

EXHIBIT C



Board of County Commissioners

March 17, 2010

Via U.S. Mail and Electronic Mail or E-filing

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Re: Boulder County Comments on the Moffat Collection System Draft EIS and Draft FERC License Amendment Application

Dear Mr. Franklin, Ms. Bose, and Mr. Gogas:

Boulder County has reviewed the Draft EIS and Draft FERC License Amendment Application associated with the Moffat Collection System Project (“the Draft documents”) and has concluded that the analysis presented in the Draft documents is inadequate. As further detailed in the attached numbered comments, the Draft documents lack sufficient information to properly evaluate the purpose and need for the project, the best alternatives to address that need, the impacts of the preferred alternative, and the appropriate mitigation for those impacts. Consequently, Boulder County would oppose the issuance of any federal permits until such time as these deficiencies are rectified.

The purpose of the National Environmental Policy Act (“NEPA”) is to generate information that leads to a better decision on whether projects like this should be federally permitted. NEPA requires federal agencies use all practicable means to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon that environment to the fullest extent possible. Based on the data presented so far, it does not appear that the best available scientific, empirical, and contemporary data supports the Preferred Alternative, the near tripling in size of Gross Reservoir. The Preferred Alternative concentrates nearly all the negative impacts in Grand County and Boulder County – none of whose residents will benefit from the project as Denver Water customers.

Cindy Domenico County Commissioner

Ben Pearlman County Commissioner

Will Toor County Commissioner

Boulder County's comments echo the concerns of many other affected parties. Boulder County reviewed preliminary drafts of comments by Coal Creek Canyon and other county residents from the area surrounding Gross Reservoir, Grand County, Western Resource Advocates, Trout Unlimited, the City of Boulder, and others. County staff also met with U.S. Forest Service to hear its concerns about the Draft documents. In general, Boulder County supports resolution by the Corps and FERC of the issues raised by all of these groups related to data deficiencies, faulty assumptions, and the resulting conclusions. For brevity's sake, many of the specific issues raised in those comments will not be repeated in our own. But at a minimum, the County supports the following objectives of these stakeholders:

- (1) As sought by Western Resource Advocates and several others, the Corps must remove and replace the economic and demographic data used to project water demand, as well as reanalyze the effect greater conservation measures imposed by Denver Water on its customers would have on dampening demand for additional storage;
- (2) Before processing Denver Water's license amendment application, FERC must require Denver Water reach agreement with the USFS on the additional resource studies the USFS has been requesting since 2008 as well as the extent of the USFS's Federal Power Act § 4(e) authority over this project;
- (3) Neither FERC nor the Corps should approve any alternative expanding Gross Reservoir without conditioning that approval on binding mitigation measures acceptable to a majority of affected residents, which measures must at a minimum address temporary and permanent impacts to local and state roads; traffic levels; traveler safety; access to homes during medical, wildfire, or other emergencies; noise, light, and air pollution; and recreational opportunities;
- (4) The Corps should allow no further dewatering of the Upper Colorado River basin via grant of a Clean Water Act § 404 permit for this project unless such approval is conditioned on execution of a mandatory stream flow management plan that includes measurable performance standards, ongoing monitoring mechanisms, and enforcement provisions satisfactory to Grand and Boulder County;
- (5) In alignment with concerns raised by the City of Boulder, should the Corps grant a § 404 permit for the expansion of Gross Reservoir, the Corps should include as a condition of that approval permanent preservation of equally valuable land, preferably within Boulder County, although preservation of lands along the Highway 93 corridor south of Boulder County could also suffice as further explained below, as a method of offsite mitigation of significant impacts on plant and animal habitat; and
- (6) Should the Corps grant a § 404 permit for any expansion of Gross Reservoir, the Corps should require Denver Water design and implement a project that support full implementation of the "Environmental Pool" as described in the IGA between Denver Water, Boulder, and Lafayette, as necessary but not sufficient aquatic mitigation for impacts on in-stream flows and wildlife habitat in South Boulder Creek below the dam.

In addition to the parties listed above, our concerns after reviewing the Moffat Draft documents mirror most of the EPA's concerns about the initial DRAFT EIS analysis published for the Windy Gap FIRMING Project, including: an improperly truncated review of alternatives; a lack of meaningful analysis on secondary and cumulative impacts, given other reasonably foreseeable water projects; substantial and unacceptable impacts to the Upper Colorado River basin and Front Range resources; and insufficient mitigation to compensate for unavoidable impacts. Although we do not yet know the EPA's position, we agree with Grand County that the Moffat system expansion and Windy Gap FIRMING projects should be analyzed together.

Before authorizing the irreversible and irretrievable commitment of resources to a project that will further dewater the already decimated Colorado River headwaters, the Corps and FERC must mandate a more thorough and accurate analysis for public review and comment. This analysis must show why Denver Water cannot address its reliability, vulnerability, and flexibility needs by conserving more water within its service area on the Front Range.

Please note that, unless otherwise specified, the comments below refer to the Preferred Alternative. We take this approach because that is the alternative likely to have the greatest direct, indirect, and cumulative impacts on Boulder County and our residents. Note also that we choose to respond to both the Corps and the FERC Draft documents in a single consolidated set of comments, notwithstanding the different regulations applicable to each federal permit and the different study areas used. The FERC document references the Corps document for analysis of the environmental impacts yet, for some issues, critical analyses related to environmental effects is only present in the FERC documents (e.g., whether to transport construction materials in trucks or rail). To fully evaluate the proposal's impacts, both the Draft documents must be considered together.

This letter incorporates by reference all of the past comments submitted to the Corps of Engineers by Boulder County during the Moffat Collection System Project EIS process. And Boulder County preserves its right to raise additional issues later in the NEPA process.

Unless and until the county is persuaded that the best data and most robust assumptions support the additional transmountain diversions the current proposal would trigger, and the impacts on affected parties are suitably mitigated, we cannot support expanding Gross Reservoir. The county does support the efforts of Denver Water to plan wisely for the future and we appreciate the chance to provide input on the project. We look forward to working with each of you to resolve our concerns. If you have questions about our comments, please let us know or contact Assistant County Attorney Ben Doyle at bdoyle@bouldercounty.org or (303) 441-3854.

Very truly yours,

COUNTY OF BOULDER, a body corporate and politic



By:
Cindy Domenico, Chair



By:
Ben Pearlman, Vice Chair



By:
Will Toor, Commissioner

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Numbered Boulder County Comments on Moffat Collection System Draft Environmental Impact Statement and Draft FERC License Amendment Application

