the proposed hydrological changes on river and lake recreation. Where possible, these quantitative hydrological changes are related to measurable thresholds that affect recreational access and opportunities (such as preferred flows for boating and access to boat ramps at reservoirs). By their very nature, some recreation activities are widely dispersed, are not quantified, and the quality of recreation experiences vary by individual user. Potential impacts were described quantitatively wherever possible and qualitatively where insufficient information was available based on sound logic and professional experience using the best available information.
8	• A single EIS for both the Moffat Tunnel Expansion Project and the WGFP should be conducted in order to ensure that the cumulative impacts from both projects are evaluated simultaneously and that appropriate mitigation measures are put into place. Thank you for taking these comments into consideration. I look forward to seeing them addressed in the Final Environmental Impact Statement. Sincerely, Bruce Becker Geo Tours Whitewater Raft Trips GEO TOURS, 229 Hwy 8, P O Box 483, Morrison, CO 80465-0483 Local: 303-756-6070, Toll Free: 800-660-7238, FAX 303-756-9532 E-mail: Bruce@georafting.com Website: www.georafting.com	The EIS provides a reasonable description of the impacts of the alternatives based on available data and accepted analysis methods. Section 3.25 of the FEIS describes mitigation measures to reduce resource impacts, including modifying prepositioning to maintain higher water levels in Granby Reservoir, reducing nutrient loading into the Three Lakes system, and other measures that will avoid or minimize adverse effects to recreation and fish and wildlife resources as a result of the WGFP. 5. A combination of daily and monthly hydrologic data were used for flow-related resource evaluations. Additional information on the use of daily data for resource analyses was included in Section 3.5.2.2 in the FEIS. 6. The WGFP Participants have committed, and will be required, to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans,

Com-ment	Letter #256	Response
		and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict. 7. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop recommendations of preferred streamflow regimes to support stream health for aquatic habitat and other nonconsumptive water uses, as well as the flow regimes necessary to support water use requirements for irrigators, municipalities, industry, and recreation. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. After review of the Grand County SMP and additional conversations with BLM staff, the preferred flow ranges for boating were changed and simplified to use a preferred flow of 850 to 1,250 cfs in Gore Canyon and 1,100 to 2,200 for Pumphouse. The Recreation section of the FEIS includes these changes. 8. The WGFP FEIS fully considered the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.

Com-ment	Letter #24	Response
1	WGFP 24 **From:** Norman Carpenter [ncarpenter@royalresorts.com] **Sent:** Tuesday, September 30, 2008 4:25 PM **To:** wtully@gp.usbr.gov **Cc:** grndcty1@co.grand.co.us; japrecourt@aol.com **Subject:** Windy Gap Draft EIS Comment Dear Mr. Tully, Twenty years ago I realized a lifelong dream and purchased an historical working cattle ranch on the Colorado River near Parshall. This is my second home. I visit and live there a week or more every month of the year, and in the process, give a great deal of support to the local economy. In the last dozen years I have spent more than a million dollars preserving and protecting the ranchland and its water rights, wetlands, riparian areas, the river itself, and the fishery. I have watched with dismay as water levels decline and fish habitat is ruined, so that highway overpasses and lawns on the other side of the continental divide can be green. This is a seriously misplaced priority for our precious water resource. I AM ADAMANTLY OPPOSED TO ANY ACTION WHICH WILL REDUCE FLOWS IN THE UPPER COLORADO RIVER, AND INSIST THAT HISTORICAL NATURAL FLOWS BE RESTORED. Please do what you can to right this wrong. Sincerely, Norman A. Carpenter, owner Gold Medal Ranch LLC --- This e-mail message is for the sole use of the intended recipient and may contain confidential information. Any unauthorized review, use, disclosure or distribution of this message is prohibited. If you are not the intended recipient of this message please respond to the sender by reply e-mail and destroy all copies of the original message. This e-mail and any attachments have been scanned for viruses prior to leaving our network. We are not liable for indirect or consequential damages from alteration of these contents by a third party or by the result of any virus. Este mensaje es para el uso unico y exclusivo del destinatario y contiene informacion confidencial. Queda estrictamente prohibida cualquier reconsideracion, uso revelacion o distribucion de este mensaje. Si usted no es el destinatario, por favor informe inmediatamente al remitente via email y destruya el mensaje original asi como las copias del mismo. Este mensaje y los archivos adjuntos han sido escaneados contra virus en nuestra red. Sin embargo, no seremos responsables por daños o alteraciones en este contexto, a terceras personas, o por el resultado de cualquier virus.	1. Thank you for expressing your concerns about the proposed project. Mitigation measures to avoid and minimize project impacts are summarized in Section 3.25 of the FEIS and discussed in more detail for each of the resources.

Com-ment	Letter #359	Response
1	WGFP 359 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Sharon Brenner MS. BRENNER: I'm Sharon Brenner. I'm with the Granby Chamber of Commerce. That's B-r-e-n-n-e-r. I think when I was looking at this study -- and I haven't read through the whole thing, but from looking at the study, I don't see where they really looked at the economic impacts of the community. Granby has long been -- Granby and Grand County have long been a tourism area. And if you drop the flows in the river, we ruin the fly fishing. If you drop the level in the lakes, you lose the marinas and you lose the fishing in the lakes. People -- when we had our drought, we had -- people were not coming up. And, as a motel owner when I was here, when I owned the motel, we saw less people coming up to go fishing because there was no water in the lake. I think it's something that needs to be checked. I think it's something that needs to be studied. I haven't had anybody come to me and ask me, what's going on? I haven't had my -- the members of the chamber have all said that they have not heard from anybody asking questions about what happened to them economically when there was a drought. So, with the impact of the lake and the impact on the rivers, I think there is a serious impact on the economy of this whole county. And I really believe that that needs to be studied more before anything is approved. Thank you.	1. Economic and recreation effects were quantified where data on use and impacts are available. Quantitative impacts to boating in the Colorado River are included in the Socioeconomic section of the FEIS. Hydrological changes are unlikely to adversely impact sport fishing under any alternative based on both the timing of flow changes and the results of the aquatic resources analysis, which determined that the projected effects to fish habitat would not result in a loss of angling opportunities or success. As reported in the Recreation section (Section 3.19), effects of the proposed alternatives on land-based recreation activities, aesthetics, and tourism in Grand County are not readily measured and are likely to be small. It is reasonable to assume that a 6 to 7 percent average reduction in Granby Reservoir surface area, in a water storage reservoir that regularly fluctuates under existing conditions, would not noticeably affect recreation use or the quality of the recreation experience, or have measurable socioeconomic impacts. However, to reduce potential impacts as described in Section 3.5.4, the Subdistrict would modify prepositioning operations under the Proposed Action to moderate Granby Reservoir water level fluctuations, which would maintain higher average and dry year water levels in Granby Reservoir compared to the original prepositioning plan. Additional mitigation measures to address Colorado River temperature, Three Lakes nutrient loading, flushing flows, and other impacts are summarized in Section 3.25 of the FEIS.

Comment	Letter #408	Response
1 2	WGFP 408 Loveland Public Hearing Transcript for Windy Gap Firming Project October 7, 2008 John Brooks MR. BROOKS: Good evening. My name is John Brooks, and I represent GGLSA, the Greater Grand Lake Shoreline Association. We're just under a hundred members and have water quality and clarity of Grand Lake as our number one mission. We have several members that worked for the last several decades on water quality issues in Grand Lake. Before I give my individual comments on the EIS, let me set a little background. In 1937, Senate Document 80 created Colorado Big Thompson project. It's been called the Bible of the project. There was a promise in that to Grand Lake, Grand County, and the people of Colorado that the project would be operated, quote, to preserve fishing, recreation, and the scenic attraction of Grand Lake, end of quote. Before the project started pumping, clarity in Grand Lake was measured at over 9 meters, about 30 feet. Let's jump ahead to 2006. Because of continued degradation in clarity and to a little under 2 meters, northern -- the City of Grand Lake, Three Lakes Watershed Association, and ourself, jointly funded a study to identify a less harmful means of moving water to the Adams tunnel. Less harmful than just using Grand Lake as a big ditch. The contractor was McKlackering (phonetic) out of Denver. They identified several alternatives, the preferred one being a tunnel bypassing Shadow Mountain and Grand Lake. Let's move ahead again to June 2008. With water quality and clarity of Grand Lake still a major concern, the Northwest Council of Governments and Grand County proposed to the State of Colorado that a 4-meter standard be established for Grand Lake. In fact, in a pretty historic setting, the Colorado Water Quality Control Commission issued a narrative water clarity standard, the first one that's ever been issued in the State of Colorado. That standard was the highest level of clarity obtainable with a goal of reaching a clarity of 4 meters by the year 2014. With that as background, I have five specific comments on the EIS. Number one: According to the EIS, the current proposed action will see a 4 percent degradation in the current level in Grand Lake. We think the EIS should address how it plans to meet not only the intent of Senate Document 80 but the specific goal as set by the Colorado Water Quality Control Commission. Number two: The study uses annual averages. This is a little like the guy that drowned in a lake that was an average of an inch deep. The averages don't mean much when your real area of concern is July through September when the algae bloom and inflow from Shadow is the biggest concern. We think the model needs to be rerun. In fact, the data is all	1. Section 3.8.4 of the FEIS includes a discussion of the nutrient mitigation measures designed to offset nutrient loading to the Three Lakes from additional WGFP pumping so that the WGFP would not exacerbate the current algae and clarity problem in the Three Lakes system. These measures would offset the total nitrogen and total phosphorus loadings to the Three Lakes projected from the WGFP. These measures would not only benefit the Three Lakes and deliveries to the East Slope during pumping, but would provide a year-round benefit to water quality in the lower Fraser River, Willow Creek, and the Colorado River. With respect to the requirements of Senate Document 80, please refer to the additional text added at the beginning of Section 1.10.2 of the FEIS. 2. The peak chlorophyll *a* concentrations and the minimum Secchi-disk depths are reported by year in the FEIS and encompass the period of prime concern in the summer. The analysis of water quality impacts for the Three Lakes was conducted using daily data. The DEIS presented monthly average data and the range of daily values. Figures displaying daily values for total phosphorus, total nitrogen, chlorophyll *a* concentrations, Secchi-disk depths, and dissolved oxygen were added to Section 3.8.2.4 of the FEIS.

Com-ment	Letter #408	Response
2 3 4 5	there and easily done, in using that to see what the degradation would actually be during the time of prime concern. Number three: The EIS strangely enough has a concept in this that increased flow through Grand Lake would somehow flush out the bad stuff and bring in the good stuff. Every study we've seen shows just the opposite. In fact, this year, Reclamation shut down the tunnel for a two-week period. During that time, clarity improved at a level of about 2 feet per week. As soon as the tunnel was turned back on, it degraded at about the same rate until it reached its original level of clarity. We think that unless specific science can be quoted, that that should be taken out of the EIS. Number four: There's a big Delta being formed at the entrance into Grand Lake, where Shadow Mountain pumps into Grand Lake. The addition of 30,000 acre-feet of additional material coming through there will just add to that. We think that needs to be addressed. Fifth and most importantly, we think the tunnel study of McKlackering needs to be included. At a cost of a little over 2 percent of total project costs, this would ensure the clarity of Grand Lake not only for our generation but for generations to come. Thank you.	3. In general, high flushing rates can improve water quality. Flushing can achieve improved quality in eutrophic lakes by increasing the water exchange rate (Cooke et al. 2005). According to these authors, "by increasing the water input the flushing rate is increased, which in turn increases the loss rate of plankton algae from the lake." The discussion in the EIS for Grand Lake is focused on predicted nitrogen concentrations and describe the impacts of both increased loading and increased flushing. 4. Discussion of the delta located in Grand Lake at the east end of the channel was included in the FEIS. It is very difficult to quantitatively describe the impact of additional Farr pumping on the delta. Given the existing problems with sediment in Shadow Mountain Reservoir, it is possible that the delta may increase with increasing Farr pumping; by how much, is unknown and difficult to quantify. 5. Considering modifications in C-BT Project facilities, such as rerouting C-BT Project water around Grand Lake, are beyond the scope of the WGFP EIS. Modifications to C-BT Project facilities would require Congressional authorization, funding, and review under the National Environmental Policy Act.

Com-ment	Letter #58	Response

Windy Gap Draft EIS Comments

Greater Grand Lake Shoreline Association (GGLSA) comments on the Windy Gap Firming Project Draft Environmental Impact Statement (DEIS) in compliance with the National Environmental Policy Act

1. Introduction

GGLSA represents almost 100 members who have the vital interests of water quality in Grand Lake, Colorado's largest natural lake, as their primary mission. Members of GGLSA have been actively involved in Grand Lake water quality issues over the past several decades.

2. Background

Senate Document 80, (1937) the enabling legislation for the Colorado – Big Thompson Project (C-BT) and the "bible" of the C-BT,has as its second operational requirement "To preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and the Rocky Mountain National Park." "In order to accomplish these purposes, the project should be operated by an unprejudiced agency in a fair and efficient manner, equitable to all parties having interests therein," In 1941, prior to the start of C-BT pumping operations but after the SD 80 commitment to preservation, world-renowned lake scientist Robert Pennak measured Grand Lake clarity at 9 Meters (29.7ft..) Sechi dish measurements since the start-up of C-BT pumping have never reproduced that level of clarity.

In 2006, due to concerns over degrading quality of water in Grand Lake, GGLSA, Three Lakes Watershed Association (TLWA), Grand County and NCWCD jointly funded a study targeted at finding a viable, less harmful means of moving water from the Western Slope to the Eastern Slope.. It was determined that due to its shallow structure, Shadow Mountain Reservoir would always be problematic and that either a pipeline through, or a tunnel around, should be constructed to bypass both Shadow Mountain Reservoir and Grand Lake. The preferred alternative was a 3 mile tunnel that would alleviate the influx of nutrients and sediment into Shadow

Com-ment	Letter #58	Response
1	Mountain Reservoir and Grand Lake by moving water from the south side of Shadow Mountain Reservoir directly to the Adams tunnel. The commenter's concerns regarding water quality which are shared by several municipal and county governments and sanitation districts located in the Upper Colorado River and North Platte River basin will be further heightened by continued degradation in water quality in Grand Lake. Based on these concerns the Northwest Council of Governments (NWCCOG) and Grand County, with the support of GGLSA and TLWA proposed a site specific Secchi- Disk depth standard for Grand Lake of 4 meters [13.12 ft.] (CWQCC, 2008). In June 2008 The Colorado Water Quality Control Commission established a narrative clarity standard ("The highest level of clarity attainable, consistent with the exercise of established water rights and the protection of aquatic life") for Grand Lake effective December 31, 2008. The CWQCC also established a numeric clarity standard of 4 meter Secchi-disk depth for the months of July through September effective January 1, 2014. This unprecedented action is the first and only time a clarity standard has been established for a lake in the state of Colorado. As a result Reclamation and NCWCD committed to CB-T trial operations by "altering pumping from Granby Reservoir to Grand Lake during critical periods to determine impacts on Grand Lake clarity". 3. Comments According to the DEIS the proposed action would degrade Grand Lakes existing annual average Secchi-Disk Depth of 2.6 meters by almost 4% --A move in the wrong direction. An additional concern is the use of annual averages when addressing Grand Lake clarity –As is evident from the decision of the CWQCC, the period of interest is from June – September – the use of annual averages severely understates the effect of increased water flows during these critical months. On page 3-75 the EIS notes that Grand Lake clarity has varied between 1.8 meters and 5.6 meters. The 5.6 meter Secchi depth measurement is the second best measurement EVER documented on Grand Lake (second only to Pennak's 9 meter measurement in 1941). That data was taken in November of 2006. C-BT pumping had ceased three weeks earlier to facilitate the draw-down of Shadow Mountain reservoir for weed mitigation. Only East and North Inlet streams flows were providing water to	1. The DEIS analysis shows a decrease of almost 4% to the annual average Secchi-disk depth for Grand Lake for the alternatives compared with existing conditions. Annual averages are listed in Table 3-54 of the DEIS (Table 3-75 FEIS). Figure 3-81 was added to the FEIS to show the predicted daily fluctuations in Secchi-disk depth for Grand Lake and similar figures were added for Shadow Mountain Reservoir and Granby Reservoir. The statement in the DEIS of "Secchi-disk depths since 2000 have ranged from 1.8 to 5.6 meters" should actually read "Secchi-disk depths since 2000 have ranged from 1.8 to 5.7 meters." The measurement taken in November 2006 was not the second best measurement ever documented. A reading taken by the USGS in November 2000 was higher. Note that operations of the Granby Pump Canal and Adams Tunnel in November 2000 were similar to that of other years.

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	Grand Lake during that time period, resulting in a good approximation to the natural state of the Lake.	
2	As agreed, Reclamation and NCWCD modified operations to stop pumping water into Grand Lake for the first 3 weeks of August 2008. Due to lack of moisture on the Front Range and extremely high temperatures, the pumping cessation was shortened to two weeks. Even during the shortened no-pumping period clarity improved by 50%, from just under 8 feet to just under 12 feet – close to the 4 meter goal set by the CWQCC. Clarity improved at a rate of 2 feet per week until pumping resumed. After pumping resumed clarity degraded to nearly its original level –at the rate of about 2 feet per week. (See attachment – revised letter from GGLSA to Reclamation dated 10/22/08) The increased flow of 30,000 Acre Feet of water from the Firming Project will require 27.5 days of additional pumping at 550 cubic feet/second (24/7) which will then severely limit the ability of Reclamation and NCWCD to improve the clarity of Grand Lake using operational modifications to cease pumping during the most critical periods.	2. Reclamation is continuing to evaluate operational changes in the water delivery from Granby Reservoir through Shadow Mountain Reservoir and Grand Lake. Any changes in operations or other measures to improve Grand Lake water quality are occurring independent of the WGFP. Proposed water quality mitigation, as described in Section 3.8.4 of the FEIS, would reduce nutrient loading from the WGFP to the Three Lakes System so that the WGFP would not exacerbate the algae and clarity problem in Shadow Mountain Reservoir and Grand Lake.
3	Even though NCWCD helped fund and had the results from the 2006 McLaughlin Rincon scoping study which recommended a tunnel alternative to restore Grand Lake water quality, it was not considered or included in the DEIS as potential mitigation.	3. Modifications in C-BT facilities, such as rerouting C-BT water around Grand Lake, are beyond the scope of the proposed WGFP. Modifications to C-BT facilities would require Congressional authorization, funding, and review under the National Environmental Policy Act.
4	The DEIS comments that the higher "flushing rate" resulting from the increased flow "can serve to improve water quality". Every study we have seen shows exactly the opposite –increased flow is directly related to lower water quality. The mission of the Bureau of Reclamation is to "manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American Public". *Until recently, their* focus seems to have been on the economics at the sacrifice of the environment..	4. In general, high flushing rates can improve water quality. Flushing can achieve improved quality in eutrophic lakes by increasing the water exchange rate (Cooke et al. 2005). According to these authors, "by increasing the water input, the flushing rate is increased, which in turn increases the loss rate of plankton algae from the lake."
	4. Recommendations	
5	A sustainable operational plan to meet the 4 meter clarity goal for Grand Lake should be submitted to CDPHE (Colorado Dept. of Public Health & Environment) including the number of days in June, July, August, and	5. See response to Comment No. 2.

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	September when no pumping would occur prior to the submittal of the EIS for the Windy Gap project.	6. See response to Comment No. 4.
6	The DEIS should then include information on how the 4 meter clarity goal for Grand Lake will be met when the flow is increased by 30,000 acre feet of water from the firming project which would require another 27.5 days of plumping to accomplish.	7. The model was run on a daily basis. In addition to reporting the annual average clarity, the minimum clarity by year is reported in the DEIS. Graphs of daily results were added to the FEIS. See response to Comment No. 1.
7	The Model used in the DEIS for Grand Lake clarity should be run on a weekly basis for the critical months of June – September rather than just addressing annual averages.	8. See response to Comment No. 4.
8	If no scientific basis can be cited – the concept that increased flow can lead to "flushing" and "improved water quality", should be removed from the DEIS.	9. The delta located in Grand Lake at the east end of the channel is included in the FEIS. It is very difficult to quantitatively describe the impact of additional Farr pumping on the delta. Given the existing problems with sediment in Shadow Mountain Reservoir, it is reasonable to think that the delta may increase with increasing Farr pumping. By how much, is difficult to quantify.
9	A discussion and mitigation plan should be included regarding the significant delta being formed at the channel entrance to Grand Lake and the impact on that delta of an additional 30,000 acre feet of water annually.	
10	The use of the McLaughlin Rincon tunnel alternative should be included in the mitigation discussion. At a cost of a little over 2 % of the total project –it is clearly a less harmful means of moving water from the Western slope to the Eastern slope while insuring the clarity of Grand Lake as well as Shadow Mountain Reservoir for future generations.	10. Modifications in C-BT facilities are beyond the scope of the proposed WGFP and beyond the scope of the EIS. Reclamation will continue to operate the C-BT Project in accordance with the requirements of Senate Document 80.
11	The Moffatt tunnel expansion EIS should be considered jointly with the Windy Gap EIS since they both draw from the same basin and the cumulative effects of both projects have not been considered.	11. The FEIS fully considers the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impacts of the WGFP.
12	The water users requesting the additional 33,000 ac/ft. of water should demonstrate adequate conservation programs or rate structures which would be inductive to conservation of finite resources.	12. The WGFP Participants have committed and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation will require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict .
	Respectfully,  Stephen E. Paul 22 October, 2008 President, Greater Grand Lake Shoreline Association	

Com-ment	Letter #58	Response

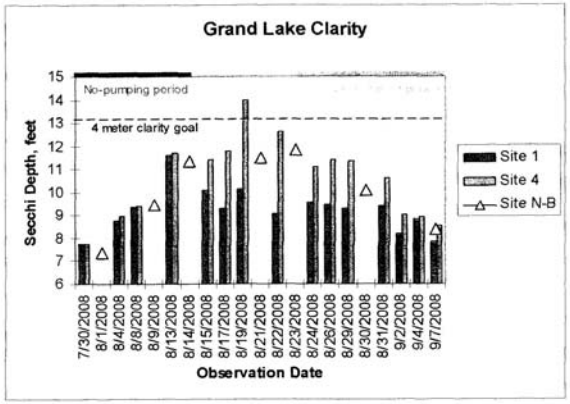
Greater Grand Lake Shoreline Association
Box 1096, Grand Lake, Colorado 80447
www.gglsa.org

October 22, 2008

Will Tully
Jaci Gould
Mike Collins, Area Manager
Bureau of Reclamation
Eastern Colorado Area Office
11056 W. County Road 18E
Loveland, CO 80537

Dear Will, Jaci, and Mike,

This letter is to follow up on my September 8, 2008 communication in which I summarized initial clarity data collected during the 2008 pumping trials. You'll recall the data reported in that earlier letter summarizing three sites in Grand Lake:



Data for all ten sites sampled on Grand Lake is now available through GCWIN, and I have summarized the results for those ten sites below. For simplicity I have split the data into the two periods, Trial Start and Trial Finish. The former includes the no-pumping period and the ramp-up to full pumping, while the latter is that period after which full pumping was resumed. The two graphs below summarize the ten sites measured on Grand Lake, with a least-squares line fitted to each:

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Greater Grand Lake Shoreline Association

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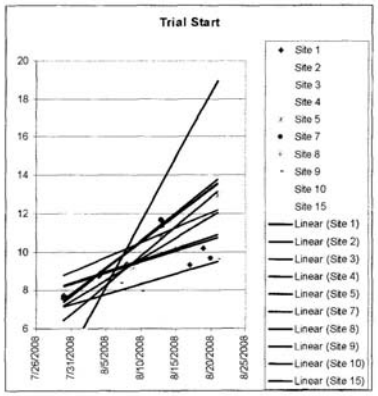

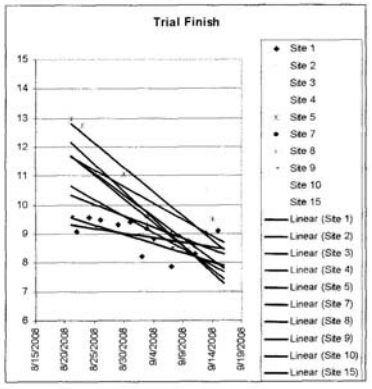

As was the case for the three sites summarized earlier, every location sampled in Grand Lake showed the same trend: Clarity improving markedly when pumping was ceased, and degrading markedly when pumping resumed.

Shadow Mountain reservoir was also sampled at three sites, and is summarized next:

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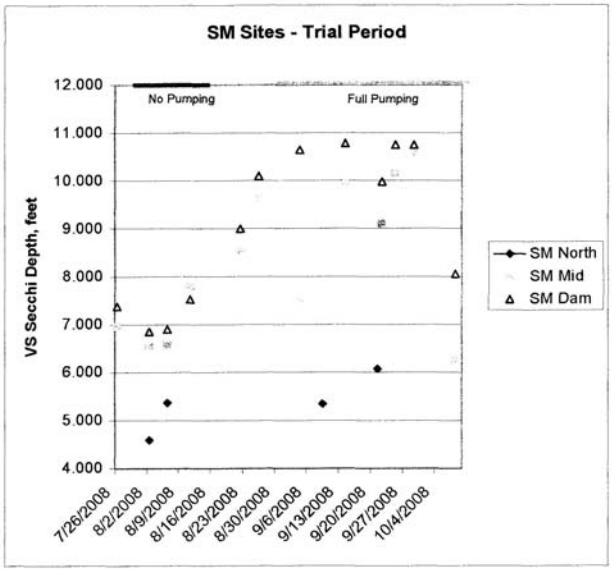

The clarity of Shadow Mountain reservoir, like Grand Lake, improved markedly during the no-pumping period at two of the three sites and eventually declined after resumption of pumping. (Data from the third site (SM North) is currently in question due to the shallow depth at that location, but I have shown all the data here to be inclusive).

Note that the clarity data above does not support the "stagnation" hypothesis, namely that the reservoir will grow more algae and become less clear if "refreshing flows" are halted. Instead the data supports an alternative hypothesis, that when the influx of nutrients from pumping is ceased, the reservoir will clear up. That it did.

One more site was measured that is worthy of comment, and that is Columbine Lake. Columbine Lake is located just a few miles from Grand Lake and serves as an interesting control reference. It is not part of the C-BT but is close enough to be influenced by local weather patterns. Thus, if any of the variations in either Grand Lake or Shadow Mountain reservoir were caused by temperature or other environmental effects not

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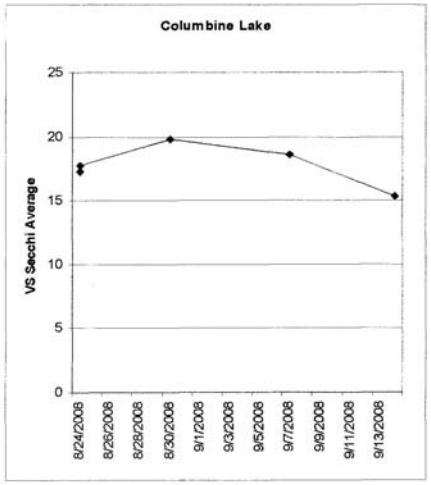
explainable by C-BT pumping, we would expect to see those same trends show up in the Columbine Lake data:



All four measurements taken on Columbine Lake during the trial period showed Secchi depths in excess of 15 feet. We should expect to achieve similar results for Grand Lake next year, assuming that the no-pumping period can be extended through August and September, as was initially proposed for 2008 by the Bureau and NCWCD.

Thanks again for your continued support.

Best Regards,

Steve Paul
President
GGLSA

K. John Stahl
Board Member
GGLSA

Com-ment	Letter #58	Response
	Greater Grand Lake Shoreline Association **Box 1096, Grand Lake, Colorado 80447** www.gglsa.org CC: Dr. G. Chris Holgren, Bureau of Reclamation Mike Applegate, President, Northern Colorado Water Conservancy District Don Carlson, Assistant General Manager, Operations, NCWCD Jeff Drager, NCWCD Esther Vincent, NCWCD Sarah Johnson, Standards Unit Manager, CDPHE Paul Frohardt, Commission Administrator, Water Quality Control Commission Luline Underbrink-Curran, Grand County Manager Katherine Morris, Grand County Lane Wyatt, Northwest Council of Governments Elwin Crabtree, Three Lakes Watershed Association Judy Burke, Town of Grand Lake	

Com-ment	Letter #388	Response
	WGFP 388 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Steve Paul MR. PAUL: My name is Steve Paul. It's P-a-u-l, and I'm president of the Greater Grand Lake Shoreline Association. We're represented by 100 members who live around Grand Lake. As you consider this environmental impact statement, which is going to add additional quantity to the CBT project, it seems appropriate to me to go back to the original crowning document, which was Senate Document 80, which was passed by the United States Senate in 1937. In that legislation, they outline five operating principles for the CBT, and the second one of those was to preserve the fishing and recreational facilities and scenic attractions at Grand Lake, Rocky Mountain National Park, and the Colorado River. Let me repeat that. Preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, Rocky Mountain National Park, and the Colorado River. As John mentioned, in 1941 Robert Penick (ph), the famed lake scientist, measured the lake depth, clarity depth, at nine meters, which is right around 30 feet. In 2007, last summer, a year ago, it went down to one-and-a-half because of the algae growth. That's not preservation; that's degradation. In 2006, due to the decreasing clarity that everybody was observing, the Greater Grand Lake Shoreline Association, Three Lakes Watershed, the Northern Colorado Water Conservancy District -- and thank you to them for contributing -- as well as Grand County contributed to a study, the Boston Marine Con Study (ph). And their goal, their task, was to find less harmful means of moving water from the West Slope to the East Slope. And they came up with a couple of things. First of all, pumping water backwards through Shadow Mountain Reservoir is always going to be problematic because of the shallow depth of Shadow Mountain Reservoir. They proposed two alternatives. One was a pipeline; the other was a tunnel, both of which would bypass both Shadow Mountain and Grand Lake, thus returning it to the natural flow. I'm losing my stance here. And based on these concerns, the Northwest	

Com-ment	Letter #388	Response
1	Council of Government and Grand County, along with the support of Greater Grand Lake Shoreline and the Three Lakes Watershed Association, applied for a site-specific clarity stand (ph) for Grand Lake. It's the first time it's ever been done. On June 10th of this year, a bunch of us went over to Grand Junction before the Water Quality Control Commission. Along with the water rights that are being exercised by the Front Range users, there are also responsibilities, and these responsibilities have been abrogated for over 50 years. They came up with two things. One, first of all, is a narrative standing, which I will read to you: "To the highest level of clarity attainable, consistent with the exercise of established water rights and the protection of aquatic life." And the second thing was a hard four-meter standard in 2014. So this basically means: Do the best you can between now and 2014 -- 30 seconds. Oh, goodness, I'm not finished yet. Okay. And then a hard standard in 2014.	1. Thank you for your comment.
2	I'll go to my recommendations here. I think sometimes in day-to-day life, things get lost in the shuffle here. And I would like to read to you the mission of the Bureau. "The mission of the Bureau of Reclamation is to manage, develop and protect water and related resources in an environmentally and economically sound manner in the interest of the American public." Well, last time I looked, Grand County residents are still part of the American public. Thank you.	2. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.

Comment	Letter #1094	Response

WGFP 1094

December 5, 2008
McElroy Ranch
P.O. Box 215
Kremmling, Colorado 0459

Bureau of Reclamation
11056 W. County Rd. 18E
Loveland, Colorado 80537
Attn. Will Tully

Subject: Windy Gap Draft E.I.S. comments

The McElroy ranch, encompassing a two mile corridor of the Colorado River near Kremmling, has been in active production by the same family (five generations) for over one hundred years. When Grandpa Henry first came on the scene, the Colorado River was irrigating the entire ranch every spring as the snow melted and the resulting high water, backing up at the mouth of Gore Canyon, inundated the meadows. Now,one hundred years later, there is barely enough flow in that once gorgeous river for us "survivors" to satisfy our legal water rights, not to mention trying to figure out a way to get our water out of that measly dribble and up onto the meadows.

This change in the river from "The Grand River" to the "measly dribble"has already caused enormous changes in the ecology along the river corridor, resulting in the disappearance of the native plants and the invasion of all sorts of noxious weeds and trees, Canadian thistle and tamerisk to name a couple.

And now, incredibly, there are plans in the making to devastate the land and the river even further by diverting -- figuratively speaking (or maybe literally) - - - the last drop of water that is left in the Colorado River. Because this action removes the water from the entire Western Basin, it will have adverse effects all the way to Mexico.

Our ranching future on the McElroy Ranch will be determined by how you respond to us about the impact of the following issues. Please send a reply to the above address.

1 | 1) What remediation is planned to control the slime moss that has already become a devastating menace to the fish and to the intakes of our irrigation pumps?

2 | 2) What is the plan to maintain the few wetlands that are left in the river bottom so that the birds and the beasts that depend on them for survival don't go away with the water?

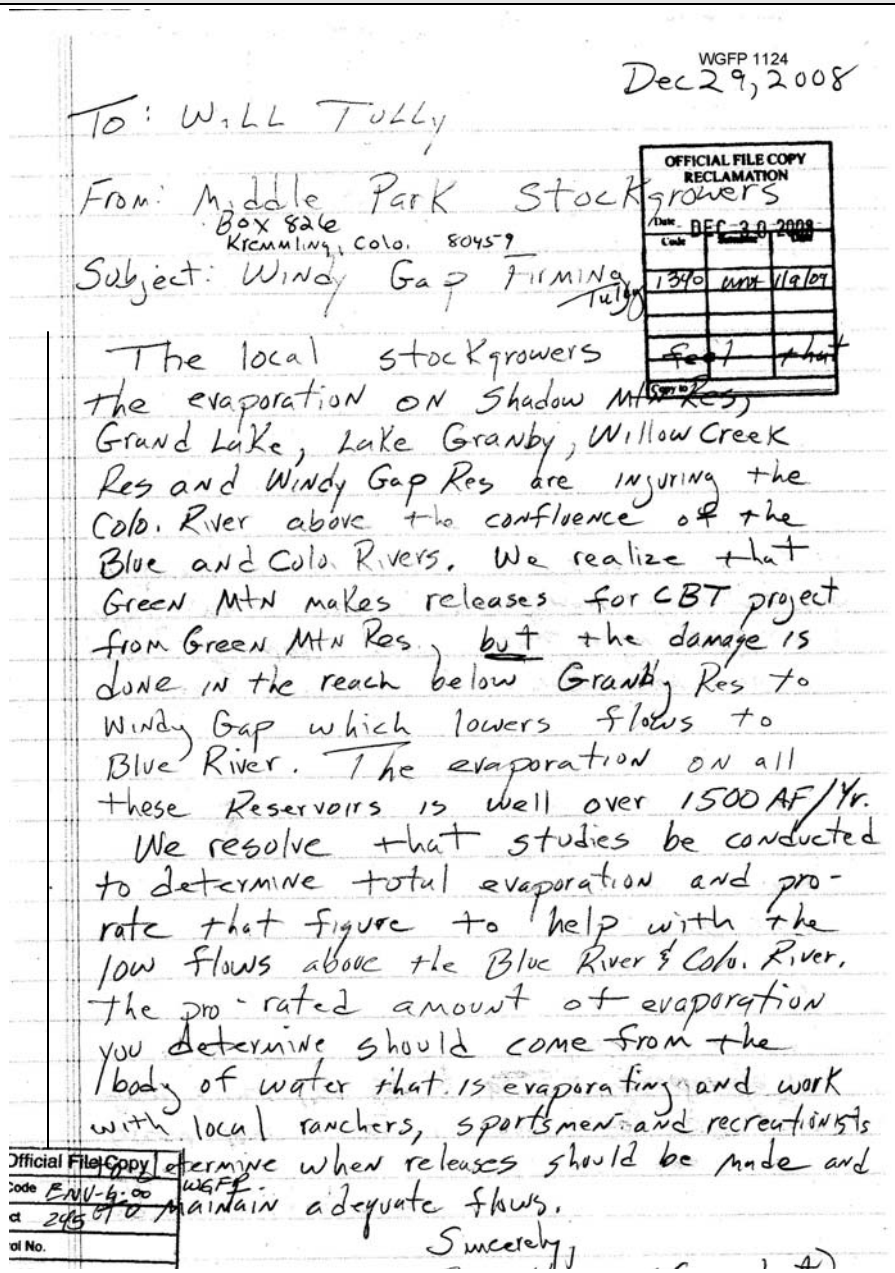
3 | 3) Is there money and a plan in place to control the noxious plants that will result from even lower flows and to re-vegetate the river bottom lands with vegetation that will be a benefit for not only agriculture, but wildlife, recreation,hunting, fishing, and pure esthetic beauty?

4 | 4) The River, because of present low flows, is already struggling to clean itself of the ever increasing discharges into it from such things as storm drains, sewer systems,

1. The growth of "slime moss" is controlled by a number of interacting factors including temperature, water velocity, nutrient concentrations, shading, flushing flows, and grazing by herbivores. Some of these factors would change in the direction of potentially providing conditions for more growth with the WGFP. Mitigation efforts have been identified to help reduce nutrient concentrations and increase flows at critical times. See response to Comment No. 4.

2. None of the WGFP alternatives are anticipated to impact wetlands or riparian areas on the West Slope in a measurable way. No new facilities or infrastructure would be built on the West Slope. Projected changes in Colorado River streamflow are not estimated to impact stream channel morphology or conditions needed for riparian/wetland vegetation. Projected changes in stream stage are not anticipated to have a measurable effect on alluvial ground water levels or the distribution and composition of wetland and riparian vegetation. Because no substantial change to wetland and riparian habitat is anticipated, no adverse impacts to birds and wildlife are expected.

Com-ment	Letter #1094	Response
4 5	and fertilizers and pesticides from lawns and meadows. How will you manage an even lower water flow to "fix" this problem? 5) Is there a plan in place to guarantee in writing that our present irrigation pumping system will remain viable and useable? The McElroy family has been witness to this once-mighty River deteriorating to a measly dribble as it winds its way through Middle Park. If even more west-flowing water is diverted to the eastern slope, and the impacts of these diversions are not adequately addressed, future generations will be left with a slimy drainage canal to enjoy, instead of the "treasure of the West" the Colorado River once was. John H. Mc Elroy Mary K. McElroy Christina M. McElroy Sammons David Sammons Dillan Christine Sammons Cole David Sammons	3. While noxious weeds are a concern for many areas in Colorado, including the Colorado River basin, there is currently no plan to implement weed control on the West Slope as a result of the WGFP. Weed control would be a component of the project where ground disturbances occur. 4. Section 3.8.4 of the FEIS includes a detailed discussion of the nutrient mitigation measures designed to offset nutrient loading to the Three Lakes from additional WGFP pumping. These measures would offset the total nitrogen and total phosphorus loadings to the Three Lakes projected from the WGFP compared to existing conditions. These measures would not only benefit the Three Lakes and deliveries to the East Slope during pumping, but would provide a year-round benefit to water quality in the lower Fraser River, Willow Creek, and the Colorado River. 5. The Subdistrict would continue to comply with state water law for all diversions. Windy Gap cannot divert when downstream senior water rights are calling for water. In addition, the WGFP would comply with Colorado River bypass flow requirements established by the *Agreement Concerning the Windy Gap Project and the Azure Reservoir and Power Project* (Azure Agreement) completed April 30, 1980 as part of the original Windy Gap Project. This agreement requires the Windy Gap Project to curtail diversions if streamflow drops below 90 cfs below Windy Gap Reservoir, 135 cfs below the Williams Fork, or 150 cfs below Troublesome Creek. The Azure Agreement was signed by 30 ranchers affected by the WG Project. The Windy Gap Project cannot divert if the agreed minimum flows are not met, even if Windy Gap water rights are in priority. Colorado River flows may fall below the minimum streamflow volumes when the WGFP is not pumping, particularly in the late summer. The Subdistrict has no control over Colorado River flow when the Windy Gap Project is not pumping. The EIS points out that water rights for existing agriculture, municipal, and other uses would be protected under Colorado water law, and any municipal or agricultural diversions downstream from Windy Gap Reservoir, per Colorado water law (C.R.S. § 37-92-102(2)(b)), would remain responsible for developing a reasonable means of diversion for their water. Per the Azure Agreement, the Subdistrict funded $500,000 in improvements for ranches downstream from the Windy Gap Reservoir to maintain their diversion structures on the Colorado River. The original Windy Gap Project anticipated diversions greater than those evaluated in the WGFP EIS. The Azure Agreement was developed to mitigate and address all objections to the Windy Gap Project.

Comment	Letter #1124	Response
1		1. Diversions to storage are made in accordance with water rights decrees. Evaporative losses after water is placed in storage is a loss to the project owner, not downstream users. Evaporative losses incurred by the C-BT Project as a whole would decrease under the WGFP alternatives because less Windy Gap water would be stored in Granby Reservoir. Under the Proposed Action, C-BT water stored in Chimney Hollow would incur a higher evaporative loss on average than if the water was stored in Granby Reservoir; however, the overall loss to the C-BT Project due to evaporation would be less. Under existing conditions, all Windy Gap water is stored in Granby Reservoir; therefore, Granby Reservoir contents and the corresponding surface area are greater than under the Proposed Action. This results in additional evaporative losses, which are charged to the Windy Gap Project. The C-BT Project loses no water as a result of Windy Gap water in the C-BT Project system. Green Mountain Reservoir's function with respect to the C-BT Project is to provide replacement water to downstream users that would otherwise be impacted by C-BT operations. The Replacement Pool of 52,000 acre-feet is reserved to meet the obligation of replacing out-of-priority depletions associated with the C-BT Project. There is no injury to water rights on the Colorado River above the confluence of the Blue River. In accordance with Stipulation j of Senate Document 80, to assure that the C-BT Project does not adversely affect irrigators in the vicinity of Kremmling, they are treated as if they have water rights with priorities earlier than the C-BT Project

Com-ment	Letter #237	Response
1	WGFP 237 **From:** Mo Henry"s Trout Shop **To:** wtully@gp.usbr.gov; **Subject:** Water Conservation **Date:** Wednesday, December 10, 2008 10:31:05 AM Mr. Tully, It seems you are faced with quite a decision. One that should come quite easy based on the arguments. You have a growing population on the front range in need of water but lacks the critical water conservation regulations necessary to warrant further request. The 30 million people that access the water flowing through the Colorado river for municipal and agricultural needs will soon be faced with their greatest natural resource disaster to date. (http://www.msnbc.msn.com/id/28068692/) When that debate takes place, I would want to be the one to say that I have exercised every avenue to conserve the water currently recieved. The greatest water conservation infrastructure to date needs to be put in place and Colorado might as well be the first This infrastructure needs to include Xeriscaping requirement(not voluntary), Gray water reuse, require removal of Kentucky blue grass(it isn't green), and other non-native vegetation. You are in a position to have incredible influence on the future of water conservation. Require Northern Colorado Water Conservancy to demonstrate their responsible conservation measures before adding water to the problem. As a race, we will be severely tested by our environmental mistakes in the next 20 years. We need responsible conservation policy now to cushion the severity of these disasters. Take action now by limiting the current water abuse in our state and set an example for others to follow. Someday we will wait to long to pay for our mistakes. Don't let this be one of them. Thank you, Henry Kirwan, resident of Grand County and member of the human race willing to coexist! Mo Henry's Trout Shop 76837 US HWY 40 Box 1351 Fraser, Co 80442 (970)726-9754 mohenrys.com <")))))><(	1. The WGFP Participants have committed to and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.

Com-ment	Letter #375	Response
1	WGFP 375 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Henry Kirwan MR. KIRWAN: Name is Henry Kirwan. Last name, K-i-r-w-a-n. I'm co-owner of Mo Henry's Trout Shop with my brother, who just spoke very well, for once. I would just like to cover a few topics. We have covered a great many things tonight that are very important, and it's amazing that we've had such turnout in this valley. First of all, I would like to say that the 60-day extension is very viable, especially when we have at least a thousand clients that are very involved in the valley and just recently found out about the topic that they would like to be more involved in and have a say in, not only in asking us where to send their written comments, but also what politicians they need to contact to solve this problem and maybe see different ways. Other aspects that we're looking at, of course, is conservation. You know, in this valley, right now we're looking at invasive species, such as New Zealand Mud Snails, the Quagga Mussels, the Didymo issue. I would say probably the most important invasive species that we have to deal with right now are the grasses in the desert on the Front Range that you are spending 50 percent of our water watering. We need to solve that issue, and conservation is a big portion of that. You know, many of your people representing Greeley and Fort Lupton and other places, I understand that there is issues for water, and we need to address that. But right now, you are looking at short term. What we need to look at is a 30, 40, 50-year solution. Our water is going to -- your taking our water from us is going to destroy our ecosystem, destroy our economy. Directly, my brother and I's fly shop, as well as the other fly shop, and some of the rafting companies, they go down immediately. And then I spend all day talking to businesses that we send all of our clients to. Sharky's Restaurant, I asked them, I said, "Do you realize what your business in the summer, where it comes from?" And they said, "Well, yeah, from the fisherman, from rafting companies." They didn't realize that this issue could encompass them.	1. The WGFP Participants have committed, and will be required, to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB) approved plans and other participants will be required to have a CWCB approved plan prior to delivery of WGFP water. Reclamation will require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.

Com-ment	Letter #375	Response
2	I'm talking to the gas stations. Fewer people are going to buy gas. Fewer people are going to be in the valley attending their gas station, their convenience stores, their restaurants, at night. This is a major issue that entails much more than just fishing, much more than just our ecosystem. I would rather stand up here and say, "Save our ecosystem. Don't kill it." But that's not enough. We have to stand up here and say it's economy, it's many other issues. You are talking about the growth in the Front Range. Those people come up here to recreate, right? So you are talking about the growth on the Front Range. Where are those people going to go when we're gone? Are you planning on the growth of us moving down there? Because that's where our water is going to be. You know, I spoke to my daughter about this. She's six years old and smarter than all of us. And I told her about this issue today and told her what her dad was doing, told her what her Uncle Mitch was doing. And we talked about things. And, you know, at one point in time, I told her about moose. And I said, "They are not really smart. When you see a moose, don't run. Stand behind a tree." And she said, "Yep, they think pigs can fly." And I can say that this project is like "lipstick on a pig," which has been used quite a bit lately. But I talked to my daughter about this. And you know what she said? She said, "Dad, it sounds like they are looking for a Band-Aid for a short-term solution, whereas they should be looking for something to solve their solution long term." So what she did is, she gave me a pack of her Band-Aids. She loves Scooby Doo. Here is the Scooby Doo Band-Aids, $2.89. If you want a Band-Aid, it's right here. It's from my daughter. Her name is Calista Kirwan. Thank you.	2. Thank you for your comment.

Com-ment	Letter #1103	Response
	MOUNTAIN LAKES LODGE 10480 US HWY 34 GRAND LAKE CO 80447 December 28, 2008 **Re: Windy Gap Farming Project** VIA EMAIL: WTULLY@gp.usbr.gov Mr. Will Tully Bureau of Reclamation Eastern Colorado Area 11056 West County Road 18E Loveland, CO 80537-9711 VIA EMAIL: chandler.j.peter@usace.army.mil Mr. Chandler Peter, P.E. Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Dear Mr. Tully and Mr. Peters, As owners of Mountain Lakes Lodge, an 11-unit lodge near Lake Granby Reservoir, I submit the following comments on the Windy Gap Farming Project Draft Environmental Impact Statement (DEIS).	
1	•Water resources and the local Grand County economy are inextricably linked. The WGFP directly impacts the environmental quality of the Colorado River, Granby Reservoir, Shadow Mountain Reservoir, and Grand Lake, thus it will also impact the tourist and recreation industry, the lifeblood of Grand County's economy. However, very few of these impacts are measured in the DEIS – and those that are measured are underestimated through use of an inaccurate measure of "existing conditions," an inaccurate measure of the "No Action Alternative," inappropriate modeling techniques, false assumptions, outdated data, lack of quantification and omission of critical considerations. Impacts need to be further evaluated and addressed in the DEIS.	1. Socioeconomic and other effects were quantified where data on use and impacts are available. Effects of the proposed alternatives on recreation experiences and aesthetics is qualitatively described wherever possible, recognizing that these effects vary widely by individual user. Additional mitigation measures were defined and developed to avoid or minimize potential adverse impacts of the proposed project to Grand County water resources. These measures included revising prepositioning to maintain higher water levels in Granby Reservoir (FEIS Section 3.5.4), along with point and nonpoint source nutrient reduction measures to reduce nitrogen and phosphorus loading into the Fraser and Colorado rivers, and Three Lakes (FEIS Section 3.8.4). Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25 of the FEIS. Additional discussion on existing conditions is found in response to Comment No. 2.
2	• The "Existing Conditions" figures against which impacts are measured are inaccurate and do not reflect reality. Throughout the DEIS, current Windy Gap diversions for Existing Conditions are listed as 36,352 as an average annual amount. This is a modeled PHONE (303) 246-1957 FAX (303) 321-3482 EMAIL RNAHA@COMCAST.NET	2. It is appropriate to assess effects due to the EIS alternatives based on a comparison against a modeled existing conditions as opposed to historical conditions since the hydrology associated with existing conditions reflects the current administration of the river, demands, infrastructure, and operations. As discussed in Section 7.1 of the WGFP Water Resources Technical Report (ERO and Boyle 2007), hydrologic output associated with the action alternatives is not compared with historical hydrology for the following reasons:

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		• Demands have changed considerably over the course of the study period, • Certain facilities and reservoirs were not in operation for the entire study period, and • River administration and project operations have changed over the study period. Windy Gap diversions for the last 10 years (1999 through 2008) averaged 22,158 AF/yr, which is significantly higher than the average diversion of 11,080 AF/yr for the period from 1985 through 2005, as presented in Table 3 of the Water Resources Technical Report. Windy Gap diversions were made in accordance with the Project's water rights, the same water rights that would be used to effect diversions with a WGFP. The increase in recent diversions represents the Participants' need for additional water to meet increasing water demands, which is supported by information presented in Chapter 1 on the Participants' water demands and needs. Modeled Windy Gap diversions under existing conditions reflect the recent increases in Windy Gap Participant demands. Windy Gap pumping for the 8-year period from 2001 through 2008, since Granby Reservoir last filled, averaged 27,450 AF/yr. That average includes 2002 and 2004 when almost no Windy Gap water was pumped. Therefore, estimated pumping under existing conditions is much closer to recent operations than suggested in the comment. The comment asserts that potential impacts of additional Windy Gap diversions under the Proposed Action are minimized or underestimated based on a comparison against existing conditions. Reclamation does not believe that to be the case. The average decrease in Colorado River flows below Windy Gap between the Proposed Action and existing conditions is 21,283 AF/yr, which is the estimated increase in net depletions to the Colorado River. This reflects the net effect of additional Windy Gap diversions from the Colorado River and the difference in spills from Granby Reservoir. A considerable portion of Windy Gap water diverted from the Colorado River is delivered back to the river via a spill under the existing conditions scenario. Windy Gap operations were simulated in this manner to present the amount of water than could be diverted with the project's current water rights to meet demands even if a portion of the water is subsequently spilled from Granby Reservoir back to the Colorado River. Table 3-9 was added to the FEIS to better illustrate the water balance associated with the Proposed Action.

