

US EPA ARCHIVE DOCUMENT

**FINAL DETERMINATION OF THE
U.S. ENVIRONMENTAL PROTECTION AGENCY'S
ASSISTANT ADMINISTRATOR FOR WATER
PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT
CONCERNING THE TWO FORKS
WATER SUPPLY IMPOUNDMENTS
JEFFERSON AND DOUGLAS COUNTIES, COLORADO**

NOVEMBER 23, 1990

EXECUTIVE SUMMARY

Section 404(c) of the Clean Water Act provides that, if the U.S. Environmental Protection Agency (EPA) determines, after notice and opportunity for public hearing, that unacceptable adverse effects on municipal water supplies, shellfish beds, fishery areas (including spawning and breeding areas), wildlife, or recreational areas will result from the discharge of dredged or fill material into waters of the United States, the Agency may exercise its authority to withdraw or prohibit the specification, or deny, restrict or withdraw the use for specification, of any defined area in the waters of the United States as a disposal site for dredged or fill material.

As established by regulations for implementing the Section 404(c) authority, EPA has prepared a Final Determination regarding the proposed 1.1 million acre-foot (MAF) Two Forks dam and water supply reservoir in the South Platte River in Jefferson and Douglas Counties, Colorado, as well as the 400,000 acre-foot (AF) project and 450,000 AF corrective action proposal. This Final Determination is based on an evaluation of the EPA Region VIII's Recommended Determination, and review and consideration of the administrative record developed in this case, including public comments submitted in response to EPA Region VIII's Proposed Determination and comments received at public hearings held in Denver, Colorado and Grand Island, Nebraska. In addition, this Final Determination reflects careful review and full consideration of written information submitted by the Denver Board of Water Commissioners and the Metropolitan Water Providers, as well as information they conveyed to EPA as part of the Section 404(c) consultation process.

EPA's Final Determination concludes that the discharge of dredged or fill material associated with the proposed 1.1 million AF Two Forks dam and water supply reservoir in the South Platte River in Jefferson and Douglas Counties, Colorado, as well as the 400,000 AF project and 450,000 AF corrective action proposal, would result in unacceptable adverse effects on fishery areas and recreational areas. This conclusion that the subject projects would have unacceptable adverse effects on fishery and recreational areas is based upon two independent grounds. First, EPA finds that the effects are unacceptable in light of the significant loss of or damage to these resources that would occur as a result of the subject projects, which loss and damage is avoidable because practicable, less damaging alternatives are available. Second, EPA has concluded that even if no less damaging practicable alternatives were available, the significance of the damage to fishery and recreational areas caused by the projects would be so great that they would constitute an unacceptable adverse effect under section 404(c), which effects are not adequately compensated for by the mitigation proposed by the Applicant. Based on these findings, this Final Determination prohibits, pursuant to Section 404(c) of the Clean Water Act, the specification of the subject waters of the United States within the South Platte River as a discharge site for dredged or fill material for the purpose of creating any reservoir or impoundment as described in the Two Forks 1.1 million AF proposal, 400,000 AF project and the proposed 450,000 AF corrective action.

I. INTRODUCTION

Section 404(c) of the Clean Water Act (33 U.S.C. Section 1251 *et seq.*) provides that, if the Administrator of the U.S. Environmental Protection Agency (EPA) determines, after notice and opportunity for public hearing, that unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas will result from the discharge of dredged or fill material, he may exercise his authority to withdraw or prohibit the specification, or deny, restrict or withdraw the use for specification, of any defined aquatic area within waters of the United States as a disposal site for dredged or fill material. In 1979, EPA promulgated regulations to implement Section 404(c), which state that before making such a determination, the Administrator must provide an opportunity for consultation with the Chief of the Army Corps of Engineers (Corps), the property owner(s), and the applicant where there has been an application for a Section 404 permit. The procedures for implementation of Section 404(c) are set forth in the Code of Federal Regulations, 40 CFR Part 231.

EPA's regulations for implementing Section 404(c) establish procedures to be followed in exercising the Administrator's authority pursuant to that Section. Three major steps in the process are: 1) the Regional Administrator's proposed decision to withdraw, deny, restrict or prohibit the use of a site (Proposed Determination); 2) the Regional Administrator's recommendation to the Administrator to withdraw, deny, restrict or prohibit the use of a site (Recommended Determination); and 3) the Administrator's final decision to affirm, modify, or rescind the Regional recommendation (Final Determination). In 1984 the EPA Administrator delegated the authority to make final decisions under Section 404(c) to EPA's national Clean Water Act Section 404 program manager, who is the Assistant Administrator for Water. That delegation remains in effect.

In the instant case, this Final Determination concerns the placement of dredged or fill material in the South Platte River in Jefferson and Douglas Counties, Colorado at the site of the 1.1 million acre-foot (MAF) Two Forks proposal as proposed by the Denver Water Department, for the purpose of creating a water supply impoundment.¹ Specific Two Forks project configurations addressed in this Final Determination include the 1.1 MAF proposal, the 400,000 acre-foot (AF) project, and the 450,000 AF proposal submitted by the Applicants as a corrective action during formal consultation proceedings. The 1.1 MAF and 400,000 AF projects are described in detail in the

¹ Although the Denver Board of Water Commissioners applied for a Section 404 permit for this project as the sole applicant, the subject projects would also serve the Metropolitan Water Providers. For the purposes of this Section 404(c) action, EPA has used the term "Applicants" to represent both of these entities. Further, the Denver Board of Water Commissioners is also referred to as the Denver Water Board or the Denver Water Department, which is managed by the Denver Water Board.

Corps of Engineers Environmental Impact Statement (EIS) entitled, "Metropolitan Denver Water Supply EIS, March 1989. The structural design and location of the corrective action proposal is generally the same as the 400,000 AF project. The corrective action proposal is summarized in Section VII, Applicants' Proposed Corrective Action, of this Final Determination and is described in documents submitted by the Applicants and contained in the EPA Headquarters portion of the administrative record.

As stated in the Regional Recommended Determination, the Two Forks reservoir would provide for long-term storage of flows from the South Platte River Basin upstream from the dam and storage of transmountain water diversions from the west slope of Colorado. The Regional Recommended Determination states that the overall purpose of the Two Forks project is provision of a dependable, long-term water supply for the Denver metropolitan area. After review of the administrative record (including the extensive comments submitted by the Applicants), EPA has determined that the Recommended Determination's findings concerning the overall project purpose are correct and supported by the administrative record. For the purposes of this Section 404(c) Final Determination, EPA will consider the basic purpose² of the

² The Section 404(b)(1) Guidelines use the terms "basic purpose" and "overall project purposes" interchangeably. However, for the sake of clarity, this Final Determination will generally refer to the "basic purpose" of the Two Forks proposal. We believe that when examined in the context of the regulations, it is clear that the two terms are not intended to have distinct meanings. The term "basic purpose" is used not only in section 230.10(a)(3), regarding water dependency, but also in section 230.10(a)(2), which describes what would be a practicable alternative. Moreover, the latter section uses the phrases "basic purpose" and "overall project purposes" together in a manner that clearly suggests that the two phrases are not to be used for distinct tests. Further, the preamble language explaining the practicability requirement also uses the terms interchangeably. In addition, we believe it would make little sense to draw a distinction between the terms, thereby establishing a rebuttable presumption that practicable alternatives exist based on a definition of project purpose that differs from the definition used for determining practicability of alternatives. Such a distinction would only cause confusion and administrative difficulties in applying the Guidelines. Additionally, there is clear evidence that the Corps and EPA have consistently considered project purpose in only a single context in other cases, defining it generically so that the determination of practicability is not unduly constrained by applicant preferences. Finally, we do not believe that there is an important distinction between the singular "basic purpose" and the plural "overall project purposes." Both the Corps and EPA have used the singular "basic purpose" or "project purpose" to include more than one concept (e.g., residential housing with recreational amenities). As such, we have read both phrases to have the same meaning, which is a generic, basic purpose test.

proposed activity to be "the provision of dependable, long-term water supply to the Denver metropolitan area."

EPA Region VIII's Regional Decision Officer for this Section 404(c) action has recommended that EPA prohibit the specification of the defined area of the South Platte River as a disposal site for the discharge of fill material in conjunction with any dam or reservoir project. The Regional Decision Officer based this recommendation upon his conclusion that both the 1.1 MAF and 400,000 AF Two Forks projects would cause unacceptable adverse effects to fishery areas, wildlife and recreational areas. The Regional Decision Officer also concluded that less environmentally damaging alternatives were available to meet Denver metropolitan water supply needs and that the existence of these alternatives is a basis for denial of a Section 404 permit under the Section 404(b)(1) Guidelines.

This Final Determination is based on an evaluation by the Assistant Administrator for Water and her staff³ of the Regional Decision Officer's Recommended Determination and review and consideration of the administrative record developed in this case, including public comment submitted in response to the Regional Proposed Determination and comment received at public hearings held in Denver, Colorado and Grand Island, Nebraska. Additionally, this Final Determination also reflects careful review and full consideration of written information submitted by the Two Forks Applicants as well as information conveyed to EPA by the Applicants during the EPA Headquarters Section 404(c) consultation process. The Headquarters consultation is described in Section II, EPA Headquarters Actions, of this document. For the significant issues raised by the Applicants which are not addressed in the body of this document, EPA's specific responses are set out in the Appendix to this Final Determination.

As stated above, the Section 404(c) regulations authorize the prohibition or other restriction of the discharge of dredged or fill material at sites in waters of the United States where it is found that "an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas" would result from this discharge.

EPA has determined that the administrative record supports the conclusion that construction of the Applicants' 1.1 MAF Two Forks proposal, or the Applicants' 450,000 AF corrective action proposal, or the 400,000 AF project, at the Two Forks site on the South Platte River would have an unacceptable adverse effect on fishery areas

³ As discussed in the Appendix (response to comments), EPA Administrator Reilly participated in initiating this Section 404(c) action but did not participate in the Final Determination.

on the South Platte River. Further, EPA has determined that the administrative record supports the conclusion that construction of the Applicants' 1.1 MAF Two Forks proposal, or the Applicants' 450,000 AF corrective action proposal, or the 400,000 AF project, at the Two Forks site on the South Platte River would have an unacceptable adverse effect on recreation areas.⁴

EPA concludes that the three subject projects would have unacceptable adverse effects on fishery and recreation areas based upon two independent grounds. First, EPA finds that the effects are unacceptable in light of the significant loss of or damage to these resources that would occur as a result of the subject projects, which loss or damage is avoidable because practicable, less damaging alternatives are available. Second, EPA has concluded that even if no less damaging practicable alternatives were available, the significance of the damage to fishery and recreational areas caused by the projects would be so great that they would constitute an unacceptable adverse effect under Section 404(c), which effects are not adequately compensated for by the mitigation proposed by the Applicants.

EPA notes that the administrative record confirms that substantial adverse impacts to wildlife would result from inundation of the upland areas directly adjacent to the portion of the South Platte River which would be inundated by the various Two Forks projects. While EPA remains concerned that the loss of this wildlife habitat would have adverse consequences on the terrestrial ecosystem, EPA has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to wildlife under Section 404(c).

In summary, after evaluation of the Recommended Determination and the full administrative record, including written documents and information provided by the Two Forks Section 404 permit Applicants to EPA subsequent to the Recommended Determination, the Assistant Administrator for Water, on behalf of EPA, has determined that the discharge of dredged or fill material in connection with each of the subject Two Forks water supply reservoirs would result in an unacceptable adverse effect on fishery areas and recreational areas. Based on these findings, this Final Determination therefore prohibits the specification of the subject waters of the United States within the South Platte River as a discharge site for dredged or fill material for the purpose of creating any reservoir or impoundment as described in the Two Forks 1.1 MAF proposal, 400,000 AF project and 450,000 AF corrective action proposal in the subject area.

⁴ EPA finds that the adverse effects on both fishery and recreational areas are unacceptable under Section 404(c). Thus, the impacts on either of these resources provide an independent basis for EPA's Section 404(c) determination.

II. EPA HEADQUARTERS ACTIONS

Pursuant to Section 404(c) of the Clean Water Act and the Section 404(c) regulations, after extensive consultation with the Two Forks project Applicants and upon consideration of the administrative record and public comment on the Proposed Determination, EPA Region VIII submitted the Regional Recommended Determination to EPA Headquarters. The Recommended Determination document was signed by Mr. Lee A. DeHihns III, the Regional Decision Officer, on March 26, 1990, and the full administrative record was received by EPA Headquarters on April 17, 1990. As noted in the Recommended Determination, due to his previous lengthy involvement in the Two Forks process, the EPA Region VIII Regional Administrator declined to conduct the Regional Section 404(c) review and delegated authority for that review to Mr. DeHihns.

Pursuant to Section 231.6 of the Section 404(c) regulations, the initial deadline for issuing the Final Determination for the recommended action was June 18, 1990. Due to the magnitude of the administrative record for this case and in consideration of the Applicants' request for additional opportunity to review the administrative record and consult with EPA, the Agency determined that there was good cause for extending the period for EPA Headquarters action on the Regional Recommended Determination until December 14, 1990. Notice of the extension of time was published in the Federal Register on June 20, 1990 (55 FR 25172).

In accordance with the Section 404(c) regulations at Section 231.6, EPA's Headquarters Office of Water offered opportunity for final consultation to the Applicants, the Denver Water Board and Denver Metropolitan Water Providers, and the Director of Civil Works of the Army Corps of Engineers, by letters dated April 30, 1990, and May 3, 1990, respectively. The letters provided the Two Forks permit Applicants and Corps the opportunity to present information which reflects an intent to take corrective action to prevent unacceptable adverse effects from the subject activities. Further, while not required by the Section 404(c) regulations, EPA's letters offered the Applicants the opportunity to respond to the Recommended Determination and to meet with EPA representatives to consult with them concerning any issues related to the Section 404(c) action.

The Corps responded to EPA in a letter from Colonel Wilbur T. Gregory, Jr., Executive Director of Civil Works, which stated that the Corps had no comments on the Recommended Determination on the Two Forks dam. At the request of the Applicants, EPA held a pre-consultation meeting with them on June 27, 1990. At the invitation of EPA, and at the Applicants' suggestion, the Corps attended. Again, at the Applicants' request, on August 3, 1990, EPA granted an extension to the Applicants to comment regarding certain documents in the administrative record. During August 15, through 17, 1990, the Assistant Administrator for Water and EPA staff attended a

consultation meeting in Denver with the Applicants. The travel included site visits to the area that would be affected by the various Two Forks projects as well as the sites of structural alternatives to the Two Forks projects. A meeting between the Applicants' legal representatives and EPA's Office of General Counsel occurred on October 10, 1990. An additional consultation meeting with the Applicants was held at EPA Headquarters on October 15, 1990. A summary of issues discussed at each meeting was prepared by EPA staff and placed in the administrative record. In total, after the date of the Recommended Determination, the project Applicants submitted approximately 800 pages of material to EPA concerning the Recommended Determination, administrative record and proposed corrective action. The Applicants also submitted four boxes of documents to supplement information already contained in the administrative record transmitted to EPA Headquarters by EPA Region VIII. All materials submitted to EPA by the Applicants and summaries of the meetings with the Applicants have been included in the Headquarters portion of the administrative record.

By letter dated May 8, 1990, EPA Headquarters Office of Water contacted landowners who would be affected by the proposed 1.1 MAF Two Forks impoundment. In the letters, EPA offered the landowners a final opportunity to comment on the proposed 1.1 MAF Two Forks project and the Regional Recommended Determination. EPA received eleven letters and one phone call from persons on the list of landowners used for the landowner consultation letter. One letter and the phone response stated the opinion that the project should be allowed to go forward; ten letters stated the opinion that the Two Forks project should not go forward.

The Environmental Defense Fund (EDF) requested a meeting with the Assistant Administrator for Water to discuss the environmental community's concerns regarding EPA Headquarters' review of the Two Forks proposal and the Applicants' proposed corrective action. EPA agreed to the request and a meeting was held with EDF and other members of the Colorado Environmental Caucus on September 25, 1990. A summary of the meeting was prepared by EPA staff and is included in the Headquarters portion of the administrative record.

III. 1.1 MAF RESERVOIR

A. BACKGROUND⁵

Descriptions of the physical features of the 1.1 MAF Two Forks proposal found in the Regional Recommended Determination are supported by the administrative record.

The major physiographic landscape feature in the area that would be directly affected by the 1.1 MAF Two Forks proposal is the segment of the South Platte River corridor between the proposed dam site (approximately one mile downstream from the confluence of the North Fork of the South Platte with the mainstem of the South Platte) and what would be the most upstream extent of the reservoir flood pool on the mainstem, and from the confluence to the most upstream extent of the flood pool on the North Fork. For the mainstem, the upstream boundary of the "normal maximum pool" would be approximately 1.1 to 1.2 stream miles downstream from Cheesman Dam. On the North Fork, the upstream boundary would be approximately five stream miles downstream from the town of Pine, Colorado. The 1.1 MAF Two Forks reservoir would directly affect 30.1 miles of river including 8.8 miles of the North Fork of the South Platte, and 21.3 miles of the mainstem of the South Platte. The aquatic portion of the inundation area is characterized by a free-flowing⁶ riverine system characterized by riffle and pool complexes⁷, with the mainstem in particular characterized by relatively calm shallow water sections interspersed with whitewater segments. The mainstem stream reach downstream of Cheesman Dam approximately to the upper limits of the Wigwam Club is characterized by a relatively narrow stream bed and relatively steep canyon slopes adjacent to the river. This stream segment contains large boulders and has a bed surface of large gravel and cobbles. The segment of the South Platte River downstream of the Wigwam Club to the confluence is characterized by slightly less slope with broad gravel riffles and large deep runs and pools with intermittent outcrops of larger rock assemblages. The adjacent side slopes in this reach are less steep. The

⁵ As stated previously, the 1.1 MAF Two Forks dam and reservoir proposal was the subject of substantial detailed documentation prepared by the Corps of Engineers in their review of the project under the National Environmental Policy Act, Environmental Impact Statement process.

⁶ For the purpose of this document, the term free-flowing denotes a lotic aquatic environment, which is for the most part unimpeded by man-made or natural features which would obstruct the river's flow.

⁷ Riffle and pool complexes are recognized as Special Aquatic Sites under the Section 404(b)(1) Guidelines.

segment of the North Fork of the South Platte which would be affected by the 1.1 MAF Two Forks proposal, has a relatively steep and narrow stream bed characterized by coarse gravels and cobbles.

The flowing aquatic system of the South Platte meanders through adjacent vegetated riparian/wetland systems characterized by scrub-shrub plant communities occurring in relatively small (<1 acre) units, with none of the wetland units larger than 15 acres in size. The most abundant wetland type in the area that would be affected by the project is willow thicket, stream-side mix, willow-sedge and cottonwood-willow. According to the Corps EIS, the wetlands merge with mesic meadow habitats in areas where topography allows for this transition, but abruptly give way to upland habitats in steep areas.

In describing the visual attributes of the area that would be affected by the 1.1 MAF Two Forks proposal, the Final EIS notes that although the flows of the river have been altered by diversion structures and dams upstream of the area, "the channel morphology, with its clear, fast moving water, has a natural appearance." The area adjacent to the river is characterized by upland sparsely forested slopes, rock outcrops, jagged peaks, vegetated meadows and narrow canyons. The EIS also states that the area is sparsely populated and suffers visually from manmade features such as roads and abandoned buildings but only the areas surrounding the towns of Deckers and Trumbull exhibit moderate/low aesthetic values; most of the remainder of the area exhibits high aesthetic values. Aesthetic attributes associated with the river and lands adjacent to the river corridor include distinctive geologic formations such as Eagle Rock, Dome Rock and "the Chutes."

B. AQUATICS

EPA recognizes the extraordinary value of the intrinsic physical, chemical, and biological components of the aquatic environment and has seriously weighed the consequences of adverse alterations to the aquatic ecosystem in reaching the findings and conclusions of this Final Determination. EPA further recognizes the critical relationship between valuable fishery resources and the characteristics of the aquatic ecosystem that sustains those resources. Alteration of vital aquatic ecosystem components can cause a severe and irreversible loss to stream fisheries.

The aquatic ecosystem on the mainstem, characterized by a series of riffle and pool complexes, contains relatively calm shallow water segments, which establish fishery habitat that is highly favorable to rainbow and brown trout populations. Stream components that normally control the stream habitat carrying capacity -- water quality, volume, velocity, depth, and temperature, spawning and breeding areas, food sources, stream substrate, and cover -- are present at levels sufficient to sustain significant fish densities and sizes. Additionally, as noted in the Corps EIS, "The adequate flows and

primary reason for the Resource Category 1 designation was the resilience of the aquatic habitat and its ability to support high trout density and size on a self-sustaining basis, despite heavy angling pressure and unfavorable effects from the operation of Cheesman Reservoir. EPA agrees with the USFWS' evaluation and use of the elements of habitat value analysis and concurs with the USFWS conclusion that even with the measures as proposed in the Service's Coordination Act Report, "there will be unavoidable unreplaceable losses to aquatic resources if Two Forks is built."

C. RECREATION

In reviewing the 1.1 MAF Two Forks proposal and its alternatives, the Corps delineated a "region of use" for identifying recreational features in the vicinity of the subject proposal. The region was defined by the reasonable driving time for day-use recreation in the destination area, two hours from the Denver metropolitan area. The Corps' review found that the South Platte is the largest flowing water resource within this boundary and the region contains 14 recreational reservoir complexes totalling over 30,000 surface acres, and that there are nearly 100 smaller lakes and reservoirs within 100 miles of the Denver metropolitan area. The Corps found that the South Platte corridor is a particularly notable aquatic recreation resource because it is one of three of Colorado's front range rivers exhibiting an annual flow greater than 200,000 AF.

The majority of the land area that would be directly affected by the 1.1 MAF Two Forks, a subset of the "region of use," is owned by the Federal Government and managed by the U.S. Forest Service (USFS). Of 11,395 acres within the project boundary as defined by the 1988 EIS: 6000 acres are managed by USFS, 3,720 acres (2040 Federal and 1680 private) are in a Department of the Interior 1931 right-of-way, 1,500 acres are in private ownership and 3,850 acres are owned by the Denver Water Board.⁹ The Forest Service has recognized the area as one of the most heavily used recreation areas on the front range.

For the purposes of the EIS review of recreational impacts, the Corps defined the project area as that area that would be inundated by the 1.1 MAF Two Forks proposal and lands that would be within at least one mile of the maximum water level elevation. The area is described as a year-round recreation area where the river corridor's natural stream gradients, level areas, vegetation patterns and scenic quality provide for a variety of dispersed recreation activities. Most of the recreational use of the area occurs along the mainstem of the South Platte during the summer, particularly

⁹ These areas overlap and therefore the acreage figures do not add up to the acreage figure presented for the acreage within the project boundary. The Corps notes that "aquatic life analyses to date have focused on the productivity of the riffle/pool ecosystem using trout biomass as an indicator."

weekends and holidays, when up to 4,000 people are present at any one time. During the winter, the area accommodates recreational activities, such as mountain hiking, that are limited throughout much of the rest of the State due to weather conditions.

According to the Corps EIS, the mainstem and North Fork of the South Platte River constitute the major recreation attraction of the area. This attraction of the river corridor is accentuated by the corridor's public accessibility. The free-flowing stretches of the North Fork of the South Platte and the mainstem attract a substantial number of visitors each year and offer multiple recreation opportunities besides fishing, such as canoeing, kayaking, tubing, camping, picnicking, and scenic viewing. The EIS states that a majority of these activities are day use activities. The activities are related, directly and/or indirectly, to the presence of the river. The administrative record confirms that much of the recreational popularity of the area is due to its close proximity to Denver, ease of public access, scenic qualities, and high fishery values. With regard to the availability of comparable recreational attributes, the EIS states that, "... there are few substitutes for dispersed camping and picnicking along a major river in the area with comparable scenic value."

At the present time, approximately 13.9 miles of the mainstem of the South Platte River in the area that would be affected by the 1.1 MAF Two Forks proposal is designated as a "Gold Medal Trout Water" by the Colorado Division of Wildlife (CDOW). This designation identifies Colorado waters, "... which offer the greatest potential for trophy trout fishing and angling success." Prior to a change in fishing regulations in 1988, Gold Medal fisheries on the mainstem of the South Platte extended 21.4 miles along the South Platte River from Cheesman dam to the confluence of the North Fork and the mainstem. At that time, the South Platte was one of only three rivers in eastern Colorado (11 in the State) designated "Gold Medal Trout Water." Currently, the area designated as the "South Platte" (from Cheesman Dam downstream to Scraggy View Picnic Ground, excluding water within the Wigwam Club boundaries) is one of thirteen "Gold Medal Trout Waters" in Colorado (11 stream reaches and 2 lakes, with two of the other sections of Gold Medal waters in the upper reaches of the Platte). With a total annual flow of over 200,000 AF per year, the South Platte is considered a major riverine system and offers fishermen a "big water" experience. The combination of aesthetic attributes and select fishing opportunities has imparted international status to the South Platte fishery.

In addition to the ability of the South Platte River to support an outstanding recreational fishery, the administrative record indicates that the area that would be directly impacted by the 1.1 MAF Two Forks proposal is utilized for recreational boating. According to the administrative record, both the North Fork and the mainstem of the South Platte River accommodate a significant number of canoeists and kayakers enjoying the wide range of recreational canoeing and kayaking opportunities, rated from Class 1 to Class 4 in difficulty. The Corps EIS emphasized the importance

the low elevations of the South Platte River, result in high fish productivity and ideal habitat requirements for large fish."

Over three miles of the South Platte River stream reach from Cheesman Dam to the Wigwam Club support a self-sustaining trout population and has demonstrated a very high inherent carrying capacity. Review of information in the administrative record shows that reliable biomass estimates indicate that this area consistently supports trout biomass in excess of 400 pounds-per-acre. Biomass figures presented in the EIS and other documents contained in the administrative record indicate that the Platte River stream segments downstream from the Wigwam Club also maintain a relatively high biomass of trout. Additionally, more recent information indicates that the biomass figures for those stream segments downstream from Wigwam Club have increased since preparation of the EIS. Since the release of the Final EIS, fish populations in other sections of the mainstem, in particular the section near Deckers, have exhibited a positive response to changes in harvest restrictions. This response is evidence of the overall high productivity of this aquatic ecosystem, and its resilience as indicated by its capacity to support relatively higher biomasses where intense harvesting pressure on the fish population is eased.⁹ Although the sections downstream from Scraggy View picnic area exhibit smaller trout densities and size, they have sustained heavy angling pressure, despite the absence of special harvest restrictions. This river reach has shown a recent increase in biomass, but because the area is stocked, the reason for the increase is indistinct.

