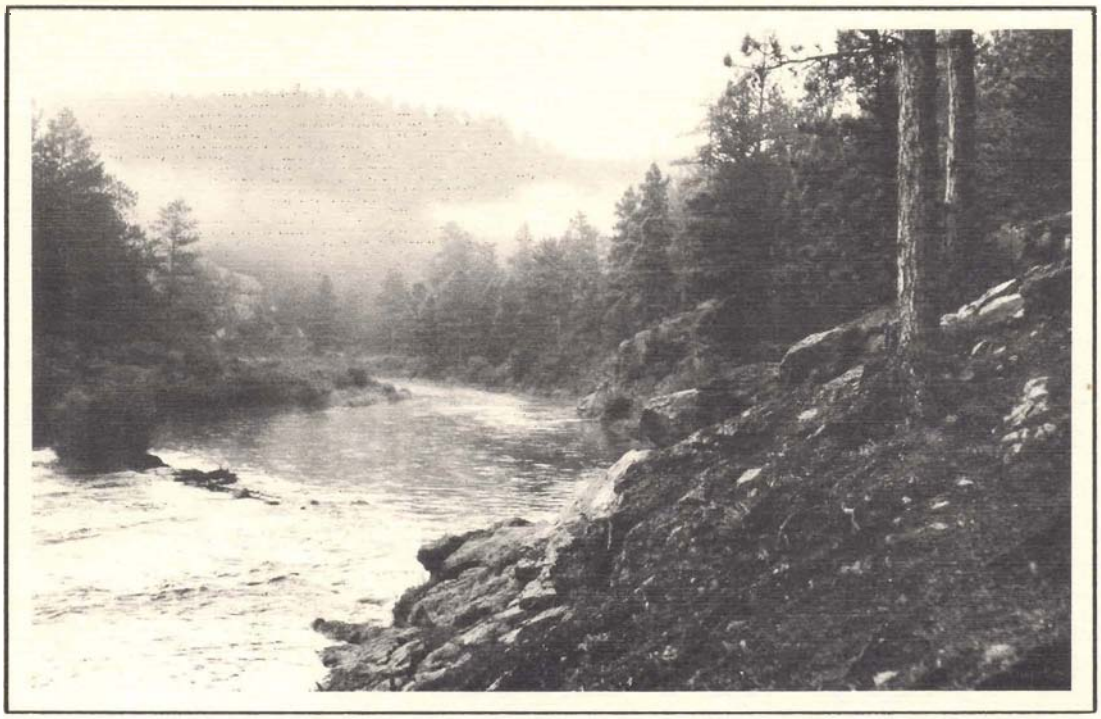
US EPA ARCHIVE DOCUMENT

Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act



U.S. Environmental Protection Agency

Region VIII

March 1990

RECOMMENDED DETERMINATION TO PROHIBIT CONSTRUCTION OF TWO FORKS DAM AND RESERVOIR PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT

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RECOMMENDED DETERMINATION TO PROHIBIT CONSTRUCTION OF TWO FORKS DAM AND RESERVOIR PURSUANT TO SECTION 404(c) OF THE CLEAN WATER ACT

I. EXECUTIVE SUMMARY

Two Forks dam and reservoir is a water supply project proposed by the Denver Board of Water Commissioners (DWB) and the Metropolitan Water Providers (MWP) to help meet the water supply needs of the Denver metropolitan area. The project site is located in Section 30, Township 7 South, Range 6.9 West, Jefferson and Douglas Counties, Colorado. The proposed reservoir would have a surface area of approximately 7,300 acres and would provide an active storage capacity of 1,100,000 acre-feet. It would have an estimated safe annual yield of 98,000 acre-feet per year.

Both the 1,100,000 AF and the 400,000 AF Two Forks reservoirs would inundate a diverse riverine, wetland, upland complex with extremely high aquatic, wildlife, and recreational values. The fishery resource is one of the most productive in the State of Colorado and is designated as a "Gold Medal Trout Water" by the Colorado Wildlife Commission. The U.S. Fish and Wildlife Service (USFWS) designated a portion of the area as a "Resource Category 1," which is defined as "unique and irreplaceable." The wildlife values are very high because of the diversity of species, the numerous high interest species (deer, elk, bighorn sheep, turkeys), and the presence of threatened or endangered species (bald eagle, peregrine falcon, pawnee montane skipper). The U.S. Forest Service (USFS) (the major land manager in the area) concluded that the area has "outstanding and remarkable recreational and fishery values." The U.S. National Park Service also evaluated the area and concluded the area "possesses outstandingly remarkable recreational, fish, historic and other (endangered species) values." These values are all enhanced by the close proximity of the site to the major metropolitan areas of Denver and Colorado Springs.

Construction and operation of Two Forks dam and reservoir would eliminate approximately 90 percent of the Gold Medal reach of the South Platte River; result in the loss of mule deer, elk, wild turkey, bighorn sheep, small animal, avian, and threatened Pawnee montane skipper habitat; and may adversely affect the endangered bald eagle and peregrine falcon. The reservoir would also inundate the South Platte River areas currently receiving the most intense recreational use.

Through the National Environmental Policy Act (NEPA) and Clean Water Act (CWA) Section 404 permitting processes, the U.S. Army, Corps of Engineers (Corps), identified practicable alternatives

to the proposed Two Forks project. The Corps' Final Environmental Impact Statement and its CWA Section 404(b)(1) evaluation indicate that the adverse impacts of Two Forks on wetlands, wildlife, recreation, aquatic life, and threatened and endangered species are greater than any of the other site-specific practicable alternatives evaluated. In addition to those alternatives identified as "practicable" by the Corps, the Environmental Protection Agency (EPA) believes there are additional practicable alternatives available to meet the water needs of the Denver metropolitan area.

EPA has been an active participant in the Two Forks process. Throughout the NEPA review, EPA identified major concerns, including the adverse environmental impacts of the project and the availability of alternatives. Following the Corps' "Notice of Intent" to issue the 404 permit for Two Forks, EPA announced that it would commence the Section 404(c) process. Subsequently, EPA held extensive meetings with the applicants, their consultants, public officials, and representatives of the environmental community. In addition, during this period, EPA personnel participated in several site visits.

After evaluating the information received, EPA issued a "Proposed Determination" which was published in the Federal Register on September 5, 1989. The basis for the Proposed Determination was unacceptable adverse environmental impacts of the proposed Two Forks project and the availability of less damaging practicable alternatives. EPA solicited comments on the Proposed Determination and conducted public hearings in Denver, Colorado and Grand Island, Nebraska. Since the initiation of the Section 404(c) review, approximately '11,000 written comments have been received by EPA.

It is indisputable that the proposed Two Forks reservoir would inundate a diverse riverine/wetland/upland complex with extremely high fisheries, wildlife and recreational values. Construction and operation of the project would have unacceptable adverse effects on fishery areas (including spawning and breeding grounds), wildlife, and recreation areas. Furthermore, the record demonstrates the existence of practicable, environmentally less damaging alternatives to the proposed project.

Therefore, EPA Region VIII recommends that action be taken under Section 404(c) of the CWA to prohibit the specification of the defined area as a disposal site for the discharge of fill material in conjunction 'with any dam or reservoir project.

II. BACKGROUND

This Recommended Determination is the result of the EPA, Region VIII, review of the proposed Two Forks dam and reservoir, Jefferson and Douglas Counties, Colorado. This review was conducted under authority of Section 404(c) of the CWA (33 U.S.C. 1344(c)). Two Forks dam and reservoir is a water supply project proposed by the DWB and the MWP (the applicants) to help meet the water supply needs of the Denver metropolitan area.

A. Project Description

The proposed Two Forks dam would be located on the South Platte River about one mile downstream from the confluence of the North Fork of the South Platte with the South Platte River. The dam would straddle the Jefferson-Douglas County line approximately 24 miles southwest of Denver, and approximately 40 miles northwest of Colorado Springs. The project site is located in Section 30, Township 7 South, Range 69 West, Jefferson and Douglas Counties, Colorado (Corps 1989a). The general location of the proposed reservoir is shown in Figure 1.

The following description applies to the *@large[1]@wo Forks although EPA's concerns also apply to the "small" Two Forks. Two Forks dam would be a multicurvature thin arch concrete dam designed to be constructed in either one stage or two stages. Principal project features would be the concrete arch dam; a free overflow spillway in the center of the dam crest; a spillway plunge pool; a multilevel intake structure on the upstream face of the dam; valving systems for selective withdrawals from the reservoir, including an emergen'cyreservoir drain system; a diversion tunnel and cofferdams for river diversion during construction; electrical transmission lines; and project access roads. (Corps 1988, page 3-126).

The dam would be 615 feet high, would have a crest length of 1700 feet, and would require approximately 1,330,000 cubic yards of concrete to construct the dam. The riverbed altitude is approximately 6,020 feet and the normal maximum reservoir pool altitude would be at 6,547 feet with the normal minimum pool altitude at 6,180 feet. The reservoir created by Two Forks dam would have an active storage capacity of 1,100,000 acre-feet (AF) and have a surface area of 7,300 acres (11.4 square miles) at the normal maximum pool (Corps 1988, Table 43, page 3-127).

Two Forks reservoir would provide long-term storage for flows from the South Platte basin upstream from the dam and storage of transmountain water diversions from the west slope of Colorado. Two Forks reservoir storage would allow the Denver Water Department (DWD) to further integrate the northern and southern sections of its water supply system and improve yields from the existing Blue, Williams Fork, and Fraser River collection

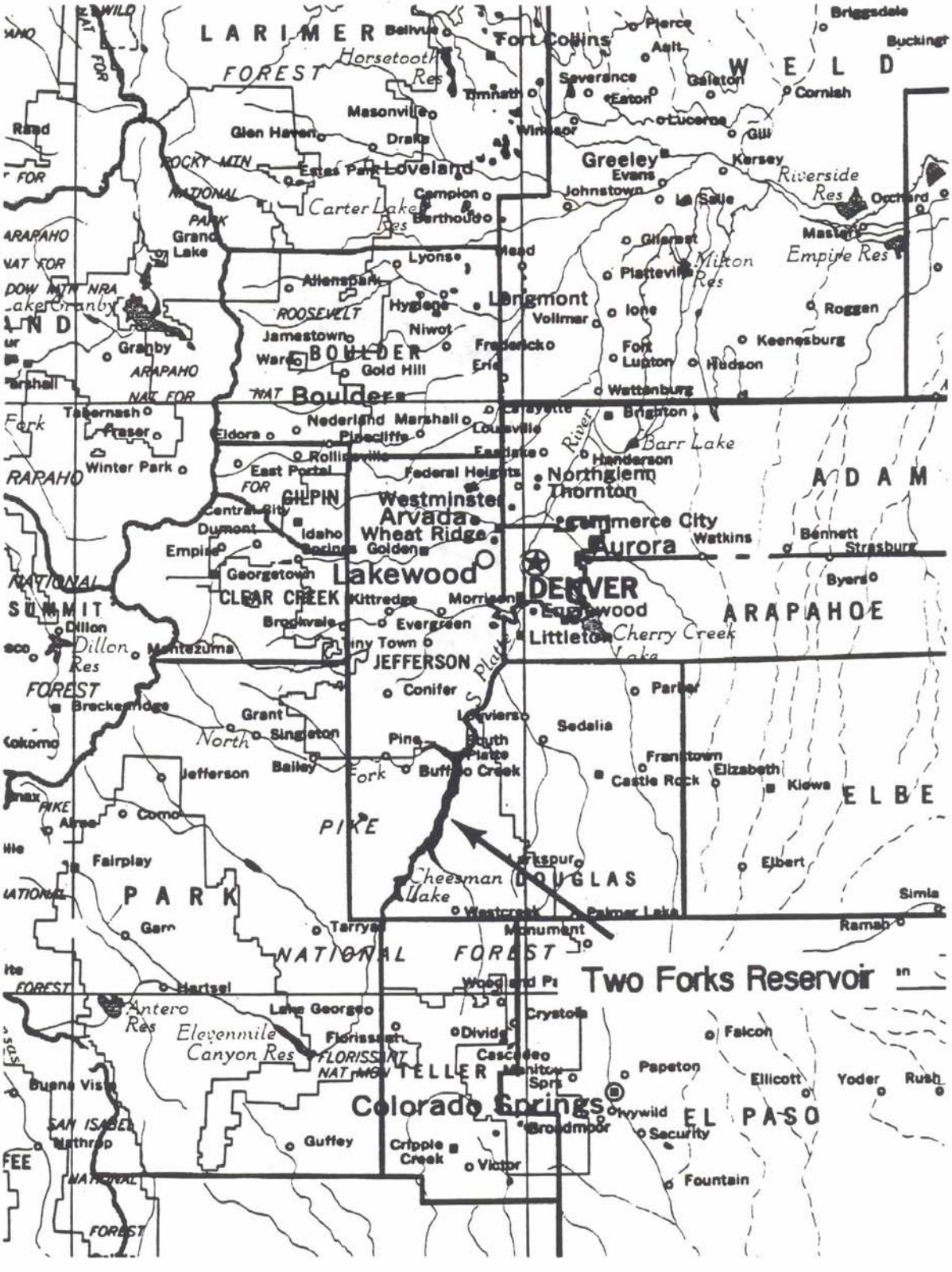

Figure 1. Location of Proposed Two Forks Reservoir

systems. The Blue River would supply 42 percent of the safe yield; the South Platte, 33 percent; the Fraser River, 20 percent; and the Williams Fork, 5 percent. A number of MWP would also use the storage capacity in Two Forks reservoir to store water rights held independently from the DWD.

Two Forks dam and reservoir would be operated in conjunction with other water storage reservoirs in DWD's system. Because of the hydrology of the basin, the topography of the site, the relatively junior storage rights, and the operational principles of the Summit County Agreement, Two Forks reservoir would be subject to significant fluctuations during normal reservoir operations. Model studies of the annual fluctuations of Two Forks reservoir conducted by the Corps indicate that, under the assumptions modeled, Two Forks reservoir would reach the "normal maximum pool" (altitude 6,547 feet) six years out of the 28 years modeled and wauld reach the "normal minimum pool" (altitude 6,180) six years out of the 28 years modeled (Corps 1986, Appendix 4C, Volume 2, plate 2-33).

The operation of the proposed reservoir, in conjunction with the rest of the DWD water supply system would result in an estimated 98,000 acre-feet of safe yield per year (AFY) from Two Forks reservoir. A "rule-of-thumb" is that one AFY will provide water supply for a family of four for one year. This is enough water to meet the needs of approximately 392,000 new residents in the Denver metropolitan area.

B. History of Project

The following is a brief historical review of the Two Forks dam and reservoir project. A more detailed chronology of EPA's involvement with the project is presented in Appendix B.

Shortly after the turn of the current century, plans were being proposed to develop water from the Upper South Platte and Blue Rivers to serve the needs of the Denver area (BLM 1974). In 1905 Cheesman dam was constructed on the Upper South Platte, and water supply development in the upper basin continued with the purchase of Antero reservoir and the construction of Eleven Mile reservoir by Denver in the 1930's.

The water storage potential of the Two Forks dam site was subject to several earlier studies (Corps 1988, Appendix 4C). For example, the United States Bureau of Reclamation (BOR) studied the potential for a project several times, the most recent (mid 1970's) being an evaluation of a federal project at the Two Forks dam site (International Engineering Company, Inc. 1973). The report of the "steering committee" formed to help guide this feasibility study identified many of the major issues which were later to surface during the subsequent Foothills and Two Forks

debates, including the need for additional east slope storage, the availability of alternatives, the role of water conservation, and the recreational and wildlife values of the Upper South Platte. (Upper South Platte Unit Steering Committee 1974).

In commenting on the Upper South Platte Project (Two Forks), the USFWS in 1974 observed, "Based on a recent preliminary fish and wildlife evaluation for the major alternatives, the Two Forks dam and reservoir alternative was the least desirable choice." (Upper South Platte Unit Steering Committee 1974). Subsequently, the BOR decided not to pursue the Two Forks project.

Somewhat concurrently with the BOR study, the DWD proposed the Foothills Project which consisted of a Strontia Springs diversion dam on the South Platte approximately two miles below the Two Forks dam site and a Foothills Tunnel and Treatment Plant (BLM 1974). This proposed project was controversial because of its direct environmental effects and potential links to additional upstream storage (Two Forks) and additional transmountain diversions. Additional issues involved in the proposed Foothills Project included compliance with NEPA (42 U.S.C. 4321, et seq.), switching from the USFS to the United States Bureau of Land Management (BLM) as "lead agency", and permitting requirements under Section 404 of the CWA.

The Foothills project was the subject of an EPA elevation to the Council of Environmental Quality (CEQ) and of litigation initiated by proponents as well as opponents of the project. The substantive outcome of these activities, as far as the Two Forks dam and reservoir project is concerned, was the Foothills "Consent Decree" (77-W-306) signed by the parties in 1979. Among the stipulations in the agreement was a requirement that prior to any future DWD projects, a site specific analysis as well as a cumulative assessment of DWD's water projects would be prepared. The Systemwide Environmental Impact Statement (SEIS) (Corps 1988) for Two Forks dam and reservoir project evolved from this stipulation. Other stipulations in the Foothills Consent Agreement were that the DWD "institutionalize" a water conservation program and that EPA establish water conservation goals and periodically evaluate DWD's progress on water conservation.

In 1981, Colorado Governor Richard Lamm convened the "Metropolitan Water Roundtable" to address Denver metropolitan water supply issues. Representation on the Roundtable included the DWB, the MWP, the environmental community, and West Slope interests. Discussions covered South Platte storage, water conservation, and exchange and joint use agreements with the West Slope. The Governor's Roundtable activities subsequently merged into the Two Forks dam and reservoir project NEPA process.

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In December 1981, the DWB requested that the Corps be the lead agency in preparation of the SEIS. The primary purpose of the SEIS was to document the environmental impacts of the proposed future development of the DWD water supply system. The SEIS was also to include analysis of alternatives, including a "No Federal Action" alternative, consistent with requirements of NEPA. Subsequently, at the request of the DWB and with the consent of the representatives on the Roundtable; the focus of the SEIS changed from that of a systemwide planning document to a site-specific EIS designed to meet all federal and state permitting requirements for the Two Forks dam and reservoir project.

In January 1987, after three years of extensive study, review, and coordination, the Corps provided public notice of availability of the Draft Environmental Impact Statement (DEIS) (Corps 1986) and Section 404 permit application for the Two Forks dam and reservoir project. The DEIS indicated that the Two Forks dam and reservoir project was the most environmentally damaging of the alternatives examined (Corps 1986, Appendix 4C). In April 1987, EPA submitted comments to the Corps on the DEIS and rated the draft sEU-3 (environmentally unsatisfactory - inadequate information) (EPA 1987). The primary bases for the EU-3 rating were that adverse environmental impacts of the project would be significant and an appropriate mitigation plan had not been,. developed. Additionally, EPA expressed concerns that the DEIS inadequately addressed potentially significant water quality standards violations and failed to fully address reasonably available alternatives which had the potential to reduce or eliminate the significant adverse environmental impacts. In view of the substantial inadequacies of the document, EPA recommended that the Corps prepare a supplement to the DEIS addressing these outstanding issues.

In March 1988, the Corps issued the Final Environmental Impact Statement (FEIS) (Corps 1988). While improvements, especially a more detailed impact analysis, had been made, EPA concluded a number of'major issues had not been adequately addressed. EPA's May 26, 1988 comments on the FEIS and public notice identified remaining concerns, including the (1) lack of a definitive mitigation plan, (2) length of the proposed permit, (3) adequacy of the implementation program for "interim" water supplies and effective conservation, and (4) the lack of a "re-opener" of the permit process in the future to reassess project need (EPA 1988a). Even with the mitigation measures developed between the. DEIS and FEIS, EPA indicated that the Two Forks dam and reservoir remained the most environmentally damaging of the alternatives examined.

On June 9, 1988, EPA provided the Corps with additional detailed NEPA comments on the FEIS, which addressed (1) alternative water supply sources, (2) mitigation, (3) water quality, (4) aquatics, (5) wetlands, and (6) water conservation (EPA 1988b). In

addition, EPA announced that it was considering invoking its authorities under Section 404, including referral to a higher Corps authority under Section 404(q) and elevation of the matter to the CEQ.

After EPA submitted its FEIS comments to the COE there were several meetings (June 29, 1988, DWD-Water Quality; July 14, 1988, COE-NEPA/404; July 21, 1988, DWD Aquatics-Wetlands-Mitigation; July 25, 1988, DWD-Water Conservation/Interim Supplies) between the COE, DWD and EPA to discuss EPA's comments on the FEIS. On August 10, 1988 EPA informed the COE of issues where EPA had remaining concerns with the NEPA process and the 404 permit (EPA 1988c). These issues included 1) the public participation need for a Supplement to the FEIS to address the mitigation and water quality issues developed between the DEIS and the FEIS; 2) the need for the COE to determine whether Two Forks complied with the 404(b)(1) Guidelines particularly in relation to availability of practicable alternatives; 3) if the COE determined that there are no practicable alternatives to Two Forks, the need for a reopener in the permit conditions to examine both the need for a large project and alternatives which were not examined in detail in the FEIS; 4) if a long term permit, as requested by the applicant, is issued, it must include requirements to develop the less environmentally damaging interim supplies prior to construction of Two Forks; and 5) the need for the permit conditions, the ROD and the conservation requirements under the Foothills Consent Decree to be consistent. EPA again pointed out that these issues were potential candidates for elevation under the Section 404(q) MOU and/or referral to CEQ for resolution.

The level of EPA concern, including the level of agreement between EPA and DWD about the various issues raised in EPA's comments on the FEIS, was again clarified for the COE in a September 14 1988 letter (EPA 1988d). Again, practicability of alternatives, water quality, aquatic mitigation, water conservation, and the longterm nature of the proposed 404 permit remained as major concerns of EPA which had not been resolved.

In December 1988, EPA elevated its disagreements with the Corps pursuant to Section 404(q). The Regional Administrator met with the Division Engineer on January 17, 1989, to identify outstanding concerns in the areas of water conservation; "interim" supplies; public review of need and alternatives prior to construction; and mitigation of impacts to aquatics, wetlands, and water quality. A number of subsequent meetings were held among EPA, the Corps and the applicants to discuss these issues and develop permit conditions.

On March 15, 1989, the Corps issued a "Notice of Intent" to issue the permit for Two Forks dam and reservoir. In response, EPA informed the Corps on March 24, 1989, that EPA would commence the

Section 404(c) process by preparing a public notice in accordance with 40 C.F.R. Part 231 (EPA 1989b). The bases for this action were EPA's concerns that ".... the project may result in unacceptable adverse impacts to wildlife, fisheries, and recreation." (EPA 1989b) Because of his previous lengthy involvement in the Two Forks process, the Region VIII Regional Administrator declined to conduct the Region VIII Section 404(c) review. On April 3, 1989, this authority was delegated to Lee A. DeHihns, III, the Deputy Regional Administrator for EPA Region IV in Atlanta, Georgia (EPA 1989c).

The Section 404(c) regulations at 40 C.F.R. 231.3(2) call for an initial 15-day period during which the applicant and the Corps are given the opportunity to demonstrate to EPA Regional Administrator (or his designee) that the proposed project will not result in unacceptable adverse effects. Because of the complexities of the proposed project, this 15-day period was extended, with consent of the applicant, from April 28, 1989 until July 14, 1989 (54 Fed. Reg. 21470 (1989)).

During this extended period, EPA met numerous times with the DWD, the MWP, and their consultants. In addition, meetings were held with the Governor of 'Colorado, three United States Congressmen, the Mayor of Denver, numerous local elected officials, State officials of Colorado and Nebraska, and representatives of the environmental community. Visits were made to the Two Forks dam and reservoir site and to Cheesman Canyon. Mr. DeHihns and staff also toured the DWD system and portions of northeastern Colorado.

On August 29, 1989, EPA announced its intention to continue the Section 404(c) process by issuing the Proposed Determination to Prohibit, Restrict, or Deny the Specification, or the use for Specification, of an area as a Disposal Site: South Platte River. This Proposed Determination was published in the Federal Register on September 5, 1989 (54 Fed. Reg. 36812 (1989)). The main bases for this proposal to use the Section 404(c) authority were the significant loss of: aquatic wildlife; terrestrial wildlife; water quality impacts; recreational values; inadequate mitigation; and the availability of less damaging practicable alternatives.

In addition to seeking comments on the proposed action, EPA solicited comments on seven specific areas of concern. These were:

1) The potential for the Two Forks dam and reservoir project to violate State water quality standards, especially as related to potential channel stability alterations;

2) Whether, based on information collected since preparation of the biological opinions, the threatened and endangered species consultation should be reinitiated for any of the species potentially affected by the Two Forks dam and reservoir project;

3) Information on the wildlife species which would be affected by changes in the aquatic ecosystem;

4) Information on the recreational uses which would be affected;

5) Information on the availability of less environmentally damaging practicable alternatives to satisfy the overall project purpose of municipal and industrial water supply, taking into account cost, technology, and logistics, and including other alternatives which do not require the discharge of dredged material into the waters of the United States;

6) Whether the discharge should be prohibited forever, allowed as proposed by the Corps, or restricted in time, size or other manner; and

7) Information on recent population projections by DRCOG, information on what criteria Denver should utilize to supply water under its charter obligation, and the affect of planning uncertainties on water supply planning.

In addition to solicitation of written comments, EPA held public hearings in Denver, Colorado on October 23 and 24, 1989 and in Grand Island, Nebraska on October 27, 1989. Announcements of the scheduled hearings were published in seven local and regional newspapers in Colorado and Nebraska. During the Denver hearing 283 individuals presented oral testimony and 74 individuals testified at the Grand Island hearing.

The comment period for the Proposed Determination ran from August 29, 1989 through November 17, 1989, however, EPA began receiving comments on EPA's proposed veto soon after the March 24 announcement to initiate the Section 404(c) process. Over 11,000 individual comments were received between March 24, 1989 and March 26, 1990, and all comments received have been made part of the record. During the formal comment period (August 29 - November 17, 1989) approximately 4,000 comments were received. Because of the need to thoroughly review the large number of written and oral comments, and the diversity and significance of the issues associated with the proposed Two Forks project, EPA initially extended the Section 404(c) process until January 31, 1990 (54 Fed. Reg. 51470 (1989)). In order to complete microfilming and data entry of the record, this date was further extended until February 28, 1990 (55 Fed. Reg. 4009 (1990)), and again to March 31, 1990 (55 Fed. Reg. 7938 (1990)).

This Recommended Determination represents the culmination of the. Region VIII Section 404(c) review of the proposed Two Forks dam and reservoir. This document, along with the Administrative Record, is being transmitted to the Assistant Administrator for Water. The Assistant Administrator for Water will review this Recommended Determination, the administrative record, provide the Corps and the applicant with the opportunity to consult, and ultimately issue a final determination affirming, modifying, or rescinding Region VIII's Recommended Determination. The Final Determination is the final agency action in this matter.

C. Introduction to Remainder of Recommended Determination

Section III of this document contains the summary of unacceptable adverse effects required by Section 404(c). It also includes the legal background and authorities of Sections 404(c) and 404(b)(1) as well as the findings relative to the 404(c) and the 404(b)(1) Guidelines. Region VIII's conclusions and recommendations are contained in Section IV. Section V lists the references cited in the body of this document.

EPA has continuing concerns about project impacts in several areas that are not included among the Unacceptable Adverse Effects and Conclusions as bases for the Recommended Determination, Summary discussions of these concerns may be found in Appendix A. Also incorporated into Appendix A is discussion of many of the issues that have dominated the Two Forks debate over the years and discussion of the specific questions posed by EPA in the Proposed Determination. Appendix A also contains a listing of additional comments received by EPA. Appendix B is a chronology of EPA involvement in the Two Forks project. Appendix C contains photographs illustrating portions of the impoundment area. For the convenience of the reader, Appendix D contains a copy of the Supplementary Information for both the Section 404(b)(1) Guidelines and the Section 404(c) Procedures.

III. UNACCEPTABLE ADVERSE EFFECTS

A. Legal Background and Authority

In general, the Clean Water Act (CWA) prohibits the discharge of pollutants, including dredged or fill material, into waters of the United States (33 U.S.C. 1311(a)). Discharge of dredged or fill material may occur, but only in compliance with a permit issued through regulatory .procedures established by Section 404 of the Act (33 U.S.C. 1344). Responsibility for implementing the 404 program is divided between the Corps and EPA.

The Corps administers the permit program, reviewing applications for 404 permits against environmental regulations prepared by EPA (the "404(b)(1) Guidelines", 40 C.F.R. 230, hereafter "Guidelines"). The Corps also conducts a "public interest review" of permit applications to insure that projects are in the public interest and comply with the requirements of other relevant statutes. Pursuant to Corps regulations, the public interest review is conducted subject to compliance with the Guidelines (See 33 C.F.R. 320.4(a) and (b); 320.2(f)).

EPA's primary role in Section 404 permitting is to police compliance with the Guidelines (45 Fed. Reg. 85337 (1980)). This. is accomplished in two ways: through comments provided to the Corps and the applicant as part of the permit review; and, if necessary, through the exercise of EPA's "veto" authorities. Under Section 404(c), the EPA Administrator may restrict or prohibit the discharge of dredged or fill material at an identified site. The Administrator has delegated this authority to the Assistant Administrator for Water. The procedures for exercising these authorities are found at 40 C.F.R. Part 231.

Restriction or prohibition of a discharge under Section 404(c) . must be based on a showing by EPA that the discharge would have unacceptable adverse effects on fish and shellfish areas (including spawning and breeding areas), municipal water supplies, wildlife, or recreation areas (33 U.S.C. 1344(c)). If the Regional Administrator has reason to believe that discharge of dredged or fill materials will have an unacceptable adverse effect, he may notify the Corps and the applicant that he intends to issue a proposed determination. This action initiates the "veto" process and suspends the Corps' permit action.

Unless the applicant and the Corps demonstrate within 15 days that no unacceptable adverse effects will occur, or that corrective action will be taken to prevent such effects, the Regional Administrator will publish notice in the Federal Register of his proposed determination (40 C.F.R. 231.3(a)(2)). The primary purpose of this notice is to solicit comments on

EPA's proposed action (40 C.F.R. 231.4(a)). The Regional Administrator may also hold public hearings during the public comment period (40 C.F.R. 231.4(b)).

After considering comments received during the comment period, as well as information compiled by EPA, the Regional Administrator either withdraws the proposed determination or forwards a "Recommended Determination" to restrict or prohibit the discharge, with its underlying administrative record, to the Assistant Administrator for Water for final action (40 C.F.R. 231.5(b)). A decision to withdraw may be reviewed at the discretion of the Assistant Administrator for Water (40 C.F.R. 231.5(c)).

The Assistant Administrator for Water will review the administrative record, provide the Corps and the applicant with further opportunity to consult, and ultimately issue a final determination affirming, modifying, or rescinding the Region's recommended determination (40 C.F.R. 231.6). The Final Determination is the final agency action on the matter.

The 404(c) regulations define an "unacceptable adverse effect" as "an impact on an aquatic or wetland ecosystem which 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 C.F.R. 231.2(e)). In its evaluation of unacceptability, EPA considers both the magnitude of the potential impact and whether the impact may reasonably be avoided. (Guidelines for Specification of Disposal Sites for Dredged or Fill Material, Supplementary Information to the Final Rule, 45 Fed. Reg. 85336, 85339-40 (1980). The Supplementary Information to the Guidelines is contained in Appendix D of this Recommended Determination.)

Relevant sections of the Guidelines, particularly Sections 230.10 and 230.12, are considered in making the Section 404(c) determination of "unacceptability." Section 230.10 of the Guidelines identifies a series of restrictions on the discharge of dredged or fill material. These restrictions include:

- only the least damaging practicable alternative may be permitted (230.10(a)); (see Supplementary Information at 45 Fed. Reg. 85339 (1980));

- a prohibition against any discharge that causes or contributes to violations of State water quality standards or jeopardizes the existence of threatened or endangered species (230.10(b));

- o a prohibition against permitting any discharge that causes or contributes to significant degradation of waters of the U.S., as demonstrated by evaluations conducted pursuant to Subparts C through G of the Guidelines (230.10(c); and

- o a requirement that appropriate and practicable steps be taken to minimize potential adverse impacts before a discharge may be.permitted (230.10 (d).

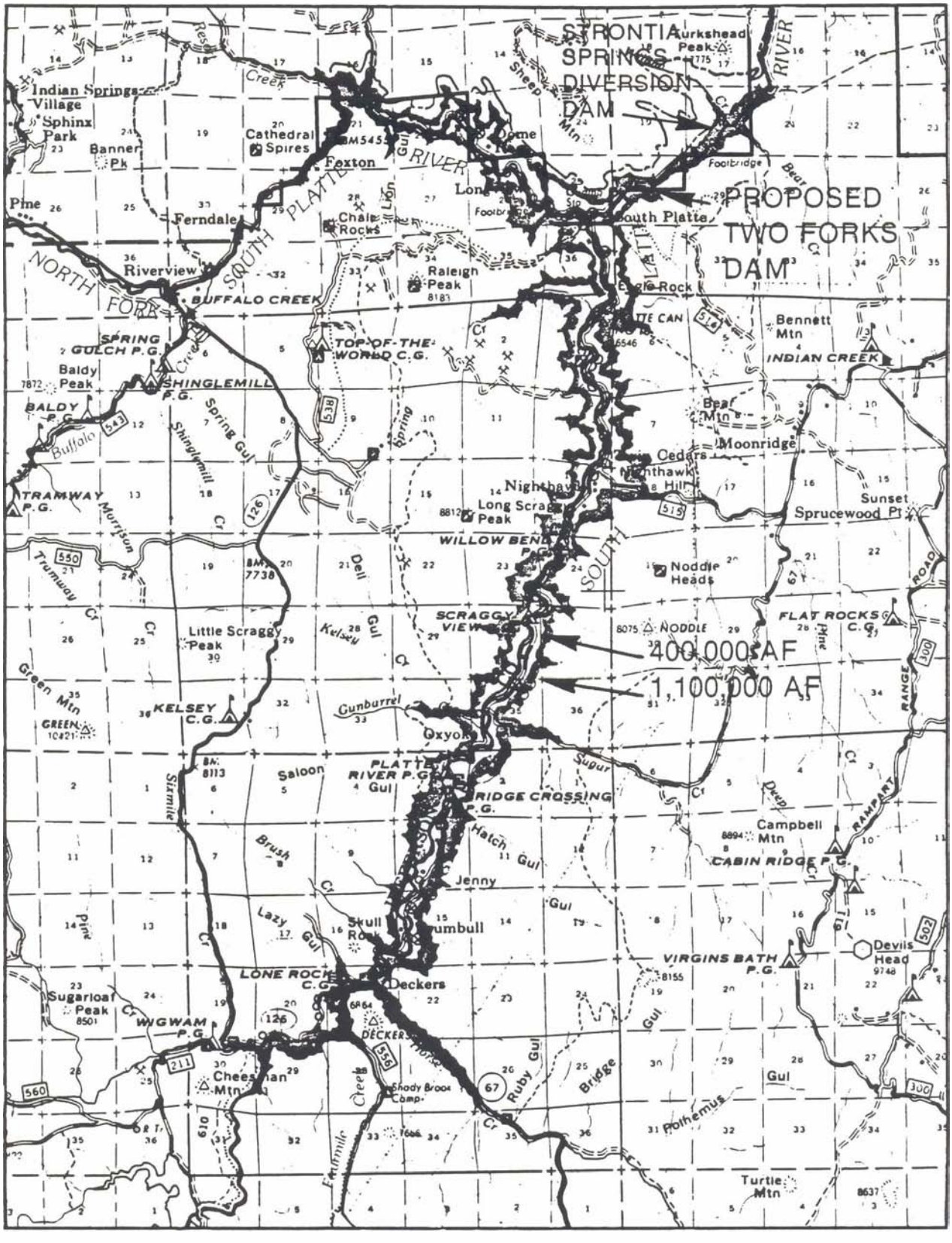
An applicant must 'demonstrate that all of the requirements of Section 230.10 have been met before a discharge may be permitted (See Supplementary Information at 4.5 Fed. Reg. 85338 (1980)). Section 230.12 requires the permitting authority to make written findings of compliance or non-compliance with the restrictions imposed by Section 230.1 0.

B. Overview

The following discussion summarizes the adverse environmental impacts that Two Forks dam and reservoir would have on resources in the inundation area. While the impacts are discussed in terms of distinct resource "categories" such as fisheries, wildlife, and recreation, the ultimate "value" of the inundation area is based on the unique combination of these components at one location. This overview also documents that the high resource values of the area have been confirmed by the assessments of other resource agencies and the public at large.

The proposed Two Forks dam would be located approximately one mile downstream from the confluence of the mainstem of the South Platte with the North Fork of the South Platte River (Figure 2). Two Forks reservoir would inundate more than 40 miles of river and associated tributaries. Included in the inundation area would be 8.8 miles of the North Fork of the South Platte, 21.3 miles of the mainstem South Platte, and 11.8 miles of tributaries. (Corps 1988, page 5-277). The inundation area would include the most popular of the remaining free-flowing stretches of the South Platte river. In addition to the direct, on-site impacts from inundation, the Two Forks project would also have off-site impacts due to hydrologic changes resulting from operation of the reservoir.

Two Forks would destroy a diverse riverine/wetland/upland complex with extremely high fish, wildlife, and recreational values. The active storage pool would inundate approximately 7,300 acres of upland, riparian, and stream habitat, including approximately 300 acres of vegetated wetlands and more than 30 miles of riffle and pool complexes. Both wetlands (Section 230.41) and riffle and pool complexes (Section 230.45) are recognized as "Special Aquatic Sites" in the Guidelines. This area provides important habitat for game fish as well as a wide variety of native



Pigure 2. Two Forks Reservoir Impoundment Area (Corps 1988)

LEGEND
Relocated Roads
Access Roads

wildlife. The proposed inundation area is also important as a recreational resource. It is the only area within a convenient day-use driving distance from metropolitan Denver where a relatively natural setting along a major waterway is available for dispersed public recreation, including fishing and whitewater recreation as well as more leisurely activities such as tubing, hiking, birdwatching, picnicking, and sightseeing. No comparable recreational substitute exists in similar proximity to the Denver metropolitan area.