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2	number that is over three times actual current diversions. This flaw is repeated in every table, graph, and text and undermines all impact analyses conducted.	In summary, Reclamation believes the effects assessments based on net depletions to the Colorado River below Windy Gap as presented in the FEIS are appropriate. Windy Gap diversions under existing conditions reasonably reflect recent operations and diversions, which are much higher than the 20-year average from 1985 through 2005. In addition, this issue does not affect Windy Gap diversions in dry years; therefore, Windy Gap pumping, net depletions to the Colorado River and associated impacts are appropriately estimated in dry years, which are typically more critical for aquatics, water quality, and other flow-related resources.
3	• The presentation of data in average monthly statistics is unhelpful as visitors view and use the reservoir on a daily basis. Average monthly statistics might mask the more realistic impacts. If the conditions are unfavorable on the day that a visitor is present, that visitor is likely to go elsewhere the next time. Fish require adequate water on a moment to moment basis.	3. Water levels in Granby Reservoir, because of its size, do not change substantially on a daily basis. Thus, average monthly elevations were considered accurate when comparing impacts to reservoir elevations, storage, and surface area. Figures 36 and 37 in the Water Resources Technical Report (ERO and Boyle 2007) show the differences in average monthly surface elevation and end-of-month contents between existing conditions and the Proposed Action every month in the whole period of record (1950–1996) at Granby Reservoir. The actual daily contents would track reasonably well with the linear interpolation of reservoir end-of-month values shown in those graphs.
4	• Low water levels in Granby Reservoir during the drought of 2002 caused this normally beautiful lake to appear unsightly. Few visitors came and those who did, acquired a poor taste for the lake that has taken years to overcome. Our business and family suffered – and continue to suffer significant economic damage because of these low water levels. Other businesses could not survive. I have little doubt that the regular low water levels that the DEIS admits will be caused by WGFP, will cause the aesthetics - the very thing that draws our customers to the lake and that support the economic well-being of businesses at Granby Reservoir – to deteriorate. We could be threatened with closure. Yet, the DEIS Socioeconomic Analysis completely disregards these impacts. Given the 2002 drought, the authors could easily have obtained historical data as to the environmental and socioeconomic impacts of low water levels on this community. However, the DEIS curiously omitted any data after 1996, completely ignoring the realities of more recent times.	4. A number of factors contribute changes in visitor use at Granby Reservoir. No statistical information is kept on visitor numbers at Granby Reservoir from which to compare visitor numbers for different years. (See note on similar comment in Letter # 1106, Comment No. 1) Certainly, visitor preference is for a fuller reservoir, but quantifying the incremental impacts on recreation and visitation strictly related to changes in lake level for a water storage reservoir that fluctuates widely is challenging. However, it is unlikely that visitation is affected by lake elevation until the reservoir gets abnormally low. This is based on an observation of usage at other Reclamation associated with the C-BT Project and Fryingpan Arkansas Project. To reduce the frequency and amount of fluctuations in Granby Reservoir, the Subdistrict has proposed to modify prepositioning operations as explained in Section 3.5.4 of the EIS The model study period is suitable for estimating hydrologic effects associated with the EIS alternatives because it includes a broad range of average, wet, and dry years, and sequences of years that include dry years followed by wet years. As a basis of comparison, the recent 2002 drought year was similar to the dry years that occurred in 1955–1957 and 1965 (within the hydrological model period of record). WGFP junior water rights would not be in priority for diversion in dry years like 2002.
5	• The DEIS reports that between one and all three boat ramps will be closed during one or more months of summer, depending upon whether it is an average or dry year. However, it concludes that "it is unlikely to noticeably affect recreation use or the quality of the recreation experience under any alternative" and fails to quantify the economic impacts. If the authors had conducted interviews of the local population and/or reviewed tax records, they would have learned that the 2002 drought has already demonstrated otherwise.	5. In average years, all boat ramps would remain accessible in the summer under the action alternatives, except for Arapaho Bay in May. In dry years, the Arapaho Bay boat ramp would be affected in August. None of the other boat ramps would be affected during the summer recreation season. It is reasonable to assume that the loss of one boat ramp during 1 month of the 5-month recreation season would
6	• The Granby Fishing Contest is an important event economically for the Granby Reservoir community. It is held in May of each year to celebrate the opening of the fishing season – which coincides with the time that the water will be low enough that at least one boat ramp will be inaccessible. If this event must be cancelled due to low water levels, or if it presents a poor aesthetic for fishing, the local economy will be compromised throughout the summer as anglers will select other places to fish.	
7	• The DEIS states that in an average year, the WGFP would trigger a reduction in Granby Reservoir's surface area of up to 6% under the Proposed Action and up to 7% under the Proposed Action – Cumulative Effects. It dismisses this reduction as "relatively small" and states that it is unlikely to noticeably affect recreation use or quality. As indicated above, this percentage is understated due to its use of "average year". Moreover, as previously stated, the report did not utilize readily available information regarding impacts felt in 2002, which were inconsistent with this conclusion. In addition, there is	

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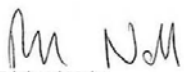
7	ample secondary research that provides quantitative relationships between reductions in surface areas and recreation.	not affect recreation use or experiences. See response to Comment No. 4 regarding 2002 water levels. As discussed in Section 3.19.4 of the FEIS, modified prepositioning would maintain water levels in Granby Reservoir for access to the Arapaho Bay boat ramp under most conditions. Drought conditions and delivery of C-BT water could still result in water levels below the 8,250 elevation of the Arapahoe Bay boat ramp. The Recreation section in the FEIS has been changed to acknowledge potential impacts on private marinas and boat docks at Granby Reservoir.
8	• The DEIS states that in a dry year, the WGFP impacts could cause water level decreases of up 23 feet under the Proposed Action and in consecutive dry years, water levels could decrease up to 33 feet. However, it provides no baseline data upon which to compare actual current conditions, except that the mean depth of the reservoir is 74 feet. The DEIS fails to discuss cumulative impacts under these scenarios. These low water levels will clearly decrease tourism and have a significant negative impact on the socioeconomics of the area. Reduction in depth and surface area require discussions and mitigation concerning water quality, recreation, access to boat ramps, air quality and well water.	6. See responses to Comment Nos. 4 and 5. Granby Reservoir water levels have fluctuated widely in the past and would continue to do so in the future. Lower water levels in May, when the Granby Fishing Contest usually takes place, are an unfortunate consequence of these fluctuations and operation of the reservoir as a water supply reservoir. Granby Reservoir is operated to meet water demands rather than optimized for recreation use. Modifications to prepositioning, as discussed in response to Comment No. 4, would help maintain higher water levels.
9	• The DEIS provides very few mitigation solutions to the visual, land use, recreation and socioeconomic impacts, because it quantifies very few impacts.	7. Existing Granby Reservoir surface area was derived based on actual conditions during the 47-year study period. It is reasonable to assume that a 6 to 7 percent reduction in surface area in a water storage reservoir that regularly fluctuates under existing conditions would not noticeably affect recreation use or the quality of the recreation experience. See also response to Comment No. 1 on modified prepositioning for the Proposed Action to maintain higher water levels in Granby Reservoir.
10	• Prior to diverting west slope water away from the people and environment that need it, the east slope receivers should be required to maximize water conservation. Some municipalities in the arid west have decreased water consumption by as much as 30%. The burden of water scarcity should at least be shared – not borne solely by the people and environment of the West Slope.	8. Additional information has been added to the FEIS to better correlate severe drawdowns during consecutive dry years with reservoir surface area to clarify the effects of successive dry years on Granby Reservoir water levels and acreage. As a result of the proposed modifications to prepositioning, water level reductions would be limited to no more than 15 feet (777 surface acres) in successive dry years under the Proposed Action compared to existing conditions. See response to Comment No. 1 regarding socioeconomic impacts.
11	• Grand County is preparing a comprehensive scientific study and analysis, the Grand County Stream Management Plan, to identify a preferred flow regimen for streams and rivers in Grand County. This Plan will take into consideration cumulative impacts and view the river system as a whole. It will seek to avoid the worst impacts of further diversions. A decision-making process would be established to adapt operations to achieve the management plan's goals for the benefit of all parties, when specified. The DEIS fails to acknowledge this Plan. If approved, the WGFP should be mandated to adopt the Plan and its compliance should be monitored and adapted as new lessons are learned.	
12	• A single EIS for both the Moffat Tunnel Expansion Project and the WGFP should be conducted in order to ensure that the cumulative impacts are evaluated and that appropriate mitigation measures are taken. Thank you for taking these comments into consideration. I look forward to seeing them addressed in the Final Environmental Impact Statement. Sincerely yours,  Richard Naha	9. The EIS provides a reasonable and accurate description of the impacts of the alternatives, based on available data and analysis methods. Where adverse effects were identified, mitigation measures were identified to avoid or minimize those impacts. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25 of the FEIS.

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		10. The WGFP Participants have committed to and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with Subdistrict. 11. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop recommendations of preferred streamflow regimes to support stream health for aquatic habitat and other nonconsumptive water uses, as well as the flow regimes necessary to support water use requirements for irrigators, municipalities, industry, and recreation. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. However, mitigation measures included in the FEIS may help meet some of the goals of the SMP. Additional discussion of the Grand County SMP was added to Section 3.9.1.4 of the FEIS. 12. The WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.

Com-ment	Letter #1106	Response
1	NORTH SHORE RESORT 928 COUNTY RD 64 GRAND LAKE CO 80447 December 28, 2008 **Re: Windy Gap Farming Project** **VIA EMAIL:** WTULLY@gp.usbr.gov Mr. Will Tully, Bureau of Reclamation Eastern Colorado Area 11056 West County Road 18E Loveland, CO 80537-9711 **VIA EMAIL:** chandler.j.peter@usace.army.mil Mr. Chandler Peter, P.E., Project Manager Denver Regulatory Office U.S. Army Corps of Engineers 9307 South Wadsworth Blvd. Littleton, CO 80128-6901 Dear Mr. Tully and Mr. Peters, As owners of North Shore Resort, an 11-unit lodge on the shore of Granby Reservoir, I submit the following comments on the Windy Gap Farming Project. From an economical standpoint, draining additional water out of Granby Reservoir will have a hugely negative impact. We can show you very detailed financial information that when the lake level is down, so is our income. When guests arrive at our resort, they complain and sometimes cancel their reservation if the reservoir is not full. It is very common that potential guests will ask how full the reservoir is. From an environmental standpoint, we feel that the Windy Gap Firming Project Draft Environmental Impact Statement (DEIS) defies logic, and is the standard greedy developer rhetoric for justifying their project. I can recommend several environmental consulting firms that can point out the faults in their assumptions and logic. Unfortunately, this would cost $40,000 - $60,000, and we are not in a position to spend this kind of money to protect our interests (nor should we have to). This is the most basic problem with environmental protection (and most government decisions), is that the information presented to the agencies is biased, and produced by the people that stand to benefit from the decision. The other side of the argument does not get fair representation. We hope that you analyze the situation carefully before letting this project continue. PHONE (303) 246-1957 FAX (303) 321-3482 EMAIL RNAHA@COMCAST.NET	1. The best available information was used in the analysis for the EIS. We were unable to find any information to accurately quantify the incremental impacts on recreation and visitation from changes in lake level area for a high elevation western water storage reservoir where water levels already fluctuate widely such as Granby Reservoir. No statistical information is kept on visitor numbers at Granby Reservoir from which to compare visitor numbers for different years. Certainly, visitor preference is for a fuller reservoir, but quantifying the incremental impacts on recreation and visitation strictly related to changes in lake water levels is challenging, however, it is unlikely that visitation is affected until the reservoir gets abnormally low. Also, there are a number of factors besides water levels that affect tourism and visitation. As a mitigation measure, the Subdistrict has proposed to modify prepositioning operations under the Proposed Action to moderate Granby Reservoir water level fluctuations as explained in Section 3.5.4 of the FEIS.

Com-ment	Letter #1106	Response
	Sincerely yours,  Richard Naha North Shore Resort	

Comment	Letter #367	Response
1	WGFP 367 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Bill Emslie MR. EMSLIE: My name is Bill Emslie, E-m-s-l-i-e. I'm a fourth-generation Coloradan. I live in Ft. Collins. I'm also a farmer in Colorado, but tonight I'm here as a representative of Platte River Power. Platte River is a project participant, with its headquarters in Ft. Collins. Now, Platte River supplies wholesale electric power to nearly 300,000 Coloradans in the communities of Estes Park, Ft. Collins, Longmont and Loveland. Responsible stewardship of natural resources, including air, land and water, is embodied in our commitment to provide customers with a reliable supply of electric energy. Windy Gap -- well, since 1985, Platte River has relied on Windy Gap to supply cooling water and processed water to Platte River Rawhide energy station for use in power generation, and also to the city of Ft. Collins. Rawhide is a generating facility comprised of natural gas, fire and combustion turbines, in addition to unit one, which is a full-fire generator requiring water as a major part of its generating process. Platte River relies on Windy Gap heavily for water for the operation of Rawhide. The Windy Gap Firming Project is significant to Platte River and to our customers in Northern Colorado who use the electricity generated from Rawhide. Firming Windy Gap will provide increased reliability to that water. Now, Platte River is aware of the importance of conserving existing water use. We have heard a lot of comments tonight about water conservation. At Rawhide, we use 100 percent of the water provided to the site as a source of cooling water and processed water. Some of processes recycle water to maximize the use of this valuable resource. For example, water to a boiler used to make steam is recycled. So is the water used for the emission control system. The largest water used at Rawhide, which is cooling of the spent steam back into water, is through an arrangement with the City of Ft. Collins, where the Windy Gap water is delivered to the city in exchange for reusable effluent that goes to Rawhide. This makes efficient use of water that is first used by the city.	1. Thank you for your comment.

Com-ment	Letter #367	Response
1	And, I might say, this is a concept which was suggested here tonight. Overall, Rawhide is a zero-discharge facility. I would like to close by saying that the pioneers living in the West were bound by unwritten rules, commonly referred to as the "Code of the West." This was first chronicled by Zane Gray in 1934. These homespun laws, that boiled down to a gentleman's agreement to certain rules of conduct for survival, centered on hospitality, fair play, loyalty and respect for the land. We appreciate the opportunity to work cooperatively with our neighbors here in western Colorado to firm the Windy Gap water supply in an environmentally responsible manner and look forward to working with you. Your comments tonight have been helpful for me, for Platte River, to better understand our neighbor's perspective, and we thank you for those sincere comments. I have three pages of notes I'm taking with me back home tonight. Thank you.	

Com-ment	Letter #148	Response
1	**R.W. THORPE & ASSOCIATES, INC.** *Seattle • Anchorage • Denver • Winthrop* **Planning • Landscape • Environmental • Economics** PRINCIPALS: Robert W. Thorpe, AICP, President Stephen Speidel, ASLA, Of Counsel ASSOCIATES: Jennifer Lee, RLA Barbara Baker, AICP October 27, 2008 Will Tully Bureau of Reclamation 11056 West County Rd. 18E Loveland, CO 80537 **VIA Email: wtully@gp.usbr.gov** **Reference: Windy Gap Draft EIS Comment** Dear Mr. Tully: We are writing to **express our support for the preferred alternative reservoir location**. We have been providing Master Planning, Permitting, Site Environmental Analyses for a property owner, Weatherwax Farms, Inc, entitled Elk Run at Blue Mountain, a PUD project. Our review of the EIS concludes that the preferred location is supported by the EIS. (See www.rwta.com for EIS professional expertise.) We would note that US DOI – BOR, State of Colorado and Larimer County should, as part of this project, **work to improve roads and equestrian, bike, and pedestrian trails north and south of the project (west of Carter Lake)** for area residents circulation and emergency access. Currently, Larimer County residents must drive a circuitous route through Lyons from Fort Collins. New linkages from the reservoir south should be part of improved access to the new reservoir, for recreation, emergency, and energy savings via reduced commute distances. Thank you for including our comments. Respectfully submitted, *R. W. Thorpe & Associates, Inc.* Robert W. Thorpe, AICP President 705 Second Avenue Suite 710 • Seattle WA 98104• Telephone: 206/624-6239 • Fax: (206) 625-0930 • E-Mail: rwta@rwta.com	1. If Chimney Hollow Reservoir is built, Larimer County would manage the reservoir and adjacent county property for recreation use. Preliminary plans include the development of several trails on the west side of the reservoir with possible linkage to existing trails or roads. The details on the recreation plan would be developed concurrent with reservoir design.

Comment	Letter #386	Response
	WGFP 386 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Canton O'Donnell MR. O'DONNELL: Thank you. I'm Canton O'Donnell, representing the Shoreline Landing Homeowners' Association that's located at the north end of Shadow Mountain Reservoir. I've been around Grand County for the better part of 78 years. My grandfather built a cabin there 110 years ago on Grand County. When I was a young lad, we all drank water directly out of the lake, pumped it up into a tank. It wasn't treated at all, and nobody got sick. The original design of the Colorado Big Thompson project is faulty. It has resulted in unintended consequences. Grand County and Shadow Mountain Lake perform as canals to transport water to the Adams Tunnel.	
1	Shadow Mountain Lake comes filled with weeds that severely impede any recreational use, wash up to residential and commercial shores with unfavorable impact, including offensive odors. The weed problem has been mitigated by draw-downs, the last one as recent as 2006 for a period of six weeks. The DEIS suggests that Adams Tunnel capacity is such that the firming project will require a more constant flow, which implies that future draw-downs may not be possible.	1. Under the Proposed Action, average monthly deliveries through the Adams Tunnel would generally be higher because of C-BT deliveries to Chimney Hollow Reservoir and deliveries to meet Windy Gap demands. The Adams Tunnel is typically shut down for maintenance during the last two weeks in October and first two weeks in November, and the last week in March and first two weeks in April. In addition, Reclamation indicated that maintenance on the Adams Tunnel may increase by about 10 percent with a firming project online. To reflect the additional maintenance requirements, the Adams Tunnel was modeled as being shut down for an additional 3.5 days in March for each alternative. These maintenance periods would still be available for future drawdown of Shadow Mountain if the Adams Tunnel is required to be shut down when Shadow Mountain is drawn down. Therefore, the potential for future draw-downs of Shadow Mountain Lake should not be reduced.
2	Grand County is suffering silting near the east end of the channel between it and Shadow Mountain; has weed growth resulting from weeds transported from Shadow Mountain during pumping; has seen algae blooms that came close to a health crisis; and constantly experiences vastly reduced clarity. Reclamation and Northern experimented with a cessation of pumping this year, which was successful in mitigating the algae bloom. Again, the increased flow may imply that such cessations will no longer be possible. Prior to the advent of CBT, residents on Grand County pumped from the lake for drinking water, without treatment. Had there been such a thing as an environmental impact study 70 years ago, the design of the Colorado Big Thompson would have been rejected. What the DEIS misses is that Grand County is not just a body of water. It is a community, with commercial enterprises, jobs, residents, visitors from	2. The Section 3.8.1.3 on Water Quality in the FEIS has been revised to note silting in Grand Lake on the east side of the channel. Reclamation and the Northern Colorado Water Conservation District will continue to evaluate operational changes with the Three Lakes system to improve water quality and clarity in Grand Lake. This ongoing effort will continue regardless of implementation of the WGFP. Nutrient mitigation proposed for the WGFP, as described in Section 3.8.4 of the FEIS, is projected to offset most of the nutrient loading associated with additional Windy Gap pumping into the Three Lakes. Impacts to recreation, economics, and other resources due to the WGFP are discussed in other sections of the EIS.

Com-ment	Letter #386	Response
3	around the world, descendants of families that settled there five and six generations ago, and is an adjunct to Rocky Mountain National Park. The addition of 30,000 or more acre-feet of flow through the two lakes will only compound an already serious design flaw. Colorado water conveys rights to water. The law does not convey any rights to anyone to ravage the environment of a community in order to transport the water to the rights holder. None of the DEIS proposals are acceptable. Prior to any increase in the volume of water going into Adams Tunnel, a method of transporting all of the diverted waters around the two lakes must be implemented. A study by an engineering firm suggested that the best alternative would be a tunnel from Shadow Mountain to the entrance of the Adams Tunnel. Such a tunnel could easily be paid by several million users of CBT water on the East Slope through a modest rate increase. Thank you.	3. Modifications in C-BT facilities, such as rerouting C-BT water around Grand Lake are beyond the scope of the WGFP EIS. Modifications to C-BT facilities would require Congressional authorization, funding, and review under the National Environmental Policy Act.

Com-ment	Letter #1117	Response
1	WGFP 1117 Ms. Kara Lamb and Mr. Will Tully US Bureau of Reclamation 11056 West County Road Loveland, CO 80537 Mr. Chandler J. Peter US Army Corps of Engineers 18E Denver Regulatory Office 9307 South Wadsworth Boulevard Littleton, CO 80128 Dear Ms. Lamb, Mr. Tully, and Mr. Peter, December 29, 2008 This letter regards the Draft Environmental Impact Statement (DEIS) for the Windy Gap Firming Project (WGFP) and the associated Section 404 Permit Application to the U.S. Army Corps of Engineers. Thank you for the opportunity to comment on this document. We respectfully request that you include the following comments in the legal record for the NEPA process on this document. **Demand for the WGFP project water is overstated.** Three factors lead the WGFP Draft EIS to overestimate project participants' future water demands: 1. An unreasonably high population growth rate; 2. Inadequate integration of water conservation and efficiency measures; and 3. Inaccurate water demand projections for power generation by the Platte River Power Authority (PRPA). Although our comments focus on the PRPA's water demands, the three listed factors are interrelated. For example, overstated population growth has two effects: it increases the projected water demands and increases projected electricity demands. Electricity generation from conventional supplies requires water; overstating electricity needs, therefore, inflates the amount of water required by a power plant. Furthermore, electricity generation from coal-fired power plants requires substantial amounts of water to cool and condense steam - one MWh of electricity generated at a coal-fired plant requires approximately 541 gallons of water. In contrast, electricity generated by wind turbines and solar photovoltaic panels use no water, and combined cycle natural gas plants require approximately 180 gallons/MWh.[1] Energy supplies in Colorado are shifting away from outmoded sources like traditional coal and natural gas generation and towards renewable supplies such as wind and solar and replacement technologies that significantly increase the efficiency of power generation from fossil fuels. Recent developments are leading the Platte River Power Authority (PRPA) away from inefficient technologies such as traditional coal and natural gas systems: a) PRPA recently signed onto The Colorado Governor's Climate Action Plan to reduce greenhouse emissions by 20% before 2020. [1] Western Resource Advocates. 2008. *A Sustainable Path: Meeting Nevada's Water and Energy Demands*. Boulder, CO.	1. The recession has indeed had an impact on growth in the past several years months in many previously fast-growing areas, and the Participant service areas are no exception. However, recessions are short-term economic phenomena, similar to economic boom growth. Long-term growth projections are normalized to "smooth out" cyclical high and low-growth periods. The population projections for the DEIS, and ultimately the water demand projections, were made on an individual Participant basis, factoring in the unique historical trends, anticipated future trends, land use characteristics, and customer base of each Participant. The projected growth rates applied to each Participant are discussed in the Appendices to the Purpose and Need Report (ERO and Harvey Economics 2005). The Colorado State Demographer's Office (SDO) prepares updated statewide and county-level population projections each year. These projections incorporate local information and input, and are continually adjusted to reflect current economic conditions. The November 2008 projections, the most recent available, show that for the counties in which the Participants are located, projected average annual growth rates range from 1.1% to 3.1% between 2005 and 2030. These recently projected rates are in line with those used for the WGFP Participants in the DEIS analyses. The Platte River Power Authority's (Platte River) participation in the WGFP is based solely on its need for a firm supply of water at the existing Rawhide Power Plant and not for a new facility. Platte River must be able to provide reliable service to existing customers. As stated in the Purpose and Need Report (ERO and Harvey Economics 2005), Platte River is evaluating its options for additional power generation to meet future demands. New power could come from a variety of sources, several of which may be less water intensive than the current coal-fired plant. The Purpose and Need Report states that "future demand projections will be continually updated by Platte River to determine the timing of power generation needs and the associated water requirements" (p. 54).

Com-ment	Letter #1117	Response
1	b) The U.S. Supreme Court compelled the U.S. Environmental Protection Agency to regulate greenhouse gas emissions in their decision on the Massachusetts *et al.* v. Environmental Protection Agency *et al.* in their April 2, 2007 decision[2]. The EPA is currently seeking public comments on draft plans to regulate greenhouse gas emissions under the Clean Air Act.[3] Under the statewide initiatives currently in place and the impending new regulatory environment for greenhouse gas emissions, it is very unlikely that permits will be issued for new power generation systems that require the amount of cooling water currently used. As PRPA develops their 21st century plans to meet energy needs they will be moving into new technologies such as renewable sources of energy, combined heat and power, combined cycle, and integrated gasification combined cycle, which significantly reduce the need for cooling water.	
2	**Water quality impacts on the Big Thompson and Cache la Poudre rivers, Carter Lake, and Horsetooth Reservoir are not adequately addressed.** Water trades involving multiple watersheds are certain to be executed under the action alternatives proposed in the DEIS. The likelihood of water trades involving C-BT and WGFP water into the Cache la Poudre River via Horsetooth Reservoir and the Charles Hansen Supply Canal were not adequately addressed in the DEIS. The WGFP DEIS states clearly that ammonia and inorganic phosphorus concentrations in WGFP supplies will rise significantly and dissolved oxygen will drop under all EIS actions, but will be highest under the proposed action. Water temperature would also rise under the proposed action. According to the DEIS, nearly all of the reservoirs impacted by the project do not currently meet water quality standards for various pollutants and other measures of water quality. Horsetooth reservoir in particular exhibits poor water quality in dissolved oxygen and phosphorus, and increases in pollutants imported from the West Slope through WGFP (such as inorganic phosphorus) as well as increases in water temperature will compound this problem further. The Cache la Poudre River below the Charles Hansen Supply Canal currently does not meet water quality standards for ammonia, nitrates, copper, dissolved oxygen, water temperature, and other water quality parameters because of the highly altered flow regime in the river and other factors. Likely water trades described in the DEIS and as proposed by the Northern Colorado Water Conservancy District, Horsetooth Reservoir and the Charles Hansen Supply Canal would be the primary vehicle for executing C-BT and other water trades into the Cache la Poudre River. Water quality impacts on Horsetooth Reservoir and the Cache la Poudre River resulting from water trades must be adequately addressed.	2. The effect of water trades on the water quality of the Poudre River was added to the discussion in the FEIS. Most of the water moving into Horsetooth Reservoir is C-BT water, with some Windy Gap (WG) water. Currently, the average annual delivery to Greeley on the Poudre River is 725 AF; under the WGFP, the total firm yield exchanged into the Poudre River via Horsetooth Reservoir would be 1,115 AF. However, on the way to the Poudre River, the WG water would be commingled several times, and the WG water would be dominated by a much greater volume of C-BT water in Chimney Hollow Reservoir, Carter Lake, and Horsetooth Reservoir. It is expected that water quality effects to the Poudre River at Greeley would be minor due to the commingling of a relatively small amount of WGFP water. In addition, the incremental nutrient loading to the Three Lakes would be offset by nutrient mitigation measures required of the Subdistrict; therefore, there would be no change in the quality of WG water delivered to the East Slope via the C-BT system.
3	**Linkages between WGFP and the proposed Northern Integrated Supply Project (NISP) are not adequately assessed.** The NISP DEIS describes linkages between the NISP and WGFP projects, whereas the WGFP DEIS dismisses linkages between the projects. Table 2.4 of the WGFP DEIS states the following: "Information on currently identified sources of water and storage locations for the NISP Project indicate that this project would have little or no interaction or overlap with the area of potential effect for the WGFP. Planned NISP diversions from the Cache la Poudre River or South Platte River would not affect operation of the WGFP or vice	3. Five of the WGFP Participants—Central Weld County Water District, Erie, Evans, Fort Lupton, and Lafayette—are also participants in the Northern Integrated Supply Project (NISP). These entities have identified future water needs that will require multiple sources of water. The fact that these entities are participating in more than one project does not mean that there is a cumulative impact. There are no substantial overlapping impacts between the NISP and the WGFP.

[2] http://www.supremecourtus.gov/opinions/06pdf/05-1120.pdf, viewed on 12/1/2008.
[3] http://www.epa.gov/climatechange/anpr.html, viewed on 12/1/2008.

Com-ment	Letter #1117	Response
3	versa." Operation plans for the proposed WGFP and NISP projects describe significant water trades between the proposed projects and existing water projects on the Front Range and Western Slope. Water trades between projects will by definition alter flows in the affected watersheds (Colorado, Cache la Poudre, Big Thompson, and St. Vrain Rivers) and hence will as a result affect the environment of and water quality in those watersheds. The effects on other rivers of these proposed water trades and operational flexibility requested in the project must be addressed. At least five of the entities subscribing to NISP water also have interests in WGFP shares. The cumulative impacts of the two projects must therefore be addressed in the WGFP DEIS.	
4	**Expansion of invasive species were not addressed in the DEIS.** The expansion of invasive species was not addressed at all in the WGFP DEIS. Tamarisk invasion is a dire and immediate threat to the riparian ecosystems of nearly every watershed in Colorado, and the C-BT and expanded operations of the WGFP have great potential to exacerbate the spread of Tamarisk into Eastern Slope rivers. Tamarisk has already been found in Douglas Reservoir and other locations on Northeast Colorado, as a result of C-BT water transfers. Invasive quagga mussels have been found in C-BT reservoir system and it appears to be only a matter of time before invasive zebra mussels are found there. These virulent, invasive species present a dire and immediate threat to the aquatic ecosystems of Eastern Slope rivers. The expanded operations of the proposed WGFP and the water trades planned under the project are extremely likely to spread these invasive species more quickly into areas already threatened by them and are likely to spread them into areas not previously threatened by them. The threats posed by them are extremely severe and must be addressed in the DEIS. Thank you for the opportunity to provide input in this process and I look forward to your response. Sincerely, Mark J. Easter 2820 Cherry Lane Fort Collins, CO 80521 On behalf of the Sierra Club Rocky Mountain Chapter 1536 Wynkoop Street Denver, CO 80202 Gary Wockner Colorado Director, Clean Water Action 1630 S College Ave Fort Collins, CO 80525	4. The potential for expansion of invasive species or noxious weeds was discussed in the DEIS. (See Sections 3.10, 3.10.4, and 3.10.5 among others) Although tamarisk (on the Colorado Noxious Weed List B) was not discussed specifically, the potential for noxious weeds, in general, to invade the proposed reservoirs and other impacted areas was described. To help prevent the spread of tamarisk and other noxious weeds from the WGFP, a noxious weed control plan would be developed and implemented, as described in the FEIS.

Com-ment	Letter #204	Response
	TABERNASH MEADOWS WATER AND SANITATION DISTRICT P.O. Box 443, Tabernash CO 80478 (970) 726-2839 Fax (970) 726-2852 Mobile (970) 531-3234 tmwsd@rkymtnhi.com December 1, 2008 Will Tully Bureau of Reclamation, 11056 West County Road 18E Loveland, CO 80537 wtully@gp.usbr.gov RE: Windy Gap Firming Project Dear Mr. Tully, My name is Lauralee Kourse and I live in Tabernash Colorado. I manage and operate the Tabernash Waste Water Treatment Facility and from February 2008 thru July of 2008 I operated the water treatment plant in the town of Town of Hot Sulphur Springs.	
1	The Tabernash Waste Treatment Plant discharges into the Fraser River. Present diversions have already affected the health of the Fraser River and further reduced flows will likely require additional treatment for phosphorus removal. This will require tertiary treatment which my District will not be able to afford.	1. The WGFP would have no direct impacts on Fraser River flows or water quality. Proposed water quality mitigation, as described in Section 3.8.4 of the FEIS, would reduce nutrient loading from the WGFP to the Three Lakes System so that the WGFP would not exacerbate the algae and clarity problem in Shadow Mountain reservoir and Grand Lake. These measures would improve the quality of Fraser River, Willow Creek, and the Colorado River water downstream of these improvements.
2	The Moffat Firming project will reduce flows in the Fraser River and I am concerned that the Windy Gap Firming Project does not include the affects of this upstream depletion. That your agency is even considering additional projects that will negatively impact the Upper Colorado River Basin is disturbing and that you consider these projects in a vacuum is not acceptable.	2. The WGFP FEIS fully considered the cumulative impacts of the Moffat Collection System Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP and are presented in cumulative effect sections for each resource in the FEIS.
3	Your report mentions; higher concentration of nutrients, higher temperatures and a diminished aquatic habitat. What your report does not address is how mitigation is implemented and who will monitor their effectiveness. How can the negative effects on the river be mitigated? The truth is they cannot!	3. As mentioned above, nutrient mitigation would prevent exacerbating the algae problem in the Three Lakes system from additional pumping as a result of the WGFP. Mitigation measures for potential elevated stream temperature in the Colorado River and effects on aquatic life would be addressed per the mitigation measures in the Fish and Wildlife Mitigation Plan developed by the Subdistrict in accordance with the requirements of CRS 37-60-122.2 and as adopted by the Wildlife Commission and Colorado Water Conservation Board (FEIS Appendix E). The mitigation measures in the FWMP would offset the potential impacts of the proposed project on nutrient loading to the Three Lakes and reduce the potential for exceedance of the temperature standard in the Colorado River. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. A summary of mitigation measures is included in Section 3.25 of the FEIS.
4	The Town of Hot Sulphur Springs drinking water comes directly from the Colorado River. From February thru July I witnessed rapid changes in the water quality that could not be explained. In the course of minutes the river would "silt" up and turbidity spikes would fowl the filters and decrease the water plant production. The river levels would fluctuate to the point that the intake structure for the town was almost out of the water. Windy Gap adversely affects the water quality at the Town of Hot Sulphur Springs.	
5	Back in the 1983 Northern Water Conservation District funded the Hot Sulphur water plant in 1983 they did not do this out of the kindness of their hearts they funded the	

Com-ment	Letter #204	Response
5	water plant because they understood that the Windy Gap Diversion project would adversely affect the downstream users. Additional diversions will cost the Town of Hot Sulphur Springs money that the town does not have. At the very least a new diversion structure and infiltration gallery will be required to assure that water quantity is available and that the quality of the water in the river is such that is can be treated.	4. In 2008, Windy Gap diverted water in April, May, and June. There is no evidence to suggest that Windy Gap diversions were responsible for the silting and high turbidity observed in the Colorado River at Hot Sulphur Springs. Windy Gap diversions do not increase the turbidity of downstream Colorado River streamflow Windy Gap Reservoir provides some settling of coarser sediments, which reduces turbidity. The events described regarding changes in turbidity could be caused by a variety of point and/or nonpoint sources upstream of Hot Sulphur Springs, including tributaries to the Colorado River. The WGFP would slightly increase the specific conductivity of the river, but should not impair Hot Sulphur Springs' drinking water facility's ability to meet drinking water standards or increase its cost for treatment. In addition, Windy Gap does not divert if the flows downstream of the reservoir are less than 90 cfs. If flows dropped to lower than 90 cfs, it was not due to Windy Gap diversions. Windy Gap's water rights are junior to Hot Sulphur Springs' water rights in the Colorado River; and Windy Gap cannot impair the Town's rights to divert the Colorado River water it is legally entitled to.
6	Lastly I would like to point out that the water rights being firmed in this project are conditional water rights. We are all aware that the rivers are already over allocated so why we are reviewing a project that would rely on conditional water rights is ludicrous. I recommend that this project be denied for all of the above reasons. Sincerely, Lauralee Kourse, Manager	5. See response to Comment No. 3 on measures to reduce nutrient loadings to the Colorado River. The WGFP would not divert water when streamflow in the Colorado River reaches the current 90 cfs minimum flow below Windy Gap Reservoir. Any reduction in flow below 90 cfs would not be attributable to the WGFP. The Subdistrict would comply with state water law for all diversions. Windy Gap cannot divert when downstream senior water rights are calling for water. In compliance with the 1980 Agreement Concerning the Windy Gap Project and the Azure Reservoir and Power Project, the Subdistrict provided funding to The Town of Hot Sulphur Springs for assistance in improving its water treatment facility and wastewater treatment facility. This agreement quantified the maximum diversions for the Windy Gap Project under its decrees of up to 600 cfs and specified volumetric limits for Subdistrict diversions. The proposed WGFP would not exceed the previously agreed-upon diversion limits and, therefore, no further mitigation is required to satisfy diversion for the Town of Hot Sulphur Springs. 6. The water rights firmed in this project were made absolute in Case No. 89CW298, which awarded absolute water rights to pump 600 cfs from the Windy Gap Pump Canal and also confirmed the volumetric diversion limits as an integral part of the decree.

Comment	Letter #363	Response
1	WGFP 363 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Eldon Crabtree, MR. CRABTREE: My name is Eldon Crabtree. That's C-r-a-b-t-r-e-e. I'm president of the Three Lakes Watershed Association. We have a membership of about 170 persons in and around Grand Lake. We work in concert with the greater Grand Lake Shoreline Owners Association. It's a small community. We work in concert with everyone, including the Town of Grand Lake. I have two points. I'm not going to belabor those, because it's been said before, but: One, we vehemently believe that Grand Lake has to be removed from the CBT system; that it should no longer be used as a conduit as part of that transmountain water diversion project. I can't emphasize that enough, and it's for all the obvious reasons. They have been stated before. The second point here is that we are really concerned about the degradation about the Colorado River itself, ranging from adverse temperature conditions to algae growth, moss, and all of the other bad things that are happening to that river as a consequence of too much water being removed from it. That's why the firming project should not be allowed to proceed. That's all I have. Thank you.	1. Modifications in C-BT facilities, such as rerouting C-BT water around Grand Lake, are beyond the scope of the proposed WGFP. Modifications to C-BT facilities would require Congressional authorization, funding, and review under the National Environmental Policy Act. A number of mitigation measures have been added in the FEIS that will avoid or minimize adverse effects of the Proposed Project. Mitigation measures are described in each resource section and are summarized in Section 3.25 of the FEIS.

Com-ment	Letter #33	Response
1 2 3 4	WGFP 33 **Three Lakes Watershed Association** **P. O. Box 1718** **Grand Lake, Colorado 80447** October 9, 2008 Response comments to the Windy Gap Firming Project Draft Environmental Impact Statement. My name is Elwin Crabtree and I am President of the Three Lakes Watershed Association. We have a membership of approximately 170 persons who live and/or own property in the Grand Lake area. Our primary mission is to promote and protect the environmental health of the Watershed and, more specifically, to support the monitoring of water quality in the Three Lakes Area. One result of these activities has been the observation of the operation of the CBT project and its effects on water quality in Grand Lake. The operation of that system has resulted in years of inflows of chemically affected and silt laden water into Grand Lake from Shadow Mountain Reservoir. This has resulted among other things, in a reduction of water clarity and the creation of a man made alluvial fan in Grand Lake spreading from the channel which connects Shadow Mountain Reservoir to Grand Lake. Pumping an increased volume of water through this system, as contemplated by the Windy Gap Firming Project, will only exacerbate the problem. Grand Lake is Colorado's largest natural lake. It simply should no longer be used as a physical conduit for the transport of water through the CBT system. Too, a 24 percent decrease in adult rainbow trout habitat upstream from the confluence of the Williams Fork is another unacceptable result of the firming project. The enabling legislation for the CBT project is Senate Document 80, promulgated in 1937, and that document mandates that CBT operations "preserve the fishing and recreational facilities and the scenic attractions of Grand Lake". The Draft Environmental Impact Statement for the Windy Gap Firming Project does not address this mandated responsibility. A concerted effort needs to be made which will result in a redesign of the CBT system to allow Grand Lake to function as nature originally intended. The McLaughlin Rincon study should be used as a springboard to that end. Sincerely, Elwin E. Crabtree, President Three Lakes Watershed Association	1. Comment regarding Grand Lake is noted. 2. The estimated decrease of 24 percent in available rainbow trout habitat between Windy Gap and the Williams Fork confluence with the Colorado River is the estimated maximum impact that would occur and would happen for a short period of time in about 4 out of 10 years. The loss of habitat, primarily during periods of high flow, is not expected adversely impact fish populations. Additional discussion was added to Section 3.9.2.3 of the Aquatic Resource section of the FEIS to explain the significance of flow changes to fish, including information on seasonal changes in habitat. A major assumption for application of PHABSIM is that habitat quantity controls or limits populations. Therefore the time of the year when the lowest amount of habitat is available is likely to be the limiting time period for the species being studied. In the Colorado River, winter is the time when the least amount of habitat is available to the fish species and likely controls the populations. WGFP does not divert in the winter and therefore does not change the habitat availability during the limiting time period. The changes to habitat during summer are substantial but still provide considerably more habitat than during winter. Also, the duration of the decrease is usually on the order of several weeks rather the months of low habitat as in fall and winter and therefore less likely to effect fish at the population level. The Subdistrict developed a Fish and Wildlife Mitigation Plan (FWMP) in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). 3. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS. 4. Redesign of the C-BT system, such as rerouting C-BT water around Grand Lake are beyond the scope of the proposed WGFP. Modifications to C-BT facilities would require Congressional authorization, funding, and review under the National Environmental Policy Act.

Com-ment	Letter #417	Response
1 2	WGFP 417 Loveland Public Hearing Transcript for Windy Gap Firming Project October 7, 2008 David McComb MR. McCOMB: I'm David McComb. I'm the executive director of Colorado Trout Unlimited. A lot of the issues that I was going to share with you have been raised but I will try to highlight a couple of key things. First, some of the river segments that would be impacted by this diversions were found relatively recently to be eligible for wild and scenic protection by the Bureau of Land Management as part of their study process. I would encourage you to try to look carefully at this project and be sure that it does not impact this study through the remarkable values that were identified through those study. And secondly, I'd like to respectfully disagree with one of the statements that was made in framing the discussion today. By speaking about impacts of the Colorado Big Thompson project. I think it's critical that those impacts are looked at, as much as already noted earlier, to understand the condition of the Colorado River baseline and how this cumulatively with those existing past, present, and reasonably important final future projects will affect that resource. Stress on fishery resources, specifically my primary interest, is additive, and you have to understand those existing stresses in order to understand that additional increment of stress, that additional impact, and what it's really going to mean. My organization has members on both sides of the Divide, and we would like nothing better than to get to the point where we could support this as a reasonable project that can move forward but we believe that those issues of addressing the impacts on the Colorado River really need to be addressed more thoroughly. There needs to be more specific mitigation measures laid out, and we hope there will be some opportunity as those are better refined for the public to get a look at some of those and provide feedback to you in the process. And hopefully, through that kind of a vote we can get at the end to a project that addressing Front Range water demands while still respecting the needs of our state's namesake river. Thank you.	1. Evaluation and potential designation of portions of the Colorado River as Wild and Scenic is a separate and ongoing process being pursued by the BLM. Recreational values are among the outstanding remarkable values identified for segments of the river. The Wild and Scenic designation process is described in the Recreation section of the FEIS. While the effects to river recreation described in the FEIS could relate to the recreational values along the Colorado River, the decision on Wild and Scenic River status is a determination made by the BLM as part of the planning process and is not part of the evaluation for the WGFP EIS. 2. The affected environment section of the EIS describes historical hydrologic conditions and the various actions and projects that have contributed to existing conditions. Other sections in the EIS provide discussions on the existing condition and status of aquatic and other resources. The existing hydrologic conditions presented in the EIS provide an accurate baseline from which to make a reasonable comparison of the impacts of each of the alternatives. The same is true for other resources. Tables 3-1 and 3-20 were added to the FEIS to provide additional information on how past actions have affected Colorado River streamflow. The cumulative effects assessment in the EIS considers the impact of all past, present, and reasonably foreseeable actions, including the C-BT Project, in combination with the alternatives. The cumulative effects analysis for hydrology, water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP.

Com-ment	Letter #1126	Response

WGFP 1126

December 29, 2008

TROUT UNLIMITED

VIA EMAIL: WTULLY@gp.usbr.gov
Mr. Will Tully
Bureau of Reclamation Eastern Colorado Area
11056 West County Road 18E
Loveland, CO 80537-9711

VIA EMAIL: chandler.j.peter@usace.army.mil
Mr. Chandler Peter, P.E.
Project Manager
Denver Regulatory Office
U.S. Army Corps of Engineers
9307 South Wadsworth Blvd.
Littleton, CO 80128-6901

Re: Windy Gap Firming Project - Draft Environmental Impact Statement

Dear Mr. Tully and Mr. Peters,

Trout Unlimited, Colorado Trout Unlimited, and the Colorado Headwaters Chapter of Trout Unlimited (jointly referred to as "Trout Unlimited") offer the attached comments on the draft Environmental Statement (DEIS) for the Windy Gap Firming Project (WGFP) for your consideration. Trout Unlimited is a non-profit conservation organization with approximately 150,000 members nationally, approximately 10,000 in Colorado. Our Headwaters Chapter, based in Grand County, counts with 100 very active members. Our mission is to conserve, protect and restore coldwater fisheries and their habitat.

In addition to these comments, Trout Unlimited joins in the separate comments provided by Western Resource Advocates, the National Wildlife Federation, Grand County, and the Colorado River Water Conservation District, to the extent not inconsistent with these comments.

Thank you for the opportunity to comment. Do not hesitate to contact me at 720.470.4758 if you have any question or would like to further discuss the project.

Com-ment	Letter #1126	Response

Sincerely,

/s Amelia S. Whiting
Amelia S. Whiting, Legal Counsel
Trout Unlimited, Colorado Water Project
P.O. Box 1544
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/s David Nickum
David Nickum, Executive Director
Colorado Trout Unlimited
1320 Pearl Street, Suite 320
Boulder, CO 80302
303.440.2937
dnickum@tu.org

cc: U.S. EPA
U.S. Fish and Wildlife Services
Colorado Division of Wildlife
Colorado Water Conservation Board
Colorado Water Quality Control Division
NCWCD

Com-ment	Letter #1126	Response
	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 3 of 56 **SCOPE OF COMMENTS** It is our understanding that the DEIS has been prepared to fulfill the requirements of the National Environmental Policy Act (NEPA) to inform two primary distinct and separate federal decisions: (1) A decision by the Bureau of Reclamation (Reclamation) on whether to enter into a carriage contract agreement with Northern Colorado Water Conservancy District (Northern) and its Municipal Subdistrict (Subdistrict) allowing the use of Colorado-Big Thompson (C-BT) facilities and C-BT water as part of the WGFP and, if so, under what conditions. (2) A decision by the U.S. Army Corps of Engineers (Corps) on whether to grant a Clean Water Act, § 404 permit for the WGFP and, if so, under what conditions. It is further our understanding that, depending on the outcome of the NEPA process, Reclamation may enter into negotiations with Northern and the Subdistrict over the terms of an excess capacity, carriage contract, and that such process will be subject to additional public notice and comment. The DEIS includes an Appendix entitled "Section 404(b)(1) Analysis, Windy Gap Firming Project" (Appendix B). It is our understanding that this constitutes the Corps' analysis of the project's compliance with CWA § 404(b)(1) guidelines. These comments address the analysis and findings of the DEIS in light of NEPA requirements. Separate comments are being submitted to the Corps with respect to the CWA § 404(b)(1) guidelines analysis in Appendix B. Trout Unlimited expects to provide comments on Reclamation's contractual activities, if any, associated with the WGFP upon notice. **Trout Unlimited requests to be directly notified of any such contractual activity.** **SUMMARY OF COMMENTS** Over the last few years, Trout Unlimited has increased its focus on the upper Colorado River - in particular, the reaches of the river between Granby Reservoir and the Blue River. A designated Gold Medal trout fishery and eligible Wild & Scenic Rivers Act segment for most of its length, this reach of the river is showing signs of degradation due largely to the cumulative impacts of transmountain diversions - including C-BT Project diversions - that take over 50% of the native river flows to the Front Range and Northern Colorado. Oxygen-robbing algae and high stream temperatures are a source of concern. In late summer of 2006, local irrigators with senior water rights warned that	See specific comment responses below.

Com-ment	Letter #1126	Response

sections of the Colorado River were going dry. This triggered a flurry of communications between Trout Unlimited, Grand County, fly fishing outfits, irrigators and others, on the one hand, and Reclamation and the Secretary of the Interior's office on the other. Some of the main sources of the problem, including current operation of the C-BT Project, are yet to be addressed.

The Proposed Action alternative for the WGFP would use C-BT Project facilities and C-BT Project water to increase depletions that could further impact these valuable fisheries. Operation of WGFP and other projects could significantly alter the River's hydrograph, reducing high peak flows, extending periods of low flows, and increasing dry-year conditions in the river. While, the DEIS states that WGFP would operate mostly during late spring and early summer months, the information presented shows that the most significant percentage increase in diversions would occur in July and August – months when flows are lower and high stream temperatures are of concern. These diversions would occur immediately before C-BT Project operations cause Colorado River flows below Granby Dam to drop to a mere 20cfs. At some point, the combination of stressors could cause a significant decline and even the demise of these valuable fisheries. Before any decisions are made that will further aggravate the conditions of the river, a thorough analysis of the direct, indirect and cumulative impacts of the WGFP on these aquatic resources and their habitat is imperative. Measures designed to prevent such impacts must be adopted. Unfortunately, as described in detail in our comments, the DEIS fails to do so.

Reclamation's first duty is to operate the C-BT Project in a manner that furthers the primary purposes of the project. Preservation of the Colorado River's fisheries is identified in SD 80 as a primary purpose of the C-BT Project. Facilitating projects such as WGFP is not. Accordingly, unless the evidence clearly shows that WGFP will not harm the Colorado River's fisheries, or strict conditions are imposed that will ensure that no such harm will result, Reclamation must deny the Subdistrict's request. As discussed in detail in our comments, the DEIS fails to provide the information and analysis needed to enable Reclamation's decision, other than denial, in this regard.

Aside from deficiencies in the DEIS' analysis, Trout Unlimited has serious questions about the legality of the Proposed Action. As further discussed in Section III of our comments, below, implementation of this alternative, as currently proposed, could significantly and illegally expand the C-BT project. Serious legal questions remain about the proposed use of CB-T Project facilities and water absent Congressional approval. Moreover, Reclamation's storage of CB-T water in Chimney Hollow, as currently proposed, would violate Colorado water law. Finally, the Proposed Action alternative is illegal unless it is proven to be consistent with Senate Document 80. Instead of evaluating the legality of the Proposed Action Alternative, the DEIS simply assumes it.

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These are fundamental flaws which render the DEIS unfit to satisfy NEPA's dual goals to (1) insure that the agency has carefully and fully contemplated the environmental effects of its action, and (2) that the public has sufficient information to challenge the agency. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The information provided makes it impossible for the federal agencies to take "a hard look" at the environmental consequences of their actions. *Robertson,* 490 U.S. at 350-51. The information fails to provide information needed to evaluate the legality of the Proposed Action, compliance with Senate Document 80, and compliance with the requirements of the Clean Water Act. The information also fails to explain how acknowledged violations of State law will be addressed. Therefore, any further agency action with respect to WGFP must be postponed pending preparation of a supplemental environmental impact statement that addresses the DEIS's shortcomings and an opportunity for additional public review.

NEPA

NEPA represents the Nation's sweeping commitment to "prevent or eliminate damage to the environment and biosphere." *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 371 (1989). The statute accomplishes this goal by focusing government and public attention on the environmental effects of proposed agency action." *Id.* By doing so, NEPA "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Id.*

Accordingly, NEPA requires all federal agencies to prepare an environmental impact statement (EIS) prior to major federal action significantly affecting the quality of the environment. *42 U.S.C. § 4331; Robertson,* 490 U.S. at 348. An EIS must include a detailed statement of (1) the environmental impact of the proposed action; (2) any adverse environmental effects which cannot be avoided should the proposal be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. *Id.* at 348-9*; citing 42 U.S.C. § 4332.*

"The sweeping policy goals announced in § 101 of NEPA are thus realized through a set of 'action-forcing' procedures that require that agencies take a 'hard look' at environmental consequences" before resources are committed. *Id.* at 350-51.