1. **The Draft documents fail to objectively demonstrate a valid purpose and need for additional storage capacity on the Front Range, given unaddressed or underestimated opportunities for greater conservation measures and better management of the existing supply and delivery system.**
 - a. Invalid population and economic growth projections. The growth projections used by Denver Water and included in the Draft documents as a fundamental basis for the *Purpose and Need Statement* for the project are invalid, out-of-date, and do not accurately reflect what has occurred economically and from a growth management standpoint since 2000. Denver Water relied on data compiled by the Denver Regional Council of Governments (“DRCOG”) between 1973 – 2000, then made assumptions about these trends extending into the future under an unrestricted water supply demand scenario. The 1973 – 2000 period was a time (with some disruption in the mid-1980s) of tremendous growth in the Denver metropolitan area. Even disregarding the unanticipated and tumultuous economic chaos that surfaced in 2008, the rate of growth in the Denver area and among Denver Water’s customer jurisdictions began to decline between 1990 – 2008, from 15.8% between 1990 – 2000 to 7.5% between 2000 – 2008. Harvey Economics’ review of Denver Water’s Integrated Resource Plan lists the assumptions made in the Denver Water forecasting such as “increasing full employment growth path consistent with baby boom retirement,” “no economic shocks,” “assum[ing] a Federal budget surplus over the next 10 years...”, and ignoring “economic cycles.”¹ Since the fall of 2008, none of these assumptions can be held as credible or used as a basis for projecting growth and water supply “needs.” In fact, Harvey Economics prudently qualified the reliability of forecasting with explicit caveats on pages 7 and 8 of their review, summarized on page 9 in the last paragraph, writing that “In truth, there is little opportunity for testing the accuracy of demographic and economic forecasts. Such forecasts are inherently very uncertain, and they are based upon a host of assumptions that must be made about an uncertain future.”
 - b. Failure to consider recent developments in local and regional planning for Denver metro.
 - i. Neither Denver Water nor the DRAFT EIS reference a significant DRCOG initiative to include a Regional Sustainability Element in MetroVision 2035, an eight county/45 municipality understanding for managing and balancing growth in the DRCOG region, although it has been publicly in the works for many months. Among other things, the draft Element calls for “accommodating 50% of new housing and 75% of new employment” within “urban centers” by 2035. By extension, greater density will likely lead to less water use due to fewer or smaller lawns/landscaping. And common walls on multi-family or multi-use buildings will likely lead to less heating and water line extension/tap requirements, particularly as local building and plumbing codes along with consumer preferences turn more towards LEED and other sustainability-conscious design and construction practices. The draft Regional Sustainability Element also calls for “reduc[ing] per capita municipal and industrial water use by 13.5% from 2005 levels by 2030 (eliminate state’s forecasted gap

¹ Draft EIS: Purpose and Need, App. A, pages 7 – 9.

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between supply and demand).” The Regional Sustainability Element was presented to the Metro Vision Issues Committee, or MVIC, on February 3, 2010 where it was endorsed and authorized to proceed on for additional refinement, public input and review by the DRCOG Board of Directors. Clearly, through this initiative and other actions by the DRCOG membership, both imposed and voluntary constraints on consumption of resources have become a front row consideration in regional and local planning. Since many of Denver Water’s urban customers are in DRCOG, this could have a significant influence on Denver Water’s projected supply needs calculations.

- ii. In a letter sent to Peter Chandler, Regulatory Project Manager – US Army Corps of Engineers during the EIS scoping process dated November 6, 2003 the Boulder County Commissioners specifically requested that Denver Water become familiar with the Magnolia Environmental Preservation Plan in preparing its applications for the Moffat Collection System Project.² There is no citation in either the text or the source references listed in the Draft EIS to this document. These kinds of omissions are particularly concerning, since all of the negative and irreversible impacts are to be borne by Boulder County and its residents, none of whom are within the Denver Water service area. Boulder County has spearheaded extensive sustainability programs, adopting a Sustainability Element into its Comprehensive Plan in 2007 which calls for a reduction in wasteful resource practices, the preservation and viability of open and rural lands, and the efficient use of renewable resources.³ The preferred alternative identified in the Draft EIS makes no reference to this Sustainability Element or the other baseline goals and policies of the Comprehensive Plan with regard to how it is consistent with the Plan, advances its guidance, or how it intends to aggressively mitigate the short, mid-term and long term impacts created if the project goes forward.

c. Understatement of potential for more water conservation over time.

- i. The potential for additional conservation is understated in the Draft documents, given the moderate but growing success of conservation efforts undertaken over the past decade in Denver. This recent history presages greater public acceptance of conservation over time. Moreover, the technological feasibility of conservation measures will continue to increase with time (e.g., recycling of water).
- ii. The Draft documents fail to address why Denver Water cannot change its rate structure to incent greater conservation through reduced consumption. At least as

² Letter from Boulder County to Peter Chandler on EIS Scoping, Regulatory Project Mgr., Corps of Eng’rs, (Nov. 6, 2003) (see Comment #10).

³ Since its adoption in 1978, the Boulder County Comprehensive Plan (“BCCP”) has directed urban growth to urban areas and aggressively pursued the protection of environmental and agricultural resources as well as the retention of a rural landscape in the unincorporated areas through 1) changes and innovations in the county’s Land Use Code; 2) open space purchases supported repeatedly by county taxpayers funding open space programs at the polls; 3) land exchange agreements between the county, US Forest Service and Bureau of Land Management; 4) intergovernmental agreements between the county and cities defining the boundaries between urban and rural planning areas; 5) conservation easement programs; 6) forest health restoration and wildfire mitigation action plans in coordination with other agencies and private landowners; and 7) recognition of locally developed community plans such as the Magnolia Environmental Preservation Plan by inclusion into the BCCP.

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of 2004, Denver's fixed monthly service charge was the second lowest of 12 Front Range municipalities reviewed.⁴ This report also looked at the unit rates per 1,000 gallons of water consumed for these 12 municipalities and concluded that Denver Water, while using a theoretically more price sensitive block rate structure, sets its rates at such a low level that it “sends a very weak conservation price signal” to its customers, “particularly to the high-volume water users.”⁵

- iii. The project purpose is based on meeting unrestricted demand, which does not reflect current operation procedures. Chapter 1 of the DRAFT EIS Purpose & Need section reports that the Moffat system *could* have run out of water in recent drought years (circa 2002), but that didn't happen.
- d. Overstatement of benefit project would have on reducing system vulnerability. Expanding Gross Reservoir under the Preferred Alternative would add only 10% to Denver Water's northern supply system, a marginal improvement on balancing the storage in the northern and southern delivery systems.
- e. Overstatement of reservoir capacity needed.
 - i. The DRAFT EIS cites a 30% “safety factor” in sizing the Gross Reservoir expansion, representing an additional 30,000 acre-feet of storage. This factor received only lukewarm support in the Harvey Economics report attached to the Draft FERC License Amendment Application. The Harvey report could not conclude that this factor is not excessive. That is, this conservative estimate may well result in a possible oversizing of the reservoir capacity needed.
 - ii. The Draft documents also fail to adequately consider the impact of the additional storage that may become available in the Reuter-Hess and Chatfield reservoirs.

2. Even assuming a valid purpose and need for the project, the Draft documents fail to establish a valid analysis of alternatives. Alternatives with less environmental impact were prematurely screened out of consideration due to a latent bias toward expanding Gross Reservoir and flawed cost-benefit analyses.

- a. Noncompliance with LEDPA requirement. In considering whether to issue a § 404 permit, the Corps must identify the least environmentally damaging practicable alternative (“LEDPA”).⁶ “No discharge shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact to the aquatic ecosystem, so long as the alternative does not have any other significant adverse environmental consequences.”⁷ Noncompliance with this LEDPA requirement is a sufficient basis for the Corps to deny a permit. The burden of proving compliance lies with Denver Water, and Denver Water has not met that burden, given the selection of the full expansion option as the Preferred Alternative. While the Corps is not legally required to select the

⁴ See WESTERN RESOURCE ADVOCATES, *Water Rate Structures in Colorado: How Colorado Cities Compare in Using this Important Water Use Efficiency Tool*, September 2004, available at <http://www.westernresourceadvocates.org/media/pdf/Colorado%20Water%20Rate%20Structures.pdf>.

⁵ *Id.*

⁶ 40 C.F.R. § 230.10.

⁷ *Id.*

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environmentally preferred alternative, the Corps should reevaluate whether more environmentally preferable alternatives to expansion of Gross Reservoir are “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.”⁸

b. Bias towards expanding Gross Reservoir as a solution to projected needs.