Approximately 20 miles of the mainstem in the inundation area is designated as Gold Medal Trout Waters by the Colorado Wildlife Commission. This designation reflects the high quality of the trout habitat in this reach which offers the greatest potential for trophy trout fishing and angling success. The state does not stock the upper 13.9 miles of the Gold Medal reach where the highest trout biomass occurs. The upper 13.9 miles of the Gold Medal stretch of stream, where the highest trout biomass occurs, has also been designated as a Resource Category 1 by the USFWS, 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." This stretch of stream is managed through various catch and release mechanisms in order to support a self-maintaining population and is not stocked by the State. This outstanding aquatic resource would be irretrievably lost if the Two Forks project were completed.

Wildlife resources in the inundation area are of very high value due to the diversity of species, the number of high interest species located in the area, and the ease of access. Wildlife species which have high public interest due to hunting, photography, and general viewing include elk, mule deer, bighorn sheep (the Colorado State animal), cottontail rabbit, golden eagles, beaver, and wild turkey (USFWS 1987c, page 48).

The recreational values and popularity of the South Platte and the North Fork of the South Platte in the inundation area are due primarily to the existence of the free-flowing stream segments in association with the other environmental amenities. Easy public access along the river provides excellent dispersed recreation opportunities (Corps 1988, page 4-100).

The USFS, the major land management agency in the area, stated:

> We believe that this river does have outstanding and remarkable recreational and fishery values. We include fishery values here because they significantly enhance the high recreational values (USFS 1988).

After evaluating the South Platte segment from Cheesman Reservoir downstream to the confluence of the South Platte and the North Fork, the NPS noted:

> We have found that this stream segment possesses outstandingly remarkable recreational, fish, historic and other (endangered species) values (NPS 1988).

It is this combination of highly used recreational resources, the high value of many of the resources (such as the Gold Medal fishery, the white water recreation), and its accessibility for a large metropolitan population which makes the Two Forks reservoir inundation area unique and irreplaceable.

Excerpts from testimony at EPA's public hearings further illustrate the high value placed on this popular resource.

> "This thirty mile stretch of the river under consideration is very special. It contains a Gold Medal trout stream for fishing; whitewater and calm water for kayaking, canoeing and tubing; hiking, including a section of the Colorado Trail, which would be inundated if this dam were built. A herd of bighorn sheep, the rare Pawnee skipper butterfly has already been mentioned, wonderful areas for picnicking and outdoor recreation. The thrill of looking up from your boat or your hike or your picnic table to see a bighorn sheep or that rare butterfly. These are the things that are very special about this river" (EPA 1989d, pages 467-8).

> "I am a very avid fly fisherperson, and this fabulous river provides me with countless hours of relaxation in pursuing my favorite sport. It also provides many people with many varieties of recreation as it is in such close proximity to two large recreational cities, Denver and Colorado Springs, which are less than an hour's drive away" (EPA 1989d, page 136).

> "I can vividly recall the day nine years ago when I first hiked the Gill Trail in Cheesman Canyon. At the crest of the trail you could see the South Platte River for the first time, it was a remarkable panorama. I stopped that day, as I have at least a hundred times since, to take in the view, to experience its splendor" (EPA 1989d, page 198).

> "I am a kayaker, and this is the only close beginner through expert water that is available close to the Front Range" (EPA 1989d, page 180).

"The [inundation] area provides a priceless river environment, an hour or so away from people in the Colorado.Springs and Denver areas. People need various places to explore and enjoy. Reservoirs can be built and are everywhere; river environments with their characteristic plant and animal life cannot. This area now offers diversity and excitement from reservoirs. Kayaking and tubing experiences at all levels, birding and camping different from reservoirs, various hiking trails, including part of the recently finished Colorado Trail, and a number one Gold Medal natural fishing section. This exciting river environment should be saved..." (EPA 1989d, page 63).

"The South Platte is irreplaceable as a world class fishery, as habitat for wildlife, including bighorn sheep, and several endangered species, for recreation, and for its scenery. I have lived in Colorado my whole life and know of no other river providing so much to so many people, from kayakers, like myself, to fishermen, picnickers, hikers, mountain bikers, and people just out to enjoy the mountain scenery" (EPA 1989d, page 381).

"The South Platte was the first river that I faced and fished. I loved it then, and I love it now. It is a valuable resource and it should never be destroyed. I fondly recall the day some thirty years ago when my son, who was then five, caught his first trout, a wild brown from waters at Deckers in the South Platte. Like the river itself, one cannot replace -- cannot place value on such an experience. I look forward to the day when my son and his son's sons and his daughters can fish the Platte. I want this river saved for his children and for future generations. That seems like a very wise thing to do" (EPA 1989d, pages 195-6).

The aesthetic resources of the inundation site are an important quality of the area and are also a factor in evaluating compliance with Sections 404(b)(1) and 404(c). Photographs of portions of the impoundment area are contained in Appendix C. The Corps' visual analysis provides a description of the area:

The area is characterized by sparsely forested slopes, rock outcrops, jagged peaks, and the grassy flood plains and narrow canyons of the South Platte River corridor. Although the flows of both rivers have been altered by construction of diversion structures or dams upstream from the project study area, the channel morphology, with its clear, fast-moving water, has a natural appearance.....

> The South Platte River and river canyon are distinctive visual features. The South Fork of the South Platte River is composed of smooth, shallow water interspersed with sections of white water flowing over boulders. The South Platte River downstream from its confluence with the North Fork is made up primarily of shallow, white-water sections. There are a variety of water features and vegetative diversity associated with the South Platte River which are considered to be significant visual resources. Rock outcrops of pink and gray granite and riverside stands of willow are common along the river corridor. 'The soil color associated with the parent rock results in a high contrast where soils are exposed or vegetation is absent. Distinctive geological formations such as Eagle Rock, Dome Rock and "the Chutes" provide visual interest and are considered significant visual resources. Distinctive peaks, such as Long Scraggy Peak, Cathedral Spires, and Raleigh Peak, are notable visual features and serve as regional landmarks; they are also considered to be significant visual resources (Corps 1988, pages 4-83 to 4-86).

On a visit West in 1879, Walt Whitman described his railway journey up the South Platte corridor as "an egotistical find -- I have found the law of my own poems." His journal records the canyon in flashes of powerful imagery:

> ...as we travel on, and get well in the gorge, all the wonders, beauty, savage power of the scene -- the wild stream of water, from sources of snows, the dazzling sun, and the morning lights on the rocks, such turns and grades in the track, squirming around corners, or up and down hills -- far glimpses of a hundred peaks, titanic necklaces, stretching north and south...
>
> ...the chasm, the gorge, the crystal mountain stream, repeated scores, hundreds of miles -- the broad handling and absolute uncrampedness -- the fantastic forms, bathed in transparent browns and grays, towering sometimes a thousand, sometimes two or three thousand feet high.., (Whitman 1971).

<u>Conclusions to Overview</u>

The area which would be inundated by either a large or a small Two Forks Reservoir contains a diverse riverine/wetland/upland complex with extremely high fish, wildlife, and recreational values. Resource agencies have recognized those values through special designations such as "Gold Medal" and "Resource Category 1". Comments from the public have also acknowledged the high values of these resources. While the following discussions

provide more detail on the adverse impacts of Two Forks to individual resource categories (fisheries, wildlife, and recreation) it should be recognized that the unique and irreplaceable quality of the area is based, in large part, on the occurrence of all these high values at one location.

C. Significant Adverse Impacts to Waters of the U.S.

The following discussion details EPA's findings of unacceptable adverse effects to fisheries, wildlife, and recreation as required by Section 404(c). Two relevant sections of the Guidelines were considered when making these findings: 40 C.F.R. 230.10(c) (significant degradation .of waters of the United States) and 40 C.F.R. 230.10(a) (ability to avoid impacts through the availability of practicable alternatives). Findings regarding impacts to the affected resources follow in parts III(D) through III(F). Findings related to impact avoidance through the availability of practicable alternatives are contained in part III(G). As noted previously, EPA has other concerns with the Two Forks project, including inappropriate mitigation, negative impacts to water quality, and impacts on threatened or endangered species (see Appendix A for further discussion).

The Supplementary Information (Appendix D) to the Guidelines notes that the term "significant" used in this context relates to impacts that are not trivial, and are significant in a conceptual, rather than a statistical sense (45 Fed. Reg. 85343 (1980)). Further guidance in evaluating "significance" is found in Subparts C through G of the Guidelines (40 C.F.R. 230.20 through 230.61). These Subparts identify potential impacts to the physical, chemical, and biological characteristics of the aquatic ecosystem, to special aquatic sites, and to human uses that should be considered in a Guidelines review. The Subparts also outline evaluation and testing methods that are used to make the determinations required by Section 230.12. Relevant portions of these Subparts were considered in reaching the following determinations. 40 C.F.R. Part 230.10(c) provides in part:

> ...no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of waters of the United States.....Under these Guidelines, effects contributing to significant degradation considered individually or collectively include:
>
> > (1) Significantly adverse effects...on h'uman health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites...

(2) Significantly adverse effects...on life stages of aquatic life and other wildlife dependent on aquatic ecosystems...
(3) Significantly adverse effects...on aquatic ecosystem diversity, productivity, and stability...
(4) Significantly adverse effects...on recreational, aesthetic, and economic values.

D. Fisheries

The fishery in the Two Forks dam and reservoir area is an extremely valuable and unique resource. The Colorado Division of Wildlife (CDOW) examined the historic records concerning the South Platte fisheries and concluded that the entire South Platte basin upstream from Denver possessed a phenomenal native fishery prior to initial settlement of the Denver area. By the late 1880's this quality fishery was being actively promoted by the railroads in an effort to attract fare-paying fishermen. (USFWS 1987c, Appendix E) This large area of quality fishery has been reduced to limited portions of the basin today, much of which is in the Two Forks dam and reservoir area.

In recognition of the value and uniqueness of the remaining. resource, the Colorado Wildlife Commission and the USFWS each selected the South Platte River in the inundation area for special status. The Colorado Wildlife Commission has designated the stretch of the mainstem of the South Platte from Cheesman Dam to the town of South Platte as a Gold Medal trout fishery (USFWS 1987c, page 17), one of the highest quality habitats for trout which offers the greatest potential for trophy trout fishing and angling success. The primary game fish in the area are rainbow and brown trout.

The USFWS has designated portions of the stream in the inundation area as a 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". The main stem of the South Platte from Cheesman Dam downstream to the Scraggy View picnic area has been designated as Resource Category 1. The USFWS concluded this stretch of stream is unique because of 1) its combination of high biomass numbers and the large average size of the trout present; 2) the ability of the habitat to support these highly valued populations given the frequent adverse conditions resulting from the operation of Cheesman dam; 3) the ability of the stream reach to provide public fishing within reach of the large metropolitan population; and 4) the stream reach is the best of the Gold Medal segments in the State. (USFWS 1987c, pages 18-19)

Fish Populations

Trout biomass estimates for various segments of the South Platte upstream from Chatfield Reservoir (just southwest of Denver) are presented in Table 1. The data also indicate that the trout biomass throughout the area has been increasing since the baseline studies were conducted for the FEIS in the early 1980's. In several areas this increase in trout biomass is very significant. The increases in biomass during recent years in the vicinity of Deckers is likely the result of the limited harvest management policies established in 1983. These management related increases were not included in the impact analysis conducted for the FEIS and therefore the biomass impacts in the FEIS are understated. It is unclear whether the recent increases below Scraggy View are alsodirectly' related to management changes because portions of this stream reach are stocked.

The recreational value of the fishery results from a combination of the total number of fish and the average size of those fish. Table 2 provides a summary of the number of fish and the number of fish greater than 13.5 inches in length per acre for several Gold Medal streams in Colorado. The South Platte in the inundation area conta'ins a combination of total number of fish and number of fish over 13.5 inches in length that, with the exception of the Fryingpan, is unmatched in Gold Medal trout streams in the State of Colorado.

Fish Habitat

There would be a substantial net loss'of existing stream habitat as a result of inundation. Loss of spawning habitat would have an immediate adverse effect on the future reproductive capacity of the inundated fishery. Over 104,000 square feet of weighted usable area of rainbow trout spawning habitat would be inundated on the mainstem of the South Platte along with an additional loss of over 13,600 square feet of spawning habitat in the North Fork as a result of flow alterations (USFWS 1987c, Table 3). The remaining post project spawning habitat in the North Fork for rainbows would be 75,557 square feet weighted usable area (USFWS 1987c, Table C.11). The losses for brown trout would be over 197,000 square feet as a result of inundation, with an increase of about 1950 square feet weighted usable area resulting from flow modifications in the North Fork. The remaining brown trout spawning habitat in the North Fork would be approximately 180,000 square feet.

Table 1. Estimated trout biomass (pounds/acre) in various segments of the South Platte River upstream from Chatfield Reservoir.[1]

Stream Segment	FEIS	DWD	CDOW	CDOW
	(83)	(83)		(88)
Upstream from Antero	4	4.3		110
Upstream from Spinney	16			
Antero to Spinney		10		62
Downstream from Spinney	142			
Middle Fork of South Platte		72.8		129.8
	(83)	(83)		(88)
Elevenmile Canyon	73	73.7		108.2
Lake George to Beaver Creek	10	10.2		22.6
Beaver Creek to Cheesman	8	8.2		73.6
Tarryall Creek		4.3		59.7
	(79-85)	(79-85)	(87)	
Upper Cheesman Canyon	410	410	460	
Lower Cheesman Canyon	442		452	
	(82-85)		(87)	
Upstream from Deckers Bridge	256		448	
Downstream from Deckers	243		350	
	(79-85)		(87)	
Scraggy View	94		254	
	(82-85)		(87)	
Twin Cedars	64		142	
	(78)	(84)	(87)	(88)
Downstream from South Platte	76			
Waterton Canyon		179.3		
Upper Waterton Canyon			484	463
Middle Waterton Canyon			259	383
Lower Waterton Canyon			175	180
Kassler to Chatfield		39.3	125	75

1. Sources: Corps 1988; Chadwick & Associates 1988; CDOW 1987; CDOW 1988; Nehring 1988; Van Velson 1989.

Table 2. Number of trout per acre and number of trout greater than 13.5 Inches in length per acre in Colorado Gold Medal trout streams in 1986.[1]

Stream Segment	Number/ Acre	Number> 13.5"/acre
Blue River		
Above Blue River Campground	3065	52
At Blue River Campground	1615	62
Near Ute Pass turn-off	1297	42
Colorado River		
Paul Gilbert Wildlife Area	842	403
Lone Buck Wildlife Area	578	264
Parshall Section	948	356
Fryingpan River		
Gaging Station Pool	6150	1647
Ruedi Damsite Station	7506	1438
Old Faithful Section	5073	311
Upper Control	3769	86
Taylor Creek	2351	464
Gunnison River		
Duncan Ute. Trail	1840	472
Smith Fork - North Fork	729	422
North Platte		
Ginger Quill Ranch	210	64
South Platte		
Upper Cheesman Canyon	3512	1302
Lower Cheesman Canyon	3068	1289
Above Deckers Bridge	4093	412
Below Deckers Bridge	3379	193
Scraggy View	2238	49
Twin Cedars	1284	5
Rio Grande		
State Bridge	474	64
Coller Wildlife Area	571	25
Upper Wason Ranch	366	59
Lower Wason Ranch	400	101

1. Source: Nehring 1987.

Operational effects throughout the affected stream basins would result in positive and negative alterations in the life cycles of the various aquatic organisms present. Appendix C of the Coordination Act Report provides a detailed analysis of projected gains and losses of physical trout habitat as a result of Two Forks dam and reservoir operations (USFWS 1987c). While not supported by the DWD, this physical habitat method was adopted by the majority of the fishery biologists on the FEIS Aquatic work group, and the information was included in the Coordination Act Report (USFWS 1987c, pages 8-11).

The physical habitat method provides the user with a quantification of habitat which can be both projected for future conditions to predict impacts and remeasured in the future to verify that the projections were correct. The physical habitat method is not as likely to be influenced by annual biological variability or management alterations as are actual fish population estimates. According to this method, Two Forks operations would result in more stream segments being negatively affected than positively affected (USFWS 1987c, page 38). While not definitive because these type of studies do not address the numerous other variables which affect aquatic life (such as temperature, food, angling pressure), the conclusions do indicate that Two Forks would negatively affect the habitat requirements of trout in many of the stream segments which would be affected by hydrological operations.

The loss of the wetlands and riffle and pool complexes through inundation would result in a direct net loss of special aquatic sites as defined in the Guidelines (40 'C.F.R. 230.3(q-1)). This permanent loss of special aquatic sites contributes to significant degradation of the waters of the United States (40 C.F.R. 230.10.(c)). The primary loss of aquatic values would be the loss of stream habitat diversity through displacement by inundation. In addition, operation of Two Forks dam and reservoir project would result in hydrological modifications throughout many miles of riffle and pool complexes on both the east and west slopes. These modifications would result in negative effects on the resident aquatic life in many of the stream reaches. Should the channel stability of the hydrologically affected streams be adversely affected, additional degradation of special aquatic sites could occur as the result of the sedimentation of riffle and pool areas, decrease in habitat diversity, etc.. These losses, especially the losses resulting from inundation, would be permanent.

The inundation area, which sustains some of the highest fisherman use and trout populations in the State of Colorado (Nehring 1987), is also unique in terms of its proximity to a major metropolitan area (more discussion of recreational values is presented in Section F below). The, outstanding aquatic resource

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and the readily available stream fishing on high quality waters would be irretrievably lost as a result of the project. Much of the Resource Category 1 and Gold Medal fishery in the inundation area would also be lost. The loss of aquatic resources associated with the construction and operation of a large or small Two Forks dam and reservoir would clearly cause significant degradation of the waters of the United States.. This project related degradation includes significant adverse affects on special aquatic sites, life stages of aquatic life, aquatic ecosystem productivity, and loss and adverse modification of fish habitat.

E. Wildlife

The wildlife resources associated with the Two Forks project area are unique. For example, the habitat of the threatened Pawnee montane skipper, ponderosa pine/blue grama grass overlapping with prairie gayfeather, in the immediate project area provides the essential habitat for the maintenance of the species. The habitat's occurrence in this limited and specialized area accentuates the ecological precariousness of the skipper (USFWS 1987b, page 6). The endangered bald eagle can be readily observed in the project area, especially around Cheesman Reservoir, during the winter months. In addition, an historic eyrie of the endangered peregrine falcon is located near the upper end of the North Fork of the South Platte River arm of the proposed Two Forks reservoir. Species experts believe that, as recovery efforts for the peregrine falcon are made on the east slope, this historic nest site will be reoccupied adding another species to the diversity of the area (USFWS 1987a, page 11). Wildlife is a major value of the site and a reason people visit the area (USFWS 1987c, page 51).

Wildlife species in the Two Forks dam and reservoir area which have high public interest due to hunting, photography, and other non-consumptive recreation include elk, mule deer, bighorn sheep (the Colorado State animal), cottontail rabbit, golden eagle, beaver, and wild turkey (USFWS 1987c, page 48). The project would have significant direct impact on wildlife by eliminating over 10,000 acres of wildlife habitat (Corps 1989a, page 96). The direct wildlife' habitat losses due to the Two Forks project are listed in Table 3.

Wetland, mountain shrub, riparian vegetation types, grass-forb, and shrub-seedling structural stages of coniferous vegetation types are essential habitat components of the feeding and/or cover requirements of nearly all of the species in the Two Forks dam and reservoir area (USFWS 1987c, page 65).

Table 3. Special interest wildlife habitat losses due to the Two Forks project.[1]

Species/Habitat	Acres Lost[2]
Mule deer	
Winter range	9,315
Elk	
Winter range	477
Severe winter range	58
Calving area	0
Bighorn sheep	
Overall range	154
Lambing area	25
Severe winter range	0
Migration corridor	39
Historic range	403
Merriam's Turkey	
Overall range	865
Roosting area	0
Wetland/Riparian Acres[3]	298.5

1. Source: USFWS 1987c, page 64
2. Acre values among species are not additive because some habitats overlap.
3. Includes cottonwood, high-elevation riparian areas and wetlands, also includes beaver habitat.

The loss of all or parts of these vegetation types would also reduce overall habitat diversity and the mixing and arrangement of vegetation types (USFWS 1987c, page 65). Habitat diversity impacts would result in the loss of scarce feeding habitat for some key species. Loss of habitat would displace wildlife species to adjacent habitat areas. The ability of these areas (carrying capacity) to support increased wildlife numbers and the availability of niches for potentially new species introduced into these areas have not been determined. It is assumed, however, that, if these areas are suitable, they already are at their carrying capacity and that displaced wildlife will cause an overpopulation which would eventually die (Corps 1989a, page 97). The loss of wildlife habitat through inundation by a large or

small Two Forks reservoir and indirect impacts would result in a loss of aquatic ecosystem diversity as defined in the Guidelines at 40 C.F.R. 230.10(c)(3). Such effects may include but are not limited to loss of fish and wildlife habitat.

Elk

Elk use the mountain slopes north of the North Fork of the South Platte River in an area generally located between the town of Foxton and Dome Rock. The herd contains about 300 animals and seems to be increasing in size. Special-interest elk habitats include winter and severe winter ranges that are occupied on a semi-permanent basis. An elk calving area on private property is located on the North Fork of the South Platte within the elk winter range (USFWS 1987c, page 52). The major impacts to elk include the loss of 535 acres of designated winter range. The elk calving area could also be lost unless the land is acquired and protected from development (USFWS 1987c, page 64).

Mule deer

Mule deer'are the most abundant and widespread large mammal in the Two Forks dam and reservoir area. South-facing mountain slopes of mountain mahogany within the winter range are considered to be especially important areas. The estimated winter deer density in this area is 1.1 to 1.6 deer per square mile. Significant impacts to mule deer include the loss of summer and winter habitat (USFWS 1987c, page 52). Habitat lost would include 9,315 acres of the area that has been designated by the CDOW as mule deer winter range (USFWS 1987c, page 64).

Bighorn Sheep

Bighorn sheep are of particular concern in the area because of their present low numbers and the herd's current status as one of the few low-elevation herds remaining in Colorado. The deteriorating habitat conditions, the recent dramatic herd decline, and slow recovery after development of the DWD's Strontia Springs reservoir are causes of additional concern.

At the initiation of the Foothills project in 1978, bighorn sheep in Waterton Canyon numbered 48 individuals. The current herd is about one-third that size. The reduction in the herd ,isdue to cumulative impacts from construction of roads, stress from human intrusion, loss of habitat, and disease brought on by these activities (USFWS 1987c, page 53). As indicated above, the herd has not responded to mitigation efforts by the CDOW and the DWD.

Significant impacts to bighorn sheep from the Two Forks project would be direct and adverse. They include a loss of habitat with a partial summer and winter habitat capability for 15 sheep, loss of 154 acres of current range, 25 acres of lambing areas, and 39

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acres of migration corridors. The combined effect of Two Forks, various road construction work, and increases in vehicular traffic could further reduce the existing bighorn sheep population. The entire herd could be lost as a result of the project. Even though a substitute herd could be transplanted to the canyon, the gene pool of the existing herd would vanish (Corps 1989b, page 69).

Wild Turkey

The wild turkey has been observed throughout the general project vicinity. Vegetation types typically used as habitat include lodgepole pine, aspen, and riparian area. Wild turkeys are relatively intolerant of human disturbances during the spring breeding and summer poult-rearing periods (USFWS 1987c, page 53). The loss of turkey habitat includes a loss of 865 acres of turkey range which would eventually result in a reduced number of turkeys in the project area (USFWS 1987c, page 65).

Bald Eagle

The Two Forks dam and reservoir area and the immediately adjoining lands, including the Cheesman reservoir area, provide essential habitat for the endangered bald eagle. To date, bald eagle activity over the Two Forks dam and reservoir area has been predominantly confined to Cheesman Reservoir (USFWS 1987a, page 9). While the project area, including Cheesman Reservoir, contains essential habitat for the endangered bald eagle, impacts on the species from the construction and operation of Two Forks dam and reservoir cannot be determined without additional studies (USFWS 1987a, pages 9-10).

Peregrine Falcon

An eyrie of the endangered peregrine falcon on Cathedral Spires near Foxton, Colorado, was the last remaining historically occupied nest on the East Slope. The Cathedral Spires eyrie, abandoned in 1981, is located approximately 2,000 feet from the upper end of the North Fork of the South Platte River arm of the proposed Two Forks reservoir (USFWS 1987a, page 11).

The most significant threats to peregrine falcon habitat suitability, reoccupation, and potential breeding success at the Cathedral Spires site could result from increased human activity. Cathedral Spires is a favorite location for technical rock climbing. With the increased area access that the Two Forks project would provide, increased climbing and hiking would threaten the use of Cathedral Spires as a viable peregrine nest site. Although loss of prey base should not be significant,

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project development may also impact some foraging habitat for peregrines by inundating a portion of the riparian corridor of the North Fork of the South Platte River (USFWS 1987a, pages 11-12).

Raptors

Raptor species observed within the area include the golden eagle, red-tailed hawk, american kestrel, great horned owl, turkey vulture, cooper's hawk, swainson's hawk, bald eagle, osprey, and prairie falcon (USFWS 1987c, page 54).

The loss of over 10,000 acres of diverse wildlife habitat would negatively impact the raptors in the area by reducing their hunting and foraging area. The diversity of raptor species would decrease as a result of the project.

Pawnee Montane Skipper

The threatened Pawnee montane skipper has a restricted range in the Two Forks dam and reservoir area and adjoining lands including Cheesman Reservoir. The species occupies an area (though not necessarily all the available habitat within it) roughly 23 miles long and 5 miles wide. The skipper occurs along the mainstem of the South Platte River for approximately 20 miles and the North Fork of the South Platte for approximately 15 miles upstream from their confluence to Cheesman reservoir and Crossons, respectively. The present range covers approximately 38 square miles. Currently, the skipper's habitat forms one continuous band along the North and South Forks of the Platte River and some of their tributaries, Buffalo and Horse Creeks, respectively. This type of habitat configuration allows for an interchange of individuals throughout the habitat.

The vegetative community preferred by the skipper is a northern-most extension of the ponderosa pine/blue grama grass habitat type documented from southern Colorado and northern New Mexico. However, the preferred nectar plant of the skipper, prairie gayfeather, does not occur in similar habitats to the south. The northeastern limit of the ponderosa pine/blue grama grass community overlapping with the southwestern limit of the prairie gayfeather provides essential habitat for maintenance of the species in this limited area. Its existence in this extremely limited and specialized area accentuates the ecological precariousness of the skipper. Since modern settlement of Colorado, the South Platte River Canyon has experienced a number of habitat changes that likely have resulted in loss, modification, and curtailment of former Pawnee montane skipper habitat and range. Causes of lost habitat include Cheesman reservoir, residential development, roads, and planted and mowed

pastures. Additional amounts of habitat may have been lost as a result of certain changes in forest age structure and density, but it is not possible to quantify these areas with current information (USFWS 1987b, pages 5-6).

Approximately 22 percent of the Pawnee montane skipper's habitat will be lost to inundation and other project features (roads, transmission lines, etc.). However, because the better skipper habitat and higher skipper density occur at the lower elevation that would be inundated, an estimated 23 percent (according to the distribution survey) to 42 percent (according to the census survey) of the skipper population would be lost.

In addition to the lost habitat, the present band of habitat would be split into northern and southern portions as a result of forest clearing for the reservoir, and a water barrier would be created with the filling of the proposed Two Forks Reservoir. Because the skipper has a restricted flying capability, the width of the barrier would make the interchange of individuals between the north and south portions very difficult and infrequent.

Furthermote, even within the individual north and south portions, the habitat would become even more broken and discontinuous as the result of the Two Forks Project, potentially rendering many of these areas unsuitable for skippers and increasing the total loss of habitat. In addition, splitting of the current skipper habitat into separate, isolated areas would result in individual, uncontrollable events (such as forest fires, late spring or early fall storms, accidental spraying with insecticides) becoming a significant threat to the continued existence of the Pawnee montane skipper.

After inundation of existing skipper habitat; approximately 21 percent of the remaining skipper habitat would be on private land, 18 percent along the North Fork and 3 percent along the South Fork. Residential and commercial development on this private land would likely be accelerated if the proposed reservoir is constructed. Because of the smaller North Fork population that would remain after.construction of the Two Forks. project, increased development along the North Fork would likely threaten the chances of continued existence of the Pawnee montane skipper (USFWS 1987b, pages 8 and 10).

Wetland/Riparian Areas

Suitable habitat for beaver, muskrat, waterfowl, dippers, passerine birds, and other species dependent on streams and wetlands within the project area is primarily limited to riparian habitats which are in close proximity to aspen, willow stands, or herbaceous wetlands. These species are present on the South Platte River, the North Fork of the South Platte, and many small tributaries. Although the existing .habitat is of high quality,

the limited distribution and availability of the habitat keeps overall population low. This dependence upon riparian vegetation limits the populations and causes any loss of riparian areas to be significant (USFWS 1987c, page 54).

Direct losses and changes in wetland functions would be a significant adverse impact. Complete loss of about 298 acres of wetland sites by inundation would impact all the functions currently being provided by the wetlands (USFWS 1987c, page 65).

Indirect Impacts

With the completion of the Two Forks Reservoir, development and dispersed recreational activities would shift significantly in areas surrounding and affected by the reservoir. This shift of recreationists would generate significant indirect impacts on wildlife populations, threatened or endangered species, migration routes, fawning and calving areas, and the wildlife habitats in general. The reservoir also would increase the potential for private land development within the vicinity of the reservoir and, should these subdevelopment activities occur, they would indirectly impact the known elk calving areas, and Pawnee montane skipper habitat within the project analysis area. These activities would also reduce the existing potential of these areas to provide habitat for the present populations of key wildlife species (USFWS 1987c, pages 64-65).

Construction and operation of the large or small Two Forks project would result in significant adverse effects to life stages of wildlife. These adverse effects include reduction in ecosystem diversity, productivity and stability; and significant adverse effects on recreational and aesthetic values. These losses would contribute to significant degradation of waters of the United States (40 C.F.R. 230.10(c)).

F. Recreation

The primary recreational resources in the inundation areas are related to the free-flowing stream reaches. The proximity of these resources (in conjunction with their scarcity) to the Denver metropolitan area, makes them important and unique for the Front Range of Colorado (Corps 1988, page 4-98). The relative scarcity of Gold Medal fisheries in Colorado and the high quality of the fishery in the inundation area further enhance the recreational resources of the area.

The public access along the river provides excellent dispersed recreation opportunities (Corps 1988, page 4-100). The white water activities in the inundation area represent 70 percent of whitewater activities in the entire Pike National Forest. (Corps 1988, page 4-101). These free-flowing reaches are especially important because of their closeness to metropolitan areas and

their suitability for teaching and practicing boating skills on all classes of water. This unique capability to accommodate a wide variety of recreational activities in one easily accessible area has been documented by a number of different resource agencies. The diverse recreational activities occurring in the inundation area are listed in Table 4.

Table 4. Current recreation use (Recreational Visitor Days) in the inundation area.[1]

Activity	RVD's
(Developed Public Recreation)	
Developed Camping	10,400
Developed Picnicking	3,600
Subtotal	14,000
(Dispersed Public Recreation)	
Scenic Driving	80,950
Dirt Biking	36,480
Dispersed Day Use	22,145
Dispersed Camping	17,090
Stream Fishing	15,130
River Boating	6,305
Subtotal	178,100
Total Public Use	192,100
(Private Recreation)	
Private Facilities	91,670
Recreation Cabins	33,000
Total Private Use	124,670
Total Annual RVD's	316,770
Total Annual Visits	487,000

1. Source: Corps 1988, page 4-104, values represent Recreational Visitor Days (RVD's) during 1984.

In "A Conceptual Proposal for a South Platte Canyons Free-Flowing Recreational River" the United States Bureau of Outdoor Recreation observed:

> The Main South Platte Canyon from the forks at South Platte to Cheesman reservoir is the most intensively used of all the segments. Other than about 2,500 acres of private land developed with homes and cabins, the area is managed as a part of the Pike National Forest for public recreation. This section of the South Platte is a popular and productive fishing stream, with scenic land forms in and adjacent to the canyon. Except for the three miles of isolated but highly productive trout stream directly below Cheesman reservoir, the river is paralleled by a good, gravel road. Two paved and two unpaved roads and one paved highway provide access from several directions to the river road. Five Forest Service picnic sites and one campground are situated along this section of river. This area is popular for sightseeing, camping, picnicking, fishing, hiking, nature study, horseback riding, motorcycling, and river kayaking and tubing. (Bureau of Outdoor Recreation 1974)

The area currently receives heavy use covering a diversity of recreational activities. Some have suggested that the area does not provide a quality recreational experience because of the level and types of use occurring. 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). The quality of the recreational experience is a function of the basic resources and the amount of management attention devoted to the area.

The Bureau of Outdoor Recreation recognized this relationship and noted:

> This area is popular with visitors now. However, with additional recreation development and land acquisition, as well as improved management and access, the South Platte Canyons with their attractive free-flowing streams, should be able to provide quality recreation experiences to a million or more visitors each year (Bureau of Outdoor Recreation 1974).

During a review of the "Nationwide Rivers Inventory, Phase I" conducted by the U.S. Heritage and Conservation Service (the successor agency to the Bureau of Outdoor Recreation) a diversity of organizations suggested adding the South Platte to the national inventory. The Water and Power Resources Service (1980) noted the South Platte contained "outstanding remarkable values", and the Soil Conservation Service noted that the segment between

Cheesman reservoir and Waterton Canyon was a "highly valuable recreation area because of close proximity to highly populated urban area (Denver Metro Area)" and noted that this segment had "outstanding remarkable values" in terms of scenic, recreation, geologic, fish and wildlife values (SCS 1980).

In responding to a NPS request for information on the segment of the South Platte from Cheesman dam downstream to its confluence with the North Platte, the USFS stated:

> We believe that this river segment does have outstanding and remarkable'recreational and fishery values. We include fishery values here because they significantly enhance the high recreational values.
>
> Our reasons for concluding that this segment has outstandingly remarkable recreational values are based on more than high visitor use. Natural features in the river valley make it particularly attractive for recreational activities. Some of these include a relatively large river 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 area is within an hour's driving time of the Denver Metropolitan area and is very accessible with public gravel and dirt roads that parallel the river. The variety of recreational activities that occur in the area such as camping and picnicking at developed sites, dispersed camping and picnicking, fishing, boating, hiking, and motorized travel (dirt biking and scenic driving) make the area popular and heavily used as shown in the recreation visitor use figures disclosed in the Denver Water Supply EIS.
>
> The natural features coupled with the variety of recreational activities that are available and pursued indicate the high recreational value of this river corridor. While all activities may not appear to relate directly to the river, it is the river and adjacent valley that are the basic features that attract the recreation use. (USFS 1988)

Responsibility for updating the "Nationwide River Inventory" (NRI) has been given to the NPS and in a memorandum to the Director of the NPS, the Regional Director of the NPS stated:

> We have evaluated the 21.9 mile segment of the South Platte River in Colorado from Cheesman reservoir downstream to its confluence with the'North Fork of the South Platte River. We have found that this stream

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> segment possesses outstandingly remarkable recreational, fish, historic and other (endangered species) values. We have also made a field inspection of the subject segment which disclosed no characteristics which would cause the stream to be considered ineligible as a recreation component of the Wild and Scenic Rivers System.
>
> It is, therefore, our recommendation that the subject segment of the South Platte River be added to the NRI for its outstandingly remarkable recreational, fish, historic and other values. (NPS 1988)

The memorandum went on to note: "Please be advised that there is a great deal of long-standing and current controversy surrounding this segment of river. A water storage reservoir, Two Forks, has been proposed for this segment at least since the 1930's. Additionally, the recreational/fishery values of this segment have received wide recognition at least since the 1880's." (NPS 1988)

As with most areas of the country, the recreational resources of the Two Forks reservoir inundation area are receiving more and more use. While fishing recreation is the only recent detailed recreational use information available, it is likely the other recreational uses of the inundation area have also increased since the NEPA analysis was completed. Recent fishing recreation figures (Nehring 1987) indicate the fisherman hours in the Deckers and Scraggy View areas of the mainstem more than tripled between 1984 (when the FEIS recreation figures where developed) and 1986. The fisherman hours in the more inaccessible portion of the South Platte above Wigwam Club more than doubled in the same time period. These fisherman use figures, which were higher than any other stream the CDOW included in the analysis, clearly indicate the high recreational value of a good fishery near a major population center. Even if these figures do not increase in the future, the FEIS baseline fisherman hour estimates and the FEIS projections for the year 2010 (an increase of only 25 percent without Two Forks) have already been exceeded. EPA considers this new information sufficient to question the impact analysis on which the Corps based its' Guidelines compliance conclusions.

The Cheesman Canyon stretch of the South Platte River is a prime example of the advantages of a wild trout fishery. Given the protective regulations necessary to maintain the fishery, the upper portion of the Gold Medal fishery supports some of the highest fishing recreational use of any fishery in Colorado, without the necessity of stocking fish. Trout are stocked below the Scraggy View Picnic Area for anglers who wish to keep fish.

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The inundation area is accessible to both a large number of anglers, as well as a large variety of anglers. Those who wish to walk can normally find solitude in the recesses of the upper canyon even on weekends. Those who may be limited in their mobility, including wheelchair anglers, find ready access along* many miles of road and the gradient and access are such that it is relatively easy to get from a vehicle to the stream. This is one of the few areas in the State where handicapped anglers have many access points to a high quality fishery. The inundation area also provides the level of "sophisticated fish'' any fisherman may desire, from a heavily stocked put-and-take fishery in the North Fork and the lower main stem, to a few fish in Cheesman Canyon which may never be caught. In places it has many fish which are relatively easy to catch and it has large fish which are difficult to catch. It is one of the best trout streams in the nation. It is a stream which provides a unique and irreplaceable resource for the residents of Colorado and the nation. These recreational fishery values alone are sufficient to determine that the impacts of a large or small Two Forks dam and reservoir are unacceptable (Section 230.10(c)1.