Information provided in an EIS must be of high quality and must include accurate scientific analysis. *40 C.F.R. § 1500.1(b).* "The NEPA process is intended to help public officials make decisions that are based on understanding environmental consequences, and take actions that protect, restore and enhance the environment." *40 C.F.R. § 1500.1(c).* "When an agency is evaluating reasonably foreseeable significant adverse

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effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking." *40 C.F.R. § 1502.22.* If the information cannot be obtained because the overall costs would be exorbitant or the means to obtain the information unknown, the agencies must explain the relevance of the incomplete or unavailable information, provide a summary of existing credible evidence, and evaluate the impacts based on theoretical approaches or research methods generally accepted in the scientific community. *40 C.F.R. § 1502.22(b).*

To fulfill the essential purposes of NEPA, federal agencies are required, to the fullest extent possible, to "use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment." *40 CFR § 1500.2.* These means include (1) avoiding the impact altogether by not taking the action; (2) minimizing the impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; (5) compensating for the impact by replacing or providing substitute resources or environments. *40 C.F.R. § 1508.20.* Mitigation measures must be fully discussed in the EIS. *40 CFR §1502.14(f) and 40 CFR § 1502.16(h).*

COMMENTS

I. THE DEIS FAILS TO TAKE A HARD LOOK AT THE DIRECT, INDIRECT, AND CUMULATIVE IMPACTS OF WGFP ON THE COLORADO RIVER AQUATIC RESOURCES AND TO OTHERWISE MEET NEPA REQUIREMENTS.[1]

The DEIS evaluates impacts to the Colorado River's aquatic resources by attempting to predict changes in available juvenile and adult trout habitat and in stream water quality due to increased Windy Gap project pumping under the various alternatives. *DEIS at p. ES-14.* The DEIS also looks at the potential reduction in peak flows and effects on macroinverterbrates in a cursory manner. Habitat availability, water quality, and maintenance of peak flows are critical factors in assessing potential impacts on aquatic resources. Yet, the analysis of these factors in the DEIS is fundamentally flawed, the information provided inadequate for meaningful analysis, and impacts

[1] While the majority of these comments directly refer to the DEIS analysis of impacts to the aquatic resources of the Colorado River, these comments pertain to aquatic resource impacts in Willow Creek and elsewhere to the extent the DEIS analysis of those impacts relies on similarly flawed assumptions and incomplete information.

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1	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 7 of 56 revealed are arbitrarily dismissed. Other factors, such as exacerbation of whirling disease problems, are not analyzed at all. These deficiencies, discussed in detail in what follows, are fundamental deficiencies that preclude a meaningful review, much less the required "hard look" at the impacts of the WGFP alternatives on the aquatic resources of the Colorado River. **A. WGFP has the potential to dramatically change the hydrology of the Colorado River.** Appendix A of the DEIS includes a series of tables that reflect modeled projections of additional diversions, and concomitant Colorado River flow reductions, that would result from operation of the WGFP. Inadequate as these figures are to evaluate some of the most damaging potential impacts on the river's aquatic resources, they forecast dramatic changes in the Colorado River's hydrology. According to the DEIS, operation of the Proposed WGFP alternative would increase Colorado River diversions by 109% in July and by 144% in August. *DEIS, Appendix A, Table A-6 at p. A-11.* July diversions in a wet year would increase by 1,639%. Under current conditions, the river has experienced no Windy Gap diversions in August of wet years. The Proposed WGFP would increase those diversions from zero to an average of 3,636 acre-feet per year. *Id.* Flows below Windy Gap reservoir, expected to be the most severely impacted reach of the river, are projected to decrease by 23% in July and by 16% in August of an average year. *DEIS, Appendix A, Table A-10, at p. A-17.* Under the cumulative impacts scenario, flows are expected to drop by 24% in July and by 20% in August in an average year. *DEIS, Appendix A, Table A-33, at p. A-40.* As discussed in what follows, these modeled, anticipated changes are significantly understated and fail to capture some of the most damaging hydrological changes likely to occur as a result of operation of WGFP and other reasonably foreseeable projects. Nevertheless, as flawed as they are, these figures provide a glimpse at the magnitude of changes the Colorado River will experience and, therefore, at the project's potential to significantly impact the aquatic resources of the river. These figures, which indicate that the greatest percentage increases in river depletions caused by operation of WGFP will occur in July and August, also belie the DEIS's repeated assertion that impacts to aquatic resources will not be significant because the project would seldom operate during these critical months. *See e.g. DEIS at ES-14.* **B. The DEIS fails to take a "hard look" at how operation of the WGFP and other foreseeable projects will change the Colorado River's hydrograph and how those changes will impact the river's aquatic resources.**	1. The increased Windy Gap diversions referenced in the comment would be approximately 51 cfs in July and 10 cfs in August on average. Therefore, although the percentage increase in Windy Gap diversions is higher in those months compared to existing conditions, the average monthly percentage decrease in Colorado River flows below Windy Gap under the Proposed Action would be much less. Modeled flow changes below Windy Gap Reservoir are not understated. See response to Comment No. 4. Changes in the Colorado River's hydrograph as a result of the WGFP and other reasonably foreseeable projects are described for several locations along the Colorado River in Sections 3.5.2.6 and 3.5.3.8. The change in diversion rate based on "percentage" was not used for the aquatic resource evaluation of impacts. The aquatic habitat analysis used daily flows in cubic feet per second (cfs) to compare the alternatives to existing conditions. Volume expressed as a percentage or AF does not directly translate to habitat.

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1 2 3	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 8 of 56 As recognized in the DEIS, hydrological changes can have significant impacts on the river's aquatic resources. Flows affect the availability of habitat, water quality, and water temperature of the stream. They also affect the stream's ability to serve functions that play a critical role in supporting a healthy aquatic ecosystem, such as channel creation and maintenance and cleansing of sediments lodged in spawning beds. While recognizing the importance of adequately predicting expected flow conditions to properly assess the project's impacts on aquatic resources, the DEIS in fact fails to do so. **1. The DEIS analysis relies on a hydrological model that is inadequate as a tool to predict and assess impacts on aquatic resources.** The DEIS estimates predicted changes in available juvenile and adult rainbow and brown trout habitat within the stream using estimated flow scenarios supplied by a model prepared by Boyle Engineering (Boyle Model). *Aquatics Technical Report at 36; DEIS at 3-134.* The Boyle Model estimates flow changes at particular locations in the Colorado River based on pre-defined average dry, average, and wet year conditions. Dry and wet year conditions are defined by averaging the five driest and the five wettest years of the study period, respectively. Average year conditions are defined based on the averaging of all years within the study period. While perhaps adequate for municipal water development and planning purposes, the model is inadequate to estimate impacts to aquatic resources. ***The Model Yields Average Flow Values.*** The model reports flow estimates in terms of monthly and annual averages. These values are, in turn, used in the DEIS to report how much habitat will be lost and water quality impacts. While average values may work well for water supply development and planning purposes, they do not work to assess impacts to aquatic resources. Monthly averages can mask important stream flow changes that may have significant impacts on river ecosystems, generally, and fish species in particular. For example, flows throughout August may be very low, but a single, large flood event may elevate the month's average. Accordingly, while looking at the average flow values may not reveal a potential problem, the average may be masking harmful flow conditions that occur for most of the averaged period. As the National Academy of Sciences so aptly noted in a recent report, "planners operate on a monthly basis, but fish live on a daily basis". (*National Academy Science Report, 2007*). Indeed, the Academy considered Reclamation's use of monthly average flows to be a fatal flaw in its *Natural Flow of the Upper Klamath River* study. Given that fish and other aquatic organisms respond to changes in flow that occur on much shorter time scales, it is inappropriate to evaluate changes in habitat availability using monthly averages.[2] [2] The DEIS appears to attempt to deal with this problem by trying to estimate daily flows by using a mathematical process referred to as "disaggregation" to convert monthly values into daily values. This method of analysis uses gages that are, sometimes, far removed from the affected river reaches. In addition	2. The response to Comment Nos. 2 and 3 was combined since Comment No. 2 is an introduction to Comment No. 3. Also refer to response to Comment No. 6. The WGFP model is adequate to estimate impacts to aquatic resources. A combination of daily and monthly hydrologic data were used for evaluations of impacts to aquatic resources. Average monthly summaries of flows, diversions, reservoir outflow, end-of-month reservoir contents, surface elevations, and surface areas for average, dry, and wet conditions were used to support general characterizations of hydrologic changes associated with the alternatives. Daily data were developed from monthly model output by disaggregating monthly values using historical gage records. Daily data were developed for the entire study period for the USGS gages on the Colorado River below Lake Granby, below Windy Gap, at Hot Sulphur Springs, near Kremmling, and the gage on Willow Creek below Willow Creek Reservoir. Daily data were used to generate flow duration curves and daily hydrographs and to determine the frequency and magnitude of daily flow changes. Hydrologic analyses based on daily variations were used in resource assessments where the magnitude or value of the resources are especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. Daily hydrologic data were used as an input parameter for the River2D model to evaluate the effects on aquatic resources. Use of daily data for the entire hydrologic study period supported an assessment of the overall range and frequency of aquatic habitat changes. Section 3.5.2.2 of the FEIS was revised to include information related to the use of daily data for aquatic resource evaluations. Because of its relatively junior water rights, the Windy Gap Project is not in priority and is precluded from diverting water from the Colorado River during droughts and low-flow periods, with or without the alternatives assessed, to provide firming storage. During low-flow periods, the Windy Gap Project would operate the same whether there is a firming project online or not. In these low-flow conditions, downstream Colorado River flows, whether they are viewed on a monthly or on a daily basis, are the same for existing conditions, the No Action Alternative, and each of the EIS alternatives. Because there are no hydrologic impacts during low-flow and drought periods, a daily model is not needed to assess effects for these low-flow periods, and the disaggregation of monthly data to daily data is sufficient for the assessment of effects on aquatic resources for nondrought conditions. Daily flows for average, wet, and dry year types are appropriate to assess aquatic impacts. The comparisons are made between flow regimes, both hydrologic and management. The daily flows used for the analysis are based on both hydrologic year types and management alternatives. This approach has been used by other applications of IFIM, including those by the USGS and USFWS (Bovee

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4 5	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 9 of 56 ***The Model Understates Anticipated Changes.*** As discussed in detail in Grand County's comments, the DEIS's overestimates existing Windy Gap pumping. Modeled diversions for Windy Gap under existing conditions are over three times the amount of actual diversions as reflected in the Colorado State Engineer's records. This discrepancy taints most aspects of modeling including, but not limited to, the predicted percentage increases in diversions and reduction in flows due to WGFP. By overestimating existing conditions, the DEIS understates the anticipated changes in the river's hydrograph due to WGFP and their impacts on aquatic and other resources. ***The Model Overestimates Anticipated Flows.*** The Model's use of averages is likely artificially inflating predictions of flows that will be available to the fisheries and other aquatic resources in a dry, average and wet year. Because stream flow time-series tend to be positively skewed (i.e., high flows tend to be much larger than low flows) the average, mean annual runoff tends to be higher than the median annual runoff (Smakhtin 2001). By using average annual discharge values in its impacts analysis, the DEIS overestimates the amount of water flowing through the river in a typical year. Median discharge values should have been used. This problem is compounded by the fact that the data used to estimate average annual flows in wet and dry years were also included in estimates of discharge in the average year. Estimates of the average flow based on the entire 46-year record are higher than they would have been if only the 36 years that were not included in the wettest five to its reliance on data from removed gages, the use of disaggregated monthly flows to evaluate daily impacts of the various WGFP alternatives is flawed for at least two reasons. First, the use of long-term averages to represent daily flow conditions in a highly variable river like the upper Colorado is inappropriate and leads to highly inaccurate results. Figure 1 (attached) illustrates this problem. In this example, "disaggregating" the mean monthly flow of 74 cfs based on an average daily flow distribution is unlikely to capture the true extreme high (123 cfs) and extreme low (29 cfs) flows that were actually experienced on the Colorado River in August 2002. Flows within this section of the Colorado River vary widely, even when comparing average years to average years or wet years to wet years. Because the daily pattern of flows within a given month is unlikely to be the same from year to year, long-term averages are not representative of true daily flow conditions. Second, the approach fails to model the temporal sequencing of annual flow events (wet/average/dry years). For example, the DEIS states that WGFP diversions would not increase in dry years. However, dry years create deficits in reservoir storage and diversions to fill these deficits are likely to increase in average or wet years following dry years. The right approach would be to evaluate impacts of the various project alternatives in a series of average or wet years that occur in the period following a dry year. In addition, the output from the habitat analysis is summarized in numerous exceedence charts, but these charts cannot be used to evaluate seasonal impacts of the various project alternatives. For example, what are the impacts of back-to-back dry years followed by an average to wet year on habitat availability during the most critical days in August? Relatively small impacts during the most critical times of the year can have devastating implications for aquatic species that are already at risk from low stream flows and elevated water temperatures. Consequently, the hydrologic model is inadequate as a tool to predict and assess impacts on aquatic resources.	et al. 1998). Long periods of daily records do not allow the analysis of typical conditions but rather can result in a broad band of continuous habitat traces without a distinct difference between alternatives. To get a more discreet characterization, year types are used, as was the case for the WGFP. 3. See response to Comment No. 2. 4. Windy Gap diversions for the last 10 years averaged 22,158 AF/yr, which is significantly greater than the 20-year average of 11,080 AF/yr for the period from 1985 through 2005 presented in Table 3 of the Water Resources Technical Report. Windy Gap diversions were made in accordance with the project's water rights, the same water rights that would be used to effect diversions with a WGFP. Average Windy Gap pumping for the 8-year period from 2001 through 2008 since Granby Reservoir last filled was 27,450 AF/yr, and the average includes 2002 and 2004 when almost no Windy Gap water was pumped. Therefore, estimated pumping under existing conditions is much closer to recent operations than suggested in the comment. Recent diversions represent the Participants' need for additional water to meet water demands, which is supported by information presented in Chapter 1 on the Participants' water demands and needs. Modeled Windy Gap diversions under existing conditions reflect recent Windy Gap Participant demands. In summary, these recent operations show that the Participants' current water demand is greater than it was historically. The comment asserts that potential impacts of additional Windy Gap diversions under the Proposed Action are minimized or underestimated based on a comparison against existing conditions. Reclamation does not believe that to be the case. The average decrease in Colorado River flows below Windy Gap between the Proposed Action and existing conditions is 21,283 AF/yr, which is the estimated increase in net depletions to the Colorado River. This reflects the net effect of additional Windy Gap diversions from the Colorado River and the difference in spills from Granby Reservoir. A considerable portion of Windy Gap water diverted from the Colorado River is delivered back to the river via a spill under the existing conditions scenario. Windy Gap operations were simulated in this manner to present the amount of water than could be diverted with the project's current water rights to meet demands even if a portion of the water is subsequently spilled from Granby Reservoir back to the Colorado River. Table 3-9 was added to the FEIS to better illustrate the water balance associated with the Proposed Action.

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		In summary, Reclamation believes that the effects assessments based on net depletions to the Colorado River below Windy Gap, as presented in the FEIS, are appropriate. Windy Gap diversions under existing conditions reasonably reflect recent operations and diversions, which are much higher than the 20-year average from 1985 through 2005. In addition, this issue does not affect Windy Gap diversions in dry years; therefore, Windy Gap pumping, net depletions to the Colorado River, and associated impacts are appropriately estimated in dry years, which are typically more critical for aquatics, water quality, and other flow-related resources. 5. We do not believe that the model overestimates anticipated flows. The WGFP model was simulated using a monthly time-step for the study period from 1950 through 1996. Hydrologic output was generated for each month of the study period. This monthly output was summarized (monthly averages) for all 47 years to characterize hydrologic changes over the entire modeled period. Because averages can be skewed by extreme events, the monthly model output for the five driest and five wettest years were averaged to characterize hydrologic changes associated with the alternatives in an average dry year and average wet year, respectively. Use of mean values is a reasonable and often applied approach for evaluating hydrologic results, and for making relative comparisons of changes in flow; this approach was approved by Reclamation and the COE for purposes of this EIS. In addition, the resource evaluations did not rely solely on these average monthly values. A combination of daily and monthly hydrologic data were used for evaluations of impacts to aquatic resources. Average monthly summaries of flows, diversions, reservoir outflow, end-of-month reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with the alternatives. Daily data were developed from monthly model output for the entire study period for the USGS gages on the Colorado River below Lake Granby, below Windy Gap, at Hot Sulphur Springs, near Kremmling, and the gage on Willow Creek below Willow Creek Reservoir. A discussion of the use of monthly vs. daily data for flow-related resources was added to Section 3.5.2.2 of the FEIS.

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5	or driest five were used. In other words, by double counting the extreme years, the DEIS further overestimates the discharge of an average year. This may not have been a problem if the DEIS had focused on median discharge values.	
6	***The Model Yields Isolated Dry, Average and Wet Years Data.*** One of the most critical deficiencies rendering the Boyle Model incapable of producing data necessary to assess the impacts of the WGFP alternatives on aquatic resources, is the fact that the model estimates flows during each dry, average and wet year in isolation. It does not look at how often operation of the WGFP alternatives will turn what have historically been average years into dry years or wet years into average years. Nor does it look at the distribution of expected dry, average and wet years over time. Because the model does not provide the required information, the DEIS cannot and does not evaluate the most probable and potentially devastating impacts operation of the WGFP will have on the river's aquatic resources: the creation of dry year conditions, extension of low flow conditions during average and wet years, and prolongation of drought (back-to-back dry year) conditions across the years. As further discussed in what follows, failure to evaluate this critical information renders the aquatic resources impacts analysis fatally flawed.	6. The model does not estimate flows during average, wet, and dry years in isolation. The model simulates flows using a monthly time-step for the entire 47-year study period from 1950 through 1996; therefore, model output reflects the carry-over or recovery effects of additional Windy Gap diversions in wet years following dry years. The wet and dry year averages are averages of five individual years within the study period and the flows in those years reflect the effects of operations in preceding years (i.e., reservoir releases and spills). The current model study period from 1950 through 1996 includes several series of dry years followed by wet years, which illustrate the effects of increased diversions to refill Windy Gap firming storage. For example, the existing study period includes the mid-1950's drought followed by 1957 (a wet year), 1963 and 1964 (dry years) followed by 1965 (wet year), 1977 (dry year) followed by 1978 (wet year), and 1981 (dry year) followed by several wet years in the mid-1980s. These sequences of years allow for an evaluation of impacts associated with diverting additional water in wet years following dry years. Use of data for the entire study period provided an indication of the overall range and frequency of aquatic habitat changes.
7	**2. The DEIS fails to evaluate the most probable and potentially harmful hydrological changes operation of WGFP and other reasonably foreseeable projects would cause.** The DEIS aquatics impacts analysis focuses on average and wet year conditions as those conditions are defined in the Boyle Model. Dry year impacts are glossed over because Windy Gap is not expected to divert during dry year conditions. *See e.g., DEIS at 3-23, 3-27, 3-92 and 3-3-137.* Dry-year conditions can have significant impacts on aquatic resources, particularly when they occur in consecutive years. As discussed in what follows, operation of the project alternatives is likely to increase the incidence of dry-year conditions and prolong drought conditions in the river. The DEIS does not ask whether or how often these dry-year and extended drought conditions will occur as a result of operation of the WGFP alternatives, or what impacts such conditions will have on aquatic resources. Rather, the DEIS looks at historical average and wet year depletions in general and anticipates water and aquatic resource impacts in isolation. In so doing, the DEIS fails to evaluate some of the most probably and potentially damaging effects of the project.	The WGFP would not increase the incidence of dry-year conditions or prolong drought conditions. Windy Gap diversions during below-average years or in the year following a drought typically do not change with additional firming storage online. The existing Windy Gap Project is able to divert water in below-average years and in wet years following dry years because there is typically storage space available in Granby Reservoir. In years when there is sufficient storage space in Granby Reservoir, there would be no difference in the amount of Windy Gap water diverted. In those types of years, the same amount of Windy Gap water would be diverted under the Proposed Action as existing conditions; however, the Participants' Windy Gap water would be stored in Chimney Hollow Reservoir as opposed to Granby Reservoir. For example, there is no difference in Windy Gap diversions between the Proposed Action and existing conditions in 1965 (wet year) following two dry years (1963 and 1964), in 1978 (wet year) following 1977 (dry year), and in 1982 (above-average year) following 1981 (dry year). Although there would be additional Windy Gap water diverted under the Proposed Action in 1957, which is a wet year following a drought period, the additional diversions would not cause Colorado River streamflows to drop to dry year conditions. For example, under the Proposed Action, an additional 32,420 AF would be diverted in July 1957 compared to existing conditions; however, flows below Windy Gap would still be considerably higher than 90 cfs. The most significant additional diversions under the Proposed Action occur in wet years following wet years, or wet years following average years, which would not increase the incidence of dry year conditions or prolong drought conditions.
8	***Low flows and dry year conditions are particularly harmful to aquatic life.*** Dry year conditions can create particularly harmful bottle-necks for aquatic life; especially in late summer and early fall as stream flows decline to critical levels. Low stream flows cause reductions in available aquatic habitat as more of the stream channel becomes desiccated and the remaining aquatic habitat becomes marginal as velocities and depths are reduced. In addition, stream temperatures fluctuate more rapidly at low flows thereby	

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	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 11 of 56	The use of daily data, year types, and habitat exceedance follow the guidelines for IFIM and are appropriate for analysis of aquatic resource impacts. 7. See response to Comment No. 6.
8	increasing the probability of exceeding both daily maximum and weekly average temperature standards. The Colorado River below Windy Gap already experiences low stream flows and high water temperatures during most dry and some average water years. WGFP could significantly exacerbate these existing problems by prolonging low flow periods in average years, increasing the frequency of dry year conditions and effectively creating prolonged drought conditions.	8. The Subdistrict developed a Fish and Wildlife Mitigation Plan (FWMP) in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). The Colorado Wildlife Commission adopted the FWMP on June 9, 2011 and the Colorado Water Conservation Board (CWCB) adopted it on July 13, 2011. The FWMP includes measures to address temperature increases and includes an increase in periodic flushing flows to 600 cfs. The FWMP is a component of the mitigation and environmental commitments described in the FEIS (Section 3.25). Aquatic mitigation measures are also described in Section 3.8.4 and 3.9.4 of the FEIS.
9	***The DEIS fails to evaluate the frequency with which WGFP would increase the incidence of dry year conditions and resulting impacts to aquatic resources.*** While it is perhaps accurate to say that Windy Gap would not likely be pumping in dry years, as defined in the Boyle Model, the project would be pumping during average years. Diversions during average years, particularly in those years at the lower end of the Boyle Model average year range or following a dry year, could cause Colorado River stream flows to dip into a dry year condition, resulting in a reduction of habitat which would have been available in the absence of the project. The DEIS does not evaluate these potential impacts.	9. See response to Comment No. 6.
10	***The DEIS fails to evaluate the frequency with which WGFP would prolong periods of drought and resulting impacts on aquatic resources.*** The likelihood that operation of the WGFP alternatives will change the river hydrograph by increasing the incidence of low flow, dry year conditions is particularly high following a very dry year or series of moderately dry years. Because Windy Gap cannot divert during dry years, the need to maximize diversions in the year immediately following a dry year would be high. Other reservoirs in the area would also be maximizing their diversions at the time. From the stream's standpoint, operation of WGFP and other projects under these conditions could significantly prolong drought conditions. The drought of 2002 provides a telling example of these circumstances. WGFP could not pump during the 2002 drought. However, in 2003, the year after the drought, Windy Gap recorded its largest diversions since the project was built. *Water Resources Technical Report, Table 3 at p. 22.* The DEIS does not ask how often these conditions will re-occur as a result of WGFP, nor does it evaluate what impacts the conditions will have on the river's aquatic resources. The DEIS ignores these conditions altogether. Telling is the DEIS's decision to exclude the drought of 2002 and subsequent years from its study period and the explanation given for the exclusion. The explanation given is that the data is not relevant because WGFP would not be diverting during 2002 conditions. This conclusion entirely misses the point. Windy Gap pumping did not impact the river in 2002, it did so in 2003 and subsequent years. The impacts in 2003 and subsequent years was greater both because of the 2002 reservoir draw-downs and because the fish had already been stressed by the drought. Had the Proposed WGFP, with its additional 93,000 acre-foot reservoir, been on line, the impacts in years following the 2002 drought would have increased dramatically. By failing to include post-2002 conditions in the analysis, the DEIS not	10. See response to Comment No. 6. The amount of Windy Gap water diverted in 2003, which was an above-average year following 2002, would not change with additional Windy Gap firming storage online. There was more than sufficient storage space in Granby Reservoir to accommodate the 64,200 AF of Windy Gap water pumped that year. The WGFP would not cause *additional* depletions to the Colorado River beyond what occurred under the existing project that year. The only difference with the WGFP would be that Windy Gap water may be stored in Chimney Hollow Reservoir as opposed to Granby Reservoir. The maximum storage content in Granby Reservoir in 2003 was just over 400,000 AF. As discussed in response to Comment No. 6, the existing Windy Gap Project is able to divert water during years at the lower end of the average-year range because there is typically storage space available in Granby Reservoir. In years when there is sufficient storage space in Granby Reservoir, there would be no difference in the amount of Windy Gap water diverted. The frequency of impacts to aquatic resources are based on the daily flows for average, wet, and dry hydrologic conditions. The frequency of dry conditions is not changed with the Project and, therefore, the impact to aquatic resources in dry years is the same with and without WGFP. The change to aquatic resources during average and wet hydrologic conditions are displayed in Section 3.9.2.3 of the FEIS.

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10	only ignores one of the most severe droughts on record, it completely disregards the role of WGFP and other reasonably foreseeable projects in extending the duration of drought conditions and the impacts this would have on the Colorado River's aquatic resources.	
11	***The DEIS recognizes the impacts of multiple years of exposure on trout populations but ignores impacts due to increased drought conditions.*** The DEIS's failure to evaluate the potential for extended drought conditions due to the operation of the project is particularly troublesome given the agency consultants' recognition that multiple-year exposures can impact the fish population. The Aquatics Resources Technical Report notes: "Trout in the study area have a maximum age of approximately 6 or 7 years. Impacts that happen to trout often during their life span (e.g. 4 out of 10 years) may affect populations." *Aquatic Resources Technical Report at p. 46.* Clearly extending droughts across multiple years is analogous to increasing the frequency of droughts. In fact, it may be worse as trout that are impacted in one year will not have a chance to recover in subsequent years. By failing to evaluate WGFP's potential to increase drought conditions, the DEIS severely underestimates its impacts on aquatic resources.	11. See response to Comment Nos. 6 and 10.
12	**3. Review of the Moffat Tunnel Extension Project and WGFP in a single DEIS would have avoided many of these problems.** Several of the problems identified thus far would have been avoided by the use of a daily time-step model. There are at least two projects currently being evaluated by the Corps which use such models: Moffat Tunnel Extension and Halligan-Seaman. The Moffat Project will deplete the same critical reach of the Colorado River impacted by the proposed WGFP. CEQ regulations provide that a single EIS should be prepared for two or more projects that involve "cumulative" or "similar" actions. *40 CFR § 1508.25(a)(2) and (3)*; *Klamath-Siskiyou v. BLM*, 387 F.3d 989 (9th Cir. 2004). Cumulative actions are actions that "when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." *40 C.F.R. § 1508.25(a)(2).* Similar actions are actions which "when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." *40 C.F.R. § 1508.25(a)(2).* Sometimes these actions must be considered together to prevent an agency from "dividing a project into multiple 'actions,' each of which individually has an insignificant environmental impact, but which collectively have a substantial impact." *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir.1985). The anticipated Moffat Tunnel Extension Project and WGFP are both "common" and "similar" actions which should be evaluated in a single EIS, particularly, in light of the fact that they affect the same aquatic resources in the same geographic region.	12. The WGFP and Denver Water's Moffat Project do not need to be evaluated in a single EIS. A significant effort was made by the Corps and Reclamation to coordinate the modeling efforts for the WGFP and Moffat Project EISs. Prior to initiating the modeling of EIS alternatives and cumulative effects for the Moffat Project and WGFP, the lead federal agencies for the EISs compared the hydrologic modeling approaches and tools. This process included reviews of Windy Gap diversions, Granby Reservoir, and Adams Tunnel flows simulated in PACSM, and Moffat Project and Roberts Tunnel flows simulated in the WGFP models. This process also included a detailed comparison of flows in the vicinity of the Projects' diversions, and is presented in the technical memorandum, *Comparison of Fraser River Flows Simulated in the WGFP CDSS Model with those Simulated in PACSM* (Boyle *2005*). Where possible, model data were compared on the two projects to assure that the WGFP and Moffat Project were reflected in a similar manner in each model. The cumulative effects analysis for the WGFP considered future diversions under the Moffat Project. Hydrologic data was shared so that the model simulations of the WGFP and Moffat Project were consistent and in appropriate detail for each EIS. The cumulative effects analyses for the WGFP and Moffat Project also considered the same reasonably foreseeable water-based actions.

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	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 13 of 56	In summary, the WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project. Hydrologic impacts of the Moffat Project are actually overstated in the WGFP analysis because Denver's Blue River demands are 30,000 AF less than used in the hydrologic modeling for the WGFP because Denver changed their estimates after the hydrologic model for the WGFP was completed. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impact of the WGFP. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.
12	Scoping comments from the public and not one but two letters from the U.S. Environmental Protection Agency strongly recommended review of both projects under a single EIS. *See letters from Larry Svoboda, U.S. EPA to Will Tully, Bureau of Reclamation, dated November 4, 2003 and January 6, 2006 (copy to Chandler Peters, U.S. Army Corps of Engineer).* Had the agencies followed the urged course of action, the daily time-step PACSM model could have been used to evaluate the impacts of both projects. The agencies' failure to do so results in a fatally flawed DEIS.	
13	**C. The DEIS fails to take a "hard look" at the impacts of habitat availability reduction on the Colorado River's aquatic resources.** As described in Part B, above, the DEIS underestimates expected hydrological changes and altogether fails to evaluate the most likely and critical hydrological changes caused by operation of WGFP and other foreseeable projects: an increase in the extent and frequency of low flow periods, dry year, and drought conditions. This failure translates into fatal flaws in the DEIS's habitat availability analysis. Simply put, evaluating available habitat losses or gains is not possible absent an adequate assessment of current conditions and expected flow changes, and an understanding of the extent and frequency of expected low flow, dry year conditions created by the project. The DEIS's habitat availability analysis is deficient in other ways.	13. The WGFP would not increase the incidence of dry and drought year hydrologic conditions. See response to Comments Nos. 6 and 10.
14	***The analysis fails to evaluate the seasonality of habitat loss.*** Neither the proffered 380 graphs representing expected habitat availability changes, nor any other information presented in the DEIS can be used to answer the critical question: will fish habitat be available during times when fish need it? In some instances, large amounts of habitat may be available during a time of year when it is not being used by fish. Conversely, there may be other times of the year when habitat is critical but not available, thereby creating a bottleneck to fish populations. A small loss in habitat during these critical times can be immensely more significant than larger losses at other times. The DEIS provides no information from which the project's seasonal effects on fish habitat can be evaluated. This is particularly troubling because, while admitting that the most severe percentage increases in diversions from operation of WGFP would occur in July and August, when Colorado River low flows are known to be a problem, the DEIS provides no analysis or quantification of habitat reduction or impacts during these shoulder, low flow periods. Simply stating that the largest reductions in habitat are expected to occur during high flows when habitat is plentiful and, therefore, less harmful, does not amount to taking a "hard look" at the aquatic habitat availability impacts of WGFP.	14. The habitat exceedance analysis follows the guidelines for IFIM (Bovee 1982; Bovee et al. 1998). Additional tables were developed to show the seasonal changes for each year type and are included in Section 3.9.2.3 of the FEIS.
15	***The analysis reaches a number of unexplained, unsupported, and arbitrary conclusions.*** The DEIS concludes that "[t]he predicted maximum periodic decreases in fish habitat are unlikely to substantially impact fish populations at most locations." *DEIS*	15. A threshold level of 15% change was set as the point above which expected changes to habitat could be observed in the fish populations. The use of the threshold takes into account the error inherent in modeling. Several sources of error can affect the modeling used in IFIM, including field measurement and model errors. Other investigators in Oregon and Washington also have used this threshold level (Instream Flow Council 2008 Short Course - What About Those High Flows have used this threshold level? Environmental Flow Requirements for High Flows on Streams and Rivers, Moderator: Alan Wald, Washington Department of Fish & Wildlife, October 6, 2008). The rationale for selecting a

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15	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 14 of 56 *at p. 3-140.* The DEIS does not provide the basis for this conclusion, nor does it provide a criteria defining what constitutes "substantial impact" to fish populations. In fact, the conclusion appears to be directly contrary to information indicating that a large portion of the studied river reach will experience 24 to 30% decreases in fish habitat in 4 out of 10 years. It would be very hard to believe that such large habitat decreases, even in wet and average years, would not have a significant impact on trout populations. The DEIS also concludes that "[t]he more frequent habitat reductions above the Williams Fork confluence could result in a *slight* decrease in rainbow trout population." *Id. (emphasis added).* The DEIS fails to quantify such decrease, explain the basis for such conclusion, or define what is meant by "slight."[3] Finally, the DEIS concludes that "[r]eductions in brown trout habitat and the frequency of those changes are unlikely to impact current populations." *Id.* No rationale or explanation for the conclusion is provided. Does this mean that no habitat reduction is expected? Clearly, this is not the case. Does it mean that habitat will be reduced but such reductions will not affect populations? If so, how was this conclusion reached? What criteria were used to decide at which point habitat reduction affects populations and at what point it does not? Were expected flow reductions in late July and August evaluated? Neither the DEIS nor the attached reports provide information to support such conclusions.	threshold level is based on the error associated with field measurements and the error within the habitat models. In addition, the time of year also was factored into the analysis. As pointed out by earlier comments, seasonal habitat availability is important to fish species. The additional tables show the seasonal changes for each species.
16	***The DEIS improperly concludes that large flows are harmful to fish.*** Because the DEIS's estimates of changes in weighted usable area (WUA) are limited to the stream channel, the report does not account for the large increases in habitat that are produced when large flows overtop the banks and inundate the floodplain. By creating new habitat, large flows provide fish with refugia during peak discharge that allows them to survive periods of high flows. Because the report does not evaluate these habitats, it concludes that habitat declines as flows increase beyond a local maximum. For example at Breeze, brown and rainbow trout adult habitat is maximized at approximately 500 cfs. However, it is likely that habitat increases again once flows over-top the banks. Because this increase in habitat was not evaluated, the DEIS incorrectly concludes that very large flows are universally bad for fish. *DEIS at p. 3-140.* The DEIS's conclusion that large flows are harmful to fish, and implication that WGFP's flow reduction may actually improve fish habitat, is particularly troublesome because over-the bank, habitat-producing flows were historically available to the river but were dramatically reduced by operation of transmountain diversions, including C-BT. Indeed, native peak flows were reduced from an average of around 3500 cfs to less than 1000 cfs by 1950. *Water Resources Technical Report, Figure 3 at p.17.* Peak flows were further reduced when Windy Gap came on line. Yet, the DEIS arbitrarily begins the study period in 1950, in essence ignoring the impacts this huge reduction in peak flows [3] The comment is also meaningless, as rainbow trout populations were decimated by operation of the original Windy Gap project. It is assumed that this statement refers to the impacts of habitat reduction on potentially restored rainbow trout populations.	16. The EIS explains the function of high flows and the importance of high flows on creating and maintaining fish habitat. The primary analysis tool used during the runoff period was evaluation of peak flows and sediment transport. The habitat analysis included calculation of usable area during all summer months. The habitat use criteria available for this study did not include data collected during runoff. Data for habitat use during runoff are usually not collected due to the inability to safely collect the position, depth, velocity, and substrate information. The habitat is approximated with the data collected during other summer months. In this instance, the habitat suitability data were collected by CDPW and USGS personnel in several Colorado rivers during summer. The assertion that habitat would increase as flows increase is arbitrary and not based on fact. The habitat models included topography points that were past bankfull. The concept that peak flows routinely inundate large floodplains is an incorrect model for moderate to high gradient Colorado alpine streams and rivers. The stream gradient and channel form are not like low gradient meandering channels where the water width becomes very broad as flows exceed bankfull. The wetted area in the Colorado River, as in other mountain streams, is confined by either gradually or steeply rising banks. The affected environment for all resource evaluations is based on existing conditions at the time the reports were written. Existing conditions reflect past actions, such as the Windy Gap Project, which was completed in 1985 and other actions since that time. Existing conditions, as well as the No Action Alternative, provide the baseline for comparison of the incremental impacts of the Proposed Action and other alternatives.

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16	has had on the river and its aquatic resources. The DEIS's conclusion is particularly problematic because it uses the void in analysis created by the agencies' arbitrary decision to disregard the impacts of C-BT and other projects on current conditions to argue that WGFP may cause an improvement in fish habitat.	
17	**D. The DEIS fails to take a hard look at the impacts of reduced peak flows on aquatic resources.** Peak flows are critical for maintaining healthy aquatic ecosystems. Floods of varying magnitude, duration and frequency perform different ecosystem functions such as building floodplains, forming and maintaining the active channel and scouring sediments from gravels to enhance trout spawning and macroinvertebrate habitat. The DEIS acknowledges that "[p]eak flows are an important component for creating and maintaining stream habitat for aquatic life," *DEIS at p. 3-140.* Yet, it fails to adequately evaluate how these flows and stream processes will change as a result of operation of WGFP and other reasonably foreseeable projects, or how these changes will impact the river's resources.	17. See response to Comment No. 16.
18	***The DEIS does not adequately account for the benefits of large flows.*** As described in Part C, above, the report does not account for or quantify the large increases in habitat that are produced when large flows overtop the banks and inundate the floodplain.	18. See response to Comment No. 16.
19	***The DEIS improperly defines channel maintaining flows on the basis of current hydrology.*** The DEIS defines channel maintaining flows on the basis of the current hydrology. This is inappropriate as the channel was created by flows significantly greater than those currently observed. Moreover, large rivers are formed by rare events. The DEIS improperly assumes that the Colorado River is a "morphologically stable stream" that is not subject to these changes, based on the fact that aerial photos taken between 1972 and 1974 and again in the 1990's and in 2005 show few changes in its morphology. *DEIS at 3-60.* Yet, failure to evaluate historical information about river changes does not justify a conclusion that the river is morphologically stable. It is likely that flow reductions have altered the fluvial dynamics so significantly that fluvial processes like channel migration have been severely curtailed. However, from the river's perspective, even a 60-year period of stability is not an indication that the river is no longer geomorphically active. An analysis of the flows that produced the river and which are needed to maintain both channel form and habitat diversity is needed.	19. The task of the EIS is to analyze the effects of the project alternatives to the No Action alternative and existing conditions, not to conditions that existed prior to human impacts on the flows of the Upper Colorado River. See also response to Comment No. 20. It is widely acknowledged that flows near bankfull discharge (recurrence of 1.5 to 2 years) largely control the form of alluvial channels. The statement that the river is morphologically stable is based on several different analyses of hydrologic conditions as described in the FEIS, not simply on a review of aerial photos.
20	***The DEIS incorrectly assumes that currently measured 2-year peak flows are channel-maintaining flows.*** The DEIS incorrectly assumes that the 1,240 cfs flow which currently occurs at Hot Sulphur Springs every 2 years is a channel maintaining flow. *DEIS at p. 3-62.* Whether or not a 1,240 cfs is actually a bank-full discharge is uncertain from the data presented. In any event, current conditions did not create the channel so it	20. See response to Comment No. 21. The 1,240 cfs value for the 2-year peak flow was derived using the historical flow data at Hot Sulphur Springs for the 47-year study period (1950–1996) and a standard statistical method to derive the recurrence interval of historical flows. The USGS has determined that the current bankfull flow volume at the Windy Gap gage, based on monthly measurements, is 765 cfs, plus or minus 10 percent (Craig 2010). This is similar to the 1.5-year flow (640 cfs) at Hot Sulphur Springs. This information was added to the FEIS.

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	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 16 of 56	21. Reclamation does not believe that current Windy Gap diversions are overestimated. See response to Comment No. 4. The flow duration curve for Hot Sulphur Springs does show a 25% drop in flows of 1,240 cfs (the 2-year flow). However, the flow duration curves show that for flows exceeding 1,240 cfs, the decrease in frequency of occurrence would be less and become nearly the same as existing conditions for the highest flows. According to the channel maintenance flows analysis, the range of channel maintenance flows (80% of the 1.5-year flow to the 25-year flow) would occur about 3 percent of the time under the proposed action compared to about 4 percent of the time under existing conditions. This was clarified in the FEIS. A recent evaluation was completed of available streamflow vs. shear stress data at the Breeze station, a riffle site located downstream of the confluence of the Williams Fork. This analysis provides a generalized relationship between sediment mobilization and streamflows in the Colorado River. The results showed that fine sediments (sand, 2 mm or finer) would be mobilized at this riffle site at flows of less than 50 cfs. Fine gravel (8 mm) would require a flow of 200 cfs, medium gravel (16 mm) would require a flow of about 400 cfs, and coarse gravel (32 mm) would require a flow of about 850 cfs to be mobilized. In Ward's 1981 study, his results at four locations located from below Windy Gap to above the Blue River showed that fine sediments (sand, 2 mm or finer) would be mobilized at discharges ranging from 140 to 240 cfs (depending on location, with the highest flow at the lowest site above the Blue River). The flow duration curve for Hot Sulphur Springs shows small changes in flows of 150 cfs or less and almost no changes at Kremmling for flows of about 1,000 cfs or less. Additional discussion was added in Section 3.7.2.3 of the FEIS.
20	is highly unlikely that today's 2-year peak discharge will maintain a channel formed under a significantly higher channel-forming flow.	
21	***The DEIS arbitrarily concludes that WGFP will result in "little change in peak flow magnitude and recurrence intervals."*** First, the DEIS's conclusion is the result of the agencies' arbitrary decision to ignore pre-1950 conditions as part of the analysis.[4] Second, the conclusion relies on an analysis that, as described in Grand County's comment letter, significantly overestimates current Windy Gap diversions and, therefore, underestimates hydrological changes due to WGFP. Third, even when compared to modeled, existing conditions, a decrease in the frequency of occurrence from 4 to 3% is not a 1% decrease in the frequency of peak flows, as the DEIS indicates. It is a 25% decrease in frequency of peak flows. This is by no means a "little" or "insignificant" change in expected peak flows.	
22	***The DEIS fails to evaluate impacts on other stream functions.*** Not only does the DEIS fail to properly characterize the anticipated reduction in large, channel forming flows due to operation of WGFP, the DEIS entirely fails to evaluate the impacts of reducing the amount and frequency of smaller but more frequent high flows that serve other stream functions, such as cleansing sediments from spawning beds.	
23	**E. The DEIS fails to take a hard look at the water quality impacts of WGFP and at how those impacts will affect the aquatic resources of the Colorado River.** Elevated stream temperatures are a significant concern in the upper Colorado River. As the DEIS indicates, stream temperature at various locations periodically exceeds levels deemed to be safe for the fisheries.[5] As discussed in these comments, operation of WGFP has the potential to significantly change the Colorado River's current hydrograph by prolonging periods of low flows in average and wet years, by creating more frequent dry-year river conditions, and by extending drought conditions across the years. These changes could not only reduce fish habitat, they could significantly aggravate existing stream temperature conditions, increasing the length of time and frequency with which fisheries and other aquatic resources are exposed to the stress of high stream temperatures. Accordingly, a thorough evaluation of the impacts of the project on stream temperatures and of the impacts such increases will have on the river's aquatic resources is critical. Unfortunately the DEIS fails to do so.	22. The EIS analyzed the change in frequency of required 450 cfs flushing flows at Hot Sulphur Springs, which indicates flows of this magnitude and higher would still commonly occur under WGFP alternatives. A recent evaluation on sediment transport was completed of streamflow vs. shear stress data at the Breeze station, a riffle site located downstream of the confluence of the Williams Fork. Results of this analysis, as described in response to Comment No. 21, indicate flows would remain sufficient for sediment transport. The FEIS includes mitigation measures to increase flushing flows. Flushing flows from the original Windy Gap Project (1980 MOU) would be modified to increase from 450 cfs to 600 cfs. In any year when flows below Windy Gap have not exceeded 600 cfs for at least 50 consecutive hours in the previous two years, and total Subdistrict water supplies in Chimney Hollow and Granby Reservoirs exceed 60,000 AF on April 1, the Subdistrict would cease all Windy Gap pumping for at least 50 consecutive hours to enhance peak flows below Windy Gap. See the FWMP (FEIS Appendix E).

[4] This is part and parcel of the DEIS's failure to evaluate the impacts C-BT and other pre-1950 projects have had on the river as part of its cumulative impacts analysis, as further discussed in Part G, below. The DEIS's failure to look at available, pre-1950 hydrological information also indicates a failure to use the proper baseline for the analysis.

[5] Current operation of the C-BT Project is likely to significantly contribute to the problem.

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23	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 17 of 56 The DEIS relies on the QUAL2K Model to predict how anticipated flow reductions in the Colorado River will change stream temperatures in the river at various locations. *DEIS at 3-92*. The QUAL2K Model is a "steady state" model that simulates future conditions based on data inputs for a single instant in time – in this case, a single day: July 25. The model was run under two different flow scenarios. One scenario uses modeled stream flows for July 25 in an average year. The other scenario assumes July 25 stream flows that approximate the 90 cfs minimum flows beyond which WGFP would not be able to divert. *Stream Water Quality Technical Report at 51*. Model results are reported in terms of percentage of stream temperature change expected on that single day. *DEIS at p. 3-141*. These stream temperature change predictions are compared with stream temperatures standards adopted by the State of Colorado, and conclusions with respect to potential impacts to aquatic resources drawn. The DEIS's analysis is deficient in three critical ways. First, it relies on a steady state, single-day model that is inherently incapable of accurately predicting stream temperature increases either on a single day or over time. Second, the DEIS compares modeled increases against the wrong State stream temperature standards deemed to be protective of cold water biota. Third, even though the model establishes that operation of WGFP will cause the State's chronic stream temperature standards to be exceeded, the DEIS arbitrarily concludes that aquatic resources will not be impacted. These deficiencies, described in detail in what follows, are fundamental deficiencies that render the DEIS incapable to inform the agencies' decision, much less enable them to meet the "hard look" requirements of NEPA.	The peak flow characteristics would reach the level that would maintain the stream geomorphology. For evaluating changes to stream morphology, analyzing changes in streamflows is a standard method of analysis. The IFIM model of aquatic habitat accounts for depth in determining available fish habitat. In addition, the discussion in the response to Comment No. 21 shows that sediment transport in the river would be maintained. Table 3-3215 in the FEIS shows that channel maintenance flows (510 to 6,520 cfs) would continue to occur under the alternatives. 23. There is no change to drought frequency with the Proposed Action. Additional stream temperature and climatic data became available following the initial analysis of temperature impacts for the DEIS. Additional stream temperature and climatic data became available following the initial analysis of temperature impacts for the DEIS. Subsequently, a dynamic temperature model (Hydros 2011) was developed with input and review by EPA to simulate weekly average temperatures and daily maximums for the Colorado River between Windy Gap Reservoir and the Williams Fork for existing conditions and the alternatives. The model simulations were conducted for the months of June through September using the very warm observed climatic data from 2007. Results of this analysis indicated that increased exceedance of the chronic MWAT and acute DM standards would occur in July and August of some years. Specifically, temperature standard exceedances were simulated to increase from existing conditions in 4 out of the 15 years evaluated with additional WGFP diversions. For these years, the dynamic modeling indicated that the MWAT standard would be exceeded for several consecutive days or weeks and the DM would be exceeded up to several additional days, when simulated with the very warm 2007 meteorology. Mitigation for temperature impacts is included in the Fish and Wildlife Mitigation Plan developed by the Subdistrict as described in response to Comment No. 8. See Section 3.8.4.2 for further discussion of temperature mitigation. Temperature mitigation measures would reduce the potential for exceedance of the temperature standards and impacts to fish associated with operation of the WGFP. Temperature mitigation measures would reduce the potential for impacts to fish associated with the WGFP. Other factors including low precipitation, diversions by others, and WWTP discharges also contribute to elevated stream temperatures, whether the WGFP is pumping or not.
24	**1. The DEIS fails to take a hard look at how stream temperatures will change as a result of WGFP.** The QUAL2K Model looks at temperature changes as a result of operation of WGFP and other projects on a single day. The model does not look at how diversions affects flows and stream temperatures in previous days or how it will affect stream temperature in subsequent days. This limitation has a number of serious consequences. First, it precludes an accurate assessment of stream temperatures on the single modeled day. Second, it precludes an assessment of stream temperature changes over time and, consequently, an evaluation of chronic stream temperature impacts. Third, it precludes an assessment of the cumulative effects operation of WGFP will have, when combined with continued diversions by other projects, including C-BT, Moffat, and the reasonably foreseeable Moffat Expansion.	24. See response to Comment No. 23.
25	***The DEIS fails to accurately predict stream temperature increases due to WGFP operation on the single modeled day.*** Stream temperatures fluctuate more rapidly when flows are low. Therefore, when low flow periods are extended, the probability that both daily maximum temperatures and weekly average temperatures will be exceeded increases. Diversions by WGFP and future projects would increase periods	25. See response to Comment No. 23.

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25	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 18 of 56 in which stream flows are reduced not only on the single, modeled day, but also in previous days. If these flow reductions have caused stream temperatures to gradually increase, a single day's diversion can increase temperatures to a point where they are harmful to aquatic life. Yet, because the model looks at neither predicted flows nor predicted temperature conditions as a result of operation of WGFP and future projects before the single modeled day, it fails to assess the projects' impacts on stream temperature and, therefore, on aquatic resources. The DEIS admits this limitation of the model when it states that State standards could be exceeded "if the existing conditions temperatures during that week were already near or above the standard." *DEIS at 3-96.* However, the DEIS fails to evaluate the extent and frequency of these conditions. Absent this information, it is impossible to draw conclusions as to the potential impacts of the WGFP and other projects on the river's aquatic resources.	
26	***The DEIS fails to evaluate how stream temperatures will increase over a series of days.*** The DEIS predicts that stream temperatures will increase by up to 0.6ºC on an average July 25 day under the Proposed WGFP. *DEIS at p. 3-96.* Based on this prediction, the DEIS concludes that operation of WGFP will not cause exceedences of the State standards under the average July 25 scenario. *Id.* However, the DEIS does not explain how this information translates into stream temperature changes in subsequent days. If the Proposed Action causes stream temperatures to increase by 0.6ºC on July 25, does that mean that temperatures will also be increased by 0.6ºC on July 26, resulting in a total 1.2 ºC increase? Will this exceed acute or chronic tolerance thresholds? What will the increase be in July 27? Will that increase exceed those thresholds? And so on. Because the DEIS relies on a steady state, single-day model, it cannot answer these critical questions.	26. See response to Comment No. 23.
27	***The DEIS fails to evaluate the potential for stream temperature conditions that have chronic impacts on aquatic resources.*** Because the model cannot predict stream temperature changes over a period of time, the DEIS does not evaluate the extent to which operation of WGFP and other projects will cause increases in stream temperature that create chronic conditions harmful to the river's aquatic resources. Chronic conditions include effects which, while not immediately lethal, have the potential to devastate fisheries - such as reduced growth, reduced reproduction, and reduced survivorship. As further described below, the State has adopted standards that reflect temperature levels trout fisheries can tolerate, both on a daily basis (acute) and over a period of time (chronic). Chronic standards are expressed as maximum weekly average tolerance levels (MWAT). To assess whether operation of WGFP and other projects will cause increases in stream temperature that will exceed chronic tolerance levels, the agencies must be able to evaluate how stream temperatures will change on a weekly basis. A steady state, single-day model which can only make predictions based on conditions for the single modeled day, cannot do this.	27. See response to Comment No. 23.