- i. In 1954, Denver Water sited the dam to allow for an ultimate height of 465 feet but only built it to a height of 340 feet. It appears this original design for Gross Reservoir contemplating a larger capacity storage facility than actually built was given more weight as screening criteria than is appropriate or consistent with NEPA. This flawed approach resulted in premature elimination of less impactful alternatives before those impacts and associated mitigation costs could be fairly contrasted and compared. The exclusion of all alternatives not incorporating an expansion of Gross reflects a biased or even pre-ordained analysis of alternatives. The Corps should not permit developers to artificially constrain the Corps’ alternatives analysis by defining the project’s purpose in an overly narrow manner.⁹ This is not a reasonable range of alternatives. Denver Water’s “sunk cost” in the Gross Reservoir facility has already been adequately amortized several times over and therefore should not be a factor in the analysis. The only legitimate factor in this regard is whatever environmental advantage having a dam in place that can hold more water will give. At a minimum, the Draft documents should be revised to plainly disclose that the original Gross Dam was built to accommodate an expansion commensurate with the one proposed, biasing the EIS result toward alternatives involving full expansion of the reservoir.
- ii. Note: The Draft documents do not adequately address whether the Gross Dam site works for the additional six feet required to accommodate the Environmental Pool contemplated by Denver Water’s IGA with the Cities of Boulder and Lafayette. More engineering feasibility analysis on this issue is necessary.

c. Flawed cost-benefit analysis.

- i. The Draft documents do not include adequate discussion of costs and benefits that reflect the full cost of the alternatives. Although a cost/benefit analysis is not required under NEPA, it is encouraged to fully evaluate the alternatives.¹⁰ Full costs should include capital, operations and maintenance, and mitigation costs. Full benefits should include both the monetary value of saleable water as well as intangible benefits. Before issuing a Final EIS for this project, the Corps should require Denver Water to include a more robust cost/benefit analysis in the screening process, as further described below.
- ii. Major capital costs were applied in Screen 1C along with Purpose and Need and “fatal flaws.” This process is not consistent with the definition of Purpose and Need,

⁸ *Id.* at § 230.3(q) (definition of “practicable”).

⁹ *See, e.g., Nat’l Wildlife Fed’n v. Whistler*, 27 F.3d 1341, 1346 (8th Cir. 1994).

¹⁰ “[A]n environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision.” 40 C.F.R. § 1502.23.

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which does not include “lowest cost” as either a purpose of the project nor as a stated need.

- iii. The cost of the No Action alternative is not presented in the Draft EIS.¹¹ An effort must be made to estimate costs associated with strategies such as using a portion of the Strategic Water Reserve and enforcing mandatory restrictions to reduce demand.
- iv. Broad assumptions were used to measure the cost of early alternatives, such as assuming an “excessive cost” of five times the lowest-cost alternative. Why five? This methodology needs better justification.
- v. Similar EIS documents prepared by the Corps and the Bureau of Reclamation in Colorado over the past ten years have applied widely different cost methods. For example, the following four major recent EISs based cost on different factors, including firm yield, average annual yield, and storage capacity. This variation suggests a history of inconsistent assumptions on the true cost of such projects, making it difficult to compare the cost-effectiveness of any one project, including the alternatives in the Moffat Draft documents.
 1. *Windy Gap Firming Project*: total storage unit cost based on a weighted average of costs for each component, including capital costs for pipelines, 30% contingencies for construction and for design, and 5% interest over 50 years
 2. *Northern Integrated Supply Project (“NISP”)*: capital costs included but not operations, maintenance, or pumping costs for 19 original alternatives; Preferred Alternative feasibility cost included capital and annual operations and maintenance (fixed as 0.5% of construction cost), but not mitigation costs
 3. *Rueter-Hess Reservoir*: costs not applied until second level screening; average annual yield costs only provided for two reservoir sizes considered; operations and maintenance and power costs converted to present worth (5% interest over 50 years) and included with capital costs, but average annual yield costs did not include operations and maintenance costs
 4. *Moffat Draft EIS*: costs include capital cost and present worth operations and maintenance; mitigation costs do not seem to be included
- vi. The mitigation information available in the Draft documents is not adequate for costing purposes and should be supplemented and included in the cost screening process.
 1. Although compensatory mitigation may not be used as a method to reduce impacts in the evaluation of the LEDPA for the purposes of requirements, “[p]roposed mitigation should be considered throughout the NEPA process.”¹² The Corps and FERC must consider reasonable alternative

¹¹ Draft EIS, Chap. 2, Table 2-5 Relative Cost of Project Alternatives.

¹² Memorandum for Heads of Fed. Dep’ts and Agencies from Council on Environmental Quality, Draft Guidance for NEPA Mitigation and Monitoring § II (Feb. 18, 2010).

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mitigation measures in the EIS analysis.¹³ “The EIS should, and the Record of Decision must, describe those mitigation measures that the agency is adopting and committed to implementing.”¹⁴ However, mitigation costs should be identified to be sure they are affordable and can actually be implemented.

2. The message from the Draft documents that mitigation will “possibly” be included in the Final EIS, and that Denver Water is pursuing additional environmental “enhancement” opportunities separate from the EIS process is unsatisfactory. In present form, the Draft documents do not identify all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, as required by 40 CFR Part 230.12.

d. Premature elimination of alternatives involving greater hydropower generation.

- i. Alternatives involving expansion of Gross Reservoir that result in adding more than 5 megawatts of hydropower were prematurely screened out. As proposed, the project qualifies for expedited FERC processing as a major project 5MW or less, which allows for streamlined or eliminated requirements for construction schedules, statements of costs and financing, project operations and resource utilization plans, and the like. Despite Denver Water’s contention that hydropower generation is an ancillary benefit from the water storage functionality of Gross Reservoir, expedited processing and some additional cost are not enough justification to forego the substantial benefit of additional clean power for the region. This is especially true in light of the claim Denver Water has made to Boulder County that the power generation aspect of the project preempts the County’s H.B. 1041 authority over the project. The Corps and FERC should require further analysis on the costs and benefits of adding substantial hydropower, either in a reformulated statement of purpose and need, a recalibrated analysis of alternatives, or as a form of regional impact mitigation. Additional hydropower would help offset the indirect and cumulative impacts on air pollution, climate change, and demand for power caused by the additional development induced by an enlarged Gross Reservoir.
- ii. The proposed modifications to the hydroelectric project would not increase the total installed capacity of the project, would not result in an increase in the installed nameplate capacity of 2 megawatts (MW) or more, and would not increase the hydroelectric project’s maximum hydraulic capacity by 15% or more.¹⁵ Therefore, this license amendment application is for a “non-capacity-related amendment” per 18 CFR § 4.210(b). FERC states that up to 5 more kWh could be produced (16.5% increase) with minor modifications to the existing system, and implies that this is part of the Preferred Alternative.¹⁶ Beyond that modest increase, however, Denver Water’s FERC license amendment application concludes that modifications to the existing hydroelectric system to increase capacity beyond the existing 8,100 kW

¹³ Draft Guidance for NEPA Mitigation and Monitoring § II.A.1, *supra* note 12 (citing 40 C.F.R. §§ 1502.14(f), 1508.25(b)(3)).

¹⁴ *Id.* (citing 40 C.F.R. § 1505.2(c)).

¹⁵ Draft FERC License Amendment Application, page I.

¹⁶ *See id.*, Atch. E-5.

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“nameplate’ would require major modifications to the system and would not be economically feasible at this time.¹⁷ However, no cost comparison is provided in the FERC application or in the Draft EIS to substantiate this conclusion. The Corps and FERC should require Denver Water to explain the cost basis for this conclusion.