According to the Corps, "The Two Forks 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" (Corps 1988, page 5-115). "No comparable substitute recreation opportunities exist in similar proximity to Metropolitan Denver", (Corps 1988, page 5-116). The other practicable alternatives that include reservoir sites do not involve a recreational resource with these attributes. Compared to the alternatives reviewed in the FEIS, the Two Forks project would result in the loss of more recreational visitor days associated with roadside dispersed camping, scenic viewing from roads, dirt biking, stream fishing, and river boating/tubing (Corps 1988, page 5-137).

In "A Colorado Agenda for Water", the Governor of Colorado noted "We could act to save the canyon in several ways. We could decide to make the investment to make the canyon a State Park --- which, incidently, I believe would be a tremendous recreational and economic asset to Colorado." (Romer 1988). Two Forks dam and reservoir would result in the irreplaceable loss of these existing recreational values and forever prevent creation of some type of special recreation management area based on the free-flowing river.

Factual determinations and the findings of compliance or non-compliance with the Guidelines requires consideration of recreational fisheries (Section 230.51), water related recreation (Section 230.521, and aesthetics (Section 230.53). In evaluating the impact of Two Forks on these resources, EPA concludes that

the construction and operation of a large or small Two Forks would result in significant adverse effects on the recreational and aesthetic resources of the area.

Conclusions on Fisheries, Wildlife and Recreation

EPA has determined that the discharge of fill material for the Two Forks project would cause or contribute to significant degradation of waters of the United States as defined in 40 C.F.R. 230.10(c). In reaching this determination, EPA finds there would be significantly adverse effects on human health and welfare including effects on fish, wildlife, and special aquatic sites; significantly adverse effects on the life stages of aquatic life and other wildlife dependent on aquatic ecosystems; significantly adverse effects on aquatic ecosystem productivity; and significantly adverse effects on recreational and aesthetic values. Pursuant to 40 C.F.R. 230.12(a)(3)(ii), EPA finds that the proposed project does not comply with the Guidelines.

Compared to the 1.1 MAF Two Forks, the 400,000 AF Two Forks would result in the loss of 71 percent of the wetlands, 53 percent of the upland habitat, 75 percent of the public RVDs, 71 percent of the stream miles, 49 percent of the sustained trout standing crop, and 53 percent of the Pawnee montane skipper habitat. Accordingly, EPA finds that construction and operation of a 400,000 AF "small" Two Forks would have unacceptable adverse effects on fishing areas, wildlife, and recreation substantially similar to those of 1,000,000 AF large Two Forks. In addition, as discussed in Section III(G) below, these impacts are equally avoidable through the availability of practicable alternatives.

G. Practicable Alternative Analysis

The primary purpose of Section 230.10(a) is to avoid the unnecessary destruction of aquatic ecosystems. While the remaining portions of the Section focus on the magnitude of environmental impacts, this Section directs the permitting authority to consider whether the impacts can be avoided altogether. Thus, if a less damaging practicable alternative is available that will avoid destruction of the aquatic ecosystem, the permit application must be denied. 40 C.F.R. 230.10(a) provides in part:

> ...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....(2) 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 overall project purposes.

As explained in the Supplementary Information to the Guidelines, this provision means that:

> ... the Guidelines ... prohibit discharges where there is a practicable, less damaging alternative... Thus, if destruction of an area of waters of the United States may reasonably be avoided, it should be avoided (45 Fed. Reg. 85336 (1980)).

Project purpose.

One important step in the determination of "practicability" is to identify the overall project purpose. Since the inception of the Guidelines, the Corps and EPA have taken the position that "overall project purpose[1]' is to be determined by the federal government. Indeed, when district engineers have failed to judge independently the overall project purpose, the Corps has issued directives to correct that action as in the case of Plantation Landing, and the Hartz Mountain Development Corporation permit elevation (memorandum from General Kelly, August 17, 1989, hereafter, "Hartz Mountain*'). That "overall project purpose[v] is defined by the federal government, taking the applicants' views into consideration, has been repeatedly upheld by the courts as well (see, for example, National Audubon Society v. Hartz Mountain Development Corp., 14 ELR 20724 (D.C. NJ 1983); accord, Hough v. Marsh, 557 F. Supp. 27 (D. Mass. 1982).

Recent Corps guidance to its district engineers in addressing overall project purpose states (Memorandum from Brigadier General Patrick J. Kelly, Director of Civil Works, regarding the permit elevation for the Plantation Landing Resort, Inc., April 21, 1989, hereafter "Plantation Landing"):

> The Corps is responsible for controlling every aspect of the 404(b)(1) analysis. While the Corps should consider the views of the applicant regarding his project's purpose and the existence (or lack) of practicable alternatives, the Corps must determine and evaluate these matters itself, with no control or direction from the applicant, and without undue deference to the applicant's wishes (DOA 1989, page 4).

In evaluating overall project purpose and practicable alternatives, governmental agencies must ensure that the "overall project purpose*' is not defined so narrowly that only the project as proposed by the applicant will survive review. A narrow characterization of the overall project purpose may restrict or preclude from review alternatives that are otherwise practicable and that meet the overall purpose of the project. For example, the New York District's undue deference to the applicant's narrow project purpose (construction of an extremely large housing , development) was criticized in the Hartz Mountain memorandum:

> Limiting project sites to those that can facilitate a 3,301 unit development may preclude the evaluation of otherwise practicable alternatives. Acceptance of this very restrictive alternatives analysis negates all attempts to otherwise more generically define basic project purpose....the basic project purpose should be defined as 'construction of a large scale high density housing project in the Region 1 area.' That does not necessarily mean 3,301 units in one contiguous location as proposed by Hartz. The District should determine the minimum feasible size, circumstances, etc., which characterize a viable large scale, high density housing project (DOA 1989b, pages 4-6, emphasis in original).

DWD and the MWP argue that principles of federalism require EPA and the Corps to give special deference to the project purposes of local public entities, because these entities are ultimately responsible for land use decisions. They contend that, because Two Forks would be built with local funds and is intended to supply water for local development projects, the federal government should defer to local governments' judgments regarding project purpose and need. To that end, the DWD and MWP have developed a ten and thirteen point project purpose, respectively, which they believe should govern the alternatives analysis.

The Corps considered the DWD's ten point project purpose, but ultimately did not include most of the applicants' specific elements in the definition of project purpose. In summarizing its decision, the Corps stated:

> The applicant's stated project purposes taken at face value would seem to preclude the practicability of any alternative to the 1.1 MAF million acre feet Two Forks. I believe that it would be inappropriate to accept. without question or review a statement of project purpose so narrowly defined (Corps 1989a).

EPA agrees with this conclusion. Where an applicant's project purpose would artificially narrow the range of alternatives to be considered, it is the duty of the regulatory agencies to define the overall purpose in a more appropriate way. Public entities are not entitled to greater deference than private applicants in this regard. The Executive Order on Federalism (52 Fed. Reg. 14685-14688 (1987)) and the applicable regulations both support this view.

The Corps' implementing regulations specifically contemplate that local judgments on matters related to land use may be overridden when there are "significant issues of overriding national importance," such as preservation of special aquatic sites (33 C.F.R. 320.4(j)(2)). In the preamble to this regulation, the

Corps rejected the suggestion that it owed greater deference to local governmental judgments regarding a project's viability or need (51 Fed. Reg. 41207 (1986)). In Hartz Mountain, the Corps emphasized that:

> ...federal concerns over the environment, health and/or safety will often result in decisions that are inconsistent with local land use approvals. In this respect, the Corps should not give undue deference to [the applicant] or any other zoning body (DOA 1989b, page 4).

For Two Forks, the Corps determined that the overall project purpose was to provide water to the metropolitan Denver area in a manner that meets the overall public interest. (Corps 1989b, page 5). EPA agrees with this general formulation of overall project purpose. For purposes of this Section 404(c) action, EPA considers the overall purpose of the Two Forks project to be provision of a dependable, long term water supply for the Denver metropolitan area.

This is not to say, however, that all of the DWD s and MWP s more specific purposes have been rejected; where appropriate, elements of the applicants purpose have been included in the alternatives' review. EPA's analysis of the thirteen elements of DWD and MWP's detailed project purpose is found in Appendix A.

<u>Mitigation in the practicability review.</u>

Once the overall project purpose is identified,' alternatives included in the practicability review must be shown to be capable of achieving this purpose and be reasonably capable of being implemented. The analysis takes into account costs, existing technology, and logistics. Practicable alternatives should present a reasonable range of costs and be reasonably available to the applicant.' To be "available," an alternative site need not be presently owned or within the applicant's current control; an alternative site may be included if it could reasonably be obtained or utilized by the applicant (Section 230.10(a)(2)). The Guidelines require that alternatives be evaluated and compared without taking potential mitigation measures into account (40 C.F.R. 230.10(a)).

The Corps has recognized and affirmed the importance of avoidance in the mitigation sequence in guidance to its field staff such as Plantation Landing, referenced earlier. General Kelly describes Section 230.10(a) as a "key provision....which clearly is intended to discourage unnecessary filling or degradation of wetlands..." (DOA 1989a, page 2). In Hartz Mountain, he concludes:

> From the guidance presented in this document, the general conclusion should be drawn that the Army Corps of Engineers is serious about protecting waters of the United States, including wetlands, from unnecessary and avoidable loss. The Corps districts should interpret and implement the Guidelines in a manner that recognizes this. Further, the Corps should inform developers that special aquatic sites are not preferred sites for development...When unavoidable impacts do occur, the Corps will ensure that all appropriate and practicable action is required to mitigate such impacts (DOA 1989b, page 11).

The Guidelines' emphasis on avoiding environmental impacts through a sequential approach to mitigation was recently affirmed in a Memorandum of Agreement between EPA and the Corps (See "Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines", February 6, 1990).

Practicable alternatives to Two Forks: reservoirs.

In reviewing Two Forks, the Corps' Section 404(b)(1) analysis (Corps 1989a, pages 16-20.) concluded that the following structural alternatives to the 1.1 million acre-foot Two Forks project were practicable:

- 400,000 acre-foot Two Forks Dam and Reservoir
- 400,000 acre-foot Estabrook Dam and Reservoir
- 200,000 acre-foot Estabrook Dam and Reservoir
- New Cheesman Dam and Reservoir

A summary of the Corps' findings is presented in Table 1 of the 404(b)(1) Evaluation (Corps 1989a, page 13). With the exception of the 400,000 AF Two Forks, EPA concurs with Corps' determination that these structural alternatives are practicable alternatives to Two Forks.

As discussed in the conclusions of Section III(F), "small" Two Forks would have substantially similar unacceptable adverse effects on fisheries, wildlife, and recreation areas to the 1.1 MAF Two Forks. These impacts are equally avoidable through the availability of other practicable alternatives. EPA thus finds that the 400,000 AF Two Forks is not a practicable alternative to its larger counterpart.

In its Guidelines review of Two Forks, the Corps established the following criteria to determine practicability:

> Cost: A maximum cost of $1,000 per AFY. Costs greater than $1,000 per AFY could be considered practicable; for purposes of this analysis, however, EPA accepts the Corps[1] ceiling as a basis for review.
>
> Existing Technology: Site permeability, strength, and seismic characteristics (reservoir sites).
>
> Logistics: Procurement, distribution, reliability, and availability for future need were primary factors. Yields, water rights, and "linkage relationships" were used as site specific screening criteria.

Costs for the three reservoirs were projected at $675 per AFY (58,000 AFY large Estabrook), $589 per AFY (46,000 AFY small Estabrook) and $845 per AFY (68,000 AFY New Cheesman). Geologic investigations established that construction of the alternative reservoirs was feasible with existing technology. The Corps analysis of logistic concerns indicated that water could be procured and d'istributed from the alternative reservoir sites in much the same manner as planned for Two Forks. Yields from these reservoirs were equally as reliable as Two Forks. EPA agrees with the Corps analysis of the practicability of these reservoirs.

The Corps determination of practicability recognized that the smaller reservoirs, including the smaller Two Forks, would not provide the same firm yield as Two Forks. In its 404(b)(1) evaluation, the Corps analyzed the smaller yields "in the context of the Applicant's existing system and in the context of the future need for water" and noted:

> With respect to long term water-supply needs for the metropolitan area, no single project would provide a complete solution. Therefore, the size of a South Platte reservoir project affects only the timing of the next project, not its existence (Corps 1989a, page 18).

The Corps concluded in its Record of Decision:

> The fact that the yields are not equal does not mean that these other projects are not practicable. It means that, should a smaller project be built in lieu of Two Forks, the next water supply project, such as Green Mountain pumpback would have to come online earlier (Corps 1989b, page 6).

Again, EPA concurs with this conclusion. Given that the overall purpose of the Two Forks project is to provide metropolitan Denver with a long term water supply, metropolitan area water suppliers will be required to combine a variety of'alternatives to fulfill the overall project purpose, even with the largest reservoir proposed (Two Forks). The FEIS estimated metropolitan Denver's additional long term water supply needs at 166,000 AFY (Corps 1988, page 2-29). Large Two Forks, with its estimated firm yield of 98,000 AFY, would meet approximately 60 percent of this demand. Additional sources will be required to supply the remaining 40 percent. Thus, any source that contributes meaningful firm yields can logically be considered a portion of an alternative to Two Forks.

After comparing the environmental impacts of Two Forks with impacts of practicable alternatives, the Corps determined that the 1.1 million acre-foot Two Forks was the most environmentally damaging alternative. As stated by the Corps:

> The evaluation of alternatives is important to judge the impacts of Two Forks relative to the impacts of the other practicable alternatives. Clearly, without mitigation, Two Forks will have the greatest environmental impacts... (Corps 1989b, page 6).

Compared to the alternative reservoirs, large Two Forks would cause the greatest loss of wetlands (Corps 1989a, page 24), inundate the largest area of riffle and pool complexes (Corps 1989a, page 27), and is the only alternative that would result in a net loss of trout biomass (Corps 1989a, page 26). Small Two Forks is also more environmentally damaging than New Cheesman or either Estabrook reservoirs. The Corps' findings on the relative environmental impacts of large and small Two Forks and the practicable alternatives are summarized in Table 1 of the FEIS, page 5-2 (Corps 1988).

Other reviewing agencies have also found that Two Forks would cause the most environmental damage. In the Fish and Wildlife Coordination Act report, the Regional Director of USFWS stated that the Estabrook and New Cheesman alternatives would have much less adverse effects on fish and wildlife resources and would require far less mitigation than Two Forks (USFWS 1987c, page 68). The Regional Director reiterated this position in a December 5, 1989 letter to the MWP (USFWS 1989a). In his comments to the Proposed Determination, the Director of the Office of Environmental Review, U.S. Department of the Interior (DOI), noted that even with the proposed mitigation for Two Forks, there still would be unavoidable losses to aquatic and terrestrial resources (DOI 1989).

Guidelines compliance.

Having determined that there were several practicable alternatives to the Two Forks project that would have less adverse impact on the aquatic ecosystem, the Corps should have specified that the project failed to comply with the Guidelines, in accordance with Section 230.12(3)(i). Instead, the Corps attempted to "level" the impacts by comparing Two Forks and the alternatives as mitigated in its Section 230.10(a) review. In the words of the Corps,

> ...mitigation can effectively reduce the impacts of Two Forks to the level that it is comparable to the other practicable alternatives. (Corps 1989b, page 6)

This approach is contrary to the basic thrust of the Guidelines and fails to follow both Corps and EPA policy on the appropriate handling of mitigation. EPA has stressed this point repeatedly in its comments on the Two Forks project over the last six years.

In his detailed comments to the FEIS, provided to the Corps and the applicants on June 9, 1988 the Regional Administrator, James J. Scherer, stated:

> EPA would again like to clarify the necessity to implement alternatives which would avoid the need for compensatory mitigation. Unless it is clearly demonstrated that an alternative project site or method of providing additional water supplies does not exist, or that alternative sites or methods will have fewer adverse environmental effects, avoidance of impacts is the required course of action (EPA 1988b).

In his letter of November 17, 1988, invoking 404(q) procedures, the Regional Administrator identified the Corps District's handling of mitigation as one of the major outstanding issues:

> ...as you know, our agency does not agree with your statement that 'if Two Forks can be mitigated in such a way that there are few or no net impacts remaining, a future alternative would not preclude Two Forks from being the least damaging practicable alternative.' EPA does not believe its appropriate to include mitigation when making the determination regarding least-damaging practicable alternatives (EPA 1989f).

The Corps' evaluation did not follow the three step sequence (avoidance, minimization and compensation) required by the Guidelines. Off-site measures and out-of-kind compensation were weighted equally against measures that could be used to avoid the impact altogether. This approach masked the environmental impacts which should have been the focus of review. Mitigation

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is appropriately considered only for the least environmentally damaging alternative, in accordance with the requirements of Section 230.10(d).

The District Engineer acknowledged that his application of mitigation in the alternatives review differed substantially from' EPA's (Corps 1989a, pages 31-35). He also noted that an interagency Working Group had been formed to "develop guidance on implementing mitigation requirements" and, specifically, to resolve differing views over the application of mitigation sequencing as part of Guideline reviews (Corps 1989a, page 31, referencing the preamble to relevant Corps guidance at 51 Fed. Reg. 41227 (1986)).

Because the Corps' analysis and EPA's independent review have demonstrated that less damaging practicable alternatives to Two Forks are available, EPA finds that neither 400,000 AF nor the 1,100,000 AF Two Forks project comply with Section 230.10(a) of the Guidelines. Reservoir alternatives demonstrated to be practicable with fewer adverse environmental effects include large Estabrook, small Estabrook and New Cheesman Reservoirs.

Other alternatives.

While New Cheesman, large Estabrook, and small Estabrook are the only alternatives demonstrated to be practicable by the Corps, EPA believes that additional practicable alternatives could also have been identified. Additional alternatives could have been drawn from the FEIS Systemwide analysis; commentors have suggested a variety of additional sources as well. Many of these sources are already being pursued by area water suppliers.

The discussion below of additional alternative sources illustrates that there are a variety of projects that could be used, either singly or as components of a metropolitan-wide package, to meet the metropolitan area's water supply needs for the planning period. It is not an EPA endorsement of any particular project or combination of projects, or a definitive listing of the "universe" of potential alternatives to Two Forks. A finding of practicability does not necessarily mean that a project is permittable, only that the alternative project can fulfill the overall project purpose in a manner that is less environmentally damaging than the project under review.

Throughout its involvement in the Two Forks project, EPA has repeatedly pointed out that there were additional less damaging. practicable alternatives to Two Forks and that these alternatives should be pursued before a permit was issued for Two Forks. In his June 9, 1988 comments to the FEIS, the Regional Administrator

identified all of the alternatives discussed in this section of the Recommended Determination as **reasonablyavailable, less costly and less environmentally damaging" than Two Forks (EPA 1988b, page 5).

On August 10, 1988, in a follow-up letter to the District Engineer, the Regional Administrator stated:

> ...in our Detailed Comments attached to our June 9, 1988 comment letter we noted approximately 150,000 acre feet of alternative sources of water. These sources were identified in the Final EIS as being reliable and cost effective sources of water, with less environmental damage than the applied for project. As I stated in my May 26, 1988 letter, while I have significant reservations regarding the issuance of a 25 year permit, if it is to occur, it must assure the development of those environmentally less damaging alternative sources which are practicable, prior to the construction of Two Forks (EPA 1988c).

On October 12, 1988 the Regional Administrator reiterated:

> Again, as stated in my August 10 letter, if a decision is made by the Federal Agencies that there are currently no practicable alternatives to Two Forks, and a long term permit is issued, I believe it is essential that other future alternatives not considered in the EIS in site-specific detail be reviewed prior to construction of the project. If a less-damaging practicable alternative is found to exist at that future time, there should be a mechanism in place to ensure that Two Forks is not constructed prematurely (EPA 1988e).

On November 1.7, 1988, in identifying issues to be elevated under CWA section 404(q), the Regional Administrator said:

> I continue to believe that there are a substantial number of interim sources which are practicable, available and less-damaging and should therefore be implemented prior to construction of a large reservoir project. Many of these sources were identified in my June 9, 1988 comment letter on the FEIS. It seems that we both are in agreement that those sources which are directly under the control of the DWD should be required through a permit condition. In addition, there are a significant amount of other "interim" sources which are not currently within the control of DWD, but which could be implemented if certain institutional or legal issues were resolved. I believe that the implementation of a certain amount

> (approximately 60,000 acre feet total) of this larger "pool" of available sources should also be required prior to construction of a large reservoir. An appropriately-worded permit condition should be used to require DWD to exhaust all available legal and other feasible means to develop these sources (EPA 1988f).

On January 6, 1989, in summarizing EPA's concerns about draft permit conditions, the Regional Administrator stated:

> Several of my concerns have still not been addressed in your latest draft conditions. The need to develop and share at least 60,000 acre feet of interim sources is not included as a permit condition. The requirement to review, prior to construction, both the need for the project as well as any reasonable alternatives not already considered in site specific detail was not included. This review requirement should be applicable unless the Corps issues a short-term permit (less than 10 years) (EPA 1989a).

The Corps could also have chosen to evaluate additional alternatives in its Guidelines review (40 C.F.R. 230.10(4)); it was not limited to the range of alternatives evaluated in the EIS. Although the Corps acknowledged that the single non-structural alternative it chose to review was "only one of many ways that local water suppliers would provide water to their service areas" should Two Forks not be approved (Corps 1988, Appendix 4-C, Volume 9, Representative No Federal Action Alternative, page 9-31, the Corps nonetheless declined to conduct a practicability review of any other alternatives. There appear to be two principal reasons for this decision: the fact that not all water suppliers could obtain water from all alternative sources; and the lack of existing institutional arrangements to share water from any alternative except Two Forks.

The Corps' concerns about availability of supply related principally to groundwater. The District Engineer found that groundwater met the "cost" and "existing technology" criteria, however, because groundwater was not available to every suburban entity, water supplied from groundwater sources could not be considered an alternative to Two Forks. The District Engineer also expressed concerns about the long term reliability of the groundwater resource, which he characterized as "not renewed annually" (Corps 1989a, page 20). EPA believes that, properly managed, groundwater can make an important contribution to overall water supply for the metropolitan area.

Groundwater currently supplies some of the suburban communities and is physically and legally available to most of the suburban providers (Corps 1988, Appendix 4-C, Representative No Federal Action Alternative, Volume 9, page 9-23). An estimated 69

million acre feet of recoverable groundwater is stored in major aquifers beneath the Denver metropolitan area (Wireman 1989). Proper management could result in sustained use of this resource well beyond the planning period. The experiences of a number of metropolitan communities who have incorporated groundwater into their water supplies demonstrate that ground water can be developed at reasonable cost. A more detailed discussion of groundwater is found in Appendix A.

Moreover, the fact that one particular source of water (groundwater or another project) is not equally available to all municipalities does not mean it should be discounted as a potential source of water supply for the metropolitan area. As discussed above, even Two Forks could not meet water demands for the entire metropolitan area. Even with Two Forks, some individual water suppliers will be required to pursue a variety of projects to meet projected demand. Some of these projects may be pursued cooperatively with other entities; others will be pursued independently by individual municipalities. This pattern has been historically followed by area water suppliers and appears likely to continue.

A similar view can be taken about the lack of signed agreements to share alternative water supplies. The Corps stated that:

> ... the DWD, the Providers, and others cannot be assumed to cooperate in either the development of interim water supplies or future water provider needs...Without some form of cooperative metropolitan water development it is reasonable to assume the DWD sources (Blue River and Transmountain Effluent Exchange, Cherry Creek Wells, and Other Ditch Rights) would not be shared. (Corps 1989a, page 6)

This statement illustrates the deference given by the Corps to existing contractual arrangements and the need for cooperative metropolitan water planning. It also appears somewhat contradictory in view of the District Engineer's handling of the element of "metropolitan cooperation'' in the applicants' proposed project purpose:

> I [District Engineer] recognize the importance of the South Platte agreement to metropolitan cooperation. I recognize the importance of long-term solutions and I have also included reliability as a component of logistics. These are important benefits of the project; however, for reasons stated previously, alternatives that do not meet the Participation Agreement allotments...may still be technically practicable. (Corps 1989b, page 12)

EPA agrees with this latter statement and believes cooperative water planning is a worthy goal. Cooperative planning can occur regardless of source, should the metropolitan entities enter into appropriate agreements.

The DWB itself has acknowledged this point. In its **policy statement setting forth guidelines for carrying out the resolution" authorizing the Two Forks permit application, the DWB stated:

> The Metropolitan area requires a variety of supply sources to meet reasonably foreseeable demands. While a Two Forks Reservoir will be required, impoundment of water will not alone be adequate. Denver and its suburban neighbors must use their ingenuity to investigate and locate reliable wells, pursue water exchanges, acquire surplus supplies of others, share management of supplies and water courses, implement successive re-use, lease interim water and implement a comprehensive water conservation program to provide adequate supplies at competitive prices (DWB 1986).

<u>Additional practicable alternatives to Two Forks.</u>

The alternatives discussed in this section and identified in EPA's June 9, 1988 letter were evaluated in the SEIS systemwide analysis on the basis of costs, technology, and logistics. A summary of this analysis is shown in Table 5.

EPA recognizes that not all of this projected 150,000 AFY safe yield may be developed. As the Regional Administrator stated in his October 12, 1988 letter to the District Engineer:

> ...I would still like to see...the requirement that sources which are found to be environmentally less damaging and practicable be implemented prior to construction of Two Forks. I believe that all of those sources which meet the above criteria and are within the control of the Applicant should be implemented prior to construction of Two Forks. I also recommend using an appropriate permit condition to encourage the development of at least a portion of those sources which may not be totally within the control of the [DWD], but which could be developed with metropolitan cooperation. A large number of alternative sources were identified in the FEIS as being reliable and cost-effective sources of water, with less environmental damage than the applied for project (refer to my June 9, 1988 FEIS comment letter). However, I have discussed this issue with the Applicant and recognize there may be some constraints to the development of some of the sources identified in my June 9th letter. My current belief is that the total amount of interim sources that should be developed prior to Two Forks is approximately 60,000 acre feet (EPA 1988e).

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Table 5 — Additional practicable alternative water supply sources for the Denver metropolitan area

Alternative	Cost per AFY (annualized)	Existing Technology	Yield	+liability	Water Rights	Demographic Availability	Other Issues
Blue River Exchange with Williams Fork	minimal	tracking and accounting system only	10,000 1/	renewable	water rights transfer needed	DWD only	
Blue River Exchange with Muddy Creek	$516	2/	15,000 1/ 3/	renewable	modification to Blue River Decree needed	DWD only	25-year lease, wetlands mitigation unresolved
Transmountain Effluent Exchange	$20	tracking and accounting system only	14,000 1/ 3/	renewable	water rights transfer needed	DWD only	
Straight Creek and Joint Use Reservoir	$390	uses an existing diversion dam	5,000 1/ 3/	renewable	water rights transfer needed	DWD only	yield in question without South Platte storage
Additional DWD ditch rights, wells and system improvements	4/	conventional technology	16,000 1/	renewable	water rights transfer needed	DWD only	
Conservation Program 4 or Governor's program	4/	programs are implemented in other U.S. cities	42,000	potentially renewable	transfer may be needed	available to most providers	reliable yield not yet established
Rocky Ford Ditch Rights	4/	under development	8,000	renewable	water rights transfer needed	Aurora only	revegetation of farmland in question
Non-potable Reuse	$560	currently used for park irrigation	10,000	renewable	water rights transfer needed	available to most providers	storage site not yet established

Table 5 (continued) - Additional practicable alternative water supply sources for the Denver metropolitan area

Alternative	Cost per AFY (annualized)	Existing Technology	Yield (AFY)	Reliability	Water Rights	Demographic Availability	Other Issues
Groundwater under municipal boundaries	$440	currently used by some metro area suburbs	30,000 5/	a portion may not be renewable	State law allows 1% depletion annually	available to most providers	annual recharge uncertain
Estabrook 61 (200,000 AF or 400,000 AF)	$589 $675	7/	46,000 or 58,000	renewable	water rights transfer needed	available to most providers	inundates the Town of Bailey
New Cheesman 61	$845	7/	68,000	reneuable	water rights transfer needed	available to most providers	Presidential exemption needed for wilderness area

Source: Data and information from Corps 1986 and Corps 1988 unless otherwise noted.

1/ Part of the DWD "interim supplies" which total 60,000 AFY.

21 Wolford Mountain Dam on Muddy Creek would be constructed of local earthen materials using special construction technology for the moderate seismic hazard (Boyle Engineering, 1986 and Western Engineering, 1983, DEIS, Technical Appendix 4B, page 6-16).

3/ Yields from these sources are from the Corps Permit Conditions, March 1989. These sources were estimated in the Corps DEIS to yield 14,000, 20,000, and 3,000 AFY, respectively.

4/ Not calculated in the FEIS.

5/ The Corps FEIS estimated yield from Groundwater under mmicipal boundaries was 77,800 AFY. EPA has determined that at least 30,000 AFY from ground water would be available at the *same* unit cost (EPA 1988c).

61 The Corps determined these reservoir alternatives to be practicable. They are presented here for ease of comparison.

71 The geologic studies by Harza Engineering indicate foundation and abutment conditions at New Cheesman and Estabrook sites are suitable to support double-curvature arch dams (FEIS, page 3-178).

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Taken individually, these alternatives would satisfy the cost criterion by falling below the $1,000 per AFY ceiling established by the Corps. No technological obstacles to development have been identified, and all were considered to be reliable by the Corps. Each alternative could contribute meaningful safe yields on an individual basis; collectively, these or other sources could equal or surpass the projected yield of Two Forks. Logistically, water from these sources could be made available through Denver's existing distribution network or through individual supplier systems. Based on information contained in the FEIS and on EPA's independent review, EPA finds that these projects are practicable, less damaging alternatives to Two Forks.

Section 230.10(a) of the Guidelines is clear: if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem, no permit is to be issued for the more damaging alternative. Large (1,100,000 AF) and small (400,000 AF) Two Forks dam and reservoir are the most environmentally damaging alternatives examined in the 404(b)(1) analysis (Corps 1989a). Other practicable alternatives are available and have been identified by the Corps and EPA. EPA finds that the large and small Two Forks project fails to comply with the Guidelines pursuant to Section 230.12(a)(3)(i).

CONCLUSIONS AND RECOMMENDATION

The proposed Two Forks dam and reservoir project has been very controversial and contentious. The project site is located in Section 30, Township 7 South, Range 69 West, Jefferson and Douglas Counties, Colorado (Corps 1989a). While many issues have been raised in the lengthy debate over Two Forks, from the regulatory perspective of Section 404 of the Clean Water Act, there are three fundamental issues: The qualities and values of the environmental resources at risk; the impact of the project on those resources; and the alternatives available for achieving the overall project purpose.

Both the 1,100,000 AF and the 400,000 AF Two Forks dams and reservoirs would destroy an extremely valuable and unique fishery, wildlife, and recreational resource. The USFWS and the Colorado Wildlife Commission have recognized the South Platte River in the inundation area for its outstanding environmental qualities and have given the river segments special designation. The USFWS has designated portions of the South Platte River in the Two Forks site as a "Resource Category 1" indicating that 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." The Colorado Wildlife Commission has designated much of the stream as a "Gold Medal[1]' trout fishery, one of the highest quality habitats for trout which offers the greatest potential for trophy trout fishing and angling success. Wildlife values of the project area are also very high due to the diversity of the wildlife species, the number of high interest species, and the ease of public access. The USFS (the major land manager in the area) concluded that the area has "outstanding and remarkable recreational and fishery values". The U.S. National Park Service also evaluated the area and concluded the area "possesses outstandingly remarkable recreational, fish, historic and other (endangered species) values".

These agencies' perspectives on the environmental amenities of the Two Forks site were reaffirmed by the public comments received during the review period. There was overwhelming recognition of the extremely high fishery and recreational'values of the South Platte River segments which would be inundated. These values are all enhanced by the close proximity of the site to the major metropolitan areas of Denver and Colorado Springs.

Section 404(c) of the Clean Water Act states that unacceptable adverse effects on fishery areas (including spawning and breeding areas), wildlife, or recreational areas provides the basis for a Section 404(c) action. The adverse impacts of the proposed Two Forks dam and reservoir on these resources are indisputably significant in that these resources would be forever lost. Therefore, these significantly adverse environmental effects are a basis for the recommended action.

The administrative record demonstrates that the proposed Two Forks dam and reservoir would be the most environmentally damaging of the site-specific alternatives evaluated. The Corps' FEIS (Corps 1988, Vol. 1, Table 1) and 404(b)(1) evaluation (Corps 1989a) document that the adverse impacts of Two Forks on wetlands, wildlife, recreation, aquatic life, and threatened and endangered species are greater than any of the other site-specific alternatives evaluated.

The Corps concluded that New Cheesman, a 400,000 AF Estabrook, and a 200,000 AF Estabrook are all practicable alternatives to the 1,100,000 AF Two Forks sought by the applicants (Corps 1989a, pages 15-20). EPA concurs and furthermore believes there are additional practicable alternatives available to meet the metropolitan water supply needs. The existence of practicable alternatives which would have less adverse impacts on the aquatic ecosystem is also a basis for denial of a Section 404 Permit under the Guidelines (Section 230.10(a)).

Therefore, EPA Region VIII recommends that action be taken under Section 404(c) of the CWA to prohibit the specification of the defined area as a disposal site for the discharge of fill material in conjunction with any dam or reservoir project.

Lee A. DeHihns, III

March 26, 1990

Lee A. DeHihns, III
Regional Decision Officer

Date

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APPENDIX A

SUPPLEMENTARY INFORMATION FOR THE EPA REGION VIII MARCH 1990, TWO FORKS DAM AND RESERVOIR RECOMMENDED DETERMINATION

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APPENDIX A

SUPPLEMENTARY INFORMATION FOR THE EPA REGION VIII MARCH 1990, TWO FORKS DAM AND RESERVOIR RECOMMENDED DETERMINATION

This Appendix provides information on a broad range of issues which have been raised since the initiation of the Environmental Protection Agency (EPA) Region VIII review of the proposed Two Forks dam and reservoir under authority of Section 404(c) of the Clean Water Act (CWA). This Appendix, along with the body of the Recommended Determination, reflect EPA's evaluation of written comments received plus oral statements provided during EPA held public hearings.

Approximately 11,000 written comments were received by EPA during the period from the March 24, 1989 initiation of the Section 404(c) process through the November 17, 1989 close of the public comment period on the Proposed Determination. These comments included letters, petitions, postcards, and major detailed responses to the questions raised by EPA in the Proposed Determination. Two Forks comments sent to the Region VIII Office, the Washington D.C. EPA office, and the Office of the President as well as comments sent to other agencies were examined in Region VIII. Some comments were duplicative in that a commentor would send the original letter to one office and copies of the comment to several other offices who would then forward the copies to the Region VIII office. While EPA does not have the staff time available to eliminate the duplicative comments, all comments received on or before March 20, 1990 are included in the administrative record. Although the official comment period on the Proposed Determination has been completed, comment letters are still being received. Comments which were received after the close of the comment period, and prior to March 20, 1990 when the administrative record of Region VIII was completed, have been included in the record but were not considered in the Recommended Determination. Any further comments received in the Region will be forwarded to the EPA Office of Water in Washington, D.C.

As part of the public comment period on the Proposed Determination, EPA held public hearings in Denver, Colorado on October 23 and 24, 1989, and in Grand Island, Nebraska on October 27, 1989. The public was invited to provide oral or written comments at the hearings and a total of 364 individuals provided oral comment. A written transcript of the oral testimony has been prepared and, along with the written comments submitted at the hearings, has been made part of the administrative record.

This Appendix provides EPA's response to the major groups of comments received. It is organized into two broad categories. First are EPA "policy" issues which have received considerable comment. This "policy" section also incorporates discussion of the specific questions posed by EPA in the Proposed Determination. as well as other significant issues raised during the 404(c) review. The second category is a "listing" of additional comments received. The references cited in this Appendix are contained in the last section of this Appendix.

While all individual comments have not been listed in this Appendix, all comments received prior to or on November 17, 1989 (the close of the comment period) were reviewed and are included in the Administrative Record. For issues which formed the bases for EPA's Recommended Determination refer to Section III of the Recommended Determination.

1. PROJECT PURPOSE

As indicated in the Recommended Determination, EPA has concluded that the overall project purpose for the Two Forks project is to provide the Denver metropolitan area with a long-term, dependable water supply. The following discussion provides EPA's response to comments on the Proposed Determination which were directed toward the purpose for Two Forks dam and reservoir.

COMMENT: It would be inappropriate not to defer to the applicant's definition of the project purpose. Neither the Corps of Engineers (Corps) nor the EPA offered any basis in fact, law, or policy to "bridge the logic-gap between finding it inappropriate to accept the applicant's project purpose definition 'without question' and accepting only one small element of the applicants' purpose without an express determination that other aspects of the applicants' purpose are inappropriate, incorrect or unreasonable'' (DWD/MWP 1989, page 110).

RESPONSE: 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 overall project purposes (40 C.F.R. 230.10(a)(2)). If it is otherwise a practicable alternative, an area not presently 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 also be considered (emphasis added, 40 C.F.R. 230.10(a)(2)). There is no requirement in the regulations that an analysis of project purpose be based upon whether the alleged purpose is "inappropriate, incorrect or unreasonable" as the applicants suggest. The identification of project purpose is to be made by the regulatory agency after considering the applicants' perspective of project purpose (DOA 1989, page 8). The Corps did so in its 404(b)(1) Evaluation and concluded the

overall project purpose was to supply water for the metropolitan area in a manner which is not contrary to the public interest (Corps 1989a, page 7). EPA agrees with the Corps that the overall project purpose is to provide a long-term water supply. Some of the project purpose elements as proposed by the applicant are intended to guide the selection of an alternative that is optimal from the applicants' view. Including these elements could lead to an overly restrictive range of alternatives to be reviewed. Consequently, alternatives less desirable from the applicants[1] perspective could remain under consideration when judged against meeting the overall project purpose. In the following discussion, EPA reviews the applicant-submitted 13-point project purpose.