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27	The DEIS draws conclusions with respect to the project's predicted impacts on these chronic exposure levels, *DEIS at 3-96*. However, neither the DEIS nor the Stream Water Quality Technical Report on which it relies explain how these conclusions were derived or how single-day model predictions were translated into weekly values. In the end, the DEIS simply admits that chronic levels could be exceeded if existing stream temperature conditions during the week are already near or above the standard. *See DEIS at p. 3-96; Technical Report at 62*. Neither the DEIS nor the Technical report evaluate the expected frequency of this condition. As a result, the DEIS fails to assess whether and how often operation of the WGFP and other projects will cause stream temperatures to exceed the State chronic temperature standards or otherwise create chronic conditions that harmful to the river's aquatic life.	
28	***The DEIS fails to evaluate the impacts of cumulative stream temperature increases caused by operation of WGFP, combined with projects that will continue to operate when WGFP ceases to pump.*** Even more alarming is the DEIS's failure to evaluate the combined effects on stream temperature (and consequent effects on aquatic resources), caused by the combination of WGFP pumping and continued diversions by other project after WGFP operation ceases. Projects such as C-BT, Moffat Tunnel and the reasonably foreseeable Moffat Tunnel Expansion are not subject to the same limitations that restrict WGFP pumping (i.e., junior priority of water rights and minimum 90 cfs flows). Accordingly, these projects can continue to reduce stream flows well after WGFP ceases diversions. If operation of WGFP causes stream temperatures to increase, such increases will be further aggravated by continued diversions by these projects. Yet, the DEIS completely fails to evaluate such combined effects.	28. Continued operation of the C-BT and Moffat Projects is not the subject to this EIS. Effects of these projects is considered part of the existing environment and considered in the cumulative effects analysis and discussion. Effects of the Moffat expansion is considered and discussed as part of the cumulative effects analysis. The WGFP cannot divert if flows in the Colorado River drop to 90 cfs downstream of the Windy Gap diversion dam. Actions by others or naturally low precipitation that results in streamflows less than 90 cfs or elevated temperatures is beyond the control of the WGFP. The cumulative effects evaluation in the DEIS included use of the dynamic temperature model to evaluate the effects on stream temperature with reasonably foreseeable actions in place. WGFP diversions would be less under cumulative effects, but diversions by others would increase. Results were similar to direct effects; however, the *Colorado Water Users' Commitment to Provide 10,825 acre-feet to the 15-Mile Reach of the Upper Colorado River* includes releases of 5,412 AF from Granby Reservoir in the late summer and fall. Implementation of the 10825 Project would benefit aquatic habitat and reduce stream temperatures during a typically low-flow period. Temperature mitigation for WGFP as outlined in the FWMP (FEIS Appendix E) also would reduce direct effects and overall cumulative impacts.
29	**2. The DEIS fails to evaluate the most harmful stream temperature changes that would occur as a result of operation of WGFP and other projects.** The DEIS indicates that the two modeled runs (i.e., the average year July 25 run and the 90cfs July 25 run) were selected to capture a "worst case" scenario. *DEIS at p. 3-141, n. 2*. Presumably, evaluation of these worst case scenarios obviates the need to assess impacts that may occur under other scenarios. The DEIS's assumption that the modeled scenarios are worst case scenarios is unsupported. The DEIS fails to look at the truly harmful effects of the project.	29. A dynamic temperature model was used for evaluating temperature in the FEIS (Section 3.8.2.4). The QUAL2K assessment for temperature was removed from the FEIS. See response to Comment No. 23.
30	***The assertion that an average July 25 represents a worst case scenario is unfounded***. From a hydrological and climate perspective, WGFP diversions in August would clearly present a worse scenario. The DEIS indicates that, under the Proposed Action alternative, WGFP will increase Windy Gap diversions by 144% in an average August. *DEIS, Appendix A, Table A-6, at p. A-11*. Moreover, the cumulative impacts of WGFP pumping will likely be much greater after July 25, when other projects, including C-BT, Moffat Tunnel and the reasonably foreseeable Moffat Tunnel Extension continue	30. WGFP diversions after July 25 would only occur in wet years and would be infrequent. An analysis of available air temperature data since 1948 revealed that July air temperatures are generally higher than August. See response to Comment No. 23.

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30	to deplete the Colorado River, further increasing stream temperatures already increased due to operation of WGFP.	
31	***WGFP's reduction of flows to 90 cfs is not, by far, the worst case scenario for the Colorado River's aquatic resources.*** A very alarming and, unfortunately, real scenario that is not considered anywhere in the DEIS, is the operation of WGFP down to 90cfs, followed by continued flow reductions caused by operation of projects that are not restricted by the 90 cfs instream flow right held by the Colorado Water Conservation Board (CWCB). As discussed above, diversions by C-BT, Moffat Tunnel, Moffat Tunnel Expansion and, perhaps other reasonably foreseeable projects, are not restricted by the 90 cfs CWCB instream flow right. As a result, WGFP's reduction of flows down to 90 cfs is not, by far, the worst case scenario. Operation of these projects after WGFP has ceased pumping is.[6] Matters can get even worse as a result of climate changes – a cumulative impact the DEIS glosses over. Indeed, reducing flows down to 90cfs is not, by far, the worst case scenario the Colorado River fisheries would endure. The worst case scenarios are neither identified nor considered anywhere in the DEIS.	31. While Colorado River flows could drop below 90 cfs, it would not be as a result of the WGFP and therefore not an effect of the WGFP. See response to Comment No. 28. The dynamic temperature modeling also used 2007 meteorology data, which had some of the highest July and August air temperatures recorded in the basin, which could reflect climate change. However, climate change also would affect precipitation, runoff, and other variables that may influence stream temperature.
32	**3. The DEIS compares modeled stream temperature as a result of operation of the WGFP and reasonably foreseeable future projects to the wrong State Standards.** In January of 2007, the Colorado Water Quality Control Commission, the State agency charged with adoption of water quality standards under the Clean Water Act, adopted regulations that define the levels of stream temperature beyond which harm to aquatic life is anticipated (State Standards). *See Basic Standards and Methodologies for Surface Water, 5 CCR 1002-31.*[7] For cold water biota, standards were adopted based on stream temperature levels deemed to be protective of trout fisheries. Maximum daily (DM) and weekly average (MWAT) levels were established to protect all life stages of trout from acute and chronic effects. While both acute and chronic standards were adopted, the chronic (MWAT) standard was established on an interim basis, pending hearings to assess whether the established levels of protection were necessary to protect biota within specific streams in the State. *See 5 CCR 1002-31.45; 5 CCR 1002-33.41.* In June of 2008, the Commission held hearings and proceeded to adopt regulations applying final acute and chronic temperature standards to streams within the	32. The interim standards for the Colorado River were noted in the DEIS. Those were the standards in place when the document was written. The FEIS was revised using the currently adopted temperature standards when discussing the impacts of the Project. The time period November through March is not considered in the DEIS. Windy Gap would not divert during this period or the 2 months proceeding this period. Thus, there would be no effects from the Project between November and March.

[6] Indeed, while any continued diversions below 90 cfs would make a bad stream temperature situation even worse, the combination of WGFP pumping down to 90 cfs, followed by C-BT's reduction of Granby releases to 20 cfs on September 1 and continued diversions by Moffat and Moffat Expansion, would present perhaps the worst case scenario, potentially leading to a catastrophic event.

[7] The referenced State's stream temperature regulations and policy documents are available from the Colorado Water Quality Control Commission's offices and on the web, at http://www.cdphe.state.co.us/op/wqcc/StatutesRegsPolicies/StatRegsPols.html

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Colorado River basin, including the reach of the Colorado River impacted by the WGFP alternatives evaluated in the DEIS. *5 CCR 1002-33; 5 CCR 1002-33.44.* For that reach, the Commission adopted the following stream temperature standards:

Temperature	TEMPERATURE TIER	TIER COD	SPECIES EXPECTED TO BE PRESENT	APPLICABLE MONTHS	TEMPERATURE STANDARD (°C) (MWAT)	(DM)
	Cold Stream Tier II	CS-II	brown trout, rainbow trout, mottled sculpin, mountain whitefish, longnose sucker, Arctic grayling	April – Oct.	18.2	23.8
				Nov. – March	9.0	13.0

5 CCR 1002-33.6(3). These temperature standards were adopted following years of intense evaluation of available scientific literature, studies and data by the Commission's staff in conjunction with a widely represented technical advisory panel. *See 5 CCR 1002-31.44(H); 5 CCR 1002-31.45; Temperature Criteria Methodology, Policy Statement 06-1.* Accordingly, they represent the best science and consensus available at the time.

The DEIS's surface water quality analysis attempts to compare modeled stream temperature increases due to operation of WGFP and other reasonably foreseeable projects to the State Standards. Unfortunately, it uses the interim standards of 2007, not the final standards adopted in 2008. As a result, the DEIS entirely fails to evaluate the extent and frequency with which operation of WGFP and other projects will increase temperature levels beyond the acute, lethal tolerance levels reflected in the Commission's regulation adopted in 2008. The DEIS also fails to evaluate the impacts of WGFP and other projects on the State's stricter acute and chronic stream temperature standards applicable for the November through March time period.

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5. Finding that operation of WGFP will exceed State Standards, the DEIS either ignores the exceedences or arbitrarily concludes that such violations will not impact the river's aquatic resources.

The DEIS's surface water quality analysis predicts that maximum weekly average stream temperatures in the Colorado River upstream of Williams Fork will reach 18.9°C when pumping under the Proposed Action alternative reduces flows to 90 cfs. *DEIS at 3-96.* This level exceeds the maximum, chronic thermal tolerance levels deemed for rainbow and brown trout established by the Commission.

33. See response to Comment No. 23.

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33	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 22 of 56 Likewise, modeled maximum daily temperatures are expected to increase to 25.5ºC - well in excess of the 23.8ºC acute (lethal) levels deemed safe by the State. *Stream Water Quality Technical Report, Table 26 at 63.* Because it uses the wrong State Standards, the DEIS entirely ignores the projected violation of the State's acute, lethal standard. The DEIS's stream water quality analysis does acknowledge that State chronic standards will be exceeded. However, the DEIS proceeds to disregard it, arbitrarily concluding that such temperature standard violations are "unlikely to measurably impact fish populations." *DEIS at 3-141.* . The DEIS appears to base this conclusion on three rationales. First, the DEIS finds that "temperature of about 19ºC is well below lethal and chronic [tolerance] levels for rainbow cutthroat, and especially brown trout." *DEIS at p. 3-141.* Second, the DEIS states that the conclusion is based on "observed water temperatures, which occasionally exceed 19ºC under current conditions, and the healthy fish populations that exist in this reach of the river." *DEIS at p. 3-141.* In the end, the DEIS simply concludes that WGFP will infrequently divert to 90cfs when air temperatures are high and, therefore, no "measurable impacts to fish populations" will result. *DEIS at p. 3-141.* The DEIS's reasoning is scientifically flawed and ignores well-supported standards legally adopted by the State in accordance with and under the authority of the Clean Water Act. As such, the DEIS conclusion is arbitrary and capricious and contrary to law.	
34	***The DEIS arbitrarily establishes thermal tolerance levels that are inconsistent with levels established by the State after rigorous scientific review and formal rulemaking.*** State regulation states that the summertime chronic thermal tolerance level for adult and juvenile cutthroat trout is 17ºC and 18.2ºC for juvenile and adult rainbow and brown trout. For this segment of the Colorado River, State regulation establishes rainbow and brown trout tolerance levels as the State Standard. Defining thermal tolerance levels for aquatic life is challenging, to say the least. Hundreds of studies and papers on the subject are available expressing widely varying conclusions – not all of which meet the highest scientific standards. The State Standards were adopted after rigorous review and selection of literature and other data on the subject, a multi-year, open process involving a panel of experts with widely varying perspectives. In contrast, the DEIS summarily concludes that stream temperatures that exceed the State Standard are "well within" tolerance levels, citing a handful of studies. Neither the DEIS nor the Technical Report explain why these particular studies, among the myriad of studies and information, were selected.[8] The data set on which the State [8] The DEIS's conclusion that chronic temperatures of 19ºC MWAT are within tolerance levels "especially for brown trout" is particularly aggravating, as the statement disregards the impacts of these higher temperature levels on rainbow trout, which were decimated in this section of the Colorado River by operation of the original Windy Gap project and are subject to intense reintroduction efforts by the State.	34. The thermal tolerance levels reported in the DEIS are from cited literature sources. This table was removed from the FEIS. As described in response to Comment No. 23, temperature mitigation measures in the FWMP were developed to reduce the potential for exceedance of the chronic and acute state temperature standard for the Colorado River.

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34	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 23 of 56 Standards are based was adopted after rigorous analysis and an open, public process. It represents the best estimate of the thermal tolerance for those fishes. The DEIS's disregard of these formally adopted State Standards is arbitrary and capricious. Moreover, should a legitimate disagreement with the State Standards, adopted under the authority of the Clean Water Act, arise the proper means to address such differences is by requesting the State Commission to adopt different standards after a formal rulemaking hearing process that is open to the public.	
35	***The DEIS's conclusion that modeled temperature exceedences are not harmful to the fisheries because occasional exceedences currently occur and the fisheries appear to be healthy lacks any scientific basis.*** That an apparently healthy fish population persists where temperatures occasionally are high enough to produce chronic impacts is not proof that these chronic impacts are not being felt. Instead it merely indicates that, to date, the existing data set is incapable of detecting these sub-lethal, chronic effects. Indeed, it is the difficulty of demonstrating these in the field that necessitates the adoption of standards that prevent sub-lethal impacts. Yet, the DEIS appears to be arguing the converse: that the inability to detect sub-lethal effects obviates the need for the adopted standards. This is patently false. Increasing the frequency and or duration of low flow events and associated high water temperatures is likely to increase the severity of these sub-lethal effects, perhaps to the point where they are easily detectable in the fish population. The rationale behind the recently adopted temperature standards is a desire to protect the fishery and avoid measurable population impacts, impacts that may only be easily detectable when they are very, very large. The DEIS's disregard for the State Standards and conclusion that impacts do not exist because they have not been measured is arbitrary and capricious, unsupported by science and is contrary to duly adopted State regulations.[9]	35. See response to Comment No. 34. Additional discussion on temperature impacts was added to Section 3.9.2.3 of the FEIS based on use of a dynamic temperature model a discussed in Surface Water Quality Section 3.8.2.4.
36	**6. The DEIS's conclusion that WGFP will not "significantly" impact the aquatic resources of the Colorado River because WGFP will infrequently divert in July and August is arbitrary and capricious and contrary to the information presented.** After extensive discussion of potential stream temperature changes, spanning dozens of pages and significant (although not particularly helpful) technical analysis, in the end, the DEIS simply concludes that "measurable impacts to fish populations are not	36. The aquatic resource narrative in Section 3.9.2.3 of the FEIS was revised to incorporate the new water temperature information and impacts to aquatic resources. The hydrologic model indicates that WGFP diversions of more than 100 AF in August would increase from 6 times in the 47-year hydrologic modeling period to 15 times under the Proposed Action. Actual WGFP pumping in August is likely to be less because a new reservoir would typically be close to full in years when the WGFP diversions are in priority in August and the cost of pumping is high for the limited water that would be available.

[9] Before claiming that impacts to fish populations are not currently detected because the impacts either do not exist or are too small to detect, the DEIS should have at least bothered to engage in a power analysis. A power analysis is a statistical determination of how large or small an effect must be before it can be detected with a given data set. Without such an analysis, the observation that there have been no measurable impacts of temperature on fish in the Colorado River is merely evidence that the reviewed data set is inadequate – i.e., that the agencies have failed to look for those impacts hard enough.

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36	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 24 of 56 expected because flow reductions in July and August would be infrequent." *DEIS at p. ES-14.* The scientific bases for this critical conclusion are not explained. Its basic premise – i.e., that WGFP will not divert in July and August, is contrary to specific DEIS findings. The assumptions it reflects are unfounded and contrary to State regulation. As such, the conclusion is arbitrary and capricious, contrary to law, and renders the DEIS fatally flawed.	
37	***The conclusion that the project will infrequently divert in July and August is in direct conflict with the DEIS findings, as reflected in Appendix A of the DEIS.*** As discussed in Part A of these comments, Table A-6, Appendix A of the DEIS indicates that WGFP diversions under the Proposed Action alternative will increase current diversions by as much as 109% in July and by as much as 144% in August on average years – this, compared to estimated diversion increases of 13% in June, 5% in May, and 0% during the rest of the year. On a wet year, the DEIS estimates a 1639% increase in July, compared to an estimated 13% increase in diversions in June, 4% in April, and 0% for the rest of the year. *DEIS, Appendix A, Table A-6.* Model outputs also estimate that the greatest Colorado River flow reductions below Windy Gap as a result of operation of the Proposed WGFP would occur in July, when flows will be reduced by 23% in an average year. Flows in August would be reduced by as much as 16%. In a wet year, flow reductions caused by operation of the Proposed Action alternative would be the highest in August, when flows below Windy Gap would be reduced by as much as 33%. July reductions would be the next highest, at 26%. *DEIS Appendix A, Table A-10.* Indeed, the DEIS's reported hydrological model outputs belie the DEIS's conclusion and indicate that the effect of WGFP will be to significantly increase July and August diversions.	37. Narrative was added to Section 3.9.2.3 of the FEIS regarding impacts from diversion for all months, and resulting impacts to aquatic resources.
38	***The assumption that stream temperature reductions outside of July and August would not have an impact on the river's aquatic resources is groundless.*** As discussed above, the model and information provided in the DEIS and associated technical reports is incapable of supporting this or any other conclusion with respect to the magnitude of or frequency in which WGFP operations will cause exceedences of stream temperature standards, or otherwise increase temperature to levels that are lethal to the aquatic resources.	38. As described in response to Comment No. 32, temperature standards have been adopted following years of intense evaluation of available scientific literature, studies, and data by the Commission's staff in conjunction with a widely represented technical advisory panel. These standards were put into place to protect aquatic resources. Conditions that meet the standards are assumed to be fully protective. Therefore, the temperature standards are used as a threshold to determine impacts. Standards have been set for two periods – April to October and November to March. For a given flow, water temperature is generally a function of the air temperature. There can be a time lag of hours to days, but it is more likely hours for small shallow streams (Stefan 1993). For the Colorado River, there is a strong relationship between daily water and air temperatures ($R^2 > 0.9$). We looked at the period of record for average daily air temperatures at Kremmling and found that the highest temperatures occurred between July 2 and August 31. Thus, the critical time for temperature exceedances (April to October) for all alternatives (independent of operations) is July through late August. An analysis of subhourly data taken in 2007 and 2008 shows that when exceedances occur, they occur in the mid-July to August time period. Therefore, the dynamic temperature model simulates July and August. September also is simulated to capture any lingering impacts from the Project. The time period of November through March is not considered in the DEIS. The WGFP would not divert during this period or the 2 months preceding this period. Thus, there would be no lingering effects from the Project.
39	***The DEIS fails to describe the criteria by which the "frequency" of a stream temperature exceedence is deemed to yield a "measurable" impact for purposes of the NEPA analysis.*** The acute and chronic stream temperature standards adopted by the State define not only the levels, but also the frequency of exposure that results in lethal (daily) and chronic (weekly) impacts to trout fisheries. The DEIS's conclusion entirely disregards these standards, established by the State of Colorado after extensive analysis and formal hearings. The DEIS fails to provide <u>any</u> explanation as to why the State's frequency standard was disregarded, or what other criteria the agencies' relied upon to	

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39	conclude that no "measurable" impacts resulted. The conclusion is arbitrary and capricious, and contrary NEPA and well established State law.	39. The dynamic temperature simulations conducting since the DEIS was completed, as described in the FEIS (Section 3.8.2.4), provide detail on the frequency of exceedance of the chronic and acute temperature standard for existing conditions and the alternatives. This information was used in the evaluation of impacts to aquatic life in Section 3.9.2.3. The Fish and Wildlife Mitigation Plan (FEIS Appendix E) approved by the Wildlife Commission and CWCB includes measures to mitigate potential exceedance of temperature standards. See response to Comment No. 23.
40	**F. The DEIS fails to evaluate other critical impacts of WGFP and other reasonably foreseeable projects on trout fisheries and entirely fails to evaluate impacts on other fish species.** Changes in WUA and stream temperature are not the only mechanisms by which fish can be impacted. Trout can be impacted if changes in flow lead to a collapse of important food resources like the stonefly, *Pteronarcys californica*. In addition, if reduced peak flows cause additional sediments suitable for the tubificid worm, *Tubifex tubifex*, to accumulate along the Colorado River below Windy Gap, problems with whirling disease may be exacerbated. The DEIS fails to adequately evaluate these impacts or explain why these obvious effects of changes in flows have been ignored.	40. Multiple approaches were used in the determination of impacts. Additional discussion on sediment transport from the 2D modeling was completed at the study sites and was added to Section 3.7 of the FEIS. See response to Comment No. 22. Water quality was modeled as a function of existing and predicted future conditions, including a cumulative effects analysis. Dissolved oxygen would have a slight decrease, approximately 0.1 mg/l, and concentrations would remain above the current water quality standard and are not expected to impact aquatic life. Water temperature could exceed the standard during periods of WGFP pumping; therefore, the Fish and Wildlife Mitigation Plan was developed to reduce potential impacts (See response to Comment No. 23). The river stage changes are modeled as part of the habitat modeling. The change to habitat was modeled throughout most of the range of expected flows. The combined results of the water quality modeling, hydrology analysis, and sediment transport analysis all indicate that the ecological function of the river would be maintained at most times without mitigation. At times when impacts to water quality standards may occur, mitigation has been designed to maintain stream health. Physical habitat for fish was simulated using daily flow data. There are short (2- to 4-week) periods when physical habitat for some life stages of some aquatic species is reduced. The minimum streamflows maintain the habitat needed for primary and secondary productivity. The sediment transport data show that the habitat for spawning fish and for macroinvertebrates is maintained annually. No impacts to those trophic levels are expected. The Fish and Wildlife Mitigation Plan developed by the Subdistrict in accordance with the requirements of CRS 37-60-122.2 will address impacts to aquatic habitat.
41	**1. The DEIS fails to take a "hard look" at potential impacts to macroinvertebrates.** The DEIS simply states that the "habitat needs of the macroinvertebrates . . . are similar to those of the trout species" and that "species, abundance, and distribution of macroinvertebrates should remain similar to existing conditions under all alternatives based on the anticipated changes in flow and minor changes in water quality." *DEIS at p. 3-142*. However, no evidence is presented to support these conclusions. In fact, the habitat needs of fish and aquatic invertebrates are quite different since fish generally live within the water column, while invertebrates spend most of their lives on the surfaces of and in the spaces between rocks and cobble found on the streambed. Water quality conditions may change significantly at low flows as acknowledged by the Aquatic Resources Technical Report's statement that "[l]ower flows could increase the potential for exceedence of the weekly maximum average temperature for standard aquatic life." *see Aquatic Resources Technical Report at p. 38.*. As such, the DEIS conclusion that aquatic macroinvertebrate species and distribution are not expected to change is unsubstantiated.	41. See response to Comment No. 40.
42	**2. The DEIS fails to evaluate impacts to other fish species.** The DEIS focuses on two non-native trout species to the exclusion of other fish species. The DEIS states that two native species of sculpin are present within Colorado River and Willow Creek study areas. In addition, non-native dace, chub darter, and sucker can also be found in these study areas. *See Table 2, Aquatic Resources Technical Report at p. 14*. The DEIS fails to evaluate impacts of WGFP on these other native and non-native fish species.	42. Species of interest were determined during discussions with CDPW at the initiation of the study. The main concerns were impacts to trout habitat. In addition, habitat use data for many nongame species has not been collected for use in the IFIM. As such, the two trout species were selected.

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43	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 26 of 56 **3. The DEIS fails to evaluate impacts of WGFP and other reasonably foreseeable projects on whirling disease and, consequently, on the Colorado River, west slope reservoirs, and east slope streams and reservoirs fisheries.** The DEIS's aquatic resource impacts analysis entirely fails to address WGFP's potential to exacerbate the impacts of whirling disease on the aquatic resources of the Colorado River, west slope reservoirs, and east slope reservoirs and streams. This, in spite of admitting that "CDOW identified Windy Gap Reservoir as some of the most suitable habitat (low-velocity water and silt or mud substrate) for *T. tubifex*, especially those lineages that are most susceptible to infection by *M. Cerebralis* (Beauchamp et al. 2002), *DEIS at 3-133,* that "potential biological limiting factors in the Colorado River include the presence of whirling disease and its impact on rainbow trout," *Aquatic Resources Technical Report at 78*, and that Windy Gap Reservoir has historically been considered a major source for TAM production in this drainage (Nehring and Thompson 2003)." *DEIS at 3-133.* Tables 6 and 7 of the Aquatic Resources Technical Report further supports the conclusion that rainbow trout have declined dramatically since 1988. Accordingly, prior to 1988, rainbow trout generally comprised 70%-80% of the fish population in biomass, total numbers and fish over 35 cm in length. Since 1988, the rainbow population has declined to comprise only around 20% of the total population, 20%-30% of the total biomass and 25% to 50% of the fish over 35 cm in length. *Aquatic Resources Technical Report at 19-20.* In spite of these findings, the DEIS fails to evaluate the likelihood that further reduction in flows will prolong or even aggravate whirling disease conditions either in the Colorado River itself or in west slope reservoirs and east slope streams where additional Windy Gap water will be pumped. Rather, the DEIS cursory dismisses the issue, concluding that whirling disease is no longer an issue. *See DEIS at 3-133; Technical Report at 29* (citing only a "personal communication" between "B. Nerhing and Don Carlson," a Northern employee). Failure to consider the potential impacts of increased WGFP pumping on whirling disease and, therefore, on the survival of trout populations both in the Colorado River and in west slope and east slope reservoirs and streams, renders the DEIS fatally deficient. Such failure is particularly aggravating, given the acknowledged fact that approval of the original Windy Gap project was directly responsible for wiping out the rainbow trout population of the Colorado River below Windy Gap reservoir in the first place.	43. The existing conditions include past affects of streamflow temperature regimes and factors such as whirling disease. Whirling disease in particular is widespread across Colorado and has resulted in the loss or reduction of rainbow trout populations in most of the state's rivers. CDPW is actively researching ways to counteract whirling disease within the river systems, including stocking alternate species that are less susceptible to whirling disease. We are aware of the whirling disease studies conducted in Windy Gap Reservoir and downstream of Windy Gap Reservoir in the Colorado River. Mr. Barry Nehring, CDPW researcher, was contacted and asked if the whirling disease pathogens were still at a problematic level as they had been in the past. The quote from Mr. Nehring is presented in the EIS. In addition, Mr. Jon Ewert presented information regarding the current status of the fishery in the Colorado River to Denver Water and Northern on July 14, 2009. During that presentation, questions were again raised about the presence of whirling disease in Windy Gap Reservoir. Mr. Ewert reiterated that whirling disease is still present, but there appears to be a shift in the species of tubifex worms present in the reservoir. The current species are not the carriers of whirling disease in the same number as previously sampled in Windy Gap Reservoir. CDPW also is researching habitat modification as a means to curtail whirling disease. Thompson (2005, Whirling Disease/Habitat Interactions, Federal Aid Project F-427-R2, Federal Aid in Fish and Wildlife Restoration Job Progress Report, Colorado Division of Wildlife, Fish Research Section, Fort Collins, Colorado, May 2005) reports the percentage of myxospore in brown trout for several rivers in Colorado. Thompson reported that the percentage of prevalence of myxospores in brown trout in the Fryingpan River and Spring Creek in the Taylor River drainage were as high or higher than downstream from Windy Gap Reservoir. The objective of the study was to determine the response of whirling disease presence to habitat modification. Thompson could not conclude that habitat modification resulted in a marked reduction in the prevalence of whirling disease myxospores. Available information indicates that the WGFP would not increase the incidence or conditions that promote whirling disease.
44	**G. The DEIS fails to take a hard look at the cumulative impacts operation of the WGFP, combined with past, present and future reasonably foreseeable projects will have on the aquatic resources of the Colorado River.**	44. The WGFP FEIS fully considered the cumulative impacts of all reasonably foreseeable future actions using the same methodology as direct impacts. See response to Comment No. 12.

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44	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 27 of 56 So far, these comments have highlighted several DEIS deficiencies that preclude the agencies' required "hard look" at both the direct and the cumulative impacts of the WGFP. Not only does the DEIS fail to look at the cumulative impacts of WGFP combined with past, present and reasonably foreseeable future projects, it fails to look at the impacts of WGFP, either alone or in combination with other projects, across the years. Instead, the analysis focuses on individual, isolated, average days, months and years. This approach ignores the most potentially damaging impacts of WGFP on the aquatic resources of the river and renders the DEIS fatally defective. The DEIS's cumulative impacts analysis is deficient in other ways. First, it fails to evaluate the impacts ongoing project operations, including C-BT, Moffat Tunnel and Windy Gap, have had on the river's aquatic resources. Second, it fails to take into account the impacts of all reasonably foreseeable projects. Third, it fails to evaluate the cumulative impacts of reasonably foreseeable future events, such as global warming, on the Colorado River's hydrology and its aquatic resources. These deficiencies render the DEIS fatally defective.	
45	**1. The DEIS fails to evaluate the impacts ongoing project operations, including C-BT Project operations, have had on the Colorado River resources.** The DEIS's cumulative impacts analysis does not evaluate the impacts large transmountain diversions, such as C-BT and the Moffat Tunnel, have had on the resources of the Colorado River. The DEIS acknowledges that these and other diversions have had a profound impact on the hydrologic regime of the river. For example, the DEIS notes that flows at Hot Sulphur Springs have been reduced from 486,209 acre-feet per year during the period from 1905-1949, to only 175,264 acre-feet per year for the period from 1950-1994. *DEIS at p. 3-7.* Yet, the DEIS fails to evaluate the impacts these changes have had when assessing the cumulative impacts of the WGFP and other foreseeable actions on water and aquatic resources. Instead, the cumulative impacts analysis only looks at expected future changes as compared to existing conditions. *See e.g., DEIS at p. 3-1.* If the Colorado River is to avoid a death of 1,000 cuts, future changes must be placed in the broader context of the alterations that have occurred to date. The DEIS does not explain the rationale for this decision. At most, in describing the environment affected by the project, the DEIS states that "[t]he affected environment reflects any past activities that have affected the resources and that contributed to the current status of the resource." *DEIS at 3-1.* However, acknowledging that the Colorado River has been impacted by past activities is not the same as actually evaluating those impacts. Perhaps an assumption is being made that, if current flows support a healthy fishery, the changes to date have not significantly impacted the aquatic resources of the	45. The purpose of this EIS is to display the potential effects of the WGFP to assist decision making. The cumulative effects analysis includes the hydrologic conditions created by the C-BT Project; Moffat Project; and other past, present, and reasonable foreseeable future actions. Where adverse effects of the WGFP were identified, mitigation measures were developed including temperature mitigation and water quality improvements from nutrient reduction, as summarized in Sections 3.8.4 and 3.9.4 of the FEIS. The Fish and Wildlife Mitigation Plan (FEIS Appendix E) developed by the Subdistrict will address the effects of the WGFP on aquatic resources. See response to Comment Nos. 12, 40, and 44.

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45	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 28 of 56 river. If this is the case, the assumption would have no empirical support. Indeed, it is much more reasonable to presume that the changes resulting from diverting nearly two-thirds of the native flow from the basin have been significant. The resilience (Holling 1996) of the system has almost certainly been compromised. The critical question the DEIS must answer is not how much of a change will the WGFP and other future projects will have on the Colorado River of today, but whether the Colorado River can withstand any further impacts without being pushed into an alternative state, one that cannot support healthy fish populations and other aquatic life. This question is critical to evaluating the impact of future projects and has not been asked. Ecologists have long recognized that many ecosystems exhibit nonlinear behavior in response to human perturbations. In other words, a continuous change in an independent variable (e.g., a continuous decline in stream flow) may not produce smooth changes in a response variable (e.g., fish productivity). Instead, if a threshold is crossed, the system may flip from one capable of supporting trout to one that can not. The term "ecological resilience" has been used to describe the amount of disturbance required to propel the ecosystem across a threshold and into an alternative stable state (Holling 1996). Riverine ecosystems are strongly affected by external factors like stream flow, sediment, and temperature (Groffman et al. 2006). Indeed, the quantity and timing of stream flow are critical components responsible for maintaining the ecological integrity of river ecosystems (Poff et al. 1997) and stream flow is often considered a "master variable" that limits the distribution and abundance of riverine species (Resh et al. 1988, Power et al. 1995). Continued reductions in stream flow quantity and changes in stream flow timing have the potential to fundamentally alter how the Colorado River ecosystem functions. Potential non-linear responses to the continued reduction in stream flow have not been considered in the DEIS, and this is a significant omission. Because many ecosystems such as the Colorado River's exhibit hystereses, the change required to restore the ecosystem may need to be much greater than the change that produced the change in state. The best know examples of this phenomenon are from lakes where continuously adding nutrients has little impact on water clarity before a threshold is crossed and the lake flips from a clear-water state to a cloudy, phytoplankton-dominated state (Scheffer and Carpenter 2003). Restoring the lake frequently requires not only ending the input of nutrients, but removing much of the nutrients that have accumulated in the lake. Thus, the challenge for managers is to recognize the existence of such a threshold before it is crossed. Not only does the DEIS fail to recognize the potential for these thresholds, but by evaluating cumulative impacts as the change from current conditions rather than the change from the native state, it fails to acknowledge the likelihood that the historic reductions in flow have already pushed the river close to any existing threshold.	

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46	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 29 of 56 **2. The DEIS fails to evaluate the cumulative impacts of reasonably foreseeable projects.** ***Green Mountain Reservoir Substitution and Power Interference Agreement.*** Reclamation is currently in the process of evaluating a proposal by Colorado Springs Utilities (CSU) and Western Area Power Administration to enter into a Substitution and Power Interference Agreement for Green Mountain Reservoir (Green Mountain Reservoir Agreement). http://www.usbr.gov/gp/nepa/quarterly.cfm#ecao. According to the draft EA, released in September of 2008, the proposed 40-year Agreement would allow CSU to use Wolford Mountain Reservoir and Homestake Reservoir releases to substitute Blue River diversions at times when Green Mountain Reservoir does not fill. Currently, CSU is only allowed to meet its substitution obligations by releasing water from Williams Fork Reservoir or storage sources in the Blue River. As acknowledged in the draft EA, the proposed Agreement would impact the reach of the Colorado River between its confluence with Williams Fork and its confluence with the Eagle River. *See Draft EA, Figure 3-1.* Impacts include reduction of flows within the reach. *See Draft EA, Chapter 3.* Yet, the DEIS entirely fails to include the Green Mountain Substitution and Power Interference Agreement in the list of reasonably foreseeable projects, to include in any way evaluation of this project in its cumulative impacts analysis, or to explain why the project was not included – this, in spite of the fact that the project is currently being considered by the lead federal agency for the WGFP.	46. Additional discussion on the Colorado Springs Substitution and Green Mountain Reservoir Substitution and Power Interference agreements was added to Section 2.8.2—Reasonably Foreseeable Actions of the FEIS. As described in detail in the FEIS, these agreements would have a minor contribution to cumulative effects and, therefore, they were not included in the analysis.
47	***Northern Integrated Supply Pipeline (NISP).*** Likewise, the Corps is currently evaluating a CWA § 404 permit application for the Northern Integrated Supply Project. https://www.nwo.usace.army.mil/html/od-tl/eis-info.htm. Although the primary identified sources of water for the project are located in the east slope, use of upper Colorado River sources for initial fill and/or storage at times when east slope sources are not available seems to be contemplated. Yet, neither the project's draft EIS, nor the DEIS for WGFP evaluate the potential cumulative impacts of such potential diversions. The DEIS determines that NISP is not a reasonably foreseeable project because "identified sources of water and storage locations for the NISP Project indicate that this project would have little or no interaction or overlap with the area of potential effect for the WGFP." *DEIS, Table 2-4 at 2-53.* If such remains the case and the Corps specifically prohibits NISP's use of west slope water, then evaluation of the project in the context of WGFP is not necessary. Otherwise, the project and its potential cumulative impacts must be evaluated.	47. Windy Gap water could potentially be rented by NISP participants as part of the initial fill of Glade Reservoir. NISP participants can either collectively or separately rent Windy Gap water from Windy Gap Participants. If the rented Windy Gap water is greater than the Participants' need that year, the water could be delivered into Glade Reservoir. The water would be delivered to the NISP from Horsetooth Reservoir through the Windsor Extension into the Poudre Valley Canal. Should Windy Gap water be used for the initial fill of Glade Reservoir, it would have minimal cumulative impacts since it merely changes the delivery location of WGFP Participants' water.
48	**3. The DEIS fails to evaluate the cumulative impacts of climate change and global warming and mountain pine beetle killed trees.**	48. The discussion of climate change in Section 2.8.2—Reasonably Foreseeable Actions was revised in the FEIS. This section includes updated information from recent publications on climatic change trends in the upper Colorado River basin and possible future changes. Potential environmental impacts from climate change are qualitatively evaluated as part of the cumulative effects evaluation discussed for applicable resources in Chapter 3 of the FEIS.

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48	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 30 of 56 The DEIS recognizes that "climate change and global warming may affect the WGFP" and that records and models indicate "higher temperatures which can result in earlier snowmelt and runoff, higher evaporation rates and increased water demands" *DEIS at 2-44*. However, the DEIS fails to evaluate these potential impacts and simply states that "there is no accepted science for transforming the general concept of variations in global temperature into incremental change is stream flow at particular locations". Moreover, the DEIS fails to acknowledge the potential impacts of global warming on exacerbating already anticipated stream temperature problems. A recent report prepared by CU-NOAA Western Water Assessment for the Colorado Water Conservation Board (CWCB) reports that recent hydrologic studies of the Upper Colorado River Basin project multi-model average decreases in runoff ranging from 6% to 20% by 2050 compared to the 20th century average.[10] The report concludes that "[a] warming climate will amplify Colorado's water related challenges, with potential reductions and seasonal shifts in water availability. While most water resource planning has been based on past hydrology, ***water users can no longer assume that future conditions will reflect the past. Although there are uncertainties regarding aspects of the science, enough information is available to support adaptation planning for risks associated with climate variability and change*** [emphasis added].[11] Clearly, acceptable science is currently available and the DEIS should utilize this science to evaluate how climate change may affect its assumptions regarding impacts to stream flows and stream temperature. [10] *Climate Change in Colorado. A Synthesis to Support Water Resources Management and Adaptation. A Report by the Western Water Assessment for the Colorado Water Conservation Board. 2008. Page 2.* [11] *Id. at p. 43.*	49. Quantitative effects of pine bark beetle infestation on hydrology and water quality are difficult to accurately predict because of the numerous assumptions that would be necessary. The FEIS indicates the types of effects that could occur as a result of pine beetle-killed trees. These impacts are possible with or without the WGFP and would be similar for all of the alternatives. Additional discussion was added in Section 2.8.2.1 on the potential impact of pine bark beetle-killed trees.
49	The DEIS also recognizes that pine beetle killed trees may have implications for the upper Colorado River such as increased rate of nitrification and increased wildfire risk resulting in increased runoff, sediment and nutrients *DEIS at 2-44* but the DEIS fails to quantitatively evaluate these impacts, particularly in terms of sedimentation and sediment transport problems, or to acknowledge potential impacts on stream temperature.	
50	**H. The DEIS fails to take a "hard look" at the effects of WGFP and other reasonably foreseeable projects on the special State and Federal designations of the affected reach of the Colorado River.** The Colorado River reaches impacted by the proposed WGFP and other foreseeable projects are subject to special designations by both the State and the Federal government. The reach between Windy Gap Reservoir and the river's confluence with Troublesome Creek is a Gold Medal Trout fishery, designated by the Colorado Wildlife Commission. This designation is reserved to outstanding fisheries that meet specific fish	50. The "Gold Medal" trout fishery policy was adopted in 1992 by the Colorado Wildlife Commission. This designation is limited to "waters of the State accessible for fishing to the general angling public." Only public waters are designated as Gold Medal; private waters are excluded by the above requirement. To be eligible for designation, the water must consistently produce a minimum standing stock of 60 pounds of trout per acre and a minimum of 12 quality trout (>14 inches long) per acre. The Colorado River public waters currently designated as Gold Medal meet these criteria (131 pounds of trout per acre and 51 fish greater than 14 inches). It is expected that the CDPW management of the river will continue as it has in the past, and the Gold Medal designation will remain in place. The impacts from WGFP are expected to be offset by mitigation, and no impact to the Gold Medal designation is expected from the project as noted in Section 3.9.2.3 of the FEIS. Because the impacts to fish are expected to be minor with implementation of mitigation measures, no adverse impact to fishing opportunities are likely.

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50	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 31 of 56 population and size requirements.[12] There are only 10 designated Gold Medal streams in the State of Colorado. The reach of the river between Gore Canyon and State Bridge is a designated "Wild Trout" stream. This designation is based on the presence of naturally reproducing, wild trout.[13] In addition to the State's Gold Medal and Wild Trout designations, these reaches of the river are "eligible" reaches for Wild & Scenic Rivers Act (WSA) designation. *Final Wild and Scenic River Eligibility Report for Kremmling and Glenwood Springs Field Offices, Colorado (March 2007).* The reaches have been deemed to be eligible under the WSA because they exhibit "outstandingly remarkable values" (ORVs) that merit protection. These values include outstanding fishing recreation. BLM manages these and other eligible rivers so as to not adversely affect their values pending potential WSA designation by Congress. *BLM Policy 8351 (Dec. 22, 1993).* In addition, over the last year, a stakeholders group has been working diligently to develop a plan for the management of the upper Colorado River (including the reach between Gore Canyon and State Bridge), to protect the ORVs of the reach. Reclamation staff has been attending these meetings. The DEIS acknowledges most of these designations in its Recreation analysis. *See DEIS at 3-3-231 to 234.* Yet, the DEIS's analysis entirely fails to evaluate the direct, indirect and cumulative impacts of WGFP on these designations, focusing the recreation impacts analysis almost exclusively on boating recreation (e.g., rafting and kayaking). At most, the DEIS' recreational analysis makes conclusory statements regarding the anticipated impacts on fishing recreation, but provides no supporting analysis. *See DEIS at 3-26 and 3-246* ("Potential effects to aquatic resources from changes in streamflow and reservoir storage on the West Slope and East Slope as discussed in Section 3.9 are unlikely to adversely impact sports fishing under any alternative based on estimated effects to fish habitat and communities."). As discussed at great length in these comments, the aquatic resources impacts analysis on which the DEIS's conclusions rely is fatally flawed and, therefore, cannot provide the basis for such conclusion. Moreover, while the aquatic impacts analysis discusses potential impacts to fisheries, it does not evaluate the impacts of the project on [12] The Colorado Wildlife Commission defines a Gold Medal Water as a lake or stream that supports a standing stock of at least 60 pounds per acre, and contains an average of at least 12 quality (14" or longer) trout per acre. *See Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008).* [13] The Colorado Wildlife Commission defines Wild Trout Water as a lake or stream that contains a wild trout population; a wild trout population is one that can sustain itself through natural reproduction and recruitment and a wild trout is a trout that completes its entire life cycle in a lake or stream. *Colorado Wildlife Commission's "Wild and Gold Medal Trout Management Policy" September 18, 1992 (Revised June 12, 2008).*	

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50	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 32 of 56 the quality of those fisheries for recreational use.[14] For example, the size of fish plays as critical a role in the State's designations as their numbers. Yet, the aquatic impacts analysis only describes potential impacts to fish populations. Because BLM's outstanding recreational fishing designation is largely based on the State's designation criteria, the aquatics analysis also fails to yield the information needed to assess potential impacts on designation under the WSA. Even more alarming is the fact that the DEIS reaches the same conclusions with respect to impacts of the project on fishing recreation downstream of Gore Canyon, even though the aquatic resource impacts analysis does not look at impacts to fisheries in that reach. Indeed, relying on an inadequate hydrological analysis, the aquatic resource impacts analysis ends its review at the Colorado River's confluence with the Blue. *See DEIS at 3-6 and 3-130.* Yet, even under inadequate hydrological modeling used in the aquatic resources impacts analysis, on an average, operation of WGFP and other reasonably foreseeable projects will reduce flows in the reach below Gore Canyon by 13%. This, compared to an average of 20% flow reduction below Windy Gap Reservoir. *DEIS, Table 2-7 at 2-67.* Operation of WGFP and other reasonably foreseeable projects would reduce stream levels below Gore Canyon by a foot. *DEIS, Table 2-7 at 2-67.* This is by no means an insignificant reduction. And, while during high flow conditions the impacts on aquatic resources may not be as great, they could be quite significant during low flows. Unfortunately, the DEIS only provides annual average information. It does not explain what the anticipated reductions would be from month to month or, even more importantly, from day to day. As such, DEIS's failure to evaluate aquatic resource impacts downstream of Gore Canyon renders the analysis fatally flawed and the DEIS's determination that fishing recreation values in that reach are unlikely to be impacted arbitrary and capricious. Finally, it should be noted that BLM has already forewarned Reclamation of concerns with respect to the cumulative impacts of WGFP and other reasonably foreseeable projects on the Colorado River, both upstream and downstream of its confluence with the Blue River. In its comment letter regarding Reclamation's consideration of the Green Mountain Agreement, BLM expresses concern with the cumulative impacts of individual projects, including WGFP, on the reach of the Colorado downstream of Gore Canyon, noting that "[n]one of the in *individual* projects appear to have overwhelmingly negative impacts on the ORVs . . . however, *collectively*, the reasonably foreseeable projects could have substantial impacts on the ORVs over time." [14] It should be noted that the Recreation Technical Report simply cites "Miller Ecological 2008" as sole support for its repeated assertions that no impacts to fishing recreation or Gold Medal fisheries would result. *See e.g., Technical Report at 43 and 51.* Presumably, this cite refers to the Aquatic Resources Technical Report prepared in connection with the DEIS. Yet, like the DEIS, the Aquatic Resources Technical Report reaches no conclusions with respect to impacts to either fishing recreation or State designations.	

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51	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 33 of 56 *Memorandum dated October 14, 2008, from David Stout to Kara Lamb (emphasis in the original).* **I. The "no action" alternative evaluated in the DEIS is speculative and the associated analysis misleading.** NEPA requires federal agencies to evaluate all reasonable alternatives to a proposed action, including the option of taking no action. *Silverton Snowmobile Club v. U.S. Forest Service*, 433 F.3d 772, 780 (10th Cir. 2006). The DEIS defines the "no action" alternative for the WGFP as follows: "Under this alternative, Participants would maximize delivery of Windy Gap water according to their demand, water rights, availability of storage in Granby Reservoir, and existing Adams Tunnel conveyance constraints. The City of Longmont would enlarge Ralph Price Reservoir by raising the dam and increasing storage capacity by 13,000 AF (Figure ES-3)." *DEIS at ES-5.* The DEIS goes on to estimate future diversion scenarios by Windy Gap project participants, in the absence of WGFP, and reaches conclusions regarding anticipated impacts of such diversions on the environment, including aquatic resources. These estimated impacts are then compared with the predicted impacts associated with the action alternatives, as well as to existing conditions. As further explained below, the DEIS's assumptions regarding these future scenarios are speculative and its estimated impacts artificially inflated when compared to the action alternatives. As a result, the DEIS fails to properly evaluate the impacts of opting to take no action.	51. The No Action Alternative presents what WGFP Participants would do if Reclamation does not allow the proposed connection to C-BT facilities. Consistent with CEQ guidance on what should be considered in a No Action alternative, it does not mean that agencies stop what they are doing. In the case of existing projects and/or agreements, prior court decisions and CEQ guidance define No Action as no change to existing operations or agreements. For WG and the WGFP this means that Reclamation would continue operation under the existing agreement between Reclamation and the Subdistrict for conveyance of WG water through the C-BT Project system. (See CEQ 40 Questions, #3) This also includes foreseeable actions by the participants. For most Participants, this includes continuing to take Windy Gap deliveries and increasing those deliveries as water demands increase within the capacity of the existing Windy Gap Project facilities and available storage in Granby Reservoir. One Participant would drop out of the WGFP. The City of Longmont would pursue enlargement of Ralph Price Reservoir to store its Windy Gap water. While there is no guarantee that enlargement of Ralph Price Reservoir would acquire all of the regulatory authorizations, it is a reasonable action for the City of Longmont, and no fatal flaws were discovered in review of this alternative in the WGFP EIS. The majority of the hydrologic impacts included under the No Action alternative included increased Windy Gap diversions which can currently be done without any infrastructure changes or additional authorizations or approvals from Reclamation. It is unreasonable to assume that Windy Gap diversions would remain status quo under the No Action Alternative or that the No Action alternative should be no diversions.
52	**1. The "no action" alternative defined by the DEIS is speculative.** To be reasonable, an alternative must be non-speculative. *Utahans for Better Transportation v. U.S. Department of Transportation*, 305 F.3d 1152, 1172 (10th Cir. 2002). The "no action" alternative defined in the DEIS is speculative. First, the "no action" alternative assumes enlargement of Longmont's Ralph-Price reservoir based on a statement by the City of Longmont that it may pursue such enlargement should the WGFP not be approved. Yet, the feasibility of such project as well as conditions that may significantly restrict its development are not evaluated in the DEIS. Indeed, enlargement of Ralph-Price Reservoir would require CWA § 404 permits and other approvals, the evaluation of which would raise environmental impacts considerations, and potential restrictions, similar to those raised by the proposed WGFP. The DEIS does not evaluate such potential restrictions but, rather, assumes that the project would allow diversions to the full extent requested by Longmont. This assumption is simply unreasonable and so is the assumption that, given potential	52. The No Action Alternative is not speculative. As indicate in response to Comment No. 51, the WGFP Participants can and would increase their Windy Gap diversions in the future regardless of implementation of the WGFP. Longmont would pursue increased storage for its Windy Gap water and, like other Participants, could increase its Windy Gap diversions from existing conditions regardless of additional storage.

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52	restrictions, reservoir enlargement would remain an economically feasible prospect for Longmont. The agencies themselves conclude that such an endeavor is speculative when they decline to evaluate the cumulative impacts of enlarging Union Park Reservoir, another Longmont project, as too speculative. *See DEIS, Table 2-4 at p. 2-52.* The DEIS neither discusses nor evaluates whether enlargement of Ralph-Price Reservoir is more or less likely or the basis for such determination. As further discussed below, the agencies' arbitrary selection of assumptions for the action and no action alternatives artificially inflates the impacts of the no-action alternative while at the same time minimizing the impacts of the action alternatives.	
53	Second, the "no action" alternative assumes that, in the absence of WGFP, participants will find ways to fully utilize their Windy Gap shares and projects future diversions, and resulting impacts, accordingly. Yet, the DEIS finds this very same exercise too speculative for cumulative impacts analysis. *See DEIS, Table 2-4 at p. 2-53 (Firming Remaining Windy Gap Project Units).* As a result, the impacts of future share development are reflected in the "no action" alternative, but they are not reflected in the action alternatives. As further discussed below, such arbitrary approach artificially inflates the impacts of the "no action" alternative, while minimizing the potential impacts of the action alternatives.	53. The WGFP Participants have all demonstrated a future need for use of Windy Gap water. WGFP Participants would maximize their use of Windy Gap water when it is available by using the full amount based on their unit ownership, the same as Windy Gap unit holders not in the WGFP. The Method for Effects Analysis for Water Resources in Section 3.5.2.2 was expanded to provide additional discussion on existing conditions and the No Action Alternative.
54	Third, the DEIS fails to evaluate the economic feasibility of the no action alternative when compared with less costly means potentially available to participants to meet their future water needs. Indeed, as discussed in comments submitted by Western Resource Advocates, adoption of the conservation measures consistent with the State's conservation objectives would enable project participants to meet their demand through 2030. When other projects currently proposed and involving several of the WGFP participants is considered, firm supplies will exceed participant demands through 2050. Indeed, the original Windy Gap project, approved over 20 years ago, anticipated the need for 90,000 acre-feet of storage but assumed that such storage would be supplied by the project participants. Such assumption did not come to fruition, hence the proposed WGFP. The DEIS's assumption that, absent WGFP, project participants will choose the high cost of pumping Windy Gap water over conservation and other solutions is both unsupported and highly speculative.	54. Water conservation is a key component of meeting future water needs by all WGFP Participants. The Participants have committed to and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Six of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict. While improvements in water conservation may delay the timing of additional deliveries of WGFP water, conservation is not sufficient to meet projected future water demands. For some Participants, additional sources besides the WGFP and conservation are needed to meet projected demands.
55	**2. The DEIS relies on inconsistent assumptions that artificially inflate the impacts of the no action alternative and understate the impacts of the action alternatives.** The environmental impacts of the WGFP action alternatives and, as currently defined, the "no action" alternative are directly tied to the amount and timing of additional Colorado River and Willow Creek diversions expected under each alternative.	55. See response to Comment Nos. 56 and 57.