As a result of demonstrated habitat values of the subject area of the Platte River, the area below Cheesman Dam to Scraggy View has been formally designated by the U.S. Fish and Wildlife Service (USFWS) as Resource Category 1, indicating the "habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the ecoregion section." With regard to mitigation, the USFWS goal for areas with this designation is no loss of existing habitat value; that goal is not attainable if the 1.1 MAF Two Forks proposal is built. The

⁹ EPA recognizes that biomass data based on field sampling is not ideal for reaching conclusions regarding intrinsic value of an aquatic system because this data may reflect biomass augmentation from fish stocking activities as well as biomass reduction as a result of removal of fish by anglers. EPA believes, however, that the statistical information on fish biomass, recognizing the fishing pressure placed on the stream and the biomass figures presented in the record for the South Platte relative to other stream systems, and the apparent positive response (increase) of the fish population in certain stream segments to decreased removal, as evidenced by the increased biomass resulting from changes to game regulations, provides relevant information concerning the overall vitality of the aquatic ecosystem in segments of the Platte River which would be affected by the project proposal.

of this water-based recreational resource, noting that "The white water boating opportunity is an especially valuable resource in that it is close to metropolitan Denver and there are segments that are suitable for teaching and practicing boating skills."

D. ADVERSE IMPACTS¹⁰

Construction of the 1.1 MAF Two Forks dam and reservoir project would inundate and destroy 281 acres of riffle and pool complexes and 299 acres of riparian wetlands. Alteration of the South Platte River's aquatic ecosystem, including these important elements, would result in the direct loss of intrinsic physical, chemical, and biological components that support high fish densities and other aquatic life forms. The 1.1 MAF Two Forks proposal would inundate and result in the loss of 12.3 miles of USFWS Resource Category 1 designated stream and 8.0 stream miles of USFWS Resource Category 2 designated stream in the South Platte River.¹¹

The administrative record demonstrates that the project would result in the direct loss of an area which currently supports 38,162 pounds of trout biomass. With a projected net gain of 1,587 pounds on the Blue River as a result of project induced flow alterations, a net loss of 36,575 pounds of trout biomass would occur as a direct result of the Two Forks 1.1 MAF project according to the EIS. Biomass data for the South Platte, delineated according to most recent trout density estimates, indicate that the project would result in the loss of 30 acres of 420 lb/acre, 23 acres of 252 lb/acre, 51 acres of 113 lb/acre, 90 acres of 75 lb/acre, and 71 acres of 46 lb/acre. Recent biomass estimates indicate that biomass loss may be greater than indicated in the Final EIS.

The 1.1 MAF Two Forks proposal would convert one of three major flowing river systems on the east slope of Colorado and the largest flowing water resource within a two hour driving distance from Denver into a reservoir resource that is currently not scarce. As stated earlier, the Corps found that within two hours driving time from metropolitan Denver, the region contains numerous recreational reservoir complexes. Additionally, there would be a loss of access to dispersed and developed

¹⁰ This section describes impacts of the project without consideration of mitigation; EPA also considered these impacts as they were affected by proposed mitigation which is addressed in Section VI, Mitigation Measures.

¹¹ Under the U.S. Fish and Wildlife Service's formal Mitigation Policy, areas designated as Resource Category 2 symbolize areas where the habitat to be impacted is of high value for evaluation species and is relatively scarce or becoming scarce on a national basis or in the ecoregion section.

recreation opportunities adjacent to over 30 miles of river corridor which are less than a 1.5 hour drive from the Denver metropolitan area. The proposed project would result in the loss of a broad range of whitewater boating opportunity (rafting, canoeing, kayaking) on both the North Fork and mainstem of the South Platte River.

The EIS estimates that approximately 158,000 recreational visitor days of (RVDs) annual public and private day use and overnight recreation activities directly and indirectly associated with the North Fork and mainstem of the South Platte River would be affected "immediately" by the 1.1 MAF Two Forks proposal. Including beneficial impacts to recreation, the Corps estimated that 177,000 RVDs annually, would be lost by the year 2010 from inundation caused by the 1.1 MAF Two Forks proposal. In summarizing near-term effects of the proposed reservoir, the EIS found that ninety percent of the stream fishing and seventy seven percent of the boating in the project area would be lost as a result of implementation of the 1.1 MAF Two Forks proposal. The EIS notes that, although fishing use would not be completely eliminated, the sharp reduction in the availability of this recreational activity would be locally significant. Loss of boating opportunities would affect fewer visitors, but would still be significant by virtue of proximity to user groups and ease of access. Activities directly related to recreational use of the South Platte River environment would be adversely affected by the proposal.

The EIS notes that implementation of the 1.1 MAF Two Forks proposal would result in significant direct adverse impacts on the visual quality and thereby the overall recreational values associated with the South Platte River corridor. Implementation of the 1.1 MAF Two Forks proposal would result in the inundation of "a variety of water features and vegetative diversity and distinctive geologic features such as Eagle Rock, Dome Rock and the Chutes." Further, in addition to impacts to distinctive visual features along the river corridor, the operation of the reservoir would result in a "bath tub ring" effect on exposed shoreline adjacent to the reservoir pool. The EIS states that, "More than one-half of the inundation area would be exposed at the average pool elevation in 19 out of 28 years, or in about 2 out of every 3 years." In addition, the Corps found that many of the visual and aesthetic qualities associated with the present area would be lost or severely diminished by inundation of the subject area.

Lastly, there would be a loss of public access to ~~quality trout~~ fishing opportunities on approximately 20.5 miles of stream, which includes 13.9 miles of one of the highest quality "Gold Medal Trout Water" stretches in the State. The ability to experience "big water" fishing close to Denver would be lost. The administrative record indicates that areas which arguably provide similar "big water" fishing experiences with the potential to catch large fish are generally more remote from the impacted area or are currently in private ownership. The EIS notes that, "Within a 2-hour driving distance of the Denver metropolitan area, there are no fishing opportunities presently [sic] available that duplicate or substitute for the elements of fish size, abundance and

catch rates found on the South Platte River." Finally, it should be noted that during construction of the dam structure for the 1.1 MAF Two Forks proposal recreational use opportunities in Waterton Canyon would be completely disrupted, including use of the first few miles of the Colorado Trail and the trailhead facilities.

E. CONCLUSION

The Recommended Determination and the administrative record support the conclusion that the South Platte River corridor in the proposed impoundment area supports exceptional aquatic habitat that sustains outstanding fishery resources, particularly below Cheesman Dam through the Deckers area. It is the combination of suitable habitat components -- food source, water quality and velocity, spawning-egg incubation area, and cover -- including riffle-pool complexes which contribute to the distinct fishery characteristics of this section of the South Platte River corridor. The habitat components that constitute this valuable aquatic resource would be irretrievably lost as a result of inundation from the construction and operation of the 1.1 MAF Two Forks Dam and Reservoir. Riparian wetlands located adjacent to the flowing water system would also be lost.

The Recommended Determination and the administrative record also support the conclusion that the South Platte River corridor provides the Denver metropolitan area with outstanding and diverse recreational opportunities. The administrative record confirms the popularity and exceptional recreational value of the South Platte River corridor due to its proximity to the Denver metropolitan area, public accessibility, quality fishery, and scenic values. Inundation would result in the loss of significant recreational features including a highly utilized recreational fishery; a wide, scenic valley that does not constrict use; and a major riverine system that supports a wide range of activities including whitewater boating, picnicking, camping, and scenic viewing.

Inundation of the 1.1 MAF Two Forks reservoir area would result in the loss of the general aesthetic value of the meandering, whitewater riverine system freely flowing through the sparsely forested slopes, rock outcrops, jagged peaks, vegetated meadows and narrow canyons. Lost features of particular aesthetic value would include the picturesque Cheesman Canyon; distinct geologic features such as Dome Rock, Eagle Rock, and the "Chutes"; and the area at the proposed dam site.

EPA concludes that the significant, adverse fishery and recreational impacts associated with the proposed 1.1 MAF Two Forks Dam and Reservoir Project would be profound and would constitute an unacceptable adverse effect to fishery and recreational areas.

IV. 400,000 AF PROJECT

A. BACKGROUND

As with the larger Two Forks proposal, the major physiographic landscape feature that would be directly affected by the 400,000 AF Two Forks project is the South Platte River corridor between the proposed dam site and the upstream extent of the reservoir flood pool on the mainstem and North Fork. For the mainstem, the upstream boundary of the "normal maximum pool" would be approximately 5.7 stream miles downstream from Cheesman Dam. On the North Fork, the upstream boundary would be approximately eight stream miles downstream from the town of Pine, Colorado. The 400,000 AF Two Forks project would inundate and directly affect 22.4 miles of river including 5.7 miles of the North Fork of the South Platte, and 16.7 miles of the mainstem of the South Platte. The dam structure for the 400,000 AF Two Forks project would be placed at the same site as the 1.1 MAF Two Forks proposal and would be of similar design.

It is important to clarify that while the capacity of the 400,000 AF Two Forks project would by definition and design be less than the capacity of the 1.1 MAF proposal, the majority of the land area that would not be inundated by the smaller alternative would be the topographically higher upland areas adjacent to the flood pool. Because the flood pool of either project would naturally follow the topography of the inundation zone and because of the relatively narrow configuration of the South Platte River corridor and the river corridor's slope, inundation of the aquatic zone is disproportionately greater compared to inundation of upland areas. Comparison of the South Platte corridor stream miles inundated by the 1.1 MAF Two Forks proposal and stream miles inundated by the 400,000 AF project reveals that while overall, the area affected by the 400,000 AF project is less than the area affected by the 1.1 MAF proposal, the reduction of impacts to those aquatic resources which are the focus of EPA's review does not directly correspond to the reduction in reservoir pool size from 1.1 MAF to 400,000 AF. Whereas the storage capacity of the 400,000 AF project would be approximately thirty six percent of the capacity of the 1.1 MAF Two Forks proposal, the adverse impacts on aquatic resources directly attributable to reservoir inundation would be more similar to the 1.1 MAF proposal. Section VII, Applicants' Proposed Corrective Action, presents data from the administrative record comparing the relative impacts of the South Platte River reservoir configurations.

Based on the above discussion and review of information in the administrative record, EPA has determined that while the overall extent of environmental losses as a result of stream inundation by the 400,000 AF project would be incrementally less, the majority of the aquatic environment affected exhibits the same ecological characteristics and recreational attributes as the areas described for the 1.1 MAF Two Forks proposal. The similarity of the area impacted by the different Two Forks alternatives is supported

by the fact that the "AFFECTED ENVIRONMENT" section of the Final EIS does not differentiate between the two configurations except in the section on socioeconomics where factors such as demographics and employment are described rather than landscape features.

The most notable landscape feature that would not be directly affected by the 400,000 AF project is the approximately 5.7 mile stream reach of the mainstem South Platte River downstream from Cheesman Dam which would not be inundated by the 400,000 AF project. While this stream reach is somewhat limited in terms of public access, it currently supports significant fish populations. Notwithstanding recognition of the values of those portions of the South Platte not directly inundated, the fishery and aquatic recreational values associated with much of the remainder of the river have been previously described for the 1.1 MAF Two Forks proposal. The analysis provided in the following section on adverse environmental impacts associated with the 400,000 AF project allows comparison of the extent of the inundation into areas previously described in the Background section for the 1.1 MAF Two Forks proposal without unnecessarily duplicating information contained in that section.

B. ADVERSE IMPACTS

As noted above and as confirmed in the administrative record, the type of adverse impact to the aquatic ecosystem of the South Platte River from the 400,000 AF project would be the same as the type of impacts associated with the 1.1 MAF Two Forks proposal. The Corps' EIS states that as a result of the inundation of fewer stream miles on both the North Fork and mainstem of the South Platte, the magnitude of the impacts would be "slightly less" than impacts associated with the 1.1 MAF Two Forks proposal.

Inundation of wetland complexes on the mainstem and North Fork of the South Platte as a result of the 400,000 AF project would result in the direct loss of approximately 213 acres of wetlands and their attendant functions. This acreage represents approximately 50 percent of the wetland acreage in the project vicinity as defined by the Corps. As with the 1.1 MAF Two Forks proposal, the majority of wetland vegetation type lost as a result of the 400,000 AF project would be willow thicket and stream-side mix.

As a direct result of the implementation of the 400,000 AF Two Forks reservoir project, over 22.4 miles of free-flowing stream would be inundated and transformed into a 4,400 acre water supply storage reservoir. In addition to the mile of river inundated between the confluence of the North Fork and mainstem and the dam site, a total of 15.7 miles of the mainstem from the confluence upstream would be inundated by the 400,000 AF project. The EIS states that there would be an associated total loss of riverine trout habitat and biomass within this area. The EIS states, "Therefore, within

this segment, a total of 16,442 pounds of trout would be lost and the loss is considered to be a significant aquatic impact." The project would also inundate 5.7 miles of the North Fork with an attendant loss of riverine trout population and habitat. According to the EIS, approximately 2,498 pounds of trout would be lost as a direct result of inundation of the North Fork.

Recreational attributes of the area of the South Platte which would be inundated are comparable to those for the area which would be inundated by the larger 1.1 MAF Two Forks proposal. Impacts to recreational activities associated with the present river corridor would include the loss of the majority of the current recreational stream fishery on the mainstem as well as a significant portion of the boating activities associated with sections of the river used for tubing, canoeing and kayaking.

In describing the potential recreational use of the reservoir which would be created by either the 1.1 MAF Two Forks proposal or the 400,000 AF project, the Corps EIS stated that the narrow configuration of the reservoir would make effective management of recreational use of the reservoir difficult and result in possible conflicts in recreational uses of the reservoir surface. Further, the extremely steep shoreline that would accompany the reservoir combined with the substantial fluctuations in the reservoir pool and surface would significantly limit use of the shoreline and result in a visually unpleasant recreational experience. The Corps concluded that the actual surface of the reservoir pool would, on average, be located from 500 to 1000 feet from the high water mark. While on average the drawdown would preclude use of boat ramps and marinas an average of once every three years, the Corps predicted that, under full demand conditions during extreme drawdown episodes, the reservoir could remain below the "recreational pool" for up to 13 years. Finally, like the 1.1 MAF Two Forks proposal, the 400,000 AF project would directly alter and significantly affect aesthetic (visual) qualities of the South Platte River corridor in the inundation zone. As with the larger proposal, the 400,000 AF project would result in the inundation of major scenic geologic formations and stream features.

C. CONCLUSION

The Recommended Determination and the administrative record support the conclusion that the 400,000 AF project would result in significant adverse impact to fishery and recreational resources. While avoiding the valuable aquatic habitat in Cheesman Canyon, inundation from the 400,000 AF project would nonetheless result in the loss of exceptional aquatic habitat, extending from the Deckers section to Scraggy View picnic area. With this project, the same valuable aquatic habitat components as would be eliminated by the 1.1 MAF Two Forks reservoir -- food source, water quality and velocity, spawning-egg incubation area, and cover -- would be irretrievably lost from construction and operation of the 400,000 AF Two Forks project. Riparian wetlands located along the river corridor in the 400,000 AF inundation area would also be lost.

The Recommended Determination and the administrative record indicate a loss of recreational opportunities comparable to the 1.1 MAF Two Forks proposal. Except for the Cheesman Canyon and Cathedral Spires area of the North Fork, inundation would result in the loss of a highly utilized river corridor with outstanding recreational value due to its proximity to the Denver metropolitan area, public accessibility, quality fishery, and scenic values. Significant recreational features that would be lost include a highly utilized fishery; a wide, scenic valley that does not restrict use; and a major riverine system that supports a wide range of activities including whitewater boating, picnicking, camping, and scenic viewing.

Inundation in the 400,000 AF Two Forks project area would result in the loss of the general aesthetic value of the meandering, whitewater riverine system freely flowing through sparsely forested slopes, rock outcrops, jagged peaks, vegetated meadows and narrow canyons (located at and near the confluence with the North Fork). Lost features of particular aesthetic value would include distinct geologic features such as Dome Rock, Eagle Rock, and the "Chutes," as well as the area at the dam site.

EPA concludes that the significant, adverse fishery and recreational impacts associated with the 400,000 AF Two Forks Dam and Reservoir Project would be profound and would constitute an unacceptable adverse effect to fishery and recreational areas.

V. ALTERNATIVES ANALYSIS

A. INTRODUCTION

Section 231.2(e) of the Section 404(c) regulations states that in evaluating the unacceptability of impacts on an aquatic ecosystem, consideration should be given to the relevant portions of the Section 404(b)(1) Guidelines (40 CFR Part 230). A fundamental provision of the Section 404(b)(1) Guidelines which is pertinent to EPA's review of the impacts associated with the various Two Forks projects is the alternatives analysis requirement which, in relevant part, provides that, "... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The clear intent of this provision is to assure that degradation of the aquatic ecosystem resulting from the discharge of dredged or fill material into waters of the United States is avoided to the maximum extent practicable. As noted in the conclusion of the Recommended Determination, the existence of practicable alternatives to the subject projects which would have less adverse impacts on the aquatic ecosystem is a basis for denial of a Section 404 permit under the Section 404(b)(1) Guidelines.

1. Basic Purpose

Review of alternatives to a proposed discharge of dredged or fill material in waters of the United States includes a determination of the basic purpose of the proposed action, in order to define the scope of practicable alternatives to be reviewed. The Corps has determined, and EPA concurs, that the definition of basic purpose underlying an applicant's proposed activity must be carried out independently by the reviewing agency without solely relying on the applicant's definition of project purpose. This is not to say that the agency's definition of project purpose cannot be the same as the applicant's or that the applicant's project must, by definition, have alternatives other than those proposed by the applicant. The agency is not charged with determining whether or not the project purpose accurately reflects legitimate concerns or needs of the applicant nor is the agency substituting its judgment for the decisions of elected officials. This judgment means only that the articulation of project purpose must be made by the agency pursuant to the Section 404(b)(1) Guidelines independent of control or direction from the applicant.

In the Final EIS, the Corps stated, "The purpose of Denver's proposed projects¹² is to provide a dependable water supply for the metropolitan area." Later in the

¹² The Corps' analysis included consideration of the Williams Fork proposal. The Williams Fork proposal is not the subject of this Final Determination.

document, the Corps elaborated on the basic purpose stating, "The purpose [of the 1.1 MAF Two Forks project] as viewed by the Federal Government is to provide water to the Denver metropolitan area in a manner which is not contrary to the overall public interest." Additionally, the Corps stated, "In reviewing the Applicant's stated purpose and need, however, it is apparent that the Applicant has defined its purpose and need in terms relating to the two applications [for the 1.1 MAF Two Forks proposal and the Williams Forks proposal] it submitted rather than in terms of a broader purpose and need." In the Corps' March, 1989, "404(b)(1) EVALUATION," the District Engineer noted that he had revisited the Final EIS statement of project purpose and concluded, "... that the project purpose as identified in the Final EIS is a reasonable and proper statement of the basic project purpose as viewed from the broad Federal perspective." In that document, the District Engineer continued:

In evaluating practicable alternatives, I must not only consider the basic project purpose as viewed by the Federal Government, I must also look at the project purpose from the Applicant's perspective. To this end, the Applicant provided me a 10-point project purpose statement. I have evaluated the Applicant's statement as well as comments received on the statement. The Applicant's stated purposes taken at face value would seem to preclude the practicability of any alternative to the 1.1 MAF Two Forks. I believe that it would be inappropriate to accept without question or review a statement of project purpose so narrowly defined.

EPA has reviewed the Corps' statement of project purpose and found that the definition is balanced and reasonable. Further, EPA Headquarters Office of Water has reviewed the Corps' evaluation of the Applicants' project purpose and the evaluation of the project purpose presented in the Recommended Determination. As stated previously, for the purposes of this Section 404(c) Final Determination, EPA will consider the basic purpose of the proposed activity to be "the provision of dependable, long-term water supply to the metropolitan Denver area." EPA Headquarters' Office of Water findings on the Applicants' project purpose submission follows.

B. BASIC PURPOSE AS DEFINED BY APPLICANTS

The Section 404(b)(1) Guidelines recognize that only "practicable" alternatives should be considered in the evaluation of potential project alternatives. Section 230.10(a) states that, "An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes. If it is otherwise a practicable alternative, an area not presently [sic] owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered." Thus, for an alternative to be practicable under the Section 404(b)(1)

Guidelines, it must satisfy the basic purpose of the proposed activity, and it must be available and both technically and economically feasible.

EPA has reviewed the administrative record for this case and finds that the Corps' reformulation of the Applicants' multi-component project purpose as presented in the Corps Section 404(b)(1) Evaluation, as well as the Recommended Determination's general acceptance of this reformulation, is correct. The result is that EPA has accepted as the basic purpose a broader description that more accurately reflects the fundamental project goals and objectives rather than the more specific perspective proposed by the Applicants. Criteria identified by the Applicants are more relevant to selecting among practicable alternatives once they have been determined (and have been found to have similar adverse environmental impacts) in order that project goals may be maximized. These criteria are not, however, relevant to the statement of project purpose because inclusion of these additional factors would inappropriately restrict the review of potential practicable alternatives.

For example, projects that do not meet the specific terms of the South Platte Agreement could nonetheless provide dependable, long-term water supplies. The mere fact that similar arrangements are not currently in place for an otherwise practicable alternative does not make that alternative logistically infeasible. As a consequence, EPA has determined that this is not an element of the basic purpose, as discussed more fully below.

Thus, EPA concludes that application of these additional criteria to alternative projects determined to satisfy the basic purpose could still allow the Applicants to obtain desired project benefits, but ensures that adverse environmental impacts are avoided to the maximum extent practicable as required under the Section 404(b)(1) Guidelines. EPA's analysis regarding the use of the Applicants' formulation of the project purpose to evaluate compliance with the Section 404(b)(1) Guidelines is presented below, outlined to correspond to each component of the Applicants' stated project purpose.

1) Provide Needed Long-Term Water Supplies

As stated in the Recommended Determination, EPA has determined that providing a dependable long-term water supply to metropolitan Denver reflects an appropriately-defined project purpose. In addition, EPA agrees with the Corps' reasoning that the project purpose must be framed in a manner that would allow project alternatives to be evaluated on the basis of their capability of satisfying water demand projections outlined in the Final EIS, and not whether the specific Platte and Colorado Rivers Storage Project Participation Agreement ("South Platte Agreement") for Denver and each of the approximately 40 other beneficiary communities is met.

2) Provide the Greatest Amount of Water at the Least Unit Cost

Inclusion of this component as part of the basic purpose would unduly limit the range of alternatives analyzed as part of the determination regarding compliance with the Section 404(b)(1) Guidelines. As noted in the Corps' evaluation and the Recommended Determination, cost is a relevant factor that must be assessed in determining whether an alternative is practicable. However, while the Section 404(b)(1) Guidelines recognize that only those alternatives that are "cost-competitive" need be examined, the Guidelines do not require that only the "least-cost" alternatives be examined. Restricting the project purpose in the manner proposed by the Applicants would not allow for a complete analysis of all practicable alternatives that would in fact achieve the basic purpose of the project at a reasonable cost. Consequently, EPA concluded that this qualifier should not be included as part of the basic purpose.

3) Alleviate Planning Uncertainties

EPA agrees that alleviating planning uncertainties regarding the supply of water to metropolitan Denver is an important factor relevant to the evaluation of the practicability of potential alternatives to the proposed project. However, as noted in the Recommended Determination and the Corps' Section 404(b)(1) Guidelines Evaluation, EPA believes that this component is substantively inherent in the purpose of providing dependable, long-term water supplies, as it reflects the ability of the project to provide appropriate yield quantities of water. We believe that the project purpose as stated in the Recommended Determination – provision of a dependable, long-term water supply for the Denver metropolitan area – incorporates this proposed component of the project purpose and consequently, isolating this as a separate element is not necessary.

4) Maximize the Utility of Denver's Existing Waterworks System and Water Rights

EPA believes that maximizing the utility of Denver's existing waterworks system and water rights are not an appropriate component of basic purpose, but instead are two factors the Applicants might use to select a project proposal from a range of practicable alternatives which meet the basic purpose, i.e., provision of a dependable, long-term water supply for the Denver metropolitan area. As noted in the Recommended Determination, an alternative which would not maximize the utility of the existing waterworks system, but would provide water supplies to Denver, may be more difficult to operate. However, the increased difficulties in operating the system should not automatically eliminate the alternative from consideration if it is otherwise practicable. In addition, while the status of water rights needs to be considered in evaluating the logistics of an alternative, seeking a maximization of existing water rights as a project purpose would unduly narrow the range of alternatives reviewed. Maximization suggests that only one project could satisfy this criterion when in fact the

Corps' analysis identified several alternatives that would provide significant improvements for the existing waterworks system and water rights. EPA concludes that optimal use of existing water works and water rights is not an appropriate element of the basic purpose.

5) Minimize Institutional and Legal Barriers to the Development of the Needed Water Supply

The Recommended Determination correctly concludes that setting the minimization of institutional and legal barriers as a project purpose would unduly narrow the alternatives analysis and should therefore not be considered an element of the basic purpose. As recognized above, seeking to "minimize" barriers to development of a water supply suggests that only one project could substantively satisfy this element whereas the Corps has identified several project alternatives that do not involve insurmountable barriers for the Applicants. While EPA agrees that practicable alternatives should be capable of being done, i.e., the alternatives should not involve insurmountable legal or institutional barriers, these criteria are not relevant to the statement of project purpose. EPA concludes, therefore, that minimization of institutional and legal barriers is not an appropriate element of the basic purpose of the proposal.

6) Avoid Precluding Post-project Alternatives or Requiring Early Development of Additional Projects

As noted by the Corps Section 404(b)(1) Guidelines Evaluation and the Recommended Determination, this element is very similar to the goal of providing the greatest amount of water at the least unit cost. Avoiding the preclusion of post-project alternatives and the need to develop additional projects within an earlier timeframe are both goals that reduce the unit cost while providing a particular yield quantity. As discussed earlier, cost is a relevant factor that must be assessed in determining whether an alternative is practicable. However, evaluations under the Section 404(b)(1) Guidelines are not intended to exclude those alternatives that represent reasonably higher cost options, but would nonetheless be deemed practicable. Inclusion of this component as part of the basic purpose would unduly limit the range of alternatives analyzed as part of the determination regarding compliance with the Section 404(b)(1) Guidelines. Restricting the project purpose in the manner proposed by the Applicants would not allow for a complete analysis of all practicable alternatives. Consequently, EPA concludes that this qualifier should not be included as part of the basic purpose.