Provide Needed Long-Term Water Supplies

EPA agrees that providing needed long-term water supplies is the overall project purpose. The determination of need was established by the Corps in the Final Environmental Impact Statement (FEIS) using population forecasts and a water demand model to estimate metropolitan water needs until the year 2035. EPA has used the FEIS analysis of long-term water demand as the basis to quantify water needs.

Provide the Greatest Amount of Water at the Least Unit Cost

DWD stated that any alternative to Two Forks reservoir which could not provide a reliable long-term supply of water on a cost-competitive basis would not satisfy this element of the applicant's project purpose. To be a practicable alternative, the unit cost of water must be reasonably comparable to the proposed project's unit cost. Projects with higher unit costs would still be considered if otherwise practicable. The Corps used a criterion of less than $1000 per AFY annualized cost as the basis of comparability. EPA agrees this cost is reasonable to assess the cost-competitive basis of alternatives although a higher cost could be reasonable. While the cost of water is one of the evaluation factors used in determining the practicability of alternatives, selecting the least unit cost is not. Therefore, EPA concludes this element is not part of the overall project purpose.

Alleviate Planning Uncertainties

While it is difficult to alleviate all planning uncertainties, reliability of a long-term supply is an essential component of the overall project purpose. To meet the overall purpose, an alternative must be reliable. DWD states that by providing a larger firm

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annual yield than any available alternative, the larger Two Forks Reservoir would best assure the future needs of Denver and the participants for a longer time. As the Corps noted in its 404(b)(1) Evaluation, this element of the project purpose is very similar to the applicant's element to provide long-term water supplies since both elements relate to water yield. The amount of water yield and the time the project would satisfy demand are' appropriate evaluating factors regarding the logistics of alternatives. Large projects reduce some of the uncertainty for a longer period of time. Without large additions to supply, the next water supply project would need to come on line at an earlier date. DWD's observation that a large reservoir provides a longer period of reducing planning uncertainties is valid. This does not mean, however, that alternatives which supply less yield and hence have a shorter period of certainty are any less valid. The metropolitan area would need additional long-term water supplies even with Two Forks. Without Two Forks, such additions to the long-term supply may be needed earlier. If a water supply alternative provides a portion of needed long-term water supply, planning uncertainties will be reduced. EPA concludes that reducing planning uncertainties is part of the overall project purpose, but this element of the project purpose can be accomplished in ways other than those suggested by the applicants.

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

DWD notes that the complexity of operating its water system is reduced if the water can be developed using Denver's existing storage and delivery system. EPA concludes that reduction in complexity of operation may be a benefit of the proposed Two Forks project, but it would not be an element of the overall project purpose. Alternatives which require the use of new waterworks or do not optimize Denver's existing water system may be more difficult to operate, but if such alternatives provide the long-term supply and are otherwise practicable, they would still meet the overall project purpose. DWD also notes that the proposed reservoir will develop valuable water right assets. The status of the water rights of the alternatives is a relevant evaluation factor relating to the logistics of alternatives. Maximizing existing water rights should not, however, be used to unduly narrow the range of alternatives reviewed. Water rights are transferrable under Colorado law and thus do not ordinarily present a major obstacle to development of water projects.

Implementing an alternative which the utility views as less than optimal from a water rights perspective may be necessary to meet other applicable statutes, including the CWA. EPA concludes that optimal use of DWD's existing water works and water rights is not an element of the overall project purpose.

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

The review of practicable alternatives should not be limited solely to those alternatives which could provide water through existing institutional arrangements. If a cost effective source of water can be identified and developed, institutional arrangements to distribute the water are likely to follow. EPA recognizes that development of some alternative sources could involve the transfer of the water rights or other institutional changes. This would not preclude the practicability of an alternative, since the'waterright transfers required are not unusual and are permissible under Colorado law. The 1982 Metropolitan Water Development agreement provides an example of an existing contractual arrangement to add additional water sources such as those from groundwater, "interim supplies," and conservation. EPA concludes that reducing institutional and legal barriers is not an element of the overall project purpose.

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

Denver has argued that this element is intended to avoid bringing higher cost alternatives on line earlier. EPA concludes this project purpose element is very similar to the element of providing the greatest amount of water at the least unit cost. Cost is a relevant factor to be used in determining practicable alternatives, but reasonable higher cost alternatives would still be considered practicable. EPA concludes that avoiding early development of additional projects is not part of the overall project purpose.

Develop the Best Available Reservoir Site

EPA concludes a project would not have to be either the "best" or a reservoir project in order to be practicable. Long-term water supply options are not limited to reservoir alternatives. Alternatives that are capable of delivering comparable dependable long-term yields at reasonably comparable costs without requiring reservoir construction are not precluded from

practicability under the Guidelines. EPA concludes that developing the best reservoir site is not an element of the overall project purpose.

Provide Sufficient "Reserve" Water Supply and Security agains Interruption

Security against interruption is an important element of providing long-term water supplies. An alternative must provide a long-term water supply reliably and securely. DWD stated that any alternative to the Two Forks Reservoir which does not increase Denver's year-to-year carry over storage capacity to guard against the uncertainty of drought, and provide operational flexibility of Denver's water system to deal with maintenance and the potential for failure of transbasin diversion tunnels, fails to fulfill this element of the applicants' project purpose. Maximizing carry over storage, ability to absorb drought cycles, and operational flexibility are useful benefits to be derived from a project. However, that does not mean that alternatives that do not maximize those considerations are not practicable. The Corps noted that: "The amount of water stored on the East Slope is not solely a function of the site or location of the reservoir, but is more a function of operational agreements, such as the Summit County agreement and other operational considerations", (Corps 1989a, page 11). The use of groundwater and dependable yields from water conservation programs are independent of drought year considerations and have the ability to provide operational flexibility in the case of system failures. EPA concludes that providing sufficient reserve water and reducing security against interruption are not elements of the overall project purpose.

Build on Metropolitan Water Cooperation.

DWD stated that providing opportunities for cooperation on water supply between the suburban communities requires a major water supply project such as Two Forks. EPA recognizes the applicants' claims that these objectives were important benefits to be realized from the Two Forks project. However, alternatives that do not meet the South Platte Agreement water allotments or fail to attract cooperation from other communities may still be technically and logistically practicable to provide long-term water supplies. Metropolitan cooperation for water supplies appears to be dependent upon the amount of water available to share with the

suburban communities, not on a particular project. EPA concludes that providing for metropolitan water cooperation is not an element of the overall project purpose.

Protect the State's Agricultural Economy

DWD states that alternatives which increase pressure to convert irrigated agriculture in northern Colorado are unacceptable. Without some overall water development direction in Colorado, communities will continue to obtain water from agriculture. As the Corps noted in its 404(b)(1) Evaluation, protection of agricultural supplies may be a desirable planning goal, but it is outside the scope of a Section 404 review. Impacts on agriculture do not preclude the implementation of an alternative. EPA concludes that protecting the State's agricultural economy is not an element of the overall project purpose.

Meet the conditions of the South Platte Agreement

The MWP concluded that any alternative which does not satisfy the allocation amounts of the Platte and Colorado Rivers Storage Project Participation Agreement (South Platte Agreement) for Denver and each of the 40 suburban communities does not fulfill this essential component of the overall project purpose. The South Platte Agreement allocated the amount of water from the Two Forks project to be received by each participating community. This Agreement established the privilege to receive water from several identified projects as well as future projects that might be added to the agreement.

Projects which do not meet the specific terms of the South Platte Agreement could provide long-term water supplies. Accordingly, the Corps stated in its 404(b)(1) Evaluation that it would "not use the South Platte Agreement in [the] analysis of the logistical component of practicability for each alternative," (Corps 1989a, page 9). EPA agrees with this conclusion, and thus will not use the lack of consistency with the South Platte Agreement as a basis for rejecting an alternative's practicability. EPA concludes that meeting the conditions of the South Platte Agreement is not an element of the overall project purpose.

Provide additional reservoir storage on the South Platte

Additional storage on the South Platte River would enhance the developable yield for metropolitan communities such as Aurora and Thornton, with water supplies deliverable along the South Platte River. MWP notes that Two Forks.would yield 98,000 AFY from Denver's water rights, and another 15,000 AFY from other MWP-owned South Platte water rights (MWP 1988). EPA recognizes the applicants' claims that these objectives were additional benefits that may be realized from Two Forks. Alternatives should not, however, be eliminated simply because they provide less yield than the applicants' preferred project, or storage/transfer capacity at some other location. The capability of each alternative to provide long-term water supply was used as an evaluation factor relating to the logistics of a practicable alternative, not its specific location. Consequently, EPA concludes providing additional storage on the South Platte is not an element of the overall project purpose.

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

One feature of the South Platte Agreement is that the water yields to be made available to each community from the Two Forks project can be used by that community as it determines, without being subject to the usual annual allocation of taps imposed by DWB. EPA recognizes that independent water allotment would result from implementation of the South Platte Agreement. The fact that similar arrangements are not presently in place on other projects would not, however, disqualify an alternative as logistically impracticable. Similar arrangements could be negotiated on other projects in the future. As stated. above, the relevant evaluation factor is the capability of each alternative to provide long-term water supplies, rather than the existence of contractual arrangements. Consequently, EPA has determined this is not an element of the overall project purpose.

COMMENT: Without Two Forks, there will be additional pressure to obtain agricultural water which will harm agricultural interests and result in the loss of wetlands (DWD/MWP 1989, page 119).

RESPONSE: Colorado water law permits the transfer of water rights in a "free market" forum within the Colorado water court process. Given the legal system's flexibility, communities such

as Aurora and Thornton have acquired agricultural water rights with the intent of transferring those rights to municipal uses. These actions are likely to continue (DWD/MWP 1989, page 119).

There are practicable alternatives which can be pursued which have no effect on irrigated agriculture. Examples include water conservation and ground water under municipal boundaries.

In addition, because only 43 percent of the independent providers 2035 water demands would have been provided from Two Forks, pressure to convert agriculture or find other sources would be likely even with Two Forks. The historical trend regarding the transfer of agriculture water to municipalities is unlikely to change. There hay be creative institutional arrangements for mutual cooperation between municipal and agricultural water use, such as dry year leasing or acquisition of water "salvaged*' through agricultural water conservation which could benefit the agricultural community and the metropolitan area and also protect environmental values. In the absence of appropriate incentives or controls on agricultural purchases, current trends will continue.

As noted in'the PD, in his "A Colorado Agenda for Water*'the Governor of Colorado made a number of observations and recommendations which have a bearing on these issues. "...the General Assembly should investigate ways to encourage water savings in the State's agriculture sector. Agriculture uses the vast majority of our water, and thus the potential for savings are tremendous. Yet our current system discourages water conservation by Agricultural users[1]* (Romer 1988). The Governor further observed, "We know that there are a number of ways to reduce water consumption without reducing agricultural production, and we know that these methods often are cheaper than building a dam. We should seriously consider legislation which encourages farmers to find those savings and allows them to profit from their initiative" (Romer 1988). The Governor's statement also noted the need to balance a diversity of competing interests (protection of basin of origin, municipal, agriculture, environmental and recreational uses) .and the desirability of fostering greater metropolitan cooperation (Romer 1988).

The project proponents have argued that the transfer of irrigation water to municipalities will result in substantial reductions in wetlands and other wildlife habitat. There was no clear evidence presented to EPA that agricultural "dry-up" will occur as a result of a Two Forks permit denial, let alone result in significant impacts to wetlands and other wildlife habitat. Some experts have indicated that even the "worst case scenario" of potential "dry-up" is "much lessN than the figures used by Two Forks proponents (Young 1989). As noted in the PD, water transfers have taken place independent of a decision on Two Forks. In the transfer of irrigation water from the Colorado

Canal in the Arkansas Valley to the City of Aurora, the final decree included requirements regarding revegetation of lands formerly irrigated. Such conditions on water transfers indicate that environmental conditions may be placed on water transfers through water court proceedings. Conceivably, conditions could also be attached to water transfers to protect wetlands and wildlife habitat.

COMMENT.: Without Two Forks, cooperation on the sharing of water supplies will be frustrated. Water sharing and metropolitan cooperation on issues other than water depend upon Two Forks (DWD/MWP 1989, page 105).

RESPONSE: Water sharing is an important benefit which might be realized from Two Forks. However, other means may be available to pursue this goal. For example, Denver could offer its "interim" water supplies and water from conservation, if they become available and are proven reliable to DWD's satisfaction. As noted in the PD, the 1982 Metropolitan Water Development agreement provides an existing contractual .arrangement for this purpose. DWD notes in its comments to EPA that, while this may be theoretically possible, it is not likely. DWB believes sharing of these water supplies sources is limited because of the DWB's responsibility under the city charter to put the needs of Denver first. "DWB...cannot share supplies it needs for its ultimate build-out with suburban entities unless there is in hand a long-term water supply such as Two Forks" (DWD/MWP 1989, page 98).

Recent events such as the joint effort by Aurora, Arvada, Thornton, and Westminster in forming a joint water authority to obtain future water sources, are indicative of cooperation efforts for these cities (Denver Post 1990a). In February 1990, DWB contracted with the Inverness Water and Sanitation District to allow water purchased by Inverness to be supplied through the DWD water system (Denver Post 1990b). Allowing additional communities to use DWD systems is an example of cooperative water supply efforts.

Cooperation on all issues of metropolitan concern (such as transportation, health care, cultural activities) is a goal that EPA supports. Such cooperation, however, appears to be independent of the sharing of water supplies.

COMMENT: EPA's statement in the PD that Denver has up to 107,600 AFY of excess water supply that should be available to Denver from existing and future projects by 1995, and that this water could be shared with other metropolitan entities, is wrong. DWD challenged EPA's calculations of safe yield, pointed out that it is not certain that these projects will be on line in that timeframe, asserted that new growth (such as the airport) will absorb much of Denver's current surplus and argued that the

projected yield from these projects should not be added to any calculations of available supply. DWB has made a policy statement that without Two Forks, Denver will be unable to provide water to meet its charter obligations and meet the needs of its suburban distributors (DWD/MWP 1989, pages 91-107).

RESPONSE: DWD's calculations of yield from these projects (DWD/MWP 1989, page 93) correspond with EPA's. EPA acknowledges that it is not certain that all of the new water sources will actually become available to DWD by 1995. Given the broad range of water projects currently being planned or developed, however, it is certain that water from other sources will be available in the near future.' Whatever amount of water is available in excess of DWD's charter obligations could be made available to partially meet the needs of DWD's suburban distributors. If Denver is unable to obtain all of these new water sources, then additional water supply sources will need to be brought on line sooner.

COMMENT: Water conservation sources have not been proven as a long term source and, therefore, should not be credited as a future water supply.. DWD estimates its potential water supply available'from water conservation sources at 28,400 AFY by 2010 (DWD/MWP 1989, page 93).

RESPONSE: It is not yet certain that water conservation programs will yield reliable long-term water supplies in the amounts currently estimated by DWD. If Denver is unable to achieve water conservation at the planned level, then additional water supply sources may be needed on line sooner. Under the Foothills Consent Agreement, EPA is conducting aninvestigation of cost effective water conservation programs suitable for Denver which will further explore the detailed means of achieving water conservation success.

COMMENT: EPA ignored the water requirements of the Providers independent of Denver (DWD 1989b, page 12).

RESPONSE: Two Forks would provide about 43 percent of the estimated unconstrained demand for the independent Providers or about 28 percent of independent Providers plus those partially dependent on Denver.

The current water supply and projected demand of the .Provider communities that are independent of Denver and those partially dependent on Denver are listed in Table A-1.

TABLE A-1
THE INDEPENDENT AND PARTIALLY DEPENDENT MWP COMMUNITIES WATER SUPPLY AND PROJECTED DEMAND

MWP Community	Adjusted Safe Yield AFY 1/	2035 Demand AFY 2/	Water Shortage AFY (demand less safe yield)	Two Forks Share AFY 3/	Community Estimated Total Demand AFY 41
Adams County	NA 5/			118	
Arvada (80% DWD) 6/	4,416	30,029	25,613	3,920	53,000
Aurora	34,440	71,663	37,223	13,865	
Broomfield (60% DWD)	2,002	12,956	10,954	3,136	34,000
Centennial	2,626	13,905	11,379	6,664	
Consolidated (72% DWD)	2,666	16,936	14,270	1,866	
Cottonwood	not avail.	3,426		392	
Douglas County	NA			3,975	
Castle Pines	402	1,899	1,497		
Meadows	not avail.				
Meridian	not avail.				
East Cherry Creek	1,333	15,860	14,527	4,743	
Glendale	2,581	2,476	0	627	
Golden	2,086	6,040	3,954	753	
Inverness	not avail.			470	
Louisville	1,188	6,922	5,734	784	
Mt. Carbon	0	259	259	909	
Thornton	19,663	22,917	2,397	412	89,000
Westminster	7,965	21,917	13,952	6,272	25,000
Willows (53% DWD)	5,564	3,767	0	1,450	
		Total	90,922 7/ 141,759 8/	39,984 7/ 50,356 8/	

Notes for Table A-1:

1/ Corps 1986, Appendix 4C, Volume 9, Representative No Federal Action Alternative, Table 9-1.

2/ Corps 1988, Volume VI, Addendum, Technical Appendix 2, Future Water Demands, Table 29, page 4-29 to 4-31.

3/ DWD 1988, page V-5.

4/ MWP 1989.

5/ NA -- Not applicable since Adams and Douglas County do not currently operate water systems.

6/ Number in parenthesis for MWP partially-dependent communities is the current percent of water now supplied by DWD.

7/ This total does not include those districts and cities partially dependent on Denver.

8/ This total includes those districts and cities partially dependent on Denver.

Based on the information in the table, the Independent and Partially Dependent Providers can be classed in four distinct categories:

1) Providers with apparently adequate supplies to meet 2035 shortages: Glendale, Inverness, and Willows.

2) Providers using non-tributary groundwater with apparent capability of expansion to meet 2035 shortages: Centennial, Castle Pines, Meadows, Meridian, and East Cherry Creek with a total shortage of 27,400 AFY.

3) Providers using surface water sources with plans for water supply expansion sufficient to meet 2035 shortages: Aurora and Thornton and possibly Broomfield and Westminster with a total shortage of 64,000 AFY. Denver may supply a portion of Broomfield's shortage to meet contract obligations and possibly to Westminster to meet terms of a litigation settlement (MWP 1989).

4) Providers apparently without adequate long-term water supplies: Arvada, Consolidated Mutual, Golden, Louisville, and Mt. Carbon with a total shortage of about 50,000 AFY to meet 2035 demand. DWD may supply a portion of this shortage to fulfill contract obligations to Arvada and Consolidated Mutual.

COMMENT: Since, groundwater is a non-renewable resource, it should not be relied upon as a future water supply (DWD/MWP 1989, page 113).

RESPONSE: Properly managed, groundwater can make a meaningful contribution to the metropolitan area's water supply. Sufficient quantities of groundwater are stored in major aquifers beneath the Denver metropolitan area to use this resource, in conjunction with surface water resources, as a park of the alternative supply to the proposed Two Forks reservoir. Approximately 69 million acre-feet of physically recoverable groundwater is stored in five major aquifers that occur beneath the Denver metropolitan area (Wireman 1989). Of this, approximately 68,600,000 acre-feet is stored in' four major bedrock aquifers: the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifers. Approximately 400,000 acre-feet is stored in the South Platte alluvial aquifer. Groundwater in the bedrock aquifers is administered pursuant to Colorado Revised Statutes 37-90-137, 1985 (known as Senate Bill 5). Groundwater in the South Platte alluvial aquifer is administered as surface water.

Recharge to the Denver Ground-Water Basin bedrock aquifers has been estimated to be between 40,000 AFY and 120,000 AFY (Robson 1987 and Romero 1976). Recharge to that part of the South Platte alluvial aquifer within the Denver metropolitan area is estimated to be in excess of 10,000 AFY.

Current ground-water withdrawals within the Denver metropolitan area have been estimated to be 27,000 AFY from the bedrock aquifers, and 38,000 AFY from the South Platte alluvial aquifer (Wireman 1989).

From these estimates, it would appear that from 13,000 to 93,000 AFY of additional bedrock supply may be obtained before mining occurs within the Denver Basin. These bedrock aquifers generally contain water that is of good chemical quality for public supply and domestic use (Robson 1987, page 30).

Considering the tremendous volume of groundwater stored in major non-tributary aquifers beneath the Denver metropolitan area, with adequate economic engineering analyses these aquifers could be managed to sustain an annual yield of an additional 30,000 AFY well beyond the year 2035. Locating wells throughout the

metropolitan area will significantly reduce the problem of localized decline of ground water levels and would prevent pumping costs from becoming prohibitive.

Properly developed wells, using modern well design, would also prevent significant head losses. For example, fully developed well fields developed in the Denver aquifer in Highlands Ranch have shown no significant head losses in 5 years of operation. Fully developed well fields in the Arapahoe Aquifer, in the same area, have operated for 8-10 years with less than four feet of head loss per year (Harmon 1990).

2. PROJECT NEED

COMMENT: The PD referenced a draft report produced by the staff of Denver Regional Council of Governments (DRCOG) regarding recent population trends and stated this draft information should not be relied upon for analysis. Use of this draft report information and other errors resulted in calculations of demand that invalidated EPA's work (DWD/MWP 1989, page 84).

RESPONSE: EPA's analysis contained in the Recommended Determination is based on the demand model used in the FEIS. For purposes of this analysis, EPA accepts the population projections adopted by the Corps,

In the PD, EPA used the draft DRCOG projections of population reductions to illustrate the uncertainty of forecasting water demand. In this case, the draft DRCOG information appeared to indicate that the population projection made in the FEIS was overly optimistic since the estimated 1990 population had not been attained. While this statement of population forecasting was included in the PD, the Recommended Determination's analysis of future water demand and Denver's potential to share its current and future water supplies was based upon the water demand (and hence the same population forecast) as presented in the FEIS.

COMMENT:. The population projection for 2010 may be reached at an earlier point in time or it may take a few years more. What is certain is that the region will grow, and that the 2010 population projection figure will be exceeded. This creates the long-term need for a substantial new water supply project to meet the applicants' project purposes. The uncertainties inherent in any population projections are addressed by the applicants in the use of the long-term shelf life...and by the use of a safety factor... (DWD/MWP 1989, page 85).

RESPONSE: EPA recognizes that errors or changes in the population and demand analysis would affect the timing, not the eventual need, for additional long-term water supplies for the metropolitan area.

COMMENT: Changes in demographic factors which affect water demand, including expected increases in median household income, decrease in the number of persons per household, and the possible effect of a change in water pricing should be analyzed (EDF 1989, page 6).

RESPONSE: Changes in the assumptions used to model demographic factors could result in major differences (either increases or decreases) in projected demand. EPA was, however, unable to make any clear finding that the analysis completed in the NEPA process should be amended and has thus chosen to rely on the FEIS projections for purposes of this 404(c) action.

COMMENT: Safety factors should be added to the water demand estimates to account for planning uncertainties resulting from varying assumptions regarding drought, population, and demographic variables (DWD/MWP 1989, page 88).

RESPONSE: Application of a safety factor is part of prudent utility planning practice. As DWD applies its safety factors, it may bring new water supplies on line at an earlier date in anticipation of demand higher than predicted in the FEIS.

3. ALTERNATIVE WATER SUPPLY SOURCES

COMMENT: There may be a variety of alternatives that could supply water to the Denver metropolitan with less environmental impact (EDF 1989, page 7).

RESPONSE: Practicable alternatives identified in the Recommended Determination include "interim supplies", conservation, Rocky Ford ditch rights, non-potable reuse, and groundwater under municipal boundaries. In addition, EPA agrees with the Corps that reservoirs at New Cheesman and Estabrook are practicable alternatives to Two Forks. (EPA does not believe "small" Two Forks is a practicable alternative). Also see "Additional practical alternatives to Two Forks" discussion in Section III(G) of the Recommended Determination.

A number of alternatives were identified in the FEIS and additional alternatives have also been suggested by other sources since publication of the FEIS. These projects were not reviewed for practicability. In the future, it is possible that additional alternatives, including those currently under investigation, will emerge as environmentally less damaging and practicable alternatives to supply a portion of the metropolitan area water needs.

4. WATER QUALITY

The potential of a project to violate State water quality standards is one of the issues to be evaluated under the 404(b)(1) Guidelines. 40 C.F.R. Part 230.10(b)(1) provides:

> No discharge of dredged or fill material shall be permitted if it [clauses or contributes...to violations of any applicable State water quality standard.

The regulatory mechanism used to evaluate compliance with State water quality standards is the Section 401 certification. The Corps' regulations consider State 401 certification to be conclusive with respect to water quality issues unless EPA raises other water quality concerns (33 C.F.R. 320.4(d)). EPA raised a number of concerns over water quality impacts, including mitigation of those impacts, during development of the FEIS, throughout and after the State's 401 certification, and during subsequent discussions of permit conditions. Although not all of EPA's water quality concerns were resolved through these discussions, EPA Region VIII believes the remaining concerns do not rise to the level of "significant adverse affects" contemplated by Section 404(c).

EPA's water quality concerns were highlighted in correspondence from EPA to the Council on Environmental Quality (CEQ) (EPA 1987), in various EPA comment letters including those on the FEIS (EPA 1988b) and in comments on the draft State 401 certification (EPA 1988a). In separate correspondence to the State, EPA reserved the right to invoke Section 320.4(d) of the Corps' regulations, which allows for specific consideration of EPA's concerns on water quality issues beyond the State's certification (EPA 1988c). Because the Agency was not satisfied with the State's resolution of water quality issues, EPA elected to invoke Part 320.4(d) and to continue to raise concerns related to water quality (EPA 1988d; EPA 1988e; EPA 1989).

During 404(q) discussions in January 1989, EPA, the Corps and the applicants developed compromise language to address the most significant water quality concerns raised by EPA (DWD 1989a, attachment 2). This language was subsequently incorporated into the final 404(b)(1) Evaluation (Corps 1989a), the final 404 Permit Conditions (Corps 1989b), and the final Record of Decision (Corps 1989c). EPA has found that the State's 401 certification conditions, supplemented by the Corps final permit conditions, are appropriate and practicable steps which would minimize potential adverse water quality impacts should Two Forks be built.

Nevertheless, impacts on water quality due to the proposed Two Forks 1.1 MAF alternative still concern EPA. This is due, in part, to some of the uncertainty in projecting water quality

changes related to transporting water from one basin to another. As discussed below, violations of water quality standards were projected during the course of evaluating Two Forks. Mitigation actions, primarily related to the timing and extent of water transport, were fashioned to address those impacts.

COMMENT: Certification by the CWQCC pursuant to Section 401 resolved all water quality concerns related to the Two Forks project (DWD/MWP 1989, page 7). EPA must accept a State certification as binding on all water quality issues (DWD/MWP 1989, page 7).

RESPONSE: Under the CWA, EPA is bound by a State's denial of a Section 401 certification only in that EPA cannot approve less stringent conditions than those approved by the State. The State's decision to certify does not, however, bar EPA from making an independent determination of whether water quality standards have been violated (EPA 1977). Moreover, the Corps' 404 regulations contemplate that a State's 401 certification will be considered conclusive only with EPA concurrence (See 33 C.F.R. 320.4(d)).

COMMENT: The proposed veto was partly based on water quality impacts which were unsubstantiated and contradicted by the Water Quality Team and the Colorado Section 401 certification (DWB/MWP 1989).

RESPONSE: Significant water quality impacts are projected in the Water Quality Team reports (EPA et al. 1987) which, left unmitigated, represent violations of State water quality standards in the North Fork of the South Platte and to a lesser extent in the Fraser River and the Blue River. The Water Quality Team reports do not comment on the impact of Two Forks on the Williams Fork River. The State 401 certification provides special conditions which are designed to prevent the projected violation of State water quality standards (CDOH 1988). At the same time, the State acknowledged the uncertainty behind their certification and called for further monitoring and analysis in the Williams Fork and Fraser Basin to determine: 1) if standards could be violated and; 2) if further mitigation was required to prevent those standards violations (CWQCC 1989). Furthermore, the Corps recognized the need to collect further water quality data before implementation of the Williams Fork increment of Two Forks because of the uncertainty of the current analysis (Corps 1988, page 5-233).

Simply stated, the conditional nature of the 401 certification and the permit conditions recognizes significant water quality standards exceedences may be identified in the future in the Williams Fork and Fraser Rivers. The 401 certification addresses this possibility by calling for mitigation if such water quality exceedences are identified.

COMMENT: The fact that the impacts of the operation of Two Forks on water quality in the Williams Fork River was never estimated is evidence that the 401 certification and the analysis on which it is based is flawed (EDF 1989).

RESPONSE: EPA agrees that an analysis of the Two Forks impacts on water quality in the Williams Fork river was not completed. EPA believes, however, that the structureand design of the 401 certification and permit conditions would prevent water quality exceedences.

COMMENT: EPA's channel stability concerns are contrary to the FEIS record (DWD/MWP 1989, page 67).

RESPONSE: Channel stability is a significant component of the aquatic systems of the west. When stream channels are stable, the aquatic communities within the streams can adjust to a consistent environment and better maintain their health. Unstable stream channels can result in unstable aquatic communities. Because of the constantly changing physical system, the community must adapt to frequent sedimentation problems related to unstable channels. EPA, during the preparation of the Proposed Determination, received notification from the U.S. Forest Service (USFS) that recent events had lead them to be concerned about the methods which were used in the National Environmental Policy Act (NEPA) process to document the stream channel stability impacts. While the data and analysis were not available at that time to determine the extent of the effect on the impact analysis contained in the FEIS, EPA requested information on channel stability effects in the Proposed Determination. Few comments were received. The USFS concluded that the determination of whether or not there would be significant negative channel stability effects which were not documented in the FEIS will require additional studies (USFS 1989).

5. THREATENED OR ENDANGERED SPECIES

Because of the length of time between the completion of the Biological Opinions for the Two Forks project and EPA's Proposed Determination, EPA specifically requested information concerning threatened or endangered species in the Proposed Determination. The following discussion is EPA's response to the information received. Section 230.10(b) of the Guidelines states:

> "no discharge shall be permitted if it: (3) jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of habitat which is determined to be critical habitat under the Endangered Species Act."

With the exception of the threatened Pawnee montane skipper, (discussed in Section III of the Recommended Determination) EPA has determined that information on projected impacts to the threatened or endangered species is inconclusive to determine whether unacceptable adverse effects would r'esult. This decision was based on the assumption that the conservation measures as recommended by the U.S. Fish and Wildlife Service (USFWS) would be successfully implemented.

COMMENT: EPA has no authority to supersede a finding by the USFWS pursuant to Section 7 of the ESA that the project will not jeopardize the existence of threatened or endangered species. A "no jeopardy" finding by the USFWS forecloses EPA consideration of impacts to listed wildlife species (DWD/MWP 1989, page 70).

RESPONSE: The USFWS performed Section 7 consultations and found "no jeopardy" as to all nine listed species that would be affected by the Two Forks project. These consultations were performed between 1985 and 1987. Since that time, according to the USFWS, substantial new information has been developed related to these species as well as to additional species now listed or proposed for listing. Based on this new information, EPA believes, as does the USFWS, that Section 7 consultations would have to be re-initiated before a permit could be issued for the project (USFWS 1989b).

Moreover, a "no jeopardy" finding by the USFWS does not foreclose EPA's evaluation of significant impacts to threatened or endangered species as part of its wildlife review. Pursuant to Section 7, the USFWS evaluates the narrow auestion of whether the existence of a listed species will be jeopardized by the proposed project. EPA's 404(c) review focuses on the broader question of whether there are "unacceptable adverse effects[1]* to wildlife as a result of project impacts. A species can be "significantly affected" by project impacts without necessarily having its existence jeopardized. Wildlife species affected by Two Forks include both listed and non-listed species. EPA has evaluated significant impacts to both classes of wildlife in its 404(c) review.

COMMENT: There is no potential degradation of fish and bird populations in Colorado and Nebraska as a result of Two Forks (DWD/MWP 1989, page 69).

RESPONSE: The Two Forks reservoir would draw 67 percent of its average yield from west slope rivers, including the Blue River (42 percent), the Fraser River (20 percent) and the Williams Fork River (5 percent) (Corps 1989c, p. 16). Increased withdrawals associated with reservoir operations would reduce flows in west slope streams, potentially degrading water quality and impacting endangered fishes in the Colorado River. By reducing spring runoff and July flows, the project would contribute to the

further deterioration of the already severely impacted environment of the endangered Colorado River fishes (USFWS 1987b, page 29). Reduced flows may also impair channel stability, with the potential to degrade the physical, chemical, and biological integrity of the affected streams. Whitewater recreation in the Fraser, Blue, and Colorado rivers would also be negatively affected through the loss of peak flows.

Impacts on the east slope would occur on the South Platte, some of its tributaries such as South Boulder Creek and the North Fork of the South Platte, and downstream into Nebraska (Corps 1989a, page 73). Concerns in Nebraska center around recreational and wildlife habitat losses, including potential impacts to endangered species, as a'result of modifications to the flow regime, reduced peak flows, and reduced sediment transport through the critical "Big Bend" reach of the Platte in central Nebraska. There is serious concern regarding impacts of past, present. and future flow depletions and vegetative encroachment on fish and wildlife resources of the Platte River in Nebraska.

In the case of Two Forks impacts on threatened or endangered birds on'the Platte River in Nebraska, EPA, Corps and USFWS believe the major effects result from cumulative impacts. Since 70 percent of the Platte River flows have been lost to water development projects, the remaining 30 percent is extremely important for preservation of the wildlife habitat. However, the conservation measures do not recommend that water be provided to replace the depletion caused by Two Forks. Instead, it is recommended that land be cleared to maintain whooping crane habitat with reduced flows, As flows continue to be depleted, this form of habitat maintenance becomes less and less viable until it reaches the point where it no longer works. Adequate flows are essential to habitat maintenance on the Platte River (USFWS 1987c, page 60). For these reasons EPA believes that there would be cumulative impacts from Two Forks on listed and unlisted birds and their habitat in Nebraska. However, EPA has been unable to determine the extent of these impacts from the available information.

COMMENT: There is no need for reinitiation of Section 7 consultation (DWD/MWP 1989, page 70).

RESPONSE: EPA's reason for asking this question in the proposed determination was that almost all of the data in the biological opinions are at least 4 years old. Since there are ongoing studies concerning almost all of the threatened or endangered species, we believed that data may have been developed in these studies that would shed new light on the affect of Two Forks on the listed.species and the adequacy of the biological opinions. On December 7 and 11, 1989, the USFWS met with EPA to discuss new information that was available on the listed species.

Among other things, the USFWS pointed out that a recently listed plant, the Prairie Western Fringed Orchid, is found in the Big Bend area of Nebraska. In addition, a status report on the razorback sucker, which is found in the Colorado River, recommended listing this species as endangered. Because new information has been collected on the listed species and newly listed species in Nebraska and Colorado that may be impacted by the project, the USFWS stated that if EPA did not "veto" the Two Forks Project, that they (USFWS) would request reinitiation of Section 7 consultation on the listed species (USFWS 1989b).

COMMENT: EPA's concern regarding impacts to the Peregrine Falcon is wholly unjustified (DWD/MWP 1989, page 72).

RESPONSE: EPA recognizes that the peregrine falcon eyrie on Cathedral Spires is not currently an active nest. The site was abandoned in 1981. However, EPA and the USFWS are concerned about actions that may degrade historic peregrine nesting habitat, thereby slowing or obstructing the recovery of the species. The Cathedral Spires site was the last remaining historically occupied nest on the east slope of Colorado. It is believed'that as peregrine falcon recovery efforts are made on the east slope, the Cathedral Spires site will be one of the first to be reoccupied. Direct and indirect human disturbances associated with Two Forks could preclude nest establishment, abandonment or breeding failures at the Cathedral Spires eyrie (USFWS 1987a, page 11). In their letter commenting on the Proposed Determination, DOI stated:

> Impacts to the nest site at Cathedral Spires would primarily be associated with relocation of the road uphill from its present location,closer to the eyrie site. It is likely that this would encourage even more hiking and rock climbing at the spires, making this area unsuitable to peregrines in the future." (DOI 1989).

Therefore, EPA is concerned that Two Forks could hamper the reintroduction of the peregrine falcon on Colorado's east slope.

COMMENT: There is no significance to the recent sighting of the least tern in Colorado (DWD/MWP 1989 page 72).

RESPONSE: EPA agrees that there is probably limited biological significance to the sighting of a least tern in Colorado other than showing that there is suitable habitat for terns in this area. Surveys,may provide additional information during the summer of 1990.

COMMENT: The conservation measures for endangered species in Nebraska are scientifically sound, have been used by others, and 'are adequate to offset impacts to listed species (DWD/MWP 1989, page 54).

RESPONSE: EPA agrees with the applicant regarding the use of in-channel vegetation clearing projects to improve whooping crane and sandhill crane habitat under existing flow conditions. However, this is only effective when there is sufficient water to maintain the habitat: In conducting this type of habitat maintenance, the Whooping Crane Maintenance Trust is attempting to make the best out of a bad situation. The preferred alternative is to provide adequate flows to maintain the habitat. Regarding the replaceability of crane habitat, the USFWS states:

> Within the two reaches which support spring staging, partial replacement of sandhill crane roosting habitat which has been lost because of flow depletions has value, but only to a point. As flows continue to be depleted, this mitigation technique becomes less and less viable until it reaches the point where it no longer works. Adequate flows are essential to habitat maintenance on the Platte River.
>
> Mechanical clearing and channel reshaping of the unused reaches would be very expensive and may not be as successful without additional streamflows (USFWS 1987c, page 60).