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55	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 35 of 56 The more water diverted, the greater the likelihood and extent of impact – particularly at times when stream flows are low. Accordingly, the DEIS impacts analysis relies on a hydrological model that attempts to predict the amount and timing of future diversions expected under each alternative. While the approach is reasonable, the DEIS arbitrarily uses a different set of assumptions when predicting future diversions associated with WGFP action alternatives than those used to predict future diversions under the no action alternative. As a result, the diversions (and impacts) of the no action alternative are artificially inflated and the diversions (and impacts) of the action alternatives artificially reduced, thus creating the misleading impression that, should the agencies choose to do nothing, the environmental impacts would still be quite large.	
56	***The DEIS improperly and arbitrarily uses two different participants' "demands" to evaluate anticipated future diversions under the action and the no action alternatives.*** According to the DEIS, the hydrological model predicts future diversions under both the action and no action alternatives using the project participants' estimated future "demands." The term is not defined anywhere in the DEIS or associated technical reports. Under common usage, "water demand" is the amount of water requested by users to satisfy their needs. As such, the water demands of project participants are in no way tied to the availability of Windy Gap water supplies or how those supplies are delivered. As a result, water demands under both the action and no action alternatives should be the same. Under the DEIS, they are different. Indeed, the DEIS estimates that demands under the no action alternative will be twice as much as the demands under the action alternatives. *See e.g., Water Resources Technical Report at 81.* Under the no action alternative, it assumes that all Windy Gap unit holders, including non-project participants, will divert as much water as they can to satisfy their needs. Under the action alternatives, the DEIS only assumes diversions by WGFP project participants necessary to satisfy their firm yield. The bases for this inconsistent approach are not explained.	56. Windy Gap Project water demands are described in detail in Section 7.9 of the WGFP Water Resources Technical Report, and an overview is provided in Section 3.5.2.9 of the DEIS. Water needs under both the action and No Action alternatives are the same, but the "demands" used in the WGFP model, which drive diversions to storage and releases, vary by alternative. The term "demand" used for modeling reflects not just the amount of water requested by users to satisfy their water needs, but also the manner in which the Windy Gap project would operate with or without firming storage online. The Participants' demand under the No Action Alternative would be 36,665 AF/yr vs. 29,130 AF/yr under the Proposed Action. Water demands under the action and No Action alternatives are different because the Windy Gap project would be operated differently with additional firming storage online. Windy Gap Participant demands under the No Action Alternative are higher because Participants would try to maximize their use of Windy Gap water, when it is available, as their water needs increase in the future. Since there is no firm yield associated with Windy Gap supplies without additional storage online, the Participants would maximize their Windy Gap deliveries when available under the No Action Alternative because that water could be spilled in subsequent wet years. Firming storage allows Windy Gap water to be carried over for use in dry years because it is not at risk of being spilled from Granby Reservoir. Under the action alternatives, the demands were set so that the Participants' needs could be met each year, including the modeled drought years. In other words, the Participants' demands reflect the maximum amount of Windy Gap water that could be delivered each year without any shortage. If the Participants' demands used in the WGFP model were higher under the action alternatives, the Participants would experience shortages in dry years.
57	***The DEIS's no action alternative analysis assumes future diversions that the agencies specifically rejected as too speculative for inclusion in their action alternatives impacts analysis.*** As the language cited above indicates, the DEIS's "no action" alternative analysis assumes that both WGFP participants and Windy Gap unit holders that are not participating in the project, will strive to fully divert under their shares. *See also Water Resources Technical Report at p. 51* ("No Action reflects the estimated future full demand by all Windy Gap unit holders, including those entities not in the WGFP."). Yet, when evaluating whether to include full development by Windy Gap unit holders in its cumulative impacts analysis, the DEIS concludes that such development is too speculative to include in the evaluation. *See DEIS, Table 2-4, at 2-53.* As a result of this arbitrary disparity of treatment, increased diversions by Windy Gap shareholders are taken into account in the no action alternative but appear to be omitted from the action alternatives analysis. Thus, the DEIS artificially inflates diversions and	57. The demand for Windy Gap water by the nonparticipants (Windy Gap unit holders that are not participating in the Project) is the same under the No Action and action alternatives. Therefore, nonparticipant diversions of Windy Gap water were taken into account, and those diversions increase in a similar manner under both the No Action and action alternatives compared to existing conditions.

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57	resulting impacts under the no action alternative while at the same time understating the true impacts of the action alternatives.	Increased diversions by nonparticipants were not omitted from the action alternatives analysis. Because nonparticipant demands are the same under both the No Action and action alternatives, the DEIS does not artificially inflate diversions and understate impacts of the action alternatives. Table 2-4 in the DEIS states that no specific projects have been identified to firm the yield of those units not included in the proposed WGFP. Therefore, under both the No Action and action alternatives, the nonparticipants would maximize their Windy Gap deliveries when available because their Windy Gap water could be spilled in subsequent wet years, which is reflected in the model.
58	**3. The DEIS fails to provide needed information to enable the agencies' or the public's evaluation of the adequacy of modeled predictions under the "no action" alternative analysis.** The DEIS fails to explain critical assumptions used in modeling anticipated future diversions under the no action alternative. According to the DEIS, the model assumes that most project participants will try to maximize their Windy Gap diversions within existing project constraints (e.g., junior priority of water rights and limits in C-BT system capacity). However, the DEIS does not describe how most project participants would do so, by how much, or the assumptions used regarding Windy Gap water availability and participant system capacity and need.	58. The WGFP Modeling Report Addendum (Boyle, July 2006) includes information on the model parameters and assumptions for each of the EIS scenarios, including the No Action Alternative. That report describes how Project Participants would maximize their Windy Gap deliveries and how much each Participant's demand would be under the No Action Alternative. Specifically, Section 3.2.1 of that report describes Participants' Windy Gap operations under the No Action Alternative, including Windy Gap diversions to Granby and Ralph Price reservoirs, storage of Windy Gap water in Granby and Ralph Price reservoirs, Windy Gap demands, and Windy Gap deliveries. Section 2.1.10 of that report describes Windy Gap demands under the No Action Alternative. Assumptions regarding Windy Gap water availability for diversion are similar to the action alternatives, as described in Section 3.5.2.5 of the DEIS under the subsection Windy Gap Diversions. Windy Gap water available for diversion is constrained by downstream senior water right calls and instream flow requirements; decree limitations; the physical supply at the diversion point; pump station and Windy Gap pipeline conveyance limitations; and available space in Granby Reservoir, the firming reservoirs, and Adams Tunnel, depending on the action alternative. The Participants' water needs are described in Section 1.7 of the DEIS. The capacities of C-BT conveyance facilities used to deliver C-BT and Windy Gap water to the Participants and the Participants' water supply systems are currently sufficient for the maximum annual Windy Gap deliveries anticipated under the No Action Alternative. For example, Broomfield's annual demand under the No Action Alternative is 5,600 AF. Broomfield took delivery of 5,600 AF in 2003; therefore, Broomfield has an existing demand for 5,600 AF, and the capacity of the C-BT system and Broomfield's water supply system is sufficient to deliver that quantity of water under the No Action Alternative. Additional information on the No Action Alternative consistent with the information requested in this comment was added to Section 3.5.2.2 of the FEIS.
59	Indeed, the DEIS attributes the additional diversions under the no action alternative strictly to Longmont's storage in Ralph Price Reservoir. *See DEIS at 3-22 and 23.* If this is the case, and the increases in Windy Gap diversions under the no action alternative are strictly attributable to enlargement of the reservoir, then Longmont's future needs would be the only needs properly modeled. The assumptions used in the model regarding such needs are not described or explained. Based on the DEIS estimates of Longmont's water demands, even under a worst case scenario, estimated future no action alternative diversions far exceed Longmont's projected Windy Gap needs. *See DEIS at 1-30 and 3-22 and 23.*	
60	If, on the other hand, the model assumes other participants' increased future diversions under the no action alternative, the assumptions used in the model remain unexplained. What portion of modeled future diversions are attributable to Longmont, and what portion to other participants? Are future diversions by Lafayette assumed, given the city's announcement that it would drop from Windy Gap if WGFP is not approved? What assumptions were made with respect to the system capacity of participants to handle the diversions? Does the model assume water plant enlargement? Does it assume increased storage?[15] What assumptions were made with respect to the timing of available supply and project participants needs? Municipal water demands can be considerably lower during wet years, which appears to be when the majority of no action alternative diversions are estimated. Does the model take into account the timing of project participants' needs, or does it assume full diversion regardless of need? If diversions are assumed regardless of need and not storage is assumed, where would participants put the water?	
	[15] Inclusion of additional storage assumptions in the model without discussion of specifics, including assumptions regarding size, location, etc., would render the no action alternative's analysis fatally flawed – particularly in light of the DEIS's lengthy discussion of the potential enlargement of Ralph Price Reservoir.	

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		59. Additional diversions under the No Action Alternative are not strictly due to Longmont's additional storage at Ralph Price Reservoir. Additional Windy Gap diversions under No Action would occur because the Participants' and nonparticipants' demands under No Action are greater than under exiting conditions and there is additional storage capacity available at Ralph Price Reservoir. The Windy Gap demands for Participants and nonparticipants under No Action are greater due to each Participants' increased water needs in the future. With a higher demand for Windy Gap water under the No Action Alternative, Windy Gap deliveries from Granby Reservoir would increase, creating additional storage space that, at times, results in additional Windy Gap diversions. This explanation was added to Section 3.5.2.5 under the subsection Windy Gap Diversions. The assumptions used in the model regarding Participants' demands for Windy Gap water under the No Action Alternative were added to Section 3.5.2.2 of the FEIS. Estimated future Windy Gap diversions under the No Action Alternative are intended for Participants, nonparticipants, and MPWCD; therefore, the increase from existing conditions cannot be compared solely to Longmont's projected Windy Gap needs as indicated in the comment (see response to Comment No. 60). 60. The Participants', nonparticipants', and MPWCD's demands under No Action are greater than under exiting conditions; therefore, future Windy Gap diversions would increase to meet those higher demands. The model parameters related to Windy Gap operations under the No Action Alternative, including Windy Gap diversions, storage, demands, and deliveries, are described in the WGFP Modeling Report Addendum (Boyle, July 2006). Additional information on these assumptions was added to Section 3.5.2.2 of the FEIS. Approximately 6,400 AF/yr of Windy Gap diversions (including diversion shrink) are attributable to Longmont, and about 37,200 AF/yr of Windy Gap diversions are attributable to the other Participants, MPWCD, and nonparticipants. Windy Gap diversions for Longmont include water diverted to Granby Reservoir and then subsequently delivered to Ralph Price Reservoir when space is available, and Windy Gap water diverted directly to Ralph Price Reservoir when Granby Reservoir is full and space exists in the Adams Tunnel. Future Windy Gap deliveries to Lafayette were not included in the No Action Alternative since Lafayette would not participate in the WGFP if it is not approved.

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		The East Slope portion of the WGFP model includes the C-BT facilities required to convey Windy Gap water to each Participants' raw water system delivery point. Each of the Participant's existing systems have the capacity to handle Windy Gap deliveries anticipated under the No Action Alternative. Water treatment plant operations and enlargements are not addressed in the WGFP model because the purpose of the model is to simulate raw water diversion, conveyance, and storage. No increased storage is included in the WGFP model for firming Windy Gap supplies except Ralph Price Reservoir. No additional firming storage is assumed because all Participants, except Longmont, do not have a currently defined storage option under the No Action Alternative. Participants would take delivery of Windy Gap water when it is available, based on their demands within the capacity of their existing water systems and delivery points under the terms of the Carriage Contract. Assumptions or constraints regarding Windy Gap water availability for diversion from the Colorado River are described in Section 3.5.2.5 of the DEIS under the subsection Windy Gap Diversions. Windy Gap water would be diverted in average and wet years based on the constraints described in Section 3.5.2.2 so that it is available for delivery in dry years, when it is needed most and Windy Gap is typically out-of-priority. Under the No Action Alternative, Windy Gap diversions would be curtailed in wet years once Granby Reservoir fills and Windy Gap supplies are spilled. Longmont can continue to divert Windy Gap water to Ralph Price Reservoir if there is space in the Adams Tunnel. If Windy Gap water is available in Granby Reservoir for delivery in wet years because Granby Reservoir has not filled or Windy Gap supplies have not spilled entirely, the model assumes it is delivered up to each Participants' No Action demand. Windy Gap diversions and deliveries in wet years would be very low and in some instances zero in back-to-back wet years like 1983 and 1984 under the No Action Alternative.

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61	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 37 of 56 In addition, the assumptions used in the model regarding availability of C-BT system capacity are not explained and appear to be inconsistently applied. First, the DEIS indicates that the model assumes continuation of existing system restrictions and repeatedly states that additional diversions under the no action alternative could be accomplished when Granby is full "as long as there is space in the Adams Tunnel . . ." *DEIS at 3-22*. Was the availability of tunnel capacity under the no action alternative modeled? Second, the DEIS's predicts that wet year diversions under the no action alternative will increase by an average of 25,400 acre-feet from existing conditions. *DEIS at 3-23*. Yet, the DEIS states that "under . . . the No Action alternative, Windy Gap diversions would be limited or curtailed in most wet years" because "there is no conveyance or storage capacity in the C-BT system for Windy Gap water when Granby Reservoir fills." DEIS at 3-14. Does this mean that the anticipated 25,400 acre-foot average diversions under the no action alternative will not take place in most years? How does this affect the no action alternative impacts on aquatic resources?	61. The capacity of C-BT conveyance facilities that are incorporated in the WGFP model are described Section 3.2.2.2 and Table 3.6 of the WGFP Modeling Report (Boyle, December 2003). C-BT Project deliveries take precedence over Windy Gap deliveries via C-BT conveyance facilities. For example, C-BT deliveries made via the Adams Tunnel (such as deliveries to Carter Lake and Horsetooth Reservoir) occur first in the model up to the capacity of the tunnel, which is 550 cfs. If C-BT deliveries are less than 550 cfs, then additional space would be available to deliver Windy Gap water to the East Slope up to a maximum total delivery of 550 cfs. Therefore, availability of tunnel capacity is modeled under the No Action Alternative. The intent of the statement "Windy Gap diversions would be limited in or curtailed in most wet years." was that Windy Gap diversions would be limited to the period prior to Granby Reservoir filling, which is why "or curtailed" was added as synonymous with limited. This statement was revised in Section 3.5.2.3 of the FEIS under the subsection Colorado River below Granby Reservoir. Additional Windy Gap diversions under No Action would occur because the Participants' and nonparticipants' demands under No Action are greater than under existing conditions, and there is additional storage capacity available at Ralph Price Reservoir. With a higher demand for Windy Gap water under the No Action Alternative, Windy Gap deliveries from Granby Reservoir prior to spilling would increase, creating additional storage space at times that results in additional Windy Gap diversions in wet years. The No Action Alternative impacts on aquatic resources consider the additional Windy Gap diversions that would occur in wet years prior to Granby Reservoir filling.
62	Finally, the DEIS indicates that the "no action" alternative modeling assumes that exchange capacity in St. Vrain is available to accomplish delivery to Ralph Price Reservoir. Has this assumption been verified? Quantified? Is it reasonable? What basis?	62. The exchange capacity of St. Vrain Creek for delivery of Windy Gap water to Ralph Price Reservoir was analyzed based on a review of USGS gage data for North St. Vrain Creek near Allens Park, which is upstream of Ralph Price Reservoir; and conversations with Longmont staff regarding inflow to Ralph Price Reservoir during the period from May through August when exchanges would likely occur. Average monthly Windy Gap exchanges upstream to Ralph Price would range from about 15 cfs in May to 60 cfs in July. Based on a review of available flow data and information from Longmont staff, the exchange potential along North St. Vrain Creek would frequently be more than sufficient to exchange Windy Gap water upstream to Ralph Price Reservoir, particularly since there are only minor diversions in the exchange reach, other than the Longmont pipeline. If exchange potential was limited in some months, Longmont's Windy Gap water could be stored in Granby Reservoir longer (space permitting) until sufficient exchange potential exists.
63	A full disclosure of the assumptions built into the "no action" alternative modeled projections is critical, first, because of the inherently speculative nature of the exercise and, second, because of the risk that using arbitrary assumptions will under-estimate the impacts of WGFP and over-estimate the effects of doing nothing. Full disclosure is also particularly important given the relatively small difference between modeled future diversions under the no action and action alternatives. That a 93,000 acre-foot, $3__ million reservoir can accomplish so very little improvement in diversions over a 13,000 acre-foot, $33 million enlargement is simply counter-intuitive, and brings into question the economic feasibility and viability of the WGFP. **4. The "no action" alternative does not provide the baseline against which WGFP impacts can be evaluated and is otherwise inconsistent with NEPA.** The purpose of requiring federal agencies to include a "no-action" alternative is to enable them to "compare the potential impacts of the proposed major federal action to the known impacts of maintaining the status quo." *Custer County Action Assoc. v. Garvey*, 256 F.3d 1024, 1040 (10th Cir. 2001). For the no-action alternative, the current level of activity is used as a benchmark. *Id.*	
64	The no action alternative against which the proposed WGFP is compared does <u>not</u> reflect either the "status quo" or the "current level of activity" (i.e., water diversions in the study area today). Rather, the "no action" alternative consists of speculative guesses as to what may occur in the future, absent development of the WGFP. As discussed	

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64	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 38 of 56 above, such predictions are not only speculative, but the assumptions on which they are based remain largely unexplained and lead to counter-intuitive results. Perhaps in recognition of the speculative nature of the exercise and other shortcomings, the DEIS also compares the WGFP action alternatives to existing conditions. However, the DEIS does not reveal which predictions are being used by the agencies as the "baseline" against which WGFP impacts are compared. Without establishing a baseline, there is no way for the agencies to determine what effect the proposed action will have on the environment and, consequently, no way to comply with NEPA. *Half Moon Bay Fishermans' Mktg Ass', v. Carlucci*, 857 F.2d 505, 510 ((9th Cir. 1988). Without disclosure regarding the baseline used by the agencies, NEPA's dual goals to (1) insure that the agency has carefully and fully contemplated the environmental effects of its action, and (2) that the public has sufficient information to challenge the agency. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Moreover, if existing conditions are being used by the agencies as the benchmark against which the action alternatives are measured, evaluation of the no action alternative appears to serve no purpose other than to artificially minimize the impacts of the Proposed WGFP, a purpose which would bring into question whether the outcome of the Proposed WGFP has already been decided. **J. The DEIS's characterization of the "unavoidable impacts" of WGFP on the aquatic resources of the Colorado River is arbitrary and capricious and fails to meet NEPA and CWA §404(b)(1) review requirements.** The DEIS describes the expected unavoidable impacts of WGFP on the aquatic resources of the Colorado River as follows: "The additional diversions under all alternatives would result in a decrease in available fish habitat in the Colorado River below Windy Gap Reservoir and Willow Creek below Willow Creek Reservoir. The greatest effect to fish habitat would occur in the reach between Windy Gap Reservoir and the Williams Fork River; however, no significant impacts to fish populations are likely. Additional Windy Gap diversions from the Colorado River are likely to result in more exceedances of the aquatic life temperature standard, primarily when diversions occur in July and August." *DEIS at p. 3-145 (emphasis added).* With respect to exceedences of temperature standards, the DEIS further concludes that "measurable impacts" to fish populations are not expected because flow reductions in July and August would be infrequent. *DEIS at p. ES-1.*	63. Additional information on the No Action assumptions was added to Section 3.5.2.2 of the FEIS; however, a more complete discussion of the No Action Alternative assumptions is provided in the WGFP Modeling Report Addendum (Boyle, July 2006). The viability of the WGFP is based on the increase in the firm yield of the Windy Gap water rights for the Participants, not the change in diversion amounts. Comparison of the cost of a firming project and the No Action Alternative should be based on the respective firm yields, not Windy Gap diversions. There is no firm yield for the Participants, other than Longmont, under the No Action Alternative, whereas the firm yield of the Participants under the Proposed Action would be about 26,000 AF. 64. See response to Comment No. 51 on rationale for the No Action Alternative. The EIS provides two reference points for comparison of impacts. Existing conditions provide a baseline to compare impacts of the alternative actions and is representative of the change from existing conditions. In addition, Reclamation NEPA policy and guidance uses a comparison of the action alternatives with the No Action Alternative because this reflects the incremental impacts of proposed actions with likely future conditions if the WGFP is not implemented. The FEIS and associated technical reports provide data for all of the alternatives comparing action and no action alternatives with existing conditions.
65	The DEIS's description fails to meet NEPA requirements, reflects unsupported, arbitrary and capricious conclusions, and is based on the DEIS's failure to take a "hard	65. The effects to aquatic resources in the FEIS were based on best available information and included a detailed analysis using IFIM modeling of aquatic habitat changes, predictions on changes in stream morphology, and water quality. The Fish and Wildlife Mitigation Plan (FEIS Appendix E) and mitigation measures summarized in Section 3.25 of the FEIS were developed to reduce identified impacts. The cumulative effects analysis likewise used the same methodology to evaluate aquatic impacts from a number of reasonably foreseeable actions, as described in Section 2.8.2 of the FEIS.

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65	look" at the potential impacts of WGFP and other reasonably foreseeable projects on the aquatic resources of the Colorado River.	
66	**1. The DEIS's unavoidable impacts description fails to meet NEPA's requirement to inform both the decision-making agencies and the public.** The DEIS describes unavoidable impacts in a cursory manner, without describing the basis for its conclusions or whether they reflect an evaluation of proposed mitigation measures. Even more troubling is the fact that, the DEIS reaches critical conclusions with respect to the "significance" of identified, unavoidable impacts, but fails to explain the basis for those conclusions. Without such description, it is impossible for the agencies' decision-makers or the public to evaluate the soundness of the conclusions or the true nature of the unavoidable impacts the project will have. This leaves the decision-makers and the public with the only option of wading through the thousands of pages of DEIS and technical reports, and the hundreds of unexplained graphs, to at best guess the basis for the preparer's conclusions. As such, the DEIS fails to meet the most basic purposes of NEPA – i.e., to inform the decision-making agencies and the public, and violates the specific requirements of CEQ regulations.	66. The discussion of unavoidable impacts has been revised for many of the resources based on additional mitigation measures described in the FEIS.
67	**2. The DEIS's determination that unavoidable impacts are not significant is arbitrary and capricious and contrary to NEPA.** NEPA regulations specify the criteria by which the "significance" of an environmental impact is to be evaluated by a federal agency. *See 40 C.F.R. § 1508.27.* The DEIS summarily concludes that identified impacts are not "significant" or "measurable," but does not conduct the required analysis in accordance with CEQ regulations. In fact, the DEIS fails to describe <u>any</u> criteria used to arrive at such significance determinations. In addition, as discussed at length in these comments, the information provided in the DEIS and associated technical reports is inadequate to support <u>any</u> conclusions regarding the significance of the impacts of WGFP and other projects on the river's aquatic resources, much less a determination that identified impacts are not significant. As such, the DEIS significance conclusions are both arbitrary and capricious and inconsistent with NEPA requirements.	67. Additional discussion was added to the FEIS to describe the context and intensity of impacts to aquatic and other resources. Where adverse impacts were identified, feasible mitigation measures were added to reduce impacts.
68	**3. The DEIS's determination that no other unavoidable impacts will result is arbitrary and capricious and contrary to NEPA.** The same lack of adequate information and analysis, as described in these comments, precludes a determination that the identified impacts are the only unavoidable impacts resulting from the project. For example, the DEIS's failure to properly analyze how the impacts of WGFP on the Colorado River hydrograph precludes the agencies from taking a "hard look" at the impacts of reducing peak flows and less-than-peak flows that serve key aquatic habitat functions, such as cleaning spawning beds. The DEIS'	68. Reclamation could not locate where the EIS makes a statement that there are "no other unavoidable impacts". The EIS was written in accordance with the CEQ regulations implementing the NEPA and provides Reclamation's best estimate, based on available information, of the anticipated effects of the proposed action. Analyses in the EIS uses accepted methods for estimating hydrologic changes. The hydrologic analysis used in the EIS provided an estimation of the likely hydrologic impacts of the alternative actions compared to existing conditions and No Action. Substantial information is provided on changes in flow duration and peak flows based on use of daily data for multiple stations and gages for a 47-year period of record. Results of the hydrologic analysis provided an baseline for evaluating the impacts to stream morphology, changes in fish habitat (using the IFIM model), impacts to habitat for macroinvertebrates, changes in water quality, and influence on whirling disease. See response to Comment No. 43 on whirling disease.

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68	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 40 of 56 inadequate analysis of macroinverterbrates and the impacts potential low flows and high stream temperatures will have on these organisms precludes a determination of whether these aquatic organisms will be impacted and, in turn, whether the fisheries will be affected by a reduction in food supply. The DEIS's failure to evaluate potential impacts of increased pumping on whirling disease and, therefore, on the survival of the trout fisheries, precludes a determination that the exacerbating effects of whirling disease are not unavoidable impacts. As a result, whether WGFP will result in other unavoidable impacts cannot be ascertained at this time and the DEIS's conclusions in this regard, arbitrary. **K. The DEIS fails to present an adequate mitigation measures analysis.** NEPA requires that mitigation measures be fully reviewed in the NEPA process. "[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the action-forcing function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 352. CEQ regulations require that the agencies include in the EIS a discussion of appropriate measures to mitigate adverse environmental impacts. *40 CFR §1502.14(f) and 40 CFR § 1502.16(h).* Agencies must also state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. *40 CFR §1505.2(c).* Mitigation must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated. *Carmel-By-The-Sea v. Dept. of Transportation*, 123 F.3d 1142, 1154 (9th Cir. 1997). A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA. *Northwest Indian Cemetery Protective Association v. Peterson*, 795 F.2d 688, 697 (9th Cir. 1986). Broad generalizations and vague references to mitigation, which fails to specify whether any mitigation measures would in fact be adopted or to provide an estimate of their effectiveness or why such estimate is not possible, do not meet NEPA requirements. *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380-81 (9th Cir. 1998) The only two discernable mitigation measures proposed to address impacts to the aquatic resources of the Colorado River are as follows: • The Subdistrict will work with Grand County, CDOW, and others to determine if increasing bypass flows in the Colorado River from the existing minimum flow of 90 cfs to 135 cfs while Windy Gap is pumping during July and August would result in temperature reductions downstream of Windy Gap that would measurably benefit the trout fishery. If studies indicate that increased bypass flows would be effective, Subdistrict would consider increasing required flows under certain water supply conditions.	

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69	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 41 of 56 • Opportunities for improvements to aquatic lie habitat in the Colorado River and mitigation of impacts of fish will be coordinated with the CDOW, Grand County and other responsible agencies. *DEIS at ES-21.* The DEIS's description of proposed mitigation measures fails to meet NEPA's requirements. **1. The DEIS's description of mitigation measures fails to meet NEPA requirements.** First, the description of mitigation measures is vague, generally announcing an intent to study potential, as-yet-unsubmitted, mitigation ideas. Second, the DEIS fails to describe when, where or how "improvements" opportunities would be explored and implemented. Third, the DEIS completely fails to explain how these to-be-studied mitigation measures will address impacts to aquatic resources or how effective they will be in affecting such impacts. Fourth, the DEIS makes no commitment to actually implement such measures. Rather, it vaguely states that "opportunities" for habitat improvement (if any) would be coordinated, and that the Subdistrict "may consider" implementing bypass measures. Fifth, the DEIS offers no mitigation whatsoever to address impacts to Willow Creek. As such, the DEIS's mitigation measures description fails to meet NEPA requirements.	69. Additional mitigation measures were defined and developed to reduce or offset the potential impacts from implementation of the proposed project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25 of the FEIS.
70	**2. The DEIS fails to support the adequacy or effectiveness of the suggested "bypass flow" to address aquatic resources impacts and omits proposed mitigation of impacts as a result of reduced fish habitat.** The DEIS's aquatic resources impacts analysis indicates that the optimum flows for adult rainbow and brown trout habitat are 500 cfs. *DEIS at 3-135.* Yet, mitigation proposed would, at most, restrict WGFP pumping to times when Colorado River flows below Windy Gap are reduced to 135 cfs and further restricts potential implementation of such restrictions to a showing of benefits to the fisheries due to stream temperature reductions. The DEIS fails to explain how such dramatic reductions below trout habitat needs would avoid or minimize impacts to aquatic resources, or the impacts of such reduced flows on these Gold Medal, Wild and Scenic Rivers Act eligible fisheries.	70. See response to Comment No. 23 regarding impacts to temperature and mitigation.
71	**3. The DEIS's suggested "bypass flow" mitigation measure is subject to conditions that are scientifically unworkable and unjustified.** Requiring proof that bypassing 135cfs "would result in temperature reductions downstream of Windy Gap that would measurably benefit the trout fishery" is scientifically unworkable. Thankfully, all trout do not die each and every time a certain stream temperature level is reached. Instead, they begin to suffer sub-lethal effects (e.g., reduced growth, reduced reproduction, as well as reduced survivorship) which increase in	71. See response to Comment No. 23 regarding impacts to temperature and mitigation.

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71	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 42 of 56 magnitude as both the severity and duration of temperature exceedences increase. If temperatures increases are high enough, all the trout will die. Indeed this is why trout are not found in warm-water streams. However, demonstrating the benefit of a specific instance in which exposure to temperatures that produce sub-lethal effects was avoided in the field is very difficult if not impossible to do. Instead, we adopt protective standards based on controlled studies and attempt to avoid exceeding the standards. **This is why the State has adopted stream temperature standards, based on extensive and well vetted studies.** Even assuming such demonstration is possible, developing the required information would be, at best, prohibitively expensive. In either case, the condition would pretty much ensure that no flow mitigation is ever done. Moreover, requiring such effort is scientifically unjustifiable. Flow is one of the critical factors determining how quickly a stretch of river warms (or cools) on a given day. Higher flows change temperature more slowly than lower flows.[16] It is unquestionable that increased bypass flows will result in smaller temperature swings throughout the day and lower average temperatures at any given location. We know that trout are negatively impacted by high daily maximums and by prolonged exposure to high temperatures. Indeed, the State went through a rigorous and protracted evaluation of the available science to determine what temperatures would be protective of trout. Requiring that the avoidance of a given temperature exceedences be correlated with a measurable benefit for the trout fishery is recreating the wheel. We know that temperature exceedences harm trout. This is why temperature standards were adopted. A demonstration of the specific benefit of any avoided temperature exceedences in these specific reaches of the river is not needed. The DEIS's proposed mitigation is vague, unsupported, and imposes conditions that are unnecessary and virtually impossible to meet. Accordingly, the DEIS's mitigation analysis is fatally flawed. [16] There are two reasons for this and they both come back to mass. The greater the volume of water that is being heated, the more energy it needs to absorb or release to change temperature. This is essentially the first law of thermodynamics: "the increase in internal energy of a system is equal to the amount of energy added by heating the system, minus the amount lost as a result of the work done by the system". When discharges are higher, there is more water in the river that needs to be heated (or cooled) for any given swing in temperature. Because velocity is also related to discharge in that the average water velocity of a river increases with increasing discharge, the turnover time of the river is also greater. This means that water in a river reach is replaced more frequently when discharge is high than when it is low. This, too, contributes to the total amount of water than needs to be heated to produce a swing in temperature. Another way to think about this is that all else being equal, when water velocity is high a slug of water travels further downstream before it absorbs enough heat to produce a given increase in temperature. Since much Colorado River Water begins as snowmelt at 0 ºF this means that when velocity is high, water travels further before it is heated to temperatures that are stressful for trout.	

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72	**L. The DEIS fails to comply with NEPA requirements and agency guidance requiring evaluation of consistency with Federal, State, regional or local laws.** NEPA regulations require federal agencies to identify and evaluate possible conflicts between the proposed action and federal, regional, State and local laws. *See 40 CFR §§ 1502.16(c) and 1506.2(d).* Where an inconsistency between the proposed action and State and local laws exists, the regulations require the agencies to describe "the extent to which the agency would reconcile its proposed action with the plan or law." *40 CFR § 1506.2(d).* In addition, Reclamation and the Corps operate under specific guidance for compliance with NEPA regulations. *See Reclamation's Environmental and Planning Coordination Office, D-5100; 33 CFR Part 320 and 325 (Corps).* The DEIS fails to meet NEPA requirements and guidance as set forth in CEQ regulations and the agencies' respective guidance and regulations.	72. See response to Comment Nos. 73 to 75.
73	First, the DEIS lists "[p]rincipal federal, state and local environmental compliance requirements associated with implementation of [WGFP]." *DEIS at 1-43; see DEIS, Table 1-7 at 1-44 to 1-46; see also DEIS at 3-130 (specific to aquatic resources and recreational fisheries).* However, while summarily listing such requirements, the DEIS fails to evaluate whether approval of WGFP would conflict with these requirements or how, if such conflict exists, the agencies propose to reconcile approval of WGFP with such requirements. Based on the information provided by the DEIS, and as discussed in these comments, it is clear that, at a minimum, approval of WGFP would conflict with State law establishing stream temperature Standards for the protection of cold water biota. The DEIS could also conflict with Colorado's management of fisheries within the affected segments as Gold Medal and/or Wild trout fisheries, the goals of the Fish and Wildlife Coordination Act, and Executive Order 12962 (established to "conserve, restore, and enhance aquatic systems to provide for increased recreational fishing opportunities nationwide."). The DEIS does not discuss how the agencies propose to reconcile approval of WGFP with such conflicts.	73. Mitigation measures for aquatic resources are described in Sections 3.8.4 and 3.9.4 of the FEIS. There would be no conflict with management of Gold Medal waters, as described in response to Comment No. 50. A Fish and Wildlife Mitigation Plan (FEIS Appendix E) was developed for the project in accordance with CRS 37-60-122.2. The Fish and Wildlife Mitigation Plan will be incorporated in the Fish and Wildlife Coordination Act report.
74	Second, the DEIS fails to identify State water laws as a requirement with which approval of WGFP must comply. Colorado water laws establish a system to administer and protect the water rights of its citizens, including instream flow water rights held by the CWCB for "protection of the natural environment to a reasonable decree." [CITE]. As further discussed in Section III of these comments, approval of WGFP absent a change of water rights by a Colorado water court would violate the State's water right laws. Yet, the DEIS neither identifies nor addresses potential conflicts with such laws.	74. In 2006, Reclamation consulted with the Colorado State Engineer to determine if the alternatives being considered in the Preliminary draft EIS could be administered, without change, or what changes would be required to implement the alternatives. The State Engineer considered to proposed operation of the proposed operation and determined that an east slope reservoir with prepositioning may be administered in compliance with current water right decrees and within the priority system. Alternatives requiring a West Slope reservoir would require a change in the Windy Gap water rights. Reclamation is relying on this opinion from the State Engineer in determining that there are no conflicts with Colorado water rights law. Additionally, Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS. Also see response to Comment Nos. 89 and 90.
75	Finally, the DEIS improperly restricts the requirement for compliance with Grand County's 1041 regulations to actions that require construction of reservoirs in the west slope. *See DEIS, Table 1-7, at 1-46.* Trout Unlimited refers to Grand County's comments in this regard.	

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76	The DEIS fails to identify and evaluate potential conflicts with Federal, State and local laws as required by CEQ regulations and agency guidance. Accordingly, the DEIS fails to meet NEPA requirements.	75. The EIS acknowledges that a 1041 permit may be required but takes no position on the need for a 1041 Permit for the Preferred Alternative. Resolution of this issue is not required for completion of the NEPA process or issuance of a Record of Decision. Additional discussion on this issue was added to Section 1.10.3 of the FEIS. Grand County and the Subdistrict disagree on the need for a new or modification of the existing Windy Gap 1041 Permit for the Preferred Alternative, which includes no new facilities in Grand County.
77	**II. THE DEIS FAILS TO PROVIDE INFORMATION NECESSARY FOR THE AGENCIES' EVALUATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS.** Before the agencies decide on a course of action regarding the proposed WGFP, they must evaluate whether their actions will comply with Federal, State and local laws and they must consult with the U.S. Fish and Wildlife Service (USFWS) regarding potential impacts to aquatic resources.[17] The information provided in the DEIS is inadequate to enable the agencies' determination in this regard. The DEIS is also inadequate to enable the U.S. Fish and Wildlife Service to provide recommendations under the Federal Wildlife Coordination Act (FWCA) or for the State of Colorado to issue a certification under CWA § 401. Accordingly, Reclamation and the Corps should stay any decision with respect to WGFP until such time as a supplemental EIS providing the required information is prepared.	76. Table 1-7 in the FEIS lists potential compliance requirements needed for the WGFP. In addition, Chapter 3 of the FEIS indicates applicable Regulatory Framework for resources. Some of these regulatory requirements are met as part of the NEPA process, while others would need to be addressed by the applicant at a later date. The USFWS was consulted with regarding the Fish and Wildlife Coordination Act and the Endangered Species Act. The 404/401 permitting process is running parallel with NEPA compliance. A supplemental EIS is not needed to meet permitting and consultation requirements.
78	**A. The DEIS fails to provide information necessary for Reclamation's evaluation of compliance with Senate Document 80 and other Reclamation laws and policies.** Senate Document 80 (SD 80) imposes upon Reclamation an affirmative duty to protect the Colorado River's fisheries.[18] It provides that the project must be operated "to most nearly effect" the C-BT Project's primary purposes. SD 80 specifically identifies preservation of the Colorado River's fisheries as one of those purposes. *SD 80 at pp. 2.* SD 80 further stipulates that the project shall be operated so as to "insure an adequate supply for irrigation, for sanitary purposes, for the preservation of scenic attractions, **and for the preservation of fish life**." *SD 80 at p. 5 (emphasis added).*	77. Reclamation completed consultation with the Fish and Wildlife Service on the effects of the proposed action on the Colorado River endangered fish. The U.S. Fish and Wildlife Service issued a biological opinion on February 12, 2010 for the Preferred Alternative (FEIS Appendix D). The biological opinion determined that the original Windy Gap Project meets the criteria for coverage under the PBO because a Recovery Agreement was signed by the Subdistrict in March of 2000 and the depletions existed when the Recovery Program was initiated. Additionally, discussions with the FWS indicate that the FWS will adopt the Fish and Wildlife Mitigation Plan as part of the compliance with the Fish and Wildlife Coordination Act.
	[17] The DEIS acknowledges the agencies' obligation to make consistency determinations with respect to other laws, but states that such determination "is not part" of the DEIS. *DEIS at 1-42.* Accordingly, these comments are not intended to provide a comprehensive analysis in this regard. Rather, they are intended to provide initial input with respect to the sufficiency of the information and analysis provided in the DEIS to enable such decisions. Trout Unlimited will provide comprehensive comments regarding the consistency and legality of Reclamation's proposed contractual actions upon notice, as required by Federal regulations and Reclamation's policy. *See e.g., 43 CFR § 426.22; Reclamation Manual, PEC P06 (Oct. 3, 2006) and WTR 04-01(Nov. 11, 2000).* **Trout Unlimited again requests to be directly notified with respect to any proposed contract action by Reclamation in connection with WGFP.** [18] Senate Document 80 is the legal foundation of the C-BT Project. The Project was authorized by the Appropriations Act of August 9, 1937, 50 Stat. 564, 595, which requires that the project be built and operated in accordance with Senate Document 80.	78. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.

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78	Enabling projects such as WGFP is <u>not</u> a primary, secondary, or tertiary purpose of the project. Indeed, enabling such projects is not a purpose of the C-BT Project at all. At most, reclamation's approval of the WGFP carriage contract would be a voluntary Reclamation action "to assist in improving the management of the West's water resources." *See Reclamation Manual, WRP P04 (Jan. 10, 2001).* Assuming that using C-BT Project facilities and water for such purpose is allowable under SD 80, an assumption that as further discussed Section III remains in question, if operation of WGFP results in negative impacts to the river's fisheries or recreation resources, Reclamation must either impose conditions that will protect the river's resources or it must deny use of C-BT Project facilities and water to accomplish WGFP purposes.[19] The information provided by the DEIS is insufficient to support Reclamation's decision in this regard.	
79	First, the DEIS fails to evaluate the impacts the C-BT Project is already having on the Colorado River fisheries. Rather, the DEIS simply assumes that past impacts are reflected in existing conditions. While in philosophical sense this may be true, as discussed in detail in Section I of these comments, such analysis is insufficient to understand the extent to which the Colorado River fisheries have been compromised by past operations, including C-BT Project operations and, therefore, the extent to which additional diversions by WGFP may push the river system over the brink, causing significant degradation, or even the total collapse of these valuable fisheries.[20]	79. See response to Comment No. 12.
80	Second, the DEIS fails to assess the true impacts of WGFP on the Colorado River's aquatic resources and recreational values. As discussed at length in Section I of these comments, the DEIS fails to evaluate the most likely and damaging impacts of the project and arbitrarily dismisses impacts that are identified – including anticipated	80. Aquatic resource effects were evaluated and identified in the FEIS. Mitigation measures for effects on aquatic resources are included in the Fish and Wildlife Mitigation Plan (FEIS Appendix E) and have been incorporated into the FEIS as summarized in Section 3.25.
	[19] Reclamation's failure to do so would not only violate SD 80, but also the Warren Act and Reclamation's policy implementing it. See *e.g., Reclamation Manual, WRP P04 (Jan. 10, 2001);* and *Principles Governing Voluntary Water Transactions That Involve or Affect Facilities Owned or Operated by the Department of the Interior (Dec. 16, 1988) (1988 Principles).* See discussion in Part III of these comments, below. [20] The DEIS makes passing reference to the "Principles to Govern the Release of Water at Granby Reservoir Dam to provide Fishery Flows immediately downstream ." (Principles). While these principles may have at one time been intended to provide flow protection downstream of Granby Reservoir, more recent information, including information provided by the Grand County Stream Flow Management Plan and even information presented in the DEIS, shows that those flows are insufficient for the purpose. Moreover, available information also indicates that the flows established in 1961 are inconsistent with the recommendations made by the USFWS. *See Fish and Wildlife Service and Bureau of Reclamation Joint Report Concerning Fishery Flows below Granby and Willow Creek Dams, Colorado Big Thompson Project.*	

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80	violations of stream temperature standards adopted by the State of Colorado for the projection of aquatic life.	
81	Third, the DEIS fails to propose firm mitigation measures, or to evaluate the extent to which mitigation measures that may be evaluated in the future will protect the fisheries.	81. See response to Comment No. 80.
82	Reclamation's first duty is to operate the C-BT Project in a manner that meets the primary purposes identified in SD 80, including the primary purpose of preserving the fisheries and recreation opportunities of the Colorado River. Even if such duty allows room for Reclamation's facilitation of projects like WGFP, Reclamation may not do so at the expense of fulfilling its primary obligations under SD 80. The DEIS fails to provide information necessary to enable Reclamation's determination in this regard. Accordingly, Reclamation may not approve WGFP until such time as adequate information is developed or strict conditions that will ensure that the river's fisheries and recreation opportunities will not be harmed are developed.	82. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.
83	**B. The DEIS fails to provide information needed to enable the Agencies compliance with the Federal Wildlife Coordination Act.** The Federal Wildlife and Coordination Act (FWCA) requires federal agencies to consult with the USFWS and the State's fish and wildlife agencies when evaluating approval of projects that will impound, divert, or otherwise modify a stream or other water body. *16 U.S.C § 662(a).* The purpose of this requirement is to ensure that "wildlife conservation shall receive equal consideration with other features in the planning of Federal water resource development programs . . . putting fish and wildlife on the basis of equality with flood control, irrigation, navigation, and hydroelectric power in our water resource programs. . ." *S.Rep. No. 1981, 85th Cong.2d Sess. (July 28, 1958). 1958 U.S.Code Cong. & Admin.News, pp. 3446, 3448, 3450.1958 U.S.Code Cong. & Admin.News, at 3450.* Consultation with the fish and wildlife agencies must occur before the agencies make decisions. *See, e.g. Zabel v. Tabb*, 430 F.2d 199 (5th Cir. 1970), and their recommendations must be given proper consideration and weight. *See e.g., Sierra Club v. Alexander,* 484 F. Supp. 455, 470 (N.D.N.Y. 1980). To enable consultation, federal agencies must give the fish and wildlife agencies a meaningful opportunity to comment. *Sierra Club v. U.S. Army Corps of Engineers, 935 F. Supp. 1556, 1580 (S.D. Ala. 1996).* The DEIS provides sufficient information to warrant a determination by the USFWS and the Colorado Division of Wildlife that the proposed WGFP will have unacceptable impacts to aquatic resources – in particular, given the acknowledged violation of State stream temperature standards. However, for the reasons summarized in Part B, above, and described in detail in Section I of these comments, the DEIS fails to	83. See response to Comment No. 77.

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83	provide adequate information to understand the full impacts of the project or from which recommended mitigation can be developed. Accordingly, the agencies have failed to provide a meaningful opportunity for the WSFWS and the Colorado Division of Wildlife's comments, in violation of the FWCA.	
84	**C. The DEIS fails to provide information needed to enable the Agencies to evaluate compliance with Executive Order 12962.** Executive Order 12962 (EO 12962), issued on June 7, 1995, requires federal agencies to take actions designed to improve aquatic resources to provide increased recreational fishing opportunities. In this regard, EO 12962 provides, in pertinent part: Federal agencies shall, to the extent permitted by law and where practicable, and in cooperation with States and Tribes, improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by . . . *b)* identifying recreational fishing opportunities that are limited by water quality and habitat degradation and promoting restoration to support viable, healthy, and, where feasible, self-sustaining recreational fisheries; *c)* fostering sound aquatic conservation and restoration endeavors to benefit recreational fisheries . . . *f)* implementing laws under their purview in a manner that will conserve, restore, and enhance aquatic systems that support recreational fisheries . . . *h)* evaluating the effects of Federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order. *EO 12962, § 1.* The order further creates a National Recreational Fisheries Coordination Council, of which the Department of the Interior, the Department of Defense and EPA are members. The council is directed to, among other things, "ensure that the social and economic values of healthy aquatic systems that support recreational fisheries are considered by Federal agencies in the course of their actions." *EO 12962, § 2(a).* Not only does the DEIS fail to evaluate the extent to which approval of WGFP will further and not conflict with the directives of EO 12962, for the reasons summarized in Part B, above, and discussed in detail in Section I of these comments, the DEIS fails to supply the information needed for the agencies evaluation of consistency with EO 12962.	84. Section 1(h) of EO 12962 requires agencies to evaluate, " the effects of Federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order;" The FEIS evaluates and documents the anticipated effects of the proposed action on aquatic systems and recreational fisheries.
85	**D. The DEIS fails to provide information needed for the State of Colorado's determination of compliance with CWA § 401.** Section 401 of the Clean Water Act requires § 404 permit applicants to provide a State certification of compliance with state water quality standards. *See 33 USC § 1341(a).*	85. The impacts of the WGFP are evaluated during the periods when the Project could make an impact. See the Fish and Wildlife Mitigation Plan (FEIS Appendix E) and Section 3.8.4 of the FEIS for a discussion regarding mitigation for temperature impacts.

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85	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 48 of 56 In spite of its inadequacies, the DEIS already establishes that operation of WGFP will violate stream temperature standards established by the State of Colorado for the protection of cold water biota. As described in Section I of these comments, these acknowledged violations may only reflect the "tip of the iceberg" with respect to the extent to which operation of WGFP may aggravate stream temperature problems. Due to inadequacies of the model and analysis, the DEIS fails to evaluate the full extent to which operation of WGFP, combined with past, present and future reasonably anticipated projects, will cause violations of the State Standards. The DEIS further fails to propose firm mitigation measures that will prevent either acknowledged or as yet undetermined violations of these State Standards. As a result, the information provided by the DEIS is insufficient to enable the State to do anything other than to deny CWA § 401 certification.	
86	**5. The DEIS fails to provide information needed for the Corps' determination regarding compliance with CWA § 404.** Trout Unlimited's comments in this regard are incorporated in its comments to the Corp's proposed CWA § 404, attached to these comments as Attachment __ .	86. As a cooperating agency, the Corps has participated in the preparation and review of the DEIS and FEIS, and has sufficient information for a decision on a 404 Permit. This decision is not required as part of the NEPA process and the Corps can request additional information from Reclamation or the applicant, as needed. The Corps will use information in the FEIS to develop their own Record of Decision on the 404 permit application.
	III. THE WGFP ACTION ALTERNATIVE, AS PROPOSED, WOULD VIOLATE FEDERAL AND STATE LAW.[21] NEPA requires consideration of *reasonable* alternatives. *Utahans for Better Transportation v. U.S. Department of Transportation*, 305 F.3d 1152, 1172 (10th Cir. 2002). An illegal or unauthorized alternative cannot be considered reasonable. *Utah v. Norton, 2006 WL 11798 (slip opinion).* The Proposed WGFP Action alternative, as proposed, would violate Federal and State law.	
87	**A. Reclamation laws.** **1. Use of C-BT Project Facilities.** The Warren Act provides Reclamation's general authority to enter into contracts allowing the use of Reclamation project facilities for storage and conveyance of non-project water (excess capacity contracts), subject to strict requirements designed to protect the beneficiaries of the Reclamation project. The proposed WGFP carriage contract would be an excess capacity contract.	87. Reclamation does not consider the Warren Act as authority to enter into the contract to implement the proposed action. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.
	[21] Trout Unlimited's comments are not intended to provide comprehensive input as to the legality of the agencies' action in this regard. Rather, they are intended to provide input regarding the legality of the proposed alternative in the context of the NEPA analysis. Comprehensive comments will be provided by Trout Unlimited upon notification of agency action.	