- iii. The Draft documents do not discuss increasing hydropower production to allow pump-back for release during high-use periods. The Draft documents should include a statement on whether this concept showed up in earlier alternatives and, if so, why it was dismissed.
- e. Premature elimination of alternatives involving greater conservation.
- i. The assumption water demand will “harden” – i.e., conservation gains will decrease with time – is questionable and should be removed as a criterion for comparing alternatives.¹⁸ Recent conservation successes belie the assumption; from 2001 to 2008 Denver residents achieved an 18% reduction.
 - ii. Once projections of future demand are corrected based on updated population and economic data, the Corps and FERC should mandate better evaluation of conservation-based alternatives to meet that demand. Revised growth projections could negate the need for the project at all, or negate the need to designate expansion of Gross Reservoir as the preferred alternative.
 - iii. Many Denver Water municipal customers do not have conservation plans on file with the Colorado Water Conservation Board (“CWCB”). Until these water customers come into compliance with state law, the Corps should withhold a § 404 permit to build a bigger dam as a way to protect supply. This is especially true with respect to Arvada, which does not have a state-approved conservation plan. Just because Arvada contracted with Denver Water for 3,000 acre-feet/year of Moffat project water does not inexorably lead to the conclusion Gross must be built. That is the tail wagging the dog.
 - iv. Agricultural-Urban Cooperative Water Sharing Agreements were not evaluated, which could be a good small-scale alternative to increase yield of the Moffat system.
- f. Failure to compare the homeland security pros and cons of different alternatives. The Draft documents do not communicate how well different alternatives address national security concerns. Indeed, the entire Moffat system appears vulnerable to human-caused disasters, including terrorism. Denver Water’s failure to address this aspect of the project is especially problematic given its alleged goal of reducing system vulnerability. By this metric, none of the alternatives fully address the purpose and need. The Corps and FERC should mandate a

¹⁷ *Id.*, Atch. B, page B-1.

¹⁸ *See, e.g.*, Statement of Mary Ann Dickinson, Exec. Dir., Alliance for Water Efficiency, March 31, 2009 Hearing before the Senate Committee on Environment and Public Works, Subcommittee on Water and Wildlife, *EPA’s Role in Promoting Water Efficiency* (“Field experience suggests that as technology changes and new products appear in the marketplace, there will always be additional conservation potential”) and Vera McCaig, Office of Water Conservation and Drought Planning, Colorado Water Conservation Board, presentation on *Water Conservation and Demand Hardening*, available at <http://www.greatwesterninstitute.org/presentations/berthoud06/forum/McCaig-DemandHardening-Dec06.pdf>.

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comparison of security measures that would be necessary for each of the alternatives, factoring in these costs to the screening process.

- g. Note: Boulder County does not support any alternative involving a reservoir at Leyden Gulch. Areas north and south of this location along the Highway 93 corridor have been preserved by Jefferson County and the City of Boulder to protect open space, wildlife, prairie ecosystems, and the mountain backdrop as viewed from points east. Construction of Leyden Gulch Reservoir would compromise the longtime efforts of many to preserve the Front Range Mountain Backdrop, “a unique ecological system not found elsewhere in Colorado.”¹⁹

3. Even assuming a valid purpose and need for the project and that the Preferred Alternative is the least environmentally damaging practicable option, the impacts are not adequately analyzed and described in the Draft documents.

- a. Overall inadequacy. The Draft documents do not provide sufficient information to evaluate whether the grant of a § 404 permit will cause or contribute to significant degradation of the waters of the United States.²⁰ Under the Guidelines, effects contributing to “significant degradation” considered individually or collectively include significantly adverse effects on: human health or welfare, taking into consideration recreational, aesthetic, and economic values; aquatic ecosystem diversity, productivity, and stability; and life stages of aquatic life and other wildlife dependent on aquatic ecosystems, taking into consideration fish and wildlife habitat.
- b. Failure to analyze other reasonably foreseeable projects together. “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 regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”²¹ The purpose and need, alternatives, impacts, and mitigation of the Moffat Collection System expansion and Windy Gap Firing Project should be analyzed together, as both result in further dewatering of the Colorado River headwaters. Failing to do so runs the risk of authorizing unacceptable cumulative effects on water quality as well as over-allocation of water resources, particularly in Grand County on the western slope, but also in Front Range communities.²²
- c. Mid-term impacts characterized as “temporary.” Recognizing that construction is typically considered a temporary phenomenon, the Preferred Alternative is projected to take at least four years to complete. For those who frequent or live in the area, especially Coal Creek Canyon visitors and residents, a 49-month construction period is not “temporary.” Impacts

¹⁹ Front Range Mountain Backdrop Task Force, *Front Range Mountain Backdrop: Phase 2 Final Report: Executive Summary* i (1998) (prepared by ERO Resources). “In ecological terms, the Backdrop is a regional ecotone (transition area) where plant and animal communities of the Great Plains meet the foothills of the Rocky Mountains. The result is a diverse assemblage of plants, animals, geologic features, and scenic beauty near the rapidly growing Front Range urban corridor.” *Id.*

²⁰ 40 C.F.R. § 230.10(c).

²¹ 40 C.F.R. § 1508.7 (definition of cumulative impacts).

²² See comments of Larry Svoboda, Environmental Assessment Director at EPA, quoted in Mark Jaffe, *Surge of Water Projects Show Little Coordination*, DENVER POST, April 26, 2009.

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may be short-term in a geological time-scale, but not in the life of certain animal species or the humans living there, using the roads, or visiting Walker Ranch Open Space or the USFS lands surrounding Gross Reservoir. The Draft EIS analysis of temporary noise and visual impacts to wildlife and visitors to Boulder County lands due to construction-related activities must be strengthened.

d. Impacts on Boulder County open space.

- i. The conclusion in the Draft EIS that there would be no impact to Boulder County parks and open space properties is inaccurate.²³ Gross Reservoir is bordered by Walker Ranch Open Space to the east, which should be reflected in Figure 13.13-1 (“Recreation Gross Reservoir”). The proposed action will have a detrimental impact on the natural and human environment at Walker Ranch.
- ii. Although the proposed expansion will not cause a direct loss of county open space land, adverse indirect impacts to Walker Ranch and its users will include noise, dust, truck traffic, visual impacts, and impacts to trail users and fisherpersons on South Boulder Creek.
- iii. The limited discussion of the impacts from construction activities on Walker Ranch Open Space in Section 4.13 does not fully reflect the fact that views from Walker Ranch will be affected during construction, as will the experience of being in open space.
- iv. The Draft EIS states that, “[A]ll impacts to recreation uses would be temporary...” While this may be true of noise and construction impacts, changes to the viewshed from a larger dam at Gross Reservoir will be permanent and the Draft documents should reflect that.

e. Construction-related impacts.

- i. The description of the construction impact area in the Draft EIS is not sufficient and needs to be redone (Chapter 4, page 337). Light, noise, trucks, and dust will exceed the immediate construction site at Gross Reservoir. These impacts will carry across the reservoir and will impact visitors of Boulder County parks and open space lands as well as residents along the transportation routes for the duration of the project.
- ii. One of the most worrisome “temporary” direct impacts to Coal Creek Canyon residents, many of whose homes lie within Boulder County, is the enormous increase in construction truck traffic contemplated if the Preferred Alternative is approved as proposed. The proposed increase in truck traffic poses a serious threat to the safety of travelers in Coal Creek Canyon (vehicular, bicycle, and pedestrian), road maintenance costs, and access for emergency vehicles – particularly in case of wildfire. The Draft documents do not adequately describe and address the nature of these impacts on local and regional residents during the construction period.
- iii. The noise, air quality, and fiscal impacts of roadway maintenance and repair caused by thousands of truck trips from the construction material source near Longmont along state highways and local roads of Boulder County will be significant, yet the

²³ Draft EIS, Exec. Summary at 37.

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Draft documents do not adequately describe these impacts, much less how Denver Water proposes to mitigate them.