Regarding the adequacy of the biological opinions, it was assumed at the time of writing the biological opinions that the populations of least tern and piping plover populations were stable. It has since been determined that the populations in the Big Bend area are declining (USFWS 1989b). This fact alone could cause the USFWS to reevaluate the permissible extent of incidental take of these species. It was initially thought that the habitat manipulation proposed for the whooping crane would also benefit the terns and plovers. It has since been discovered that this is not true (USFWS 1989b). This essentially leaves the interior population of the least tern and piping plover with a reduced level of conservation measures for their protection.

6. MITIGATION

Mitigation measures have been a major concern throughout the Two Forks process. Section 230.10(d) of the Guidelines states that "... no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem."

While EPA has remaining concerns about the mitigation proposed (particularly in the area of aquatics and recreation), these concerns do not rise to the level of "unacceptable adverse effects". Accordingly, the adequacy of the mitigation proposed is not a basis for the Recommended Determination.

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The following discussion contains EPA's response to comments received concerning mitigation. As noted in the Recommended Determination, EPA does not consider the Corps attempt to "level" the adverse affects of Two Forks through mitigation as an appropriate approach to the alternative selection process.

COMMENT: There are no additional mitigation measures which are both practicable and appropriate, although there are additional measures which must be considered practicable, and which could be implemented, if the proposed measures prove unsuccessful (DWD/MWP 1989, page 78).

RESPONSE: EPA's position is based on a combination of the Guideline requirements that non-compliance be found where all appropriate and practicable mitigation measures to minimize potential harm to the aquatic ecosystem are not included (40 C.F.R. 230.12(a)(3)(iii) emphasis added) and the NEPA requirement that a ROD must include a statement of "whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted" (40 C.F.R. 1505.2(c) emphasis added). EPA believes that the lack of a clear determination by the Corps in the ROD (of whether or not all practicable mitigation has been included), should be assumed to mean that there is no other practicable mitigation to meet the goals established. If, as the applicants believe, there is additional practicable mitigation available, the Corps is required under NEPA to indicate what additional practicable means are available but were not adopted by the Corps and why they were not adopted (40 C.F.R. 1505.2(c)). EPA's conclusion is also supported by the Corps statement on the Section 404(b)(1) Evaluation indicating."All practicable steps to minimize potential impacts of the discharge on the aquatic ecosystem are included as permit conditions*'(Corps 1989a, page 79, emphasis added).

EPA has concluded that the mitigation goal, particularly as determined for the aquatic and recreational resources, was inappropriate in that it did not attempt to replace the most significant resources **in-kind*.EPA has defined "in-kind" to mean "the same kind*. (For example, EPA believes the loss of a mile of stream which contains 400 pounds per acre of trout should be replaced with another mile of stream which contains the same biomass. The replacement fishery should also contain the same average size fish as that of the lost fishery. The Corps and the applicant have expressed the view that 2 miles of stream which contain 200 pounds per acre of trout is appropriate to replace the values of 1 mile with 400 pound per acre of trout.) EPA has concluded the methods proposed to replace these values are not capable of meeting an appropriate in-kind compensation for the lost values.

COMMENT: EPA failed to consider proposed permit requirements which would mitigate environmental impacts of the Two Forks Project (DWD/MWP 1989, page 79).

RESPONSE: EPA's exclusion of mitigation benefit discussion in much of the Recommended Determination relates to the sequencing of mitigation in the alternative analysis. A discussion of this issue is contained in Section III of the Recommended Determination.

EPA indicated in the Recommended Determinatio'nthat, if the permit was issued, EPA would concur with the Water Quality mitigation contained in the permit .conditions. EPA also concurs with the wetland mitigation contained in the permit conditions.

COMMENT: EPA used an inappropriate standard (100 percent in-kind replacement) in evaluating the adequacy of the proposed mitigation requirements (DWD/MWP 1989, page 80).

RESPONSE: EPA has consistently stated its preference for true "in-kind" mitigation, especially as it relates to highly valued resources'such as aquatics and the related recreation which would be lost as a result of Two Forks. We understand the desires of the Colorado Division of Wildlife (CDOW) and Corps to have a goal of 90 percent for biomass replacement. But EPA also concludes that the CDOW goals are recommendations under the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661 et. seq.). They have been carefully and reasonably considered throughout this 404 process. It does not defeat the 90 percent goal of the CDOW to prefer a 100 percent goal. At no time has the Corps or the applicant approached EPA with a proposal to provide true "in-kind" mitigation for all the resources that would be lost. Rather, the applicant indicated "there is no legal basis" to require 100 percent in-kind mitigation (DWD/MWP 1989, page 80). EPA believes the various statutes, regulations, and policies which relate to mitigation have as their underlying premise "full in-kind replacement" for resources which are of sufficient value to require mitigation. To hold otherwise is to accede to the loss of valued resources at the gain of less valued resources. This is especially troublesome when very highly valued resources are considered. The approach of replacing highly valued resources with lesser valued resources, over time will result in the loss of all of the highest valued resources. EPA is not willing, nor is EPA required to acquiesce to this type of mitigation approa'ch.

COMMENT: EPA incorrectly inferred that the Two Forks mitigation plan failed to satisfy NEPA requirements (DWD/MWP 1989, page 81).

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RESPONSE: EPA does not believe it was incorrect in preferring a detailed mitigation plan in the Draft EIS (DEIS), or in the FEIS. EPA's April 23, 1987 comments on the DEIS and it's May 26 and June 10, 1988 comments on the FEIS were very clear on the need for a detailed mitigation plan in the NEPA documents.

COMMENT: EPA incorrectly characterized the aquatics mitigation measures as an 'after the impact approach' (DWD/MWP 1989, page 49).

RESPONSE: The aquatics mitigation as proposed is an "after the impact" approach. The mitigation would have been developed and tested after much of the resource was lost. EPA did not ignore the two-stage reservoir filling restriction contained in the Corp's 404 permit conditions. Rather, as stated in the Proposed Determination, EPA believes this approach leaves the resource at risk. It is clear from the applicants' comments that 70 percent of the fish biomass would be inundated prior to implementation of the flow plan (DWD/MWP 1989, page 49). Any determination that the flow plan and related habitat improvements would effectively replace the biomass which would be lost could not begin until after the loss of the resource. The potential for an unmitigated loss of 70 percent of a high value aquatic resource must be factored into EPA's consideration of significant degradation of the waters of the United States.

In the case of wildlife, mitigation is largely after-the-fact and speculative. For example, the mitigation plan for deer calls for treating one-third of the mitigation land during each of three ten-yeaperiods to improve the carrying capacity of the land. Assuming that the carrying capacity of the mitigation area can be increased as projected, it would still take 30 years after completion of the project to realize full compensation under the mitigation plan as proposed. In addition, a large portion of the proposed big game mitigation areas may be required to compensate for project related impacts to the threatened Pawnee montane skipper habitat. This would require the acquisition and development of additional private land to mitigate impacts to deer and elk. While this mitigation delay has been recognized by the Corps and the applicant, there has been no action taken to remedy this obvious deficiency in the mitigation plan.

The potential loss of the elk calving grounds on private land along the North Fork of the South Platte River is recognized, but, mitigation would not be addressed until after the loss has taken place. For bighorn sheep, the mitigation plan is even more speculative as well as after-the-fact. Impacts to the herd are not completely understood, but there appears to be agreement among the Corps, applicants and the wildlife agencies that the entire herd may be lost due to construction related activities. If the herd should be lost, the gene pool for this low elevation bighorn herd would also be lost. To mitigate for this loss the

applicants could be required to pay $10,000 for each sheep lost as a result of the project and to transplant a replacement herd in the canyon. Even if the herd is replaced, there is no assurance that this effort would be successful.

COMMENT: EPA should defer to the recommendations of the USFWS, CDOW, Nebraska Game and Parks Commission, and the Corps concerning the adequacy of the proposed mitigation (DWD/MWP 1989, page 81).

RESPONSE: The recommendations of the FWCA report are "recommendations", not "requirements". Since completion of the FWCA report in 1987, EPA has received additional material which clarifies the position of the various agencies involved in preparation of the FWCA report (DOI 1989; USFWS 1989a; Colorado Wildlife Commission 1988; NGPC 1988; State of Nebraska 1989b). EPA has seriously considered this information during preparation of the Recommended Determination.

Other than limited authorities under the Endangered Species Act (16 U.S.C. 1531 et. seq.), Federal and State fish and wildlife agencies have primarily an advisory role in providing comments and recommendations to the lead or decision making agency under the FWCA. The fish and wildlife agencies do not have the authority to "approve" or "disapprove" projects. Under the FWCA, the lead agency must consult with .... and consider the recommendations of the USFWS and the State Wildlife agencies.

The positions of the fish and wildlife agencies are best made clear by their own statements. The CDOW has stated:

> It should be made clear that the Division and the Commission are not supporting the Two Forks project by recommending the particular plan of mitigation set forth in the Coordination Act Report. It is the Commission's clearly stated policy that we neither endorse or oppose a project where the decision is a responsibility of other agencies. It also must be clear that the 1.1 million acre Two Forks Reservoir Project is the most severely environmental impacting alternative of all the alternatives under consideration in the EIS (CDOW 1987).

The USFWS position regarding Two Forks has also been clearly expressed:

> Please be aware that the Service does not support Two Forks. The Service has stated that the No Federal Action, New Cheesman, and Estabrook alternatives have much less adverse effects on fish and wildlife resources and would require far less mitigation than would Two Forks. Also, there are several other

projects identified in the scenario analyses in the Final Environmental Impact Statement which would have far less impact than the Two Forks project. (USFWS 1989a; USFWS 1987c, page 68; DOI, 1989)

COMMENT: Because the Division [CDOW] is the agency responsible for the management of wildlife in this State, EPA should either accept this mitigation package in full or provide a detailed accounting of specific concerns, together with the legal and scientific basis for non-acceptance of the mitigation package (CDNR 1989).

RESPONSE: EPA is required to consider the recommendations of the FWCA report, but is not required to accept all the recommendations. EPA believes it has accepted all the CDOW mitigation measures recommended in the FWCA report. EPA does not believe its continued request for all appropriate mitigation contradicts the efforts of the CDOW.

7. NEBRASKA

COMMENT: Exhaustive Multi-Agency studies have concluded that Two Forks will have no significant impacts in the State of Nebraska (DWD/MWP 1989, page 53).

RESPONSE: Past and present water development projects have reduced Platte River streamflows in central Nebraska by as much as 70 percent. The reduced flows have decreased channel width by 60 to 90 percent, decreased scouring of sandbars and shifts of alluvial sediments, caused invasion of deciduous woodlands into the channel and onto sandbars, and decreased water tables which have resulted in loss of wet meadows (USFWS 1987c, page 67). This loss of streamflow and habitat is not necessarily the result of a single large project but rather the cumulative effect of hundreds of diversions and water development projects within the Platte River Basin in Colorado, Wyoming, and Nebraska. Further flow depletions will aggravate the existing situation and lead to additional loss of ecologically important open, shallow water areas; islands; and sandbars as the active channel width decreases. As a result of habitat changes, additional adverse impacts to migratory birds using these areas (several species of waterfowl) and wading and shore birds (especially sandhill cranes) would take place. Furbearers such as muskrat and mink would also be adversely affected by the loss of food supply, reduced water acreages, and the loss of water depth. The adverse impacts to sandhill cranes, white-fronted geese, and the various ducks along the central Platte River area in Nebraska would affect a large proportion of the midcontinent populations that use this reach as a migratory habitat. In addition, mallard

ducks and geese use most open water reaches of the river for wintering habitat (Corps 1989a, page 73). Two Forks would reduce streamflows in the Platte River in Nebraska and add to the cumulative loss of habitat.

COMMENT: The DWD modeling through Wyoming is entirely separate from the Deer Creek model and is not flawed (DWD/MWP 1989, page 54).

RESPONSE: EPA recognizes the fact that this is a complex issue - one that will be decided in court. The question of the validity of the hydrologic models used by Denver, Wyoming, and Nebraska was not used as a basis for our Recommended Determination.

COMMENT: Two Forks wili not significantly impact peak flows or sediment transport through Nebraska (DWD/MWP 1989, page 57).

RESPONSE: There is no doubt that peak flows and sediment transport have been reduced by the water development projects in the Platte River Basin. Further depletions will increase the cumulative impact and reduce peak flows and sediment transport. More importantly, the hypothetical Narrows Reservoir was included in the environmental baseline. It was assumed that Narrows Reservoir was constructed and in operation prior to Two Forks. Since both Narrows Reservoir and Two Forks are designed to capture peak spring flows, it appears reasonable to assume that Narrows Reservoir may mask the impact of Two Forks on peak flows on the South Platte River. Without Narrows Reservoir, Two Forks would likely reduce peak flows and sediment transport in the South Platte, and in turn, the Platte River in Nebraska.

COMMENT: Two Forks project would deplete peak flows and sediment transport in the Big Bend area of the Platte River in Nebraska. These flows are critical to the maintenance of the habitat in this area (NAS/NWF 1989). Similar comments were also expressed by a number of people who commented at the Public Hearing in Grand Island, Nebraska on October 27, 1989.

RESPONSE: During the 404(c) process EPA attempted to determine if the impacts of Two Forks in Nebraska were as stated in the USFWS Biological Opinions. However, EPA was not provided any conclusive evidence to dispute the impacts projected by the USFWS. Due to the inconclusive nature of our findings, impacts in Nebraska were not used as a basis for our Recommended Determination.

If EPA continues the process to veto Two Forks'dam and reservoir, the degree of impacts on fish and wildlife habitat in Nebraska may be a moot point. If on the other hand EPA decides that Two Forks should be permitted, the USFWS has stated that Section 7 consultation would have to be reinitiated'(USFWS 1989b). New information on the species examined in the Biological Opinions

(as well as new information which would need to be developed for species which have been recently listed) would be evaluated, and a new determination concerning effects of the project on the threatened or endangered species would be made at that time.

COMMENT: The Nebraska impacts are based on an invalid hydrologic model and a mitigation scheme that is unauthorized, untested and has no scientific base; and, the use of a secret model in an EIS violates the letter and spirit of the NEPA (State of Nebraska 1989a).

RESPONSE: It is unfortunate that agreement, among all parties, was not reached on the use of a specific model to predict impacts of Two Forks project in Nebraska. The use of a "secret model" lends itself to speculation on the results and the intended purpose for using the model. EPA did not examine this issue in detail.

It appears to EPA that the use of in-channel vegetation clearing projects to improve whooping crane and sandhill crane habitat has some limited value under the existing flow conditions. As flows continue to be depleted, however, this mitigation technique will become less and less viable until it is no longer effective. EPA believes adequate flows are essential to maintain habitat on the Platte River. In the case of Two Forks EPA was not provided data that contradicted the findings of the USFWS. As noted in the response to the previous comment, however, the USFWS has stated that Section 7 consultations would have to be reinitiated should the 'permit for Two Forks go forward.

8. SUBSTITUTION OF JUDGMENT/IGNORING THE FACTS

COMMENT: EPA either waived its concerns by failing to refer the EIS to CEQ, or is bound by the Corps' findings when exercising its authorities under Section 404(c) (DWD/MWP 1989, page 3).

RESPONSE: EPA acknowledges that the Corps as lead agency on the FEIS made certain findings regarding environmental impacts in that document. EPA participated in the FEIS and repeatedly raised many concerns about environmental impacts in that process. The applicants are in error, however, in asserting that EPA waived its concerns or is bound by the Corps' FEIS findings when exercising its 404(c) authorities.

NEPA and the CWA are separate statutory authorities, directing regulatory agencies to undertake distinct and different environmental reviews. The authority to elevate concerns under either act is discretionary. There is no requirement that EPA exhaust its NEPA remedies before exercising its authorities under

404(c). EPA is not obligated to refer the EIS to CEQ prior to using its 404(c) authorities. EPA's decision not to refer the EIS prior to a final decision by the Corps cannot be construed as a waiver of EPA's concerns.

In addition, the Guidelines are explicit that compliance with other environmental laws does not necessarily assure approval of a 404 permit (see note to 40 C.F.R. 230.10; 40 C.F.R. 230.10(a)(4) and (a)(5)).

COMMENT: EPA has no authority to consider environmental impacts caused by the indirect effects of dams and reservoirs (such as operational impacts) because Congress reserved authority to regulate dam impacts to the States (DWD/MWP 1989, page 8).

RESPONSE: The Guidelines specifically direct permitting authorities to consider both direct and indirect impacts attributable to the project under review (See, e.g., 40 C.F.R. 230.11(h), "Determination of Secondary Effects on the Aquatic Ecosystem"). In making this assertion, the applicants confuse regulation of dams as point source discharges pursuant to Section 502 of th'e CWA (the issue addressed in the applicants' cited caselaw) with regulation of the point source discharge of dredged or fill material pursuant to Section 404.

COMMENT: EPA failed to meet its burden in the PD to prove that the discharge would result in unacceptable adverse effects (DWD/MWP 1989, page 9).

RESPONSE: The primary purpose served by publication of a Proposed Determination is solicitation of comments on potential impacts from members of the public. The regulatory threshold for issuance of a PD is simply the Regional Administrator's belief that an unacceptable adverse effect <u>could</u> result from the proposed project (40 C.F.R. 231.3(a)). Although EPA does ultimately have the burden of proving that the discharge <u>would be likely to have</u> an unacceptable adverse effect," this burden first arises with publication of a Recommended Determination, and must ultimately be met in the Final Determination, the EPA's final decision document. See 40 C.F.R. 231.5(a) and 231.6. The Recommended Determination in this matter complies with the regulatory requirement to provide specific findings supporting the Regional Decision Officer's decision that the Two Forks project would be likely to have unacceptable adverse effects on fisheries, wildlife, and recreation.

US EPA ARCHIVE DOCUMENT

9. DISREGARD FOR STATUTORY, REGULATORY AND CONSTITUTIONAL REQUIREMENTS.

COMMENT: The 404(c) action was unlawfully initiated by the Administrator of EPA after all of EPA's concerns had been fully allayed through the Corps' permit conditions (DWD/MWP 1989, page 11).

RESPONSE: EPA has been involved in the review of the Two Forks project for more than six years. During that time, the applicants have met with various representatives of EPA to share data, identify project impacts, and discuss EPA's environmental concerns. EPA acknowledges that, as a result of these meetings, the applicants made changes to their project plans in order to address some EPA concerns. The applicants are incorrect, however, in their assertion that all of EPA's concerns had been resolved prior to initiation of the 404(c) process.

As detailed in Appendix B, EPA throughout the last six years has consistently articulated major concerns with the project. These issues were highlighted in the Regional Administrator's letter of March 24, 1989 initiating 404(c); were the subject of several hundred hours of discussion with Mr. DeHihns, the Regional Decision Officer, during the extended 120 day consultation period; were detailed in the Proposed Determination; and were discussed with the applicants on a number of occasions after publication of the PD and prior to issuance of the Recommended Determination.

COMMENT: EPA's action was unlawful because EPA failed to consult with the applicant and the Corps prior to exercising its 404(c) authorities (DWD/MWP 1989, page 16).

RESPONSE: Many of the concerns identified in EPA's early comments remain and form the bases for this action. As recipients of dozens of pieces of EPA correspondence, and as participants in hundreds of hours of meetings with EPA staff and decisionmakers, the applicants have been well aware of the scope and nature of EPA's continuing concerns for many years. They have had numerous opportunities to "consult" with appropriate EPA decisionmakers before and after initiation of 404(c).

The applicants' assertion that EPA's concerns had been met rests on oral assurances they believe were provided to them by Regional Administrator, James Scherer. Mr. Scherer's formal action, however, is reflected in his letter of March 24 advising the Corps and the applicant of EPA's intent to issue public notice of a proposed determination in accordance with Section 404(c), as well as his many previous letters detailing EPA's concerns in a variety of areas.

COMMENT: Until and after publication of the PD, the applicants were never informed of the nature of EPA's concerns and were thus denied their opportunity to meaningfully "consult" with the decisionmaker (DWD/MWP 1989, pages 16 through 19).

RESPONSE: The applicants' belief that they were not provided with an opportunity to "consult" stems from their desire to treat the 15-day period called for by the regulations as a negotiation period, rather than a final opportunity to persuade the Regional decisionmaker that unacceptable adverse effects will not result. After his appointment as Regional Decision Officer, Mr. DeHihns was fully exposed to all of the issues of concern raised by all of the interested parties. The applicants were encouraged to present their concerns, as well as any information they believed supported issuance of a permit, in any manner they chose. After listening to all arguments and information presented by the applicants and others, and after reviewing the extensive records compiled by EPA staff, the Regional Decision Officer was convinced that unacceptable adverse effects to fisheries, wildlife, and recreation would be likely to occur from the project.

COMMENT: Any involvement by the Administrator at this initial stage of the proceedings was unlawful, because EPA's decision on whether to allow a permit to issue is a matter to be left solely to the discretion of a Regional Administrator (DWD/MWP 1989, page 11).

RESPONSE: Authority to act under Section 404(c) was given by Congress to the Administrator of EPA. The Administrator has, in turn, delegated portions of this authority to the Regional Administrators through the 404(c) regulations. Simply because the regulations identify the Regional Administrator as the official designated to initiate a 404(c) action, the Administrator is not thereby divested of all authority to act. The head of an agency does not necessarily lose his statutory authority when he delegates, particularly, as in this case, when the authority in question is merely a decision on whether to initiate a review.

Regional Administrators are appointed by the Administrator who retains general oversight responsibility for their actions. The Administrator can be expected to be involved in decisions as important as whether to exercise EPA's veto authorities under Section 404(c). In this case, the Region had earlier solicited the Administrator's involvement in the decision through elevation of the matter pursuant to Section 404(q). Thus, the Administrator's interest and involvement in this matter was both expected and reasonable.

In his statement of March 24 1989, the EPA Administrator expressed his own belief the Two Forks project could result in potentially unacceptable adverse effects to fisheries, wildlife habitat and recreation areas. The Administrator's concerns were based on his knowledge of the information before the Region at that time. Having helped to initiate the review, however, the Administrator has had no further involvement with this 404(c) process. The Regional Decision Officer has consulted with the applicants, prepared and issued the PD, held public hearings, and assembled and considered the administrative record. The Recommended Determination reflects the Regional Decision Officer's judgment, based on the administrative record, that unacceptable adverse effects are likely to occur.

COMMENT: EPA was in error by failing to take "less severe action" before initiating 404(c) (DWD/MWP 1989, page 14).

RESPONSE: EPA is not obligated to exhaust its NEPA or 404(q) remedies before exercising its 404(c) authorities. Both the statute and the regulations provide that EPA may use its veto authoritfes whenever it decides that the discharge will have an unacceptable adverse effect (See CWA Section 404(c); 40 C.F.R. 231.1.)). Comments provided to the lead agency by EPA as part of an EIS review are not binding; consequently, the lead agency is free to accept or reject these comments as it sees fit. Similarly, elevation pursuant to Section 404(q) is intended primarily to ensure that the Corps hears and acknowledges EPA's concerns. Elevation does not change the Corps' authority to decide whether a particular permit application should be granted, nor does it negate the Administrator's authorities under Section 404(c) (EPA/DOA 1985). It would be unreasonable to require EPA to invoke these non-binding procedures if EPA believes that such discussions would be futile, particularly since EPA has the means available to resolve disputes itself through the procedures established under Section 404(c).

COMMENT: Denial of this 404 permit could result in cancellation by the State water court of Denver's Two Forks conditional water rights, because Denver will be unable to construct the project and thus complete its appropriation (DWD/MWP 1989, page 20).

RESPONSE: Under Colorado law, an applicant for a water right is required to demonstrate that it has completed all elements of an appropriation in order to perfect its right. An applicant must demonstrate the intent to appropriate, actual diversion of a specified quantity of water, and application of the diverted water to a beneficial use. The burden of proving that an appropriation has been completed is on the applicant. Thus, if Denver's conditional rights were cancelled because of failure to obtain a permit required by law in order to construct the Two Forks project, Denver would have simply failed to meet its burden of proof under Colorado law.

It is not certain, however, that Denver's rights would be cancelled by the water court. Conditional rights are not necessarily forever tied to one specific geographic location, but may be changed to an alternate point of diversion or place of storage. An applicant may keep conditional water rights alive for years through quadrennial showings of diligence before the water court. Therefore, if Denver could demonstrate reasonable progress toward completion of the project (through continued work on financing, land acquisition, and other permit approval) or that it could transfer its conditional storage rights to another location (an action permitted under Colorado law), it seems reasonable to conclude that its conditional rights would be' maintained. Whatever the outcome of Denver's arguments, it should be noted that a decision by the water court is an exercise of State law, not a result of Federal action.

COMMENT: Permit denial would work a taking of valuable property rights by the Federal government under the U.S. and Colorado constitutions (DWD/MWP 1989, page 22).

RESPONSE:' Until the appropriation is completed and a final decree issued by the water court, conditional water rights are treated as emerging property rights. The primary protection afforded conditional rights by the Colorado constitution is the ability to relate back to an earlier appropriation date when and if the project is finally completed. No actions by the Federal government, either through the Corps or EPA, have any effect on Denver's ability to claim an earlier appropriation date.

COMMENT: Section 101(g) of the CWA prohibits EPA from interfering with State allocation of water quantities, and that this 404(c) action constitutes such interference (DWD/MWP 1989, page 21).

RESPONSE: The Wallop Amendment, Section 101(g) of the CWA, was added to clarify the relationship between Federal regulation of water quality and State allocation of water quantity. Both the legislative history and subsequent caselaw make it clear that incidental effects on water rights are acceptable and will sometimes be necessary in order to achieve the objectives of the CWA. See, e.g., statement of Senator Wallop at 3 Leg, Hist. 532; NWF v. Gorsuch, 693 F.2d 156 (D.C. Cir. 1982); Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985). Any impacts to Denver's water rights resulting from this 404(c) action would be incidental and fall well within the expected range of acceptable effects.

COMMENT: EPA has failed to comply with its own regulations by failing to make the administrative record available prior to issuance of the PD (DWD/MWP 1989, page 24).

RESPONSE: The 404(c) regulations require that the EPA Regional office begin compiling an administrative record upon publication of the PD (see 40 C.F.R. 231.4(g)). After the close of the public comment period, the decisionmaker reviews the information received and completes the record upon which his decision is based. This record is then forwarded to the Assistant Administrator for Water together with the Recommended Decision (see 40 C.F.R. 231.5(b)). Region VIII has strictly followed these requirements.

COMMENT: EPA has failed to comply with its own regulations by failing to include the complete Corps' record in the administrative record for the 404(c) action (DWD/MWP 1989, page 24).

RESPONSE: The regulations provide that, where possible, the administrative record should include the record of the Corps (40 C.F.R. 231.5(e)). In the Two Forks administrative record, Region VIII has included every document provided to EPA by the Corps over the last six years. These documents represent the culmination of the Corps' information gathering process and are therefore most likely to shed light on the issues before EPA.

As lead agency on the FEIS, and the initial permitting authority under Section 404, the Corps has prepared and reviewed many documents that are not directly relevant to EPA's 404(c) action. As a cooperating agency, EPA has participated in the development or review of all documents relevant to environmental impacts (such as compliance with the Guidelines). EPA has reviewed the draft and final EIS, the Corps 404(b)(1) Evaluation, the State's 401 certification and the reports of the Water quality team, the FWCA report, the biological opinions, and various versions of the permit conditions and record of decision. All of these documents, which are the most important from the perspective of a 404(c) review, are contained in the administrative record.

COMMENT: An adjudicatory hearing is required (DWD/MWP 1989, page 26).

RESPONSE: Section 404(c) of the CWA does not require adjudicatory hearings (See discussion in the preamble to the 404(c) regulations, 44 Fed. Reg. 58076, (1979), at 58078-79). The public comment period, public hearing, and opportunities for face-to-face discussion with the decisionmaker have been held sufficient to protect an applicant's due process rights. Creppel v. U.S. Army COE, 19 ELR 20134 (E.D. La. 1988). Accord, Buttrey v. U.S., 690 F.2d 1170 (5th Cir. 1982); Nofelco Realty Corp. v. U.S., 521 F. Supp. 458 (S.D. NY 1981); Shoreline Associates v. Marsh, 555 F. Supp. 169 (D. Md. 1983).

COMMENT: EPA's handling of the 404 process violated the applicants' procedural due process rights (DWD/MWP 1989, page 26).

RESPONSE: In asserting its "rights" to an adjudicatory hearing, the applicants identify a number of instances in which they believe EPA committed procedural errors in its handling of the 404(c) process. These purported procedural errors have been separately addressed.

10. DISREGARD FOR LIMITS OF STATUTORY AUTHORITY

COMMENT: Exercise of EPA's 404(c) ,authorities is tied to unacceptable adverse effects to the five enumerated resources. EPA must narrowly limit its investigation, and the PD's discussion of environmental impacts goes beyond the statutory limits (DWD/MWP 1989, page 31).

RESPONSE: EPA's 404(c) authorities are rooted in the finding of unacceptable adverse effects to the enumerated resources. The findings and recommendation in the RD are based specifically on findings of unacceptable adverse effects to three (aquatics, wildlife, and recreation) of the five 404(c) resources.

The applicants' assertion that EPA has used 404(c) to "re-open" issues that were closed by the EIS is incorrect. In fact, there are many issues common to both the EIS and the 404 reviews. Many of these were never "closed". As discussed above, EPA's decision not to refer the EIS to CEQ cannot be construed as waiver of its concerns. EPA's 404(c) process has maintained an appropriate focus on impacts to the enumerated environmental resources.

COMMENT: The scope of EPA's investigation is limited to violations of water quality standards (DWD/MWP 1989, page 33).

RESPONSE: The applicants' assertion that EPA's 404(c) review is limited solely to violations of water quality standards is in error. The goal of the CWA is to protect the chemical, physical, and biological integrity of the nation's waters. A wide range of impacts from the discharge of dredged or fill materials have long been regulated through section 404 (See, for example, Subparts D ("Potential Impacts on Biological Characteristics of the Aquatic Ecosystem") and F ("Potential Effects on Human Use Characteristics") of the 404(b)(1) Guidelines).

COMMENT: EPA's review of environmental impacts is limited to impacts directly caused by the proposed project (DWD/MWP page 34).

RESPONSE: This comment disregards the plain language of the 404(b)(1) Guidelines (See 40 C.F.R. 230.11(h)). The argument is rooted in the applicants' belief that dams are exempt from

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regulation under the CWA. The applicants identified two limitations on the scope of EPA's factual inquiries that they believe were written into the CWA.

11. ADDITIONAL COMMENTS RECEIVED

The following is a list summarizing comments received by EPA during the 404(c) process. All comments received were fully considered during preparation of the Recommended Determination. To the extent the comments addressed issues, the Recommended Determination and this Appendix contain EPA's response.

WRITTEN COMMENTS WHICH FAVORED CONSTRUCTION OF TWO FORKS.

Build Two Forks because:

- ~~other alternatives are too expensive~~
- EPA's alternative analysis is wrong
- the dam is approved by the Corps, CDOW, CDOH, USFWS, NGPD
- the existing fishery is no good
- the canyon is not pristine
- the ,canyon is not irreplaceable
- water conservation is already being practiced, therefore additional conservation won't be affective
- conservation does not solve the need
- conservation alone will not protect us from a drought
- conservation will reduce flows downstream
- conservation will cause lifestyle changes
- the $90 million mitigation plan is adequate
- the groundwater alternative is disastrous
- groundwater is non-renewable
- water storage is the best conservation in the west
- the six existing dams on the river have enhanced the river
- there are not enough lakes for boating in Colorado
- people are more important than birds, etc.
- wildlife and wetlands will still exist after Two Forks
- all gold medal trout streams in Colorado are located below dams
- Washington officials should not override local decisions
- ~~the benefits ou:weigh the impacts~~

Two Forks is:

- the best alternative
- the least damaging alternative studied
- essential to the well-being of the metropolitan area
- essential to manage the Denver Water Supply
- the most efficient reservoir

The metropolitan area needs:
- water to continue growth
- water to lure industry into the State
- water to continue its lifestyle
- water to water lawns
- to insure an adequate water supply
- to build it now to save money
- to provide needed employment
- drought protection
- reservoirs to supply fishing
- recreation close to the metropolitan area

There would be no negative **effects on:**
- water quality and the fishery of the North Fork of South Platte fishery because the 401 certification process concluded thus
- the Platte in Nebraska because dams are the reason there is water in the Platte in Nebraska year round.
- threatened or endangered species

Two **Forks will:**
- provide water for more trees which will reduce global warming
- provide water to plan for **future needs**
- avoid taking agricultural water and destroying small towns
- avoid wasting the $40 million spent on studies
- provide better recreation than the river
- displace fewer people than the other alternatives
- help recharge the Denver Basin aquifers
- create a strong economy
- protect the downstream water user
- provide recreation for more people than at present
- allow Colorado to develop Colorado's water rights
- stop floods
- increase east slope flows because of return flows from west slope diversions
- increase **Aurora's** safe yield

Without Two Forks:
- water shortages will be severe
- metropolitan cooperation will not continue
- other west slope projects will be developed
- independent providers will not have a part of the Denver Water System

EPA is wrong because:
- the staff are biased
- it doesn't **understand/not** qualified on
  - Colorado water law
  - municipal water supply planning
- NFAA alternative is impractical because it ignores the needs of the independent water suppliers

water conservation will not benefit independent water suppliers
Denver has not shared water in the last 15 years
it failed to provide documents in a timely manner
it withheld "secret" documents
it's record does not include the Corp's record.

WRITTEN COMMENTS RECEIVED WHICH OPPOSED CONSTRUCTION OF TWO FORKS

the river was here first, therefore "it" should remain
the loss of the resource cannot be mitigated
the irreplaceable resource needs to be preserved
there should be limits to growth
our remaining free-flowing rivers need to be preserved
we need water in the Platte to dilute metropolitan sewage and wastewater
we need water in the Platte to dilute agricultural runoff from fields and feedlots which cause algae blooms and obnoxious odors presently
Denver needs to comply with the Foothills Consent Agreement
what is good for Denver is not what is good for the rest of the State
harm to nature is harm to people
endangered ecosystems need to be protected and preserved
the Colorado River needs its water too
open space is preferable to water supply
low energy consumption recreation (flyfishing and hiking) is preferable to high energy consumption recreation (motor boating)
people must learn to protect the environment
there is no evidence that agriculture would be affected without Two Forks

the project is:
environmentally damaging and/or ecologically unsound
too expensive, and/or a waste of money, and/or an economic disaster, and/or the costs outweigh the benefits
not presently needed
politically motivated

the project would cause:
the loss of the beautiful scenery and recreation of the canyon
the loss of wildlife habitat/natural resources
the loss of the gold medal trout fishery
loss of the resource close to Denver
the loss of adequate drinking water in Nebraska
the loss of agricultural water in Nebraska
negative impacts on tourism
the promotion of unwanted growth in Denver

the loss of beautiful rock formations
a loss in whitewater activities
drastic changes to many peoples lives
the best quality of life for the greatest number
reduction of aquifer recharge which is used by farms
the loss of a portion of the newly-created Colorado trail
a charge to farmers for surplus water which was free in the past
loss of pawnee montane skipper habitat
loss of threatened or endangered species
loss of the homes of those inundated
the overuse of other scenic canyons in the area
the loss of recreation in Nebraska
decreased flows in Nebraska
more air pollution
negative effects to water quality
negative effects to channel stability
a decrease in the quality of life
destruction of natural resources in Colorado and Nebraska
reduction/loss of Nebraska groundwater
destruction of "un-dug" archaeological sites
salinity impacts in the Grand Valley
dry up the Fraser and Blue Rivers
a potential for flooding with earthquake damage to the dam

Instead of Two Forks:

Denver needs to practice water conservation
alternatives are available/should be found
preserve sandhill cranes/migratory birds and/or their habitat
endangered birds need to be protected
preserve the resource for future generations
preserve Cheesman Canyon
develop management plan for Platte River in Nebraska
South Platte should receive wild and scenic designation
avoid impacts to fishing and recreation on the Blue River
more people should be discouraged from moving to Denver or population growth controlled
develop a recreation plan for the Cheesman Canyon area
preserve bighorn sheep
preserve resource category 1
boating on the Platte downstream from Chatfield would be improved
develop non-potable use of water
per capita water consumption won't increase

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APPENDIX B

CHRONOLOGY OF EPA INVOLVEMENT IN THE TWO FORKS DAM AND RESERVOIR PROJECT

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APPENDIX B

CHRONOLOGY OF EPA INVOLVEMENT IN THE TWO FORKS DAM AND RESERVOIR PROJECT

This Appendix contains a brief overview of EPA's involvement in the NEPA and Section 404 permitting process for the Two Forks dam and reservoir project. This Appendix does not attempt to document all EPA/Corps/DWD/MWP meetings and correspondence. Rather, the discussion below covers the major decision points in the Two Forks process.

The BOR initiated water storage investigation in the South Platte Basin as early as 1902 (Corps 1988, FEIS, Appendix 4C page 2-4). In 1948 the BOR issued a report which suggested that water from the Upper Colorado River as well as the South Platte River could be developed for use in the Denver area (Corps 1988, FEIS, Appendix 4C page 2-5). In 1965 the BOR proposed construction of Two Forks dam and reservoir and Turks Head dam and reservoir on the South Platte in Waterton Canyon (Corps 1988, FEIS, Appendix 4C page 2-5). Concurrent with the BOR studies, the DWD had initiated its own studies of water storage projects in the South Platte and Colorado River basins which resulted in the completion of the Foothills project in 1983 (Corps 1988, FEIS Appendix 4C page 2-6). EPA was intimately involved in the Foothills Project.