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87	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 49 of 56 In 1985, an investigation of practices approving excess capacity contracts under the Warren Act revealed that many such contracts could not be administered under the Act.[22] As a result, Reclamation developed a number of policies addressing the conditions under which Reclamation would approve excess capacity contracts. *See, e.g. 1988 Principles; Reclamation Manual, Policy WTR-P04 (Jan. 10, 2001); Reclamation Manual, Policy WTR P03 (Jan. 10, 2001).* The Policies apply to amendments and extensions of previous excess capacity contracts as well as to new contracts. These policies prohibit Reclamation from entering into excess capacity contracts unless specific conditions are met. They include, but are not limited to, the following provisions: • "Excess capacity will be made available only for the storage and conveyance of non-project water to be used for irrigation, except in the case of the projects identified in section 305 of the Drought Relief Act or in other project-specific legislation." *Policy WTR-P04 at p. 3.* According to the Policy, this limitation is imposed by the Warren Act. *Policy WTR-P04 at p. 3, n. 2.* • "Reclamation will not allow the use of Reclamation project facilities for the storage and conveyance of nonproject water unless excess capacity exists and project operations and Reclamation's contractual obligations to its project contractors, O&M contractors, or others can and will be protected." *Policy WTR-P04 at p. 3.* • "The storage and conveyance of non-project water will be allowed only if this will not impair Reclamation's ability to protect the water rights for and the yield of its projects and to meet its statutory or regulatory obligations." *Id.* • "Reclamation will not enter into contracts for the use of excess capacity unless and until the requirements of contracts applicable to project service from the facilities involved, of Federal reclamation law (including, but not limited to, the requirements, restrictions, and limitations of the Warren Act and, if applicable, section 305 of the Drought Relief Act), and of all other applicable Federal laws (including, but not limited to, NEPA and the Endangered Species Act) are met." *Id. at p. 4.* • Reclamation may enter into excess capacity contracts only when doing so can be accomplished without diminution of services to those parties being served by the [22] *See Memorandum from Keith Eastin, Associate Solicitor, Division of Energy and Natural Resources, Dept. of Interior, to Commissioner, Regarding Application of Reclamation Reform Act of 1982 to Contracts Executed Pursuant to the Warren Act of 1911, at 7 (Aug. 28, 1985).*	

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87 88	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 50 of 56 project and there are no third-party consequences, those consequences are addressed in appropriate forums, or the consequences will be mitigated to the satisfaction of the affected parties. *1988 Principles, §§ 2 and 3.* • "Primacy in water allocation and management decisions rests principally with the States. Voluntary water transactions under this policy must be in accordance with applicable State and Federal laws." *1988 Principles, § 1.* **2. Use of C-BT Project Water.** Neither the Warren Act nor these policies authorize the use of project water for non-project purposes. With respect to the use of project water for non-project purposes, Reclamation has adopted a specific policy, which states: "Effective immediately, no new contracts for the sale or use of project water or surplus project water from a Reclamation project shall be entered into based upon the Warren Act of 1911 (43 U.S.C. 523-525). Rather, all future contracts for the sale or use of project water or surplus project water shall be entered into based upon the Reclamation Project Act of 1939 and/or other applicable authorities." *Reclamation Manual, WTR P03 (January 10, 2001).* Indeed, the DEIS indicates that Reclamation will evaluate the extent to which using C-BT Project water for non-project purposes will meet the requirements of § 14 of the Reclamation Project Act of 1939. *See DEIS at 1-43.* However, it is unclear whether such Act applies to these circumstances and, if so, whether use of C-BT Project water for WGFP purposes is "necessary and in the interests of the United States and the project," as required by the act - particularly in light of the potential impacts such use will have on the primary purposes of the C-BT Project, as stated in SD 80. In addition, the storage facilities where C-BT Project water is to be stored are specifically identified in SD 80 and the Blue River decree, the water rights decree under which the C-BT Project operates consistent with State water law. Neither SD 80 nor the Blue River decree authorizes storage of C-BT Project water in non-project facilities, such as the proposed Chimney Hollow Reservoir. Whether storage of C-BT Project water can be accomplished consistent with SD 80 restrictions is questionable. As further discussed in Part B, below, storage of C-BT Project water in a new reservoir, absent a change of water right duly decreed by the court, would most certainly violate State water law. Moreover, as further described in Part B, below, major modifications to Granby Reservoir may be needed to ensure that implementation of the Proposed Alternative will not illegally expand C-BT Project diversions. Such changes, as well as storage of C-BT	88. See response to Comment No. 87.

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88	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 51 of 56 Project water in an unauthorized facility, appear to constitute "major changes" requiring Congressional approval under the Reservation Projects Act. *43 U.S.C. § 390b(d).* Serious questions remain as to the legality of the Proposed WGFP Action, as currently proposed. Accordingly, before the agencies proceed, they must take a close look as to whether the Proposed Action alternative is legal and, therefore, meets NEPA requirements. In accordance with NEPA, such review must be made available for public review. **B. Colorado water law.** **1. Absent a change of water rights decree, Reclamation's storage of C-BT Project water in Chimney Hollow Reservoir would violate Colorado water law.** The WGFP Proposed Action alternative relies on temporary storage of C-BT Project water in the new Chimney Hollow Reservoir – a concept described in the DEIS as "prepositioning." Reclamation would store C-BT Project Water in the new, proposed Chimney Hollow Reservoir, thus creating space in Granby for storage of Windy Gap water when in priority. Storage of C-BT Project water in Chimney Hollow reservoir is not authorized under the Blue River decree, the court decree authorizing diversion and storage of C-BT Project water under its senior, 1937 priority.[23] Under Colorado law, the owner of a decreed water right has the right to change the place where decreed water will be stored, or to add places of storage. *See Trail's End Ranch v. Colorado Division of Water Resources,* 91 P.3d 1058, 1061 (Colo. 2004); *C.R.S. § 37-92-103(5).* However, to do so, the owner must obtain a decree from the water court approving the change of water rights. *Trail's End Ranch*, 91 P.3d at 1061; *Empire Lodge Homeowners' Ass'n v. Moyer,* 39 P.3d 1139 (Colo. 2001); *Farmers Reservoir and Irr. Co. v. City of Golden,* 44 P.3d 241, 246 (Colo. 2002). The purpose of the requirement is to ensure that the change in the use of the decreed water right will not result in injury to the water rights of others.[24] [23] *See Final Decree for Consolidated Civil Case Nos. 2782, 5016 and 5017, in the U.S. District Court for the District of Colorado. While water right decrees in Colorado are usually adjudicated in State water courts, as the decree explains, the Blue River decree was issued by Federal district court because the case was removed by the United States from state court. However, in ruling on the matter, the federal court must use and is bound by Colorado water law.* [24] As further discussed below, Trout Unlimited is particularly concerned with the injury the proposed change of C-BT Project water rights will have on the instream flow water rights held by the CWCB, in trust, for the people of the State of Colorado, to preserve the natural environment to a reasonable decree. For example, the CWCB instream flow rights are junior to the C-BT Project water rights. Accordingly, to the extent the change in water rights increases C-BT Project diversions beyond what is legally allowed under the Blue River decree, the CWCB's junior instream flow rights will be injured.	
89		89. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.

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89	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 52 of 56 *Empire Lodge Homeowners' Ass'n,* 39 P.3d 1158; *Farmers Reservoir and Irr. Co. v. City of Golden,* 44 P.3d at 246. The requirement is mandatory, not discretionary. *Id.* Accordingly, unless Reclamation obtains a decree amending the Blue River decree to authorize storage of C-BT Project water in Chimney Hollow reservoir, storage of C-BT Project water in that reservoir would be illegal under State law. The DEIS indicates that the Colorado State Engineer "indicated that the Proposed Action to deliver and store water in Chimney Hollow Reservoir using prepositioning could be administered in compliance with current water right decrees and within the priority system." *DEIS at 3-7 (citing January 17, 2007 personal communication between then State Engineer Simpson, H.D. and Fred Ore, DEIS at 5-12).* However, Colorado water law is crystal clear in that the Colorado State Engineer does not have the authority to make this type of determination. Only the water court does. *See e.g., Empire Lodge Homeowners' Ass'n,* 39 P.3d at 1147; *Simpson v. Bijou Irrigation Co.*, 69 P.3d 50 (Colo. 2003).[25] The DEIS further indicates that to "prevent the C-BT Project from storing more water in Granby Reservoir than it could without prepositioning," C-BT would stop storing water at Granby Reservoir when "the total C-BT contents in Granby and Chimney Hollow combined reaches 539,568 AF, which is the physical capacity of Granby Reservoir." *DEIS a 3-24.* Presumably, this limitation would prevent expansion of the C-BT Project water rights to the injury of others. However, even if Reclamation were to incorporate such limitation in its carriage (excess capacity) contract, Reclamation would be violating Colorado water law unless it obtains the mandatory change of water rights decree from water court. Far from a mere formality, the requirement of water court approval of changes of water rights "provides and important protection for potentially affected decree water rights holders." *Trail's End Ranch,* 91 P.3d at 1063. "They are designed to provide notice and the opportunity for potentially affected decreed water rights holders to participate in proceedings in order to protect their rights." *Empire Lodge Homeowners' Ass'n,* 39 P.3d at 1158. Reclamation may not substitute its authority for the authority of the water court, granted by the State of Colorado, and having primacy over federal law. Moreover, the proposed restriction is ineffective in protecting water rights held by others from injury caused by the proposed prepositioning. First, the suggested volumetric limits would allow diversion of C-BT Project water in excess of what is authorized in the Blue River decree. Under the Blue River decree, Granby Reservoir's total storage [25] Nor does the fact that C-BT Project water would be stored in a reservoir located in a different basin from where the water is diverted changes the strict, mandatory requirement to obtain a change decree imposed by Colorado water law. *See e.g., Twin Lakes Reservoir and Canal Co. v. Aspen,* 596 P.2d 45 (Colo. 1977); *Cities of Aurora and Colorado Springs v. Division 5 Engineer*, 799 P. 2d 33 (Colo. 1990).	

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89	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 53 of 56 capacity is 543,758 acre-feet. However, only 469,568 acre-feet are active storage. By storing water in an additional, undecreed reservoir, and restricting storage to 539,568 AF, the Proposed Action alternative may illegally expand existing C-BT Project water rights.[26] In fact, to the extent the proposed limit permits increases in Granby's current operational capacity, prepositioning would illegally expand such water rights and potentially injure the water rights of others. Second, the suggested volumetric limits could allow an expansion of the historical diversions associated with the C-BT Project. To the extent storage in Chimney Hollow Reservoir allow an increase of C-BT Project diversions beyond that which has occurred historically, such expansion of historical use would violate Colorado water law. *See Santa Fe Trail Ranches Prop. Owners Ass'n,* 44 P.3d 46 (Colo. 1999). To the extent such expansion in the historic diversions injures the water rights of others, including the CWCB's instream flow rights (e.g., by reducing the amount of Colorado River water available, in priority, to other water rights), such would also violate Colorado water law. *Id.* Third, by storing C-BT Project water in Chimney Hollow reservoir and, then, "exchanging" it for Windy Gap water when the latter is available in priority, prepositioning would increase the length and frequency with which Windy Gap water rights can divert from what has occurred historically. Indeed this is one of the very goals of prepositioning. In doing so, WGFP would improperly expand the existing, decreed Windy Gap water rights, potentially injurying water rights that are junior to the C-BT Project water rights, but senior to the Windy Gap decreed water rights (such as the CWCB's instream flow rights). Fourth, the suggested storage limitation is worthless unless it can be enforced – e.g., unless storage in Granby Reservoir can be prevented once the sum of water stored in Granby and in Chimney Hollow exceeds the proposed volumetric limits. The proposed combined storage limitation would create a "paper fill" situation, whereby room for storage will be physically available in Granby even after it is declared officially "full" as a result of implementation of the proposed limitation. If Granby is in this condition into the runoff season, Granby will continue to physically fill, whether it is entitled to or not. Unless the physical means are available to release flows into the Colorado River in excess of what the "paper fill" entitles C-BT to store, the proposed limitations will not be physically enforceable and the downstream water rights, including the CWCB's instream flow water rights, will be illegally injured. There seems to be some indication that the outlet works for Granby may not be sufficient to handle the release of excess, out of [26] In fact, the Blue River decree's identified storage capacity for Granby Reservoir is inconsistent with the lesser capacity identified in SD 80. Yet, the Blue River decree purports to give effect to and, in fact, incorporates the "manner of operation" (including structure capacity descriptions) set forth in SD 80 by reference. This potential inconsistency would have to be resolved by the court upon consideration of a change of water rights decree.	

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89	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 54 of 56 priority, storage water – which during runoff has been as high as 3,000 cfs. Reclamation must closely look at Granby's spill and outlet release capabilities. If the capabilities are not there, the proposed limits could not be implemented and injury to vested water rights could result, in violation of Colorado water law. Reclamation law and policy requires operation of Reclamation projects in strict compliance with State water laws. Moreover, Reclamation law and policy specifically prohibits Reclamation from entering into excess capacity contracts unless such contracts can be carried out in accordance with State water laws. *See, e.g. Warren Act; 1988 Principles; Reclamation Manual, Policy WTR-P04 (Jan. 10, 2001); Reclamation Manual, Policy WTR P03 (Jan. 10, 2001).* Thus, Reclamation may not approve the Proposed WGFP unless obtains a decree amending the Blue River decree, which decree imposes conditions to prevent injury to the water rights of others and ensures that the proposed change of water rights otherwise complies with Colorado water law. As proposed, the WGFP Action alternative, which includes prepositioning, does not require Reclamation's application for a change of the Blue River decree. Accordingly, the Proposed Action alternative is illegal, in violation of Colorado water law.	
90	**2. Absent a change of water rights decree, storage of Windy Gap water in Chimney Hollow or the other action alternative reservoirs would violate Colorado water law.** Diversion of Windy Gap Project water rights is authorized pursuant to a decrees issued by Colorado water court (Windy Gap decrees).[27] The Windy Gap decrees do not allow storage of Windy Gap water anywhere except in Windy Gap reservoir (in the amount of 1546.14 acre-feet) and in Jasper Reservoir (in the amount 11,292.58 acre feet). All WGFP action alternatives provide for storage of up to 93,000 acre-feet in reservoirs that are neither identified nor decreed in the Windy Gap decrees. Only alternative 3 includes a decreed storage reservoir, Jasper Reservoir, but in amounts that far exceed the decreed amount. Thus, for the reasons discussed above, in the absence of a change of the Windy Gap water rights, the WGFP action alternatives identified in the DEIS would violate Colorado water law. It should be noted, in this regard, that while the Windy Gap decrees authorize in priority diversions of large direct flow rights, under Colorado water law, a direct flow water right cannot be stored, absent a decree authorizing such storage. *See e.g., New Loveland & Greeley Irr. & Land Co. v. Consolidated Home-Supply Ditch & Res. Co.,* 62 P. 366 (Colo. 1900); *Board of Arapahoe County Comm'rs v. Upper Gunnison River Water Conservancy Dist.*, 838 P. 2d 840, 852 (Colo. 1992). This is the case even if the same structure diverting the direct flow rights is used to fill the reservoir. *New Loveland & Greeley Irr. & Land Co.* at 368. Moreover, the fact that water is diverted from the [27] *See Civil Action No. 1768, Grand County District Court; W-4001, District Court, Water Division 5, and 80CW108, District Court, Water Division 5.*	90. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion of text added at the beginning of Section 1.10.2 of the FEIS.

Com-ment	Letter #1126	Response
90	Trout Unlimited Commments Draft Environmental Impact Statement Windy Gap Firming Project December 29, 2008 Page 55 of 56 basin of origin for storage in a different basin does not change the need, under Colorado law, to obtain a decree authorizing such storage and including terms and conditions to prevent injury to the water rights in the basin of origin. *See e.g., Twin Lakes Reservoir and Canal Co. v. Aspen,* 596 P.2d 45 (Colo. 1977); *Cities of Aurora and Colorado Springs v. Division 5 Engineer*, 799 P. 2d 33 (Colo. 1990). Because they contemplate storage of Windy Gap water under the Windy Gap decrees, and such decrees do not authorize storage in location and/or amounts identified in the decrees, the WGFP action alternatives are illegal unless a change of water rights decree is obtained in accordance with Colorado water law. **CONCLUSION** For the reasons described in detail in this letter, Trout Unlimited believes that the WGFP may not be approved until such time as the agencies prepare a supplemental EIS which resolves the problems raised, and an adequate opportunity for public comment is provided as required by NEPA. Thank you for the opportunity to comment.	

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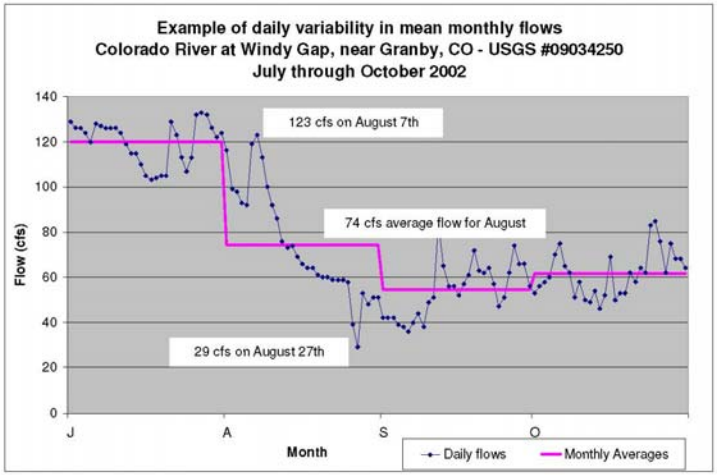
Figure 1. Daily flows vs. mean monthly flows
(USGS Colorado River at Windy Gap, near Granby, CO gage - #09034250)



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December 29, 2008

Western Resource Advocates (WRA) is pleased to offer these comments on the Draft Environmental Impact Statement (DEIS) prepared by the U.S. Bureau of Reclamation (BOR or Bureau) and the associated § 404 Permit Application to the U.S. Army Corps of Engineers on the proposed Windy Gap Firming Project (WGFP).

WRA—with members and offices in several western states—is a regional non-profit organization working to find sustainable solutions to meeting human needs while also protecting the environment, the economy it supports, and western quality of life. Specific to water resources in Colorado, WRA promotes sound water management and advocates for environmentally and economically sustainable decisions that conserve, protect, and restore Colorado's rivers. These comments were generated by a team of WRA staff who, collectively, has dozens of years of experience on water issues.

In addition to these comments, WRA joins in the separate comments provided by Trout Unlimited, National Wildlife Federation, Grand County, Northwest Colorado Council of Governments, and the Colorado River Water Conservation District.

These comments address the analysis, findings, and underlying assumptions of the WGFP DEIS in light of the requirements under the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act (CWA). They are grouped into the following topic areas:

1. Background on purpose and goals of NEPA and CWA (pp. 2-4);
2. Purpose and Need Statement (pp. 5-8);
3. Water Conservation and Efficiency (pp. 8-27);
4. Similar and Related Actions; Cumulative and Connected Impacts (pp. 27-32);
5. Construction Costs (pp. 32-37);
6. Hydrology, Modeling, Water Quality, and Stream Morphology (pp. 37-39);
7. Energy Use (p. 40);
8. Range of Alternatives (pp. 40);
9. Aquatic and other Environmental Impacts (p. 41)
10. Mitigation (p. 41).

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Western Resource Advocates' comments on WGFP Draft EIS -- December 2008

1. National Environmental Policy Act and Clean Water Act Requirements

The National Environmental Policy Act[1] requires federal agencies to prepare a detailed statement on the environmental impacts of a proposed "major federal action" and all of the reasonable alternatives thereto before authorizing any such action.[2] An agency proposal for major federal action exists for NEPA purposes "at that the stage . . . when an agency subject to [NEPA] has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated."[3] NEPA's purpose is to promote efforts "which will prevent or eliminate damage to the environment",[4] to inform the public of environmental consequences,[5] and to "help public officials . . . take actions that protect, restore, and enhance the environment."[6]

Under NEPA, the WGFP DEIS must analyze "connected", "cumulative", and "similar" actions and three types of impacts.[7] Connected actions are those which are "closely related," including those that "[c]annot or will not proceed unless other actions are taken", or those that "[a]re interdependent parts of a larger action and depend on the larger action for their justification."[8] Cumulative actions are those that "have cumulatively significant impacts and should therefore be discussed in the same impact statement."[9] Similar actions include those that have "common timing or geography."[10] To assess "significance" NEPA requires consideration of "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts."[11]

The three types of impacts to be studied in an EIS are those that are "direct," "indirect," and "cumulative."[12] Direct effects are those that "are caused by the action and occur at the same time and place."[13] Indirect effects are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[14] A project's "cumulative impact," is

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable

[1] 42 U.S.C. §§ 4321-4370f.
[2] *Id.* at § 4332(2)(C).
[3] 40 C.F.R. § 1508.23.
[4] 42 U.S.C. § 4321.
[5] 40 C.F.R. § 1500.1(b).
[6] *Id.* at § 1500.1(c).
[7] *Id.* at §§ 1508.25, 1508.7, 1508.8.
[8] *Id.* at § 1508.25(a)(1).
[9] *Id.* at § 1508.25(a)(2).
[10] *Id.* at § 1508.25(a)(3).
[11] *Id.* at § 1508.27(b)(7).
[12] *Id.* at 1508.25(c); *see also id.* at §§ 1508.7, 1508.8.
[13] *Id.* at § 1508.8(a).
[14] *Id.* at § 1508.8(b).

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	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 future actions . . . . Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.[15] NEPA's many policies and goals include: o Encouraging a "productive and enjoyable harmony between man and his environment";[16] o Promoting "efforts which will prevent or eliminate damage to the environment and biosphere";[17] o Using "all practicable means and measures . . .to create and maintain conditions under which man and nature can exist in productive harmony";[18] o Fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations";[19] o Assuring "all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings";[20] o Allowing beneficial use of the environment "without degradation . . . or other undesirable and unintended consequences";[21] o Preserving "important historic, cultural, and natural aspects of our national heritage";[22] o Achieving a "balance between population and resource use";[23] and o Enhancing "the quality of renewable resources" and maximizing recycling of depletable resources.[24] **Mitigating Environmental Impacts** At the most fundamental level, NEPA is intended to help public officials make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment.[25] Federal agencies are required, to the fullest extent possible, use all practicable means consistent with the requirements of NEPA to "restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."[26] Federal Council on Environmental Quality (CEQ) regulations further define mitigation as: [15] *Id.* at § 1508.7. *See also Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1379 (9th Cir. 1998) (with respect to a cumulative impacts analysis, an agency must provide "some quantified or detailed information" because "[w]ithout such information, neither courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide."). [16] 42 U.S.C. § 4321. [17] *Id.* [18] *Id.* [19] *Id.* at § 4331(b)(1). [20] *Id.* at § 4331(b)(2). [21] *Id.* at § 4331(b)(3). [22] *Id.* at § 4331(b)(4). [23] *Id.* at § 4331(b)(5). [24] *Id.* at § 4331(b)(6). [25] *See* 40 CFR § 1500.1(b). [26] *Id.* at 1500.2(f). 3	

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1	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 o Avoiding the impact altogether by not taking a certain action or parts of an action. o Minimizing impacts by limiting the degree or magnitude of the action and its implementation. o Rectifying the impact by repairing, rehabilitating, or restoring the affected environment. o Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. o Compensating for the impact by replacing or providing substitute resources or environments.[27] Effective mitigation starts at the beginning of the NEPA process, not at the end, and must be included as part of the alternatives development and analysis process. CWA requirements also apply to the WGFP, including § 404(b)(1) guidelines. These Guidelines (40 CFR Part 230.10(a)) allow "… permit issuance for only the least environmentally damaging practicable alternative." The emphasis is on the avoidance of impacts. The Guidelines require "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The Guidelines also make clear that "compensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." *** Based on our review of the WGFP DEIS, the analysis completed thus far fails to satisfy the requirements of NEPA and CWA Section 404(b) noted above. In particular, the DEIS lacks an adequate evaluation of the proposed project's: purpose and need; water conservation and efficiency by proposed participants; similar and related actions; cumulative and connected impacts; construction costs; hydrologic modeling, water quality and stream morphology; energy use; alternatives (including the No Action Alternative and elements considered but rejected); and proposed mitigation. [27] 40 C.F.R. § 1508.20. *See also* MEMORANDUM OF AGREEMENT BETWEEN The Department of the Army AND The Environmental Protection Agency CONCERNING THE DETERMINATION OF MITIGATION UNDER THE CLEAN WATER ACT SECTION 404(b)(1) GUIDELINES, February 6, 1990. 4	1. See responses to each of these specific comments below.

Com-ment	Letter #1138	Response
2	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **2. Purpose and Need Statement** The stated "Purpose and Need" of the WGFP is: The purpose of the Windy Gap Firming Project is to deliver a firm annual yield of about 30,000 AF of water from the existing Windy Gap Project to meet a portion of the water deliveries anticipated from the original Windy Gap Project and to provide up to 3,000 AF of storage to firm water deliveries for the Middle Park Water Conservancy District. Firm water deliveries from the Windy Gap Project are needed to meet a portion of the existing and future demands of the Project Participants. (DEIS Executive Summary at 2). This statement of purpose and need is flawed and too narrow to satisfy the statutory requirements of NEPA, CWA, and CEQ regulations found at 40 C.F.R. §§1500 *et seq*., including §1500.2, §1502.1 (full and fair discussion of significant environmental impacts and reasonable alternatives that would avoid or minimize adverse impacts), §1502.14 ("rigorously explore and objectively evaluate all reasonable alternatives"), and §1508 (full analysis of connected, cumulative, and similar actions as well as direct, indirect, and cumulative impacts). The consequence of the DEIS's unreasonably constrained purpose and need statement is to screen out alternatives for meeting the water supply needs of the participating municipalities. These alternatives include, but are not limited to, increasing levels of water conservation and transferring water in the South Platte basin from agricultural to municipal use. The purpose and need should be revised to more accurately reflect the purpose of helping meet municipal water demands and the DEIS should include a broader range of alternatives for meeting those demands. For all practical purposes, Reclamation has simply used the applicant's assertion regarding the project's purpose and need, i.e., "firming up" Windy Gap. When this issue was raised in the scoping meetings, Reclamation responded by ignoring the criticism (see **Public Scoping Report**, Reclamation, December 13, 2003). It offered instead a laundry list of the demand side comments acknowledging issues raised about the purpose and need for the Firming Project included clearly identifying and substantiating participant water demands and the methodology by which water demand was projected. (**Public Scoping Report**, page 10) Defining purpose and need so narrowly by relying on the language of the applicant is inadequate. Federal agencies may give deference to a private party applicant's stated purpose and need, but agencies also are required to look more broadly to ensure consideration of reasonable alternatives. *Citizens Committee to Save our Canyons v. United States Forest Service*, 297 F.3d 1012, 1030-31 (10th Cir. 2002). Courts repeatedly find a nexus between an agency's need to develop a project's purpose and need independently, on the one hand, and the agency's duty to identify reasonable alternatives, on the other. An agency cannot define objectives so narrowly as to preclude 5	2. The WGFP was initiated by the Participants because the original Windy Gap Project failed to deliver the yield from Participant water rights that were anticipated in the 1981 EIS for the reasons discussed in more detail in Section 1.5 of the WGFP FEIS, including insufficient storage. To address the shortcomings of the Windy Gap Project, Participants determined that a cooperative project with shared storage in a new reservoir(s) would be the most efficient way to collectively firm their Windy Gap water supply. Windy Gap water represented a source of existing water available to the Participants, but required additional infrastructure to provide reliable deliveries. Thus, the purpose of the WGFP was to fix a broken project, not to search for other sources of water. Many of the WGFP Participants have additional future water needs beyond what the WGFP would supply and will be investigating other sources of water to meet those needs. The WGFP is only functional as a collaborative effort on the part of Windy Gap Project unit holders.

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2	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 a reasonable consideration of alternatives. *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002), *citing Colo. Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1174-75 (1999). To be consistent with this legal requirement, Reclamation should have conducted its own analysis of the purpose of the applicant's proposed project. NEPA provisions requiring an examination of potential alternatives to a project or proposal are considered the "linchpin" of the impact statement. *Monroe County Conservation Council v. Volpe*, 472 F2d 693 (2nd Cir. 1972). If one accepts the premises that policy objectives of NEPA (including Section 101) can be achieved only through good planning and that the consideration of a wide range of alternatives is essential to "good" planning, then the analysis of alternatives in the EIS process is the most important measure of the effectiveness of NEPA. It is unlawful for an agency to arbitrarily restrict its purpose when the result excludes viable alternatives. *See Simmons v. Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997) (court found Army Corps "defined an impermissibly narrow purpose" and "therefore failed to examine the full range of reasonable alternatives and vitiated the EIS"). CEQ guidelines require an EIS to describe "[a]lternatives to the proposed action, **including those not within the existing authority of the responsible agency**." CEQ Guidelines, 40 C.F.R. §1500.8(a)(4) (emphasis added). The range of alternatives must include a "no action" alternative and "non-structural" options as well as modifications of the proposed project. Based on NEPA Section 102(2)(A), the Guidelines stress "[t]he interdisciplinary approach should not be limited to the preparation of the environmental statement, but should also be used in the early planning stages of the proposed action." Guidelines, §1500.8(c) (emphasis added). Because the Army Corps of Engineers is also part of this NEPA process, the Section 404(b)(1) Guidelines are relevant. As noted above, these Guidelines allow "… permit issuance for only the least environmentally damaging practicable alternative" and "…that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 CFR Part 230.10(a). They also make clear that "[C]ompensatory mitigation may not be used as a method to reduce environmental impacts in the evaluation of the least environmentally damaging practicable alternatives for the purposes of requirements under Section 230.10(a)." In sum, for all the above reasons, the "purpose and need" section of the DEIS is invalid. It must either be re-written or interpreted in a way that it does not restrict or eliminate alternatives by either restricting the **purpose** or misstating the **need**. Structuring the Purpose and Need of the WGFP as delivering "a firm annual yield of about 30,000 AF of water from the existing Windy Gap Project" dramatically reduces the scope of alternatives for achieving the real need of the participant cities—meeting water demands. The DEIS thus arbitrarily drops consideration of alternatives that could better comport with 40 C.F.R. § 1502.14 including, among other things, water conservation, water reuse, transfers of water from agricultural use in the South Platte basin, land use planning 6	

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2	strategies, and other mechanisms for providing water (or reducing demand) that might equally well meet future water demands in a more economic and sustainable manner.[28]	3. The population projections and the per capita water use rates assumed for the water demand projections are reasonable and supportable based upon the information available at the time they were prepared. See response to Comment No. 6 regarding population projections and responses to Comment Nos. 7 through 12 regarding the Participants' per capita water use rates.
3	Perhaps most importantly, as noted in detail under the next comment section, **Water Conservation and Efficiency**, the WGFP Purpose and Need is flawed due to over-estimations of future population compounded by incomplete and inaccurate data on per capita use by participants. These over-estimations create fatal flaws not only in the No Action alternative but—since DEIS alternatives necessarily include comparisons to each other—also in the entirety of the DEIS. In addition, population over-estimations compound over time: an inaccurately high projected growth rate in the first several years of any period compounds errors in later-year projections. The Final EIS—and DEIS revisions in the meantime—must address this shortcoming by broadening the Purpose and Need Statement to more accurately reflect the participant municipalities' projected population and water demands.	
4	As an additional note, the Purpose and Need Statement may inaccurately project future water demands for the Platte River Power Authority (PRPA). PRPA supplies its customers with electricity primarily generated at its coal-fired Rawhide Plant and several simple-cycle natural gas turbines. The PRPA's future water demands may be incorrectly estimated because of: (1) artificially high population growth estimates and (2) inaccurate assumptions about the type of future electricity generation. Conventional forms of electricity generation—coal- and natural gas-fired power plants—require water to cool and condense steam and for other plant processes. A typical western coal plant consumes approximately 541 gallons of water per MWh of electricity generated; in contrast, a combined cycle gas plant uses 180 gallons/MWh, and wind turbines and solar photovoltaic panels use virtually no water. Likewise, energy conservation consumes no water.[29] Many WGFP participants—and much of the PRPA's service area—have experienced rapid population growth in recent years. With the recent economic downturn, however, population growth has slowed dramatically. The PRPA's future electricity load growth is likely based, in part, on out-of-date population growth estimates. Slowed population growth is likely to lead to lower water demands *and* lower future electricity demands (*see* detailed comments in the **Water Conservation and Efficiency** section). Reduced electricity demands will delay PRPA's need to construct new power generation facilities, and delay its demand for use of WGFP water. The amount of water demanded by the PRPA depends on the type of power plant. The Draft EIS states that the PRPA's "participation in the WGFP is to meet the water needs for their current power generation facility, not to meet future water needs for expansion of power generating capacity."[30] However, continued electricity generation at	4. Platte River Power Authority (Platte River) serves Estes Park, Fort Collins, Loveland, and Longmont. Loveland and Longmont are WGFP Participants. Population projections for the WGFP Participants are discussed in response to Comment No. 6. As indicated in that response, data from the State Demographer's Office (SDO) support the projections used in the EIS analysis. Additionally, as stated in the Purpose and Need Report and the report Appendices, Platte River's need in this project is to firm Windy Gap (WG) units "to meet the current needs of the existing power facility" (Purpose and Need Report, p. 53) and "to meet existing average demands" (Appendices p. M-5). Platte River must be able to provide reliable service to existing customers. Therefore, the population projections made for Loveland and Longmont in this EIS, and the growth assumed for Estes Park and Fort Collins do not factor into Platte River's need for the WGFP. As stated in the Purpose and Need Report, Platte River is evaluating its options for additional power generation to meet future demands. New power could come from a variety of sources, several of which may be less water-intensive than the current coal-fired plant. The Purpose and Need Report states that "future demand projections will be continually updated by Platte River to determine the timing of power generation needs and the associated water requirements" (p. 54). Also, conservation of water or electricity can be considered in future supply planning, but existing power plant demands would not change without conservation within the plant itself. Water conservation at Platte River's Rawhide Plant is essentially 100 percent because all water is recycled and reused until extinction. Platte River employs a performance engineer to manage improvements in energy usage and heat rate, thereby reducing water use. Technological improvements to reduce water use are continually being explored. In addition, the Appendices state that various water conservation measures are being identified and studied for applicability at the Rawhide Plant.
	[28] *See* Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 46 Fed. Reg. 18026 (1981). [29] Western Resource Advocates. 2008. *A Sustainable Path: Meeting Nevada's Water and Energy Demands*. Boulder, CO. [30] Draft EIS, Chapter 1, page 1-35.	
	7	

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4	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 PRPA's coal-fired Rawhide power plant is not consistent with other initiatives taken by the power authority. For example, the PRPA has signed on to Colorado Governor's Climate Action Plan to reduce greenhouse emissions by 20% before 2020. If PRPA pursues energy efficiency and conservation measures, along with water-efficient renewables like wind and solar photovoltaics, its need for WGFP water may be substantially reduced. In sum, the recent economic downturn, slowed population growth, and changing regulatory climate for greenhouse gas emissions cast doubt on PRPA's future electricity and water demands. All of these factors have changed since 2005, when the WGFP Purpose and Need Statement was first issued. Prior to issuing a Final EIS, the Bureau should explain why all project participants, including the PRPA, have a bona fide need for the WGFP. **3. Water Conservation and Efficiency** Prior to committing large financial resources to the proposed Windy Gap Firming Project (WGFP), the proposed beneficiary water utilities must greatly increase their demand management. Conservation represents a "no regrets" strategy – one that does not tie the utilities to expensive infrastructure or rising electricity costs, and does not have detrimental impacts on river systems or rural communities. While conservation programs come with a price tag, it's much smaller than the one for the Windy Gap Firming Project. The proposed alternative for WGFP involves a contract with the Bureau of Reclamation.[31] As a result, the provisions of the federal Reclamation Reform Act (RRA) apply. *See* 42 U.S.C. § 390aa *et seq*. Under the RRA, the Bureau has a duty to promote "full consideration and incorporation of prudent and responsible water conservation measures" in the water projects of non-Federal water entities that receive water from Federal reclamation projects. 42 U.S.C. § 390jj(a). Project beneficiaries must develop conservation plans containing definite objectives, proposed conservation measures and a proposed time schedule for compliance, *id.* at § 390jj(b); 43 C.F.R. § 427.1, and must submit their conservation plans to the Bureau. 43 C.F.R. § 427.1. The RRA requires that water recipients certify their compliance with the Act. 42 U.S.C. § 390ff. These requirements must be met prior to approval of the project, to ensure timely and economic inclusion of water conservation measures in the original design of the project. *See* 43 U.S.C. § 390jj. Post-hoc consultation could result in expensive refitting, lengthy delays in service, or less effective conservation measures. It is unclear from the draft environmental impact statement (DEIS) whether all project beneficiaries have complied with the RRA. The final EIS must include evidence that the provisions of the RRA have been met by all project beneficiaries. [31] Implementation of prepositioning may require modification or replacement of the existing conveyance and storage contract between Reclamation, the Subdistrict, and the NCWCD. *See* DEIS at 1-42. 8	
5		5. The WGFP Participants have committed and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.

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6	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **DEIS Population Projections are Over-inflated:** Section 1.6.2.1 of the DEIS discusses population projections for the participants. The DEIS indicates that the combined population of all 13 project participants (excluding Platte River Power Authority) will increase from 426,000 in 2004 to 750,000 in 2030 and 901,000 by 2050. Given the increasingly severe economic recession (which many are calling a recession) in 2007-2008, and its impact on housing sales, population growth in the area will be slow in the near-term. Indeed, Denver Metro area November 2008 home sales were the "worst on record", with average prices falling to levels not seen since 2001.[32] Other cities along the Front Range – including WGFP participants – have seen similar trends. The population growth projected in the Draft EIS reflects an annual growth rate of 2.2% between 2008 and 2030, and 0.9% between 2031 and 2050. An annual growth rate of 2.2% exceeds both the projected national annual growth rate (0.84%) and Colorado's projected annual growth rate (0.91%) for the period from 2005 to 2030.[33] Although several WGFP participants experienced above-average rates of growth before the 2007-2008 economic downturn, these high rates of growth will not be sustained. If population in WGFP cities grows at an annual rate of 1.0% over the period from 2008 to 2030, total water demands will be substantially lower. Under this more conservative (and likely more accurate) growth rate, WGFP participants' population would be 552,000 in 2030, and 673,000 in 2050 – that's **227,000 fewer residents than projected in the DEIS** (Figure 1, below). If population grows more slowly than projected by the DEIS, water demands will also rise more slowly. [32] Rocky Mountain News. December 10, 2008. "November home sales in metro area worst on record." http://www.rockymountainnews.com/news/2008/dec/10/november-home-sales-in-metro-area-worst-on/ [33] U.S. Census Bureau, Population Division. 2005. File 1: Interim State Projections of Population by Sex: July 1, 2004 to 2030. Accessed on December 17, 2008 through http://www.census.gov/population/www/projections/projectionsagesex.html 9	6. The recession has indeed had an impact on growth in the past 2 years in many previously fast-growing areas, and the Participant service areas are no exception. However, recessions are short-term economic phenomena, similar to economic boom growth. Long-term growth projections are normalized to "smooth out" cyclical high and low-growth periods. This comment presumes that the Participant growth rates should be in line with U.S. or Colorado growth rates and, therefore, suggests that a lower growth rate be assumed for this EIS. This approach fails to recognize a fundamental principal in demographic forecasting, which is to focus on the local influences affecting a particular area's growth. The national growth rate reflects projected demographic and economic conditions and trends for all 50 states; some regions of the U.S. are built out and others do not have a well-developed economic base. Individual states will experience vastly different conditions than Colorado can expect in terms of jobs, migration, and other factors that determine population growth. In fact, historical Census data show that Colorado's annual growth rates have been considerably higher than U.S. growth rates since at least 1980. Comparing the projected annual growth rate of Colorado to that of the WGFP Participants also is misleading. The State of Colorado includes many areas, especially rural areas, that are projected to experience very slow growth. These areas impact statewide growth projections, but are not reflective of the locations or conditions of the majority of the Project Participants. Additionally, the 2.2% rate is the average projected growth rate of the combined projected populations of all Participants. The population projections for the DEIS, and ultimately the water demand projections, were made on an individual Participant basis, factoring in the unique historical trends, anticipated future trends, land use characteristics, and customer base of each Participant. The projected growth rates applied to each Participant are discussed in the Appendices to the Purpose and Need Report. The SDO prepares updated statewide and county-level population projections each year. These projections incorporate local information and input, and are continually adjusted to reflect current economic conditions. The November 2008 projections, the most recent available, show that for the counties in which the Participants are located, projected average annual growth rates range from 1.1% to 3.1% between 2005 and 2030. These recently projected rates are in line with those used for the WGFP Participants in the EIS analysis.

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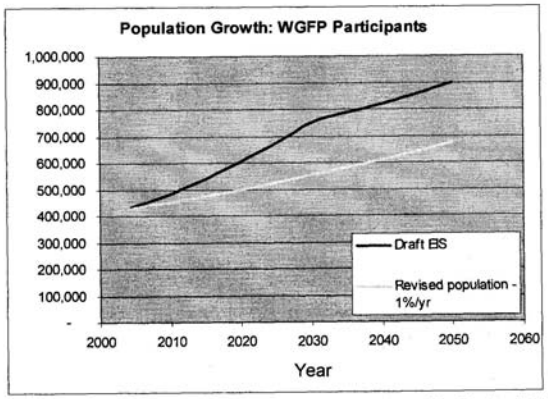
6	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008  **Figure 1. Population growth for WGFP participants, as projected by the Draft EIS (blue) and under a revised scenario of 1% annual growth rate (yellow).** *WRA's calculations throughout these comments use the population growth estimates used by BOR in the Draft EIS. However, we note here that these population projections are fatally flawed and cannot support the proposed project.* As noted in the prior section, population over-estimations compound over time: an inaccurately high projected growth rate in the first several years of any period compounds errors in later-year projections. If population grows more slowly than the DEIS projects—which all evidence indicates that it will—future water demands will be correspondingly lower than our re-calculated estimates.	
7	**Proposed Per Capita Water Use is Arbitrary:** With just a few paragraphs of explanation, the Purpose and Need and DEIS proposes 217 gallons per person per day (gpcd) as a "reasonable average" of system-wide water use against which to compare WGFP beneficiaries.[34] The figure is averaged from year-2000 data that underlie both the first phase of Colorado's recent Statewide Water Supply Investigation (SWSI) and a paper from the University of Utah. The proposed average is arbitrary, capricious, and unreasonable. It is a fatal flaw in the DEIS that must be revised. The proposed average water use rate is flawed for several reasons: 1. The water use rate in the Purpose and Need is derived from a single year of data, rather than a range of years; [34] Purpose and Need, p. 34. 10	7. The purpose of the discussion of comparable water use rates in the Purpose and Need Report is not to develop estimates of water use for various Participants, adjusting for all other factors, but to provide a more generalized comparison to place the water use of the Participants in the context of other water providers to determine reasonable water use levels. The DEIS provides water use comparisons based on the published data available at the time of development of the Purpose and Need Report. The SWSI and University of Utah reports did not contain multiyear historical data, but did include data and information useful for these analyses, in terms of recent data for communities of similar characteristics. Several shortcomings of these data sources are acknowledged, but the data extracted for use are either Colorado-specific or includes communities comparable in size and climate to the Participants. See responses to Comment Nos. 8 through 12 for further elaboration.

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2. Many of the communities that were analyzed in the University of Utah paper and compared to WGFP participants have higher average temperatures and lower rates of precipitation than WGFP participants;
3. The University of Utah study relies on county-wide water use data, rather than city-specific data, skewing water use rates;
4. The University of Utah paper does not adequately integrate expected conservation savings; and
5. The Purpose and Need determines a per capita water use rate using communities from across Colorado, including several from the Western Slope, which have much higher rates of water use than Front Range communities.

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First, it is arbitrary to use single year data to set an average for future years. The year 2000 is outside the norm; indeed, based on the multi-year data for Windy Gap cities in the P&N, the year 2000 had unusually high water rates of water use. The P&N and DEIS must not perpetuate the errors inherent in using high, single-year data. Rather, it must use a range of years to derive an average for projected future use.

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Second, many of the communities studied in the Utah report have considerably hotter and drier climates than WGFP participants. For example, as shown in Table 1, below, Salt Lake City, St. George, Phoenix, Lewiston, Las Vegas and Boise all have significantly higher average annual temperatures and higher average July temperatures than Greeley, Broomfield and Longmont.[35] Additionally, nearly all receive less precipitation than the Colorado cities, some as little as 1/2 to 1/3 of Front Range communities.[36] The more arid climates of many cities in the Utah paper make it a poor choice for comparison to WGFP participant cities.

9

Table 1: Temperature and Precipitation for Select Cities[37]

	Average Annual Temperature (F)	Average July Temperature (F)	Average Annual Precipitation (in.)
Boise, ID	51	74	11.8
Greeley, CO	48	72	12.1
Broomfield, CO	49	71	13.8
Longmont, CO	48	71	13.3
Las Vegas, NV	67	90	4.1
Lewiston, ID	53	74	12.6
Phoenix, AZ	73	93	7.7
Salt Lake City, UT	52	78	15.6
St. George, UT	60	83	8.3

Third, the Utah paper relies upon county-wide data rather than water provider data, thereby skewing any comparison to residents of WGFP cities. Using county-wide

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[35] http://www.weatherbase.com/
[36] Id.
[37] Id.

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8. This comment inaccurately suggests that the EIS water demand projections relied upon a single year of data. The water use rates used in projecting future water demands for each Participant were derived from a number of years of data specific to each individual Participant. For example, the City of Broomfield's future water use rate is based on historical water use rates between 1996 and 2003 (refer to the Appendices to the Purpose and Need Report for more detail on each Participant). Future water use rates were not based upon a single year data point for any Participant. The average rate developed from the SWSI and Utah reports (year 2000 data) and multiple years from Denver Water is only included in the Purpose and Need discussion to provide context to the Participants' individual and combined water use rates. The shortcomings of each data source are noted, but together they provide a sufficient basis for assessing the reasonableness of Participant water use. The average historical total gpcd values for most Participants ranged from 123 to 202, with most Participants experiencing water use of less than 175 gpcd (CWCWD, LTWD, MPWCD, and PRPA are special cases as described in the report and Appendices). These average rates were used when projecting future water demands, and are well below the reasonable threshold.

9. Data for a number of communities was provided in the University of Utah report; however, many of those communities were not comparable to the Participants in terms of size, temperature, or precipitation. For those reasons, only data for select communities were used for comparison to the Participants. Boise's and Lewiston's average temperatures are slightly higher than those of Greeley, Broomfield, or Longmont, but Boise's average annual precipitation is similar to Greeley's and Lewiston's precipitation and, therefore, Boise's precipitation is also within the range of northern Colorado communities.

10. Countywide water use figures were not used to project water demands in the EIS. The Technical Notes section of the Utah report states the following: "the

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10	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 data rather than data from discrete water providers distorts the average because rural communities typically have higher rates of use. As the WGFP P&N accurately notes, the use of county data is prone to over-estimate use: "larger communities . . . typically have lower gpcd."[38] For instance, in 2000 the water utility for Boulder, Colorado, reported a system-wide gpcd of 201.[39] By comparison, the USGS data, which underlies the Utah paper, uses a county-based system-wide gpcd of 245 for Boulder County, over 22% higher. Because the vast majority of new development is in tightly-knit residential development rather than rural development, use of county-wide data is arbitrary and irrelevant to projected future municipal water demand.	focus of this report was to examine water use in urbanized areas. Although several of these areas [the metropolitan areas included in the study] are quite large and contain sizeable amounts of undeveloped land, the population in each is concentrated in the urban core." The objective of the analysis was to characterize and compare water use rates of relatively urban areas in the West; however, the defined metropolitan areas in the study also included rural users that are likely to use water differently than urban users. The conditions contained in the metropolitan areas of the report appear to reflect those of the WGFP Participants, some of which are more urban and others that continue to serve rural and agricultural customers and meet those types of demands.
11	Fourth, exacerbating the flawed choice of comparison cities, year-2000 data, and county-data, the University of Utah paper fails to reflect the anticipated reductions in per capita use by most cities in the region. Utah itself has formally committed to a statewide 25% reduction in water use over the next few decades. Numerous water providers throughout that state have also adopted this goal and many have nearly attained those savings today. The Jordan Valley Water Conservancy District, which provides water to the cities of West Jordan, South Jordan, Sandy, Midvale, Riverton and South Salt Lake as well as numerous irrigation districts, has committed to reduce use by 25% from 2000 levels by 2025.[40] As of 2004, the Jordan Valley Water Conservancy District already had seen a 20 percent reduction, lowering their per capita water use from 250 to 207 gpcd in only four years.[41] This commitment has, and will continue to, drastically reduce the per capita use throughout Utah. Even more on point with water demands of WGFP cities, Colorado cities have experienced dramatic and sustained reductions in per capita use since 2002. The Colorado Water Conservation Board (CWCB) has incorporated a 25% per capita reduction goal for state-wide water planning. *See* sub-section on "**Demand Forecasting**" below.	11. The water savings experienced by Participants as a result of the conservation programs in place is captured in the historical water use data. The majority of Participants also have plans to incorporate additional conservation measures into their overall conservation programs. However, it is generally difficult to determine the savings that would result from any one measure, since savings would depend on how the measure was implemented and on the specific characteristics of each Participant (e.g., type and number of customers affected, age of housing stock, and income levels.) Seven of the Participants have approved conservation plans from the CWCB and others are in the process of plan approval, or would have an approved plan prior to delivery of WGFP water. These conservation plans include reduced water use goals for the water provider and its customers. In fact, the Participants with CWCB-approved conservation plans have developed conservation goals ranging from 5% to 17%. This conservation will be needed to meet demands in addition to those supplied by the WGFP.
12	Fifth, the Purpose and Need report also looked at Phase I of Colorado's Statewide Water Supply Initiative (SWSI) which determined a statewide system-wide average of 210 gpcd for the year 2000. This is an inaccurate predictor of Front Range consumption as it factors-in West Slope communities where usage is not representative of WGFP proponents. Many of the levels of system-wide per capita use listed in the SWSI report exceed 300 gpcd.[42] These rates are significantly higher than documented 2001 water use data in Front Range Colorado municipalities—when Boulder's system-wide water use was 180 gpcd, Highlands Ranch was 191 gpcd, and Denver was 205 gpcd.[43,44] A number	12. SWSI's statewide average water use was 210 gpcd in 2000, which includes the Front Range, the West Slope, and other communities around Colorado. However, the SWSI average for the South Platte Basin was 206 gpcd, just slightly lower than the statewide average. The statewide average is heavily influenced by the South Platte Basin since the majority of Colorado's population and water use occur within that Basin. The areas of the state with exceptionally high water use rates likely make up only a small percentage of the population and total water use. Using the average South Platte Basin gpcd instead of the statewide gpcd in the analysis of comparable water use rates would result in a regional average gpcd of 215, as compared to the 217 gpcd used in the Purpose and Need Report. This slightly lower comparable gpcd would not change the conclusions of the Purpose and Need evaluation. See response to Comment No. 11 regarding the conservation savings issue.

[38] US Bureau of Reclamation . Windy Gap Firming Project Purpose and Need Report. September 2005. 30.
[39] City of Boulder, Colorado 2000 Treated Water Master Plan & 2000 Utilities Annual Report.
[40] Jordan Valley Water Conservancy District, *2004-2005 Summary of Operations,* at p. 49.
[41] Id.
[42] Colorado Water Conservation Board, Statewide Water Supply Initiative Report (SWSI), November 2004, Appendix E, Table 7, at p. 917.
[43] Western Resource Advocates, *Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest*, Dec. 2003, at p. 66.
[44] Western Resource Advocates. Table 4. 1998-2003 Front Range Municipality Consumption Data (GPCD). 11.

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12	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 of the county rates even exceed 400 gpcd, with one at 681 gpcd (Pitkin County).[45] Water use at this level is virtually unheard of throughout the entire Southwest, exceeding some of the regional system-wide averages by a factor of two to three. Like the Utah study, the SWSI data is also only a snapshot of use from one, relatively high water use year (2000) as illustrated in Table 4 (page 19, *infra*), not an average taken over a number of years. Importantly, the SWSI has undergone significant updates since its release in late 2004. Notably, SWSI Phase II included a Water Conservation Technical sub-committee that generated data on water savings available through a range of conservation measures.[46] The research found that, state-wide, between 287,000 and 459,000 acre-feet per year could be saved by conservation.[47]	
13	**Conservation Planning and Savings Targets are Required by Law:** Much like planning for new supplies, demand-side management takes time to plan and implement. Therefore, the two must be concurrently considered and integrated into long term planning. In some communities, effective demand management programs can reduce, delay, or eliminate the need to seek new supplies, as well as reduce costs and energy consumption associated with pumping and treating water before and after use — thereby saving tax payers money. Unfortunately, conservation savings goals do not appear to play a prominent role in the planning processes for many of the WGFP participants. Contrary to the DEIS' claim that "all WGFP participants have conservation plans,"[48] not all have taken the steps to create comprehensive planning documents that comply with State law. Five communities' plans are so new they were submitted to the CWCB following the release of the DEIS (*see* Table 2)[49] As a prerequisite to moving forward with the WGFP, all participants that qualify as "covered entities" under state statute must have approved conservation plans on file with the Colorado Water Conservation Board. At this time, only Erie and Fort Lupton have newly approved plans (see Table 2, next page), while others have yet to meet the state and RRA requirements. The City of Broomfield, Louisville, Loveland, Lafayette and Central Weld County Water District have no recent water conservation plans. Since their last submitted plan, new state law requires stronger conservation planning, savings goals and tracking savings. In addition, the requirements of the RRA—including conservation plan objectives, proposed conservation measures and a proposed time schedule for compliance—would not be met were the City of Lafayette or Central Weld County Water District to rely on such outdated plans. Recently the City of Lafayette had a draft	13. See response to Comment No. 5 on WGFP Participant conservation plans. Also, see response to Comment No. 11 for a discussion on incorporating future conservation savings into water demand projections. While all Participants may not currently have a CWCB-approved conservation plan, each has a host of measures they have adopted or plan to adopt. The conservation savings goals of WGFP Participants are expected to be realized through a variety of measures; however, these anticipated water savings are not guaranteed to occur. Water providers plan their supply portfolios to meet the demands of future customers and cannot be caught short if actual water savings do not equal the goals outlined in conservation plans. Several of the WGFP Participants are involved in other regional water projects as well. Separate NEPA compliance of other water projects have not been finalized, and to date, no decisions have been made as to whether all, some, or none of these projects will be permitted. The WGFP Participants that are pursuing more than one project are doing so because implementation of the WGFP alone would not meet all of their projected future water needs.