7) Develop the Best Available Reservoir Site

We concur with the Recommended Determination's conclusion that "developing the best available reservoir site" is not an appropriate component of the basic purpose.

In defining a project's basic purpose, it is critical that the purpose not be unduly restricted in such a manner that only one project may essentially be considered to the exclusion of other reasonable alternatives. The Section 404(b)(1) Guidelines alternatives analysis process is designed to ensure the consideration of all alternatives that meet the basic purpose recognizing, however, that there will always be alternatives whose ability to fulfill the basic purpose are better than others. Because the provision of a dependable water supply may be met by reservoirs at a variety of sites, not just the "best" one, including this component in the basic purpose would unnecessarily limit the range of potential alternatives to be examined to only a single alternative and is consequently not appropriate.

8) Provide Sufficient "Reserve" Water Supply and Security Against Interruption

EPA agrees with the applicant that an important component of providing dependable, long-term water supply to metropolitan Denver is the provision of sufficient "reserve" water supply and security against interruption and that, in fact, this element is inherent in the basic purpose identified and accepted by EPA. However, the Corps' Section 404(b)(1) Guidelines Evaluation and the Recommended Determination correctly concluded that the Section 404(b)(1) Guidelines evaluation should not be limited to an analysis of only those alternatives which maximize reserves and security against interruption. Alternatives which do not maximize these functions may meet the basic purpose of providing dependable long-term water supply, but may not necessarily provide the most reserve or the most security. EPA believes that the practicable alternatives identified by the Corps would provide "sufficient" reserve water supply and security against disruption.

9) Build on Metropolitan Water Cooperation

While EPA recognizes the value of cooperation on water supply issues between Denver and its suburban communities, we cannot concur that building on that cooperation is part of the basic purpose. Instead, we believe it is clear that the issue to be evaluated in this case is how to provide dependable long-term water supply to metropolitan Denver area -- a challenge whose practicability does not rest on whether cooperation among public entities is improved. As noted in the Recommended Determination, alternatives which do not meet current water allotment agreements or do not encourage cooperation from other communities may nonetheless be technically and logistically practicable with regard to providing dependable long-term water supplies.

10) Protect the State's Agricultural Economy

EPA agrees that increasing pressure to convert water currently used in irrigated agriculture in northern Colorado for use in the Denver metropolitan area may not be a desirable situation for the State of Colorado. EPA is not convinced, however, that any of the proposed Two Forks projects could significantly relieve this pressure because it is a result of a variety of factors, albeit including metropolitan Denver's need for additional long-term water supplies. This element of the Applicants' purpose criterion is substantially the same as the above criterion that seeks to maximize water supply for the Denver metropolitan area. As previously discussed, EPA believes inclusion of this criterion in the basic purpose would unnecessarily restrict the range of potential practicable alternatives. However, this criterion may be a relevant consideration in assessing adverse environmental impacts associated with an alternative or a factor for the applicant in selecting among any practicable, less damaging alternative.

11) Meet the conditions of the South Platte Agreement

The South Platte Agreement allocates the amount of water to be received by Denver and about 40 suburban communities from the Two Forks project. However, as noted by the Recommended Determination, alternative projects that do not meet the specific terms of the South Platte Agreement could potentially provide dependable, long-term water supplies to the Denver metropolitan area, including all of the parties to the South Platte Agreement. The basic purpose of the agreement is to create a water supply reservoir on the South Platte, which purpose can be met by reservoirs at sites other than the Two Forks location. Moreover, the Applicants do not dispute the absence of concrete legal and institutional barriers to renegotiating this agreement for another project. Nothing in the South Platte Agreement prohibits such a renegotiation. Thus, provisions of the South Platte Agreement could reasonably be negotiated on practicable future projects and the fact that similar arrangements are currently not in place should not disqualify an otherwise practicable alternative as logistically infeasible. Including this requirement that conditions of the South Platte Agreement be met as part of the basic purpose would severely and unnecessarily limit the range of alternatives to be examined as part of the Section 404(b)(1) Guidelines evaluation. Consequently, EPA can not include this factor as an appropriate element of the basic purpose.

12) Provide additional reservoir storage on the South Platte

As noted in the Recommended Determination, alternatives may still be practicable even if they would provide somewhat less yield than the Applicants' preferred project or storage/transfer capacity at a location other than that preferred by the applicant. In this particular case, the Section 404(b)(1) Guidelines evaluation should appropriately involve an examination of all practicable

alternative means of providing dependable, long-term water supply to the metropolitan Denver area, without undue limits as to how, or from where, that water supply is provided. Consequently, EPA concludes that including the provision of additional reservoir storage on the South Platte as an element of the basic purpose would be too restrictive and is therefore not appropriate.

13) Provide water to suburban distributors independent of Denver's tap restriction policies

As noted above and by the Recommended Determination, despite the fact that alternative projects may not meet the specific terms of the South Platte Agreement, such projects could nonetheless provide dependable, long-term water supplies to metropolitan Denver. The fact that the South Platte Agreement allows water yields from the Two Forks project to be used by each community as it determines, without being subject to the usual allocation of taps by Denver, should not restrict the range of alternatives examined to only those that meet the terms of the Agreement. Similar arrangements could be reasonably negotiated on other projects in the future. Including as an element of the basic purpose all or some of the specific provisions of the South Platte Agreement would severely and unnecessarily limit the range of alternatives to be examined as part of the Section 404(b)(1) Guidelines evaluation. EPA, as a result, will not include this factor as an element of the basic purpose.

C. ALTERNATIVES REVIEWED IN THE CORPS' SECTION 404(b)(1) GUIDELINES EVALUATION

In the process of reviewing an application for a Clean Water Act Section 404 permit, the Corps conducts an evaluation of the proposed project's compliance with requirements of the Section 404(b)(1) Guidelines, including an analysis of practicable alternatives that would avoid potential adverse environmental impacts. In conducting their analysis, the Corps considered several alternatives, including a "No Federal Action" alternative as required by the National Environmental Policy Act (NEPA). This and other alternatives reviewed by the Corps are discussed below.

1. The "No Federal Action" Alternative

Based on the definition of project purpose in the EIS, the Corps evaluated and reviewed several alternatives to the Applicants' 1.1 MAF Two Forks proposal. As required by NEPA, the Corps also reviewed a "No Federal Action" alternative. The Corps Final EIS stated that, "A No Federal Action plan was developed by the Federal Government to evaluate the impacts of denying permits to construct either of the projects proposed by the DWB [Denver Water Board] or the alternatives of those projects." (emphasis added) The "No Federal Action" analysis as presented in the EIS is described as a situation where the Federal action is to deny permits for all

alternatives reviewed requiring permits.(emphasis added) As stated in the Corps' Section 404(b)(1) Guidelines Evaluation, the "No Federal Action" alternative for review of the 1.1 MAF Two Forks proposal in the EIS represents only one of many possible outcomes from denial of permits for all of the structural alternatives analyzed.

Subsequent to the review carried out in the EIS, the Corps evaluated the "No Federal Action" alternative in their review of the Section 404 permit application for the 1.1 MAF Two Forks proposal. Based on conclusions regarding factors constraining the development of ground water, factors preventing maximization of future project yields and factors concerning whether or not groundwater is physically available and legally obtainable in the entire Denver metropolitan area, the Corps' March, 1989 Section 404(b)(1) Guidelines Evaluation concluded that the "No Federal Action" alternative was not a practicable alternative under the Section 404(b)(1) Guidelines. EPA has reviewed the Corps' conclusion and finds that, while components of the "No Federal Action" alternative as described by the Corps EIS and Section 404(b)(1) evaluation would clearly contribute to meeting metropolitan Denver's long-term water supply needs, design of the "No Federal Action" alternative does not appear to fully address the basic purpose of dependable, long-term water supply for the Denver metropolitan area. EPA has not based its decision on the availability of non-structural alternatives such as that presented in the "No Federal Action" alternative in the Corps EIS or Section 404(b)(1) Guidelines Evaluation.

The Applicants have suggested that an EPA Section 404(c) "veto" action is analogous to the scenario presented in the Corps EIS "No Federal Action" alternative. To the contrary, EPA's action under Section 404(c) in this case is relevant only to the discharge of dredged or fill material for construction of an impoundment at the proposed Two Forks dam site. Therefore, in taking this action EPA has not prohibited the Corps from issuing permits for other structural alternatives which would effectively satisfy the basic project purpose and which otherwise comply with the Section 404(b)(1) Guidelines and other legal requirements nor has EPA formally endorsed any other alternative.¹³

2. Structural Alternatives

In preparation of the EIS and in reviewing the Section 404 permit application for the 1.1 MAF Two Forks reservoir, in addition to the "No Federal Action" alternative, the Corps evaluated several structural alternatives. South Platte River reservoir alternatives that were evaluated in the Corps EIS and which the Corps

¹³ It should be noted that EPA is unable to specifically utilize the Section 404(c) process in lieu of the Section 404 permitting process to review and approve alternatives; only the Corps may issue a permit under Section 404.

deemed within the capability of the Applicants included, "... a reasonable number and range of alternatives which would satisfy the need for meeting Metropolitan Denver's demand for water ..." Structural alternatives evaluated by the Corps included: the 1.1 MAF Two Forks reservoir, the 400,000 AF Two Forks reservoir, the 743,000 AF New Cheesman reservoir, the 400,000 AF Estabrook reservoir and the 200,000 AF Estabrook reservoir. Thus, five different reservoir scenarios were considered in the Corps' alternatives analysis. Three locations for placement of a dam structure were reviewed: Two Forks, New Cheesman, and Estabrook. Two different storage capacities for two of the locations were evaluated: the 1.1 MAF and 400,000 AF Two Forks projects and the 400,000 AF and 200,000 AF Estabrook alternatives.¹⁴ The two reservoir scenarios which involve construction of a dam at the Two Forks site, and which are, in part, the subject of this Section 404(c) action, are described in Sections III and IV of this Final Determination.

In the Corps Section 404(b)(1) Guidelines review for the 1.1 MAF Two Forks proposal, the Corps performed an alternatives analysis which determined each of the five structural alternatives was practicable as the term is defined under Section 230.10(a) of the Section 404(b)(1) Guidelines. That is, the alternatives each satisfied the basic purpose and were available and capable of being done. After review of the administrative record (including the Corps analysis under the Section 404(b)(1) Guidelines), EPA agrees with the Corps' reasoning and conclusion that the two Estabrook and New Cheesman dam and reservoir projects are practicable alternatives to the 1.1 MAF Two Forks proposal and the 400,000 AF Two Forks project that are, in part, the subject of this Final Determination.¹⁵

¹⁴ The Corps Final EIS, which is in the administrative record, provides a detailed analysis of the various South Platte reservoir alternatives. For the purposes of this Final Determination, that information is not repeated.

¹⁵ The Applicants' comments on availability of practicable alternatives focuses almost entirely on non-structural alternatives (an issue not relevant to this Final Determination) and the definition of basic project purpose (discussed above). The Applicants have not disputed either that the alternatives are within the cost range for reasonable alternatives established in the Corps' EIS and Section 404(b)(1) Guidelines Evaluation, or the absence of institutional barriers for these alternatives. EPA has fully considered the Applicants' other comments regarding the practicability of structural alternatives other than the 1.1 MAF Two Forks proposal. For reasons set forth in the response to comments, EPA has concluded that these comments do not invalidate the Corps' findings regarding practicability.

3. Adverse Impacts of Alternatives

As stated previously, Section 230.10(a) of the Section 404(b)(1) Guidelines requires that " ... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." This provision of the Section 404(b)(1) Guidelines focuses the review on potential alternatives that are both practicable and would have less damage on the aquatic ecosystem than the proposed discharge (i.e., the subject Two Forks configurations). The administrative record and this Final Determination identify three alternatives that are practicable to the subject Two Forks reservoirs: the 400,000 AF Estabrook, the 200,000 AF Estabrook, and the 743,000 AF New Cheesman. Identification of these practicable alternatives now leads to an evaluation of their associated potential adverse environmental impacts to determine whether or not any of these alternatives would, in fact, have less adverse impact on the aquatic environment without other significant adverse environmental impacts. Information that follows regarding impacts associated with the 1.1 MAF Two Forks proposal and 400,000 AF project is provided for purposes of comparison to the three identified alternatives.

Data regarding potential impacts to the aquatic ecosystem associated with the subject Two Forks reservoirs and alternatives are derived directly from information contained in the Corps' March, 1989, Section 404(b)(1) Guidelines Evaluation. Conclusions regarding these potential impacts are summarized below and are provided in this format for the purposes of comparison.

DIRECT LOSS OF RIFFLE AND POOL COMPLEXES

1.1 MAF Two Forks	loss of 281 acres
400,000 AF Two Forks	loss of 196 acres
400,000 AF Estabrook	loss of 41 acres
200,000 AF Estabrook	loss of 22 acres
743,000 AF New Cheesman	loss of 44 acres

DIRECT IMPACTS TO SUSTAINED STANDING CROP OF TROUT IN STREAMS

1.1 MAF Two Forks	loss of 36,575 pounds
400,000 AF Two Forks	loss of 18,200 pounds
400,000 AF Estabrook	loss of 6,400 pounds
200,000 AF Estabrook	loss of 900 pounds
743,000 AF New Cheesman	gain of 4,900 pounds

DIRECT IMPACTS TO WETLANDS

1.1 MAF Two Forks	loss of 299 acres
400,000 AF Two Forks	loss of 214 acres
400,000 AF Estabrook	loss of 248 acres
200,000 AF Estabrook	loss of 188 acres
743,000 AF New Cheesman	loss of 59 acres

Data regarding potential adverse impacts to the aquatic ecosystem associated with the subject Two Forks configurations and the three alternatives summarized in the above table clearly indicate that, with only one exception, the three alternative projects are projected to have fewer adverse impacts. The above table recognizes that the 400,000 AF Two Forks project would be expected to have approximately 34 fewer acres of wetlands impacted than the 400,000 AF Estabrook alternative. However, based on every other comparison of potential impacts to wetlands, trout standing crop, and riffle and pool complexes associated with the subject Two Forks projects and these three alternatives, EPA concludes that the alternatives would each have less adverse impact on the aquatic ecosystem than either the 1.1 MAF Two Forks proposal or the 400,000 AF project.¹⁶

In accordance with section 230.10(a), EPA also considered whether alternatives which are less damaging to the aquatic ecosystem would have "other significant adverse environmental consequences." The Corps stated in its analysis that it expected the direct non-aquatic environmental effects of the alternatives to be significant. The Corps' analysis, however, demonstrates that the non-aquatic environmental impacts of the alternatives would generally be less severe than those associated with the 1.1 MAF and 400,000 AF Two Forks impoundments. Thus, the record demonstrates that the relative nonaquatic, as well as aquatic, impacts of the subject Two Forks projects are greater than the alternatives. In addition, EPA believes that the non-aquatic effects of each of the three alternatives are not sufficient to outweigh the substantially lesser damages to the aquatic ecosystem that area associated with the alternatives as compared with the subject Two Forks projects. EPA therefore concludes that the three alternative projects do not have "other significant adverse consequences" within the meaning of 40 CFR Section 230.10(a).

¹⁶ Although the above analysis is largely quantitative, EPA believes that these quantitative losses alone indicate the significantly larger losses from the proposed projects. However, the administrative record shows that the disparity between the project and the alternatives in terms of quality of environment lost is even greater.

EPA's evaluation of the administrative record regarding the analysis of alternatives leads to the following conclusions:

1. There are three identified alternatives to the subject Two Forks projects that are practicable under the Section 404(b)(1) Guidelines: the 400,000 AF Estabrook, the 200,000 AF Estabrook, and the 743,000 AF New Cheesman.
2. Each of these three practicable alternatives has less adverse impacts on the aquatic ecosystem than either of the subject Two Forks projects.
3. None of these three alternatives to the subject Two Forks projects is expected to produce other significant environmental consequences (when compared to the subject projects).

Therefore, EPA concludes that due to the availability of less damaging practicable alternatives, neither the 1.1 MAF Two Forks proposal nor the 400,000 AF Two Forks project would comply with requirements set forth at Section 230.10(a) of the Section 404(b)(1) Guidelines, because expected project impacts are clearly avoidable.

C. CONCLUSION

Extensive review by the Corps during the NEPA analysis and Section 404(b)(1) Guidelines review for the 1.1 MAF Two Forks proposal found that there were several structural alternatives to satisfy the basic purpose of providing a dependable, long-term water supply to the Denver metropolitan area. After review of the administrative record, EPA finds the Corps' conclusions regarding practicability to be reasonable and supported by the administrative record. Based on impacts to the aquatic ecosystem associated with each of the practicable alternatives, EPA has determined that there are practicable alternatives to the 1.1 MAF Two Forks proposal and 400,000 AF Two Forks project which have less adverse impact on the aquatic ecosystem. After review of the administrative record, EPA further finds that those alternatives do not have other significant adverse consequences. In reaching these findings, EPA has not relied upon any factor of the "No Federal Action" alternative. Further, while there may be additional practicable alternatives which were not addressed in the Corps review or which have emerged since this Section 404(c) action began, EPA has not relied on such information in reaching its findings regarding alternatives.

EPA finds that the alternatives discussed in the above presentation are less damaging to the aquatic ecosystem and do not have other overriding environmental impacts. Because of the clear availability of practicable alternatives to the 1.1 MAF Two Forks proposal and 400,000 AF Two Forks project which would have less adverse impact on the aquatic ecosystem, EPA finds that the impoundment alternatives which would be located at the Two Forks dam site do not satisfy Section 230.10(a) of the Section 404(b)(1) Guidelines.

VI. MITIGATION MEASURES

Recognizing the significant adverse impacts associated with the subject Two Forks reservoirs, the Applicants have proposed an ambitious and extensive set of mitigation measures in an attempt to compensate for these impacts. By proposing these mitigation measures, the Applicants contend that the adverse impacts would be reduced and/or offset to such an extent that the adverse impacts should not be considered "unacceptable" under Section 404(c). Notwithstanding our conclusion that the adverse effects of the subject projects are unacceptable in light of the availability of practicable, less damaging alternatives, EPA has reviewed the mitigation proposed by the Applicants.¹⁷ Based on this review, EPA has determined that the significance of the loss and damage to fishery and recreational areas caused by the subject Two Forks projects would be so great that the mitigation specifically proposed by the Applicants would not provide adequate compensation, and consequently these effects would constitute an unacceptable adverse effect under Section 404(c).

A. DESCRIPTION OF PROPOSED MITIGATION

1. Wetlands

The wetlands mitigation proposed by the Applicants consists of various restoration methods (i.e., "treatment") on 310 acres of riparian lands which would be selected from areas along the North Fork of the South Platte River and along the river in the South Park. Selection would be based on enhancing areas which currently, are generally in a degraded condition. The major treatment methods proposed include the use of hydrologic modification measures within old stream channels and low overbank areas, use of fencing to reduce grazing stress and to allow natural regeneration of wetland vegetation, and use of selected plantings of woody and herbaceous wetland species to increase cover and forage. The Applicants also propose "treatment" of approximately 700 acres of wetlands by the fencing of those segments of the South Platte River which would also be areas utilized for mitigation of impacts to other aquatic resources lost as a result of inundation. Fencing would restrict livestock access which historically has destroyed wetland vegetation. The Corps' proposed permit

¹⁷ The Applicants specifically proposed mitigation as part of its proposed 1.1 MAF impoundment. In addition, the Corps analysis of the 400,000 AF Two Forks impoundment considered mitigation comparable in type to that proposed for the 1.1 MAF proposal, modified to reflect the smaller, 400,000 AF project. Thus, EPA's concerns expressed below regarding the mitigation proposed by the Applicants for the 1.1 MAF proposal apply equally to the 400,000 AF project. The Agency's analysis of mitigation associated with the Applicants' corrective action proposal is contained in Section VII, Applicants' Proposed Corrective Action, below.

conditions would require the development of a detailed wetlands mitigation work plan within two years of permit issuance.

2. Aquatics

In their mitigation plan as offered in the January, 1989, Corps Permit Conditions document, the Applicants propose "one of the most extensive mitigation plans for fish ever planned in Colorado." The primary geographic focus of the aquatics mitigation plan is the upper South Platte Basin. The aquatics mitigation proposal contains four general components:

- (1) Stream Habitat Mitigation
- (2) West Slope Stream Mitigation
- (3) Reservoir Fishery Benefits
- (4) Stream Access Additions

These components are described further below. It should be noted that the Corps' proposed permit conditions would require the development of an aquatic mitigation implementation plan within two years of permit issuance.

a. Stream Habitat Mitigation

The Applicants propose to enhance instream habitat primarily in the South Platte drainage to cause an increase in game fish biomass equal to or exceeding 90 percent of the net stream biomass lost (36,575 pounds) as a result of the 1.1 MAF Two Forks reservoir. This enhancement is proposed to be accomplished by improving stream habitat through modification of reservoir releases in the South Platte and Blue River systems. This modification of flows, termed an "operational flow plan," is proposed and designed to achieve a balance between stabilized stream flow conditions for extended periods of time, reductions of peaks at high flow periods, increased flow during winters, reservoir water storage levels for recreational reservoir fisheries, and more gradual operational transitions between high and low flows. This operational flow plan is described in the Applicants' document entitled "Operational Flow Plan and Reservoir Reclamation Program For The Denver Water Department Raw Water System, Draft Final, November 1987." The Applicants propose to implement this plan primarily to increase trout biomass in the upper South Platte River drainage.

The Applicants state that "the [operational] flow plan is dependent upon Two Forks and cannot be implemented prior to the completion of the project." (August 31, 1990 submission, Attachment 1, "Summary of Agreement Regarding Mitigation of

Aquatics and Wildlife Impacts Resulting From Two Forks Dam and Reservoir, page 2) The mitigation plan in the January, 1989 Corps Permit Conditions document also states that "very little flexibility currently exists to manage flows on the South Platte River for fishery habitat without losing water developed for metropolitan water customers. The addition of Two Forks will provide greatly increased flexibility." Because of these constraints, the mitigation plan notes that the operational flow plan would be implemented only after Two Forks is on line. It is proposed by the Applicants that the flow plan would also assist in reservoir "rehabilitation" efforts developed to improve reservoir fisheries.

The Applicants propose the installation of a low level outlet valve at Elevenmile Reservoir to minimize warmer surface water releases. It is suggested that the resulting controlled release of water from the reservoir would improve trout habitat in the stream below the reservoir.

The Applicants also propose to implement watershed improvements on 87 miles of sport fish habitat, in cooperation with CDOW. Watershed habitat improvement techniques could include: fencing, revegetation, log rafts, tree revetments, riprap, boulder placement, gabions, low water dams, deflectors, and flow optimization. The Applicants propose to establish a \$10 million trust to fund expenditures for watershed habitat improvements, stream monitoring, expanded fish propagation facilities, and operation and maintenance of those expanded facilities.

b. West Slope Stream Mitigation

The Applicants propose to improve the stream fishery on the Blue River in Summit County by flow enhancement. Through the operation of the Two Forks reservoir, the Applicants propose to reduce peak flows on the Blue River between Dillon Dam and Green Mountain Reservoir. It is stated in the Applicants mitigation plan contained in the January, 1989, Corps Permit Conditions document that the reduction of those peaks would substantially improve fish habitat on the Blue River.

c. Reservoir Fishery Benefits

The Applicants propose to use the trust fund to (1) enable CDOW to effect necessary fish propagation and stocking of Two Forks reservoir; (2) expand the Colorado Fish Program System; and, (3) annually stock and provide fishery maintenance at the reservoir conducted by CDOW. The Applicants would consult with CDOW to ensure strategic placement of habitat improvement structures in the reservoir bottom, and implement fish stocking as soon as Two Forks reservoir begins to fill. Moreover, the Applicants would make available additional reservoirs for rehabilitation of reservoir fisheries, and the stream fisheries above these reservoirs, and construct a spawning channel near the inlet of Spinney Mountain Reservoir. The Applicants would also

make available to CDOW the opportunity to renovate Tarryall Reservoir. Finally, the Applicants propose conveyance to CDOW of water rights needed to continue to operate existing nursery raceways located below Chatfield Reservoir as well as the planned expansion of those runs. (January 1989 Corp Permit Conditions Document)

The Applicants propose to supplement fish biomass by stocking the new Two Forks reservoir and "reclaiming" and restocking other South Platte reservoirs. The Two Forks reservoir would be available for fishing. The Applicants maintain that because Antero, Spinney, Elevenmile, Tarryall, and Cheesman reservoirs contain more "rough" fish (e.g., suckers, yellow perch) than trout, salmon or other game fish, conversion to game fish from "rough" fish would "greatly improve" recreational fishing. As described in the operational flow plan, the Applicants would "reclaim" the river/reservoir system by removing all fish and restocking with game fish (e.g., trout, salmon) which "temporarily" results in nearly 100 percent game fish. The Applicants have noted that it is most efficient to "reclaim" with rotenone, a fish neurotoxin. This would result in "rough" fish being almost totally eliminated from the reservoirs, generally taking quite a few years to become reestablished. According to the operational flow plan, the initial reservoir reclamation program would take, at a minimum, over four years to complete. This "reclamation" procedure requires human intervention to maintain as there is an initial chemical "reclamation" program, and then periodic "reclamation" as needed. The Applicants acknowledge that public reaction to "reclamation" is usually negative. Therefore, a public information program would have to be developed and initiated prior to starting any reclamation. The Applicants have also stated that public concern could be defused to some extent by liberalizing harvest limits during the year prior to "reclamation."

d. Stream Access Additions

The Applicants propose to provide public access to 13.9 miles of previously private streambank along quality fishing reaches. Further, the Applicants would form a Wildlife Mitigation Team with CDOW to coordinate implementation of aquatics mitigation and use the trust fund to monitor the stream fishery.

3. Recreation

Regarding mitigation for the recreation impacts resulting from the 1.1 MAF Two Forks reservoir, as with the aquatic impacts, the Corps proposed to require that, within two years of permit issuance, the Applicants develop a mitigation implementation plan. The plan for recreation mitigation would be developed in conjunction with the U.S. Forest Service and submitted to the District Engineer for approval prior to dam construction.