A. FOOTHILLS PROJECT

The Foothills project consisted of Strontia Springs Dam on the South Platte River in Waterton Canyon, Foothills Treatment Plant located south of Kassler, and the associated tunnels and distribution system to deliver the treated water from the plant to the Denver area (Proposed Foothills Project FEIS, February, 1978). EPA's major concerns where related to 1) the potential for Foothills Project to result in non-attainment and maintenance of national ambient air quality standards in Denver, and 2) construction of Strontia Springs dam would result in significant environmental degradation to unique aquatic, wildlife and recreational resources which could be avoided by other practicable alternatives (D. Costle, Administrator EPA, March 9, 1978 letter to C. Warren, Chairman, CEQ). Additionally, EPA found the FEIS to be 1) inadequate because of the lack of analysis of secondary impacts, and 2) not necessary because the primary purpose was to allow unlimited lawn watering through the year 1988 (Costle March 9, 1978 letter to C. Andrus, Secretary of Interior).

As a result of numerous lawsuits initiated over the Foothills controversy, the Foothills Consent Agreement was finalized (1979) and the Foothills project was built in 1983. A portion of the

settlement stipulated that the federal agencies conduct an analysis of future Denver water system projects to determine site-specific and cumulative effects of those projects (Civil Action No. 77-W-306 Stipulation, 1979). This analysis was to include an evaluation regarding the potential linkage to subsequent projects consistent with the CEQ regulations. As a direct result of this requirement in the Foothills Consent Agreement, the Metropolitan Denver Systemwide EIS (SEIS) was initiated by the Corps at the request of the DWD.

B. TWO FORKS DAM AND RESERVOIR NEPA PROCESS

EPA became a cooperating agency on the SEIS in 1984 and actively participated on both the Interagency Management Team as well as several of the media specific work groups. These efforts were designed to provide the Corps/USFS early EPA guidance concerning their overall NEPA compliance efforts. As a result, while EPA had numerous comments on the DEIS, the concerns expressed were not new, in that both the Applicant and the lead agencies had been aware of EPA's concerns prior to completion of the DEIS.

1. Draft EIS Comments

The Corps published the DEIS in December 1986. EPA's April 23, 1987 DEIS comments indicated that 1) the mitigation package contained in the DEIS was inadequate to meet the level of mitigation planning required by both NEPA and the CWA Section 404(b)(1) Guidelines (Guidelines); 2) the DEIS did not adequately portray or address significant water quality impacts or relate the water quality impacts to the permit restrictions in the Guidelines; 3) the DEIS did not provide for a meaningful comparison among alternatives because alternatives with comparable yields to Two Forks dam and reservoir were not fully considered; 4) the DEIS did not fully portray the present and future role of water conservation in the Denver metropolitan area; and 5) the DEIS did not contain an initial determination of project compliance with the Guidelines. EPA's detailed comments consisted of more than 45 pages.

Based on these comments, EPA concluded the DEIS was inadequate and the Two Forks dam and reservoir alternative was environmentally unacceptable. EPA pointed out the necessity to analyze all reasonably available alternatives to determine which of the significant impacts could be reduced through selection of a less damaging alternative and recommended that a Supplement to the DEIS be prepared to properly address the shortfalls in the NEPA process. EPA concluded that, if the Supplement to the DEIS and the FEIS remained inadequate, EPA could either elevate the matter pursuant to either the CEQ referral process or the CWA Section 404(q) process. Additionally EPA indicated that should the matters not be resolved the Section 404(c) veto authority could be exercised.

Following issuance of EPA's comments on the DEIS, extensive meetings, briefings, and working sessions were held between the EPA and the Applicant to discuss EPA's comments on the DEIS as well as EPA's July 10, 1987 comments on the DWD Mitigation Plan published after the DEIS. While these discussions did not result in agreement among the applicant, EPA and the Corps concerning resolution of all the EPA issues, after the conclusion of these discussions, the applicant and the Corps were clearly aware of the concerns of EPA and the revisions in the project mitigation, impact assessment and NEPA process necessary to resolve EPA procedural concerns. Major issues remaining after this consultation included 1) the applicability of EPA's wetland ratios to the determination of appropriate wetland mitigation; 2) EPA's sequencing approach to mitigation and the Guidelines; 3) the definition of "in-kind" mitigation; 4) whether a NEPA supplement to the FEIS (or DEIS) was necessary; 5) whether the applicant's definition of project purpose and need was appropriate; 6) whether there would be metropolitan cooperation under the No Federal Action Alternative; 7) whether construction of Two Forks dam and reservoir would be a disincentive to water conservation; 8) the specificity of mitigation which is required in a FEIS; and the adequacy of the NFA alternative in the FEIS (December 17, 1987 memo from Ruiter,Richard-Haggard,Ray to Scherer; November 11, 1987 letter from J. Sanderson to Col. West). As part of EPA's cooperating agency responsibilities, EPA also provided numerous comments to the Corps on various draft versions of the FEIS (November 4, 1987, D. Sohocki to R. Gorton; November 19, 1987, D. Sohocki to R. Gorton; November 27, 1987, D. Sohocki to R. Gorton; December 11, 1987, D. Sohocki to R. Gorton; January 14, 1988 D. Sohocki to Rose Hargrave).

2. <u>Final EIS Comments</u>

The Corps published the Final EIS on March 11, 1988. EPA submitted FEIS comments to the Corps on May 26, 1988 and June 10, 1988. While the FEIS provided a greatly improved description of the project impacts, issues which the Corps had not resolved between the DEIS and the FEIS included 1) the lack of a definitive mitigation plan; 2) the apparent length of the 404 permit which was being requested by the applicant; 3) the lack of avoidance of Two Forks dam and reservoir major environmental impacts through the use of less damaging alternatives; 4) the lack of significant use of conservation to avoid the immediate need for Two Forks dam and reservoir; and 5) the lack of a review mechanism to assess need prior to commitment of major resources. Again, EPA pointed out its regulatory options under the NEPA Regulations, Section 309 of the Clean Air Act, and Section 404 of the CWA.

After EPA submitted its FEIS comments to the Corps, there were several meetings (June 29, 1988, DWD-Water Quality; July 14, 1988, Corps-NEPA/404; July 21, 1988, DWD-Aquatics-Wetlands-Mitigation; July 25, 1988, DWD-Water Conservation/Interim Supplies) among the Corps, DWD, and EPA to discuss EPA's comments on the FEIS. On August 10, 1988 EPA informed the Corps of remaining EPA concerns with the NEPA process and the 404 permit (August 10, 1988 Scherer to West letter). These issues included: 1) the public participation need for a Supplement to the FEIS to address the mitigation and water quality issues developed between the DEIS and the FEIS; 2) the need for the Corps to determine whether Two Forks dam and reservoir complies with the Guidelines particularly in relation to availability of practicable alternatives; 3) if the Corps determined that there were no practicable alternatives to Two Forks dam and reservoir, the need for a reopener in the permit conditions to examine alternatives not examined in detail in the FEIS; 4) if a long term permit, as reque'sted by the applicant, was issued, the need to include requirements to develop the less environmentally damaging interim supplies prior to construction of Two Forks dam and reservoir; and 5) the need for the permit conditions, the ROD and the conservation requirements under the Foothills Consent Agreement to be consistent. The EPA also pointed out that these issues were potential candidates for elevation under the Section 404(q) MOU and/or referral to CEQ for resolution.

The level of EPA concern, as well as clarification about the level of agreement between EPA and DWD about the various issues raised in EPA's comments on the FEIS was again clarified for the Corps in a September 14, letter (September 14, 1988, Scherer to West). Again, practicability of alternatives, water quality, aquatic mitigation, water conservation, and the long-term nature of the proposed 404 permit remained as major concerns of the EPA which had not been resolved.

C. TWO FORKS DAM AND RESERVOIR 404 PERMIT PROCESS

1. Explanation of 404(q) Elevation

Under authority of 404(q) of the CWA, 33 U.S.C. 1344(q), the EPA and the Department of the Army signed a Memorandum of Agreement which, in essence, describes a process for attempting to resolve Agency differences over issuance of a 404 Permit. This process is generally referred to as the 404(q) "elevation process". The procedure calls for referring disagreements over issuance of a 404 permit to succeedingly higher authorities in the EPA and Army chain of command.

2. Chronology of Meetings Held and Issues Discussed

October 6, 1988 - The Corps informed the EPA that the informal discussions pursuant to Section 6(c) of the 404(q) MOA should be considered initiated and the October 14, 1988 meeting should initiate the procedures (October 6, 1988 West to Scherer letter). The Corps also provided EPA with revised draft versions of the 404(b)(1) evaluation and permit conditions.

October 12, 1988 - EPA reiterated its concerns contained in its 10 August 1988 letter (August 12, 1988 Scherer to West letter).

November 1, 1988 - Corps summarized its view of the initial October 14, 1988 EPA-Corps 404(q) meeting and concluded that all the issues between the two agencies had been resolved and the 404(q) MOA process had been completed (November 1, 1988 West to Scherer letter).

November 7, 1988 - EPA/Corps meeting to further discuss the 404(q) issues and EPA's view of remaining issues.

November 17, 1988 - EPA summarized it's position concerning the 404(q) issues and the October 14 and November 7 meetings (November 17, 1988 Scherer to West letter). Remaining issues included 1) the need to address the Foothills Consent Agreement goals in the FEIS and development of the Two Forks dam and reservoir project (appropriate conservation needs to be in place prior to construction of Two Forks dam and reservoir); 2) the water quality mitigation permit conditions were not adequate or enforceable; 3) the Corps approach of including mitigation in the practicable alternatives analysis of the 404(b)(1) evaluation; 4) the mitigation permit conditions did not contain the necessary language to ensure enforceability; 5) the need to develop true "in-kind" mitigation; and 6) the need to develop enforceable permit conditions to require development of interim sources prior to construction of Two Forks dam and reservoir. While EPA still felt that a Supplement to the FEIS for water quality and mitigation would best fulfill the intent of NEPA, EPA concluded that the supplement issue would no longer be pursued through the 404(q) process. EPA believed its continuing concerns would best be resolved through continuance of the informal consultations outlined in paragraph 6(c) of the 404(q) MOA.

December 28, 1988 - EPA provided Corps additional comments on the Water Conservation Permit Conditions (December 28, 1988 Scherer to West letter)

January 6, 1989 - EPA provided Corps with comments on the December 13 1988 draft Two Forks dam and reservoir permit conditions (January 6, 1989 Scherer to West letter). EPA was still concerned with 1) the lack of detail in the permit conditions and the resultant lack of enforceability; 2) the lack

of conditions for interim sources, the reopener and compliance with the Foothills Consent Agreement; 3) development of mitigation plans/additional studies after the permit is issued; 4) lack of sufficient mitigation for several areas including water quality, aquatics and wetlands; and 5) lack of implementable mitigation for major impacts which would occur before mitigation was proven successful.

January 10, 1989 - Corps published Draft ROD, 404(b)(1) evaluation, Permit Conditions, Supplemental Information Document. The availability of these documents initiated a series of meetings between the EPA and Corps as part of the 404(q) process. The primary discussions at these meeting were related EPA's concerns with the level of detail contained in the draft 404(b)(1) evaluation and the permit conditions.

January 10, 1989 - EPA/Corps meeting

January 17, 1989 - EPA/Corps meeting

January 20, 1989 - EPA/Corps meeting

January 26, 1989 - EPA/Corps meeting

January 27, 1989 - EPA/Corps meeting

January 31, 1989 - EPA/Corps meeting

February 3, 1989 - EPA/Corps meeting

On March 10, 1989 the Corps published revised permit conditions; 404(b)(1) evaluation; and a ROD. The revisions were based on the extensive discussions between EPA, USFWS, USFS, DWB and the Corps between the January 10 and March 10, 1989 (March 10, 1989 West to Scherer letter). Noteworthy additions or revisions to the permit conditions were made in the areas of wetlands, water quality, water conservation, interim sources, and construction timing.

On March 15, 1989 the Corps notified the EPA of its intention to issue a 404 permit to the Denver Board of Water Commissioners for the construction of Two Forks dam and reservoir (March 15, 1989 West to Scherer letter).

3. Explanation of 404(c) Process

Under Section 404(c) the EPA has the authority to prohibit or restrict the discharge of fill material into water of the United States where EPA believes the discharge would have unacceptable adverse effect on the environment. The 404(c) process starts with an initial "15 day" period during which the applicant and the Corps are given the opportunity to demonstrate to the EPA Regional Administrator's satisfaction that no unacceptable

adverse effects will occur. If after this consultation process, EPA still believes that the proposed project may result in unacceptable adverse effects on the environment EPA publishes a Proposed Determination. The Proposed Determination requests public comments on EPA's concerns. After consideration of the public comment received on the Proposed Determination, EPA either withdraws the Proposed Determination or prepares a Recommended Determination which further documents EPA's belief that the project would result in unacceptable effects on the environment. The Recommended Determination along with the Administrative Record is then forwarded to the Washington Office of EPA where the Final Determination is prepared.

4. Chronology of Meetings Held and Issues Discussed

On March 24, 1989, after consultation with William K. Reilly (EPA Administrator), the EPA Regional Administrator, initiated proceedings under Section 404(c) of the CWA for the proposed Two' Forks dam and reservoir because EPA had reason to believe that the project would result in unacceptable adverse impacts to wildlife, fisheries and recreation.

On April 3 1989, EPA Region VIII, Regional Administrator James J. Scherer delegated his authority to conduct the Two Forks Section 404(c) process to Lee A. DeHihns, III, EPA Region IV, Deputy Regional Administrator. Mr. DeHihns began the Section 404(c) process with an initial meeting with the EPA/COE/USFWS/USFS on April 18, 1989 and with the applicants on April 19 and 20, 1989. These meetings resulted in the determination that the initial "15 day" comment period of the Two Forks Section 404(c) process would need to be extended to allow the applicant adequate time to document why Two Forks project would not result in unacceptable environmental effects. On April 28, 1989, the "15 day" comment period was extended to July 14, 1989.

During this extended comment period the applicants conducted numerous presentations on various topics related to the Two Forks Project. These topics included: Description, History and Operation of the Denver Water System; Population and Demand projections; Conservation, Cost/Yield Ratios; Interim Supplies; Safety Factors; Planning Uncertainty; Metropolitan Cooperation; Purpose and Need; Groundwater; Aquatics; Wildlife; Recreation; Water Quality; Threatened and Endangered Species; Wetlands; Channel Stability; Nebraska Impacts; Legal and Institutional Barriers. In addition, Mr. DeHihns met with representatives of many of the individual members of the Metropolitan Water Providers. Below is a brief listing of meetings Mr. DeHihns attended during the "15 day" period.

April 18, 1989 EPA/Corps/USFWS/USFS meeting

April 19, 1989 EPA/Denver Mayor meeting

US EPA ARCHIVE DOCUMENT

April 19, 1989 EPA/Colorado Governor meeting

April 19, 1989 EPA/DWD/MWP meeting

April 20, 1989 EPA/DWD/MWP meeting

April 25, 1989 EPA/USFWS meeting

April 26, 1989 EPA/Environmental Caucus meeting

April 26, 1989 EPA/DWD/MWP meeting

April 26, 1989 EPA/Grand County meeting

April 27, 1989 EPA/MWP meeting

April 28, 1989 EPA/Environmental Caucus meeting

May 8, 1989 EPA/DWD/MWP/Water leaders from across Colorado

May 9, 1989 EPA/DWD/MWP meeting

May 10, 1989 EPA/DWD Helicopter Tour of the Raw Water System

May 11, 1989 EPA/MWP meeting

May 12, 1989 EPA/DWD/WWE

May 31, 1989 EPA/Breakfast with MWP/Elected Officials

May 31, 1989 EPA Agricultural Buy out/exchanges/"dry up" Meeting

May 31, 1989 EPA/Environmental Caucus meeting

June 1, 1989 EPA/DWD/MWP meeting

June 2, 1989 EPA/DWD/MWP meeting

June 3, 1989 EPA/Environmental Caucus meeting

June 5, 1989 EPA/DWD/MWP meeting

June 6, 1989 EPA/DWD/MWP meeting

June 6, 1989 EPA/Northern Providers, including Mayors of Thornton, Westminster, Arvada and Broomfield Evening Meeting

June 7, 1989 EPA/DWD/MWP

June 8, 1989 EPA/DWD Aquatics meeting

June 8, 1989 EPA/Metropolitan Water Authority meeting

June 9, 1989 EPA/DWD/MWP meeting

June 20, 1989 EPA/Nebraska State Officials meeting

June 26, 1989 EPA/"Hank Brown" Tour

June 26, 1989 EPA/Environmental Caucus meeting

June 27, 1989 EPA/DWD/MWP meeting

June 28, 1989 EPA/DWD/MWP meeting

June 29, 1989 EPA/DWD/MWP meeting

June 30, 1989 EPA/DWD/MWP meeting

July 20, 1989 EPA/NWF/EDF/TU/NAS meeting

July 21, 1989 EPA/USFS/DOJ/COE meeting

5. Proposed Determination

On August 29, 1989, EPA Region VIII published the Proposed Determination to Prohibit, Restrict, or Deny the Specification, or the use for Specification, of an area as a Disposal Site: South Platte River. The Proposed Determination specifically requested comment of the proposed EPA action to disallow construction of Two. Forks dam.

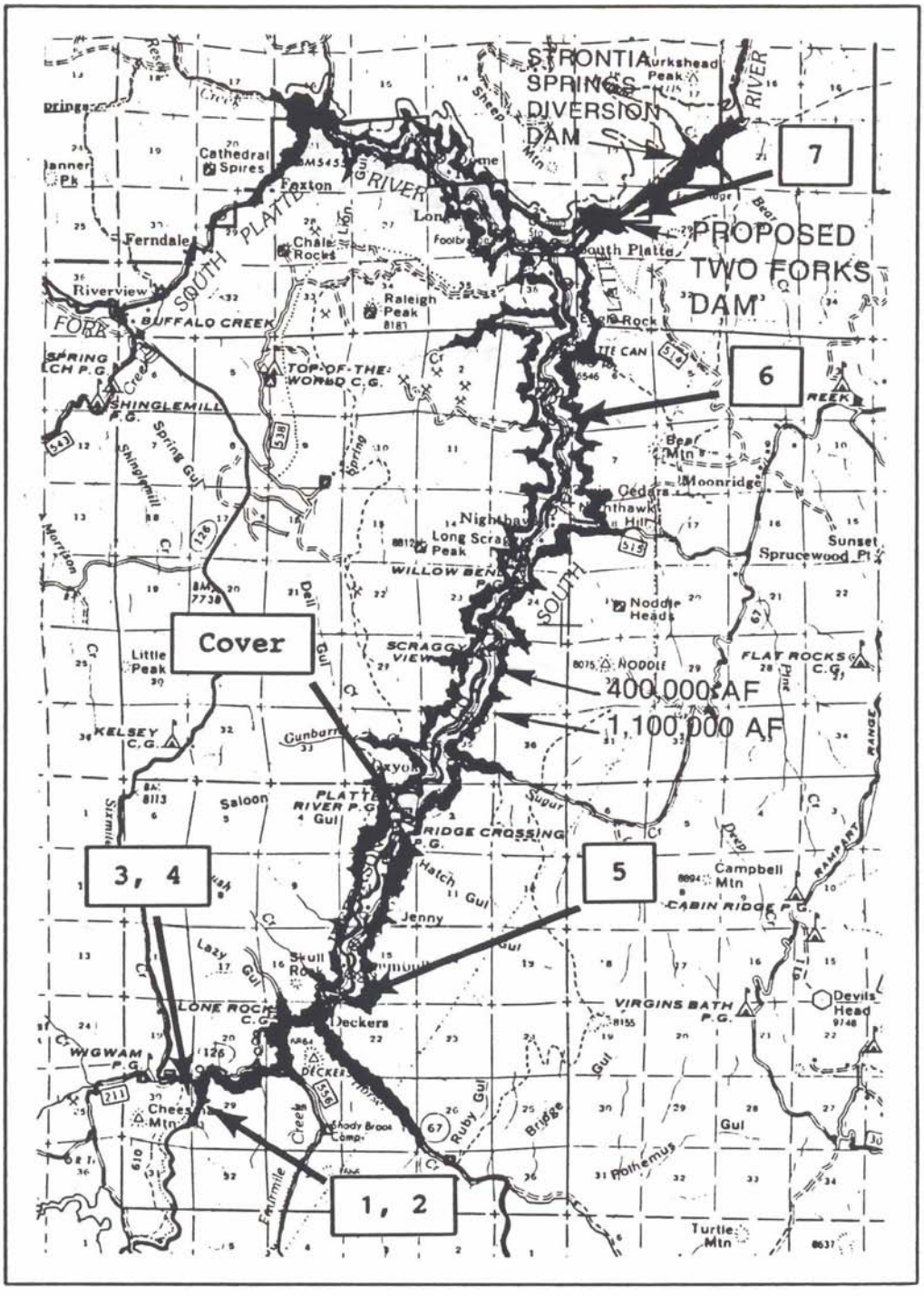
As part of the public comment period on the Proposed Determination, EPA held public hearings in Denver Colorado on October 23 and 24,. 1989, and in Grand Island Nebraska on October 27, 1989. EPA closed the public comment period on November 17, 1989.

6. Recommended Determination

On March 26, 1990 Region VIII issued the Recommended Determination to Prohibit Construction of Two Forks Dam and Reservoir Pursuant to Section 404(c) of the Clean Water Act.

APPENDIX C

PHOTOGRAPHS OF IMPOUNDMENT AREA



CORPS 1988

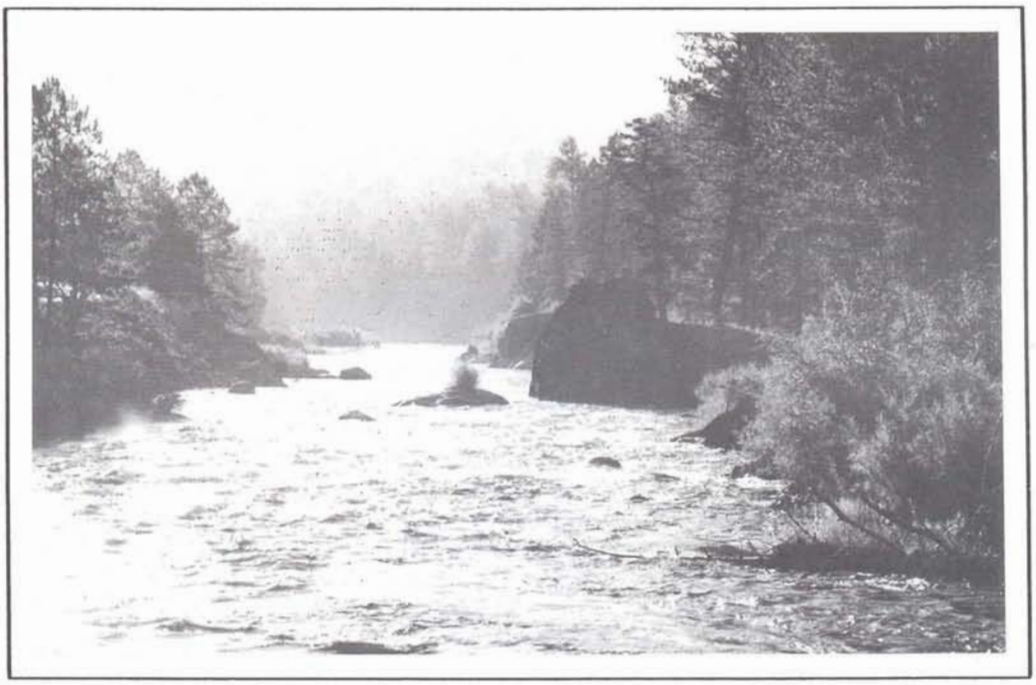
Photograph 1. Fly fishing in Cheesman Canyon

Photograph 2. Lower Cheesman Canyon

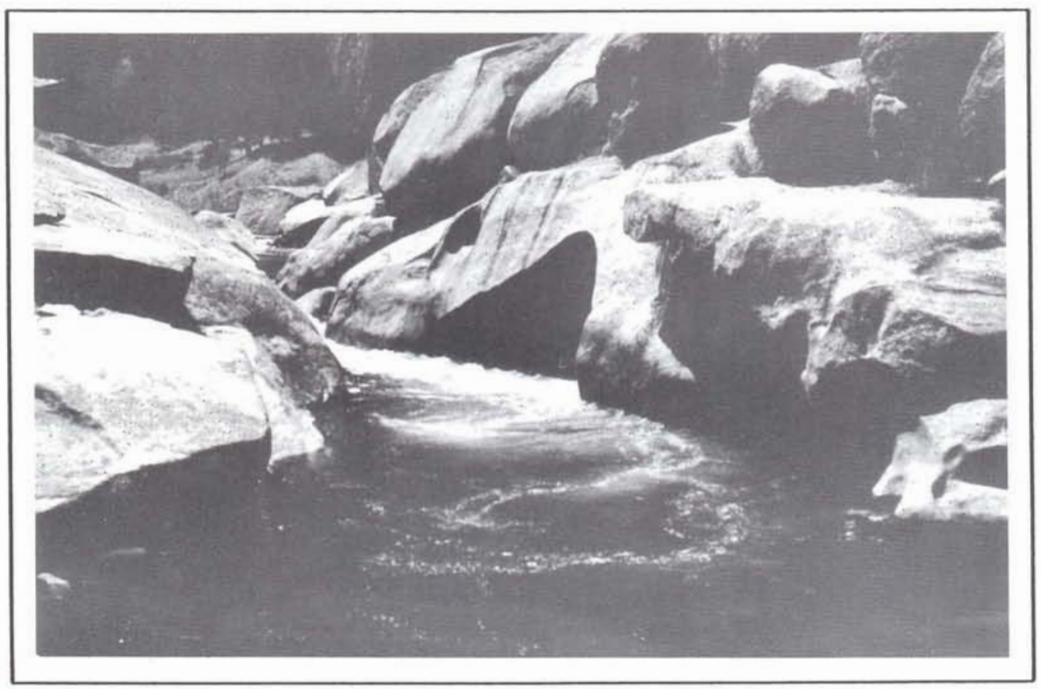
US EPA ARCHIVE DOCUMENT

Photograph 3. Lower Cheesman Canyon

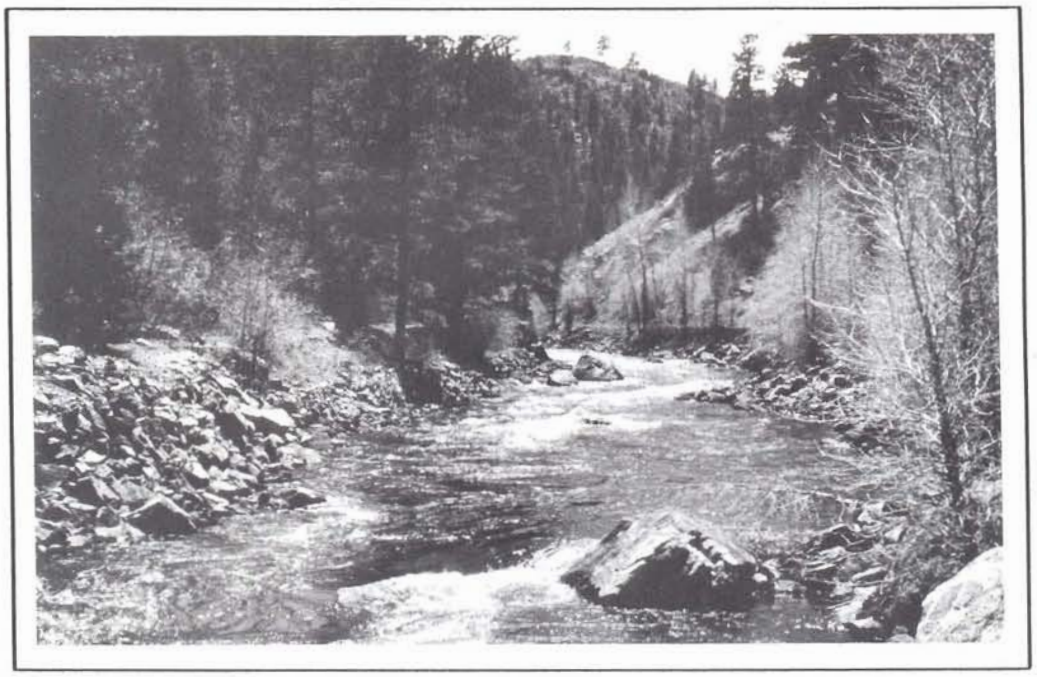
Photograph 4. Rainbow Trout in Cheesman Canyon



Photograph 5. South Platte River near Trumbull



Photograph 6. South Platte River at the "Chutes"



Photograph 7. South Platte Canyon near Two Fork Dam Site

Photograph 8. Rocky Mountain Big Horn Sheep

APPENDIX D

SUPPLEMENTARY INFORMATION FOR

40 C.F.R. Part 230

(Section 404(b)(1) Guidelines)

AND

40 C.F.R. Part 231

(Section 404(c) Procedures)

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 230

[WH-FRL 1647-7]

Guidelines for Specification of Disposal Sites for Dredged or Fill Material

AGENCY: Environmental Protection Agency.

ACTION: Rule.

SUMMARY: The 404(b)(1) Guidelines are the substantive criteria used in evaluating discharges of dredged or fill material under section 404 of the Clean Water Act. These Guidelines revise and clarify the September 5, 1975 Interim final Guidelines regarding discharge of dredged or fill material into waters of the United States in order to:

(1) Reflect the 1977 Amendments of Section 404 of the Clean Water Act (CWA);

(2) Correct inadequacies in the interim final Guidelines by filling gaps in explanations of unacceptable adverse impacts on aquatic ecosystems and by requiring documentation of compliance with the Guidelines; and

(3) Produce a final rulemaking document.

EFFECTIVE DATE: These Guidelines will apply to all 404 permit decisions made after March 23, 1981. In the case of civil works projects of the United States Army Corps of Engineers involving the discharge of dredged or fill material for which there is no permit application or permit as such, these Guidelines will apply to all projects on which construction or dredging contracts are issued, or on which dredging is initiated for Corps operations not performed under contract, after October 1, 1981. In the case of Federal construction projects meeting the criteria in section 404(r), these Guidelines will apply to all projects for which a final environmental impact statement is filed with EPA after April 1, 1981.

FOR FURTHER INFORMATION CONTACT: Joseph Krivak, Director, Criteria and Standards Division (WH-585), Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, telephone (202) 755-0100.

SUPPLEMENTARY INFORMATION:

Background

The section 404 program for the evaluation of permits for the discharge of dredged or fill material was originally enacted as part of the Federal Water Pollution Control Amendments of 1972. The section authorized the Secretary of the Army acting through the Chief of Engineers to issue permits specifying disposal sites in accordance with the section 404(b)(1) Guidelines. Section 404(b)(2) allowed the Secretary to issue permits otherwise prohibited by the Guidelines, based on consideration of the economics of anchorage and navigation. Section 404(c) authorized the Administrator of the Environmental Protection Agency to prohibit or withdraw the specification of a site, upon a determination that use of the site would have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

Under section 404(b)(1), the Guidelines are to be based on criteria comparable to those in section 403(c) of the Act, for the territorial seas, contiguous zone, and oceans. Unlike 403(c), 404 applies to all waters of the United States. Characteristics of waters of the United States vary greatly, both from region to region and within a region. There is a wide range of size, flow, substrate, water quality, and use. In addition, the materials to be discharged, the methods of discharge, and the activities associated with the discharge also vary widely. These and other variations make it unrealistic at this time to arrive at numerical criteria or standards for toxic or hazardous substances to be applied on a nationwide basis. The susceptibility of the aquatic ecosystem to degradation by purely physical placement of dredged or fill material further complicates the problem of arriving at nationwide standards. As a result, the Guidelines concentrate on specifying the tools to be used in evaluating and testing the impact of dredged or fill material discharges on waters of the United States rather than on simply listing numerical pass-fail points.

The first section 404(b)(1) Guidelines were promulgated by the Administrator in interim final form on September 5, 1975, after consultation with the Corps of Engineers. Since promulgation of the interim final Guidelines, the Act has been substantially amended. The Clean Water Act of 1977 established a procedure for transferring certain permitting authorities to the states, exempted certain discharges from any section 404 permit requirements, and gave the Corps enforcement authority. These amendements also increased the importance of the section 404(b)(1) Guidelines, since some of the exemptions are based on alternative ways of applying the Guidelines. These changes, plus the experience of EPA and the Corps in working with the interim final Guidelines, have prompted a revision of the Guidelines. The proposed revision attempted to reorganize the Guidelines, to make it clearer what had to be considered in evaluating a discharge and what weight should be given to such considerations. The proposed revision also tightened up the requirements for the permitting authority's documentation of the application of the Guidelines.

After extensive consultation with the Corps, the proposed revisions were put out for public comment (44 FR 54222, September 18, 1979). EPA has reviewed, and, after additional consultation with the Corps, revised the proposal in light of these comments. This preamble addresses the significant comments received, explains the changes made in the regulation, and attempts to clear up some misunderstandings which were revealed by the comments. Response to Significant Comments

Regulation Versus Guideline

A number of commenters objected to the proposed Guidelines on the grounds that they were too "regulatory." These commenters argued that the term "guidelines" which appears in section 404(b)(1) requires a document with less binding effect than a regulation. EPA disagrees. The Clean Water Act does not use the word "guideline" to distinguish advisory information from regulatory requirements. Section 404(b)(2) clearly demonstrates that Congress contemplated that discharges could be "prohibited" by the Guidelines. Section 403 (which is a model for the 404 (b)(1) Guidelines) also provides for "guidelines" which are clearly regulatory in nature. Consequently, we have not changed the regulation to make it simply advisory. Of course, as the regulation itself makes clear, a certain amount of flexibility is still intended. For example, while the ultimate conditions of compliance are "regulatory", the Guidelines allow some room for judgment in determining what must be done to arrive at a conclusion that those conditions have or have not been met. See, for example, § 230.6 and § 230.60, and introductory sentence in § 230.10.

Statutory Scheme and How the Guidelines Fit Into It

A number of commenters with objections appeared confused about EPA's role in the section 404 program. Some wondered why EPA was issuing Guidelines since EPA could stop an unacceptable discharge under section 404(c). Others were uncertain how the

Guidelines related to other section 404 regulations.

The Clean Water Act prohibits the discharge of dredged or fill material except in compliance with section 404. Section 404 sets up a procedure for issuing permits specifying discharge sites. Certain discharges (e.g. emergency repairs, certain farm and forest roads, and other discharges identified in sections 404(f) and (r)) are exempted from the permit requirements. The permitting authority (either the Corps of Engineers or an approved State program) approves discharges at particular sites through application of the section 404(b)(1) Guidelines, which are the substantive criteria for dredged and fill material discharges under the Clean Water Act. The Corps also conducts a Public Interest Review, which ensures that the discharge will comply with the applicable requirements of other statutes and be in the public interest. The Corps or the State, as the case may be, must provide an opportunity for a public hearing before making its decision whether to approve or deny. If the Corps concludes that the discharge does not comply with the Guidelines, it may still issue the permit under 404(b)(2) if it concludes that the economics of navigation and anchorage warrant. Section 404(b)(2) gives the Secretary a limited authority to issue permits prohibited by the Guidelines; it does not, as some commenters suggested, require the Guidelines to consider the economics of navigation and anchorage. Conversely, because of 404(b)(2), the fact that a discharge of dredged material does not comply with the Guidelines does *not* mean that it can never be permitted. The Act recognizes the concerns of ports in section 404(b)(2), not 404(b)(1). Many readers apparently misunderstood this point.

EPA's role under section 404 is several-fold. First, EPA has the responsibility for developing the 404(b)(1) Guidelines in conjunction with the Corps. Second, EPA reviews permit applications and gives its comments (if any) to the permitting authority. The Corps may issue a permit even if EPA comments adversely, after consultation takes place. In the case of state programs, the State director may not issue a permit over EPA's unresolved objection. Third, EPA has the responsibility for approving and overseeing State 404 programs. In addition, EPA has enforcement responsibilities under section 309. Finally, under either the Federal or State program, the Administrator may also prohibit the specification of a discharge site, or restrict its use, by following the procedures set out in section 404(c), if he determines that discharge would have an unacceptable adverse effect on fish and shellfish areas (including spawning and breeding areas), municipal water supplies, wildlife or recreation areas. He may do so in advance of a planned discharge or while a permit application is being evaluated or even, in unusual circumstances, after issuance of a permit. (See preamble to 40 CFR Part 231, 44 FR 58076, October 9, 1979.) If the Administrator uses 404(c), he may block the issuance of a permit by the Corps or a State 404 program. Where the Administrator has exercised his section 404(c) authority to prohibit, withhold, or restrict the specification of a site for disposal, his action may not be overridden under section 404(b)(2). The fact that EPA has 404(c) authority does not lessen EPA's responsibility for developing the 404(b)(1) Guidelines for use by the permitting authority. Indeed, if the Guidelines are properly applied, EPA will rarely have to use its 404(c) veto.

The Clean Water Act provides for several uses of the Guidelines in addition to the individual permit application review process described above. For example, the Corps or an approved state may issue General permits for a category of similar activities where it determines, on the basis of the 404(b)(1) Guidelines, that the activities will cause only minimal adverse environmental effects both individually and cumulatively (Section 404(e) and (g)(1)). In addition, some of the exemptions from the permit requirements involve application of the Guidelines. Section 404(r) exempts discharges associated with Federal construction projects where, among other things, there is an Environmental Impact Statement which considers the 404(b)(1) Guidelines. Section 404(f)(1)(F) exempts discharges covered by best management practices (BMP's) approved under section 208(b)(4)(B) and (c), the approval of which is based in part on consistency with the 404(b)(1) Guidelines.