- iv. Denver Water has dismissed any use of a railroad transportation option, in whole or in part, from the preferred alternative for reasons of costs and due to “little interest” in this option being expressed by the Union Pacific Railroad.²⁴ While it is clear that the UPRR is the sole decision maker in this regard, Denver Water did not provide a comparable cost analysis for the truck haul alternative selected, as previously requested in Boulder County’s Pre-application Document letter to Denver Water dated September 25, 2008. The Draft documents fail to adequately address why much of this impact can’t be avoided or significantly minimized by use of the existing rail system to haul aggregate and other construction materials to the site.
 1. While trucking-only appears to be less costly than rail and truck, it appears unreasonably high rail and trucking costs inflated the cost estimates. A combined rail/truck haul method was costed by HDR at 24.4 cents per ton-mile for the rail component and 119 cents/ton-mile for the six miles of trucking, resulting in a total cost of \$16.1 million. Boulder County’s research indicates a truck-only method would cost approximately 17.7 cents per ton-mile, or about \$9.3 million or 42% less than rail and truck. However, when compared to a national trucking cost average of just 26.6 cents per ton-mile, the HDR trucking cost component at 119 cents per ton-mile seems unreasonably high. This national average is based on three separate sources, including the U.S. Bureau of Transportation Statistics and the American Association of Railroads. In addition, the unit costs of a combined rail/truck haul operation as provided in the Borrow Haul Study are approximately 25 cents per ton-mile for rail and 120 cents per ton-mile for trucking materials up the remaining three miles to the dam site. Yet, national averages for railroad transport are about 3 cents per ton-mile per the Bureau of Transportation Statistics and the American Association of Railroads. Further, national trucking costs are 30 cents per ton-mile or less. Even allowing for some steep grades and 24 hour/day operations, the truck/rail costs in the Borrow Haul Study seem excessively high.
 2. The current cost comparison does not adequately show costs for the pullouts or for road improvements from the rail siding to the dam.
 3. There is no cost breakdown or itemization for the number of trucks to be rented/purchased/leased for the project, drive times between sites, fuel consumption, equipment maintenance, driver pay, liability insurance, maintenance on the county and state road systems along the haul routes, or construction and schedule delays due to inclement weather/accidents.
 4. Clearing of vegetative biomass and its removal from the project site (either in the form of ash or as cubic yards/tons of trees) warrants a similar cost analysis and would add to the overall figures.
 5. It is not evident from the documents provided that Denver Water looked at or inquired about occasional rail use, and has relied heavily on the cost of

²⁴ Draft FERC Hydropower License Amendment Application, Atch. E-4: Borrow Haul Study at 7.

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constructing new sidings as a reason for dismissing the rail option without providing any equivalent analysis of truck costs.

6. The revised analysis should also comply with the recently issued guidance for incorporating climate change impact analysis into NEPA processes.²⁵ How does the trucking-only option compare to rail and truck from a carbon emissions standpoint? There is also no air quality analysis comparing the types, quantities, and timeframes for emissions differentials between truck trips vs. rail vs. rail as an occasional option for hauling.
 7. In sum, the Corps and FERC should require Denver Water reanalyze all the costs, impacts, and benefits of truck versus rail transportation, this time using the same methodology for comparing the two options, using at least the above-mentioned types of costs, and based on accepted industry standards for trucking and rail cost.
- f. Stream flow impacts.
- i. The Draft documents state that there are “moderate” stream flow impacts to upper tributaries of Fraser and Williams Fork rivers during average to wet years. But those impacts are up to 30% of total stream flow, which is a major impact.
 - ii. In general, Boulder County is supportive of anything that benefits South Boulder Creek water flow. Thus, the County supports the concept of “Environmental Pool” as described in the IGA between Denver Water, Boulder, and Lafayette as necessary but not in and of itself sufficient mitigation for aquatic impacts on in-stream flows and wildlife habitat in South Boulder Creek below the dam. With this in mind, effects on the South Boulder Creek catchment area downstream of the reservoir, both positive and negative, need further elaboration and clarification in the Draft documents, particularly the likely effects above versus below the South Boulder Canal Diversion. Also, the Draft documents’ discussion of the Environmental Pool does not include a sufficiently detailed analysis of the associated hydrologic impacts. The maximum 75 cubic foot/second decrease in flows is not adequately analyzed. And statements that reducing peak flows is beneficial to aquatic habitats and species, that increasing winter flows is good for aquatic habitat, and that a larger pool size is good for aquatic habitat all may be false, depending on site-specific conditions, channel conditions and species requirements.
- g. Riparian and wetland area impacts.
- i. The Draft documents conclude that there are “moderate to major” cumulative impacts to riparian and wetlands areas on the Front Range area from agricultural water rights transfers. It does not make sense that these impacts will be greater than impacts on western slope streams, as reflected by statements like “cumulative impacts to aquatic resources in North Fork Ranch Creek (tributary to Fraser River) would be minor adverse.”

²⁵ Memorandum for Heads of Fed. Dep’ts and Agencies from Council on Env’tl. Quality on Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions (Feb. 18, 2010), *available at* http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf

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- ii. The Draft documents underestimate the total acreage of impacts to riparian habitat in the South Boulder Creek drainage.²⁶ The analysis of impacts to riparian habitat should include more than just direct impacts. Further, analysis of impacts in terms of “acres” does not provide an adequate assessment of a linear habitat. Rather, the analysis should be quantified in terms of “stream miles” (with an identified buffer). In addition, because of the unique values certain riparian areas may possess – all acres are not created equal – the analysis of impacts to this resource should include more detailed descriptions of impacts to unique riparian areas. These habitats are especially valuable to many riparian-centric species, such as bats, neotropical migratory birds, and their predators.
- h. Wildlife impacts.
- i. The Draft documents conclude that there are “moderate” cumulative effects to wildlife on the Front Range from loss of aquatic habitat from transfer of agricultural water rights. As with riparian and wetland areas, it does not make sense that these impacts will be higher than those on the western slope.
 - ii. Elsewhere, the Draft documents conclude there would only be minor cumulative impacts to wildlife (Summary, page 45). This analysis is flawed and should be redone to consider the negative effects to wildlife including habitat from the additional development induced by the construction of the Preferred Alternative.
 - iii. The analysis of impacts to bald eagles in the Draft EIS inaccurately concludes that there will be beneficial impacts to this species.²⁷ However, claiming beneficial impacts to bald eagles can only occur if there are no overall negative impacts to the species. The construction period (four years or more) under the Proposed Action will likely preclude bald eagle nesting and reduce foraging – a negative impact.
 - iv. The Draft EIS analysis of potential impacts to Prebles Meadow Jumping Mouse should be revised to consider new information concerning potential Prebles existence at higher elevations, including those drainages feeding Gross Reservoir from the west. A new Determination of Effect should be undertaken that considers this new information.²⁸
 - v. The analysis of impacts to elk habitat in the Draft EIS from expanding Gross Reservoir states that there would be “no long-term impacts but impacts are considered moderate.”²⁹ Any loss of elk winter concentration areas and severe winter range would be adverse and long term – that habitat will be gone forever. The Draft EIS does acknowledge the loss of some elk range; however, it does not acknowledge the loss of quality riparian habitats which, in some instances, is viable for elk calving.
 - vi. The conclusions on impacts to fish habitat in the Draft EIS is inaccurate (Chapter 4, pages 313 and 335). Lacustrine species in South Boulder Creek will benefit;

²⁶ Draft EIS, Exec. Summary at 28.

²⁷ *Id.* at 31.

²⁸ *See id.* at Chap. 3, pages 171 - 196; Chap. 4, page 290.

²⁹ *Id.* at Chap. 4, page 273.

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however, 1.25 miles of lotic habitat will be lost, including potential spawning habitat.