In general, the Applicants propose to create a 55-mile long multiple-use recreation corridor from Chatfield State Recreation Area to Lake George. This corridor would include:

- A South Platte Visitor Center at Kassler, urban gateway to the South Platte Basin;
- New picnic sites in Waterton Canyon;
- 13 miles of new trails in the vicinity of Two Forks;
- 17 miles of relocated trails around Two Forks;
- Boat ramps and attendant road improvements on both arms of the reservoir;
- Reservoir boating and fishing;
- Support for a pristine non-motorized recreation area on the west side of the reservoir;
- Overnight campgrounds with 100 campsites;
- Picnic grounds and parking areas for day use;
- Scenic backcountry trout fishing and hiking in Wildcat Canyon;
- Additional picnicking and camping facilities near Lake George; and
- Improved kayak opportunities, with put-ins and take-outs on the North Fork.

Further, the Applicants would propose to provide recreational improvements (1) along 25 miles of the North Fork; (2) within Waterton Canyon; and, (3) to the river south of Cheesman reservoir.

B. ANALYSIS OF PROPOSED MITIGATION

As described elsewhere in this Final Determination (Sections III and IV, VII, Applicants' Proposed Corrective Action), the nature and scope of the adverse impacts to the aquatic ecosystem and fisheries as well as to the recreational values of the site resulting from any of the Two Forks projects would be very extensive. As a result of implementation of the 1.1 MAF Two Forks proposal, there would be a direct loss of

30.1 miles of a relatively large, free-flowing river system which is in close proximity to a major metropolitan area and which has unusually high habitat, recreation, and aesthetic values. To attempt to address those lost values would clearly require an extensive mitigation plan and effort.

For the reasons explained below, the EPA Headquarters Office of Water has reviewed the mitigation offered by the Applicants and determined that it would not adequately offset the adverse effects to fisheries and recreation areas that would be caused by creation of the Two Forks impoundments. This conclusion is based upon two findings. First, due to the magnitude of the undertaking, the many uncertainties involved in implementing mitigation on such a scale, and the lack of specificity in the proposals, EPA questions whether the Applicants' mitigation goals are achievable. Second, even if the mitigation objectives were achieved, they would replace the current, vital aquatic ecosystem offering exceptional fishery and recreational values within a single location easily accessible to Metropolitan Denver with lesser quality recreational and fishery areas, disparately located, and which would require human intervention to create and maintain. Based on this record, EPA finds that such "compensation" would not be adequate.¹⁸

1. Uncertainty Regarding Achievability of Mitigation Objectives

Information in the administrative record regarding the proposed mitigation measures underscores the difficulties and uncertainties involved in mitigating for the extensive losses that would result from construction of any of the subject the Two Forks projects. The mitigation requirements proposed to be included in the Corps Section 404 permit are extensive and cover many issues. A number of the proposed mitigation actions would be complex, and others costly. However, EPA's review of the

¹⁸ The Applicants have argued that EPA was required, as part of the consultation process, to enter into extended discussions regarding the mitigation measures that would address EPA's concerns about the adverse impacts of the Two Forks impoundments. However, as discussed in Section II, above, the Assistant Administrator for Water and her staff have consulted extensively with the Applicants in order to discuss the issues in this proceeding. EPA does not believe the statutory and regulatory provisions relating to consultation impose on the Agency the obligation to redesign the Applicants' mitigation proposals, as opposed to consulting with the Applicant regarding the information in the record or additional information the Applicants wish to provide. As discussed below, EPA has concluded the mitigation proposed by the Applicants would not adequately compensate for the resources that would be lost if the Two Forks impoundments were to be built, and this conclusion is supported by the administrative record.

administrative record shows significant uncertainty with respect to the nature and effectiveness of some of the proposed mitigation, in part because of the inherent difficulty in undertaking any mitigation effort to address such extensive impacts. The proposed mitigation requirements set goals for what the mitigation should achieve, but there are relatively few specifics as to how those goals would be achieved. Indeed, the proposed permit conditions require the development of "specific implementation plans" for, inter alia, recreation and aquatics mitigation. Those particular plans are to be developed within two years of permit issuance, to provide for certain goals identified in the permit conditions. The time period needed for developing plans clearly reflects the difficulty in even designing appropriate mitigation on such a scale. However, it also adds significant uncertainty as to precisely what mitigation actions would be undertaken and what likelihood of success they would have. In addition, this uncertainty regarding the yet to be developed mitigation plans makes it difficult to determine whether the mitigation measures would be reasonably implementable or enforceable as permit conditions, further underscoring the unacceptability of the mitigation to account for the adverse effects to fishery and recreation areas.

It appears that some of the mitigation goals would involve methods which, EPA believes, may not in fact achieve the mitigation goals. The primary method through which the Applicants would achieve biomass increases is through the operational flow plan. However, increasing fish biomass through this method is an uncertain "science" because of the difficulties inherent in manipulating land-scape scale habitat components. Concern with the ability of this technique to achieve mitigation objections has also been expressed by the Corps, which stated in the EIS:

It does not appear that 90 percent replacement can be achieved with the number of stream miles proposed for watershed habitat improvements proposed in the Applicant's plan. The Applicant appears to be relying to a greater degree on flow modifications to obtain 90 percent replacement than is believed appropriate at this time. However, the prediction of sustained standing crop increases due to flow modification and watershed improvements is not an exact science and 90 percent replacement of biomass may indeed be attained with the Applicant's plan. Nevertheless, at the present time, it is believed that more stream miles will need to undergo watershed improvements in order to achieve 90 percent replacement. (emphasis added)

The uncertainties associated with increasing fish biomass through an operational flow plan, stream habitat enhancement and riparian restoration are substantial. The Applicants would essentially seek to recreate the physical characteristics which naturally occur in the South Platte project area and which are necessary to support indigenous fisheries. The necessary elements include riffle and pool complexes, as well as substrate conditions (i.e., gravel, cobble, boulders) which help support invertebrate communities that serve as a food source for fish populations, and vegetative cover which helps

maintain favorable conditions for fisheries. The streams intended to be enhanced by the mitigation measures, unlike the canyon streams in the South Platte area, are meandering bodies of water traveling through open vegetated meadows which do not have comparable water quality conditions, substrate or vegetative cover.¹⁹

The uncertainty regarding the potential success of the proposed mitigation is underscored by the extended period of time that would be needed before mitigation is fully implemented. Regarding mitigation for fisheries, the proposed permit conditions provide that "at least 90% of the net loss of instream trout biomass shall be replaced, within ten years of implementation of the flow management plan [also called the operational flow plan]..." There would be a significant delay before even this level of replacement would occur. The operational flow plan is to be commenced "immediately following the completion of the reservoir reclamation program," which in turn would be "implemented immediately upon completion of construction." According to the operational flow plan, under optimum hydrologic conditions, it would take over four years to complete "reclamation" of the reservoirs. However, the Applicants acknowledge that "the most likely sequence of events for initial reclamation would have to include longer periods during different parts of the program to account for natural hydrologic events (wetter or drier years than average)." In addition, the Applicants have stated that a reasonable period of time to validate the results of the aquatics mitigation is ten years after implementation of the operational flow plan.

2. Inadequacy of Mitigation Objectives to Compensate for Damage and Loss to Fisheries and Recreational Areas

Even if all of the problems discussed above could be overcome, the Assistant Administrator for Water finds that the exceptional recreational and fishery values lost and damaged by creation of the Two Forks impoundments would not be compensated for by the proposed mitigation.

The chief deficiency in the recreation mitigation proposed by the Applicants is that it would replace a location where the public can enjoy a multitude of recreational activities in a spectacular aesthetic setting close to Denver with less diverse recreational

¹⁹ EPA's 404(b)(1) guidelines recognize the unique hydrological characteristics of riffle and pool complexes, which are one of the areas defined as a "special aquatic site." Section 230.45. Riffles are characterized by the rapid movement of water over a coarse substrate in riffles resulting in a rough flow, a turbulent surface and high dissolved oxygen levels in the water; pools are characterized by slower stream velocity, a streaming flow, a smooth surface and a finer substrate, conditions which are highly conducive to formation of the high fish biomass found in the South Platte area, and which are not naturally occurring in the rivers proposed for aquatics mitigation.

components scattered at various locations generally further from the City. This concern was echoed by the Corps in the EIS:

Opportunities appear to exist to replicate the lost recreation opportunities through a variety of acquisition and development schemes involving lands that are currently unavailable to the public. However, since no substitute areas exist which can provide the same combination of quality recreation opportunities in the same location, the mitigation measures identify different, although sometimes overlapping, areas for mitigation of the major impacts: the Blue and Colorado Rivers and Williams Fork for quality fishing; the North Fork of the South Platte and Blue Rivers below Rock Creek for rafting and kayaking; and the North Fork of the South Platte River for dispersed recreation. The fact that these measures could exceed the actual acres or stream miles affected by the project does not imply "over" compensation, but merely recognizes the scarcity of large river resources, like the South Platte River, which are capable of simultaneously accommodating a multiplicity of quality recreation activities. (emphasis added)

For example, part of the recreational fishing mitigation consists of stocking the Two Forks reservoir and "reclaiming" and restocking other, existing South Platte reservoirs. This open water fishing would not be a comparable recreational experience to the instream fishing now provided by the site. While the proposed mitigation would also provide new public access for instream fishing, the affected areas would not be remotely comparable to the lost areas because they would be further from Denver, they would not replicate the lost fishing opportunities in terms of fish size or abundance, nor would they compensate for lost boating opportunities. As stated by the Corps in the EIS:

Impacts to rafting and kayaking on the Colorado River would still remain after mitigation. In addition, displacement of uses in Waterton Canyon, other than the relocation of the Colorado Trail, would still remain. While this displacement was identified as temporary, it is nevertheless important because of the estimated 7-year time period involved.

Public access to a quality fishing opportunity within 50 miles or less than an hour's drive of the Metropolitan Denver [sic], would be lost. After hours and short day trips for quality fishing would not be available. None of the segments that replace the last public access to a quality trout fishery is capable of reproducing the combination of fish size, abundance of fish and spectacular scenic setting in the 1.5 miles of Cheesman Canyon which would be lost to inundation. None of the proposed mitigation actions would replace the unique combination of recreation opportunities which includes quality stream fishing in as close proximity to population centers and user groups.

Thus, while the proposed mitigation provides "comparable" compensation measured solely in terms of the number of stream miles enhanced as compared with the number of miles lost, EPA does not believe that such an arithmetic approach captures the important combination of values of the systems lost and created. EPA's evaluation has, rather, focused on the totality of the recreational values that would be impacted and the extent to which the mitigation measures would compensate for those losses. In EPA's judgment, based upon this record, the Agency concludes that the recreational mitigation offered by the Applicants would not compensate for the exceptional recreational opportunities that would be lost, and therefore finds that the adverse impacts to recreation are therefore unacceptable under section 404(c).

EPA also believes that the proposed mitigation for fisheries, even if successful, would not adequately compensate for the damage to and loss of this resource that would occur as a result of the Two Forks projects. The Applicants propose to duplicate a robust, naturally occurring, integrated aquatic ecosystem through alteration of other aquatic habitat, artificially modifying that habitat in an attempt to create high quality habitat conditions necessary to support and sustain significant numbers and densities of fish. One tangible result of this (which the Applicants concede) is that the fish biomass densities would necessarily be lower in the mitigated streams than in the lost portions of the South Platte area. While the Applicants seek to compensate for this deficiency by mitigating more stream miles, this does not compensate for the fact that they cannot recreate the exceptional existing conditions which sustain high fish biomass densities in the South Platte river corridor. In addition, the Applicants' exclusive focus on biomass neglects other important measures of population vitality, including whether an appropriate range of age classes has been established. Moreover, as a result of this narrow focus, the mitigation proposals do not completely address loss of the specific type of habitat; such replacement would, of course, be virtually impossible because it would essentially require construction of a free-flowing river system, including a canyon.

EPA's concerns that the Applicants are not compensating for the unique habitat values in the South Platte River corridor are shared by the Corps. While the EIS acknowledged that proposed habitat improvement would seek to compensate for a substantial amount of the habitat and biomass loss by improving conditions on certain streams, the Corps stated:

The creation of the proposed 1.1 MAF Two Forks reservoir would constitute the most significant impact to fish populations in the South Platte River System The instream mitigative measures would not result in a quality habitat equal to that which would be impacted by the proposed Two Forks project in another riverine habitat of equal size.

Finally, part of the mitigation proposed by the Applicants involves "reclaiming" and restocking several South Platte reservoirs with game fish. This procedure requires an initial treatment of the water column with a neurotoxin to kill almost all fish, prior to restocking with game fish. Thus, this mitigation measure would eliminate the existing diverse, indigenous fish populations of those areas in favor of a human induced and maintained fish population. As "rough" fish populations (e.g., suckers, yellow perch) reestablish, treatment and restocking would again be necessary at periodic intervals. In short, the Applicants propose to replace of a naturally occurring, well-balanced fisheries ecosystem with a variety of artificially created aquatic habitats that will continually require human intervention to foster and maintain.

Based on factors discussed above, EPA concludes that the compensatory mitigation offered by the Applicant, even if successful, would not compensate for the fishery areas lost as a result of the subject Two Forks impoundments.

C. SUMMARY OF MITIGATION ANALYSIS

In conclusion, EPA recognizes the difficulty in compensating for losses to fisheries and recreation of the scope and nature of those that would result from any of the Two Forks projects. The Agency also recognizes that the proposed mitigation requirements are fairly extensive, and reflect the difficulty in even designing goals for such mitigation measures. However, we find that all of the proposed mitigation measures for fisheries and recreation would, even under the best of circumstances with respect to design and implementation, result in significant losses to fisheries and to recreation areas remaining after completion of the project.

VII. APPLICANTS' PROPOSED CORRECTIVE ACTION

A. BACKGROUND

As stated in Section II of this document, in response to final consultation procedures outlined in Section 231.6 of EPA's Section 404(c) regulations, the Applicants submitted a corrective action proposal to EPA Headquarters in a document entitled "Corrective Actions For The Denver Area's South Platte Storage Proposal, July 20, 1990." The Applicants submitted additional supplementary information in a document entitled "Responses to EPA Questions & Requests for Information, August 31, 1990." The Applicants also submitted an August 31, 1990 letter and enclosures to EPA entitled "Supplemental Materials to Accompany the August 31, 1990, Corrective Action Submittal." These materials were not submitted to the Region VIII Regional Decision Officer for his review and consideration and, therefore, were not addressed in EPA Region VIII's Recommended Determination.

The proposed corrective action is basically the 400,000 AF Two Forks project that was reviewed as an alternative to the 1.1 MAF Two Forks proposal in the EIS. For purposes of the corrective action, the impoundment size was increased to 450,000 AF and the reservoir operation modified for implementation of an operational flow plan. The corrective action proposes a reservoir with the dam structure at the same site as the 1.1 MAF Two Forks proposal. Because the aquatic environment that would be directly affected by the corrective action proposal is substantially the same as the area that would be affected by the 400,000 AF project reviewed in the EIS, much of the information used by EPA in its review of the affected environment is based on material in the EIS in addition to materials submitted by the Applicants. The corrective action alternative would have 400,000 AF of storage available for water supply, and 50,000 AF of storage available for aquatic flow management upstream of the reservoir.

As with the other Two Forks projects, the major physiographic landscape feature that would be directly affected by the 450,000 AF Two Forks proposal is the South Platte River corridor between the proposed dam site, and the upstream extent of the reservoir flood pool on the mainstem and North Fork. For the mainstem, the upstream boundary of the "normal maximum pool" would be approximately 4.3 stream miles downstream from Cheesman Dam (one tenth of a mile upstream from the lower boundary of the Wigwam Club). On the North Fork, the upstream boundary would be approximately 7.6 stream miles downstream from the town of Pine, Colorado. The 450,000 AF corrective action reservoir would directly affect 24.2 miles of river including 6.1 miles of the North Fork of the South Platte, and 18.1 miles of the mainstem of the South Platte. As stated previously, the dam structure for the 450,000 AF Two Forks proposal would be placed at the same site as the 1.1 MAF Two Forks proposal and 400,000 AF project and would be of similar design. In addition, the corrective action

proposal includes modifications in the timing of filling the reservoir, relative to implementation of the mitigation.

B. ADVERSE IMPACTS

The corrective action proposal would inundate a diverse riverine, wetland, riparian complex with significant aquatic/fishery and recreation values. A summary of the adverse environmental impacts to wetlands, recreation, and aquatics follows.

1. Wetland/Riparian Communities

The corrective action proposal would result in 226 acres of wetlands lost (Applicant submission, August 31, 1990, Table 1, page 3), which is approximately 52 percent of the wetland resources within the project vicinity, as defined by the Corps in the EIS process to include the reservoir impoundment zone and a surrounding buffer. Based on the EIS discussion of the 400,000 AF project, wetland/riparian resources lost would be concentrated along the stream reach inundated and direct losses would primarily affect scrub-shrub communities, with the willow thicket and stream-side mix types having the greatest losses.

2. Recreation

The construction of the corrective action proposal would result in the inundation of 24.2 miles of the North Fork and mainstem of the South Platte River. Inundation of these river reaches would eliminate most of the existing recreation opportunities directly and indirectly associated with this portion of the South Platte system including stream fishing, developed camping, scenic viewing, river boating, tubing, and picnicking. Private facilities within the project area would also be lost as a direct result of inundation. In addition, as noted in the EIS, existing public access to recreation resources would be greatly reduced as a result of inundation of roads and trails.

The opportunity for outdoor recreation along riverways is in high and growing demand. Furthermore, "the South Platte project area is the only area within a convenient day-use driving distance where a relatively natural setting along a major waterway is available for public dispersed recreation use" Including beneficial recreational impacts from use of the reservoir, it is estimated that 111,000 RVDs annually, would be lost by the year 2010 from inundation caused by the 400,000 AF project. Actual recreational impacts would be expected to be slightly higher for the 450,000 AF corrective action proposal. As with the 1.1 MAF Two Forks proposal, the proposed corrective action reservoir would completely disrupt the recreation use opportunities in Waterton Canyon during construction, including use of the first few miles of the Colorado Trail and the trailhead facilities.

3. Aquatics

As stated above, the corrective action proposal would inundate 18.1 miles of the mainstem of the South Platte River, and 6.1 miles of the North Fork of the Platte River (Applicant Submission, August 31, 1990). Therefore, the corrective action proposal would result in the inundation of a total of 24.2 miles of free-flowing miles on the South Platte River. Of the total South Platte River miles which would be inundated for the corrective action proposal, EPA Headquarters estimates that 17.5 miles are currently classified as a "Gold Medal Trout Water" fishery by CDO. The corrective action proposal would result in the inundation and direct loss of approximately 77 percent of the current Gold Medal stretch on the South Platte River project area. The Applicants have estimated that the inundation from the corrective action proposal would result in a sustained trout standing crop loss of 19,527 pounds of biomass (Applicant Submission, August 31, 1990, Table 1, page 3). The corrective action proposal would also result in the loss of at least 196 acres of riffle/pool complexes.

C. PROPOSED CORRECTIVE ACTION MITIGATION

The fundamental elements of the mitigation plan submitted by the Applicants for their corrective action proposal are the same as the elements of the mitigation plan proposed by the Applicants for the 1.1 MAF Two Forks impoundment proposal. However, to compensate for adverse environmental impacts associated with the proposed corrective action impoundment and to distinguish the proposal from the 400,000 AF project, the Applicants propose to mitigate impacts prior to actual reservoir impacts.

If the corrective action project were implemented as proposed by the Applicants, the 450,000 AF reservoir would be filled in phases. Before filling each phase, and before inundating each associated river reach, the Applicants would ensure that appropriate mitigation for the adverse impacts of inundation occurred in advance of any inundation. To meet this objective, the Applicants have proposed three interim pools, the filling of which would be phased at interim levels of 68,000 AF and 150,000 AF, and a final storage pool at 450,000 AF. The Applicants propose to fully mitigate the adverse environmental impacts associated with each reservoir pool before the inundation of the next pool. The corrective action proposal for phased inundation includes:

Phase I. Prior to construction of the impoundment, it is proposed that the fishery, recreation, and wetlands mitigation would be put in place to mitigate impacts from the dam construction and the initial 68,000 AF pool.

Phase II. A dam would be constructed at the Two Forks site with a potential total impoundment capacity of 450,000 AF. The impoundment would be filled

an interim level of 68,000 AF. Of this 68,000 AF impoundment, 50,000 AF would serve as water supply, while 18,000 AF would be available for flow management in the upper South Platte River.

Phase III. The impoundment would be filled to an interim 150,000 AF level, with 100,000 AF available for water supply and the remaining 50,000 AF available for flow management. Mitigation for the impacted fishery and recreational resources are proposed to be in place prior to filling.

Phase IV. The impoundment would be filled to the final 450,000 AF level, with 400,000 AF available for water supply, and 50,000 AF available for flow management in the upper South Platte River. Mitigation for the impacted fishery and recreational resources are proposed to be in place prior to filling.

The Applicants propose to commit to establish fish biomass equal to or exceeding 100% of the net stream biomass lost (19,527 pounds, Applicant Submission, August 31, 1990) as a result of the corrective action impoundment. For the most part, the Applicants propose to commit to establish in the upper South Platte drainage, a similar acreage of quality biomass fishing, by implementation of the operational flow plan, habitat enhancement and riparian restoration, as is inundated. Further, the Applicants propose to supplement fish biomass by stocking the new Two Forks reservoir and "reclaiming" and restocking other South Platte reservoirs as described in Section VI, above.

The Applicants propose a wetland mitigation ratio of 3 to 1 acres in their August 31, 1990, submission. The corrective action proposal would result in a loss of approximately 226 acres of wetlands compared to 299 acres for the 1.1 MAF proposal. As a result, the corrective action proposes that "a proportional amount of the 310 acres of wetlands treatment to the revised impacts (which would reflect avoidance of approximately 1/4 of the 1.1 MAF Reservoir anticipated impacts) and of the approximately 700 acres of wetlands/riparian corridors by fencing will be implemented for the downsized reservoir." That is, the Applicant proposes to reduce the mitigation for impacts associated with the smaller 450,000 AF corrective action proportional to the impacts associated with the larger 1.1 MAF reservoir. According to information submitted by the Applicants, "treatment" consists of (1) fencing to exclude livestock, and (2) converting meadows to wetlands by revegetating and redistribution of water.

To compensate for losses to recreational opportunities lost as a result of the corrective action impoundment, the Applicants would propose recreation mitigation of 295,000 RVDs. The recreation mitigation proposed is based on the Applicants' estimate of RVDs lost for the corrective action proposal. In-kind and out-of-kind recreation mitigation would be developed. As part of this, the Applicants propose to develop, dispersed recreation along river corridors, i.e., the development and

establishment of river frontage for dispersed uses such as camping and fishing, the replacement of campgrounds and picnic areas, and the development of sites for put-in and take-out of canoes, kayaks, and rafts. Much of the recreation mitigation would be adjacent to U.S. Forest Service property to facilitate public use. Potential sites where mitigation for recreational losses associated with the corrective action proposal would be located include: (1) the South Platte River between Elevenmile Canyon Reservoir and Cheesman Lake, and (2) the North Fork of the South Platte between the City of Grant and the corrective action proposal high water mark. It is proposed that all recreational facilities would be managed by the Applicants for the life of the project.

D. COMPARISON OF IMPACTS

In order to summarize the relationship between the various Two Forks projects, a numerical summary of environmental losses associated with the 1.1 MAF Two Forks, 450,000 AF corrective action proposal, and 400,000 AF Two Forks project is found below.

	<u>1.1 MAF</u>	<u>450,000 AF</u>	<u>400,000 AF</u>
Wetland acres lost	299	226 ²⁰	214
Mainstem stream miles inundated	21.3	18.1 ²⁰	16.7
North Fork stream miles inundated	8.8	6.1 ²⁰	5.7
Total S. Platte miles inundated	30.1	24.2 ²⁰	22.4
Gold medal fishery miles inundated	13.9	10.7 ²¹	10

²⁰ Data from Applicant Submission entitled "Responses to EPA Questions & Requests for Information," August 31, 1990.

²¹ EPA Headquarters calculation.

Riffle/pool acres lost	281	196 ²²	196
Recreation RVDs lost (net)	177,000	111,000 ²²	111,000
Resource Category 1 miles inundated	12.3	7.8 ²²	7.8
Resource Category 2 miles inundated	8.0	8.0 ²²	8.0
Trout standing crop lost (pounds)	36,575	19,527 ²⁰	18,200

As can be seen from the comparison chart, the adverse environmental impacts resulting from the 450,000 AF corrective action proposal, while less than the 1.1 MAF Two Forks, are still substantially similar to the original 1.1 MAF Two Forks impoundment and would result in a significant loss of or damage to fisheries and recreational areas. Moreover, the impacts of the corrective action proposal are more severe than the 400,000 AF Two Forks project. Since, as discussed in Section V, above, EPA has concluded that there are practicable, less damaging alternatives to the 400,000 AF Two Forks impoundment, EPA concludes that these same alternatives are also less damaging than the corrective action proposal.

E. CORRECTIVE ACTION MITIGATION ANALYSIS

As stated above, the impacts of the corrective action proposal are substantially similar to those of the 1.1 MAF Two Forks proposal. The mitigation proposed for the corrective action proposal is similar to that proposed for the 1.1 MAF Two Forks but is proportionally reduced. Therefore, all of EPA's concerns about the effectiveness of the proposed mitigation, as described in Section VI, are relevant for the corrective action proposal. The major difference in the mitigation for the corrective action is that impacts are proposed to be mitigated in advance by phasing in the filling of the reservoir pool. However, as with the 1.1 MAF Two Forks proposal, the key to the Applicants' proposed mitigation is successful implementation of the operational flow plan along with habitat enhancement and riparian restoration in the upper South Platte River drainage.

²² Data for 400,000 AF Two Forks project and therefore the minimum impacts for the corrective action proposal.

As described in Section VI, above, the Agency is concerned about the mitigation proposal for the 1.1 MAF Two Forks. EPA is equally concerned about the mitigation proposed for the corrective action alternative. Based on the Applicants' phased in filling approach, the aquatics and recreation impacts would have to be mitigated in advance of filling to any stage of the reservoir. However, in order to mitigate in advance for the aquatics biomass lost as a result of filling to 68,000 AF, the Applicants would have to use habitat enhancement and riparian restoration alone in the upper South Platte drainage. The operational flow plan could not be used as there would be no dam structure or flood pool available for the upstream flow management. (The Applicants have stated that implementation of the operational flow plan is dependent on a dam at Two Forks.) It should be noted that the river segments to be inundated by the 68,000 AF pool contain the highest amount of fish biomass lost (7,517 pounds), compared to the additional fish biomass lost from inundating to 150,000 AF (6,670 pounds) or to 450,000 AF (5,340 pounds). Thus, EPA is not only skeptical of the mitigation proposal in general, but is also uncertain as to the adequacy of the Applicants' reliance on habitat enhancement/riparian restoration alone in mitigating for the aquatics lost by Phase I. This is also a concern in the Phase II aquatics mitigation, where the Applicants propose only "limited use" of the operational flow plan in addition to habitat enhancement and riparian restoration. The Agency is not only concerned with the degree of success that can be attained by implementation of the operational flow plan with habitat enhancement/riparian restoration as described in Section VI, but is more concerned about an approach which diminishes the use of the operational flow plan in the corrective action proposal.