Several commenters asked for a statement on the applicability of the Guidelines to enforcement procedures. Under sections 309, 404(h)(1)(G), and 404(s), EPA, approved States, and the Corps all play a role in enforcing the section 404 permit requirements. Enforcement actions are appropriate when someone is discharging dredged or fill material without a required permit, or violates the terms and conditions of a permit. The Guidelines as such are generally irrelevant to a determination of either kind of violation, although they may represent the basis for particular permit conditions which are violated. Under the Corps' procedural regulations, the Corps may accept an application for an after-the-fact permit, in lieu of immediately commencing an enforcement action. Such after-the-fact permits may be issued only if they comply with the 404(b)(1) Guidelines as well as other requirements set out in the Corps' regulations. Criteria and procedures for exercising the various enforcement options are outside the scope of the section 404(b)(1) Guidelines.

Some commenters suggested that we either include specific permit processing procedures or that we cross-reference regulations containing them. Such procedures are described in 33 CFR Part 320–327 (Corps' procedures) and in 40 CFR Part 122–124 (minimum State procedures). When specific State 404 programs are approved, their regulations should also be consulted.

How Future Changes in the Testing Provision Relate to Promulgation of This Final Rule

The September 18, 1979, proposal contained testing provisions which were essentially the same as those in the Interim Final regulations. The Preamble to that proposal explained that it was our intention to propose changes in the testing provisions, but that a proposal was not yet ready. Consequently, while we have been revising the rest of the Guidelines, we have also been working on a proposal for reorganizing and updating the testing provisions. Now that we have finalized the rest of the Guidelines, two options are available to us. First, we could delay issuing any final revisions to our 1979 proposal until we could propose a revised testing package, consider comments on it, and finalize the testing provisions. We could then put together the Guidelines and the revised testing section in one final regulation. The 1975 interim final Guidelines would apply in their entirety until then. Second, we could publish the final Guidelines (with the 1975 testing provisions) and simultaneously propose changes to the testing provision. It is our present belief that proposed changes to the testing provision would not affect the rest of the Guidelines, but the public would be allowed to comment on any inconsistencies it saw between the rest of the Guidelines and the testing proposal. Then, when the comments to the testing proposal had been considered, we would issue a new final regulation incorporating both the previously promulgated final Guidelines and the final revised testing provision.

We have selected the second option because this approach ensures that needed improvements to the Guidelines are made effective at the earliest possible date, it gives the public ample opportunity to comment on the revised testing section, and it maintains the 1975 testing requirements in effect during the interim which would be the case in any event.

Guideline Organization

Many readers objected to the length and complexity of the Guidelines. We have substantially reorganized the regulation to eliminate duplicative material and to provide a more logical sequence. These changes should make it easier for applicants to understand the criteria and for State and Corps permit evaluators and the Administrator to apply the criteria. Throughout the document, we have also made numerous minor language changes to improve the clarity of the regulations, often at the suggestion of commenters.

Following general introductory material and the actual compliance requirements, the regulations are now organized to more closely follow the steps the permitting authority will take in arriving at his ultimate decision on compliance with the Guidelines.

By reorganizing the Guidelines in this fashion, we were also able to identify and eliminate duplicative material. For example, the proposed Guidelines listed ways to minimize impacts in many separate sections. Since there was substantial overlap in the specific methods suggested in those sections, we consolidated them into new Subpart H. Other individual sections have been made more concise. In addition, we have decreased the number of *comments*, moving them to the Preamble or making them part of the Regulation, as appropriate.

General Permits

When issued after proper consideration of the Guidelines, General permits are a useful tool in protecting the environment with a minimum of red tape and delay. We expect that their use will expand in the future.

Some commenters were confused about how General permits work. A General permit will be issued only after the permitting authority has applied the Guidelines to the class of discharges to be covered by the permit. Therefore, there is no need to repeat the process at the time a particular discharge covered by the permit takes place. Of course, under both the Corps' regulations and EPA's regulations for State programs, the permitting authority may suspend General permits or require individual permits where environmental concerns make it appropriate. For example, cumulative impacts may turn out to be more serious than predicted. This regulation is not intended to establish the *procedures* for issuance of General permits. That is the responsibility of the permitting authority in accordance with the requirements of section 404.

Burden of Proof

A number of commenters objected to the presumption in the regulations in general, and in proposed § 230.1(c) in particular, that dredged or fill material should not be discharged unless it is demonstrated that the planned discharge meets the Guidelines. These commenters thought that it was unfair and inconsistent with section 404(c) of the Act.

We disagree with these objections, and have retained the presumption against discharge and the existing burden of proof. However, the section has been rewritten for clarity.

The Clean Water Act itself declares a national goal to be the elimination of the discharge of pollutants into the navigable waters (section 101(a)(1)). This goal is implemented by section 301, which states that such discharges are unlawful except in compliance with, *inter alia*, section 404. Section 404 in turn authorizes the permitting authority to allow discharges of dredged or fill material if they comply with the 404(b)(1) Guidelines. The statutory scheme makes it clear that discharges shall not take place until they have been found acceptable. Of course, this finding may be made through the General permit process and the statutory exemptions as well as through individual permits.

The commenters who argued that section 404(c) shifts the usual burden to the EPA Administrator misunderstood the relationship between section 404(c) and the permitting process. The Administrator's authority to prohibit or restrict a site under section 404(c) operates independently of the Secretary of the Army's permitting authority in 404(a). The Administrator may use 404(c) whether or not a permit application is pending. Conversely, the Secretary may deny a permit on the basis of the Guidelines, whether or not EPA initiates a 404(c) proceeding. If the Administrator uses his 404(c) "veto," then he does have the burden to justify his action, but that burden does not come into play until he begins a 404(c) proceeding (See 40 CFR Part 231).

Toxic Pollutants

Many commenters objected strenuously to the presumptions in the Guidelines that toxic pollutants on the section 307(a)(1) list are present in the aquatic environment unless demonstrated not to be, and that such pollutants are biologically available unless demonstrated otherwise. These commenters argued that rebutting these presumptions could involve individual testing for dozens of substances every time a discharge is proposed, imposing an onerous task.

The proposed regulation attempted to avoid unnecessary testing by providing that when the § 230.22(b) "reason to believe" process indicated that toxics were not present in the discharge material, no testing was required. On the other hand, contaminants other than toxics required testing if that same "reason to believe" process indicated they might be present in the discharge material. This is in fact a distinction without a difference. In practical application, toxic and non-toxic contaminants are treated the same; if either may be there, tests are performed to get the information for the determinations; if it is believed they are not present, no testing is done. Because the additional presumption for toxics did not actually serve a purpose, and because it was a possible source of confusion, we have eliminated it, and now treat "toxics" and other contaminants alike, under the "reason to believe test" (§ 230.60). We have provided in § 230.3 a definition of "contaminants" which encompasses the 307(a)(1) toxics.

Water Dependency

One of the provisions in the proposed Guidelines which received the most objections was the so-called "water dependency test" in the proposed § 230.10(e). This provision imposed an additional requirement on fills in wetlands associated with non-water dependent activities, namely a showing that the activity was "necessary." Many environmentalists objected to what they saw as a substantial weakening of the 1975 version of the water dependency test. Industry and development-oriented groups, on the other hand, objected to the "necessary" requirement because it was too subjective, and to the provision as a whole to the extent that it seemed designed to block discharges in wetlands automatically.

We have reviewed the water dependency test, its original purpose, and its relationship to the rest of the Guidelines in light of these comments. The original purpose, which many commenters commended, was to recognize the special values of wetlands and to avoid their unnecessary destruction, particularly when

practicable alternatives were available in non-aquatic areas to achieve the basic purposes of the proposal. We still support this goal, but we have changed the water-dependency test to better achieve it.

First, we agree with the comments from both sides that the "necessary" test imposed by the 1979 proposal is not likely to be workable in practice, and may spawn more disputes than it settles. However, if the "necessary" test is simply deleted, section 230.10(e) does not provide any special recognition of or protection for wetlands, and thus defeats its purpose. Furthermore, even if the "necessary" test were retained, the provision applies only to discharges of fill material, not discharges of dredged material, a distinction which lessens the effectiveness of the provision. Thus, we have decided, in accordance with the comments, that the proposal is unsatisfactory.

We have therefore decided to focus on, round out, and strengthen the approach of the so-called "water dependency" provision of the 1975 regulation. We have rejected the suggestion that we simply go back to the 1975 language, in part because it would not mesh easily with the revised general provisions of the Guidelines. Instead, our revised "water dependency" provision creates a presumption that there are practicable alternatives to "non-water dependent" discharges proposed for special aquatic sites. "Non-water dependent" discharges are those associated with activities which do not require access or proximity to or siting within the special aquatic site to fulfill their basic purpose. An example is a fill to create a restaurant site, since restaurants do not need to be in wetlands to fulfill their basic purpose of feeding people. In the case of such activities, it is reasonable to assume there will generally be a practicable site available upland or in a less vulnerable part of the aquatic ecosystem. The mere fact that an alternative may cost somewhat more does not necessarily mean it is not practicable (see § 230.10(a)(2) and discussion below). Because the applicant may rebut the presumption through a clear showing in a given case, no unreasonable hardship should be worked. At the same time, this presumption should have the effect of forcing a hard look at the feasibility of using environmentally preferable sites. This presumption responds to the overwhelming number of commenters who urged us to retain a water dependency test to discourage avoidable discharges in wetlands.

In addition, the 1975 provision effectively created a special, irrebuttable presumption that alternatives to wetlands were always less damaging to the aquatic ecosystem. Because our experience and the comments indicate that this is not always the case, and because there could be substantial impacts on other elements of the environment and only minor impacts on wetlands, we have chosen instead to impose an explicit, but rebuttable, presumption that alternatives to discharges in special aquatic sites are less damaging to the aquatic ecosystem and are environmentally preferable. Of course, the general requirement that impacts on the aquatic ecosystem not be unacceptable also applies. The legislative history of the Clean Water Act, Executive Order 11990, and a large body of scientific information support this presumption.

Apart from the fact that it may be rebutted, this second presumption reincorporates the key elements of the 1975 provision. Moreover, it strengthens it because the recognition of the special environmental role of wetlands now applies to all discharges in special aquatic sites, whether of dredged or fill material, and whether or not water dependent. At the same time, this presumption, like the first one described above, retains sufficient flexibility to reflect the circumstances of unusual cases.

Consistent with the general burden of proof under these Guidelines, where an applicant proposes to discharge in a special aquatic site it is his responsibility to persuade the permitting authority that both of these presumptions have clearly been rebutted in order to pass the alternatives portion of these Guidelines.

Therefore, we believe that the new § 230.10(a)(3), which replaces proposed 230.10(e), will give special protection to wetlands and other special aquatic sites regardless of material discharged, allay industry's concerns about the "necessary" test, recognize the possibility of impacts on air and upland systems, and acknowledge the variability among aquatic sites and discharge activities.

Alternatives

Some commenters objected at length to the scope of alternatives which the Guidelines require to be considered, and to the requirement that a permit be denied unless the least harmful such alternative were selected. Others wrote to urge us to retain these requirements. In our judgment, a number of the objections were based on a misunderstanding of what the proposed alternatives analysis required. Therefore, we have decided to clarify the regulation, but have not changed its basic thrust.

Section 403(c) clearly requires that alternatives be considered, and provides the basic legal basis for our requirement. While the statutory provision leaves the Agency some discretion to decide *how* alternatives are to be considered, we believe that the policies and goals of the Act, as well as the other authorities cited in the Preamble to the proposed Guidelines, would be best served by the approach we have taken.

First, we emphasize that the only alternatives which must be considered are *practicable* alternatives. What is practicable depends on cost, technical, and logistic factors. We have changed the word "economic" to "cost". Our intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project. The term economic might be construed to include consideration of the applicant's financial standing, or investment, or market share, a cumbersome inquiry which is not necessarily material to the objectives of the Guidelines. 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. Both "internal" and "external" alternatives, as described in the September 18, 1979 Preamble, must satisfy the practicable test. In order for an "external" alternative to be practicable, it must be reasonably available or obtainable. However, the mere fact of ownership or lack thereof, does not necessarily determine reasonable availability. Some readers were apparently confused by the Preamble to the Proposed Regulation, which referred to the fact the National Environmental Policy Act (NEPA) may require consideration of courses of action beyond the authority of the agency involved. We did not mean to suggest that the Guidelines were necessarily imposing such a requirement on private individuals but, rather, to suggest that what we were requiring was well within the alternatives analyses required by NEPA.

Second, once these practicable alternatives have been identified in this fashion, the permitting authority should consider whether any of them, including land disposal options, are less environmentally harmful than the proposed discharge project. Of course, where there is no significant or easily identifiable difference in impact, the

alternative need not be considered to have "less adverse" impact.

Several commenters questioned the legal basis for requiring the permitting authority to select the least damaging alternative. (The use of the term "select" may have been misleading. Strictly speaking, the permitting authority does not select anything; he denies the permit if the guidelines requirements have not been complied with.) As mentioned above, the statute leaves to EPA's discretion the exact implementation of the alternative requirement in section 403 of the Act. In large part, the approach taken by these regulations is very similar to that taken by the recent section 403(c) regulations (45 FR 65942, October 3, 1980). There is one difference; the Guidelines always prohibit discharges where there is a practicable, less damaging alternative, while the section 403(c) regulations only apply this prohibition in some cases. This difference reflects the wide range of water systems subject to 404 and the extreme sensitivity of many of them to physical destruction. These waters form a priceless mosaic. Thus, if destruction of an area of waters of the United States may reasonably be avoided, it should be avoided. Of course, where a category of 404 discharges is so minimal in its effects that it has been placed under a general permit, there is no need to perform a case-by-case alternatives analysis. This feature corresponds, in a sense, to the category of discharges under section 403 for which no alternatives analysis is required.

Third, some commenters were concerned that the alternative consideration was unduly focused on water quality, and that a better alternative from a water quality standpoint might be less desirable from, say, an air quality point of view. This concern overlooks the explicit provision that the existence of an alternative which is less damaging to the aquatic ecosystem does not disqualify a discharge if that alternative has other significant adverse environmental consequences. This last provision gives the permitting authority an opportunity to take into account evidence of damage to other ecosystems in deciding whether there is a "better" alternative.

Fourth, a number of commenters were concerned that the Guidelines ensure coordination with planning processes under the Coastal Zone Management Act, § 208 of the CWA, and other programs. We agree that where an adequate alternatives analysis has already been developed, it would be wasteful not to incorporate it into the 404 process. New § 230.10(a)(5) makes it clear that where alternatives have been reviewed under another process, the permitting authority shall consider such analysis. However, if the prior analysis is not as complete as the alternatives analysis required under the Guidelines, he must supplement it as needed to determine whether the proposed discharge complies with the Guidelines. Section 230.10(a)(4) recognizes that the range of alternatives considered in NEPA documents will be sufficient for section 404 purposes, where the Corps is the permitting authority. (However, a greater level of detail may be needed in particular cases to be adequate for the 404(b)(1) Guidelines analysis.) This distinction between the Corps and State permitting authorities is based on the fact that it is the Corps' policy, in carrying out its own NEPA responsibilities, to supplement (or require a supplement to) a lead agency's environmental assessment or impact statement where such document does not contain sufficient information. State permitting agencies, on the other hand, are not subject to NEPA in this manner.

We have moved proposed § 230.10(a)(1) (iii), concerning "other particular volumes and concentrations of pollutants at other specific rates", from the list of alternatives in § 230.10 to Subpart H, Minimizing Adverse Effects, because it more properly belongs there.

Definitions (§ 230.3)

A number of the terms defined in § 230.3 are also defined in the Corps' regulations at 33 CFR 323.2, applicable to the Corps' regulatory program. The Corps has recently proposed some revisions to those regulations and expects to receive comments on the definitions. To ensure coordination of these two sets of regulations, we have decided to reserve the definitions of "discharge of dredged material," "discharge of fill material," "dredged material," and "fill material," which otherwise would have appeared at § 230.3 (f), (g), (j), and (l).

Although the term "waters of the United States" also appears in the Corps' regulations, we have retained a definition here, in view of the importance of this key jurisdictional term and the numerous comments received. The definition and the comments are explained below.

Until new definitions are published, directly or by reference to the Corps' revised regulations, users of these Guidelines should refer to the definitions in 33 CFR 323.2 (except in the case of state 404 programs, to which the definitions in 40 CFR § 122.3 apply.)

Waters of the United States: A number of commenters objected to the definition of "waters of the United States" because it was allegedly outside the scope of the Clean Water Act or of the Constitution or because it was not identical to the Corps' definition. We have retained the proposed definition with a few minor changes for clarity for several reasons. First, a number of courts have held that this basic definition of waters of the United States reasonably implements section 502(7) of the Clean Water Act, and that it is constitutional (e.g., *United States* v. *Byrd, 609 F.2d 1204, 7th Cir. 1979; Leslie Salt Company* v. *Froehlke*, 578 F.2d 742, 9th Cir. 1978). Second, we agree that it is preferable to have a uniform definition for waters of the United States, and for all regulations and programs under the CWA. We have decided to use the wording in the recent Consolidated Permit Regulations, 45 Fed. Reg. 33290, May 19, 1980, as the standard.*

Some commenters suggested that the reference in the definition to waters from which fish are taken to be sold in interstate commerce be expanded to include areas where such fish spawn. While we have not made this change because we wish to maintain consistency with the wording of the Consolidated Permit regulations, we do not intend to suggest that a spawning area may not have significance for commerce. The portion of the definition at issue lists major examples, not *all* the ways which commerce may be involved.

Some reviewers questioned the statement in proposed § 230.72(c) (now § 230.11(h)) that activities on fast land created by a discharge of dredged or fill material are considered to be in waters of the United States for purposes of these Guidelines. The proposed language was misleading and we have changed it to more accurately reflect our intent. When a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement. In the case of an illegal discharge, the fast land may remain subject to the jurisdiction of the Act until the government determines not to seek restoration. However, in authorizing a

* The Consolidated Permit Regulations exclude certain waste treatment systems from waters of the United States. The exact terms of this exclusion are undergoing technical revisions and are expected to change shortly. For this reason, these Guidelines as published do not contain the exclusion as originally worded in the Consolidated Permit Regulations. When published, the corrected exclusion will apply to the Guidelines as well as the Consolidated Permit Regulations.

discharge which will create fast lands, the permitting authority should consider, in addition to the direct effects of the fill inself, the effects on the aquatic environment of any reasonably foreseeable activities to be conducted on that fast land.

Section 230.54 (proposed 230.41) deals with impacts on parks, national and historical monuments, national sea shores, wilderness areas, research sites, and similar preserves. Some readers were concerned that we intended the Guidelines to apply to activities in such preserves whether or not the activities took place in waters of the United States. We intended, and we think the context makes it clear, that the Guidelines apply only to the specification of discharge sites in the waters of the United States, as defined in § 230.3. We have included this section because the fact that a water of the United States may be located in one of these preserves is significant in evaluating the impacts of a discharge into that water.

Wetlands: Many wetlands are waters of the United States under the Clean Water Act. Wetlands are also the subject of Federal Executive Order No. 11990, and various Federal and State laws and regulations. A number of these other programs and laws have developed slightly different wetlands definitions, in part to accommodate or emphasize specialized needs. Some of these definitions include, not only wetlands as these Guidelines define them, but also mud flats and vegetated and unvegetated shallows. Under the Guidelines some of these other areas are grouped with wetlands as "Special Aquatic Sites" (Subpart E) and as such their values are given special recognition. (See discussion of Water Dependency above.) We agree with the comment that the National Inventory of Wetlands prepared by the U.S. Fish and Wildlife Service, while not necessarily exactly coinciding with the scope of waters of the United States under the Clean Water Act or wetlands under these regulations, may help avoid construction in wetlands, and be a useful long-term planning tool.

Various commenters objected to the definition of wetlands in the Guidelines as too broad or too vague. This proposed definition has been upheld by the courts as reasonable and consistent with the Clean Water Act, and is being retained in the final regulation. However, we do agree that vegetative guides and other background material may be helpful in applying the definition in the field. EPA and the Corps are pledged to work on joint research to aid in jurisdictional determinations. As we develop such materials, we will make them available to the public.

Other commenters suggested that we expand the list of examples in the second sentence of the wetland definition. While their suggested additions could legally be added, we have not done so. The list is one of examples only, and does not serve as a limitation on the basic definition. We are reluctant to start expanding the list, since there are many kinds of wetlands which could be included, and the list could become very unwieldy.

In addition, we wish to avoid the confusion which could result from listing as examples, not only areas which generally fit the wetland definitions, but also areas which may or not meet the definition depending on the particular circumstances of a given site. In sum, if an area meets the definition, it is a wetland for purposes of the Clean Water Act, whether or not it falls into one of the listed examples. Of course, more often than not, it will be one of the listed examples.

A few commenters cited alleged inconsistencies between the definition of wetlands in § 230.3 and § 230.42. While we see no inconsistency, we have shortened the latter section as part of our effort to eliminate unnecessary comments.

Unvegetated Shallows: One of the special aquatic areas listed in the proposal was "unvegetated shallows" (§ 230.44). Since special aquatic areas are subject to the presumptions in § 230.10(a)(3), it is important that they be clearly defined so that the permitting authority may readily know when to apply the presumptions. We were unable to develop, at this time, a definition for unvegetated shallows which was both easy to apply and not too inclusive or exclusive. Therefore, we have decided the wiser course is to delete unvegetated shallows from the special aquatic area classification. Of course, as waters of the United States, they are still subject to the rest of the Guidelines.

"Fill Material": We are temporarily reserving § 230.3(1). Both the proposed Guidelines and the proposed Consolidated Permit Regulations defined fill material as material discharged for the primary purpose of replacing an aquatic area with dryland or of changing the bottom elevation of a water body, reserving to the NPDES program discharges with the same effect which are primarily for the purpose of disposing of waste. Both proposals solicited comments on this distinction, referred to as the primary purpose test. On May 19, 1980, acting under a court-imposed deadline, EPA issued final Consolidated Permit Regulations while the 404(b)(1) Guidelines rulemaking was still pending. These Consolidated Permit Regulations contained a new definition of fill material which eliminated the primary purpose test and included as fill material all pollutants which have the effect of fill, that is, which replace part of the waters of the United States with dryland or which change the bottom elevation of a water body for any purpose. This new definition is similar to the one used before 1977.

During the section 404(b)(1) rulemaking, the Corps has raised certain questions about the implementation of such a definition. Because of the importance of making the Final Guidelines available without further delay, and because of our desire to cooperate with the Corps in resolving their concerns about fill material, we have decided to temporarily reserve § 230.3(1) pending further discussion. This action does not affect the effectiveness of the Consolidated Permit Regulations. Consequently, there is a discrepency between those regulations and the Corps' regulations, which still contain the old definition.

Therefore, to avoid any uncertainty from this situation, EPA wishes to make clear its enforcement policy for unpermitted discharges of solid waste. EPA has authority under section 309 of the CWA to issue administrative orders against violations of section 301. Unpermitted discharges of solid waste into waters of the United States violate section 301.

Under the present circumstances, EPA plans to issue solid waste administrative orders with two basic elements. First, the orders will require the violator to apply to the Corps of Engineers for a section 404 permit within a specified period of time. (The Corps has agreed to accept these applications and to hold them until it resolves its position on the definition of fill material.)

Second, the order will constrain further discharges by the violator. In extreme cases, an order may require that discharges cease immediately. However, because we recognize that there will be a lapse of time before decisions are made on this kind of permit application, these orders may expressly allow unpermitted discharges to continue subject to specific conditions set forth by EPA in the order. These conditions will be designed to avoid further environmental damage.

Of course, these orders will not influence the ultimate issuance or non-issuance of a permit or determine the conditions that may be specified in such a permit. Nor will such orders limit the

Administrator's authority under section 309(b) or the right of a citizen to bring suit against a violator under section 505 of the CWA.

Permitting Authority: We have used the new term "permitting authority," instead of "District Engineer," throughout these regulations, in recognition of the fact that under the 1977 amendments approved States may also issue permits.

Coastal Zone Management Plans

Several commenters were concerned about the relationship between section 404 and approved Coastal Zone Management (CZM) plans. Some expressed concern that the Guidelines might authorize a discharge prohibited by a CZM plan; others objected to the fact that the Guidelines might prohibit a discharge which was consistent with a CZM plan.

Under section 307(b) of the CZM Act, no Federal permits may be issued until the applicant furnishes a certification that the discharge is consistent with an approved CZM plan, if there is one, and the State concurs in the certification or waives review. Section 325.2(b)(2) of the Corps' regulation, which applies to all Federal 404 permits, implements this requirement for section 404. Because the Corps' regulations adequately address the CZM consistency requirement, we have not duplicated § 325.2(b)(2) in the Guidelines. Where a State issues State 404 permits, it may of course require consistency with its CZM plan under State law.

The second concern, that the 404 Guidelines might be stricter than a CZM plan, points out a possible problem with CZM plans, not with the Guidelines. Under 307(f) of CZMA, all CZM plans must provide for compliance with applicable requirements of the Clean Water Act. The Guidelines are one such requirement. Of course, to the extent that a CZM plan is general and area-wide, it may be impossible to include in its development the same project-specific consideration of impacts and alternatives required under the Guidelines. Nonetheless, it cannot authorize or mandate a discharge of dredged or fill material which fails to comply with the requirements of these Guidelines. Often CZM plans contain a requirement that all activities conducted under it meet the permit requirements of the Clean Water Act. In such a case, there could of course be no conflict between the CZM plan and the requirements of the Guidelines.

We agree with commenters who urge that delay and duplication of effort be avoided by consolidating alternatives studies required under different statutes, including the Coastal Zone Management Act. However, since some planning processes do not deal with specific projects, their consideration of alternatives may not be sufficient for the Guidelines. Where another alternative analysis is less complete than that contemplated under section 404, it may not be used to weaken the requirements of the Guidelines.

Advanced Identification of Dredged or Fill Material Disposal Sites

A large number of commenters objected to the way proposed § 230.70, new Subpart I, had been changed from the 1975 regulations. A few objected to the section itself. Most of the comments also revealed a misunderstanding about the significance of identifying an area. First, the fact that an area has been identified as unsuitable for a potential discharge site does not mean that someone cannot apply for and obtain a permit to discharge there as long as the Guidelines and other applicable requirements are satisified.* Conversely, the fact that an area has been identified as a potential site does not mean that a permit is unnecessary or that one will automatically be forthcoming. The intent of this section was to aid applicants by giving advance notice that they would have a relatively easy or difficult time qualifying for a permit to use particular areas. Such advance notice should facilitate applicant planning and shorten permit processing time.

Most of the objectors focused on EPA's "abandonment" of its "authority" to identify sites. While that "authority" is perhaps less "authoritative" than the commenters suggested (see above), we agree that there is no reason to decrease EPA's role in the process. Therefore, we have changed new § 230.80(a) to read:

> "Consistent with these Guidelines, EPA and the permitting authority on their own initiative or at the request of any other party, and after consultation with any affected State that is not the permitting authority, may identify sites which will be considered as:"

We have also deleted proposed § 230.70(a)(3), because it did not seem to accomplish much. Consideration of the point at which cumulative and secondary impacts become unacceptable and warrant emergency action will generally be more appropriate in a permit-by-permit context. Once that point has been so determined, of course, the area can be identified as "unsuitable" under the new § 230.80(a)(2).

* EPA may foreclose the use of a site by exercising its authority under section 404(c). The advance identification referred to in this section is not a section 404(c) prohibition.

Executive Order 12044

A number of commenters took the position that Executive Order 12044 requires EPA to prepare a "regulatory analysis" in connection with these regulations. EPA disagrees. These regulations are not, strictly speaking, new regulations. They do not impose new standards or requirements, but rather substantially clarify and reorganize the existing interim final regulations

Under EPA's criteria implementing Executive Order 12044, EPA will prepare a Regulatory Analysis for any regulation which imposes *additional* annual costs totalling $100 million or which will result in a total *additional* cost of production of any major product or service which exceeds 5% of its selling price. While many commenters, particularly members of the American Association of Port Authorities (AAPA), requested a regulatory analysis and claimed that the regulations were too burdensome, none of them explained how that burden was an *additional* one attributable to this revision. A close comparison of the new regulation and the explicit and implicit requirements in the interim final Guidelines reveals that there has been very little real change in the criteria by which discharges are to be judged or in the tests that must be conducted; therefore, we stand by our original determination that a regulatory analysis is not required.

Perhaps the most significant area in which the regulations are more explicit and arguably stricter is in the consideration of alternatives. However, even the 1975 regulations required the permitting authority to consider "the availability of alternate sites and methods of disposal that are less damaging to the environment," and to avoid activities which would have significant adverse effects. We do not think that the revised Guidelines' more explicit direction to avoid adverse effects that could be prevented through selection of a clearly less damaging site or method is a change imposing a substantial new burden on the regulated public.

Because the revised regulations are more explicit than the interim final regulations in some respects, it is possible that permit reviewers will do a more thorough job evaluating proposed discharges. This may result in somewhat more carefully drawn permit conditions. However, even if, for purposes of argument, the possible cost of complying with these conditions is considered an *additional* cost, there is no reason to believe that it alone will be anywhere near $100 million annually.

We also believe that it is appropriate to recognize the regulatory benefits from these more carefully drafted final regulations. Because they are much clearer about what should be considered and documented, we expect there will be fewer delays in reviewing permits, and that initial decisions to issue permits are less likely to be appealed to higher authority. These benefits are expected to offset any potential cost increase.

Some commenters suggested that documentation requirements would generate an additional cost of operations. The Corps' procedural regulations at 33 CFR 325.8 and 325.11 already require extensive documentation for individual permits being denied or being referred to higher authority for resolution of a conflict between agencies.

Economic Factors

A number of commenters asked EPA to include consideration of economic factors in the Guidelines. We believe that the regulation already recognizes economic factors to the extent contemplated by the statute. First, the Guidelines explicitly include the concept of "practicability" in connection with both alternatives and steps to minimize impacts. If an alleged alternative is unreasonably expensive to the applicant, the alternative is not "practicable." In addition, the Guidelines also consider economics indirectly in that they are structured to avoid the expense of unnecessary testing through the "reason-to-believe-test." Second, the statute expressly provides that the economics of anchorage and navigation may be considered, but only after application of the section 404(b)(1) Guidelines. (See section 404(b)(2).)

Borrow Sites

A number of highway departments objected because they felt the Guidelines would require them to identify specific borrow sites at the time of application, which would disrupt their normal contracting process and increase cost. These objections were based on a misunderstanding of the Guideline's requirements. Under those Guidelines, the actual borrow sites need not be identified, if the application and the permit specify that the discharge material must come from clean upland sites which are removed from sources of contamination and otherwise satisfy the reason-to-believe test. A condition that the material come from such a site would enable the permitting authority to make his determinations and find compliance with the conditions of § 230.10, without requiring highway departments to specify in advance the specific borrow sites to be used.

Consultation With Fish and Wildlife Agencies

One commenter wanted us to put in a statement that the Fish and Wildlife Coordination Act requires consultation with fish and wildlife agencies. We have not added new language because (1) the Fish and Wildlife Act only applies to Federal permitting agencies and not to State permitting agencies, and (2) the Corps' regulations already provide for such consultation by the only Federal 404 permitting agency. However, we agree with the commenter that Federal and State fish and wildlife agencies may often provide valuable assistance in evaluating the impacts of discharges of dredged or fill material.

The Importance of Appropriate Documentation

Specific documentation is important to ensure an understanding of the basis for each decision to allow, condition, or prohibit a discharge through application of the Guidelines. Documentation of information is required for: (1) facts and data gathered in the evaluation and testing of the extraction site, the material to be discharged, and the disposal site; (2) factual determinations regarding changes that can be expected at the disposal site if the discharge is made as proposed; and (3) findings regarding compliance with § 230.10 conditions. This documentation provides a record of actions taken that can be evaluated for adequacy and accuracy and ensures consideration of all important impacts in the evaluation of a proposed discharge of dredged or fill material.

The specific information documented under (1) and (2) above in any given case depends on the level of investigation necessary to provide for a reasonable understanding of the impact on the aquatic ecosystems. We anticipate that a number of individual and most General permit applications will be for routine, minor activities with little potential for significant adverse environmental impacts. In such cases, the permitting authority will not have to require extensive testing or analysis to make his findings of compliance. The level of documentation should reflect the significance and complexity of the proposed discharge activity.

Factual Determinations

Proposed section 230.20, "Factual Determinations" (now § 230.11) has been significantly reorganized in response to comments. First, we have changed (e) to reflect our elimination of the artificial distinction between the section 307(a)(1) toxics and other contaminants. Second, we have eliminated proposed (f) (Biological Availability), since the necessary information will be provided by (d) and new (e). Proposed (f) was intended to reflect the presumption that toxics were present and biologically available. We have modified proposed (g), now (f), to focus on the size of the disposal site and the size and shape of the mixing zone. The specific requirement to document the site has been deleted; where such information is relevant, it will automatically be considered in making the other determinations. We have also deleted proposed (h) (Special Determinations) since it did not provide any useful information which would not already be considered in making the other factual determinations.

Finally, in response to many comments, we have moved the provisions on cumulative and secondary impact to the Factual Determination section to give them further emphasis. We agree that such impacts are an important consideration in evaluating the acceptability of a discharge site.

Water Quality Standards

One commenter was concerned that the reference § 230.10(b) to water quality standards and criteria "approved or promulgated under section 303" might encourage permit authorities to ignore other water quality requirements. Under section 303, all State water quality standards are to be submitted to EPA for approval. If the submitted standards are incomplete or insufficiently stringent, EPA may promulgate standards to replace or supplant the State standards. Disapproved standards remain in effect until replaced. Therefore, to refer to "EPA approved or promulgated standards" is to ignore those State standards which have been neither approved nor replaced. We have therefore changed the wording of this requirement as follows: "* * * any applicable State water quality standard." We have also dropped the reference to "criteria", to be consistent with the Agency's general position that water quality criteria are not regulatory.

Other Requirements for Discharge

Section 230.10(c) provides that discharges are not permitted if they will have "significantly" adverse effects on various aquatic resources. In this context, "significant" and "significantly" mean more than "trivial", that is, significant in a conceptual rather than a statistical sense. Not all effects which

are statistically significant in the laboratory are significantly adverse in the field.

Section 320.10(d) uses the term "minimize" to indicate that all reasonable reduction in impacts be obtained. As indicated by the "appropriate and practicable" provision, steps which would be unreasonably costly or would be infeasible or which would accomplish only inconsequential reductions in impact need not be taken.

Habitat Development and Restoration of Water Bodies

Habitat development and restoration involve changes in open water and wetlands that minimize adverse effects of proposed changes or that neutralize or reverse the effects of past changes on the ecosystem. Development may produce a new or modified ecological state by displacement of some or all of the existing environmental characteristics. Restoration has the potential to return degraded environments to their former ecological state.

Habitat development and restoration can contribute to the maintenance and enhancement of a viable aquatic ecosystem at the discharge site. From an environmental point of view, a project involving the discharge of dredged and fill material should be designed and managed to emulate a natural ecosystem. Research, demonstration projects, and full scale implementation have been done in many categories of development and restoration. The U.S. Fish and Wildlife Service has programs to develop and restore habitat. The U.S. Army Engineer Waterways Experiment Station has published guidelines for using dredged material to develop wetland habitat, for establishing marsh vegetation, and for building islands that attract colonies of nesting birds. The EPA has a Clean Lakes program which supplies funds to States and localities to enhance or restore degraded lakes. This may involve dredging nutrient-laden sediments from a lake and ensuring that nutrient inflows to the lake are controlled. Restoration and habitat development techniques can be used to minimize adverse impacts and compensate for destroyed habitat. Restoration and habitat development may also provide secondary benefits such as improved opportunities for outdoor recreation and positive use for dredged materials.

The development and restoration of viable habitats in water bodies requires planning and construction practices that integrate the new or improved habitat into the existing environment. Planning requires a model or standard, the achievement of which is attempted by manipulating design and implementation of the activity. This model or standard should be based on characteristics of a natural ecosystem in the vicinity of a proposed activity. Such use of a natural ecosystem ensures that the developed or restored area, once established, will be nourished and maintained physically, chemically and biologically by natural processes. Some examples of natural ecosystems include, but are not limited to, the following: salt marsh, cattail marsh, turtle grass bed, small island, etc.

Habitat development and restoration, by definition, should have environmental enhancement and maintenance as their initial purpose. Human uses may benefit but they are not the primary purpose. Where such projects are not founded on the objectives of maintaining ecosystem function and integrity, some values may be favored at the expense of others. The ecosystem affected must be considered in order to achieve the desired result of development and restoration. In the final analysis, selection of the ecosystem to be emulated is of critical importance and a loss of value can occur if the wrong model or an incomplete model is selected. Of equal importance is the planning and management of habitat development and restoration on a case-by-case basis.

Specific measures to minimize impacts on the aquatic ecosystem by enhancement and restoration projects include but are not limited to:

(1) Selecting the nearest similar natural ecosystem as the model in the implementation of the activity.

Obviously degraded or significantly less productive habitats may be considered prime candidates for habitat restoration. One viable habitat, however, should not be sacrificed in an attempt to create another, i.e., a productive vegetated shallow water area should not be destroyed in an attempt to create a wetland in its place.

(2) Using development and restoration techniques that have been demonstrated to be effective in circumstances similar to those under consideration wherever possible.

(3) Where development and restoration techniques proposed for use have not yet advanced to the pilot demonstration or implementation stage, initiate their use on a small scale to allow corrective action if unanticipated adverse impacts occur.

(4) Where Federal funds are spent to clean up waters of the U.S. through dredging, scientifically defensible levels of pollutant concentration in the return discharge should be agreed upon with the funding authority in addition to any applicable water quality standards in order to maintain the desired improved water quality.

(5) When a significant ecological change in the aquatic environment is proposed by the discharge of dredged or fill material, the permitting authority should consider the ecosystem that will be lost as well as the environmental benefits of the new system.

Dated: December 12, 1980.

Douglas M. Costle,

Administrator, Environmental Protection Agency.

Part 230 is revised to read as follows:

PART 230—SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OR DISPOSAL SITES FOR DREDGED OF FILL MATERIAL

Subpart A—General

Sec.
230.1 Purpose and policy.
230.2 Applicability.
230.3 Definitions.
230.4 Organization.
230.5 General procedures to be followed.
230.6 Adaptability.
230.7 General permits.