- i. Impacts on vegetation, including massive tree removal.
 - i. The Preferred Alternative will directly and permanently impact several rare plant communities – including flooding out two “globally rare” plant communities identified by the Colorado Natural Heritage Program (“CNHP”), water birch/mesic forb foothills riparian shrub along South Boulder Creek and thinleaf alder/mesic forb riparian shrubland in Winiger Gulch. These communities are mapped by CNHP as Potential Conservation Areas (“PCA”). PCAs are generalized areas surrounding a specific plant community that are large enough to provide protection to the specific habitat occurrence. The plant community occurrence in Winiger Gulch PCA is rated by CNHP as an area of “moderate significance” and the community in South Boulder Creek PCA as “high significance.” (About 1,835 feet of the length of Winiger Gulch within the PCA would be within the expanded reservoir area, about 43% of total length in PCA, and 2,575 feet of South Boulder Creek within the PCA, about 30% of total length in PCA.) The Draft EIS concludes that inundation of the central portions of these PCAs would have a moderate to major adverse impact, which is of concern to Boulder County. The Corps and FERC must ensure that the impacts are avoided, minimized, and mitigated to the maximum extent possible.
 - ii. All of the direct impacts to vegetation from the Proposed Action would occur at Gross Reservoir in Boulder County, totaling approximately 508 acres of vegetation communities. These 508 acres are split between approximately 456 acres of permanent vegetation loss and about 52 acres of temporary impact. Most of the impacts would be permanent due to inundation from expanding Gross Reservoir and construction of the enlarged Gross Reservoir Dam. And most would occur in the ponderosa and ponderosa pine/Douglas fir communities. The phrase “small areas of wetland and riparian vegetation would also be affected” in the Draft EIS is inaccurate (Summary, page 29). The correct terminology is “small areas of wetland and riparian vegetation would be lost.” The creation of “new” riparian areas, as described in Appendix M (Proposed Mitigation Plan) along the elevated pool level is either assured or a sufficient offset. The Draft EIS should require that the proposed replacement of riparian areas occur in areas that will be successful and provide the same habitat benefits as those areas being inundated. The Draft EIS should be revised to specifically describe the proposed revegetation/restoration plans, including the specific location for riparian restoration activities and the ratio of area of riparian vegetation restored to area lost.
 - iii. The Draft EIS analysis does not include the loss of 1.25 miles of stream/riparian/fish habitat under the Proposed Action due to inundation.³⁰ This should be included as part of the impact analysis.
 - iv. As with the question of truck versus rail transportation of construction materials to the site, on the subject of removing thousands of trees to expand the reservoir the

³⁰ *Id.* at Chap. 4, page 5.

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Draft documents should be revised in light of recent CEQ guidance on incorporating climate change impacts in NEPA documents.³¹

j. Socioeconomic impacts.

- i. The analysis and discussion of the socioeconomic impacts caused by the Preferred Alternative is insufficient, especially the permanent direct and indirect impacts to Grand County residents and Coal Creek Canyon residents. For example, the Draft documents state that there are moderate negative socioeconomic impacts to Front Range/Weld County communities from water rights transfers, but the associated discussion of cumulative or indirect impacts to the western slope is inadequate.

k. Impacts due to growth induced by an expanded Gross Reservoir.

- i. NEPA allows for consideration of indirect effects “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.”³² “Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”³³ Under the terms of an existing contract between Arvada and Denver Water, if Gross is expanded, Arvada gets up to 3,000 acre-feet/year. According to recent research by the City of Golden, the Candelas proposal for developing the area of the Highway 72/93 intersection is short some 2,900 acre-feet of water, assuming full build-out. Arvada staff views the Moffat Project as its “single biggest infrastructure need.”³⁴ Denver Water recently estimated Arvada’s share of the cost of the Moffat Project at \$90 million. Naturally, the Candelas owners and developers “strongly support” the expansion of Gross, as reflected in their one-paragraph comments on the Draft documents. In sum, it’s no secret that additional water stored in Gross will go to serve additional development, most likely in areas along the mountain backdrop corridor between Boulder and Golden that deserve especially careful planning and protection. Consequently, the Draft documents must be revised to better elucidate the connections between permitting expansion of Gross and the development of Arvada and other Denver metro area communities. These revisions should spell out the likely increase in population, the impacts of this induced growth on local communities to include an estimate of the number of affected residents who live in Boulder County, Coal Creek Canyon, and Golden at a minimum.
- ii. The Draft documents should be revised to reflect the effects on climate change of additional induced growth along the Highway 93 corridor, due to the increase in emissions associated with increased population and jobs.

³¹ Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, *supra* note 25.

³² 40 C.F.R. § 1508.8(b).

³³ *Id.*

³⁴ *See, e.g.*, Letter to Corps, FERC, and Denver Water from Jefferson Center Metro. Dist. No. 2 (Mar. 5, 2010).

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I. Recreational impacts

- i. The Draft EIS's analysis of impacts to recreation should include the loss of fishing, hunting, and kayaking from inundation of upstream water bodies.³⁵ Inundation of US Forest Service land will also eliminate some opportunities for hunting on these lands.
- ii. The Draft EIS states that under the Proposed Action "additional" recreation opportunities will be created as a result of an enlarged reservoir due to increased use.³⁶ For example, the additional shoreline may provide additional dispersed shoreline recreation opportunities such as additional fishing access. But this is inconsistent with Appendix M, Proposed Mitigation Plan (page M-14), which provides that Denver Water does not intend to change the current recreational opportunities or management of Gross Reservoir under the Proposed Action. The federal permits should include a condition of approval that there will be no net increase in the number of recreational visitors at Gross Reservoir beyond that approved in the current recreation plan. This condition should also specify that any changes in recreational opportunities that may cause increases in visitors should be coordinated with and approved by Boulder County via an IGA amendment.
- iii. The Draft EIS states that beyond the developed recreation areas defined in the Federal Energy Regulatory Commission (FERC) Gross Reservoir Management Plan, no additional developed recreation sites are planned. Because no additional infrastructure – e.g., parking areas, restrooms, etc. – would be constructed under the Proposed Action, the Draft EIS should disclose the potential adverse impact caused by overcrowding of visitor parking areas and facilities because of the improved shoreline opportunities attracting additional visitors to Gross Reservoir. Denver Water should include mitigation plans for potential overcrowding of developed recreation sites due to increased use from additional shoreline opportunities.
- iv. The Draft EIS claims that there will be "no long-term conflicts with the recreational guidelines, goals, or objectives identified in...the Boulder County Comprehensive Plan..." (Section 4.13.1.1). However, the Draft EIS does not discuss the impact of the planned Gross Reservoir expansion on the "plains to mountains" trail alignment proposed on the "County Trails Map," adopted as part of the Boulder County Comprehensive Plan. The proposed expansion of Gross Reservoir is inconsistent with this Comprehensive Plan designation and would require substantial reassessment of this proposed corridor. The expansion would not only affect the alignment of this trail where it runs adjacent to the reservoir, but also the alignment of the trail north and west of the reservoir.
- m. Inconsistency between the FERC document and the Corps documents. The FERC application discusses the Environmental Pool but the DRAFT EIS does not (it is included in the Preferred Alternative). Either document should describe the "tipping point" of needing more infrastructure to support the additional 6' dam rise.

³⁵ See Draft EIS, Chap. 3, page 278.

³⁶ *Id.* at Chap 4, page 370.