[45] SWSI, Appendix E, Table 7, at p. 917.
[46] Colorado Water Conservation Board, Colorado's Water Supply Future: State Wide Water Supply Initiative Phase 2. November, 2007. Table 2-1. http://cwcb.state.co.us/NR/rdonlyres/C65D6406-3EE0-4E44-9C5E-E1655D814CB8/0/S2_ConservationEfficiency.pdf.
[47] *Id.*
[48] WGFP DEIS §1.6.2.3 Water Conservation. 1-15.
[49] Colorado Revised Statute §37-60-126.

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conservation plan posted on their website; however; it limited "public" comment to utility customers—in violation of state statute.[50]

Little Thompson Water District and the Town of Superior have no conservation plans on file. These plans must be submitted to the CWCB and fully comply with state conservation statutes, including specific conservation savings targets and goals that are integrated in the utilities' long term planning processes. Setting conservation savings goals is an essential component of a community's water conservation plan, a requirement of the RRA and of state statute.

Table 2: Status of Conservation Plans of WGFP Participants (as of fall 2008)

Participant	Annual Deliveries (AF)[51]	Qualified as a "Covered Entity" under Colorado State Statute	Approved Conservation Plan on file with the CWCB
City & County of Broomfield	10,107	Yes	In Process
City of Evans	2,578	Yes	In Process
City of Ft. Lupton	2,500	Yes	Yes
City of Greeley	27,067	Yes	In Process
City of Lafayette	4,700	Yes	In Process
City of Longmont	20,000	Yes	In Process
City of Louisville	4,900	Yes	NO
City of Loveland	13,837	Yes	NO
CWCWD	2,786	Yes	2005 Plan
Little Thompson Water District	4900	Yes	NO
Town of Erie	2,800	Yes	Yes
Town of Superior	2,163	Yes	NO

At least seven of the fourteen participants are also participants in other regional water projects currently in the permitting process. In many cases it is unclear that all water being pursued is needed, especially if adequate water rates, loss reduction and conservation measures are adopted and implemented. Developing more water than is

[50] Colorado Revised Statute §37-60-126. Water conservation and drought mitigation planning - programs - relationship to state assistance for water facilities - guidelines - water efficiency grant program - repeal. §5. 2004.

[51] Colorado Water Conservation Board database of covered entities; except Superior from WGFP DEIS, 2003 figure Table N-5. pg N-6.

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13	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 necessary places an undue burden on existing residents though increased costs. All projects and demand projects should be examined collectively to ensure that needs are not being over estimated. *See also* Section 4 of these comments, **Similar and Related Actions and Cumulative and Connected Impacts.**	

Table 3: Firm Yield and Storage Requests for Front Range Water Projects

Participant	WG Firm Yield	NISP Firm Yield	Halligan/ Seaman (Storage)^	Total FY	Total FY + H/S Storage
Berthoud	—	1,300	—	1,300	1,300
Broomfield	5,600	—	—	5,600	5,600
Central Weld Co.	100	7,100	—	7,200	7,200
Eaton	—	1,300	—	1,300	1,300
Erie	2,000	6,500	—	8,500	8,500
Evans	500	1,600	—	2,100	2,100
ELCWD	—	—	3,795	—	3,795
Fort Lupton	300	3,000	—	3,300	3,300
Fort Morgan	—	3,600	—	3,600	3,600
Ft. Collins (city)	*See Loveland*	*see FCLWD*	1,200	—	1,200*
FCLWD	*See Loveland*	3,000	7,260	3,000*	10,260*
Greeley	4,400	—	48,000	4,400	52,400
Lafayette	800	1,800	—	2,600	2,600
Left Hand WD	—	4,900	—	4,900	4,900
Little Thompson	1,200		—	1,200	1,200
Longmont	5,125	—	—	5,125	5,125
Louisville	900	—	—	900	900
Loveland (city)	4,000	*see FCLWD*		4,000*	4,000*
Morgan Co.	—	1,300	—	1,300	1,300
No. Weld Co.	—		5,445		5,445
NPIC	—	—	5,000	—	5,000
Platte River Power	5,150	—	—	5,150	5,150
Severance	—	1,300	—	1,300	1,300
Superior	1,500	—	—	1,500	1,500
Windsor	—	3,300	—	3,300	3,300
WSSC	—	—	5,000	—	5,000

* cross over between city and water district?
^ as yet no definitive, project wide storage-to-yield ratio for Halligan/Seaman project.

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Com-ment	Letter #1138	Response
14	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **DEIS Demand Forecasts are Flawed:** As previously noted, conservation savings goals do not seem to be part of any of the participants' long term forecasting. **This is a fatal flaw of the DEIS**: future projected demands must integrate savings goals, as required by state and federal law. Conservation savings is an important part of water supply planning. In a recent presentation to the West Slope Joint Water Roundtable Meeting in November 2008, CWCB staff projected future water demands, assuming that per capita water use is reduced by **25% by 2030**.[52] Given that demand management has been proven to result in real water savings, in a cost-effective manner, conservation savings goals **must** be part of the planning and demand forecasting process for **all** WGFP participants and incorporated into the DEIS. Based on per capita water use reductions of 25% and average population growth estimates, WRA re-calculated demand projections for the thirteen WGFP participants.[53] This conservation scenario reduces per capita demands by 1% annually, starting in 2008. Based on this scenario, WGFP participants' water use rates fall from 194 gpcd (average, 1998 – 2003) to 147 gpcd by 2033.[54] We assume these conservation savings are capped at 25% in 2033; but in reality water use efficiency evolves and improves just like any other technology. Therefore, although the scenario does not assume additional savings beyond 2033, further reductions in per capita use will be possible in 2034 and later years. WRA's projected future water demands include system water losses. We assume water losses increase total demands by 10%, a water loss rate deemed acceptable by the American Water Works Association.[55] We note, however, that other cities along the Front Range have significantly lower levels of water loss—sometimes 5% or lower.[56] Thus, 10% is a very conservative estimate. WRA compared our re-calculated projections of total future water demands with existing firm supplies and potential future supplies from other proposed projects. Figure 2, below, shows projected supplies and demands through 2050. According to the DEIS, §1.6.1 Table 1-1, firm yield of WGFP participants is 140,762 AF in 2005. Table 1-4 in the DEIS shows that participants' demand is projected to increase to 251,450 AF in 2050, [52] Relative to use in 2000. Hecox, Eric. November 14, 2008. Presentation to the West Slope Joint Roundtable Meeting. [53] Two recent studies contain examples of widely used demand reduction measures from Colorado and the Western U.S.: The Colorado Water Conservation Board's *Statewide Water Supply Initiative (SWSI) Phase 2 Report* (http://cwcb.state.co.us/IWMD/SWSITechnicalResources/SWSIPhaseIIReport/, viewed on 8/31/2008) and Western Resource Advocates (2003) *Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest* (http://www.westernresourceadvocates.org/media/pdf/SmartWaterBrochure.pdf, viewed on 8/31/2008). [54] Draft EIS, Table 1-3 on p. 1-16. [55] Janice A. Beecher, Ph.D. Survey of State Agency Water Loss Reporting Practices: Final Report to the American Water Works Association. January 2002 [56] Western Resource Advocates. 2007. *Front Range Water Meter: Water Conservation Ratings and Recommendations for 13 Colorado Communities.* (http://www.westernresourceadvocates.org/watermeter/index.php) 16	14. The 25% reduction in water use by 2030 expressed by CWCB staff includes areas throughout Colorado, including some who have no current conservation plans. Water providers that do not currently promote conservation measures, and water users that do not have current incentives in place to reduce water use can achieve high percentage savings off such a baseline. Those providers that currently have strong conservation plans in place and whose customers are actively involved in reducing water use may not be able to further reduce water use by as much as they have in the past. As stated in the response to Comment No. 11, the Participants with CWCB-approved conservation plans have developed conservation goals ranging from 5% to 17%. In general, the WGFP Participants have conservation programs in place and have been realizing the resulting savings. The 25% savings also was based on the year 2000, a single year's water use. As the commenter previously noted, single years are poor analytical tools and 2000 was a high water use year in many Colorado locations. Hence, savings would be much less in a normalized year. In sum, we did not believe that this method of projecting water use patterns is appropriate for this EIS. A global reduction of each Participant's average water use by 1% per year would not be applicable to reflect the actual savings achievable by the Participants.

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110,688 AF greater than participants' 2005 firm yield. Notably, with WRA's conservation savings and revised demand projections, ***existing*** **firm supplies will meet future water demands through 2030**. Other proposed projects, including NISP and its alternatives[57], Broomfield Reservoir, and Halligan/Seaman Reservoir, will meet future demands through 2050 *without construction of the WGFP*.

Furthermore, if population grows more slowly than expected, total water demands may be significantly lower. Using the same assumptions about conservation savings and a revised annual population growth rate of 1%, total water demands in 2030 are 105,300 AF/yr, *slightly less than the current demand*. In 2050, participants' water demands grow to 122,000 AF/yr, well below today's firm supplies.

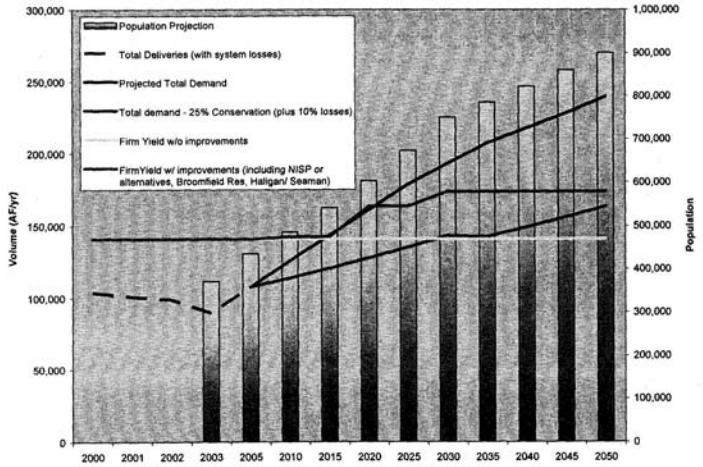

Figure 2. Population growth (right axis; uses DEIS proposed rates of population growth), water demands, and water supply projections (left axis) for WGFP participants. If NISP or its potential alternatives, Broomfield Reservoir, and the Halligan/Seaman Reservoirs are constructed, firm supplies will exceed projected demands through 2050 without the construction of the WGFP.

[57] The "Healthy Rivers Alternative" is an alternative to NISP that was developed by the Save the Poudre and Western Resource Advocates. The Healthy Rivers Alternative estimates the potential for water conservation and rotational fallowing of agricultural lands to provide future water supplies.

Com-ment	Letter #1138	Response
15	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Conservation:** The reductions in per capita water use modeled above reflect reasonable and attainable goals for project participants. While nearly all WGFP participants have adopted the 1992 National Energy Policy Guidelines (required), few have gone beyond these basic national requirements to promote indoor efficiency, despite existing technologies—readily available in the marketplace—that save more water. Many of the participant utilities have implemented education and outreach measures that inform customers about the importance of water efficiency. However, many lack conservation measures that go beyond education. For example, rebates provide incentives for customers to use water more efficiently and regulations require wise water use. Conservation measures like these help to further increase efficiency, improve behavioral practices, and educate the public. The combination of multiple measures greatly improves the overall effectiveness of any conservation program. Furthermore, public perception of water conservation has drastically changed in areas where education and other measures—such as incentives, regulation and conservation pricing—are present. The DEIS claims in §1.6.2.3 that water use reductions since 1988 indicate that conservation efforts have been successful. However, it does not mention that during this time many communities became fully metered, drastically reducing levels of use and that this conservation measure is likely the cause of the large reduction in use.[58] In truth, few participants in the WGFP have comprehensive conservation programs in place, and it is likely that implementation of further conservation measures will lead to additional reductions in use. Furthermore, conservation measures have proven to be cost effective and a source of real water savings.[59] Indeed, many studies have shown that conservation is not only cost effective, but is often less expensive per acre-foot than traditional supply development.[60] In the fall of 2007, WRA completed a report—*Front Range Water Meter: Water Conservation Ratings and Recommendations for 13 Colorado Communities*—that provides useful information for analyzing levels of water use and conservation programs in many WGFP cities. Much of the data in the pages that follow rely upon the *Water Meter* and data therein that were provided directly from water utilities. All WGFP participants have implemented some sort of demand-side management measures aimed at reducing water use. Conservation measures help to increase efficiency, improve behavioral practices, and educate the public. The combination of multiple measures greatly improves the overall conservation program. Because there are [58] U.S. Bureau of Reclamations. Windy Gap Firming Project Draft Environmental Impact Statement. August 2008. §1.6.2.3, pg 1-16 [59] Western Resource Advocates, *Smart Savings: Water Conservation Measures that Make ¢ents*. 2008. http://www.westernresourceadvocates.org/media/pdf/Smart%20Savings%20Water%20Conservation.pdf [60] Colorado Water Conservation Board, Colorado's Water Supply Future: State Wide Water Supply Initiative Phase 2. November, 2007. Table 2-1. http://cwcb.state.co.us/NR/rdonlyres/C65D6406-3EE0-4E44-9C5E-E1655D814CB8/0/S2_ConservationEfficiency.pdf 18	15. WGFP Participants have varying levels of conservation programs currently in place. The conservation programs of these Participants include measures aimed at different types of customers and water uses. The Purpose and Need Report and Appendices (ERO and Harvey Economics 2005) discuss the conservation measures in place for each Participant. In addition, Section 1.6.2.3 and Section 1.7 of the FEIS provide updated information on Participant water conservation practices. The conservation programs of each Participant, including the number and type of measures, enforcement of ordinances, and tracking capabilities are based on a number of entity-specific factors, including budget, the structure of the customer base and the types of water demands served. These programs are unique to each entity. Since Table 2 from Comment No. 13 was prepared, the cities of Evans and Greeley have finalized their conservation plans and have received CWCB approval of those plans. As outlined in Table 2, approval of conservation plans is in progress for several other Participants. These actions indicate that the WGPF Participants are serious about creating conservation goals and implementing conservation measures. These programs continue to evolve and move forward, and are required by the CWCB to be updated every 7 years. Greeley's water use data, as well as that of other WGFP Participants, has shown a downward trend in recent years (see Appendices to Purpose and Need Report). This may be due, in part, to conservation measures, but may also be due to other factors, such as weather and economic conditions. Many entities have not been able to determine the amount of water savings that results from any one measure or program.

Com-ment	Letter #1138	Response
15	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 a multitude of conservation measures utilities can adopt, we look closely at five key criteria: • Incentives/rebates (including giveaways) • Ordinances/rules • Education • Commercial and industrial (C&I) programs • Xeriscape Greeley has all of the five criteria included in their conservation programs but relatively low levels of penetration for their incentive based programs, increasing levels of unaccounted for water, and only a uniform water rate structure that provides no incentive for customers to use water more efficiently. Some communities (e.g., Broomfield, Erie, Louisville, Loveland, Lafayette and Fort Lupton) have conservation ordinances, but appear not to track or enforce the regulations, diminishing their effectiveness. In particular, ordinances dealing with new growth are essential, especially in cities experiencing extremely rapid growth. Longmont, Loveland, Lafayette and Louisville all use four out of five of the above categories in their conservation measures. All lack a commercial and industrial program, something that needs to be addressed as these water use sectors grow. Furthermore, while the communities listed do utilize four out of the five conservation measures, their programs are not robust; with more effective implementation, the communities can attain significant water savings. For instance, Longmont and Louisville are the only two of these four communities that offer rebates. Yet their level of penetration is quite low, in some instances reaching less than 1% of their service area population. Fort Lupton, Evans, Broomfield, and Berthoud all have limited measures in place, and rely heavily upon ordinances, but these are not often enforced or tracked. While the number of measures a community has adopted is not necessarily an indicator of conservation program success, communities with more measures in place typically have better tracking and enforcement in place. Tracking provides an accurate picture of what percentage of the population is being reached by their measures.[61] The above communities also have extremely limited education measures in place, do not have dedicated staff or budget to properly carry out these measures, and do not have incentive based measures or rebates in place. A huge potential exists for additional reductions in per capita demand through the implementation of more progressive policies and programs. Adopting improved rate structures, incentives and enforced regulations and a well executed education program can result in significant cost savings for the water providers. [61] Western Resource Advocates, *Front Range Water Meter*. November, 2007. 19	

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If WGFP beneficiaries secure water at a storage-to-yield ratio of 4-to-1 (typical in Colorado), they can expect to pay $9,600 per acre-foot of firm yield,[62] not including the potential for additional costs to store this water locally and projected construction cost increases for these structural features. Many conservation measures are far less expensive. A 2004 report estimates the cost of implementing a progressive water rate structure at $6000/AF.[63] A water conservation sub-committee carrying out Phase II of SWSI has developed expected costs of $2,000-7,000/AF for landscape audits, water loss reduction, and many other programs.[64]

16

Levels of Water Use and a "Reasonable" Standard

Through an analysis based on data presented in the P&N and provided by water utilities on Colorado's Front Range, WRA calculated that average water use for a large sample of Front Range communities is 177 gpcd and the median is 184 gpcd. These figures were calculated using data from water providers from 1998-2003, the same years used in the WGFP P&N. The average and median offer a much more accurate representation of recent trends in Front Range water use by proposed WGFP beneficiaries and similarly-situated communities. *See* Table 4, below.

Table 4. 1998-2003 Front Range Municipality Consumption Data (GPCD)

Front Range GPCD Total (gal)	1998	1999	2000	2001	2002	2003	AVG
Westminster			191	191	170	156	177
Longmont	215	195	213	201	196	180	200
Denver	213	203	221	211	192	166	201
Fort Collins	196	185	211	198	183	154	188
Greeley	218	197	220	201	192		206
Loveland	182	165	204	190	160	136	173
Broomfield	191	192	225	203	210	189	202
Lafayette	151	137	148	147	102	126	135
Louisville	183	178	193	182	133	157	171
Superior	149	127	131	125	128	120	130
Aurora	173	171	192	184	168	127	169
Multi-city Avg.	187	175	195	185	167	151	**177**
						Median =	**184**

[62] Based on a cost estimate of $2,400 per acre-foot of storage, an estimate provided Northern Colorado Water Conservancy District.
[63] Mayer, Peter et al., *National Multiple Family Sub-metering and Allocation Billing Program Study*. Aquacraft, Inc., 2004.
[64] Colorado Water Conservation Board, Colorado's Water Supply Future: State Wide Water Supply Initiative Phase 2. November, 2007. Table 2-1. http://cwcb.state.co.us/NR/rdonlyres/C65D6406-3EE0-4E44-9C5E-E1655D814CB8/0/S2_ConservationEfficiency.pdf

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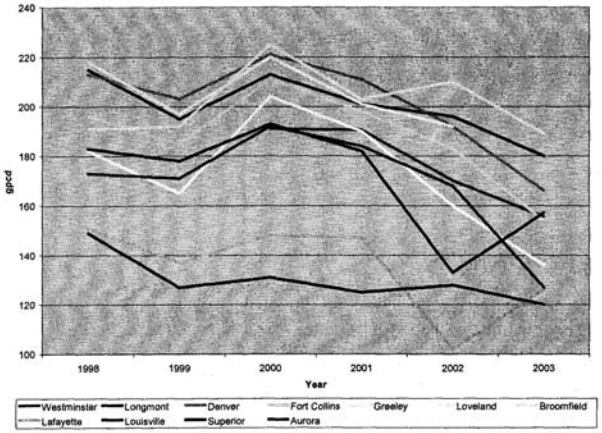
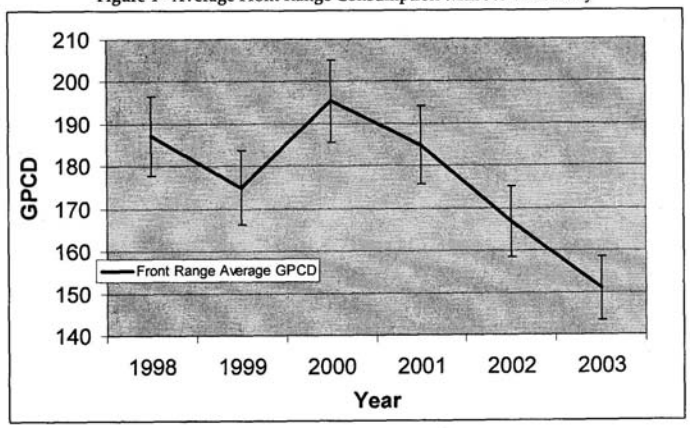
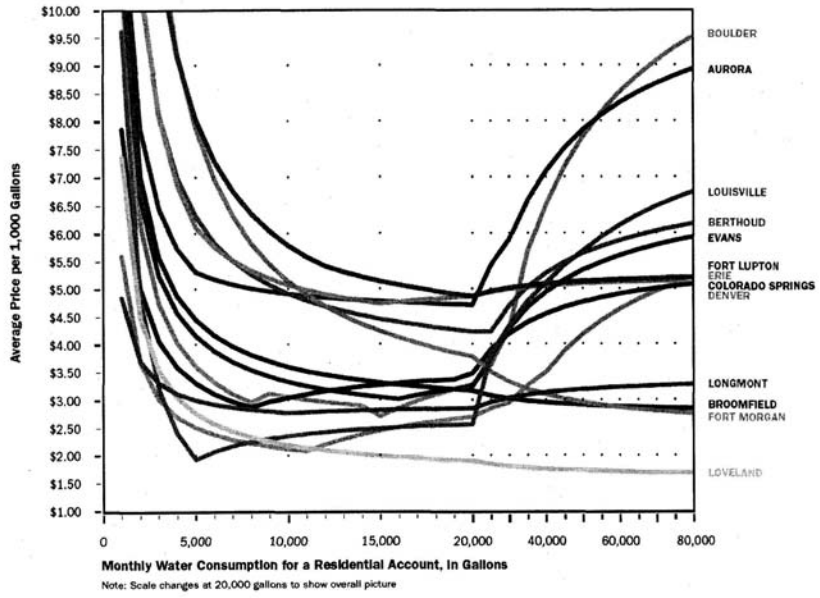
16. A number of WGFP Participants are small, rural water providers that differ from the larger cities indicated in Table 4 in terms of characteristics such as the distribution of customer types and density; land and water uses; and system infrastructure. Table 4 does not include any water providers that can be described as similar to the WGFP's rural providers or that would reflect water use patterns similar to those types of providers.

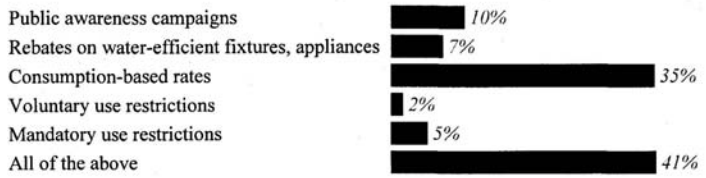
Com-ment	Letter #1138	Response
16	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 Based on the actual Front Range data depicted above, it appears cities fall into two fairly distinct groupings: those that have a 1998-2003 average gpcd of 190 or below, and those with a gpcd of 200 or above. The latter group—which includes Broomfield, Greeley and Longmont—clearly sticks out as having relatively high per capita use. The P&N should reflect this distinction and incorporate 25% per capita use reductions into these cities' projected water demand. The colored lines in Figure 3, below, depict the same data graphically. The trend since 2000 for most Front Range communities is decreasing per capita use. For example, the city of Westminster has seen a steady decrease in their system-wide per capita water use over the last five years. Westminster's 2000 gpcd was 191 while use in 2005 was 154 gpcd—a decrease of 24%.[65] Other cities experienced similar drops. This trend is, in part, the result of replacement of inefficient indoor fixtures, the adoption of city wide conservation goals, and the implementation of rate structures that encourage conservation. Changes such as these result in permanent water savings and do not rely upon behavioral adaptation that can dissipate after a drought is over. As a result, some Front Range cities, like Denver, have adapted their planning, using lower levels of consumption to forecast future demand.[66] **Figure 3- System Wide Consumption of Front Range Municipalities**  [65] City of Westminster Department of Public Works and Utilities. [66] Denver Water Board, Integrated Resource Plan materials and handouts, December 7, 2005 21	

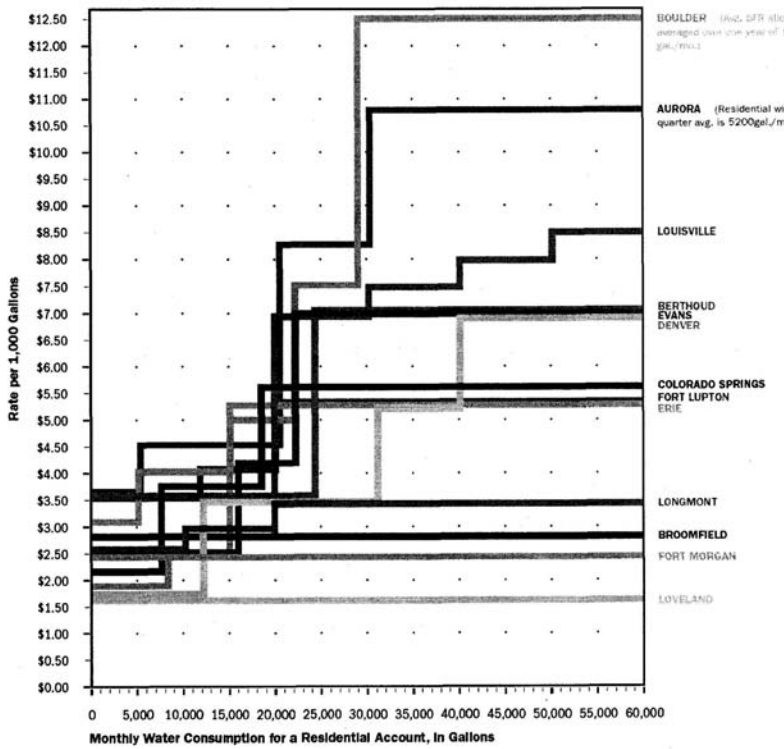
Com-ment	Letter #1138	Response
16	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Figure 4 - Average Front Range Consumption with 5% Variability**  Figure 4, above, represents the average system wide per capita consumption for municipalities along the Front Range from 1998 through 2003. The brackets provide an illustration of possible variations in average levels of use given a 5% shift in either direction. Even if a 5% increase in use were to occur, the average of all Front Range cities examined is well below the "reasonableness" standard used in the WGFP DEIS.	
17	**Participants' System Wide Loss is Unreasonably High** The WGFP participants collectively have an average rate of "unaccounted for water" of nearly 14%. This not only exceeds the American Water Works Association reasonableness standard of 10%, it is also drastically higher than other nearby communities. Fort Lupton, Loveland and Louisville all have system loss levels that exceed the 10% threshold, by as much as 7%. In contrast, Berthoud and Broomfield have achieved very low levels of unaccounted for water, 2.6 and 3% respectively.[67] Reducing average system wide loss levels for all WGFP participants to five percent would provide an additional 7,800 to 9,000 acre-feet per year – that is 25-29% of the expected WGFP firm yield.[68] It is incumbent upon cities that are considering construction and payment for a large new trans-mountain diversion project to first efficiently use water that has already been developed. [67] Western Resource Advocates, *Front Range Water Meter: Water Conservation Ratings and Recommendations for 13 Communities*, 2007, at 15. [68] Calculation by Western Resource Advocates based on data on average system loss §1.6.2.2 (pg 1-14) of the DEIS. Range is based on 2003 low of 90,000 AF loss and 2000 high of 104,400. Savings is the difference between 13.7% loss and 5%. 22	17. The comment oversimplifies the complexity of "unaccounted for water." The conveyance, treatment, and distribution losses experienced by each of the Participants depends on many factors, including the type and location of water sources and the system-wide operation of facilities and infrastructure. Water providers may not have any control over a number of these components and, therefore, may not be able to influence any reduction in some types of losses. For example, many Participants own shares in agricultural ditch companies or similar organizations that pass along their losses. The Purpose and Need Report includes a discussion of the available literature regarding water losses, including AAWWA reports (p. 20), and states that "water losses are not universally measured, nor is common terminology applied." This makes comparing losses among water providers, and determining benchmarks, a difficult exercise. Studies indicate that utilities experience a wide range of losses (from 10% to 25%), with a central tendency of between 15% and 16%. Losses are calculated consistently for each of the WGFP Participants in the EIS and fall within the range of the studies noted.

Com-ment	Letter #1138	Response
18	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Proponents' Water Rate Structures are Ineffective** Many WGFP participants have ineffective pricing structures. Other participants' price structures send no conservation price signal at all. In order for inclining block rates to be an effective conservation tool consumers must understand that the more water they use the more they will pay per unit; this is reflected in a steep positive slope on the average price curve. As illustrated in Figure 5, below, many WGFP participants such as Fort Lupton, Broomfield, Longmont and Loveland lack an effective pricing structure. Under an effective rate structure, the price per AF will rise sharply as use increases, as seen with Boulder, Aurora, Louisville, Berthoud, Denver and Evans in Figure 5. An ineffective pricing structure will rise only faintly (Fort Lupton, Longmont); not at all; or decrease as use increases, as seen in Broomfield and Loveland in Figure 5. **Figure 5: Average Price Curve[69]**  [69] Western Resource Advocates, *Front Range Water Meter*. 2007, at 16. 23	18. Pricing is indeed an effective conservation tool and is one of the evaluation factors used by the Colorado Water Conservation Board staff in evaluating and approving water conservation plans. As mentioned in the responses to previous comments, each participant will be required to have an approved water conservation plan in accordance with the requirements of Water Conservation Act of 2004, as amended, prior to the delivery of water as a result of the WGFP.

Com-ment	Letter #1138	Response
18	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 The most important element that will alter the effectiveness of any conservation price signal is the fixed monthly service charge. If this fee is a large percentage of the bill, then consumers see little incentive to conserve because regardless of how much they reduce their consumption they will still have to pay a large service fee. In other words, large service charges penalize low volume users and remove incentives to conserve water. As shown in Table 5, below, many WGFP participant cities have a fixed service charge that is an extremely high percentage of a bill for 10,000 gallons of consumption—thus decreasing or even negating the conservation price signal. **Table 5: Service Charge Percentage of Bill at 10,000 Gallons[70]** See table below. Conservation pricing is an important component of any effective demand management program and should be utilized in any community seeking new sources of water. In fact, in a recent poll by the American Water Works Association, responders stated that conservation oriented rates, or consumption-based rates, were the best individual mechanism to get customers to use less water.[71] *See* Table 6. [70] Western Resource Advocates, *Front Range Water Meter*. 2007, at 15. [71] American Water Works Association, Results of Survey "Quick Poll" *What's the best way to get customers to use less water?* Accessed 8/22/08. http://www.awwa.org/QuickPollResults.cfm?itemnumber=1663. 24	

	Total Bill at 10,000 Gal.	Service Charge	% Service Charge of 10,000 Gal. Bill
Aurora	$49.00	$8.50	17.35%
Berthoud	$49.07	$13.87	28.27%
Boulder	$28.95	$8.55	29.53%
Broomfield	$35.83	$8.53	23.81%
Colorado Springs	$31.91	$5.70	17.86%
Denver	$21.07	$3.87	18.37%
Erie	$50.65	$15.00	29.62%
Evans	$33.15	$8.25	24.89%
Fort Lupton	$57.80	$22.50	38.93%
Fort Morgan	$51.34	$27.34	53.25%
Longmont	$27.60	$2.30	8.33%
Louisville	$23.40	$9.60	41.03%
Loveland	$21.75	$5.75	26.44%

Com-ment	Letter #1138	Response
18	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Table 6: Result of AWWA Quick Poll[72]**  Municipalities with the most effective conservation oriented rates—i.e. structures that clearly communicate *the more you use the more it will cost per unit*—are the communities who provide an initial block of water at a low and affordable rate, and then increase rates noticeably from one block to the next. Far too many WGFP providers have an inclining block rate structure that has a negligible price increase as marginal water use increases (Figure 6); the result is that consumers do not notice that their unit cost is greater than before and thus have no incentive to conserve. This is the case with Fort Lupton, whose large service charge and minimal consumption price increases from one tier to the next, resulting in a rate structure that acts – in essence – as a flat rate structure and provides no price signal. SEE NEXT PAGE [72] Id. 25	

Com-ment	Letter #1138	Response
18	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Figure 6: Marginal Rate Curve**[73]  19 **Conclusions for Section 3—Water Conservation and Efficiency:** Based on a close review of the P&N, the DEIS and, other relevant data, the underlying water use projections in the DEIS—and thus the "need" for the WGFP—are arbitrary and fatally flawed. The Bureau must amend the DEIS's underlying population and water demand projections; current figures are significant over-estimatations. This amendment must more accurately reflect consumption patterns specific to the Colorado Front Range, rather than using single-year data from communities in other states with [73] Western Resource Advocates, *Front Range Water Meter*. 2007, at 14. 26	19. As mentioned in the responses to other comments, Reclamation believes that the population estimates used in the EIS are accurate and consistent with estimates developed by the State of Colorado and others.

Com-ment	Letter #1138	Response
19	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 entirely different climates and levels of water use. More accurate average per capita use by Front Range cities—as well as the marked downward trend in recent years—substantially undercuts the need for the Windy Gap Firming Project during the proposed planning horizon. Updated data will allow individual cities to more accurately assess their need for WGFP, an expensive water supply option. This is particularly important in light of the recent economic downturn and housing foreclosures in many WGFP cities. Conservation and efficiency has not been adequately incorporated into WGFP participant's long term planning process and savings from demand management to date have been overstated. Prior to developing the WGFP, participants must adopt more aggressive conservation measures and goals. In a recent presentation, the Colorado Water Conservation Board assumed a 25% reduction in average per capita water use between 2000 and 2030.[74] WGFP communities must adopt, at a minimum, the State's conservation objectives. With this level of reduction, the project participants' existing supplies will meet demand through 2030. When the other proposed projects in the region are considered—NISP and its alternatives, Broomfield Reservoir, and Halligan/Seaman Reservoir—firm supplies will exceed participants' demands through 2050. In light of these other projects, the WGFP No Action alternative is the most reasonable. Incorporating many of the above-noted conservation measures would further strengthen participants' conservation programs and, consistent with the Reclamation Reform Act and state law, should be adopted prior to committing enormous financial resources to the proposed WGFP project.	
20	**4. Similar and Related Actions; Cumulative and Connected Impacts** The DEIS lacks adequate analysis of related actions—including "connected", "cumulative", and "similar" actions[75]—as well as cumulative and connected impacts from past, present, and reasonable foreseeable future projects. As discussed in our comments on the **National Environmental Policy Act**, above, identifying and evaluating these actions and impacts is a central component of NEPA. Courts are clear that action agencies often must examine several related actions inside a single NEPA document.[76]	20. CEQ regulations and case law provide clear guidance on the scope of a particular NEPA analysis with respect to possibly related actions. See 40 CFR 1508.25. Courts have provided guidance on whether proposed projects are sufficiently interrelated to qualify as "connected actions," which should be considered together in a single NEPA analysis. The courts have generally applied an "independent utility" test to determine if two activities are closely connected, evaluating whether each of the activities could be undertaken on their own (even if they would benefit each other), or whether they are inextricably linked to each other, or if they are similar projects being pursued by the same agency. The WGFP has utility independent of the other water projects mentioned in the comment or considered as part of cumulative impacts in the FEIS and, therefore, a single NEPA analysis of all of the projects is not required.

[74] Hecox, Eric. November 14, 2008. Presentation at the West Slope Joint Roundtable Meeting.
[75] 40 C.F.R. at §§ 1508.25, 1508.7, 1508.8.
[76] *Id.* The U.S. Court of Appeals for the Fifth Circuit held that in a cumulative impact analysis, an agency should consider "(1) past and present actions without regard to whether they themselves triggered NEPA responsibilities and (2) future actions that are 'reasonably foreseeable,' even if they are not yet proposals and may never trigger NEPA-review requirements. *See*, *Fritiofson v. Alexander*, 772 F.2d 1225, 1245 (5th Cir. 1985). The court noted that the applicable law "does not limit the inquiry to the cumulative impacts that can be expected from proposed projects; rather, the inquiry also extends to the effects that can be anticipated from "reasonably foreseeable future actions." *Id.* At 1243. Similarly, the U.S. Court of Appeals for the Ninth Circuit has specifically required analysis of activities on both public and private land, since both may impact federal resources; the court also found cumulative impacts analysis insufficient where it did not include foreseeable projects in the same geographica1 region. *See*, *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 815-16 (9th Cir. 2005); *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800 (9th Cir. 1999).

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21	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Connected and Similar Water Projects** The inter-connectedness of WGFP with the existing Colorado-Big Thompson (CBT) project, including potential legal hurdles to such inter-connectedness, has not been adequately analyzed in the DEIS. The inter-connections are vividly illustrated by **Figure 2-6. Chimney Hollow Reservoir connection schematic** (DEIS at 2-21) and discussed in some detail in **Section 2.4.2 (Operations,** DEIS at 2-24). Not only are the projects' facilities intimately linked, but under the prepositioning concept, their waters are commingled: Prepositioning would involve the use of available Adams Tunnel capacity to deliver C-BT water into Chimney Hollow to occupy storage space that is not occupied by Windy Gap water...The delivery of C-BT water from Granby Reservoir into Chimney Hollow would create space for Windy Gap water in Granby Reservoir. When Windy Gap water is diverted into Granby Reservoir, the C-BT water in Chimney Hollow would be exchanged for a like amount of Windy Gap water in Granby Reservoir. (DEIS at 2-24) The WGFP DEIS notes that: Because the Proposed Action includes the storage of C-BT water in a new Firming Project facility (a concept referred to as prepositioning), Reclamation also will need to make a decision regarding accounting changes in the C-BT system to allow water storage and exchange between the two projects to occur. Implementation of prepositioning may require modification or replacement of the existing conveyance and storage contract between Reclamation, the Subdistrict, and the NCWCD. (DEIS at 1-42) Discussions about any potential contract approvals have not been completed; indeed, it is unclear if they even have been started. Since such approvals are a prerequisite for many elements of the Proposed Action, the WGFP DEIS analysis is simply not yet complete. These contract discussions and any "contract conditions" must be subject to public review and comment.	21. Reclamation expects to complete the NEPA process with a Record of Decision (ROD) no sooner than 30 days after the Final EIS is made available to the public. The ROD will document Reclamation's selection of an alternative for the WGFP and discuss the factors, including C-BT Project water rights that were considered in making that decision. If the selected alternative includes issuing a water contract, Reclamation intends to determine whether the proposed contract complies with Senate Document 80, and other applicable authorities, prior to execution of the proposed contract. See the discussion added at the beginning of Section 1.10.2 of the FEIS.
22	Further, there are significant questions about whether the proposed use of CBT facilities is allowed under existing federal law. The DEIS notes Prior to entering into a contract that would allow use of C-BT excess capacity, Reclamation must determine that the excess capacity contract is consistent with the provisions of Senate Document 80 (SD 80) and Reclamation's authority under Section 14 of the Reclamation Project Act of 1939 (43 U.S.C. § 389). This determination will be made available at a later time and is not part of this EIS. (DEIS at 1-42) 28	22. See response to Comment No. 21.

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22	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 There is, however, no support for the statement that these issues can simply be dealt with "at a later time" or that they are "not part of this EIS." To the contrary, it is critical that any uncertainties over compliance with Senate Document 80 and the 1939 Reclamation Project Act be resolved before finalizing the EIS, as the outcome could dramatically alter the EIS's analyses and conclusions. Senate Document 80 states that the Colorado Big-Thompson Project "must be operated in such a manner as to most nearly affect the following primary purposes: 1. To preserve the vested and future rights in irrigation. 2. To preserve the fishing and recreational facilities and the scenic attractions of Grand Lake, the Colorado River, and the Rocky Mountain National Park. 3. To preserve the present surface elevations of the water in Grand Lake and to prevent a variation in these elevations greater than their normal fluctuation. 4. To so conserve and make use of these waters for irrigation, power, industrial development, and other purposes, as to create the greatest benefits. 5. To maintain conditions of river flow for the benefit of domestic and sanitary uses of this water." DEIS at 1-42. The WGFP's proposed prepositioning, because it will allow more water to be pumped from Windy Gap into Lake Granby and from Granby into Grand Lake, will increase sediment and nutrient loads in the latter, aggravating an existing problem and violating primary purpose #2, above, regarding preserving fishing and recreational facilities. Furthermore, there are other features of prepositioning that must be considered as they relate to Senate Document 80. Prepositioning will require storage of C-BT water in Chimney Hollow where, at some point, it will be converted to Windy Gap water. But Senate Document 80, in its project description, identifies only three Front Range Storage facilities – Carter Lake, Horsetooth Reservoir, and Arkins Reservoir. No other storage facilities are mentioned. While Reclamation does indicate that "implementation of prepositioning may require modification or replacement of the existing conveyance and storage contract between Reclamation, the Subdistrict, and the NCWCD" (DEIS, page 1-42), it is far from clear whether, under Senate Document 80, storing C-BT water would be allowed at all in Chimney Hollow. Reclamation has defended the prepositioning concept elsewhere, by using Boulder Reservoir as an example of a Front Range reservoir not mentioned in Senate Document 80 that stores C-BT water. This example is not compelling, however, in that Boulder Reservoir, a terminal facility, is storing C-BT water for owners of C-BT shares. Other groups, most notably Grand County, the Colorado River Water Conservation District, and Northwest Colorado Council of Governments, have raised a host of additional issues related to prepositioning (*see, e.g.,* letter to Richard K. Aldrich, 29	

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22	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 Office of Solicitor, March 22, 2004). For example, these groups argue that prepositioning, because it depends on storing C-BT water in Chimney Hollow, eventually exchanging it for Windy Gap water and thereby increasing the yield of WGFP, gives Windy Gap the benefit of some of the 52,000 AF of replacement water in Green Mountain Reservoir, a situation never contemplated by Senate Document 80 and, therefore, illegal. The DEIS must review whether the operation of the project would violate any of the provisions of Senate Document 80 or any other agreement or requirement, e.g., the Blue River Decrees, that affect the operation of the C-BT Project. In the DEIS, Reclamation agrees that it needs to do this, but suggests this will only occur after the completion of the EIS (DEIS, pages 1-42 & 1-43). We believe strongly that the EIS is the appropriate place to identify and analyze all of the existing agreements and constraints that pertain to Windy Gap and disclose to the public whether there will be a need to modify them in order to operate the project. In addition, the EIS must include in the baseline conditions a summary of all in-stream flow and by-pass flow requirements that control the affected streams, and must evaluate the impacts to those flows and delivery requirements. The DEIS's failure to identify and analyze all existing agreements and constraints is repeated inside the hydrologic analysis (*see* page 36 of these comments). There, the DEIS provides only averaged or snapshot assessments and fails to assess the full impact of hydrologic regime changes at a temporal and spatial resolution sufficient to evaluate habitat, aquatic, and morphologic impacts.	
23	**WGFP Must Comply with the Federal Water Supply Act** The WGFP must comply with the federal Water Supply Act (WSA), which will require congressional approval for the proposed inter-connected use of the C-BT. The WSA requires congressional approval for major conversions of existing "Federal navigation, flood control, irrigation, or multiple purpose projects" to municipal and industrial water uses. *See* 43 U.S.C. § 390b(a), (b), (d). Determining whether a project's uses are modified focuses on the *purposes* for which the federal reservoir is used. *See Southeastern Federal Power Customers, Inc. v. Geren*, 514 F.3d 1316, 1324 (D.C. Cir. 2008). Modification of a federal reservoir project to include municipal and industrial uses, regardless of cost, requires congressional approval where such modification would: "[(1)] seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or . . . [(2)] involve major structural or operational changes . . . ." 43 U.S.C. § 390b(d). As provided in SD 80, Congress authorized construction of the CBT to bring water from the Upper Colorado River basin to Colorado's eastern slope to benefit lands in need of "supplemental irrigation" and to meet the "primary purposes" noted previously. The WGFP's proposed use of CBT, especially through the proposed prepositioning concept, would (1) seriously affect "the purposes for which the project 30	23. See response to Comment No. 21.

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23	was authorized, surveyed, planned, [and] constructed" and (2) constitute a "major structural or operational change" of the CBT project. Thus, pursuant to the WSA, the WGFP requires congressional approval. The DEIS must be revised to address this.	24. As mentioned in other responses, the purpose of the WGFP is not to develop new water supplies for the participants but to make better use of existing supplies that are available through the use of existing Windy Gap water rights. Participants that are also involved in other project that develop new water supplies have identified future water needs that will require more that what will be available as a result of the WGFP. Section 1.7 of the FEIS includes additional information on the Participants' anticipated yield from the WGFP and other sources in relation to their overall future water needs.
24	**The DEIS Fails to Analyze All Similar and Cumulative Actions and Impacts** An additional issue, also noted only briefly in the DEIS, is the overlap in the list of NISP and WGFP participants. *See* Table 3, at page 14 of these comments. For example, Erie, Evans, Fort Lupton, Lafayette, and Central Weld County Water District are involved in NISP and WGFP. If any of these communities' needs could be met through another project or projects (or an alternative to one of the currently proposed projects) it could obviate the need for their participation in WGFP. The above example highlights a much more important issue: **the DEIS fails to discuss the connection between the WGFP and many other proposed projects that would either provide water to satisfy the same or similar northern Front Range water demands and/or tap into water from the Upper Colorado River**. The WGFP and these other proposals cannot be analyzed in isolation; to do so runs afoul of NEPA's requirement to analyze "cumulative" and "similar" actions.[77] While the DEIS does discuss some "water-based" related actions (DEIS at 2-42), the list is far from complete.	
25	Three distinct elements must be analyzed. First, the regional water demands of many northern Colorado Front Range communities must be considered in a single NEPA process, rather than segmented into separate NEPA documents on separate project proposals, headed by separate federal agencies. Only when considered together can the applicant and lead federal agency be clear about the need for the currently proposed project, in light of other projects designed to meet similar needs.	25. The WGFP was initiated to firm the yield of the existing Windy Gap Project. The WGFP has a distinct purpose and need associated with addressing the deficiencies of the original Windy Gap. Alternatives for meeting project objectives were developed and evaluated. The WGFP has no interdependence or connection with other Front Range water projects, although some WGFP Participants are also participants in other water projects because the WGFP would not satisfy all of their future water needs. There is no geographic overlap among Front Range projects that would result in cumulatively significant impacts.
26	Second, the DEIS also fails to analyze the direct, indirect, cumulative, and connected impacts that would result from new growth (e.g., commercial and urban development) facilitated by WGFP. NEPA regulations, specifically 40 C.F.R. §1508.25, and court decisions make clear that environmental analyses pursuant to NEPA must consider future actions that are "reasonably foreseeable" even if they are not yet proposals and, by themselves, may never trigger NEPA-review requirements.[78] This includes activities on both public and private land[79] and includes land-use and development decisions to be made by the project participants.	26. The WGFP would support the Participants' abilities to provide water to future customers within their service areas, but would not promote or encourage growth. The Participants initiated this Project because of the need to meet anticipated future water demands that could not be met by the Windy Gap Project as it is currently configured. There is no evidence to suggest that the WGFP would stimulate growth.
27	Third, the WGFP, other project proposals, **as well as existing projects**, have cumulative impacts on the Colorado River that must be fully analyzed. For example, the existing Windy Gap project, CBT project, and Moffat Tunnel all divert large volumes of water from the Upper Colorado River, with consequent impacts on streamflows, the environment, recreation, wastewater dilution flows, opportunities for municipal growth, and the quality of life on the western slope (for residents there as well as visitors). Recent	27. The WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impacts of the WGFP. The WGFP and Moffat Project have different objectives, different project proponents, and no
	[77] 40 C.F.R. §1508.25(a)(2). *See Thomas v. Peterson*, 753 F.2d 754, 759 (9th Cir. 1985). [78] *Fitiofson v. Alexander*, 772 F.2d 1225, 1245 (5th Cir. 1985). [79] *Natural Resources Defense Council v. U.S. Forest Service*, 421 F.3d 797, 815-16 (9th Cir. 2005). 31	

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27	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 proposals, including the WGFP and Moffat Tunnel Expansion, would only add to these impacts. NEPA is clearly designed to require analysis of these cumulative impacts, but the WGFP DEIS does not yet undertake sufficient analysis.	shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.
28	**5. Construction Costs** Over the last five years, construction costs have risen dramatically. These costs have been driven upwards by fuel costs; the cost of raw materials such as steel, cement, and precious metals; and labor costs. Although in the last few months, construction costs have fallen slightly as a result of lower fuel costs and slowing demand, they have not declined to pre-2005 levels. Higher construction and capital costs provide an additional incentive for cities to invest in conservation and water use efficiency measures. As noted in WRA's comments on Conservation and Efficiency, each of the Windy Gap participant cities could achieve additional water savings. Various factors, including rising fuel costs and rising worldwide demand, have driven construction costs upward considerably in recent years. These cost increases have exceeded the average inflation rate. As a result, many public works projects have, in the end, cost substantially more than originally projected. In the following sections, we provide a methodology and rationale for the Bureau of Reclamation to re-estimate the capital costs of the WGFP. We recommend that Reclamation re-evaluate conservation and efficiency measures, many of which are cost-competitive with the updated capital costs of the WGFP. **Background: Commodities and Labor Price Trends** The price of key elements in construction – iron, steel, cement, and copper – escalated dramatically between 2003 and 2007. Although the price escalation slowed in 2008 and fell slightly in the last few months, prices are not expected to fall to the levels seen during the 1990s or early 2000s. The Producer Price Index (PPI), developed by the Bureau of Labor Statistics, provides a benchmark for the cost of various commodities and industries. Between December 2003 and January 2008, the PPI for inputs to construction rose 30.4%, while the Consumer Price Index (CPI) rose 14.5%.[80] The cost increases have been driven in large part by increasing demand for raw materials in China and other rapidly developing countries; these countries' demand is not likely to wane in future years. (Table 7 presents annual price escalation rates of key commodities from 1986 to 2007; Figure 7 and Figure 8 illustrate the PPI for major inputs to construction and the CPI.) [80] Simonson, Ken, March 2008. *AGC Construction Inflation Alert*, The Associated General Contractors of America, http://www.agc.org/galleries/econ/AGC_CIA08_webFinal.pdf. 32	28. Actual construction costs will likely be higher than the 2005 estimates in the FEIS; however, infrastructure construction costs for many large projects have decreased substantially in the last year because of the economy. Recent economic downturn may affect the ability of some Participants to finance the WGFP in the near future. The Participants will undoubtedly carefully consider the financial feasibility of the Project before they proceed with the WGFP if it is approved. The WGFP Participants have been and will be improving their conservation programs over time regardless of the decision on the WGFP. Additional water conservation measures and firming existing sources of water supply are key components of meeting current and future water supplies for all of the Participants.