The concerns about mitigation for the recreational resources lost as a result of the corrective action proposal are the same as those described for the 1.1 MAF Two Forks proposal. EPA acknowledges the proposed recreation mitigation of 295,000 RVDs based on the Applicants' estimates lost for the corrective action proposal. In general, the Applicants propose various dispersed recreation (in-kind and out-of-kind) along river corridors. Although the recreation mitigation would be implemented before actual impacts, this does not change the substantive difference in quality and type of recreational opportunities that would be lost as a result of the corrective action inundation pool. There are no substitute areas which exist that can provide the same combination of quality recreation opportunities in the same location.

F. CONCLUSION

EPA concludes that the corrective action proposal will have an unacceptable adverse effect on fishery and recreation areas. While the impacts are less severe than the 1.1 MAF Two Forks impoundment, EPA concludes that the corrective action proposal will nonetheless cause significant damage to fisheries and recreation areas, which impacts are avoidable because there are less damaging practicable alternatives available. EPA also concludes that, even if there were no less damaging practicable

alternative available, the corrective action proposal would result in an unacceptable adverse effect based on the serious damage to fisheries and recreational areas, and uncertain nature of the corrective action mitigation.

VIII. FINDINGS AND CONCLUSIONS

This Final Determination under Section 404(c) of the Clean Water Act addresses unacceptable adverse effects to fishery and recreational areas associated with the subject Two Forks projects. The Section 404(c) regulations define an unacceptable adverse effect as an impact on an aquatic ecosystem that is likely to result in significant degradation of municipal water supplies or significant loss of or damage to fisheries, shellfishing, or wildlife habitat or recreation areas (40 CFR 231.2(e)). Section 231.2(e) of the Section 404(c) regulations states that the evaluation of the unacceptability of such impacts should consider relevant portions of the Section 404(b)(1) Guidelines. For the instant case, EPA has determined that this Final Determination appropriately should include evaluation of the availability of practicable alternatives to the subject projects which would have less adverse impact on the aquatic ecosystem, and based on that evaluation a finding regarding the subject projects' compliance with the Section 404(b)(1) Guidelines Section 230.10(a).

Based upon an independent evaluation of the Recommended Determination and the administrative record submitted by the Regional Decision Officer and in full consideration of materials submitted by the permit Applicants, EPA Headquarters Office of Water finds that the aquatic environment which would be directly affected by completion of the 1.1 MAF Two Forks proposal, 400,000 AF project and 450,000 AF corrective action impoundments sustains an outstanding and distinctive free-flowing aquatic ecosystem which supports a significant fishery. Further, EPA finds that the South Platte corridor that would be inundated by each of the various Two Forks projects represents an area where there is a distinctive convergence of recreational opportunities which are available to and utilized by a broad spectrum of the public.

EPA has determined that the administrative record supports the conclusion that construction of the Applicants' 1.1 MAF Two Forks proposal, or the Applicants' 450,000 AF corrective action proposal, or the 400,000 AF project, at the Two Forks site on the South Platte River would have an unacceptable adverse effect on fishery areas on the South Platte River. Further, EPA has determined that the administrative record supports the conclusion that construction of the Applicants' 1.1 MAF Two Forks proposal, or the Applicants' 450,000 AF corrective action proposal, or the 400,000 AF project, at the Two Forks site on the South Platte River would have an unacceptable adverse effect on recreation areas.

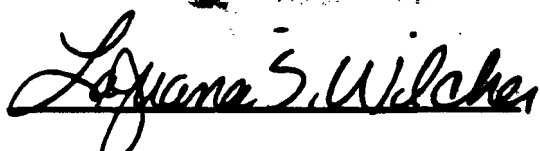
EPA concludes that the proposed projects would have unacceptable adverse effects on fishery and recreation areas based upon two independent grounds. First, EPA finds that the effects are unacceptable in light of the significant damage to these resources that would occur as a result of the subject projects, which damage is avoidable because practicable, less environmentally damaging alternatives are available. Second, EPA has concluded that even if no less damaging practicable alternatives were

available, the significance of the damage to fishery and recreation areas caused by the projects would be so great that they would constitute an unacceptable adverse effect under Section 404(c), which effects are not adequately compensated for by the mitigation specifically proposed by the Applicants.

EPA notes that the administrative record confirms that substantial adverse impacts to wildlife would result from inundation of the upland areas directly adjacent to the portion of the South Platte River which would be inundated by the various Two Forks proposals. While EPA remains concerned that the loss of this wildlife habitat would have adverse consequences on the terrestrial ecosystem, EPA has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to wildlife under Section 404(c). EPA, therefore, modifies the Regional Recommended Determination and concludes that unacceptable adverse effects to fisheries and recreation are the bases for this Final Determination.

In summary, after evaluation of the Recommended Determination and the full administrative record, including written documents and information provided by the Two Forks Section 404 permit Applicants to EPA subsequent to the Recommended Determination, EPA has determined that the discharge of dredged or fill material in connection with each of the subject Two Forks water supply reservoirs would result in an unacceptable adverse effect on fishery areas and recreational areas.

Based on these findings, this Final Determination therefore prohibits the specification of the subject waters of the United States within the South Platte River as a discharge site for dredged or fill material for the purpose of creating any reservoir or impoundment as described in the Two Forks 1.1 MAF proposal, 400,000 AF project and 450,000 AF corrective action proposal in the subject area. This Final Determination does not pertain to other discharges or dredged or fill material or to proposed discharges of dredged or fill material in other waters of the United States on the South Platte River. Other proposals involving the discharge of dredged or fill material in the subject waters of the United States will be evaluated on their merits within the Corps of Engineers' Section 404 regulatory program.



Assistant Administrator
for Water

11-23-90

Date

**APPENDIX
RESPONSES TO ISSUES RAISED BY APPLICANTS¹**

Comment: EPA Headquarters' letter initiating consultation improperly limited the scope of comments on the Recommended Determination (RD).

Response: EPA's regulations simply require EPA to provide an opportunity to propose a corrective action. In this case, EPA's letter (and, in fact, the consultation process itself) went beyond that minimum, since it provided the Applicants with an opportunity to supplement their prior comments in addition to the opportunity to propose a corrective action. The "limitations" cited by the Applicants were simply intended to help the Applicants focus their comments on new issues and information rather than on previously expressed concerns. In fact, the Applicants did raise many concerns regarding the RD and other issues, and were not limited by EPA as to what issues they raised in their written comments or (within the constraints of time) at consultation, and EPA has reviewed and considered all of the Applicants' comments. Therefore, this concern is unfounded based both on the law and the facts.

Comment: The Applicants did not have a meaningful opportunity to comment because neither the Proposed Determination (PD) nor the RD put them on notice as to the issues.

Response: The PD, which was longer than the typical PD, specifically outlined the factual setting, identified particular areas of concern, and solicited comments from the public, including the Applicants. In addition, EPA Region VIII's Regional Decision Officer and staff provided weeks of face-to-face meetings. The RD explained in detail the basis for its conclusions, and cited to illustrative support in the administrative record. The length and comprehensiveness of the Applicants' oral and written comments on the PD and RD, which addressed technical, procedural, legal, and policy issues, belie any claim that Applicants were unable to comment.

This has been a lengthy proceeding, with recurring issues (i.e., what is the appropriate formulation of project purpose, are there practicable less damaging alternatives, what are the fisheries, wildlife, and recreation values of the site and how

¹ The Recommended Determination contained extensive responses to comment, especially in Appendix A. Those responses are incorporated by reference in this Headquarters response, except as expressly superseded.

will they be affected, and when should mitigation be considered as well as the merits of the particular mitigation proposal). The substance of the administrative record predates (and was available to the Applicants prior to) commencement of the Section 404(c) action. This is not a case where an agency based its decision on new scientific studies which it did not make available to interested parties; it is one where the parties debated the policy issues and argued over the significance of facts in the record. The Applicants have had more than ample ability and opportunity to comment, and EPA has considered all of those comments; the fact that there continue to be areas of disagreement between EPA and the Applicants reflects differing conclusions or perspectives, perhaps, but not a failure to obtain and consider Applicants' comments. (Moreover, Applicants' specific claims of inability to comment mainly relate to the fact that (in their view) the RD relied on alternatives not analyzed in the Environmental Impact Statement (EIS) and not fully described in the RD. Since the Final Determination (FD) does not rely on those alternatives as a basis for its conclusions, any putative inability to comment on them is irrelevant.)

Comment: The environmental concerns of the Region were resolved prior to initiation of the Section 404(c) action.

Response: The draft letter cited by the Applicants as evidence of the Region's formal acceptance was in fact never signed or sent and did not represent the agency's official position; in any case, the draft letter indicated that the agency continued to have environmental concerns, in particular regarding alternatives (including the use of water conservation), the magnitude of impacts, and mitigation. The draft letter in fact indicated that EPA might well consider a Section 404(c) "veto" in the future, based perhaps on the status of alternatives or interim sources, or the state of the art regarding mitigation. Indeed, the Corps' last ROD, prepared after the close of the Regional Administrator's discussions with the Applicants, discusses EPA's November 1988 concerns as if still on the table. Even if, arguendo, the Region had once stated that it would not stop issuance of the permit, that would not bar the agency from reassessing that position. What is legally controlling is whether the agency has a reasonable basis for and sufficiently explains its official ultimate position. See, e.g., City of Alma v. EPA.

Comment: The Administrator's improper intervention in initiating the proceeding and his subsequent prejudicial comments have denied Applicants due process.

Response: As a preliminary matter, selected phrases from newspaper articles are not a reliable indication of Mr. Reilly's views. In any case, responsibility for final decisions under Section 404(c) has, since 1984, been delegated to the Assistant Administrator. Thus, it is the Assistant Administrator for Water who is responsible for the review of

the record, consultation with Applicants, and making a final agency decision based on her review in this case. The decision will stand or fall on whether that decision is reasonable and supported by the record.

The Applicants also contend that the sentence in Mr. Reilly's March 24, 1989, press statement to the effect that Mr. Reilly did not believe that the project complies with the Section 404(b)(1) Guidelines shows a fatal prejudgment on his part. However, a statement that a project does not comply with the Guidelines does not necessarily represent prejudgment of the Section 404(c) issues. The Guidelines provide that permits should be denied where there does not exist sufficient information to make a reasonable judgment that there will be compliance with the substantive requirements of the Guidelines. The rest of the press statement, which stresses "potential" impacts and the need to investigate further, makes it reasonable to interpret the quoted sentence as simply referring to failure to comply with the Guidelines in this sense. Further, it is important to note that initiation of a Section 404(c) action always involves a judgment that unacceptable adverse effects may result from the project at issue -- otherwise, there would be no statutory basis for initiating the action. This does not mean that the conclusion has been predetermined, and there have in fact been cases where the Section 404(c) action has been withdrawn (after it was initiated based on potential unacceptable adverse impacts).

The examples cited by Applicants as evidence that Mr. Reilly's "position" in this case improperly influenced the process also do not stand up to scrutiny. For example, although Mr. Sohocki expressed his desire to participate, he was specifically not given a central role in the Region's decision making process. In addition, no improper conclusions can be drawn from the fact that Region VIII staff drafted an outline of a proposed determination within three weeks of the initiation of the proceeding. Under EPA's regulations, the PD is normally issued promptly after a 15-day consultation period; therefore, it was quite consistent with the regulations to start drafting a possible PD when the Region did. Indeed, the fact that the Region was able to prepare an outline of concerns that quickly also undercuts the Applicants' argument that the Region's concerns had been resolved. The Applicants also cite Mr. DeHihns as saying early in the process that he would want to consult with Mr. Reilly before deciding whether to issue a PD. Not only is there no assertion (or evidence) that after thinking it over he did in fact check with Mr. Reilly, but there would be nothing improper if he had. Nothing in the law or regulations prevents a Regional employee from checking with Headquarters on agency policy or contacting Headquarters before taking action in a controversial case. Further, there is no evidence that any of Mr. Reilly's statements reflected any specific knowledge of the proceedings or any intended direction to the decision makers; there is certainly no evidence that any of the decision makers was influenced by any of those statements. In any event, statements made while the process was pending (whether accurate or inaccurate; reflected in the final decision or not) are

not the test; the real issue is whether the final decision is supported by the administrative record.

The bottom line is that the Applicants were given ample opportunity (indeed, much greater opportunity than is required or typical) to make their views known to the actual decision makers, and those views were amply considered in the PD, RD, and FD.

Comment: EPA improperly participated in meetings with the Fish and Wildlife Service (FWS or USFWS) after the close of the public comment period.

Response: An agency is not barred from receiving information after the comment period; the rule of thumb is simply that if it obtains material new information on which it intends to rely, it reopens the comment period. If the information received is not new or is not relied on, there is no need to reopen the comment period. In the present case, EPA met with the FWS to determine if there was any material new information concerning the endangered species issues. The FWS stated that new information had been collected which might necessitate reopening consultation under section 7 of the Endangered Species Act if EPA did not "veto" Two Forks and the project went ahead. However, the RD did not rely on such information in reaching its conclusions concerning unacceptable adverse effects and recommending a veto. Nor does the FD. Indeed, the FD expressly does not rely on information about any wildlife, whether or not endangered. Therefore, there was no need to reopen the comment period to seek comment on the FWS' new information.

Comment: Headquarters representatives improperly participated in the Region's decision making process.

Response: The record does not show any improper participation in the decision making process. Headquarters staff neither reviewed the RD nor engaged in substantive discussions with the Region concerning it. Contact between Regional and Headquarters staff in this case prior to issuance of the RD were limited to general policy, procedural, and logistical (e.g., transmittal of the administrative record to Headquarters) issues. Further, there are no due process reasons that would limit contact between Regional and Headquarters staff; the bottom line is still, as always, whether or not the final decision is supported by the administrative record.

Ms. Schwartz visited Region VIII in connection with a speech to be given in the Denver area and a routine regional visit as Director of the Regulatory Activities Division of the Office of Wetlands Protection. Because of her responsibilities and expertise, Ms. Schwartz is frequently consulted by the Regions as to interpretation of

and practice under EPA's Section 404 regulations, and her discussion of issues related to Two Forks fell strictly into that category.

Mr. Garvey is on Ms. Schwartz's staff and has particular experience under Section 404(c). He visited the Region on two occasions, first in April 1989 to briefly outline for the Regional staff the logistical and scheduling considerations involved in conducting a Section 404(c) proceeding, and subsequently to observe the public hearings. Such limited visits would not, under any circumstances, present due process concerns.

Comment: EPA Headquarters has refused to engage in meaningful consultation, because there has been no give and take on what is wrong with the proposed corrective action.

Response: The purpose of consultation, as provided in the regulations, is to allow the applicants (or the Corps or landowners, as appropriate) an opportunity to notify EPA of an "intent to take corrective action to prevent an unacceptable adverse effect(s)" that would be satisfactory to EPA. In this case, consultation between EPA Headquarters and the Applicants (including written comments and meetings) was very extensive. It involved not only the Applicants' proposed corrective action, but also many other issues regarding the proposed projects and the RD. The consultations proved very informative to EPA Headquarters, and provided significant additional information to the administrative record. Thus, the consultation was indeed meaningful, if perhaps more extensive than intended by the regulations.

Applicants' implication that the consultation could not be meaningful without some sort of "negotiation" regarding the corrective action proposal is based on a misunderstanding of the consultation process in particular and the Section 404(c) process in general. The process does not require negotiations regarding all of EPA's concerns; it merely provides for EPA to obtain relevant information from the Applicant before a decision is made based on the entire administrative record (including, but not limited to, the information provided by the Applicants).

Comment: Unless EPA refers an EIS to the Council on Environmental Quality (CEQ) under Section 309 of the Clean Air Act (CAA) or persuades the Corps to prepare a Supplemental EIS, EPA is bound by the facts, methodologies, and analyses in the Corps' EIS and may neither reject material from the EIS or supplement it with new data. To allow EPA to do otherwise would undercut the National Environmental Policy Act (NEPA).

Response: This comment, which underlies much of the Applicants' specific comments, reflects several misunderstandings. First, it misconstrues the relationship between

Section 404(c) and the EIS requirements of NEPA. Section 511(c) of the Clean Water Act (CWA) provides that no action by the Administrator under the Act (with two exceptions not involved here) shall constitute a major Federal action (i.e., require an EIS) under NEPA. Thus, in effect, the CWA overrides some of the EIS procedures of NEPA, rather than the other way around. Because EPA's action under Section 404(c) is not subject to the EIS requirements of NEPA, EPA's authority to consider information under Section 404(c) is not constrained by what is, or isn't, in the Corps' EIS, nor is a supplemental EIS needed before EPA may consider "new" information. The fact that EPA was a cooperating agency in the preparation of the EIS does not change that. (A cooperating agency is one with special expertise and jurisdiction relevant to the lead agency's action; it is not the same as a joint lead agency. Only a lead agency (joint or singular) is responsible for preparation of the EIS and its ultimate conclusions. A cooperating agency participates in the NEPA process and provides assistance.) [40 CFR Part 1501]

In addition, the legislative history and case law are clear that in exercising its Section 404(c) authority, EPA is free to use its independent judgment and to disagree with the Corps. To condition EPA's ability to reach different conclusions on its persuading the Corps to revise or supplement the EIS, where EPA itself is not even subject to the EIS requirement, would nullify the authority Congress gave EPA under Section 404(c). Moreover, under the statute, EPA is required to provide an opportunity for consultation and an opportunity for public hearing. These procedures would have little purpose if EPA were to be bound by the Corps' NEPA documentation or if EPA had to get that documentation "fixed" before relying on information it obtained through those procedures.

Second, failure to refer the EIS to CEQ pursuant to Section 309 of the Clean Air Act prior to initiating a Section 404(c) action does not bind EPA to accept the EIS "as is." A failure under Section 309 of the CAA simply does not deprive EPA of jurisdiction to carry out its authority under Section 404(c). Moreover, contrary to Applicants' assertion, the deadline for referring the instant EIS has not yet passed. The CEQ regulations indicate that the lead agency can extend the time period for CEQ referrals; the Corps has done so through Appendix B to 33 CFR Part 325, which contemplates CEQ referrals within 25 days after the Corps' decision, in this case the notice of intent (NOI) dated March 15, 1989. EPA commenced the instant Section 404(c) proceeding within seven working days of the NOI, which had the effect of tolling the time for permit issuance, and, by extension, CEQ referrals. Moreover, CEQ's regulations indicate that one factor in deciding whether to refer a matter to CEQ (and a factor CEQ considers in deciding whether to accept a referral) is whether the agencies have exhausted their other means of resolving the issues. [40 CFR §1504.2 and 1504.3] Section 404(c) is a means which EPA has to resolve disagreements with the Corps over whether (or under what conditions) a permit should issue where impacts to the Section 404(c) resources are involved. Therefore, EPA did not act improperly in

deferring a decision whether to refer the matter to CEQ until the Section 404(c) process was completed.

Third, neither EPA's deferral of a decision regarding referral nor its consideration of information outside or subsequent to the EIS undercuts the purposes of NEPA. Ultimately, the goal of NEPA is to ensure that agencies make their decisions fully informed of the environmental consequences. EPA's Section 404(c) decision making process, both in general and as applied here, is fully consistent with that goal, and may be considered the functional equivalent of NEPA.

Finally, this case does not involve a wholesale and unexplained abandonment of the EIS. The record shows that EPA accepted and used the vast majority of the information in the EIS. In some cases, where new information existed, EPA updated or supplemented the existing information (as indeed have the Applicants, too); in a few instances, EPA drew different conclusions from the facts. EPA has fully explained the basis for its FD.

Comment: Section 230.10(a)(4) of the Section 404(b)(1) Guidelines effectively constrains EPA to the range of alternatives analyzed in the EIS.

Response: The regulation in question (and the preamble) indicate that while an EIS can be expected to identify a sufficiently wide range of alternatives, the EIS may not provide sufficient detail for Section 404 purposes. Thus, rather than being bound by the factual conclusions in an EIS, the Corps in issuing permits or EPA in commenting or in exercising Section 404(c) is free under the Guidelines to investigate alternatives in greater detail and to reach its own conclusions as to whether there are environmentally less damaging, practicable alternatives. The section was really intended as reassurance for the Corps as to where it could stop, rather than as a limitation on the Corps or EPA.

Nonetheless, as a basis for its conclusions with respect to the existence of a less damaging practicable alternative, EPA has chosen in the FD to rely only on the structural storage alternatives described in the EIS. Any discussion of other alternatives is simply supplemental. In short, EPA has confined its decisional review to the range of alternatives discussed in detail in the EIS. Therefore, the FD is clearly consistent with even the Applicants' narrow interpretation of Section 230.10(a)(4).

Comment: EPA should consider the Applicants' purpose and should give greater deference to the Applicants as local officials who have used their discretion to determine how to meet their statutory requirements.

Response: EPA agrees that it should consider the Applicants' purpose. That is obviously the starting point. For example, in Louisiana Wildlife Federation v. York, the court rejected the plaintiffs' claim that, when faced with a permit for discharges associated with soybean farming, the Corps should consider alternate uses of the property in question, rather than alternate sites for soybean farming. However, that does not mean that the Applicants' articulation of purpose cannot be scrutinized or generalized, especially when the applicant sets out an elaborate list of purposes which, through the use of words like "maximize," appears like a "wish list" calculated to arrive at an ideal project.

Applicants do not seriously disagree that the Corps and EPA can engage in some scrutiny; rather they question the degree to which the agencies can move from a very detailed description of project purpose to a more generic one, citing some examples of cases in which fairly specific descriptions were accepted. These examples are not very illuminating since, to avoid unnecessary conflict, EPA and the Corps will often use a more specific description than necessarily required, where it is obvious that there are alternatives even for the more specific project purpose. For example, in Attleboro, EPA did not reach the question of what the precise "basic purpose" was, since there was an alternative site that was found suitable for "a 'quality' fashion-oriented enclosed mall with nearly the same square footage and three anchor department stores, serving the same trade area," nearly identical to the project as proposed.

The Applicants suggest that the Executive Order on Federalism requires EPA to defer to their articulation of project purpose. The Order does not create special rights or override Federal statutes; rather, it provides that where Federal statutes preempt State law, or could be construed as being applied to preempt State law, the Federal agency involved is to consult with appropriate State or local officials in an effort to avoid a conflict. EPA has consulted at length with the affected local governments here, in an effort to understand fully their water needs and the State and local constraints on meeting those needs. In its FD, EPA has used considerable restraint in defining project purpose and in judging practicability in recognition of those local interests.

Comment: EPA has erred by treating "basic project purpose" and "overall project purposes" (terms used in the alternatives section of the Section 404(b)(1) Guidelines) as interchangeable. "Overall project purposes" should be read more broadly to encompass additional components of the applicant project purpose.

Response: Examining the terms in the context of the regulation, as opposed to simply looking in the dictionary, shows that the terms are not intended to have distinct meanings. As Applicants note, the term "basic purpose" is used not only in Section 230.10(a)(3), regarding "water dependency," but also in Section 230.10(a)(2), which describes what would be a "practicable" alternative. Moreover, the latter section uses

the phrases "basic purpose" and "overall project purposes" together in a manner that clearly suggests that the two phrases are not to be used for distinct tests. Further, the preamble language explaining the practicability requirement also uses the terms interchangeably:

Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project....We consider it implicit that, to be practicable, an alternative must be capable of achieving the basic purpose of the proposed activity. Nonetheless, we have made this explicit to allay widespread concern.

The Final Determination in the Attleboro case noted that:

The preamble and the regulations use the terms "basic project [sic] purpose" and "overall project purpose [sic]" interchangeably. The preamble clearly supports the position that "basic purpose" refers to the general function of the proposed activity, not its specialized details ... and in practice, EPA has consistently so interpreted the terms.

It is important to note that the distinction Applicants seek would not make sense in the practical application of the Guidelines. For example, Applicants argue that the determination of what is a "practicable" alternative (the Guidelines require at Section 230.10(a)(2) that only "practicable" alternatives be considered, i.e., those alternatives that are "available and capable of being done") should turn on meeting a detailed description of the project that includes the specific goals of the applicant. However, deciding whether or not a practicable alternative that was not owned by the applicant was "available" (the Guidelines explicitly recognize that available need not be implied to mean currently owned by the applicant) would turn on whether it could meet the generic "basic purpose." It is unclear what the point would be of finding an alternative available because it could be used to serve a generic purpose (e.g., housing people), when it could not be found practicable if it would not meet a very-specific purpose (e.g., housing within a particular price range for a specific number of people, within a certain distance of a particular city and of certain transportation facilities). Similarly, it would make little sense to establish a rebuttable presumption that practicable alternatives exist based on a definition of project purpose that differs from the definition used for determining practicability of alternatives. Such a distinction would only cause confusion and administrative difficulties in applying the Guidelines, and therefore make no sense. As such, the agencies have properly read both phrases to have the same meaning, which is a generic, basic purpose test.