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- 4. Even assuming that a valid purpose and need exists, that full expansion of Gross Reservoir is the least environmentally damaging practicable option, and that the impacts are adequately described, the Draft documents fail to identify adequate mitigation for those impacts.**
- a. General notes on the mitigation plans Boulder County would like to see
- i. Boulder County agrees with the approach to mitigation described in the draft guidance on this subject published by the Council on Environmental Quality in February 2010. “The first step in mitigation is avoiding or minimizing harm.”³⁷ “Mitigation is an important mechanism for agencies to use to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with their actions.”³⁸
 - ii. Mitigation measures must be binding. “Decisions to employ mitigation measures should be clearly stated and those mitigation measures that are adopted by the agency should be identified as binding commitments to the extent consistent with agency authority, and reflected in the NEPA documentation and any agency decision documents.”³⁹
 - iii. Mitigation measures must include mechanisms for systematic accountability. “[I]mplementing agency NEPA procedures and guidance should be employed to establish procedures that create systematic accountability and the mechanisms to accomplish those goals.”⁴⁰ The Corps and FERC have broad authority under NEPA to impose mitigation conditions on applicants. “Methods to ensure implementation should include, as appropriate to the agency’s underlying authority for decisionmaking, appropriate conditions in financial agreements, grants, permits or other approvals, and conditioning funding on implementing the mitigation.”⁴¹ The final mitigation plan should specify money actually budgeted and manpower assigned and provide that the approved action cannot proceed until all adopted mitigation measures are fully resourced or the lack of funding is addressed in a NEPA analysis.⁴² The Corps and FERC should require that all their conditions of approval are written into contracts furthering the approved action.⁴³ The mitigation measures required by the Corps and FERC must include specific details outlining which parties are responsible for ensuring the mitigation is implemented and which parties are charged with ensuring it is effective.
 - iv. Mitigation plans must include robust monitoring procedures. “Implementing Federal agency actions and mitigation involves consideration of future impacts and conditions in an environment that is evolving and not static; therefore, monitoring

³⁷ Draft Guidance for NEPA Mitigation and Monitoring, *supra* note 12 at § II (citing 40 C.F.R. § 1508.2).

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.* (citing 40 C.F.R. § 1507.3).

⁴¹ *Id.* at § II.A.3.

⁴² Compare 32 C.F.R. § 651.15(a)(5)(d).

⁴³ Compare *id.* § 651.15(a)(i)(1); *id.* § 651 App. C.

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can help decision-makers adapt to changed circumstances.”⁴⁴ A monitoring program is essential to ensure mitigation measures are both actually implemented and ultimately effective. “Under NEPA, a federal agency has a continuing duty to gather and evaluate new information relevant to the environmental impact of its actions.”⁴⁵ For agency decisions based on an EIS, the regulations require that, “a monitoring and enforcement program shall be adopted...where applicable for mitigation.”⁴⁶ In addition, the regulations state that agencies may “provide for monitoring to assure that their decisions are carried out and should do so in important cases.”⁴⁷ Monitoring plans and programs should be described or incorporated by reference in the agency decision documents.”⁴⁸

- v. The results of relevant monitoring must be available to the public without the necessity of first filing a FOIA request.⁴⁹ The Corps should include in the permit conditions provisions related to public access to the results of relevant monitoring.⁵⁰ “Public participation and accountability should be supported through proactive disclosure of, and access to, agency mitigation monitoring reports and documents.”⁵¹ Should monitoring reveal that any defined mitigation measures are ineffective such that significant adverse environmental effects could reasonably be expected to result, the Corps should include language in the Record of Decision requiring that must go back through the NEPA process to determine the resolution to the situation.⁵² To define parameters for effectiveness monitoring, the Corps and FERC should at a minimum identify a source of expertise, use measurable and replicable technical parameters, conduct a baseline study before mitigation is commenced, use a control to isolate mitigation effects and importantly, provide timely results to allow the decision-maker to take corrective action if necessary.⁵³
 - b. Specific mitigation request: a plan to mitigate all construction impacts
 - i. Neither FERC nor the Corps should approve any alternative expanding Gross Reservoir without conditioning that approval on binding transportation-related mitigation measures acceptable to all stakeholders. For the entire proposed route

⁴⁴ Draft Guidance for NEPA Mitigation and Monitoring, *supra* note 12 at § II.

⁴⁵ See 42 U.S.C. § 4332(2)(A).

⁴⁶ 40 C.F.R. §1505.2(c).

⁴⁷ 40 C.F.R. § 1505.3.

⁴⁸ Draft Guidance for NEPA Mitigation and Monitoring, *supra* note 12 at § II.B.

⁴⁹ See 40 C.F.R. § 1505.3(d). “Consistent with CEQ regulations, the FOIA requires agencies to make available, through ‘computer telecommunications’ (e.g., agency websites), releasable NEPA documents and monitoring results which, because of the nature of their subject matter, are likely to become the subject of FOIA requests.” Draft Guidance for NEPA Mitigation and Monitoring, *supra* note 12 at § II.C (citing 5 U.S.C. § 552(a)(2); 40 C.F.R. § 1506.6(f)).

⁵⁰ 40 C.F.R. 1505.3(d).

⁵¹ Draft Guidance for NEPA Mitigation and Monitoring, *supra* note 12 at § II.A.4.

⁵² See 32 C.F.R. § 651.15.

⁵³ See *id.* App. C (g)(1-5).

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on both county and state highways, this plan must at a minimum address temporary and permanent impacts to local and state roadways; traffic levels; traveler safety; access to homes during medical, wildfire, or other emergencies; noise, light, and air pollution; and recreational opportunities.

- ii. Federal regulations provide for “avoiding the impact altogether by not taking a certain action or parts of an action.”⁵⁴ Regardless of what comes of the truck versus rail analysis, but especially if rail is not selected as the preferred method of transporting construction materials (primarily aggregate), the Corps and FERC should require Denver Water to pay for improvements to Highway 72, to include the addition of bike lanes on both sides of the right of way.
 - iii. A detailed traffic mitigation plan is needed. Presently, both Highway 128 and Highway 93 are shown on the proposed haul route map. Highway 72 route would take traffic south and east on a possibly less direct route. Highway 72 would require sight distance improvements (reflected in the Mitigation Plan (App. M)). The traffic mitigation plan should include analysis to determine whether growth induced in the Arvada area as a result of expanding Gross Reservoir will necessitate new roadway construction in communities bordering Arvada.
- c. Specific mitigation request: a stream flow management plan acceptable to Grand County and Boulder County
- i. The Corps should allow no further dewatering of the Upper Colorado River basin via grant of a § 404 permit for this project unless such approval is conditioned on execution of a mandatory stream flow management plan that includes measurable performance standards⁵⁵, ongoing monitoring mechanisms, and enforcement provisions satisfactory to Grand and Boulder County. Such a plan will provide for a more natural hydrographic cycle in Grand County (spring flushing flows, etc.).
 - ii. “Mitigation commitments should be structured to include adaptive management in order to minimize the possibility of mitigation failure.”⁵⁶ Continuing responsibility for a permit applicant beyond the compensation / mitigation / enhancement required at time of permit issuance may be a hurdle that Denver Water must surmount as an institution, but that is no reason that, e.g., adaptive management of the stream flow can’t be a bridge over the uncertainties that remain after the Final EIS analysis.
 - iii. The Corps should tie mitigation monitoring to the Corps and FERC’s Environmental Management Systems.⁵⁷

⁵⁴ 40 C.F.R. § 1508.20(a).

⁵⁵ Measurable performance standards were recently made binding in the 2008 Final Compensatory Mitigation Rule promulgated jointly by the Corps of Engineers and EPA. See 73 Fed. Reg. 19594 (April 10, 2008) (“Compensatory Mitigation Rule”).

⁵⁶ Memorandum for Heads of Federal Departments and Agencies from Council on Environmental Quality, Draft Guidance for NEPA Mitigation and Monitoring, § II.A.4.

⁵⁷ See Exec. Order No. 13423, 72 Fed. Reg. 3919 (Jan. 26, 2007), later codified into law by the 2009 Omnibus Appropriations Act signed on Feb. 17, 2009, and associated instructions for implementation, *available at* http://www.epa.gov/oaintrnt/documents/eo13423_instructions_508.pdf.