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Table 7. Annual Price Escalation of Key Construction Commodities.[81]

Commodity	Average Annual Escalation from 1986 – 2003	Average Annual Escalation, Dec. 2003 – April 2007	Escalation during the period Dec. 2003 – April 2007 As a Ratio of Recent Historic Average
Copper	3.30%	69.20%	21x
Cement	2.70%	11.60%	4.3x
Iron and Steel	1.20%	19.60%	16.3x
Heavy Construction	2.20%	10.50%	4.8x

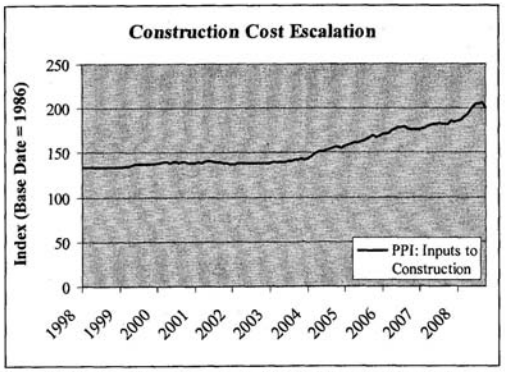

Figure 7. The Producer Price Index (PPI) of Inputs to Construction has risen sharply since 2004. The rise has outpaced inflation (see the Consumer Price Index (CPI) in the following figure). Data from the U.S. Department of Labor, Bureau of Labor Statistics. Retrieved on November 20, 2008.

[81] Table adapted from Synapse Energy Economics, Inc, 2008. *Don't Get Burned: The Risks of Investing in New Coal-Fired Generating Facilities*. Data from the Appalachian Power Company, testimony to the West Virginia Public Service Commission.

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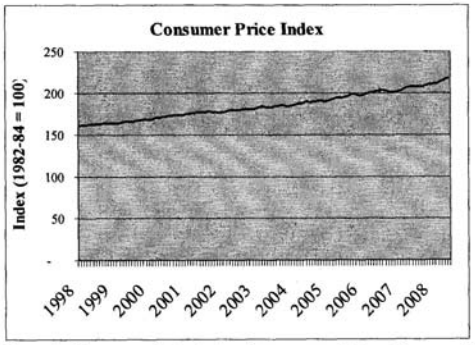

Figure 8. Consumer Price Index (for average cities, all commodities) over the period 1998 – 2008. The CPI serves as a benchmark for inflation. Data from the U.S. Department of Labor, Bureau of Labor Statistics. Retrieved on August 13, 2008.

Accurately estimating capital costs is essential – typically, agencies use the CPI or alternate measures of inflation to project future costs. As shown in Figure 7 and Figure 8, however, the cost of construction materials has escalated at a much faster rate than inflation. According to the chief economist of the Associated General Contractors of America, the growing disparity between the CPI and the PPI for construction materials "has meant that public owners have increasingly had to defer, redesign or cancel projects for which they did not budget enough money in 2003 or 2004."[82]

The experiences of other agencies in recent construction projects underscore the importance of accurately estimating costs. Construction costs for the Elkhead Reservoir expansion, completed in 2007 in Western Colorado, were originally estimated at $20 million.[83] By the time of completion, total costs had escalated to $30 million, 50% more than the original cost.[84] Similarly, the State of Utah estimated the capital costs of its proposed Lake Powell pipeline at $585 million in 2005.[85] In June of 2008, the state published a revised construction cost estimate of $1.064 billion – almost double the original cost, just 3 years later.[86]

In addition to the cost of raw materials, the cost of labor has risen, and is projected to continue rising. Wages for non-residential construction projects are projected

[82] Simonson, Ken, March 2008.
[83] Roehm, G. W. 2004. Management plan for endangered fishes in the Yampa River Basin and environmental assessment. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6). Denver. p. 75.
[84] Colorado River Water Conservation District, Elkhead Reservoir Enlargement Project website, http://www.crwcd.org/page_28, viewed August 14, 2008.
[85] Water Delivery Financing Task Force, September 2005. Water Delivery Financing Task Force Report: Financing the Lake Powell Pipeline and Bear River Projects.
[86] Utah Department of Water Resources, June 2008. *Lake Powell Pipeline Opinion of Probable Costs*, http://www.water.utah.gov/LakePowellPipeline/ProjectUpdates/default.asp.

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29	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 to rise 4.5 – 5.5% in 2008, and 5 – 6% in subsequent years. Furthermore, large, heavy industrial projects are likely to have the greatest increases in labor costs. This is an essential factor in estimating total construction costs, as labor typically comprises half of a project's total costs.[87] **A Reasonable Revised Construction Cost Estimate** To underscore the impact of rising construction costs, we present revised estimates of the costs of Reclamation's proposed action. The Bureau of Reclamation estimated the cost of its proposed action at $223.4 million (2005 dollars).[88] We estimate construction costs under several alternate scenarios: 1.) A Baseline scenario, in which construction costs are escalated at the rate of inflation (assumed to be 3.15% annually, the rate of increase of the Consumer Price Index from 2004 to 2008). 2.) The Bureau of Reclamation's composite index for cost escalation over the period 2004 – 2007 (6.0% annually). 3.) An "Elkhead Reservoir" scenario, in which total project costs are 50% higher at project completion than original estimates. For all alternate scenarios, costs are in 2008 dollars. The impact of higher rates of cost escalation is substantial, as shown in Table 8, below. Given the Bureau's own observed cost increases over the last four years, the proposed action could cost an additional $43 million dollars (19% more than the Draft EIS estimate), if construction were to begin in 2008. By the time construction could likely begin (in 2010 or later), costs will be even higher. This estimate compares favorably with a statement in the Draft EIS: "Reservoir construction costs are estimated to have increased about 17 percent since the 2005 cost estimate."[89] We suggest the escalation rate of 6.0% annually reflects a conservative estimate – the cost of steel rose at 7.4% annually, and the cost of cement rose almost 10.2% annually. For reference, Table 9, below, lists recent annual cost escalation rates for different types of projects for the Bureau of Reclamation. Before issuing its Final EIS, the Bureau should provide project participants with revised cost estimates. These costs should be compared to the cost of non-structural alternatives, including conservation and other short or long term leasing agreements. [87] Simonson, Ken, March 2008. [88] Draft EIS, p. 2-55. [89] Draft EIS, p. 2-25. 35	29. See response to Comment No. 28.

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Table 8. Estimated WGFP costs under different price escalation scenarios. All scenario cost estimates are in 2008 dollars, except the Draft EIS estimate (which is in 2005 dollars).

Escalation Rate Scenario	Annual Escalation Rate	Real Escalation Rate*	Total Project Cost (2008 dollars)	Difference, Scenario Estimate – Draft EIS Estimate	Difference, as a percent of the Draft EIS Estimate
Reference Point: Draft EIS Estimate	-	-	$ 223,400,000†	-	-
1. Baseline Escalation – CPI	3.15%	0%	$ 245,200,000	$ 21,800,000	10%
2. Bureau of Reclamation's Observed Escalation	6.0%	2.85%	$ 266,000,000	$ 42,600,000	19%
3. Elkhead Reservoir Scenario	-	-	$ 335,100,000	$ 111,700,000	50%

*The Real Escalation Rate accounts for the rate of inflation, which we assume to be 3.15%.
† The estimate in the Draft EIS reflects 2005 dollars.

Table 9. Recent escalation factors for major Bureau of Reclamation projects.[90]

Bureau of Reclamation	Average Annual Escalation Rate, 2004 – 2008*
Concrete Dams	6.9%
Pumping Plants	5.3%
Steel Pipelines	4.5%
Primary Roads	7.2%
Composite Index	**6.0%**

*Average annual escalation rates for the Bureau are for the period January 2004 to January 2008.

Other Economic Factors

The recent economic downturn could have several important implications for the Windy Gap Firming Project. Primarily—as described in prior comments on **Project Purpose and Need** and **Conservation and Efficiency**—the rate of housing foreclosures in some of the participating cities has been among the highest in the state and, indeed, the nation. Given the depth of the economic slow down, population growth rates used in the Draft EIS likely overestimate *actual* rates of growth, potentially saddling existing residents with a capital-intensive water project. Secondly, the 2008 credit crisis has made funds for all projects less available. Six of the WGFP participant cities – representing 48% of the total project costs – anticipate paying for the project through debt financing or a combination of cash and debt financing.[91] In order to secure funding, these participants

[90] Bureau of Reclamation, Technical Service Center, *Construction Cost Trends*, 2004 to 2007, and 2008, http://www.usbr.gov/pmts/estimate/cost_trend.html.
[91] Draft EIS, Table 3-138, p. 3-280. Broomfield, which will pay for approximately 28% of the total project cost, will use a combination of cash and debt financing.

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29	may face higher bond rates, increasing the long term cost of the project. This eventually is especially true for the participants who will use tap fees (i.e., funds directly tied to real estate development) to repay bonded debt.	
30	**Conclusions on Construction Costs** In recent years, the cost of construction has risen dramatically. Prior to issuing a Final EIS, the Bureau of Reclamation must re-estimate the cost of WGFP alternatives. The DEIS notes that the cost of reservoir construction has risen 17% since original estimates[92] – by the time construction commences, costs may likely be significantly higher. Substantial uncertainty surrounds future costs and financing. The 2007-2008 economic downturn has had global ramifications; demand for raw materials has fallen worldwide, and has been accompanied by falling prices, but the recent collapse of the finance sector in the U.S. makes loans and other financing arrangements uncertain, and likely to stay that way well into 2009. This level of uncertainty provides additional reason to invest in water conservation measures. Using our revised estimate of conservation savings and participants' total demands, firm water supplies are sufficient for WGFP participants through 2030, and other proposed regional projects will meet demands through 2050. Given this, investing in an expensive construction project seems unwarranted. Furthermore, in an uncertain economy, conservation measures represent a robust, risk-averse strategy for water utilities to meet their future demands. Although conservation measures also require an up-front investment, they do not incur long-term debt. Furthermore, if population and demand for water supplies do not grow as rapidly as projected, cities will not be saddled with unnecessary, long-term debt burdens.	30. See response to Comment No. 28.
31	**6. Hydrology, Modeling, Water Quality, Stream Morphology** **Background** The DEIS purports to assess and summarize impacts on river flows. The tone of the assessment, however, is primarily of a supply infrastructure nature: average existing and predicted flows are reported, and objectives are reported in simple terms of in-stream flows or outdated sediment transport assessments. As a general matter, the DEIS does not assess natural system needs—the morphologic, aquatic and habitat needs—in terms of magnitude and variability using contemporary methods. Without this assessment it is impossible to determine whether the predicted changes will have a significant impact on factors such as channel aggradation or fish habitat. As a result, it is premature for the DEIS to provide any conclusive statements as to whether the morphologic, aquatic and habitat needs are preserved or impacted.	31. The EIS provides an assessment of hydrologic effects and associated impacts to stream morphology, aquatic habitat, water quality, and other resources using contemporary sound scientific methods. Daily hydrologic data for a 47-year period of record were used in the evaluation of hydrologic changes and as input for modeling and evaluation of resource impacts. Reclamation believes that the analyses of effects to streamflow, stream morphology, water quality, and aquatic life, and other resources provide reasonable estimates of what the project effects would be based on the best available information. See further discussion in response to Comment Nos. 32 to 38.
	[92] Draft EIS, p. 2-25.	
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32	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **Flow Modeling is Inadequate** Upper Colorado River flows change on a day-to-day, and even hour-to-hour basis. The DEIS, however, lumps flows into averages. Thus, it masks the potential for short-term critical periods of elevated stream temperatures, the lack of sufficient peak flows for channel maintenance, and reduced flows dropping below critical thresholds for short, but significant periods. The DEIS fails to take advantage of contemporary information and methods accounting for short term variability associated with the Upper Colorado River system. This prevents the DEIS from being a valid assessment of WGFP impacts.	32. Daily data were developed from monthly model output by disaggregating monthly values using historical gage records. Two sets of daily data were developed. Daily data were developed for the entire study period for the USGS gages on the Colorado River below Lake Granby, below Windy Gap, at Hot Sulphur Springs, near Kremmling, and the gage on Willow Creek below Willow Creek Reservoir. In addition to the daily data developed for the entire study period at the locations listed above, average, wet, and dry monthly flows were disaggregated to daily values to develop average, wet, and dry daily hydrographs. A combination of daily and monthly hydrologic data were used for evaluations of resources dependent on flows or reservoir storage contents and levels. Average monthly summaries of flows, diversions, reservoir outflow, end-of-month reservoir contents, surface elevations, and surface areas for average, wet, and dry conditions were used to support general characterizations of hydrologic changes associated with the alternatives. Daily data were used to generate flow duration curves and daily hydrographs, and to determine the frequency and magnitude of daily flow changes. These types of hydrologic analyses, based on daily variations, were used in resource assessments where the magnitude or value of the resources are especially sensitive to daily hydrologic changes and where the use of average, wet, and dry monthly values would mask the severity of the effects on those resources. For example, daily hydrologic data were used as an input parameter for the River2D model to evaluate the effects on aquatic resources. Use of daily data for the entire hydrologic study period supported an assessment of the overall range and frequency of aquatic habitat changes. Section 3.5.2.2 of the FEIS was revised to include information related to the use of daily data for resource evaluations, including fisheries and water quality that are sensitive to daily flow variations. Because of its relatively junior water rights, the Windy Gap Project is not in priority and is precluded from diverting water from the Colorado River during droughts and low-flow periods, with or without the alternatives assessed, to provide firming storage. During low-flow periods, the Windy Gap Project would operate the same whether there is a firming project online or not. In these low-flow conditions, downstream Colorado River flows, whether they are viewed on a monthly or daily basis, are the same for existing conditions, the No Action Alternative, and each of the EIS alternatives. Because there are no hydrologic impacts from the WGFP during low-flow and drought periods, a daily model is not needed to assess effects for these low-flow periods, and the disaggregation of monthly data to daily data is sufficient for the assessment of effects for nondrought conditions.
33	Phase 3 of the Grand County Stream Management Plan will include analysis of daily flows and variability prescriptions. It should be used as a tool to refine and improve the DEIS.	33. The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop preferred and recommended streamflows, water quality, and available
34	**Stream Morphology** Assessment of whether the WGFP will push flows below levels critical for stream-channel maintenance flows cannot be adequately assessed because the WGFP DEIS lacks sufficient analysis to assess the changes in critical flow patterns. Examples include: ▪ Table A-15: recurrence intervals at the upper end span a wide range (10-year to 25-year). There is, however, considerable difference in the channel maintenance provided by flows of these recurrence intervals and no indication as to the distribution within these recurrence intervals. Schmidt and Potyondy (2004) recommend a 25-year interval flow so that less than 1% of sediment is left in channel, and note that limiting flushing flows to a 5-year interval will leave 10% of sediment load in the channel, contributing to stream aggradation.	
35	▪ The DEIS uses potentially misleading statements regarding recurrence of peak discharges. For example, the DEIS reports that the 2-year peak discharge would decrease from 4% to 3% of the time, resulting in the 2-year peak discharge occuring 1% less frequently. However, summarizing changes in flow-occurrence, the percentage of days in the season for which the flow occurs, in this manner will tend to mislead the reader into believing there is no significant impact. In several places the DEIS dismisses changes, such as from 4% to 3% of the season, as inconsequential (Windy Gap DEIS, Table 2-6 p. 2-57 and Table 2-7 p. 2-68). Stated as a 1% change, the impact may appear insignificant, but it is a significant portion of the total number of days during which the flow does occur. For example, during a 100-day season the number of days with the target flow would drop from 4 to 3 times, a 25% drop in flow occurrence. For the assessment of stream impacts, the DEIS needs to consider impacts in the more relevant terms of the number of days that the flow occurs, rather than the percentage of the season.	
36	▪ The DEIS refers to a 450 cfs flushing flow, based on calculations performed by Ward (1981), produced for the NCWCD. This single flow-level target does not 38	

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		water supplies for water users in the basin. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. 34. The 10- to 25-year flow range shown in Table 3-32 is 4,600 to 6,520 cfs. This table shows when flows in this range would occur, what the average flow is for existing conditions and each alternative, and other information on the frequency and duration of such flows. The peak flow recurrence intervals shown in the table are those that are typically used in an analysis of stream channel maintenance. The intervals could be broken down into smaller ranges, but, as indicated by Figure B-1 in the Water Resources Technical Report appendices, the change in flows of 4,600 cfs or greater is very small between existing conditions and the alternatives. Flows exceeding the 5-year flow of 3,160 cfs would continue to occur under the alternatives. 35. The flow duration curve for the Colorado River at Hot Sulphur Springs indicates a decrease in the frequency of 2-year flows of 1,240 cfs from 4% of the time under the action alternatives to 3% of the time (25% change) under existing conditions. This discussion was clarified in the FEIS. However, the flow duration curves show that for flows exceeding 1,240 cfs, the decrease in frequency of occurrence would be similar to existing conditions. According to the channel maintenance flows analysis, the range of channel maintenance flows (80% of the 1.5-year flow to the 25-year flow) would occur about 1% less frequently under the Proposed Action than existing conditions, and the duration of such flows in years when channel maintenance flows occur could be slightly longer. The number of days that various channel maintenance flows occur, as well as other information on magnitude, frequency, and duration of such flows is provided in Table 3-32. 36. The 450 cfs flushing flow established for the WGFP is still sufficient to transport fine sediments (<2 mm) and prevent aggradation. Under existing condition, Colorado River flows at Hot Sulphur Springs equal to or greater than 450 cfs occur for 3 consecutive days an average of 28 days per year under existing conditions over the 47 year period of record. For the Proposed Action, flows of 450 cfs would occur for 3 consecutive days for about 20 days per year on average. As Table 3-32 in the FEIS indicates, the full range of channel maintenance flows substantially greater than 450 cfs would continue to occur under the alternatives, although the frequency would decrease. The FEIS includes mitigation measures to increase flushing flows. Flushing flows from the original Windy Gap Project (1980 MOU) would be modified to increase

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36	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 provide the range of flows necessary for channel maintenance, and is considerably less than high flows recommended using more recent methods (e.g., Schmidt and Potyondy (2004)). **Water Quality** Similar analytic shortcomings exist for water quality. For example: ▪ The DEIS identifies the Upper Colorado River as a gaining stream, with ground water flowing into the river from adjacent alluvium and bedrock (Water Resources Technical Report, p. 35). Bedrock ground water quality is of lower quality than the river water. The DEIS assesses potential for impact by pointing out that the average stage decrease will be on the order of inches. However, the DEIS fails to consider the potential impacts when the minimum 90-cfs flow occurs, with considerably larger stage decreases, greater potential for ground water influx and reduced dilution capacity of the river. ▪ The DEIS fails to stress that the impact on water temperatures are significant, potentially reaching a tipping point. Water temperature increases are evaluated on a snapshot basis for averaged flows for essentially two different conditions (WGFP DEIS, p 3-116). These average temperatures are reported as being a 0.6 degree Celsius increase (~ 1 degree Fahrenheit). The DEIS reports that MWAT values are not exceeded for an average July 25th day. However, there are at least two other critical issues to consider: (1) these numbers are based on predicted temperatures based on median values, and (2) when the 90 cfs flow condition is considered, temperatures do exceed the MWAT value of 18.2 degrees Celsius. Considering the uncertainty of the various calculations, it seems quite probable that the flow-regime changes would push temperatures past threshold levels. **References for this sub-section** Schmidt, Larry J.; Potyondy, John P. 2004. Quantifying channel maintenance instream flows: an approach for gravel-bed streams in the Western United States. Gen. Tech. Rep. RMRS-GTR-128. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 33 p. Ward, T.J. 1981. Analysis of Aggradation and Degradation below Proposed Windy Gap Reservoir, Colorado River. Research Institute of Colorado, Fort Collins, CO. Submitted to Northern Colorado Water Conservancy District. Ward, T.J. and J. Eckhardt. 1981. Analysis of Potential Sediment Transport Impacts below the Windy Gap Reservoir, Colorado River. Aquatic Resources Management of the Colorado River Ecosystem, Edited by V. Dean Adams and Vincent A. Lamarra. Ann Arbor Science. 39	from 450 cfs to 600 cfs. In any year when flows below Windy Gap have not exceeded 600 cfs for at least 50 consecutive hours in the previous two years, and total Subdistrict water supplies in Chimney Hollow and Granby Reservoirs exceed 60,000 AF on April 1, the Subdistrict would cease all Windy Gap pumping for at least 50 consecutive hours to enhance peak flows below Windy Gap (FEIS Appendix E). A recent evaluation was completed of available streamflow vs. shear stress data at the Breeze station, a riffle site located downstream of the confluence of the Williams Fork. This analysis provides a generalized relationship between sediment mobilization and streamflows in the Colorado River. The results showed that fine sediments (sand, 2 mm or finer) would be mobilized at this riffle site at flows of less than 50 cfs. Fine gravel (8 mm) would require a flow of 200 cfs, medium gravel (16 mm) would require a flow of about 400 cfs, and coarse gravel (32 mm) would require a flow of about 850 cfs to be mobilized. In Ward's 1981 study, his results at four locations located from below Windy Gap to above the Blue River showed that fine sediments (sand, 2 mm or finer) would be mobilized at discharges ranging from 140 to 240 cfs (depending on location, with the highest flow at the lowest site above the Blue River). The flow duration curve for Hot Sulphur Springs shows minor changes in flows of 150 cfs or less, and at the Kremmling gage changes at flows less than 1,000 cfs are minimal. Additional discussion was added in Section 3.7.2.6 of the FEIS. 37. The bedrock ground water flow (or flux) that discharges to the Colorado River is not controlled by river stage. The driving head for bedrock ground water discharging to the river is generally much higher than the possible range of river stage between high and low flows and, as a result, controls the rate of discharge, along with other hydraulic parameters such as hydraulic conductivity and saturated thickness. Changes in river stage may affect bedrock hydraulic gradient in the immediate vicinity of the river, but the rate of ground water discharge to the river does not change as a result of changes in river stage. The predicted maximum stage change that would result from Windy Gap diversions to the minimum streamflow of 90 cfs, in combination with effects due to changes in Granby Reservoir spills as a result of the Project, is about 0.75 feet. Stage reductions would occur only for short periods of time, typically 2 weeks or less, but rarely up to 1 month. Also, stage reductions under this flow scenario would occur only during about 15% of all years. A river stage reduction of 0.75 feet and a similar reduction in nearby alluvial ground water levels would be within the range of current variability due to climate variability and surface and ground water use effects on the Colorado River system. Additional discussion was added to the ground water section of the FEIS in Section 3.1.2.4.
37		
38		

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		38. Additional stream temperature and climatic data became available following the initial analysis of temperature impacts for the DEIS. Subsequently, a dynamic temperature model (Hydros 2011) was developed with input and review by EPA to simulate weekly average temperatures and daily maximums for the Colorado River between Windy Gap Reservoir and the Williams Fork for existing conditions and the alternatives. The model simulations were conducted for the months of June through September using the very warm observed climatic data from 2007. Results of this analysis indicated that increased exceedance of the chronic MWAT and acute DM standards would occur in July and August of some years. Specifically, temperature standard exceedances were simulated to increase from existing conditions in 4 out of the 15 years evaluated with additional WGFP diversions. For these years, the dynamic modeling indicated that the MWAT standard would be exceeded for several consecutive days or weeks and the DM would be exceeded up to several additional days, when simulated with the very warm 2007 meteorology. Mitigation for temperature impacts is included in the Fish and Wildlife Mitigation Plan developed by the Subdistrict. See Section 3.8.4.2 for further discussion of temperature mitigation. Temperature mitigation measures would reduce the potential for exceedance of the temperature standards and impacts to fish associated with operation of the WGFP. Other factors including low precipitation, diversions by others, and WWTP discharges also contribute to elevated stream temperatures, whether the WGFP is pumping or not.

Com-ment	Letter #1138	Response
39	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 **7. Energy Use** According to the Draft EIS, all of the WGFP alternatives will generate more electricity than under current conditions. To maximize this potential, WRA supports in-conduit hydropower generation. The Draft EIS notes that because the Windy Gap Project has *not* historically generated as much power as it was expected to, WAPA has been forced to purchase power from other sources—primarily coal fired power plants—to replace the Windy Gap power.[93] Furthermore, the DEIS notes that with the additional WGFP generation, WAPA will reduce some of its coal-based electricity purchases. Although the WGFP will only provide a small amount of additional, annual power generation, we recommend that WAPA commit to reducing its coal-based electricity purchases by that amount. And, if or when the opportunity arises, we encourage WAPA to re-power its in-conduit hydro facilities, in order to maximize the power generated by water deliveries.	39. The operation of the WGFP would cause more electrical energy to be generated at Colorado-Big Thompson (CBT) Project hydroelectric facilities because more water would pass through C-BT Project hydroelectric facilities on the eastern slope. If built, the Western Area Power Administration (Western) would have to purchase less electrical energy on the wholesale power market to meet contractual firm power commitments. As noted in Comment No. 7, the source of the avoided energy purchases will most likely be coal-fired generating facilities in the Rocky Mountain region. Federal law requires Western to market power generated at federal hydroelectric projects at the lowest possible rates consistent with sound business principles. As such, Western purchases the least expensive wholesale electrical energy available, regardless of the generating resource, to meet its firm power commitments. Regarding the comment "…to re-power its [WAPA's] in-conduit hydro facilities…," Western neither owns nor operates any electrical generating facilities. All generating facilities of the C-BT Project are owned and operated by Reclamation. While Reclamation solicits input from Western regarding potential upgrades to existing C-BT generating facilities, the ultimate decision on the type of upgrades is Reclamation's responsibility.
40	**8. Range of Alternatives: No Action Alternative and Supply Options** As noted in Section 2 of these comments, the DEIS's artificially constrained Purpose and Need statement resulted in screening-out alternatives for meeting the water supply needs of the participating municipalities. The DEIS notes that the criterion used "did not eliminate potential reservoir storage alternatives, but did eliminate other types of alternatives." DEIS at 2-3. These alternatives include, but are not limited to, increasing levels of water conservation and transferring water in the South Platte basin from agricultural to municipal use. Adjusting the Purpose and Need statement to more accurately reflect the purpose of helping meet municipal water demands would enable a broader range of alternatives in the EIS. Notably, a DEIS over 500 pages long gave scant mention of the option of meeting municipal water needs through water transfers from agriculture. DEIS at 2-6. The DEIS summarily concluded interruptible supply contracts "do not provide a long-term reliable supply of water." *Id.* Missing from this analysis was any analysis of fallowing arrangements or permanent acquisition of water from agricultural, both of which would provide a "long-term reliable supply." The DEIS must address this deficiency. The DEIS should incorporate analysis by WRA and Save the Poudre Coalition related to the proposed Northern Integrated Supply Project (NISP), the "Healthy Rivers, Healthy Communities" report. *See* http://www.savethepoudre.org/eis_documents.html The "Healthy Rivers" alternative provides a template for meeting municipal water demands that could apply just as easily to WGFP participants as to NISP participants (as noted previously, there is a larger overlap in potential beneficiaries). Further, for the No Action alternative the DEIS must do more than suggest most participants have no alternative plan for meeting future water demands. The DEIS notes that Longmont would pursue enlarging Ralph Price Reservoir and that Lafayette would [93] Draft EIS, p. 3-279. 40	40. See response to Comment No. 2. Under the No Action Alternative, Participants would increase Windy Gap deliveries as demand increases within the capacity of the existing Windy Gap Project facilities and available storage in Granby Reservoir. Most Participants would still need to secure other sources of water and explore other options for storage of their Windy Gap water.

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40	Western Resource Advocates' comments on WGFP Draft EIS -- December 2008 dispose of Windy Gap units and not pursue future units (DEIS 2-15). Many WGFP beneficiaries do have other contingencies, including relying upon the NISP, which would meet demands during the planning period.	
41	**9. Aquatic and other Environmental Impacts** WRA directs the BOR (and incorporates into these comments by reference) comments on aquatic and environmental impacts submitted by Grand County, Trout Unlimited, Northwest Colorado Council of Governments, and others. In short, there are considerable aquatic and environmental issues that have not been adequately addressed in the DEIS.	41. Responses to other substantive comments on the DEIS are addressed in an appendix to the FEIS.
42	**10. Mitigation** Mitigation for any environmental impacts is a key element of any NEPA process. However, the WGFP DEIS does not commit to any mitigation. Though several mitigation measures are discussed, it is clear there are no commitments to implement mitigation. The DEIS notes "inclusion of these mitigation measures does not imply that all measures listed will be implemented" and that mitigation measures are "under consideration." DEIS at 3-292. By suggesting that evaluation of additional mitigation possibilities "will be conducted between the release of the DEIS and the preparation of the Final EIS" the BOR has made public comment impossible. At this stage, the DEIS simply has insufficient certainty of proposed mitigation to allow required public comment. *** Thank you for your attention to these comments. We look forward to discussing them further. 41	42. Additional mitigation measures were defined and developed to avoid or minimize impacts from implementation of the proposed Project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25 of the FEIS.

Com-ment	Letter #252	Response
	WGFP 252 ENV-6.00 W 295 **Wiegers & Co.** OFFICE ... NOV 17 2008 Tully 1340 ... 11/18/08 November 14, 2008 Dear Will Tully I am part owner of a working ranch in Kremmling Colorado with about a mile of the Colorado River irrigating our hay meadow and providing recreation for many of our vacationing friends (SkyLark Ranch). Over recent years the river has been seriously impacted by water diversions by Denver Water and Northern Water (Windy Gap), Temperatures get higher as water levels P.O. Box 6896, 30 Benchmark Rd. # 212, Avon, CO 81620 Tel: 970.748.6724 • Fax: 970.748.6736 • E-Mail: ~~gawinvail@aol.com~~ George@Wiegersco.com	

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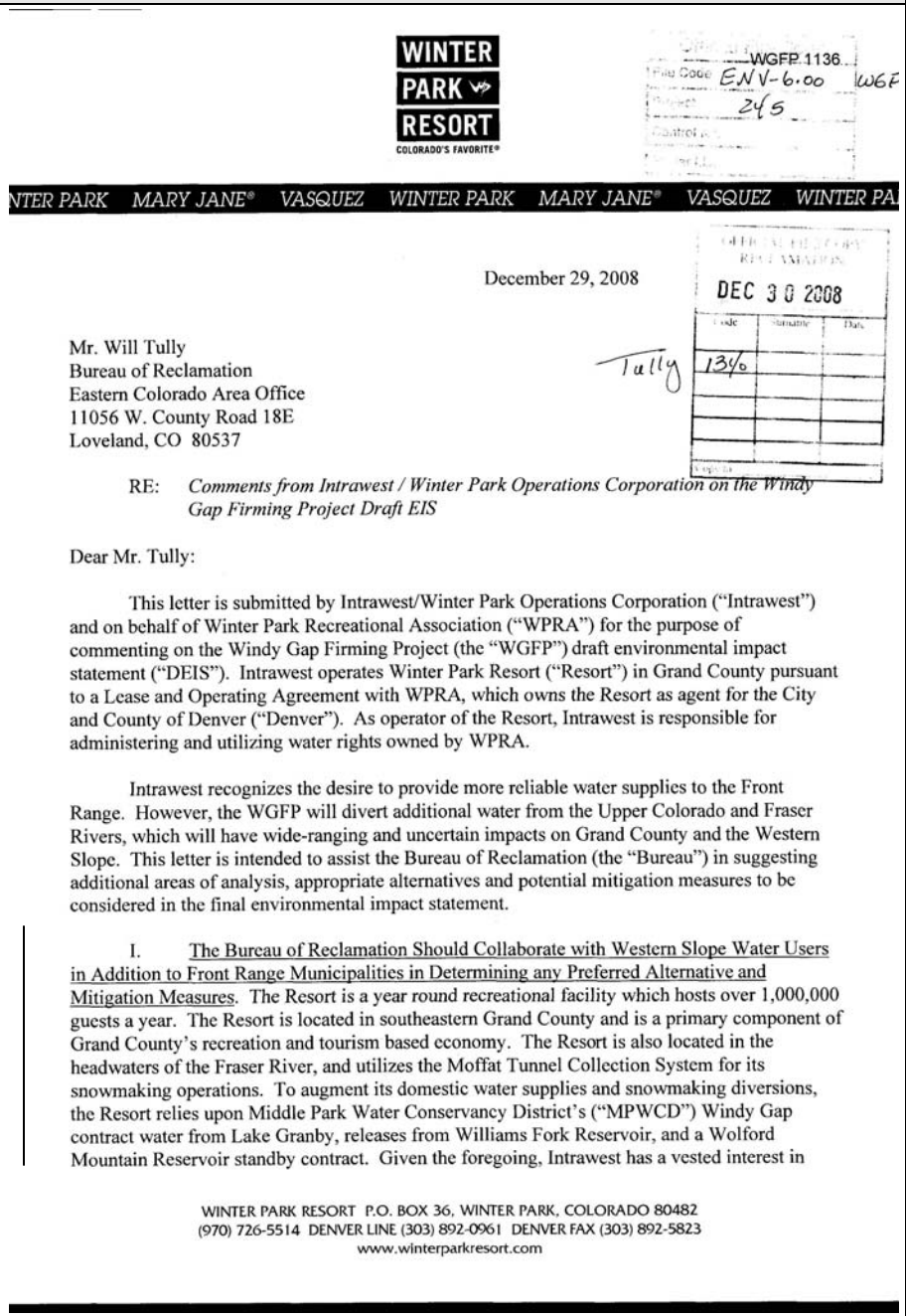
1	are reduced and the quality of fishing is poor.. I understand that Northern Water Conservancy District now has a plan to take even more water, and do it without mitigation or, for that matter, without even promoting conservation with their customers. This is irresponsible and I hope that you will intervene to represent the Colorado River users. Fish need water! Sincerely Cecile A Wiegers	1. Additional mitigation measures were defined and developed to reduce, avoid, or minimize potential impacts from implementation of the proposed project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures is also included in Section 3.25 of the FEIS. The WGFP Participants have committed and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.

Com-ment	Letter #380	Response
1	WGFP 380 Granby Public Hearing Transcript for Windy Gap Firming Project October 9, 2008 Scott Linn MR. LINN: Hi, my name is Scott Linn. That's L-i-n-n. And I am a resident of Granby and a business owner in Winter Park and a board member of the Colorado River Headwaters chapter of Trout Unlimited. And since I've been involved with Trout Unlimited, I've had the opportunity to help start the temperature monitoring program that we're doing in the county. I've also helped do some of the macro-invertebrate studies in the county and helped with some of the Division of Wildlife electro-fishing in the county. And I have spent many time in waders below Windy Gap, and I can tell you, you don't have to be a scientist to know that that's not a healthy river. You just have to be a lover of nature to understand that. I'm really proud of my fellow citizens tonight, articulating all the holes that are in this EIS. I'm not going to go through them all again. It's pretty redundant. But, basically, I think we have shown that there is many problems with this EIS. And even the no-action alternative, which will still take 7,000-acre-feet, how is that a no-action alternative? I think you've got to send this back to the drawing board unapproved.	1. The No Action Alternative represents what the project Participants would do if the proposed action were not approved by Reclamation.
2	You can't even accept the no-action alternative at this point. How can you make mitigations when you haven't considered the cumulative effects of Moffat and Windy Gap together? Not to mention the BLM potentially selling leased land for oil and gas development along the river as well. You know, there is a lot of impacts that we're facing here. I think the Bureau definitely needs to send more of it back to the drawing board on this one. Thank you.	2. The impact of the Moffat Collection System Project and other reasonably foreseeable actions were fully considered in the cumulative effects evaluation and are discussed in the various resource discussions. Additional mitigation has been developed to avoid or minimize resource impacts associated with the WGFP, as summarized in Section 3.25 of the FEIS.

Com-ment	Letter #1136	Response
1		1. Additional mitigation measures were defined and developed to avoid or minimize impacts from implementation of the proposed Project. Mitigation measures and the effectiveness of those measures are described for each resource in Environmental Consequences—Chapter 3. An updated summary of mitigation measures also is included in Section 3.25 of the FEIS. The WGFP would have no impact on the Fraser River and would improve the reliability of water availability for the Middle Park Water Conservancy District (MPWCD). The Subdistrict, Reclamation, and Corps of Engineers have met with Grand County and others multiple times in the development of mitigation measures for the proposed Project.

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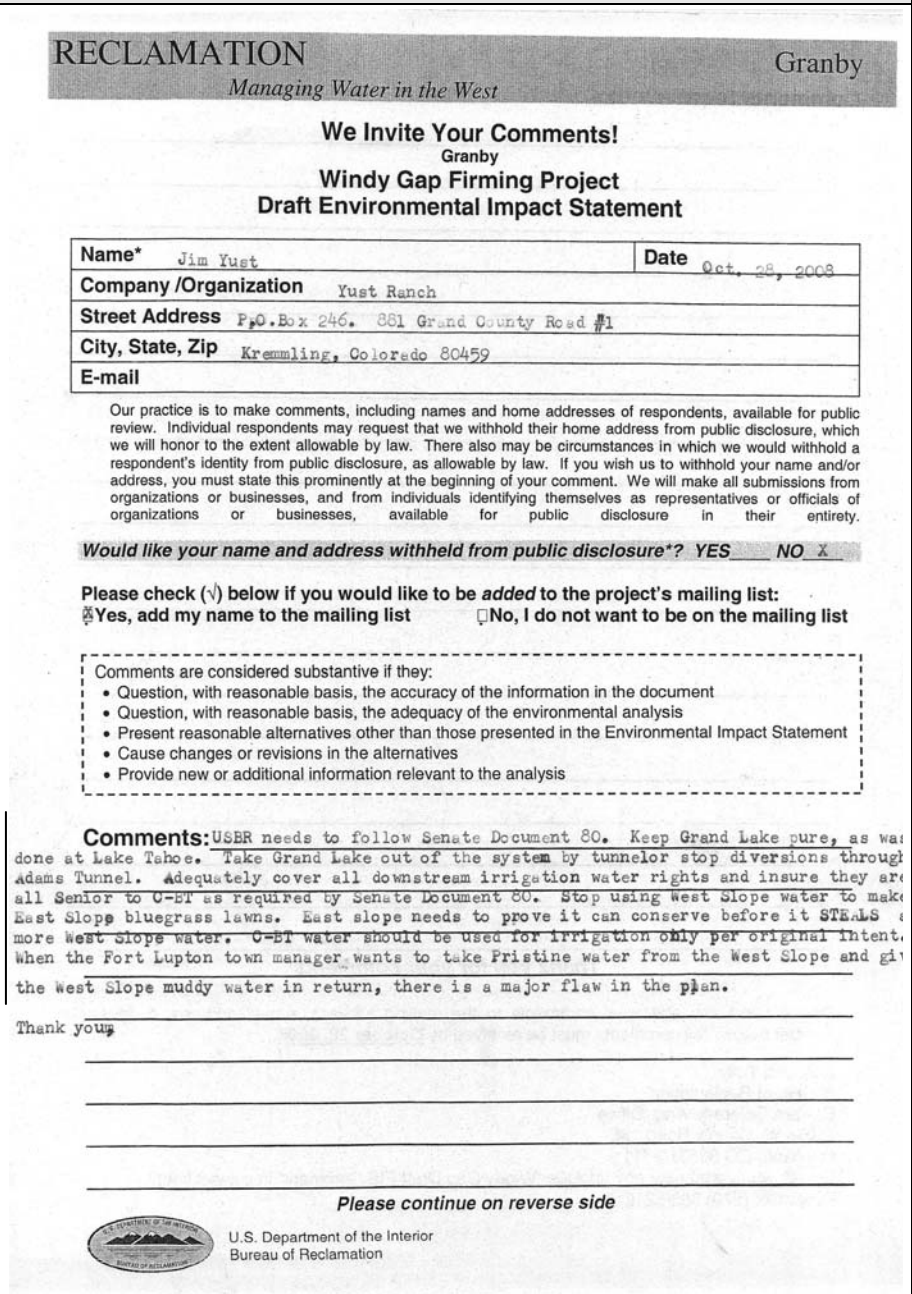
	Mr. Will Tully December 29, 2008 Page 2 of 4	
1	preserving the environment and conserving the limited water supplies in Grand County. Any structural or operational changes to the Windy Gap Project could have significant impacts to the Resort's recreation-based business and the Grand County economy as a whole. The Bureau of Reclamation should collaborate with local stakeholders such as Intrawest, who are directly impacted by the WGFP, in finalizing the WGFP's environmental impact statement and proposing any preferred alternative and mitigation measures.	2. The WGFP would provide 3,000 AF of storage in Granby Reservoir or Chimney Hollow Reservoir for MPWCD. This storage would provide a firm yield of 429 AF (Table 3-19 of the FEIS) for an average yield of about 2,000 AF.
2	II. Firming of Middle Park Water Conservancy District's 3,000 Acre-Feet of Windy Gap Project Water Should be the Top Priority of the Windy Gap Firming Project. MPWCD's 3,000 acre-foot pool of Windy Gap Project water stored in Lake Granby has been used and relied upon by many Western Slope water users as a source of replacement water in their augmentation and exchange plans. The Resort is one of the many that utilizes MPWCD water. However, in recent years, the availability of MPWCD water has been unreliable and local water users have been left with no viable source of replacement water. Intrawest supports and encourages all efforts to firm water deliveries for the MPWCD. Any concern or comment to other portions of the DEIS should not be considered as contrary to this priority.	Paragraph 2 of the "1985 Supplement" to the "1980 Agreement Concerning the Windy Gap Project and the Azure Reservoir and Power Project" states that "The Subdistrict will dedicate and set aside annually, but noncumulatively, at no cost to Middle Park, 3,000 acre feet of water in Granby Reservoir that is produced each water year from Subdistrict water supplies, for beneficial use without waste, either directly or by exchange or substitution in Middle Park." The Subdistrict has no obligation to provide water to Middle Park in any year when such water cannot be produced from Subdistrict supplies. Middle Park has been offered the opportunity to participate in the WGFP and improve their yield with storage in much the same manner as other WGFP Participants.
3	III. The Windy Gap Firming Project EIS and the Moffat Collection System Project EIS Should be Merged and Considered Jointly. As recognized in the DEIS, the US Army Corps of Engineers ("COE") and the Denver Water Board are proceeding concurrently with a separate National Environmental Policy Act ("NEPA") process for Denver's Moffat Collection System Project. It is Intrawest's understanding that a preliminary draft of the COE's environmental impact statement for the Moffat Collection System project has been completed but not released to the public. The combination of the WGFP and the Moffat Collection System project could potentially take all the remaining water from the Fraser River valley and Upper Colorado River basin and will undoubtedly have a profound effect on Grand County and the Western Slope. While the DEIS cursorily addresses the Moffat Collection System project as a reasonably foreseeable action, only a consolidated NEPA process that analyzes jointly the interrelationship of the two projects will be sufficient to fully determine the cumulative environmental impacts on Grand County, the Upper Colorado River and the Fraser River.	3. The WGFP FEIS fully considered the cumulative impacts of the Moffat Project, as well as other reasonably foreseeable future actions. The cumulative effects analysis included hydrologic modeling of the Moffat Project including changes in Fraser River, Williams Fork, and Blue River flows. The cumulative effects analysis for water quality, aquatics, and other resources were analyzed in the same level of detail as the direct impacts of the WGFP. The WGFP and Moffat Project have different objectives, different project proponents, and no shared facilities. Combining the two projects in one EIS is not needed to adequately evaluate the cumulative effects of the projects. The Corps is a cooperating agency for the WGFP, and Reclamation and the Corps have coordinated on the assessment of cumulative effects and mitigation for the two projects.
4	IV. The Fraser River is an Affected Environment and the Environmental and Socio-Economic Consequences of the Project on the Fraser River Corridor Should be Analyzed. The Fraser River is the first main tributary to the Colorado River, draining a large portion of the Middle Park basin. During spring runoff, water from the Fraser River is pumped from Windy Gap Reservoir to Lake Granby. Throughout the year, stream flow and water quality conditions in the Fraser River directly impact the stretch of the Upper Colorado River designated as the affected area. In addition, a significant portion of the Grand County population is located near the Fraser River and many recreational opportunities that drive the Grand County economy, such as Intrawest's operations, occur along the Fraser River corridor. Thus, even if none of the	4. The WGFP does not pump from the Fraser River nor does it affect flows in the Fraser. Windy Gap water is pumped from Windy Gap Reservoir located on the Colorado River about one mile downstream of the confluence with the Fraser River. Indirect impacts to recreation and socioeconomics in Grand County

Com-ment	Letter #1136	Response
	Mr. Will Tully December 29, 2008 Page 3 of 4	were evaluated as part of the EIS. Additional mitigation measures included in the FEIS, as summarized in Section 3.25, would provide new benefits and reduce the potential recreation and socioeconomic effects of the WGFP. Mitigation that removes nutrients from the system upstream of the WG diversion would improve water quality in the Fraser and Colorado Rivers year around.
4	proposed alternatives would directly affect the physical flows of the Fraser River, the WGFP will have an indirect impact on the Fraser River and its surrounding environment. It is therefore important that the Fraser River be considered an affected environment and the environmental and socio-economic consequences of the WGFP analyzed accordingly.	5. As stated in response to Comment Nos. 1 and 4, additional mitigation measures were added to the FEIS to address impacts to water quality, Granby Reservoir water levels, fish and wildlife resources, and other resources. The Windy Gap Project would continue to bypass flows in accordance with the Windy Gap water rights and the agreement between the Subdistrict and the Colorado Division of Wildlife signed on June 23, 1980. Additionally, mitigation for temperature effects were included in the Fish and Wildlife Mitigation Plan developed by the Subdistrict and the Colorado Division of Wildlife in accordance with the requirements of CRS 37-60-122.2 (FEIS Appendix E). See Section 3.8.4 in the FEIS for a description of temperature mitigation. Providing 3,000 AF of storage for MPWCD would directly benefit water users in the Fraser River and Colorado River basin by increasing the reliability of water deliveries. WGFP diversions would be curtailed if preferred flows are not available for the annual Gore kayak races.
5	V. The Final EIS Should Address Mitigating Negative Impacts from Additional Colorado and Fraser River Diversions. Intrawest is very concerned about the impact of decreased flows in the Colorado River below the Windy Gap Reservoir, resulting from implementation of the proposed action, especially considering the fact that the environmental impacts of the Moffat Collection System project and the WGFP are not being analyzed in unison. Preservation of the Grand County environment as a whole is essential to our recreation-based business. Reduced flows will have a detrimental effect on the residents of Grand County and our guests, who choose to visit Winter Park and Grand County because of the natural environment and the recreational opportunities it provides. With the exception of reducing potential drawdown in Granby Reservoir, the DEIS does not address or propose mitigating negative water resources impacts, which could also diminish the expected adverse impacts to aquatic resources, water quality and recreational opportunities. Mitigation measures for stream diversions should be identified and proposed as part of the WGFP. Proposals include building water storage projects which directly benefit water users in the headwaters of the Colorado and Fraser rivers and acquiring and retiring senior direct flow rights that could be used to increase in-stream flows. Bypass flow requirements, both permanent and mandatory, should also be analyzed as potential mitigating factors. We encourage the Bureau to utilize Grand County's Stream Flow Management as a guideline to identify mitigation measures.	The Grand County Stream Management Plan (SMP) was reviewed during preparation of the EIS. Our understanding is that the objective of the SMP was to develop preferred and recommended streamflows, water quality, and available water supplies for water users in the basin. The focus of the EIS was to evaluate and disclose the anticipated environmental effects of the alternatives. Where adverse effects were identified, mitigation measures were identified to offset or minimize those impacts. The mitigation measures developed for the WGFP are linked to identified project impacts and may not necessarily meet the target recommendations included in the SMP. However, mitigation measures included in the FEIS, may help meet some of the goals of the SMP.
6	VI. Specific Conservation Measures Should be Identified and Required by the Bureau of Reclamation. Conservation should be an essential component of any plan to satisfy the water demands of Colorado's growing population. Intrawest understands this and is constantly integrating water conservation measures into Resort operations to do our part. The Bureau needs to increase the scope of the WGFP and take a more active role in encouraging conservation measures amongst Project Participants. Doing so could postpone or even obviate the need for the WGFP.	6. The WGFP Participants have committed, and will be required, to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Six of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans, and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation would require maintenance of a state-approved water conservation plan as a condition to a contract with the Subdistrict.
7	VII. The Cost of Decreased Water Quality Caused by Increased Upper Colorado River Diversions Should be Allocated Equitably. The totality of the impacts from changed water quality and increased water temperature should be addressed in the final environmental impact statement. Local wastewater treatment facilities must already maintain potable drinking water for area residents and guests without the benefit of diluting flows that now go to the Front Range. Further degradation of water quality may require these local operators to invest in expensive upgrades to current treatment systems. This places a disproportionate additional expense on Grand County residents and guests.	

Com-ment	Letter #1136	Response
	Mr. Will Tully December 29, 2008 Page 4 of 4 Intrawest appreciates the opportunity to submit comments for the Windy Gap Firming Project EIS. As an integral member of the Grand County community and a party directly impacted by all water resources projects involving the Fraser and Upper Colorado Rivers, Intrawest also looks forward to actively participating in this public process and in finding long-term solutions to Colorado's water problems that still preserve our Grand County environment. Sincerely, Gary DeFrange President & COO GD:ns	7. The WGFP would not impact the flow or water quality of dilution flows upstream of WWTP discharges in the Fraser River basin. Proposed water quality mitigation includes reducing nutrient loading to the Three Lakes by funding projects that would lower nutrient contributions to the water shed upstream of the WG diversion as described in Section 3.8.4 of the FEIS. These measures would offset the nitrogen and phosphorus loadings to the Three Lakes projected from the WGFP. Water quality improvements would not only benefit the Three Lakes and deliveries to the East Slope during pumping, but would provide a year-round benefit to water quality in the lower Fraser River, Willow Creek, and Colorado River.

Com-ment	Letter #168	Response
1		1. Modifications in C-BT facilities are beyond the scope of the proposed WGFP and beyond the scope of the EIS. Reclamation will continue to operate the C-BT Project in accordance with the requirements of Senate Document 80 including meeting the needs of downstream irrigators in accordance with the requirements of Senate Document 80. Proposed water quality mitigation, as described in Section 3.8.4 of the FEIS, would reduce nutrient loading from the WGFP to the Three Lakes System so that the WGFP would not exacerbate the algae and clarity problem in Shadow Mountain reservoir and Grand Lake. The WGFP Participants have committed and will be required to maintain a state-approved water conservation plan in accordance with the Water Conservation Act of 2004, as amended (Colorado House Bill 04-1365). Seven of the WGFP Participants have Colorado Water Conservation Board (CWCB)-approved plans and other participants will be required to have a CWCB-approved plan prior to delivery of WGFP water. Reclamation will require maintenance of a state-approved water conservation plan as a condition to a contract with Subdistrict .

RECLAMATION
Managing Water in the West
Granby

We Invite Your Comments!
Granby
Windy Gap Firming Project
Draft Environmental Impact Statement

Name* Jim Yust	**Date** Oct. 28, 2008
Company /Organization Yust Ranch	
Street Address P.O.Box 246. 881 Grand County Road #1	
City, State, Zip Kremmling, Coloredo 80459	
E-mail	

Our practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address from public disclosure, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity from public disclosure, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety.

Would like your name and address withheld from public disclosure*? YES___ NO X

Please check (√) below if you would like to be *added* to the project's mailing list:
☒**Yes, add my name to the mailing list** ☐**No, I do not want to be on the mailing list**

Comments are considered substantive if they:
- Question, with reasonable basis, the accuracy of the information in the document
- Question, with reasonable basis, the adequacy of the environmental analysis
- Present reasonable alternatives other than those presented in the Environmental Impact Statement
- Cause changes or revisions in the alternatives
- Provide new or additional information relevant to the analysis

Comments: USBR needs to follow Senate Document 80. Keep Grand Lake pure, as wa done at Lake Tahoe. Take Grand Lake out of the system by tunnelor stop diversions throug Adams Tunnel. Adequately cover all downstream irrigation water rights and insure they ar all Senior to C-BT as required by Senate Document 80. Stop using West Slope water to mak East Slope bluegrass lawns. East slope needs to prove it can conserve before it STEALS more West Slope water. C-BT water should be used for irrigation only per original intent. When the Fort Lupton town manager wants to take Pristine water from the West Slope and gi the West Slope muddy water in return, there is a major flaw in the plan.

Thank you

Please continue on reverse side

U.S. Department of the Interior
Bureau of Reclamation