The Applicants have not pointed to, and we are not aware of, any agency pattern of using these two phrases to have distinct meanings. To the contrary, there is evidence that both EPA and the Corps have consistently considered project purpose in

only a single context, defining it generically so that the determination of practicability is not unduly constrained by applicant preferences. For example, correspondence in a number of cases elevated under Section 404(q) demonstrates that both agencies look to the "basic" purpose. ("...EPA contends that this restrictive project purpose may have effectively precluded practicable, less environmentally damaging alternatives which would have served the basic project purpose." (emphasis added)(Letter from LaJuana Wilcher, Assistant Administrator for Water, to Robert Page, dated June 4, 1990, regarding the Old Cutler Bay Associates case); "We agree that narrowly defining project purpose could unreasonably limit the consideration of alternatives under the Section 404(b)(1) Guidelines." (Letter from Robert Page, Assistant Secretary of the Army for Civil Works, to LaJuana Wilcher, dated June 25, 1990, regarding the Old Cutler Bay Associates case); "In this case ... the Corps district defined a project purpose that is too specific to the applicant's proposal. The District's project purpose paragraph contains information which it may or may not have intended to be part of the statement of basic purpose." (emphasis added)(Memorandum from MAJG Patrick J. Kelly, Director of Civil Works, to the Commander of the Jacksonville District, dated September 13, 1990, regarding the Old Cutler Bay Associates case); "As a general rule, EPA interprets the basic purpose as the generic function of a proposed activity, in this case the construction of residential housing." (emphasis added)(Letter from Rebecca Hanmer, Acting Assistant Administrator for Water, to Robert Page, dated April 25, 1989, regarding the Hartz Mountain Development Corporation project at Mill Creek); "Δ prerequisite to evaluating practicable alternatives is the establishment of the 'basic purpose' of the proposed activity." (emphasis added)(Memorandum from BG Patrick J. Kelly, Director of Civil Works, to the Commander of the New York District, dated August 17, 1989, regarding the Hartz Mountain Development Corporation project at Mill Creek); "...we believe that this is a viable alternative that would fulfill the applicant's basic purpose of creating a water oriented recreational complex. The applicant has just proposed one way ... to achieve the basic project purpose." (emphasis added) (Letter from Rebecca Hanmer, Acting Assistant Administrator for Water, to Robert Page, dated January 13, 1989, regarding the Plantation Landing Resort case); "Only if the Corps, independently of the applicant, were to determine that the basic purposes of the project cannot practicably be accomplished unless the project is built in a "contiguous," "fully integrated," and entirely waterfront" manner would those conditions be relevant to the 404(b)(1) Guidelines' alternative review. The fact that those conditions may be part of the proposal as presented by the applicant is by no means determinative of that point. Once again, the Corps, not the applicant, must define the basic purpose underlying the applicant's proposed activity." (Memorandum from BG Patrick J. Kelly, Director of Civil Works, to the Commander of the New Orleans District, dated April 21, 1989, regarding the Plantation Landing Resort case.)

The Applicants imply that there is an important distinction between the singular "basic purpose" and the plural "overall project purposes." However, this distinction is, as noted above, one without a difference. Both the Corps and EPA have used the

singular "basic purpose" or "project purpose" to include more than one concept (e.g., residential housing with recreational amenities).

Comment: EPA's approach to alternatives here is inconsistent with EPA's prior practice, that is, to the position in Bersani that availability of alternatives should be judged at the time of market entry. Here EPA is looking into the future.

Response: The Applicants have mischaracterized the universality of the Bersani approach. In that FD, EPA stated that, in addressing cases where a developer entered a market area for the accomplishment of a specific project, "It is both fair and consistent with the Guidelines to review the period of availability as including the period when the developer is selecting a site for its project." (emphasis added) Thus, that decision did not limit the time of availability to the point of market entry. Moreover, the document went on to state explicitly that EPA was not deciding what the relevant time period would be in other circumstances.

The instant case involves a very different situation from the Attleboro shopping mall developer (as Applicants have pointed out on numerous occasions), i.e., local governmental bodies, which have been developing water supplies in the area for over a hundred years and which will continue to do so for the foreseeable future. Therefore, it is reasonable for EPA to consider as alternatives those sites/options which can reasonably be foreseen as being available to provide water supply by the time that Two Forks would be needed.

Comment: The Corps correctly found the project to be water dependent.

Response: For purposes of this decision, we have applied the general requirements on alternatives in the Guidelines (which place the burden of proof on the applicant to demonstrate compliance), rather than the rebuttable presumptions, i.e., 40 CFR 230.10(a)(1) rather than 230.10(a)(3). Therefore this issue is moot. However, we note that water supply projects do not necessarily have to be located in or near special aquatic sites in order to serve their basic purpose. For example, using groundwater might well not involve wetlands or other special aquatic sites. (Further, even where surface water reservoirs are the alternatives, which ordinarily would presumably require some connection to waters of the United States, those waters needn't be special aquatic sites.) However, as mentioned above, we have not relied on such a position in this case.

Comment: By relying on unidentified alternatives, and by failing to substantiate any findings regarding practicability, the RD deprived the Applicants of a meaningful opportunity to respond.

Response: First, this mischaracterizes the RD. The RD reached its conclusion that impacts were unacceptable before it even reached the issue of alternatives. It then reinforced this position by finding that the large and small Estabrook and New Cheesman Reservoirs (structural alternatives analyzed in the EIS) were practicable structural alternatives with fewer adverse environmental effects. Only then did EPA state that it believed that additional suitable alternatives could have been identified. Thus, these additional alternatives were merely "the frosting on the cake" and not the essence of the basis of the RD.

Second, the FD concurs in the RD's conclusions that the large and small Estabrook and New Cheesman Reservoirs are practicable, less damaging alternatives, and does not rely on the existence or non-existence of additional alternatives. Therefore, any questions regarding the existence of other, "unidentified" alternatives and the Applicants' opportunity to rebut their existence are moot.

Comment: EPA must demonstrate that an alternative is permissible before it can conclude that it is practicable.

Response: In general, if it is clear that some statute or regulatory program would prevent an alternative from being used, then it would be reasonable to exclude that alternative from consideration as not being a practicable alternative. However, if the apparent constraint is something like inappropriate zoning and there is precedent in the industry for seeking zoning changes, then the alternative should still be considered practicable (until the variance was denied through the normal, complete process). Similarly, if the constraint is location of individual water rights, the record shows that seeking transfers of water rights is a common practice. Obviously, in a given case, there may be some showing that a change in water rights would be unlikely or prohibitively costly, and therefore would not constitute a practicable alternative. However, the fact that, for example, a zoning variance must be sought, or a permit applied for, or some water rights may need to be transferred to utilize an alternative does not per se make an alternative impracticable. As a practical matter, if EPA rests an FD on a finding that a given alternative is practicable, and it later turns out that that alternative is denied a necessary permit (or equivalent prerequisite), there would be grounds for reopening the FD.

Where 404 permissibility is at issue, i.e., in the case of alternatives whose impacts are severe enough that they arguably might not be permissible under Section 404, but which are still environmentally preferable to the proposed project, it would not serve

the purposes of the Act to reject the alternatives as not practicable while still entertaining the proposed project.

Comment: The practicability of New Cheesman is affected by the fact that a presidential exemption is required for its tunnel to cross a wilderness area and by the fact that the dam will impound 4.8 miles of a Wild and Scenic River study area.

Response: The Wilderness Act explicitly allows the "establishment and maintenance of reservoirs . . . and other facilities needed in the public interest, including road construction and maintenance essential to development and use thereof" where the President determines that "such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial." 16 U.S.C. §1133(d)(4). Should it occur that Two Forks has been prohibited, it is demonstrated that there is no environmentally preferable alternative to New Cheesman, and there is a demonstrated need for water, this finding should be relatively easy to make.

The fact that the South Platte north of the existing New Cheesman impoundment (Wildcat Canyon) is a wild and scenic river study area does not itself impose any legal impediment to authorization of a bigger New Cheesman. Indeed, the area to be inundated by Two Forks has long been such a study area. The statutory restrictions in the Wild and Scenic River Act, 16 U.S.C. §1271, §1278, apply to river segments actually included in the system and those listed by Congress as "potential" segments. The South Platte is not among those segments. While ordinarily the fact that a river is a wild and scenic river study area would be suggestive of its value, in this case the Applicants concede that the river reaches that would be inundated "do not contain quality fisheries" and are not utilized much for recreation.

Comment: EPA should consider the proposed mitigation as part of the project in evaluating whether there are less damaging practicable alternatives to the project and in assessing whether the project will cause significant degradation, under Sections 230.10(a) and (c) of the Guidelines.

Response: As a prefatory matter, careful use of terminology is important to avoid confusion. The term "mitigation" can be used in a broad sense to encompass avoidance of impacts, reducing impacts, and restoration after impact, as well as compensatory mitigation. At other times it is used as "short hand" for compensatory mitigation. When EPA states that it is not required to consider "mitigation" when comparing a project to practicable alternatives to determine if those alternatives are less damaging, EPA is referring to compensatory mitigation. As discussed below, compensatory mitigation carries with it certain inherent uncertainties and flaws, and therefore, it is

better to avoid a loss if possible, and then, if it is unavoidable, to try to mitigate. Recognizing the distinction between mitigation in the broad sense and compensatory mitigation provides the answer to much of the Applicants' concerns on mitigation.

The Section 404(b)(1) Guidelines establish four separate tests under § 230.10, each of which must be met before a permit may issue. The alternatives requirement (§230.10(a)) is separate from the requirements that no significant degradation result (§230.10(c)) and that all reasonable and practicable steps to minimize impacts be undertaken (§230.10(d)). Thus, the plain meaning of the Guidelines calls for avoidance of impacts first, then minimization and compensation for impacts which cannot be avoided.

EPA has applied the sequencing principle here (avoid impacts if practicable, then mitigate) because it comports with the Section 404(b)(1) Guidelines, because it serves the purpose of the Guidelines and the CWA, and because it is a prudent policy from a technical standpoint.

EPA has long recognized that allowing compensatory mitigation to be factored into the alternatives analysis is problematic because it could serve to weaken or subvert key provisions of the Guidelines and be counter to the Guidelines' obvious intent. See, e.g., "Final Determination of the Assistant Administrator for External Affairs Concerning the Sweedens Swamp Site in Attleboro, Massachusetts Pursuant to Section 404(c) of the Clean Water Act."² Region VIII of EPA has also consistently applied this principle to the Two Forks project, even before the initiation of the Section 404(c) process (see, for example, letters cited at p. 45 of the RD). This interpretation was also endorsed in the February 1990 EPA-Army Memorandum of Agreement (MOA) on mitigation.³

² The applicants contend that the RD's approach conflicted with the Attleboro case because in the latter EPA in fact considered the developer's mitigation in detail. In Attleboro, EPA clearly espoused the sequencing principle, but then looked at the mitigation as a "back up" and to illustrate the reasonableness of the principle as applied there.

This FD looks at the question of alternatives, and, applying the sequence, finds that there would be an unacceptable adverse effect in part because the impacts are avoidable. In addition, independent of the alternatives analysis, this FD looks at the impacts on fishery and recreation areas of the subject projects with the proposed compensatory mitigation, and makes a finding of unacceptable adverse effects.

³ EPA is not citing the MOA as a basis for the sequencing principle, but rather as evidence of the broad recognition that the Guidelines are properly interpreted to call for sequencing. EPA recognizes that the MOA does not apply to the Two Forks permit.

Allowing compensatory mitigation to be added to a proposal before comparing the "impacts" of the proposal to those of alternatives would substantially undermine the purpose of the alternatives analysis, i.e., to avoid environmental harm if possible and to provide an incentive for Applicants to take a hard and objective look at alternatives. Using the "net loss" approach advocated by the Applicants would not only remove that incentive but also would present the difficulties of determining what compensatory mitigation would be required for each of the alternatives, whether proposed compensatory mitigation for each alternative would work as intended and whether, even if it delivered what was promised, it would truly restore the lost resource. The policies behind the sequencing approach make sense, and Applicants have presented no compelling reason to make an exception to what is in fact the general rule here.

The Applicants contend that EPA's approach creates a prohibitive presumption against large water-dependent projects. This argument has several flaws. For example, contrary to Applicants' assumption, larger projects will not necessarily have more adverse effects on the aquatic environment; that will depend on the relative value and vulnerability of the alternative sites. In addition, if, as the Applicants hypothesize, only the largest (or larger) alternative(s) meet the Applicants' needs, then it may well be that the smaller alternatives are not "practicable" (i.e., because they do not meet the project purpose individually and cannot feasibly be used in combination).

The Applicants also argue that the determination of significant degradation must include consideration of mitigation. EPA agrees that, where a loss cannot be avoided through use of a less damaging alternative and one reaches the significant degradation test of § 230.10(c), compensatory mitigation can then be considered in determining whether or not there will be significant degradation. We also agree that it is appropriate to consider mitigation when considering whether or not unacceptable adverse effects would occur under Section 404(c). The Applicants claim that the RD improperly failed to consider mitigation, although the RD did in fact discuss the Region's concerns regarding the proposed mitigation, including that the mitigation was off-site and out-of-kind, and as such would not replace the lost resource. Nevertheless, the FD clearly analyzes the mitigation, and reaches the explicit conclusion that the impacts associated with the subject projects would be unacceptable even with the proposed mitigation.

Comment: Because State water allocation is at issue, EPA owes a special duty to minimize the water quantity/water quality conflict. In particular, EPA is required to take less severe action before resorting to Section 404(c), and, if the latter is reached, EPA must provide an "iterative" process to arrive at a mutually satisfactory way for Denver to use its water rights.

Response: As a general statement of policy, Section 101(g) does not override the specific grant of authority in the rest of the statute. Riverside Irrigation District at 513. Section 404(c) authorizes the Administrator to use Section 404(c) "whenever" he makes the requisite findings, whether before a permit is applied for, while an application is pending, or even after one has been issued. The Act does not establish other procedures as a precondition to initiating a Section 404(c) action. In addition, there is no requirement that EPA adopt special consultation procedures merely because its action may incidentally affect State water allocations. While EPA should, of course, be sensitive to the fact that its actions may affect State water allocations and avoid those impacts where practicable, it may do so through its FD whether or not there has been an "iterative" consultation process. In this case EPA has provided an "iterative" consultation process and has been sensitive to the issue of water rights. However, the Section 404(c) process does not provide either the statutory authority or mechanism for EPA to arrive at the "mutually satisfactory" solution Applicants appear to be seeking.

Comment: The RD was too glib in responding to a comment that Section 101(g) prohibits EPA from interfering with State allocation of water quantities and that this Section 404(c) action constitutes such interference.

Response: The legislative history of Section 101(g) includes an explanation by its sponsor, Senator Wallop, that:

Legitimate water quality measures authorized by this act may at times have some effect on the method of using water. Water quality standards and their upgrading are legitimate and necessary under this act. The requirements of section 402 and 404 permits may incidentally affect water rights. Management practices developed through State or local 208 planning units may also incidentally effect [sic] the use of water under an individual water right. It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to ensure that State allocation systems are not subverted, and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations.

The Applicants quarrel with the RD's characterization of the effect of a veto on water allocation as "incidental." However, the context of Section 101(g)'s passage suggests that, in using that term, Sen. Wallop was speaking of "unintended" rather than "minor" effects on water allocation. Section 101(g) was offered in immediate rebuttal to the Water Resource Council's suggestion that the Clean Water Act be used to attain non-water quality goals, i.e., the "rationalization" of western water allocation systems. If, as here, a veto is used to prevent unacceptable adverse effects to the Section 404(c) resources (e.g., fisheries and aquatic-oriented recreation), the fact that that veto may incidentally affect the use of individual water allocations does not trigger Senator

Wallop's concerns about an abuse of the Clean Water Act or a subversion of State allocation systems. (See also response to comment on takings for further discussion of incidental impacts on water allocations.) This reading of "incidental" is consistent with EPA's long-standing interpretation of Section 101(g) as not intended to prohibit EPA from taking such measures under the Act as may be necessary to protect water quality, i.e., the "chemical, physical, and biological integrity of the Nation's waters."

Comment: The RD did not respond adequately to the concerns expressed that EPA's authority is limited to preventing those unacceptable adverse effects which result directly from the discharge of dredged and fill material.

Response: The Applicants contend that the only relevant impacts under Section 404(c) are those "directly" attributable to the fill, i.e., smothering by the fill and leaching from the fill. In other words, the Applicants contend that alterations to fishing and recreational opportunities along the river which result from the impoundment behind the dam, rather than from the physical construction of the dam, are irrelevant. Arguably, the inundation behind the dam, which is the inevitable and intended consequence of the dam, is itself a direct effect of the fill. In any case, this contention ignores the clear language of the Section 404(b)(1) Guidelines, which under 40 CFR § 231.2(e) form the framework for analyzing impacts under section 404(c). See, e.g., 40 CFR § 230.11(h) and Riverside Irrigation District v. Andrews.

The Applicants' attempt to dismiss Riverside Irrigation District as focussed on the Endangered Species Act ignores the case's holdings, at p. 512, that the CWA and its regulations focus on "all the effects on the 'aquatic environment' caused by replacing water with fill material," and that both the CWA and the ESA require the Corps to consider the environmental impacts of discharges, including indirect effects of dams stemming from induced changes in water quantity. The Applicants also suggest there is a distinction between what EPA is authorized to look at under Section 404(c) and what the Corps looks at under Section 404(a), by repeatedly referring to the "broader" Section 404(a) program. While it is true that the Corps looks at a greater array of aquatic resources than the five listed in Section 404(c), there is no basis for concluding that only the Corps of Engineers can look at indirect effects on those five resources. On the contrary, Section 404(c) was intended to ensure that EPA has the final say on the acceptability of impacts. See, e.g., Muskie statement, 1st Leg. Hist. 188; Newport Galleria v. Deland.

The Applicants rely principally on NWF v. Gorsuch in support of their argument that EPA's authority is limited with respect to dams. That reliance is misplaced. EPA does not contend that dams themselves are the point sources that add pollutants

(NWF's position, which was rejected by the court).⁴ Rather, the construction of a dam like Two Forks indisputably involves the point source discharge of dredged or fill material.⁵

As mentioned above, in assessing the effects of such a discharge, the Guidelines require consideration of direct and indirect impacts. This is consistent with policies reflected in Section 404(f)(2), which provides that otherwise exempt discharges are "recaptured" where, inter alia, the flow and circulation of waters of the United States are impaired. If changes in flow and circulation were irrelevant under the Section 404 program, there would be no purpose in "recapturing" such discharges and requiring them to go through the permit process. Moreover, the Applicants' narrow position undermines the general goals of the Act to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to achieve fishable/swimmable water quality (Section 101(a)).

In sum, EPA does not exceed its authority under Section 404(c) by questioning a discharge of fill material which will result with certainty, albeit somewhat indirectly, in the loss of a valuable fishery and water-related recreational opportunities.

Comment: This Section 404(c) action could result in a taking.

Response: EPA's exercise of its Section 404(c) authority to "veto" the proposed dam/reservoir project will not constitute a taking of property for which compensation would be required. First, because the purpose and effect of the Section 404(c) action will be to protect and maintain the integrity of the waters of the United States pursuant to the CWA, by preventing unacceptable adverse impacts, the action substantially advances a legitimate state interest.

In addition, the Section 404(c) action will not preclude all economically viable uses of the property interests at stake. There are three general types of property interest that are alleged to be affected by this action: infrastructure designed to use

⁴ The NPDES cases relied on by Denver involved previously constructed dams or structures; ~~the~~ only question was whether their operation would itself result in a point source discharge. These cases do not speak to the question of what impacts EPA or the Corps may consider when there is a discharge.

⁵ For this reason, the Applicants' discussion of Federal and State nonpoint source authority and responsibility is irrelevant.

water from the reservoir, direct flow water rights, and storage water rights. The infrastructure is not designed specifically for use of water from the proposed reservoir but is designed to accommodate water from multiple existing and future sources of water for the affected water district. The action will not prevent or affect the use of these structures to divert, store, and deliver water to the municipality from many other current and future sources of water. Thus, there will be only a diminution, at most, of the property interest in these structures. See Penn Central Transportation Co. v. City of New York, 438 U.S. 104, 133 (1978). (Note that if there were any structures designed specifically for the proposed project, the construction of such structures would have been in the face of considerable controversy over the project and possible failure to obtain necessary government approval. Such structures would not constitute compensable property in any case since any investment-backed expectations in such structures would have been unreasonable in face of the substantial uncertainty of the project.)

The rights to divert direct flow of water from the river will similarly be affected minimally, if at all, by the action since Denver will maintain its ability to divert flow from the river and store diverted flow in other reservoirs. Denver's rights in the storage of water in the reservoir are conditional and will also be largely unaffected by the action. To maintain the conditional rights under Colorado law, Denver must show due diligence in attaining beneficial use of the affected water. Under State law, the failure to obtain a necessary government approval does not in itself mean that there has been a failure in due diligence. Thus, cancellation of any such rights would not automatically flow from a veto, and the veto would not be a taking. See Erosion Victims of Lake Superior v. U.S., 833 F.2d 297 (Fed. Cir. 1987); Freeze v. U.S., 639 F.2d 754, 758 (Cl. Ct. 1981); DeTom Enterprises v. U.S., 552 F.2d 337 (Cl. Ct. 1977).

For the above reasons, the action does not constitute a taking compensable under the Constitution. See Nollan v. California Coastal Commission, 107 S. Ct. 3141, 3146 (1987)(citing Agins v. Tiburon, 447 U.S. 255, 260 (1980)).

Comment: EPA should not take a "just say no" approach, but rather should work with the applicants to arrive at a mutually agreeable alternative before vetoing.

Response: ~~EPA is sensitive to the concerns of the Applicants that they know where their future water is coming from, and has pledged to work with the Applicants.~~ However, there are limitations on the extent to which this can be accomplished through the Section 404(c) process.

First, the Section 404(c) process simply authorizes EPA to prohibit or restrict a particular site; only the Corps of Engineers can actually authorize the use of an alternative aquatic site. In addition, neither EPA nor the Corps has approval authority

over alternatives which do not involve the discharge of dredged or fill material. Any EPA "endorsement" of an alternative would simply be advisory, and would be constrained by the state of the record at the time of "endorsement."

In this case, Applicants have argued strenuously that EPA must confine its consideration of alternatives to those analyzed in the EIS. While EPA does not agree with the Applicants' legal reasoning, EPA has nonetheless chosen to confine its analysis for purposes of the FD, to the range of alternatives urged by the applicants (i.e., structural alternatives in the EIS -- New Cheesman, Estabrooks). As a consequence, EPA is in a position to assess the relative environmental impacts of the various Two Forks projects (1.1 MAF, 450,000 AF and 400,000 AF) and the structural alternatives, but is not in a position to say definitively on the present record that there are no practicable alternatives that are less damaging than any of those.

Comment: The alternatives analysis must compare alternatives which have comparable yields. To fail to do this, as is the case in the RD, creates a bias in favor of small alternatives.

Response: This comment appears to argue that EPA has explored too broad a range of alternatives in order to determine under Section 230.10(a) whether the proposed project is the least damaging practicable alternative that is available. The assumption underlying this comment is that only a project which yields a volume of water comparable to the Applicants' preferred alternative would achieve the project's basic purpose. As discussed in the FD, however, the goal of the analysis of practicable alternatives is to determine whether, and to what extent, adverse impacts on the aquatic ecosystem can be avoided while still allowing the applicant to achieve the project's basic purpose. Defining project purpose to include a requirement of a specific yield (as this comment essentially suggests) ignores the fact that projects with other yields may still be able to meet the project's basic purpose. The record demonstrates, in fact, that the basic project purpose (providing a dependable, long-term water supply) can be met by, at a minimum, the other structural alternatives analyzed in the EIS. Applicants do not contend that the yields of the alternatives would be insufficient to meet the basic project purpose. Rather, a smaller yield only means a somewhat shorter time before additional water supply may be needed. In any case, the alternatives (especially New Cheesman) do provide yields relatively comparable to that of the Two Forks proposal.

This comment is also incorrect in its assumption that projects with larger yields will of necessity pose more substantial impacts than smaller projects. It is possible that a larger yield project could pose less severe environmental impacts, depending upon the project's design and other logistical factors, as well as the relative value and vulnerability of the impacted areas. To the extent a smaller project is in fact less damaging than a larger project, the comment is correct that this creates a "bias" in

favor of the smaller project. Such a "bias," however, is mandated by the prohibition in Section 230.10(a) of the Guidelines against a discharge where less damaging practicable alternatives are available, but is limited by the requirement that the less damaging alternative be practicable.

The issue of using multiple smaller projects to meet the basic purpose, whether simultaneously or over time, is discussed in the next response.

Comment: The RD disregards the three phase water supply planning process, which included a first phase consisting of nonstructural sources and projects to provide water prior to 1995; a second phase of near-term structural sources to provide water by 2010; and a third phase to provide water after 2010. By mixing sources from these three phases, the RD confuses the subject, violates NEPA, and reaches incorrect conclusions regarding practicability of some alternatives and the true adverse environmental impacts associated with having to use alternatives to a Two Forks dam.

Response: EPA disagrees with the Applicants' assertions that the RD confused this issue, violated NEPA, or were necessarily incorrect in their determinations of practicability. However, the FD has not relied on any alternatives not analyzed in the EIS, and therefore this concern by the Applicants has been rendered moot.

We do wish to address the Applicants' statements concerning the true long-term impacts of using alternatives to Two Forks, however. We do not disagree with the approach of considering impacts from multiple actions which together serve as an alternative to a single, larger project. However, the Applicants incorrectly assume that several small projects would of necessity have more serious adverse impacts than any one large project. In this case, EPA has found that the 1.1 MAF Two Forks project would have very serious adverse impacts to the aquatic ecosystem and to recreational use of that system. The record does not support a finding that the possibility of delaying other impacts, associated with smaller projects, would justify the serious environmental impacts of any of the Two Forks projects. Therefore, we have concluded that such other impacts do not constitute "other significant adverse environmental consequences" associated with the alternatives to Two Forks.

Comment: The RD violates NEPA by not limiting its analysis of practicable alternatives to those in the EIS.

Response: As discussed in our response regarding referral to CEQ under NEPA, EPA is not required to limit itself to those alternatives or other issues and/or analyses in a NEPA document in a section 404(c) action. Nevertheless, in this case the range of alternatives relied upon in the FD is limited to those structural alternatives in the EIS.

Therefore, while EPA does not agree with the Applicants' statement or, necessarily, with its conclusions regarding other alternatives, this argument is moot.

Comment: The corrective action ("No Net Loss Compromise") is not a practicable alternative as it does not achieve the project purpose (although it would come closer than other alternatives to meeting the Applicants' purpose).

Response: EPA accepts the Applicants' right to reach their own conclusions as to the practicability of any alternative. This particular issue is moot because the FD does not rely on the corrective action as an alternative; in fact, the FD "vetoes" construction of the corrective action or the other Two Forks site dams.