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- d. Specific mitigation request: conservation guarantees from water providers
- i. The Corps and FERC should require an adopted conservation plan for any water provider with a Denver Water contract that is at least as stringent as Denver Water's conservation plan.
 - ii. As a condition of approval, the Corps and FERC should consider prohibit the use of any additional water stored in a newly expanded Gross Reservoir west of State Highway 93, in support of "preserv[ing] the open and undeveloped character of the land" as provided in the federal Colorado Northern Front Range Mountain Backdrop Protection Study Act of 2009.
- e. Specific mitigation request: in-stream flows below the dam – the "Environmental Pool"
- i. The Boulder City Council has approved a draft intergovernmental agreement between Boulder, Lafayette and Denver Water for creation of a 5,000 acre foot "environmental pool" which would require increasing the height of the dam another six feet over the 125' proposed in the Draft EIS. The pool would allow for increased in-stream flows to South Boulder Creek below the dam during winter and dry months. Though it lacks the detailed analyses of habitat benefits/impacts we'd like to see, Boulder County supports this idea in concept. We also believe such a pool could be established without the dam expansion proposed in the Draft EIS. That said, should the Corps grant a § 404 permit for any expansion of Gross Reservoir, the Corps should require Denver Water design and implement a project that support full implementation of the "Environmental Pool" as described in the IGA between Denver Water, Boulder, and Lafayette, as necessary but not sufficient mitigation for impacts on in-stream flows and wildlife habitat in South Boulder Creek below the dam.
- f. Specific mitigation request: additional hydropower capacity
- i. The FERC application states that after final design Denver Water will evaluate modifications to increase the efficiency of the turbine equipment to determine whether such improvements would be economical (FERC application page A-3 and B-1 item 2). The only modification proposed in this FERC application is to add a pressure-releasing valve ("PRV") to lower the inlet pressure in order to accommodate the increased head due to the dam water level rise. The addition of the PRV would improve operating efficiency, resulting in an additional 5 million kWh/year (an increase of 16.5%). If adding additional hydroelectric capacity beyond that provided by the PRV is feasible, why is it not evaluated in this FERC application? One reason seems to be that Denver Water sells power generated at Gross Reservoir to Xcel Energy under a power purchase agreement that limits generation capacity to the existing 8,100 kW.⁵⁸ The FERC application states that this agreement expires in 2027. The Corps and FERC should require Denver Water to explain why that power purchase agreement cannot be modified to allow additional capacity in light of the additional head generated by enlarging Gross Reservoir.

⁵⁸ Draft FERC Application at B-6, Item 5-iii.

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g. Specific mitigation request: compensation for land lost to inundation

- i. Federal regulations allow for compensating for impacts “by replacing or providing substitute resources or environments.”⁵⁹ Denver Water should provide compensation for the permanent loss of 456 acres of shoreline, tributary, and bank vegetation that would result from expansion of Gross Reservoir under the Proposed Action. In addition, should Gross Reservoir be expanded, under its existing contract with Denver Water Arvada will have more water to support development in the Highway 72/93 area. This increased population will put increased pressure on Boulder County parks and open space resources along the Highway 93 corridor. Preservation of parcels along the Highway 93 corridor could help mitigate the significant impacts to Boulder County residents as well as local plant and animal habitats.
- ii. This compensation should be accomplished through a replacement of land of at least equal habitat significance on publicly owned forested lands. Priority for lands identified for compensation should be given to areas adjacent to US Forest Service land or Boulder County-owned parcels (if lands suitable for compensation are adjacent to county open space properties). Suitable parcels include, in order of priority (1) parcels within Boulder County, (2) the parcel bordering the eastern edge of Highway 93 immediately north of the parcel owned by the State Land Board, (3) the parcel owned by the State Land Board, aka “Section 16,” (4) Leyden Gulch, and (5) other parcels north of Highway 72 that will aid in achieving the goals of the Rocky Flats National Wildlife Refuge, the Front Range Mountain Backdrop project, and the City and County of Boulder’s efforts to create an urban buffer between Boulder and Jefferson counties to mitigate growth-related impacts, such as degradation to air quality and viewsheds as well as increased traffic congestion on local roads.
- iii. Boulder County is willing to work with Denver Water in determining suitable replacement ratios and to also identify areas suitable for offsetting the loss of vegetation communities. Vegetation clearance offsets should be determined by using a ratio of the area to be conserved versus the area to be cleared. This ratio should be determined using indicators of vegetation condition and significance. At a minimum, a 2:1 ratio should apply to areas with patches of native vegetation, to 5:1 for areas of intact vegetation.
- iv. Most of the riparian vegetation impacts are result of inundation of inlets to the reservoir (4.08 total acres, inundation of 2,600 feet of South Boulder Creek and 2,350 feet of Winiger Gulch above the reservoir). Riparian vegetation is a very limited resource and thus difficult to mitigate completely, necessitating a detailed mitigation plan for this area. Appendix M only provides proposed mitigation for loss of riparian vegetation (four acres) and wetland resources (1.95 acres) along the elevated pool level. However, the Draft EIS (including Appendix M) does not provide for replacement of the remaining vegetation communities permanently lost due to inundation. The creation of “new” riparian areas, as described in the Proposed Mitigation Plan (Appendix M), along the elevated pool level is neither

⁵⁹ 40 C.F.R. § 1508.20(e).

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assured nor a sufficient offset to the permanent loss of over 450 acres of vegetation communities, including areas determined to have high value.

- v. Boulder County opposes Denver Water purchasing credits from a wetland mitigation bank outside the South Boulder Creek watershed. Appendix M (Proposed Mitigation Plan) provides two options to compensate for the loss of 1.95 acres of wetlands under the Proposed Action. One option would be for Denver Water to purchase sufficient credits from an approved wetland mitigation bank. Denver Water's first attempt at replacing lost wetlands should occur within the Gross Reservoir expansion area, or greater South Boulder Creek watershed in Boulder County.
- h. Specific mitigation request: compensation for impacts to wildlife
- i. Federal regulations allow for rectifying impacts by "repairing, rehabilitating, or restoring the affected environment."⁶⁰ The Draft documents currently make no mention of any sort of mitigation action for loss of big game habitat. Boulder County has concerns regarding mitigation for the loss of potential elk habitat (vegetation communities). Every effort should be made to retain elk winter concentration area, severe winter range habitat, and the potential elk calving locations in riparian areas in the proposed Gross Reservoir expansion area.
 - ii. The Corps and FERC should impose restrictions for when forested areas are cleared to avoid nesting birds and wintering elk.⁶¹
- i. The Corps and FERC should require Denver Water commit to a management plan for all affected forested area in the Gross Reservoir storage basin (to be further defined).
- i. The Draft EIS is nearly silent on this issue. The FERC License Amendment Application Project No. 2035 alludes to an existing Forest Management Plan on page E-7 and Denver Water's intent to developing a forest treatment plan "...in cooperation with the USFS and other stakeholders in an on-going effort separate from this FERC process."
 - ii. The Corps and FERC should require Denver Water commit to a forest restoration/wildfire mitigation program covering all affected forested area in the Gross storage basin. A firm commitment to time, funds, equipment and other resources, as well as a schedule for preparing and completing the plan within the Gross Reservoir basin that involves all stakeholders and is at least initiated concurrently with any enlargement of Gross Reservoir while site disturbance and equipment are already in the area should be an approval condition for federal permitting.
 - iii. The restoration plan should be a collaborative effort with area property owners; fire protection districts; Colorado State Forest Service; USFS; Boulder County Parks & Open Space, Land Use, and Transportation Departments and in accordance with the Front Range Fuel Treatment Partnership Roundtable guidance. (The USFS, CSFS and Denver Water are all Roundtable members.)

⁶⁰ *Id.* § 1508.20(c).

⁶¹ See Draft EIS, Chap. 4, page 273.

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- iv. The restoration plan should address prevention of ad hoc off-road vehicle trails where none existed before as well as appropriate actions related to the mountain pine beetle.
- j. Specific mitigation request: compensation for construction impacts to Walker Ranch Open Space visitors
 - i. The Draft EIS should be revised to include specific mitigation to visitors of this open space. Construction impact mitigation identified in the Draft EIS should include restrictions on hours/periods (e.g., weekdays and daylight hours only) of construction.⁶²

⁶² *Id.* at Chap. 4, page 364.