Subpart B—Compliance With the Guidelines

230.10 Restrictions on discharge.
230.11 Factual determinations.
230.12 Findings of compliance or non-compliance with the restrictions on discharge.

Subpart C—Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

230.20 Substrate.
230.21 Suspended particulates/turbidity.
230.22 Water.
230.23 Current patterns and water circulation.
230.24 Normal water fluctuations.
230.25 Salinity gradients.

Subpart D—Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

230.30 Threatened and endangered species.
230.31 Fish, crustaceans, mollusks, and other aquatic organisms in the food web.
230.32 Other wildlife.

Subpart E—Potential Impacts on Special Aquatic Sites

230.40 Sanctuaries and refuges.
230.41 Wetlands.
230.42 Mud flats.
230.43 Vegetated shallows.
230.44 Coral reefs.
230.45 Riffle and pool complexes.

Subpart F—Potential Effects on Human Use Characteristics

230.50 Municipal and private water supplies.
230.51 Recreational and commercial fisheries.
230.52 Water-related recreation.
230.53 Aesthetics.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 231

[FRL 1292-6]

Denial or Restriction of Disposal Sites; Section 404(c) Procedures

AGENCY: Environmental Protection Agency.

ACTION: Rule.

SUMMARY: These regulations establish the procedures to be used when EPA is considering the use of Section 404(c) of the Clean Water Act to prevent the discharge of dredged or fill material into a defined area in the waters of the United States. Under section 404 of that Act, permits are issued by the Corps of Engineers for the disposal of dredged or fill material at specified sites in the waters of the United States.

Section 404(c) gives the Administrator authority to prohibit or withdraw the specification of a site as a disposal site or to deny or restrict use of a disposal site. In effect, section 404(c) authority may be exercised before a permit is applied for, while an application is pending, or after a permit has been issued. In each case, the Administrator may prevent any defined area in waters of the United States from being specified as a disposal site, or may simply prevent the discharge of any specific dredge or fill material into a specified area. In either case, the Administrator must determine, after notice and opportunity for public hearing, that the discharge of material will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding grounds), wildlife or recreational areas.

EFFECTIVE DATE: October 9, 1979.

ADDRESS: Comments submitted on these regulations may be inspected at the Public Information Reference Unit, EPA Headquarters, Room 2922, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460, between 8 a.m. and 4 p.m. on business days.

FOR FURTHER INFORMATION CONTACT: David G. Davis, Chief, 404 Section, Criteria and Standards Division (WH-585), Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460, telephone—202-472-3400.

SUPPLEMENTARY INFORMATION:

Section 404(c) of the Clean Water Act (CWA), 33 U.S.C. § 1344(c), was initially enacted in the Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92-500, 86 Stat. 816. These are the first regulations implementing section 404(c) to be published. The regulations establish procedures to be used by EPA in considering the use of section 404(c) to prevent the discharge of dredged or fill material into a defined area in waters of the United States. The regulations were proposed in the Federal Register on March 13, 1979 (44 FR 14578). Public comment was received on the proposal for 60 days. These regulations reflect comments received.

Section 404 of the Clean Water Act establishes a permit program, administered by the Secretary of the Army, acting through the Chief of Engineers of the U.S. Army Corps of Engineers, to regulate the discharge of dredged or fill material. Under that program, permits are issued for the disposal of dredged or fill material at specified sites in the waters of the United States. Under section 404(g) states may receive approval from the Administrator to administer permit programs for sites in certain waters of the United States in lieu of the program administered by the Corps of Engineers. Applications for section 404 permits are evaluated by the Corps and by states using guidelines devleoped by the Administrator under section 404(b). These guidelines are contained in 40 CFR Part 230. The Chief of Engineers may issue a permit that is inconsistent with those guidelines only if the economic impact of the site on navigation and anchorage warrants it.

Section 404(c) gives the Administrator authority to prohibit or withdraw the specification of a site as a disposal site or to deny or restrict use of a disposal site. In effect, section 404(c) authority may be exercised before a permit is applied for, while an application is pending, or after a permit has been issued. in each case, the Administrator may prevent any defined area in waters of the United States from being specified as a disposal site, or may simply prevent the discharge of any specific dredge or fill material into a specified area. In either case, the Administrator must determine, after notice and opportunity for public hearing, that the discharge of material will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding grounds), wildlife or recreational areas. The Administrator may also use section 404(c) where the site in question is covered by a state 404 permit program.

The Administrator's section 404(c) authority should not be confused with his right to comment on and object to permit applications. Under the Corps' regulations (33 CFR 323.5 and 325.3), EPA has an opportunity to comment on and, where appropriate, to object to applications for Corps permits. Similarly, under section 404(j), EPA may also comment on and object to applications for state permits. While the Corps may in certain circumstances override EPA's objections to a permit application, it may not override the Administrator's veto of a site under section 404(c). Nor should section 404(c) authority be confused with the Administrator's obligation under section 309 of the Clean Air Act to comment on environmental impact statements prepared for section 404 projects and to refer such projects to the Council on Environmental Quality when he finds them to be environmentally unsatisfactory.

Comments, objections to Corps permits, and CEQ referrals may be based on any kind of environmental impacts, including ones prohibited by the section 404(b) guidelines, effects on air quality, and increased noise. Objections to state permits may be based on any of the grounds specified in the Consolidated Permit Regulations, 44 FR 34244, June 14, 1979. On the other hand, 404(c) authority may be exercised only where there is an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding grounds), wildlife or recreational areas. The section 404(b)(1) guidelines provide the substantive criteria by which the acceptability of a proposed discharge is to be judged.

Comments on the Proposed Section 404(c) Regulations

In keeping with EPA's policy to involve the public in the development of the 404(c) regulations public comments were received by the Agency during the official 60-day comment period dating from March 13, 1979 to May 14, 1979. As of May 14, we had received 29 comments from the following sources: Federal agencies—2, state agencies—4, conservation groups—4, industry—14, others—5. These comments have been considered in the development of the final guidelines.

The discussion which follows responds to the comments received on the proposed regulations. Changes made in the final form of the regulations in response to public comment are discussed as are the Agency's response to significant comments that did not lead to changes. The citations in the discussion of comments are to sections of the final 404(c) regulations.

Use of 404(c) Before Permit Application

A number of commenters objected to the use of 404(c) to protect a site before

there is a permit application to use the site. Several argued that such prospective use was outside the scope of section 404(c), either beause they interpreted the phrase "any defined area" to refer to an area defined during the permit process or because they felt that pre-permit vetos would not be practical. One commenter cited some legislative history to support his objection. On the one hand, several other commenters not only argued that section 404(c) gave EPA the authority to use its veto pre-permit, but also argued that EPA should provide more explicitly for such use, and exercise it as the preferred course.

EPA feels that the statute clearly allows it to use 404(c) before an application is filed. First, the statute says that the Administrator is authorized to take action "whenever" he makes certain determinations. Second, the actions he is authorized to take are not limited to permit situations. Rather, he may prohibit the specification of a site or deny or restrict the use of a site for specification. The phrase "any defined area" does not lead to a contrary conclusion. That phrase merely means that a 404(c) action must be directed at a particular or identifiable area rather than "wetlands" or some other generic category. The Corps does not "define" areas through the permit process; it "specifies" them.

EPA also feels that there are strong reasons for including this pre-permit authority in the present regulations. Such an approach will facilitate planning by developers and industry. It will eliminate frustrating situations in which someone spends time and money developing a project for an inappropriate site and learns at an advanced stage that he must start over. In addition, advance prohibition will facilitate comprehensive rather than piecemeal protection of wetlands.

EPA disagreed with those commenters who felt that the regulations did not make the pre-permit application of 404(c) explicit enough. The number of objections to pre-permit use refutes that fear. Because the regulations as proposed already cover the pre-permit situation, EPA did not adopt one organization's suggestion for a separate procedure for that situation. EPA's procedure is quite similar to the one suggested by the commenter. For example, EPA agrees that it is appropriate to have the Administrator have the opportunity to make the final determination to ensure consistency. One commenter said that pre-permit actions were inappropriate because it would be impractical to identify unacceptable adverse effects before a specific discharge is proposed. At least in theory, there are instances where a site may be so sensitive and valuable that it is possible to say that *any* filling of more that X acres will have unacceptable adverse effects. In those instances, where likely adverse impacts cannot be identified, 404(c) will not be used.

Certain commenters asked why advance use of 404(c) was necessary in light of the advance identification provisions in 40 CFR 230.7. That provision merely aids in planning; it does not carry the weight of, or comply with the requirements of, 404(c).

Use of 404(c) After Issuance of a Permit

A number of commenters objected to the use of 404(c) after the issuance of a permit by the Corps or a state, arguing either that such action was outside the scope of section 404(c), that such action was unfair, or that 404(c) did not apply at all to sites covered by state programs. Several people suggested criteria to limit the use of section 404(c) after permit issuance.

EPA feels that an important distinction should be drawn between the Agency's right to use 404(c) after issuance and its choice to do so. The statute on its face clearly allows EPA to act after the Corps has issued a permit; it refers twice to the "withdrawal of specification," which clearly refers to action by EPA after the Corps has specified a site (e.g. issued a permit or authorized its own work).

On the other hand, EPA recognizes that where possible it is much preferable to exercise this authority before the Corps or state has issued a permit, and before the permit holder has begun operations. As stated in the preamble to the proposed regulations, it is EPA's policy to try to resolve environmental problems before permit issuance. This policy is based on both a concern for the plight of the applicant, and a desire to protest the site before any adverse impacts occur. Nonetheless, one can anticipate that there will be circumstances where it may be necessary to act after issuance in order to carry out EPA's responsibilities under the Clean Water Act. For example, new information may come to EPA's attention; there may be new scientific discoveries; or in very rare instances, EPA may not receive actual notice of the Corps' intent to issue a permit in advance of issuance. While these are the most likely occasions necessitating 404(c) action after issuance, EPA does not wish to unwittingly restrict action in other appropriate circumstances. Therefore, the regulations do not restrict EPA's right to act after a permit has been issued. EPA agrees with the suggestion of one commenter that the Corps or State should have an opportunity to suspend, modify, or revoke a permit before use of section 404(c) in such a situation. The consultation provisions provide such an opportunity.

Some commenters appeared to think that EPA would use 404(c) to invalidate discharges which had already taken place under a valid permit. This is a misinterpretation of the regulations. Under the statutory scheme, 404(c) can only be used to *prevent* discharges. On the other hand, in evaluating the adverse effect of a future discharge, EPA may consider the cumulative impact of past as well as future discharges.

EPA agrees with the suggestion that it would be inappropriate to use 404(c) after issuance of a permit where the matters at issue were reviewed by EPA without objections during the permit proceeding, or where the matters at issue were resolved to EPA's satisfaction during the permit proceeding, unless substantial new information is first brought to the Agency's attention after issuance.

Some commenters suggested that the regulations provide for bonding or reimbursement in the event that 404(c) is used after issuance. There is no provision in the statute for such a measure, and we do not think that there will be any need for such protection, given our policy of restraint on the use of 404(c) after issuance.

Two commenters questioned the use of 404(c) when a permit had been issued by a state, citing the provision in 404(j) for objecting to state permits as an exclusive remedy. However, the legislative history for the 1977 amendments to the CWA states expressly that 404(j) was not intended to restrict the Administrator's authority under 404(c). (Senate Report, Legis. Hist., Vol. 3, p. 711; Senator Stafford, *Ibid* p. 914.) Of course, as a practical matter, it will usually be simpler for EPA to object under 404(j) than to use 404(c), and it is our expectation that we will use that procedure to the extent practicable.

Emergency Provision

A number of comments related to the provision in § 231.7 for emergency suspensions of permits where the Administrator has reason to believe that there is an imminent danger of irreparable harm to the 404(c) resources and the public health, interest, or safety requires and the Corps refuses to suspend the permit under its own procedures. Some commenters objected to this provision because they objected

to any action under 404(c) after permit issuance. This objection is dealt with above. Others conceded EPA's right to act, but argued either that 404(c) did not permit suspension without opportunity for prior hearing, or that the scope (e.g. triggering circumstances) of the emergency provision was too broad or too restrictive.

Although some commenters applauded the inclusion of the proposed emergency provision, none of them gave any reasons to justify the provision. Because there is some doubt concerning our authority, EPA has decided to delete this provision, relying instead on the Corps' own suspension authority and section 504 as written. Therefore, the emergency provision has been changed to provide that, when a permit has already been issued and the Administrator perceives an imminent danger to the resources mentioned in 404(c), he may ask the Corps or state to suspend the permit (which it may do under its regulations) and/or may go to court for a preliminary injunction to stop the discharge.

Unacceptable Adverse Effect—Criteria for Action Under 404(c)

Several commenters asked for a more specific definition of "unacceptable adverse effects." EPA considered these comments, and the proposed substitutes, and concluded that some clarification was needed. The definition has, therefore, been changed to read as follows:

> Impact on an aquatic or wetland ecosystem which is likely to result in a significant degradation of municipal water supplies (including surface or ground water) or significant loss of or damage to fisheries, shellfishing, or wildlife habitat, or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the section 404(b)(1) guidelines (40 CFR Part 230).

Several people observed that the unqualified reference to the 404(b)(1) guidelines was misleading, since the guidelines are concerned with a greater range of resources than 404(c) is. To avoid any misunderstanding, the reference now reads, "the relevant portions of the section 404(b)(1) guidelines."

Several commenters argued that any determination of "unacceptability" should be based on a cost/benefit analysis which takes into account the benefits of the proposed project. In EPA's view, section 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which refers only to environmental factors. The term "unacceptable" in EPA's view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford. When Congress intended EPA to consider costs under the Clean Water Act, it said so (see, for example, section 304(b)(2)(B)). It is significant that in paraphrasing the criteria for 404(c), the Conference Report merely referred to activities which will "adversely affect" the listed resources. (Leg. Hist., Vol. 1, p. 325.) The remarks of Senator Muskie during the debate on the Conference Report also confirm that the criteria for exercise of 404(c) were environmental. In short, there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word "unacceptable" implies such a balancing. On the other hand, one of the basic functions of 404(c) is to police the application of the 404(b)(1) guidelines. Therefore, those portions of the guidelines relating to alternative sites may be considered in evaluating the unacceptability of the environmental impact. For example, the Administrator can take into account the fact that the alternative sites or methods are or are not available, so that the loss of resources is avoidable or unavoidable. Of course, even when there is no alternative available, and "vetoing" the site means stopping a project entirely, the loss of the 404(c) resources may still be so great as to be "unacceptable."

Several commenters also noted that the regulations provided that a recommended determination need only to be based on a finding that a discharge "could" have an unacceptable adverse effect. They recommend that this be changed to "will" to reflect the statutory language. EPA has retained the word "could" for the proposed determination but changed to "would be likely to" in connection with the recommended determination and, by reference, final determination. The word "could" is appropriate for the early stage because the preliminary determination merely represents a judgment that the matter is worth looking into. While EPA has used the word "would" for the later stages in the proceedings, to reflect the statutory language, it is important to note that absolute certainty is not required. Because 404(c) determinations are by their nature based on predictions of future impacts, what is required is a reasonable likelihood that unacceptable adverse effects will occur—not absolute certainty but more than mere guesswork.

One commenter asked what the point of 404(c) was if the applicable criteria were the same as those which the Corps applied. The short answer is that Congress wanted EPA to have an opportunity to have the final say to prevent significant adverse effects. Moreover, unlike the Corps, EPA can use 404(c) to protect the water before someone requests a discharge permit (e.g. before the Corps is involved).

One commenter suggested that the criteria include consideration of human health. Because of the specific language of the statute, EPA cannot consider human health under 404(c) except to the extent that it is implied by the factors listed. For example, municipal water supplies relates directly to human health; some adverse effects on fish and shellfish might also be injurious to human health. (The emergency provisions in section 504 may be available when effects on human health are outside the scope of section 404(c)).

Adjudicatory Hearings

A few commenters took the position that, under the Administrative Procedure Act, EPA must provide an opportunity for an adjudicatory hearing under section 404(c), at least where action is taken after issuance of a permit. While there are arguments to be made on either side, EPA has concluded that adjudicatory hearings are not required and that a voluntary provision for them would be inappropriate in light of the strong Congressional desire to minimize delays in the 404 program. The three proponents for adjudicatory hearings advanced slightly different theories in support of their position. One drew an analogy between the 404 and NPDES programs, for which adjudicatory hearings are required; a second took the position that the veto of a permit required an adjudicatory hearing; and the third asserted that 404(c) established an independent licensing authority which required such hearings.

The mere fact that some 404(c) actions may be considered to involve licensing or adjudication does not mean that formal adjudicatory hearings, as described in sections 556 and 557 of the APA, are required. Section 554(a) of the APA provided that those procedures apply only to adjudications "required by statute to be determined *on the record* after opportunity for an agency hearing." Section 404 does not require that the Administrator's determination be confined to the record; indeed, it expressly provides that the Administrator is to "consult" with the Corps in addition to offering a hearing. Moreover, it is significant that the same

language which appears in section 404(c) ("notice and opportunity for public hearing") also appears in sections 404(a) and 404(e), and has not been interpreted to require adjudicatory hearings in those contexts. Section 404(e), at least, clearly involves rulemaking.

Delay and Time Limits

A large number of commenters raised the question of delays in permit processing which might be caused by section 404(c). Several cited section 404(q) in support of an argument that 404(c) procedures must be designed to ensure that permit processing could be concluded in 90 days. While EPA agrees that it is important to eliminate unnecessary delay, the Agency does not believe that 404(q) requires unreasonable shortcuts merely to complete processing within 90 days. That section provides that the 90 day target is one that should be met "to the maximum extent practicable." Given the fact that 404(c) proceedings will affect only a small fraction of permit proceedings, and given the tight time constraints provided by these regulations, EPA believes that the 404(c) regulations are consistent with Congress' intent. Moreover, a shorter schedule would undercut the meaningfulness of the opportunity for hearing and the consultative process mandated by section 404(c).

Several commenters also raised questions about some of the specific time limits included in or omitted from the regulations. EPA considered each of these suggestions and made changes where they appeared warranted. Starting at the beginning of the process, one commenter asked for a requirement in § 231.3 that 404(c) be initiated "immediately" after the Regional Administrator has reason to believe that the discharge might have unacceptable impacts. This suggestion was rejected because it ignores the Regional Administrator's necessary discretion in deciding when to act or whether to act at all. He may believe that such impacts will occur but see no realistic prospect of proving a case. Or there may be instances where the Regional Administrator also has reason to believe that permitting authority will deny the permit. In such an instance, a 404(c) proceeding would be unnecessary. In addition, such a requirement would be hard to enforce, since the trigger is so subjective.

Another commenter suggested increasing the time for consultation in § 231.3 from 15 to 30 days. Since an extension can be granted under § 231.8 if necessary in a particular case, this time limit has not been changed. It should be easy to show good cause for an extension for such consultations.

Several people asked that the time period for public comment be limited to not more than 30 days (in lieu of not less than 30 days) and that the public hearing be held not more than 21 days after notice (in lieu of not less than 21 days). Another commenter suggested 45 days notice of hearings. EPA has weighed the normal notice provisions in EPA's public participation regulations, 40 CFR 25.5 (February 16, 1979), against the interests of expedition in 404(c) proceedings, and concluded the proposed time limits should not be shortened. The Agency's judgment is that shorter time periods may affect the meaningfulness of the public's opportunity to participate in the hearing/comment process. On the other hand, EPA agrees that § 231.4(a) and (b) were unnecessarily open-ended as written, and has therefore provided for a comment period of not less than 30 days or more than 60 days. A comparable maximum time limit on the public hearing notice has not been established because the appropriate time will depend on the particular facts of the case and the type of public interest which has been expressed.

The commenters suggested specific time limits for the close of the record after the hearing (one week or 15 days). The second suggestion has been adopted with the understanding that extensions may be granted under § 231.8.

It was also suggested that a time limit be imposed for the forwarding of the recommended determination and record to the Administrator (§ 231.5(b) and (c)). Because the time necessary for such action may depend on the size of the record and since unreasonable delay is unlikely, EPA has simply provided that such materials shall be forwarded "promptly."

There was a suggestion that the Administrator consult with the Corps and state within 15 days (rather than 30, as provided) of receipt of the recommended determination. EPA believes that it is necessary to allow 30 days to enable the Administrator to review the record, which may be extensive, and to form tentative views on the likely impacts of the discharge before consulting with the Corps or state. Given the Administrator's many other responsibilities and EPA's intention that he be more than a rubber stamp, 15 days appears unrealistically short.

Several commenters pointed out that the proposed regulations do not contain any final deadline for the Administrator's final determination. EPA agrees that the final determination should be made not more than 60 days after receipt of the recommendations and administrative record.

Some commenters suggested changes in § 231.8 (extensions of time). One felt that the provision should be omitted entirely, and another suggested limiting the total time that could be extended under it to 30 days. The first suggestion was rejected because the Agency feels that fairness to participants and the interests of the environment necessitate at least some degree of flexibility in the very tight time periods contained herein. EPA decided it was not necessary to put a 30 day limit on the section because it provides that extensions can only be granted upon showing of good cause; thus if extensions are unnecessary, they will not be granted, and if there *is* good cause, an extension should not be arbitrarily foreclosed.

Economic Impact Statement

Several commenters suggested that these regulations might have significant economic impacts. However these comments were not very specific and seemed to be premised on an assumption that a large number of sites used by one or more industries would be vetoed. As explained in the preamble to the proposed regulations, EPA does not expect that the 404(c) authority will be used very often. EPA feels confident that most environmental problems will be prevented through the routine operation of the permit program. Moreover, the use of 404(c) may well have some economic benefits that outweigh some of the costs, through the use of pre-application "vetoes" before industry has made financial and other commitments which lock it into a particular project design and location.

One commenter asked for an economic impact statement on the grounds that section 404 already has had an impact on irrigated agriculture. However, such impacts by definition are not impacts attributable to the proposed 404(c) regulations, which have not been used yet. Therefore, EPA sees no reason to change the original determination that a regulatory analysis of these regulations is not required and would not be useful.

Evaluation Plan

One commenter objected to the evaluation plan which was developed pursuant to Executive Order 12044, on the grounds that the alloted four years was too much time. EPA selected four years to ensure that there would be an adequate data base to assess the effectiveness of the regulations. As

noted earlier, there are not expected to be many 404(c) actions, and the first few, when EPA is becoming familiar with these procedures, may not be wholly typical. Therefore the Agency still feels that four years is an appropriate timetable for evaluating these regulations.

Public Meeting

One commenter requested that one or more public meetings be held to explain and receive comments on these regulations. Because there was only one such request, and because it was received at the very end of the comment period, EPA did not think that there was sufficient interest to warrant setting up a meeting.

Burden of Proof

Some commenters objected to the proposed regulations because they felt that EPA had improperly put the burden on the Corps to demonstrate that the discharge would not have unacceptable adverse impacts. This objection is based on a misunderstanding of the regulations. The fact that the Corps is given an opportunity to demonstrate that there are no unacceptable adverse impacts before the first public notice is issued does not relieve EPA of the responsibility of establishing a basis for any subsequent determination of unacceptable adverse effects. The consultative process, which is required by statute, merely gives the Corps an opportunity to convince the Regional Administrator that there would be no point in soliciting evidence from the public.

Other objections relating to burden of proof were based on the use of the word "could" in connection with the standard for the recommended determination. While EPA does not agree that the word "could" improperly creates a presumption against the discharge, the word has been changed to "would" to allay these fears and conform more closely to the statutory language, as discussed above under "Criteria for 404(c) Actions."

Proposed Determination

Several commenters questioned the reference to the Corps' regulations in connection with the provision in § 231.3 that the Corps would not issue permits for a site after notification that a 404(c) action has been initiated. EPA's announcement of intent to start a 404(c) action will ordinarily be preceded by an objection to the permit application, and under § 325.8 such objection serves to halt issuance of the permit until the matter is resolved. As agreed to by the Corps (see Appendix A) once the permit process is halted by the objection, EPA may proceed to complete the 404(c) proceeding while the permit is held in abeyance.

The promulgation of regulations under 404(c) will not alter EPA's present obligations to make timely objections to permit applications where appropriate. It is not the Agency's intention to hold back and then suddenly to spring a veto action at the last minute. The fact that 404(c) may be regarded as a tool of last resort implies that EPA will first employ its tool of "first resort," e.g. comment and consultation with the permitting authority at all appropriate stages of the permit process.

One commenter suggested that the provision holding permit issuance in abeyance exceeded the provisions of 404(c) because it allowed a veto before EPA had completed the formalities of 404(c). EPA disagrees. All that is involved is a temporary delay by the Corps in completing its permit decision, a delay allowed by the Corps' regulations; there is no veto of the site, just as there is no veto of the site when permit issuance is delayed while an EIS is being prepared or while the objections of other Federal agencies are elevated to headquarters for resolution.

Public Notice Provisions

Some commenters suggested that notice of the final determination as well as the proposed determination and hearing be required to be published in the Federal Register. EPA agrees and has changed § 231.6 accordingly.

It was also suggested that public notices be mailed to landowners who might be affected by a 404(c) action. EPA has added "owner of record of the site" to the list of recipients in § 231.3(d).

It was also suggested that the Regional Administrator notify the landowner and applicant, if any, when he notifies the permitting authority of his intention to issue a notice of proposed determination under § 231.3(a). Since EPA agrees that it would be appropriate to include such parties in discussions of possible corrective action, their names have been added to §§ 231.3(a)(1) and to 231.6.

Another commenter suggested that the public notice of the proposed determination be required to specify what sections of the 404(b)(1) guidelines would be violated if the site were specified as a disposal site. EPA feels that it would be more useful to the public to have a summary of the facts on which the proposed determination was based, and a description of the site and nature of the proposed discharge, as presently required, so this change has not been made.

It was also suggested that the public notice contain a legal or other precise description of the site location. Section 231.3(b)(2) has been reworded to clarify the intent that the area in question be clearly identified. As rewritten, the section reads: "The location of the existing, proposed, or potential disposal site and a summary of its characteristics."

Another commenter suggested that the public notice should state that anyone has a right to request a public hearing. While EPA considered that to be implicit in § 231.3(b)(4), the wording has been changed to "A brief description of the right to, and procedures for requesting, a public hearing," to make it more explicit.

Another commenter suggested that the notice contain the name of the applicant, if any, and this has been added. This commenter also suggested that the notice contain a brief summary of the position taken by the District Engineer or the state. EPA has not adopted this suggestion for several reasons. First, the position of the permitting agency is generally irrelevant to the question to be determined by EPA under 404(c). Second, at least where there is a pending application, the very issuance of the notice means that the permitting authority is still considering some kind of permit. Third, it would be inappropriate for EPA to try to further characterize the position of the permitting authority while that agency still has an opportunity to change its mind.

Hearings and Administrative Record

EPA adopted a suggestion that the hearings be held in the vicinity of the affected site where practicable, and amended § 231.4(b) accordingly.

Another commenter suggested that EPA establish criteria in the final regulations on just what constitutes "significant interest" warranting a hearing. While EPA finds nothing wrong with the criteria suggested by the commenter, there is no need to expand the regulations to list criteria for this judgment, since the judgment is really one made by applying common sense to the particular facts of a given situation.

Several people criticized the vagueness of "reasonable time" for the close of the hearing record. As explained above under "Delay," EPA has added a specific time limit.

One commenter suggested language to clarify the scope of comments. EPA modified the suggested language and inserted the following in the regulation:

(§ 231.4(a)) During this period any interested person may submit written comments on the proposed determination. Comments should be directed to whether the proposed determination should become the final determination and corrective actions which could be taken to reduce the adverse impact of the discharge.

One commenter objected that the hearing record would be one-sided and unfair because it would reflect only data which supported EPA. This objection overlooks the critical fact that under the regulations *anyone* who has relevant data has an opportunity to place it in the record and to have it considered by EPA.

Another commenter asked why the Corps record is not always required to be part of the administrative record, that is, why only "when possible." EPA used that phrase because there may be times when there is no Corps record because there is no permit application.

Two commenters made diametrically opposed observations about the possible duplicativeness of EPA and Corps proceedings. One suggested that they were so duplicative that §§ 231.3 and 231.4 should be deleted as unnecessary. This suggestion ignores the explicit statutory requirement that there be notice and opportunity for hearing in connection with the 404(c) determination. The other disputed the duplicativeness of the hearings in arguing that joint hearings are not appropriate. While EPA supports the principle of joint hearings where feasible, it is recognized that they are not always appropriate and that they should not be held when either participating agency objects.

Recommended Determination

One commenter pointed out that the recommended determination was not required under the regulations to contain a statement of evidence supporting the recommendation. While declining to require a detailed citation to the record, EPA has added a requirement that the recommended determination include a statement of reasons.

Final Determination

A couple commenters suggested that the Regional Administrator should make the final determination to save time. While this suggestion has some merit and is one EPA may entertain at a later date, we feel that in the initial years of implementation of 404(c) it is more important to centralize the final determination to ensure consistency and to set some precedents for future guidance. At the same time, the Regional Administrator should not be eliminated either, because he is the logical person to make the proposed determination and conduct the hearing.

Some commenters objected to the lack of public input into the Administrator's decision whether to review the Regional Administrator's withdrawal of a proposed determination. EPA decided to provide for notice to those persons who commented on the proposed determination or who participated in the hearing, to give them an opportunity to submit written recommendations concerning review.

One commenter also asked for an opportunity for public comment on any corrective action which may be proposed by the permitting authority during the consultative process, where the effect of such corrective measures is to obviate the need for 404(c) action. EPA feels that, in such a situation, it would be more appropriate for the public comment to come as part of the permit process rather than the 404(c) procedure, since it will be the permitting authority who will have the responsibility for incorporating appropriate corrective measures into a permit.

Consistency with Coastal Zone Management

Some commenters were concerned that 404(c) vetos might lead to results which were inconsistent with CZM plans. Ordinarily, this should not be a problem, if CZM plans are well conceived. However, where a conflict arises because the CZM plan was not based on project-specific considerations, the concerns of 404(c) have priority over the provisions of the plan. The CZM Act provides (16 U.S.C. 1456(f)) that "nothing in this chapter shall in any way affect any requirement (1) established by the Clean Water Act or (2) established by the Federal government * * * pursuant to any such Act." In short, a well-designed CZM plan will itself prohibit or prevent many of the adverse effects which might otherwise require 404(c) action, but in those few instances where the plan is insufficiently protective, Congress has clearly authorized EPA to maintain the stricter standards of the Clean Water Act.

Significant Comments on Other Issues

One commenter expressed concern that 404(c) was not designed to handle emergencies, such as pipeline repairs, where the environmental consequence of vetoing the discharge might be worse than that of the discharge itself. EPA feels that the authority to "restrict" rather than "prohibit" can be used to handle this situation. For example, if a pipeline already crosses a site which is proposed to be barred as a disposal site in the future, the Administrator could simply restrict permissible discharges to those associated with necessary pipeline repairs (subject to whatever additional conditions the Corps or state might impose during the permit process).

A number of commenters seemed to be objecting to the whole idea of EPA exercising a veto over discharges of dredged or fill material. Congress gave EPA such authority, and presumably intended EPA to use it, as an additional safeguard for the waters of the United States. While Congress had faith in the Corps' administrative experience, it recognized EPA as the "environmental conscience" of the Clean Water Act. While it is true that 404(c) has not been used yet, the fact that it has been available has had a deterrent effect and at least some commenters argued that it should have been used in a number of instances.

Three commenters asked that the regulations be amended to provide a formal procedure for petitioning EPA to initiate 404(c) actions. Anyone has a right to contact EPA and suggest that it take action whether or not there is a formal procedure in the regulations. However, a formal procedure might foster a somewhat adversarial relationship, and might lead to the regional 404 staff being swamped with requests to protect valuable aquatic and wetland resources in advance of permit applications being filed. However, because of limited manpower, EPA will have to focus first on areas which are in more immediate danger of destruction—e.g. those covered by a pending application to discharge. Therefore, EPA does not think it appropriate at this time to require inclusion of a formal procedure for petitioning EPA to initiate 404(c) actions.

One commenter suggested that EPA emphasize that the availability of 404(c) does not lessen its authority to take enforcement action under section 309. EPA feels is sufficient to note here that section 404(n) provides that "Nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to section 309 of this Act."

One commenter suggested that the regulations should provide that a section 404(c) prohibition would also serve as a prohibition against activities regulated under section 402, RCRA, and UIC program. EPA has not done so, for two reasons. First, the activities under those programs have their own impacts and standards, which are not interchangeable with those of the 404 program. Second, even if such a

suggestion was valid, it would result in such a change in scope of these regulations that public comment should be sought before incorporating it.

Some commenters suggested that the regulations should require EPA to consult with and to pay due respect to the views of the Fish and Wildlife Service. EPA feels that the existing regulations already give the Service an opportunity to comment and be heard. Also, § 231.3(d)(2) expressly provides that copies of public notices are to be mailed to the Service. EPA has worked closely with Fish and Wildlife Service in the past and expects this cooperation to continue in the future.

One commenter suggested that the regulations should state that the Corps of Engineers cannot override a section 404(c) veto by the Administrator. EPA feels that this is a clear from the statute, that it is understood by all agencies concerned, and that there is no need for including it in the text of the regulations.

One commenter took the position that EPA should be required to state affirmatively that it has no objection before the Corps may issue a section 404 permit. Such a requirement goes beyond the needs of section 404(c), since some of EPA's ojections to permits are based on grounds that are outside the scope of section 404(c). This suggestion thus seems to be a matter which would be more appropriately addressed in comments on the Corps' upcoming revisions to their regulations. In addition, EPA notes that such a requirement would result in a lot of unnecesary paperwork and would have a potential for delay since, in the case of the vast majority of permits which are issued, EPA has no objections or its objections are resolved before the Corps announces its intention to issue the permit.

Scope of the Regulations

The regulations describe how the Administrator's authority under 404(c) is to be exercised. The following is a summary of the process.

Under § 231.3 of the regulations, section 404(c) proceedings begin when the Regional Administrator issues a proposed determination that a site should be prohibited, withdrawn, or restricted for use as a disposal site because of unacceptable adverse environmental effects. This proposed determination does not represent a judgment that discharge of dredged or fill material will result in unacceptable adverse effects; it merely means that the Regional Administrator believes that the issue should be explored. The Regional Administrator then consults with the Corps, or, in the case of a site covered by a state program, with the state and, if no corrective actions are agreed upon, he issues a public notice, inviting public comments on the proposed determination. The Corps has agreed that if there is a permit application pending, such notice will serve to stay its issuance of the permit.

If there is enough interest, the Regional Administrator or his designee holds a public hearing under § 231.4 to supplement the public comments. (If the Corps or a State plans a hearing on a permit application, its hearing and the EPA hearing may be consolidated if the agencies agree). After the comment period and the hearing, if one is held, the Regional Administrator or his designee reviews the information available to him and decides whether to withdraw his proposed determination to prohibit or withdraw a site (§ 231.5). If he withdraws the proposed determination, he gives public notice of that step, and the matter drops (unless the Administrator decides to review). Otherwise the Regional Administrator or his designee sends a "recommended determination," and the record on which it was based, to the Administrator for a "final determination." The Administrator then reviews that material, gives the Corps and the state a final opportunity to take corrective measures, and makes a final determination whether a discharge of dredged or fill material will result in unacceptable adverse effects warranting the prohibition or restriction of the disposal site. This determination and reasons therefor are then made public. (§ 231.6)

The regulations also include a provision for emergency suspension of a permit pending 404(c) procedures. Where there is imminent danger of irreparable harm to the environment and the public interest requires, the Administrator may ask the Corps or state to suspend an existing permit under the Corps' regulations (33 CFR 325.7) and/or may go to Court under section 504 of the CWA. It is expected that the suspensions will be infrequent, since it is EPA's policy to try to resolve environmental problems before permits are issued.

Evaluation Plan

Executive Order 12044 requires that each new proposed regulation be accompanied by a plan to evaluate its effectiveness and the continued need for the regulation. The 404 section of the Office of Water Planning and Standards will be responsible for completing an evaluation of these regulations within 4 years of their effective date. The evaluation will assess the sucess or failure of the regulations in providing expeditious, fair, and informed decision-making under 404(c), and will be based on an analysis of the track record of 404(c) proceedings under these regulations.

Regulatory Analysis

Because the number of section 404(c) actions is expected to be small and because actions are unlikely to be concentrated in a particular industry or locality, these regulations should not have major economic consequences within the meaning of Executive Order 12044.

Dated September 27, 1979

Douglas M. Costle,

Administrator.

Accordingly, 40 CFR Chapter I is amended by adding a new "Part 231—Section 404(c) Procedures" to read as follows:

PART 231—SECTION 404(c) PROCEDURES

231.1 Purpose and scope.
231.2 Definitions.
231.3 Procedures for proposed determinations.
231.4 Public comments and hearings.
231.5 Recommended determination.
231.6 Administrator's final determinations.
231.7 Emergency procedure.
231.8 Extension of time.

Authority: 33 U.S.C. 1344(c).

§ 231.1 Purpose and scope.

(a) The Regulations of this part include the procedures to be followed by the Environmental Protection agency in prohibiting or withdrawing the specification, or denying, restricting, or withdrawing the use for specification, of any defined area as a disposal site for dredged or fill material pursuant to section 404(c) of the Clean Water Act ("CWA"), 33 U.S.C. 1344(c). The U.S. Army Corps of Engineers or a state with a 404 program which has been approved under section 404(h) may grant permits specifying disposal sites for dredged or fill material by determining that the section 404(b)(1) Guidelines (40 CFR Part 230) allow specification of a particular site to receive dredged or fill material. The Corps may also grant permits by determining that the discharge of dredged or fill material is necessary under the economic impact provision of section 404(b)(2). Under section 404(c), the Administrator may exercise a veto over the specification by the U.S. Army Corps of Engineers or by a state of a site for the discharge of dredged or fill material. The Administrator may also prohibit the