However, it is important to note that this comment seems to reflect the Applicants' confusion regarding the meaning and use of the concepts of project purpose and practicability. The Applicants state: "The 1.1 MAF project achieves the Applicants' project purpose elements far better than the smaller No Net Loss Compromise Thus, the Applicants are proposing the No Net Loss Compromise without qualifying their belief that the preferred project is the 1.1 MAF project." (emphasis added.) As a general rule, the project proposed by an applicant will be the one that applicant prefers, and will often match his desires and goals better than any alternative. However, the purpose of the alternatives analysis is not to ensure that the applicant gets his ideal project; if that were the case there would be no reason at all to conduct any alternatives analysis. The Guidelines' alternatives analysis is intended to ensure that harm to the aquatic environment is avoided to the extent practicable. That is why the basic purpose of a project is determined in order to identify a realistic range of alternatives, even if some or all of those alternatives are not the applicant's ideal project. (This is not to say that there must always be practicable alternatives identified; Applicants are correct that sometimes there may be no practicable alternatives to the proposed project. However, that determination must be based on an analysis of alternatives that could realistically serve the basic purpose, not on a purpose so narrow as to restrict the selection of alternatives to that single project already selected by the applicant.)

Comment: The RD misrepresents the No Federal Action Alternative as being practicable, and ignores the impacts of that alternative.

Response: As the FD indicates, Applicants have confused the result of a Section 404(c) "veto" with the No Federal Action Alternative. They are not in fact the same; the No Federal Action Alternative described in the EIS is one potential scenario should Section 404 permits be denied for the proposal and all structural alternatives, whereas the FD "vetoes" only the proposal and alternatives at the proposal site, and does not

reflect in any way on the permissibility of the other structural alternatives.

In fact, the only alternatives the FD relies on are those structural alternatives analyzed in the EIS. The FD does not assume that the No Federal Action Alternative as described in the EIS is practicable, or that such a scenario would not have serious adverse impacts; the FD merely finds that there are, at a minimum, structural alternatives that are practicable, would have less adverse impact on the aquatic ecosystem, and would not have other significant adverse environmental consequences. That is not to say that EPA agrees with Applicants' assessment of the No Federal Action Alternative as described in the EIS or of any alternatives not analyzed in the EIS (including, but not limited to, their conclusions regarding practicability, other adverse environmental impacts, and lack of South Platte storage), but merely to say that those concerns are not relevant given the findings of the FD.

Further, EPA recognizes that there are many actions beyond the scope of Section 404 which have serious adverse impacts in their own right. However, Section 404 can only consider whether or not such serious impacts will necessarily occur if a particular action is taken under Section 404 (e.g., permit denial or "veto" or even project modification). It is impossible to predict with any certainty which of a set of options an applicant or other entity could choose to pursue under a given set of circumstances, and therefore EPA cannot base its decisions on the possibility that a choice to pursue an environmentally harmful option could follow.

Comment: Applicants imply that there will be significant adverse environmental impacts to the Two Forks site if a permit is not issued for a dam project at that site.

Response: The Applicants assume an increase in recreation use of the area, with resultant user conflicts and lessened enjoyment, environmental damage, and problems associated with safety and law enforcement. While it may be true that there would be increased use of the site for recreation, with some potential adverse results, this argument nevertheless seems to make a strong case that this area is of vital recreational importance to the area and its residents, and that the loss of the area would be significantly worse than the impacts to the area of increased user pressure. Applicants also seem to assume that there will be a decrease in management attention to the site by the Forest Service, due to likely budget cutbacks. However, there does not seem to be any solid basis for this prediction. In fact, it has been acknowledged that management attention has been limited due to the dam proposal, and it seems more likely that there would be an increase in management attention by the Forest Service once the Two Forks proposals were no longer under consideration.

Comment: The RD understated the unmet future water supply needs of the

metropolitan area and of specific municipalities.

Response: This comment appears to reflect a concern that the RD has departed from the EIS with respect to the water supply needs of the Providers, independent of Denver. The RD's analysis of future water demand was based on the water demand presented in the EIS, although the Appendix did include a Table which included some figures from sources in addition to the EIS. While those projections may or may not be accurate under current circumstances, the FD did not question the water supply demand projections in the EIS or in Applicants' corrected Table, and did not in any way rely on different information or challenges to the needs stated in the EIS.

Comment: EPA lacks the specific technical expertise to properly evaluate the impacts of the Two Forks project.

Response: EPA's statutory authority requires EPA to have staff who can understand and evaluate a variety of technical issues and areas, and EPA is prepared to, and routinely does, implement its authorities. Section 404 issues, and Section 404(c) in particular, routinely involve evaluating impacts to aquatic ecosystems and to recreational use of such systems. Staff who worked on the Two Forks Section 404(c) action have experience in section 404 and related technical areas. As the Applicants indicate, the record included extensive technical studies and analyses. EPA has the expertise to review and understand these analyses, and has based the FD on its analysis of the information regarding the aquatic ecosystem at issue here and the impacts to that system and to recreational use of it.

Comment: "The EIS and the RD wrongly state that the 19 miles of river between Cheesman Dam and the confluence with the North Fork is Gold Medal Fishery. The Gold Medal fishery exists only from Cheesman Dam to Scraggy View picnic area not including Wigwam Club, and the Gold Medal fishery in the 1.1 MAF project area is approximately 13 miles (14 miles - 1 mile at Wigwam Club)."

Response: According to the administrative record, the Colorado Division of Wildlife (CDOW) in 1988 changed the Gold Medal classification (after the release of the FEIS) from the 20 mile stretch in the 1.1 MAF inundation area (the edge of the inundation pool to the confluence with the North Fork) to the 13.9 mile stretch in the inundation area (edge of the inundation pool to the Scraggy View Picnic area excluding 1 mile at the Wigwam Club)⁶. As such, EPA recognizes that the current Gold Medal designation

⁶ For clarification, the 1 mile stretch at Wigwam Club holds a private fishery that fulfills Gold Medal criteria.

is not the same as that described in the Recommended Determination.

EPA notes that despite the change in designation, the fishery and recreational value of the area between the Scraggy View picnic area and the confluence should not be dismissed. This stretch exhibits lower trout densities and size but this condition is a result of removal by anglers. Nonetheless, the area supports heavy fishing pressure, despite the absence of special regulations.⁷ Furthermore, evidence in the administrative record indicates that recent biomass and size increases in the Deckers area have attracted more fishermen to the entire mainstem fishery, and have resulted in a significant increase in fishing pressure in the Scraggy View and Twin Cedars area. As such, EPA regards this information as direct testimony to the value placed on the recreational fishery in the entire mainstem South Platte, including the reach from Scraggy View to the confluence.

Comment: The high biomass in the six mile segment of the stream immediately below Cheesman Reservoir is the result of special catch and release restrictions. "Biomass levels throughout the remainder of the river are more typical." "The RD has not discussed the impact of special fishing regulations on biomass levels in the river."

Response: EPA does not, in any way, dismiss the impact of fishing regulations on trout biomass levels and on trout size. However, EPA has chosen to interpret the impact of special regulations differently than the Applicants have.

The Applicants state that special regulations, such as catch and release regulations, are artificial management actions that eliminate angling pressure to facilitate high fish populations and size. If areas currently managed under special regulations, like Cheesman Canyon, were managed under general regulations, biomass levels would be much lower.

However, EPA asserts that the opposite argument can be made for areas managed under general regulations (8 trout/day, no terminal tackle restriction). Given the popularity of the South Platte fishery, those areas managed under general regulations may exhibit artificially low biomass levels, a condition which would result from high levels of angling pressure.

There is no doubt that biomass estimates fluctuate with changes in fishing management policies. However, the Applicants are attempting to dismiss the habitat

⁷ Recent CDOW estimates show that biomass estimates have increased in the Scraggy View and Twin Cedars area, and may be a positive response to a change in fishing regulations. This observation is not conclusive, however, because the area is stocked.

values of the South Platte by stating that catch and release regulations are a primary reason why the Cheesman Canyon supports high trout densities and size. To the contrary, the catch and release regulations for Cheesman Canyon, by eliminating angling pressure, merely create a condition that allow fish populations to approach habitat carrying capacity -- a condition revealing the true habitat value of the stream reach. It is true that biomass levels for Cheesman Canyon would be lower if managed under general regulations; however, the catch and release regulation does not cancel or enhance the valuable ecological variables existing in Cheesman Canyon that support high trout biomass. As such, EPA recognizes the fact that certain intrinsic habitat components of the South Platte aquatic ecosystem allow trout densities to approach the high level they do in Cheesman Canyon.⁸

Comment: "The fishery and its identified biomass qualities are positively influenced by the tailwater effect from Cheesman Reservoir." "The Cheesman tailwater creates favorable water temperatures, increases nutrient levels and reduces sedimentation and turbidity. In addition, based on the priority of water in the different Denver water supply reservoirs along the South Platte, Cheesman is operated in a manner that reduces peak spring flows which are adverse to fish and increases winter flows which would otherwise be limiting to South Platte fish populations."

Response: The Applicants have sought to discredit the high habitat values of the Cheesman Canyon fishery (not to mention the entire mainstem South Platte) by asserting that high fishery values for the mainstem of the South Platte are the result of a man-made system.

While the tailwater effect and flow regime theoretically could have a positive influence on trout populations, documentation in the administrative record indicates a situation exists that is quite to the contrary. In its fish flow investigation reports, the CDOW indicated that the South Platte River below Cheesman Dam has exhibited a high level of fluctuation in yearly stream flows, which has devastated the reproduction of wild rainbow and brown trout populations in the river in many years. This position is clearly stated in a 1988 report:

Maintenance of reasonable minimum flows during the most vulnerable life

⁸ The habitat components EPA is referring to are attributed to the physical, chemical, and biological characteristics of the South Platte aquatic ecosystem. For instance, fundamental components of the salmonid (trout) habitat include acceptable water quality, food producing areas, spawning-egg incubation areas, and cover. These are the factors that limit trout densities, and when present in favorable quantities, sustain high levels of trout population.

stages (spawning, incubation, hatching, and fry) are of paramount importance in maintaining thriving rainbow and brown trout populations in the South Platte River below Cheesman Reservoir, which is owned and operated by the Denver Water Department (DWD) as part of its water storage and supply system. However, maintenance of stable minimum flows for trout (or any other sort of recreation) has not been the hallmark of the DWD's flow management regime in the South Platte River.

The DWD would like the environmental community, angling groups, and the Colorado Division of Wildlife to believe that their water management plan and Cheesman Dam, in particular, are the primary reasons for the gold medal trout fishery that exists in Cheesman Canyon. However, nothing could be further from the truth.

The U.S. Fish and Wildlife Service, in making its Resource Category 1 determination, remarked that the mere fact the fish population has survived these conditions remarkably well, demonstrates the resilience of the habitat to withstand frequent adverse conditions. They further stated that the river reach below Cheesman Dam possessed an excellent habitat and fishery long before Cheesman Dam.

Given the opinions of these agencies, which are grounded in evidence contained in the administrative record, EPA cannot attribute the high fishery value below Cheesman Dam to the human-induced tailwater effect and flow regime. These conditions do not, in any way, discredit the high habitat value of the river stretch and have not had a particularly positive effect on the highly productive fishery in the area.

Comment: "Brown and rainbow trout are not native species, evidencing the effect stocking has had on the South Platte drainage. The private Wigwam and Swayback Clubs stock their portions of the river."

Response: EPA recognizes the fact that brown and rainbow trout are not native species of the South Platte. Yet, the capacity of the habitat to support such high trout densities and size cannot be dismissed. This is evidenced by the fact that the Cheesman Canyon fishery has not been stocked since 1952.

Although the Wigwam and Swayback Clubs, both on the mainstem South Platte, stock their portions of the river, the FEIS indicates that such stocking at Wigwam Club has had little impact on the self-sustaining trout populations adjoining the club. The FEIS made no statement on the impacts of stocking by the Swayback Club; however, the administrative record indicates that the Swayback Club possesses a lower biomass than at Wigwam Club (617 lb/acre). Therefore, it can be assumed that stocking at the Swayback Club does not influence the adjoining trout populations.

EPA does not believe the administrative record supports a finding that stocking from the Wigwam and Swayback Clubs has positively influenced nearby trout populations. There is little doubt the habitat supports a high quality fishery and would do so without any stocking and, as such, exemplifies a self-sustaining aquatic system with the attributes of a wild trout fishery.

Comment: "EPA places great emphasis on the Gold Medal and Resource Category 1 designations of the CDOW and the U.S. Fish and Wildlife Service. However, EPA fails to identify the legal import of the designations. A Gold Medal or Resource Category 1 designation is a policy decision, established in the absence of any supporting regulation."

Response: This statement reveals a misunderstanding regarding EPA's use of these designations. EPA recognizes that the Gold Medal and Resource Category 1 designations are policy and management tools.

EPA has looked to these designations as a means to utilize the expertise of agencies with assessment and management responsibilities for wildlife, fish, and habitat in the Two Forks area. The designations are a product of careful analysis followed by expert judgment and objective criteria and consequently provide useful baselines and/or points of comparison in the analysis of habitat (Resource Category 1) and recreational (Gold Medal) impacts expected from construction of Two Forks.

In essence, the designations provide EPA with a clear indication of the habitat and recreational value placed on the South Platte resource by these agencies. However, EPA has not accepted the designations at face value but has reviewed and analyzed the objective criteria defining them. [See Response to following comment.] As such, EPA assures the Applicants that while the Resource Category 1 and Gold Medal designations are useful, they have not been a decisive factor for the Recommended Determination or the Final Determination.

Comment: "The Applicants have, on a number of previous occasions, expressed disagreement with the Resource Category 1 and Gold Medal designation for the "tailwater" fishery below Cheesman Dam."

Response: EPA recognizes the Applicants are uncomfortable with these designations, and as such, has provided the following analysis:

Resource Category 1. The USFWS employs the Resource Category classification

system as part of its mitigation policy to ensure that the preparation of mitigation plans corresponds to the value of the habitat which may be lost or damaged. The USFWS classified the area below Cheesman Dam to the vicinity of the Scraggy View picnic area as Resource Category 1, meaning the "Habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the ecoregion section."

This stretch was designated Resource Category 1 due to ability of the habitat to sustain high trout densities and size despite heavy fishing use and frequent adverse conditions from the tailwater effect and flow regime from Cheesman Reservoir. The USFWS recognized this river reach as the "best Gold Medal segment in the State."

The administrative record shows that the area between Cheesman Dam and the Wigwam Club (Cheesman Canyon) has the second highest trout biomass level in the State of Colorado. It is second only to the Fryingpan River; however, this river is stocked, while the Cheesman Canyon is, on the whole, a self-sustaining fishery. As such, the self-sustaining characteristic of Cheesman Canyon in combination with the high trout biomass and size are a distinct attribute. The fact that there are other quality trout habitats in Colorado does not affect the outstanding nature of this habitat.

EPA recognizes the popularity of this stretch and the resultant high level of public fishing use imposed upon it. Creel census data collected over an eight-year period indicates a high level of fishing pressure for the South Platte from Cheesman Dam downstream to the confluence with the North Fork.

The Cheesman Canyon area is managed under catch and release regulations and the Deckers section has been managed under various special regulations since 1983. However, EPA also notes that high levels of public fishing use alone can be a source of disruption for the aquatic ecosystem. As such, EPA notes the ability of the habitat to incur these high levels of use. Although public fishing use tends to be more an indication of recreational value in this case it does reflect the high habitat value as well. [For more information on EPA Headquarters' position regarding special regulations, see Response to Comments, Influence of Special Regulations on Biomass]

Similarly, EPA, upon review of the record, has found evidence that high fluctuations in water flow have created adverse conditions for trout below Cheesman Dam. As such, EPA agrees that inherent habitat components have allowed the trout populations to proliferate, despite these adverse conditions. [See Response to Comments, Effect of Tailwater Effect on Trout Population]

The USFWS has stated that "the goal of no loss of habitat for the Resource Category 1 areas on the South Platte River clearly is not attainable if Two Forks is built; therefore we have presented mitigation recommendations should the Federal

permitting agencies approve Two Forks."

Therefore, upon analysis of the Resource Category criteria, EPA has found the USFWS observations to be supported by the Record. While EPA has not based its final decision on the Resource Category 1 designation, EPA Headquarters nevertheless affirms its usefulness as a point of comparison in determining habitat value.

Gold Medal Designation. The Gold Medal Designation is used by the Colorado Division of Wildlife to help anglers identify "lakes or streams in Colorado which offer the greatest potential for trophy trout fishing and angling success." As such, the Gold Medal designation identifies recreational fishing value, and is used to promote those areas the CDOW regards as offering a quality fishing experience. To be classified as "Gold Medal" a water must possess: a trout standing crop of 40 lb/acre; more than 12 fish/acre measuring 14 inches or longer; minimal dimensions of 2 miles in length and 20 feet in width; and scenic qualities (channel meandering, riparian vegetation, etc).

Currently, the river stretch below Cheesman Dam to Scraggy View picnic area is designated as a Gold Medal water. EPA recognizes the policy nature of the Gold Medal designations, as the designations have changed over the past two years – prior to 1988, the South Platte stretch below Cheesman Dam to the confluence with the North Fork was designated as a Gold Medal water. Nonetheless, EPA finds the Gold Medal indicators as a useful reference to recreational fishery value, but has not based the final decision upon them.

EPA also recognizes that biomass and size criteria used for the Gold Medal designation are influenced by special regulations. Nevertheless, documentation in the administrative record indicates that fishing use increases when trout densities and size have increased. This in particular underscores the recreation potential of a Gold Medal water, which means that Gold Medal designations are appropriate as one measure, albeit not the sole measure, of recreational fishery value.⁹

Comment: The USFWS and the CDOW "each has issued its opinion concerning

⁹ For instance, the river stretch from Scraggy View to the confluence with the North Fork, not a Gold Medal water, has traditionally supported a highly popular recreational fishery. However, it does not have the exceptionally high biomass and size levels as found upstream because it is managed under standard regulations and therefore subject to high levels of fish removal. Furthermore, recent creel estimates by Nehring show that fishing use in this area has significantly increased, an indirect effect resulting from the notoriety of new regulations and greater numbers of quality size trout in the Deckers to Scraggy View reach.

project impacts." "Neither Agency has sought to use its authority to oppose the project." "The USFWS stated in a letter to the Corps...that the mitigation proposed by the Corps was satisfactory to meet its concerns." "The CDOW has gone even further. It strongly argued for implementation of the Applicants' mitigation package which includes a \$10 million CDOW trust fund for non-project related fishery management, including stocking."

Response: As a preliminary matter, both agencies have never expressed outward support for the Two Forks Project. The Applicants are confusing agency concurrence on mitigation plans as a testimony of acceptance of the Two Forks Project.

Both agencies have expressed their positions on the Two Forks Project. First, the USFWS has gone as far as saying it does not support Two Forks, and even with the specific mitigation conditions to be included in any permit, there still would be "unavoidable losses to aquatic resources if Two Forks is built." The USFWS has contested announcements by the Applicants indicating the Two Forks decision was "accepted by" the USFWS. Likewise, the CDOW has stated that they are not supporting the Two Forks project by recommending the particular plan of mitigation and that they "neither endorse or oppose a project where the decision is a responsibility of other agencies."

It must be made clear that EPA has the statutory authority under Section 404 of the Clean Water Act to review, participate in the development of, and if deemed necessary, "veto" permits for discharges of dredged or fill material. Both USFWS and CDOW have participated in the environmental impact assessment process and the USFWS in the 404(q) elevation. Documentation revealing their comments and opinions are contained in the administrative record, and have been fully considered in making EPA's Recommended Determination and Final Determination.

Comment: Because fish populations have greatly increased due to new fishing rules imposed by the CDOW, and possibly for other reasons, the EPA is implicitly saying that the baseline biomass needs to be changed. "The RD [EPA] unilaterally adopts figures from outside the EIS record for 1987 and 1988 and relies on them in its adverse effects determination." "The figure that was used in the FEIS, 38,200 lbs, was agreed upon in the Aquatic Work Group and is the most reasonable figure." "Furthermore, mitigation should be considered as part of this analysis and, as such, it would be appropriate to consider what would occur on other streams with an equivalent level of special regulations."

Response: First, the Applicants have suggested that EPA may not go outside the EIS on factual matters, and therefore cannot base its determination on data introduced outside the EIS, specifically the more recent biomass data indicating an increase in fish

populations below Cheesman Canyon.

EPA's action under Section 404(c) is not subject to the EIS requirements of NEPA. EPA's authority to consider information under Section 404(c) is not constrained by what is, or is not, in the Corps' EIS, nor is a supplemental EIS needed before EPA may consider "new" information. As such, EPA may draw conclusions on data reflecting more recent estimates of trout biomass, just as long as it is contained in the administrative record and is deemed to have a factual basis. In fact, EPA is obligated to consider all information in the administrative record.

Second, the Applicants try to dismiss the role habitat has played in the recent increases in trout population below Cheesman Canyon. EPA recognizes that the increases are a positive response to human-induced regulation. But EPA also recognizes that the increases reflect an ecological response by fish populations to habitat. Reduced angler exploitation does not change the carrying capacity of the habitat; it merely allows the populations to more closely approach the full capacity of the habitat. This response is an indication of habitat value for the mainstem South Platte that was not reflected in the 1979-1985 CDOW data. As such, EPA believes it is important information that provides more insight on the habitat value of the mainstem South Platte.

Third, the Applicants minimize the role of habitat improvement in mitigation. They suggest that the recent increases in biomass in the mainstem South Platte merely indicate the potential fishery mitigation that can be achieved through resource management (catch restrictions). EPA reiterates that special regulations only create a condition that allow fish populations to respond to habitat. The regulations, then, are secondary to habitat. Without quality habitat, there would be no population response to fishing regulations.

It appears the Applicants are assuming either that the streams to be used for mitigation have naturally high habitat values, or that they, without question, will be able to identify and mitigate for all habitat variables that normally sustain high trout populations. In either case, the mitigation streams would have a high carrying capacity, so that, upon implementation of special regulations, the trout populations would rise to high levels, approaching habitat potential. EPA does not believe that the administrative record generally supports the former assumption; the latter assumption is highly speculative, and given the uncertainty of the science at this time, unreasonable for the purposes of discussing potential biomass gains through mitigation and special regulations.

Comment: "The RD appears to argue that the substantial work conducted by the Aquatics Work Group and the dialogue that continued between the agencies throughout

the EIS review process on aquatics should be merely discarded and instead a different type of analysis based on fish habitat "weighted useable area of rainbow trout spawning habitat" ("WUA") should be used."

Response: EPA is in no way discarding the work conducted by the Aquatics Work Group and the dialogue that continued between the agencies throughout the EIS review process. EPA has stated repeatedly that it is not bound by the EIS on factual matters and consequently may use additional data in the administrative record in reaching a determination with regard to the Two Forks permit.

In the Recommended Determination, EPA chose to use estimates of habitat (WUA) to determine impacts to spawning habitat. Strong correlations are known to exist between changes in habitat and salmonid density at the early life stages. In light of this correlation, EPA does not consider it unreasonable to identify impacts to habitat for the spawning life stage resulting from hydrological operations of Two Forks.

EPA disagrees with the Applicants' statement that trout biomass is the only aquatic ecosystem variable of concern when estimating project impacts. EPA is committed to protection of the "whole" environment, which includes protection of the aquatic ecosystem and habitat as it is used by all aquatic life forms--not just trout. Because the alteration of natural ecosystems poses a threat to the public health and welfare, impacts to habitat should not be disregarded from a determination of total impact to the aquatic resource. Therefore, EPA Headquarters finds the Recommended Determination's use of habitat analysis, in addition to the work of the Aquatics Work Group, as reasonable and supported by the record.

Comment: "There are many multiple purpose recreation areas within an easy driving distance from the metropolitan area with numerous recreation opportunities, including the Blue, the Cache la Poudre, the South St. Vrain, the Big Thompson, the Arkansas, and the Colorado Rivers."

Response: EPA recognizes that other recreational areas exist in a day-use drive from Denver. However, the South Platte River corridor in the 1.1 MAF inundation area possesses a mix of significant, natural and man-made features that greatly enhance the recreational experience-- a mix that cannot be found within a similar driving distance from Denver (less than 1-hour to 1.5-hour drive).

A summary of these features follow:

Scenic Qualities. The South Platte, a free-flowing riffle-pool riverine system, is the second largest river draining onto the eastern plains with an annual flow in excess of 200,000 acre-feet per year. The amount of stream flow often is a factor in appraising

the total recreation and scenic resource of a river or stream corridor. Only three rivers in the front range of Colorado possess flows of this size. The other two are the Cache la Poudre [at Ted's Place] and the Arkansas River [at Canon City].

The whitewater riverine system freely flows through sparsely forested slopes, rock outcrops, jagged peaks, grassy flood plains and narrow canyons. Natural features of particular interest include the picturesque Cheesman Canyon; distinct geologic features such as Dome Rock, Eagle Rock and the "Chutes"; the Cathedral Spires portion of the North Fork; and the proposed dam site.

High Quality Fishing. Fishing in the South Platte mainstem is more than just fishing, it is "big water" fishing. A Gold Medal water from Cheesman Dam to Scraggy View, the South Platte is known for its high quality fishery along a major waterway. The administrative record indicates that this combination of aesthetic attributes and select fishing imparts international status to the South Platte River fishery.

Water-Related Recreation. The South Platte River corridor, a free-flowing stream reach, offers other recreational opportunities such as canoeing, kayaking, rafting, scenic viewing, camping, and picnicking. All these activities are related directly or indirectly to the presence of the river. This is an especially valuable feature for groups, including organizations and extended families, who often frequent dispersed recreation areas because current developed facilities do not meet their needs or do not provide the desired recreation experience sought by the group.

Accessibility. Man-made features, including an access road and informal parking lots make most stretches of the 1.1 MAF inundation area excluding Cheesman Canyon highly accessible. This accessibility as well as close proximity to Denver allow for frequent trips and/or after-work activity.

The Applicants state that several waterways near Metropolitan Denver provide a riverine, natural setting available for dispersed public recreation. This may be true but, save dispersed public recreation and perhaps accessibility, none of these water systems qualitatively provide both the same big water and quality fishing experience as the mainstem South Platte. Of the rivers listed by the Applicants, the Blue and Colorado (approximately 1.5 hour drive) are designated Gold Medal segments and have annual flows over 200,000 acre-feet. However, the administrative record indicates they do not exhibit trout biomasses comparable to the Gold Medal segment on the mainstem South Platte. Furthermore, the Blue and Colorado Rivers are on the west slope; according to the FEIS, the metropolitan public tends to view areas on the east slope as being more convenient for day use and to view a trip to the west slope as a more intensive, less spontaneous recreation destination.

The Cache la Poudre and Arkansas River (1.5-hour and 2-hour drive,

respectively), are both on the east slope and have annual flows in excess of 200,000 acre-feet, but they do not offer the same high quality fishing experience. Finally, the South St. Vrain and Big Thompson (1.4-hour drive), both on the east slope, do not have annual flows in excess of 200,000 acre-feet per year nor do they offer the same high quality fishing experience.

In summary, no other riverine system offering dispersed recreational opportunities possesses the same combination of recreational features in such close proximity to the Denver metropolitan area. The administrative record shows that other agencies including the U.S. Forest Service (USFS) and National Park Service (NPS) have made reference to the "outstandingly remarkable" recreational value of the 21-mile mainstem of the South Platte corridor. As stated in the FEIS, "The combination of proximity, accessibility, and fishing quality near a large metropolitan area is unique, and the fishing opportunity is considered a significant resource."

Comment: EPA is misleading in its "reference to white water because it connotes a specific level of boating difficulty." "The majority of the mainstem and North Fork of the South Platte (Cheesman Dam to the confluence with the North Fork) is rated Class I and II on the international rating system, which merely accords a novice to easy classification."

Response: As a preliminary matter, the following is a breakdown of the "International Scale of River Difficulty for Whitewater Sports": (emphasis added)

Class 1 - very easy

Class 2 - easy

Class 3 - medium difficulty

Class 4 - difficult

Class 5 - very difficult

Class 6 - extremely difficult

The term "whitewater activities" is used to collectively describe boating activities - such as kayaking, canoeing, and rafting - in a free-flowing water habitat interspersed with sections of white water flowing over boulders. The administrative record shows that other agencies and organizations have used this term in the same manner, including the Corps of Engineers, the USFS, and, in displaying the International Scale of River Difficulty, the Public Information Corporation. Furthermore, Class 1 and Class

2 waters, although easy to maneuver, contain small patches of fast-moving, "white" water flowing over rocks.

The Applicants seem to minimize boating opportunities afforded to the more experienced boater. According to the FEIS, the South Platte mainstem, when considered in combination with the North Fork, provides white-water boating opportunities ranging from Class 1 to Class 4 -- a range that far exceeds the limited opportunities described by the Applicants.

Comment: The "whitewater runs on the North Face [Fork] of the South Platte will be enhanced by Two Forks, and at present the DWB heavily controls the present river boating quality."

Response: EPA recognizes that boating on the North Fork would be enhanced in the sense that water flows through the Roberts Tunnel would increase, thus increasing the length of the high flow period. However, the North Fork is a more hazardous whitewater river and cannot replace the class diversity lost from the North Fork and mainstem combined. Furthermore, inundation from the 1.1 MAF Two Forks project will eliminate 50 percent of the available whitewater possibilities within 1 to 2 hours of the Denver metropolitan area. As such, EPA cannot discount the diverse range of boating opportunities as they currently exist on the South Platte.

Comment: The Recommended Determination is misleading in that "the whitewater activities in the inundation area [1.1 MAF project] represent 70 percent of the activities in the Pike National Forest when less than .02% of the Colorado whitewater use occurs in the Pike Forest."

Response: Even though the Pike National Forest, and consequently the 1.1 MAF inundation area, encompasses a small percentage of whitewater opportunity in Colorado, its proximity to Denver and ease of access encourages frequent, short trips and makes it a particularly valuable resource for people who are learning, teaching, and practicing boating skills. While this resource value may not be unique or even significant when considered State-wide, that does not reduce the qualitative value of the whitewater resource to the Denver metropolitan area.

Comment: The Recommended Determination misrepresents the Federal position on designation of the South Platte River between Cheesman and Strontia Springs reservoirs because it uses quotes from other agencies without mentioning respective decisions not to include the South Platte on the NRI.

Response: EPA recognizes that in 1982 the Heritage Conservation and Recreation Service (HCRS), and in 1988 the National Park Service (NPS), chose not to list the South Platte segment on the Nationwide Rivers Inventory (NRI). EPA also recognizes that the Regional USFS made a 1988 recommendation to the Regional Director of the NPS not to list the South Platte on the Nationwide Rivers Inventory. However, these decisions did not specifically repudiate expert determinations on the recreational value of the mainstem.

EPA recognizes that other agencies must make management and policy decisions with respect to particular statutory authorities. However, EPA carries the responsibility to look beyond subjective agency judgments to review objective analysis and expert opinions that were generated during the agencies' decision making processes. EPA finds these expert opinions, and the objective criteria supporting them, to be important tools in determining impacts to resources. EPA has analyzed the Resource Category 1 and Gold Medal designations in the same manner. [See Response to Comments, Applicants' Concern with Resource Category and Gold Medal Designations]

The U.S. Forest Service has declared the 21-mile stretch from Cheesman Dam downstream to the confluence with the North Fork as having "outstandingly remarkable recreational values." In making this conclusion, the U.S. Forest Service identified distinctive natural features of the South Platte River corridor such as river size "in terms of water flow (average annual flow in excess of 200,000 acre-feet); a wide, scenic valley that doesn't constrict use; a very productive trout fishery; and sufficient water flow to provide white-water boating." The USFS made further mention of the diversity of recreational activities occurring in the area, the close proximity to the Denver metropolitan area (within an hour's drive), and public accessibility through gravel and dirt roads that parallel the river.

Similarly, the National Park Service, upon making a field inspection of the same South Platte corridor, found "that this stream segment possesses outstandingly remarkable recreational, fish, historic and other [endangered species] values."

Given the documentation as presented in the administrative record and given EPA's responsibility to review and consider such documentation, EPA Headquarters concurs with the Recommended Determination's use of agency statements that describe the high recreational and fishery values of the 21-mile segment of the South Platte River corridor extending from Cheesman Dam to the confluence of the North Fork.

Comment: EPA understates the severity of the resource management problems existing at the South Platte. As a result, EPA casts a "more favorable light on degraded resources," which makes the finding of unacceptable adverse impact on recreation unsubstantiated.

Response: EPA disagrees with this assertion. The Recommended Determination states that the value of the recreational experience depends on the level of management attention afforded to an area as well as the basic resource itself. Because an area may suffer from resource management problems does not mean the recreational value of the basic resource is eliminated.

Indeed, the case of the South Platte is to the contrary. The resource management problems that exist at the South Platte (littering, deteriorating facilities, competition between recreationists, user congestion) are a direct result of the popularity of the area. This observation has been made by Agencies, including the Bureau of Outdoor Recreation, Corps of Engineers, and the USFWS. The 1984 recreation statistics for the Two Forks project area speak for themselves – 487,000 visits which translates into 316,770 public and private Recreational Visitor Days (RVDs). Furthermore, and equally important, the FEIS indicates that recreation development has not been encouraged, due to expectations of flooding from the Two Forks Dam and to private land acquisition by the Denver Water Board.

EPA does not believe these problems are irreversible, and, in any event, has evaluated the recreational values of the South Platte river corridor as they exist. A major river in close proximity to Denver, the South Platte continues to offer a wide range of recreational opportunities to a large number of people. The Denver public has sent the Agency thousands of letters describing the quality recreational experience the South Platte river corridor provides. Hence, the management problems, while regrettable, have not unduly diminished the high recreational value of the South Platte resource.

Comment: A table in EPA's Recommended Determination presents Recreational Visitor Days (RVDs) for activities in the inundation area. The "impact projections actually reflect the entire 177 [117] square mile project study area, not just the inundation area."

Response: EPA recognizes that the table in the Recommended Determination presents Current Recreation Use in the Two Forks project study area – not the inundation area – and notes this correction. However, EPA also acknowledges that most of the activities listed in the table are related directly or indirectly to the presence of the river.

In making its final decision on impacts to recreation, EPA assures the Applicants that it has focused on the results of the FEIS recreation impact assessment. As part of the analysis, the 1984 recreation use data for the Two Forks project study area was used as a baseline to determine the number of RVDs lost from the project study area. As such, recreational impacts described as the number of RVDs lost from the Two

Forks project study area are the data EPA has used to determine impact to recreation as a result of construction of Two Forks.

Comment: On the same table (page 33 of the Recommended Determination) the scenic driving component reflects 80% travel to and from and 20% scenic driving, according to Forest Service and other planning documents.

Response: EPA recognizes and takes note that "Road Travel" is described as "Scenic Driving" in the table on page 33 of the RD. However, documentation in the administrative record have been unclear about this breakout. The table presented in the RD was extracted directly from the FEIS. Furthermore, while it is clarified later in the document, the Metropolitan Denver Water Supply Recreation Impact Assessment also uses the terms interchangeably.

In any case, the Road Travel component is in fact treated as such in the recreation impact analysis. Consequently, the above clarification as noted by the Applicants has not influenced EPA's overall conclusion on recreation impact to the South Platte River corridor by the Two Forks Project.

Comment: EPA made "an inflammatory statement that new fishing use information, introduced outside the EIS record, shows that the 1986 user hours were equivalent to the EIS projected user hours in 2010, which resulted in the Recommended Determination questioning the Corps' entire impact analysis. The Recommended Determination is deceptive, however, in not comparing the same baseline numbers or the same river lengths."

Response: For the purposes of this discussion, EPA recognizes that different study sectors were used for the purposes of determining fishing use in the CDOW and FEIS reports. Given the difference in methodologies, EPA will not directly compare data presented in the FEIS and CDOW studies.

The Applicants argue that an EPA statement referring to a tripling in fishing use since 1984 is deceptive in that 1984 marked a tremendously high water year and, consequently, a decline in fishing use. They state that because of this, the 1986 data is disproportionately higher, hence the reference to use doubling and tripling.

However, this very observation gives EPA serious reason to question the data on which the Corps' impact analysis was based. The EIS recreation impact assessment utilized 1984 fishing recreation data as the baseline for impact projections to the year 2010. Therefore, it is reasonable to assume the 1984 data, derived from USFS Recreation Information Management (RIM) statistics, was also confounded by the high

water year and, hence, lower than it should be.

Given this information, it would not be surprising if the fishing use projections for the year 2010 which were used in the FEIS are correspondingly low. EPA Headquarters believes there is reason to seriously consider the additional information concerning 1986 user hours in reaching conclusions regarding impacts to recreational fishing.

Comment: "Without analysis or reasoning, the RD makes a finding of significant off-site impacts caused by dispersed recreation activities from the project. This contradicts the EIS and the supporting technical analysis which found that even without any mitigation, virtually every potential impact was neither substantial nor significant."

Response: Statements in the FEIS are in direct contradiction with the Applicants' assertion. Hence, a collection of FEIS statements on recreational off-site impacts:

General Dispersed Use.

"The displacement would primarily involve fishing, picnicking, driving for pleasure, and other dispersed recreation activities. Focal points of activities such as dispersed camping associated with dirt bike use may shift, causing use patterns to change. One possible effect of displacement would be increased trespass and damage to private property in the first few years as visitors sought out new areas for their activity on a trial-and-error basis. These effects would be significant." (emphasis added)

Fishing Use.

"The displacement effect on fishing use is of some significance, as use shifts to streams affording similar opportunities. Stream segments with high quality fisheries, particularly those within a 2-hour drive of the Denver metropolitan area, could receive substantially increased fishing pressure. Such areas might include the Blue River downstream from Dillon Reservoir and the Middle Fork of the South Platte River." (emphasis added)

Boating Use.

"Additional water diversion from the Blue River would significantly alter rafting and kayaking opportunities by reducing peak flows and high flow duration. Commercial boating on the Blue River downstream from Dillon may cease if flows fall below the minimum level for navigation. At

least 1,500 annual visits for rafting and kayaking may be affected." (emphasis added)

Given the significance and magnitude of environmental impacts from the Two Forks Project, EPA believes it would be unrealistic to assume that no negative impacts of any consequence would occur off-site. The direct loss of recreational opportunities at the 1.1 MAF inundation site, nearby disruption from construction activities, and hydrological changes to adjacent waterways, are bound to displace would-be visitors. EPA believes this contention is supported by the above evidence in the FEIS.

Comment: "The Recommended Determination presents a one-sided picture of the area through its photographs, quotations only from commentators opposing the development of the reservoir, and quotations from authors not living, such as Walt Whitman, rather than the actual federal land use analysis conducted as part of the EIS review."

Response: As a preliminary matter, EPA has not blatantly disregarded viewpoints of commentators supporting the development of a Two Forks Project in order to create a one-sided argument. On page A-38, the Recommended Determination presents lists summarizing comments received by EPA during the 404(c) process, with comments from people supporting Two Forks being no exception.

Since the Recommended Determination was released, EPA has continued to receive letters from members of the Colorado public expressing their views on the construction of a Two Forks Dam and Reservoir. EPA has reviewed and considered all comments contained therein.

The Applicants declare that while it is important to view and consider public perceptions of a proposed Federal action, the agency has a responsibility to screen them for factual error. EPA agrees that all public comments may not be factually correct. However, EPA must remain sensitive to the public perception of any Federal action -- even those grounded on some factual errors -- where those perceptions are a function of the public value placed on the South Platte resource. On the other hand, EPA assures the Applicants that any factual errors in public comment letters, or elsewhere in the administrative record, have not influenced the final decision, which has been the result of careful review and analysis.

Finally, in reaching a Final Determination, EPA has not relied on photographs and flowery descriptions of the South Platte resource. Rather, EPA has reviewed documentation contained in the administrative record and has considered the opinions and expert judgment of participants throughout the permit process for the Two Forks project.

Comment: The "Recommended Determination creates the illusion of a 'free-flowing' river. However, the waters of the South Platte exist in a highly controlled and regulated state, with major water impoundments existing at less than twenty-mile intervals and several diversions in between."

Response: This statement reflects the Applicants' misunderstanding of EPA's use of the term "free-flowing." EPA has never used it in this case to describe a completely unaltered aquatic system. Rather, EPA has used the term "free-flowing" to denote riverine sections of the South Platte corridor as a lotic aquatic environment, which consists of actively moving water flowing over and between river substrate. EPA recognizes the existence of water flow alterations as a result of the hydrological operation of reservoirs and dams; in any case, the water located between the reservoirs is still "active" and for the most part unimpeded by natural and man-made structures.

Comment: "Riffle and pool complexes are very common in the streams and rivers throughout the Rocky Mountain Region. Considering the 8,000 miles of above average stream fisheries in Colorado, the thirty miles of impact to the riffle-pool complex represents less than one-one hundredth of one percent [actually less than .004%] of the existing Colorado resource."

Response: Riffle and pool complexes are a particularly valuable habitat for fish populations. The combination of rapidly moving water over coarse substrate with deeper pools of fine substrate provide fish populations with food supplies, optimal water conditions, breeding grounds, and cover. The South Platte mainstem, particularly the area above Scraggy View to Cheesman Dam, possesses riffle to pool ratios that are highly favorable to trout populations, and hence the high trout densities and size. For this reason, the fact that there are many other riffle and pool complexes in rivers and streams throughout the State does not lessen the value of the riffle-pool complex of the South Platte River corridor. In fact, it is the combination of these complexes with other habitat variables that undoubtedly is responsible for the high habitat values in this area.

Comment: EPA's "Recommended Determination ignores the fact that Two Forks will have many positive impacts, including the storage capacity provided by Two Forks which will generate sufficient flexibility to permit better regulation of flows for recreational use and for enhanced stream fishery resource management in the South Platte River and the North Fork and its tributaries."

Response: The South Platte River resource already provides the Denver metropolitan area with a high quality fishery resource and highly accessible, diverse recreational opportunities in a riverine setting. Given the current recreational value of the South Platte resource and the uncertainties that accompany mitigation, EPA believes it is

important to avoid the loss of the riverine resource, rather than to attempt compensation for it. Based upon EPA's review and analysis of the administrative record, beneficial impacts to fishery and recreational resources which could result from the Two Forks project do not justify or neutralize the expected adverse impacts to aquatics and recreation.

Comment: "There is absolutely no basis for considering aesthetics in the evaluation of water quality impacts to fish, wildlife, or water-based recreation." "Second, the federal agency responsible for aesthetic considerations in the project area, the U.S. Forest Service, conducted a technical evaluation of visual effects and is satisfied with the project as planned. Third, and equally important is the RD's characterization of the Cheesman Canyon visual qualities, which exist in the upper three-mile stretch of the river, as applying to the entire thirty-five miles of river."

Response: EPA disagrees with the Applicants' statements that there is no basis for considering aesthetics as a criteria for analysis under Section 404 of the Clean Water Act. EPA's 404(b)(1) Guidelines specifically identify effects to aesthetics as a consideration in making a factual determination and finding of compliance or non-compliance in Subpart B.

In the case of the Two Forks project, impacts to aesthetic qualities are especially important in the determination of impacts to recreation. EPA believes it would be unreasonable to evaluate the quality of the recreational experience without the consideration of aesthetics, as aesthetics can be a significant factor in the quality of the recreational experience.

EPA recognizes that Cheesman Canyon is considered among the most picturesque components of the 1.1 MAF inundation area; however, EPA does not discount the scenic features found in other locations on the mainstem and the North Fork. In the Corps' visual analysis other areas were rated high in aesthetic values including the Cathedral Spires portion of the North Fork, the proposed dam site, and the Eagle Rock/Chutes portion of the South Fork (located just upstream of the confluence).

Finally, EPA cannot discount the significant direct adverse visual impact as described in the FEIS from the construction of the 1.1 MAF and 400,000 acre-foot projects. The dam structure would cause a strong visual contrast with the characteristic landscape and the reservoir would fluctuate during operation, resulting in a band of exposed shoreline which would create a strong contrast with the characteristic landscape. In addition, the reservoir would inundate a variety of water features and vegetative diversity and distinctive geologic features such as Eagle Rock, Dome Rock,

and the "Chutes."

Although the USFS found that the 1.1 MAF Two Forks Project would not significantly change the overall National Forest Land and Resource Management Plans for the region, the supporting technical analysis did not repudiate the visual effects that would be expected from construction of the Two Forks dam. In fact, the USFS amended guidelines contained in the Forest Plans in direct response to visual effects in the Pike and San Isabel National Forests and the Routt National Forest.

In light of the Section 404(b)(1) Guidelines' consideration of aesthetics, and the significant role aesthetics may play in at least certain aspects of recreation, EPA Headquarters believes that it is appropriate to consider aesthetics in this case, and finds that the Recommended Determination's finding of significant adverse effect to aesthetics to be reasonable and supported by the administrative record.

Comment: "The Recommended Determination makes many comments such as that found on page 34 suggesting that this [the South Platte resource] is a pristine recreational area. This is parallel to other actions by the RD in ignoring the factual evaluation of the area by the authorized federal agency. The U.S. Forest Service has classified Cheesman Canyon in the 'semi-primitive motorized/roaded natural' category in its Recreation Opportunity Spectrum System Report. This is far from a pristine classification. Cheesman Canyon represents only the three-mile segment immediately below Cheesman Dam. The RD erroneously tries to attribute those qualities to the entire project area of varying and lower quality, all less than pristine in nature."

Response: The statement in the Recommended Determination reads "EPA believes that the area currently offers a spectrum of opportunities ranging from relatively pristine (Cheesman Canyon) to areas showing signs of misuse (such as portions of the North Fork)." In this statement, EPA recognizes that the South Platte recreational resource is not pristine in the sense that it is untouched by humans. The RD merely indicates that the Cheesman Canyon area, for the most part, possesses a relatively natural appearance. In this same statement the RD specifically recognized that areas downstream of Cheesman do not necessarily possess the same quality, which is a direct result of human intervention (or misuse). EPA also recognizes that the scenery changes below Cheesman Dam, but it still possesses distinct, aesthetic characteristics.

In addition, the Applicants have stated that diversion structures and dams upstream have transformed the South Platte into an unnatural, "contrived" aquatic system. While EPA acknowledges the presence and influence of diversion structures and dams, the South Platte River still maintains a natural appearance. The Corps in its visual analysis declared:

"Although the flows of both rivers have been altered by construction of diversion structures or dams upstream from the [Two Forks] project study area, the channel morphology, with its clear, fast-moving water, has a natural appearance."

EPA recognizes that, by definition, the South Platte is not pristine. However, this doesn't diminish the natural appearance of the area. As such, EPA Headquarters does not believe that adverse impacts of human intervention in this area have eliminated or even significantly reduced the aesthetic, scenic value of the recreational resource.

Comment: "EPA's Recommended Determination suggests the existence of irreplaceable ecological and recreational qualities in a unique combination located in close proximity to the Denver metropolitan area, when the vast majority of resources in the project area are neither unique nor irreplaceable, and occur throughout the Front Range."

Response: EPA recognizes the Applicants' discomfort with the use of the terms "unique" and "irreplaceable" in the capacity of describing ecological and recreational qualities. EPA notes, however, that the "special" characteristics of the South Platte River corridor are repeatedly mentioned throughout the administrative record.

For instance, the USFWS has recognized the river stream below Cheesman Dam to Scraggy View picnic area as Resource Category 1, meaning the resource to be impacted is "unique and irreplaceable." The U.S. Forest Service and National Park Service have remarked on the "outstandingly remarkable" recreational value of the 21-mile mainstem South Platte. Furthermore, the Corps of Engineers stated that "the combination of proximity, accessibility, and fishing quality near a large metropolitan area is unique, and the fishing opportunity is considered a significant resource."

In the final analysis, EPA has not flagrantly and irresponsibly used the terms "unique," "irreplaceable," "outstanding," and "remarkable" without supporting evidence in the administrative record. As such, the Recommended Determination and Final Determination contain conclusions based on reasoned, careful analysis.

Comment: "EPA mischaracterizes the Project Area as containing unique wildlife values."

Response: EPA Headquarters has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to

wildlife under Section 404(c). As such, the Applicants' concern does not apply.

Comment: "EPA wrongly concludes that any of the three threatened or endangered species with ranges that overlap the project area will be adversely affected by the project."

Response: EPA Headquarters has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to wildlife under Section 404(c). This includes the threatened or endangered species to which Applicants refer. As such, the Applicants' concern does not apply.

Comment: "EPA's use of HABCAP numbers improperly characterizes the extent of wildlife habitat and diversity lost."

Response: EPA Headquarters has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to wildlife under Section 404(c). As such, the Applicants' concern does not apply.

Comment: "The boldly stated conclusions with respect to [wildlife] impacts are not supported by any fact or analysis."

Response: EPA Headquarters has determined that, in this case, the administrative record does not contain sufficient information regarding wildlife use of the subject aquatic ecosystem to reach a conclusion regarding an unacceptable adverse effect to wildlife under Section 404(c). As such, the Applicants' concern does not apply.

Comment: "In its Proposed Determination issued August 29, 1989, the EPA Region identified a number of issues or matters of potential concern regarding the Two Forks project. While some of these matters persist as issues between the Applicants and EPA as the Phase 3 consultation process begins, certain others were not relied upon by EPA as a basis for its Recommended Determination. As stated in our July 5 correspondence, the Applicants' comments on the RD will assume that these matters are closed for the purposes of 404(c) process, and we accordingly do not address them in detail here. The following subsections contain our observations only at this point."

a. "Off-Site" Threatened and Endangered Species, and "Nebraska" Concerns.

Response: EPA Headquarters has not used "off-site" threatened and endangered species, or "Nebraska" concerns as a basis for the final decision. As such, the Applicants' observation does not apply.

b. Wetland/Riparian Areas.

Response: In the Final Determination, EPA Headquarters has chosen to cite impacts to wetland/riparian areas from the construction and operation of the Two Forks Reservoir and Dam Project. Wetlands are listed as special aquatic sites to be considered under Subpart E of the 404(b)(1) Guidelines and play a significant role in identifying adverse impacts to aquatic ecosystems under Section 230.10(a). In that capacity, EPA has chosen to monitor parameters of impact for the purposes of identifying adverse effects to the aquatic ecosystem in the South Platte corridor. However, in the final analysis, adverse impacts to wetland and riparian areas were a significant factor in reaching a final decision.

c. Water Quality.

Response: EPA Headquarters has not used water quality concerns as a basis for the final decision. As such, the Applicants' observation does not apply.

d. Channel Stability.

Response: EPA Headquarters has not used channel stability concerns as a basis for the final decision. As such, the Applicants' observation does not apply.

Comment: The EPA ignores the greater than 100% increase in stream miles that will qualify as Gold Medal following implementation.

Response: EPA recognizes the Applicants' proposal to mitigate an increased amount of stream miles ~~for~~ the 13.9 miles of Gold Medal trout fishery lost as a result of inundation from the 1.1 MAF reservoir. However, based on review of the mitigation measures proposed, and substantiated by the administrative record, EPA concludes that proposed methods are unproven and may not lead to the specified goals. In addition, various stream segments proposed for mitigation and public access already contain greater than 40 pounds/acre of trout biomass. EPA understands that the trout biomass in these mitigated stream segments could potentially be raised above the existing levels with successful mitigation. However, even though these stream miles would exceed the

40 pounds per acre standing crop requirement for Gold Medal quality, the density would be significantly lower than in the stream miles lost.

Comment: The RD wrongly concludes that the mitigation plan represents an after the fact approach.

Response: According to the Corps' proposed permit conditions, the Applicants would implement a reservoir reclamation program immediately upon completion of construction, and an operational flow plan would commence immediately following the completion of the reservoir reclamation program. Under the best conditions, the reservoir reclamation program is expected to take over four years to complete. In implementing the operational flow plan, the Applicants have deemed ten years a reasonable amount of time to validate results of the aquatics mitigation. This represents to EPA a significant lag time before the aquatics mitigation, if fully successful, is to even a 90% biomass replacement level. Therefore, EPA considers certain aspects of the Applicants' mitigation plan to be an after the fact approach. Indeed, the Applicants themselves must recognize the after the fact nature of the mitigation, since the mitigation included in the corrective action proposal altered the mitigation plan to provide for more before the fact mitigation of the aquatic impacts. This proposal was not before the Regional Decision Officer, and thus could not be reflected in the RD.

Comment: The proposed project will provide an even greater combination and diversity of recreational resources within the same proximity.

Response: The recreation mitigation proposed by the Applicants includes both in-kind and out-of-kind recreation replacement. EPA is not only evaluating the quantity and type of recreation mitigation proposed, but the quality of the recreation mitigation proposed compared to that which currently exists in the South Platte River project area. According to EPA's review of the administrative record, the recreation mitigation proposed by the Applicants would not replace the unique combination of recreation opportunities in as close proximity to the Denver metropolitan area. The Applicants' recreation mitigation would not account for some impacts, such as impacts to rafting and kayaking on the Colorado River. As another example, public access to quality fishing opportunity within 50 miles or less than an hour's drive of the metropolitan Denver area would be lost. Moreover, the administrative record is clear that there are no substitute areas that can provide the same combination of quality recreation opportunities that exist currently in one area of the South Platte River.