FINAL ENVIRONMENTAL IMPACT STATEMENT
JACKSON HOLE, WYOMING
FLOOD PROTECTION PROJECT

U.S. Army Corps of Engineers in Jackson Hole,
Teton County, Wyoming

Lead Agency: U.S. Army Corps of Engineers
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Abstract: The U.S. Army Corps of Engineers is evaluating a proposal to maintain the levee system on the Snake and Gros Ventre Rivers in Jackson Hole, Wyoming. The purpose of the project is to protect lives and property along the rivers and reduce flood-fighting and levee rehabilitation costs on a long-term basis. Two alternative plans for levee maintenance were investigated in detail, including the no-action alternative. Under Alternative A, existing maintenance conditions would generally prevail, as the Corps would not assume responsibility for regular levee maintenance. However, the Corps would provide levee repair assistance as an emergency action, on request. It is assumed that other parties would maintain the levee system as it currently exists. Alternative B encompasses Corps responsibility for maintaining all the Federal levees and the nonfederal levees from near Moose downstream to the South Park Bridge, plus three levees on the lower Gros Ventre River. Alternative B has been selected as the preferred alternative.

Comments Must be Submitted By: 28 May 1990

Cooperating Agencies: None

## SUMMARY

The U.S. Army Corps of Engineers (Corps), Walla Walla District, is evaluating a proposal to maintain the levee system on the banks of the Snake River and the lower reach of the Gros Ventre River in Jackson Hole, Wyoming. The proposed action is necessary to preserve Federal and nonfederal levees that have been constructed over the years to protect adjacent property from periodic floods. It would be undertaken as a Federal project to provide long-term maintenance of the levee system. Teton County and the State of Wyoming have provided some annual maintenance of the levee system from Grand Teton National Park to the South Park Bridge, with the Corps assisting in emergency flood-fighting and levee rehabilitation activities. In the past, most of those maintenance activities have been performed on an emergency basis to repair levees during and following spring floods. This has resulted in an increased potential for levee failure, a need for frequent repairs, and high costs associated with emergency actions. By applying the Corps' resources toward levee maintenance to implement a comprehensive levee operation and maintenance (O&M) program, activities could be implemented on a schedule which would optimize available resources and result in long-term economic benefits by decreasing the expenditures on expensive emergency activities.

The proposed levee maintenance project is to be implemented under the 1986 Water Resources Development Act (PL 99-662), which authorizes the Corps to take over responsibility for annual maintenance of levees in the Jackson Hole area to maintain the proper functioning of the flood control works. The proposed action is intended to maintain levee conditions that existed in 1986, and specifically does not provide for an increase in the level of flood protection. Any major change in levee design and flood protection standards would require separate project justification and environmental review.

The Corps has considered two alternatives, including no action, for levee maintenance on the Snake and Gros Ventre Rivers. Alternative A would involve the Corps taking no action to maintain the levees in Jackson Hole, although it would continue to provide emergency assistance in flood fights. Although the Corps would not take action, it is assumed that another organization, specifically Teton County, would retain the responsibility of maintaining the levee system. Considerable development has taken place on private property along the Snake River, particularly around Wilson and northward along State Route 390 toward Moose. Private landowners and developers would suffer significant property and economic losses if the Federal levee on the right bank of the Snake River were allowed to fail. Several nonfederal levees located downstream near the South Park Bridge are important in protecting the bridge and highway crossing the Snake River at that point, and provide other flood control benefits. Consequently, it is reasonable to assume that local and/or State authorities would continue to maintain the levees in the absence of action by the Corps. The costs for the maintenance program in this case would be borne by the organization implementing the activities.

Alternative B would involve the Corps taking over responsibility of annual maintenance of all levees in the system. This would include 18 Federal and nonfederal levees on the Snake River from Grand Teton National Park to the South Park Bridge, plus three nonfederal levees located on the lower reach of the Gros Ventre River, that were existing prior to high water in 1986. Maintenance activities would include removing snow from the tops of the levees in early April to allow and facilitate access for patrolling and flood fights, conducting emergency repairs when high flows have damaged the levees and threatened levee failure, rock quarrying and stockpiling operations to obtain levee materials, removing perennial vegetation (trees) from levees, removal and burning of snags that might damage the levees, and maintenance of culverts and roads providing access to the levees. The cost of conducting these activities would be assumed by the Corps. Under this alternative, it is assumed that Teton County would retain responsibility for patrolling the levees from the beginning of the high flow period (10,000 to 12,000 cubic feet per second) until the floodpeak subsides to that level. Because the existing quarry has limited quantity and quality of riprap, the Corps has proposed further investigation of four potential quarry sites on national forest land in the vicinity of Curtis Canyon, Flat Creek, Teton Pass, and Phillips Ridge, as well as two existing sites near the river. However, the existing Walton Quarry near the left bank above Wilson will continue to be used as a rock source in the interim prior to a future decision on quarry development.

Because both alternatives only differ in regard to who has responsibility for maintaining the levees, the alternatives would result in similar short-term and long-term effects on the environment. Levee maintenance activities would have minor physical influences on channel morphology and water quality and disturbance or nuisance effects related to wildlife, recreation, and aesthetics. The magnitude, timing and duration of these activities would be similar for both alternatives, because the alternatives encompass the same extent of levees. Mitigation recommendations made by the U.S. Fish and Wildlife Service regarding these effects from normal maintenance activities, which are described in the Fish and Wildlife Coordination Act Report (CAR) prepared in association with the Decision Document and EIS, have been adopted by the Corps.

The long-term effects would primarily involve direct and indirect influences on the river channel, aquatic habitat, riparian areas, wildlife habitat, and floodplain development. The existing levees have had significant effects on the structure of the river and its associated aquatic and riparian habitats. The flood protection provided by the levees has allowed or encouraged human development within the floodplain. These influences would presumably continue in the future where levees are to be maintained, but they would not be increased or accelerated because the proposed action would only maintain the existing level of flood protection.

The proposed project has been reviewed for compliance with pertinent environmental statutes, regulations, and other requirements. At the current stage of project planning, the project has been found to be in

full compliance with most of the requirements. Partial compliance has been obtained with the National Environmental Policy Act of 1969, as amended, which will be fully satisfied when the environmental impact statement process is completed and fully documented through issuance of a Record of Decision on the flood protection project. Full compliance with the appropriate requirements of the Fish and Wildlife Coordination Act will also be accomplished with release of the Final EIS and the final Coordination Act Report that is appended to the EIS. Partial compliance status continues to apply to the Endangered Species Act and several requirements related to cultural resources. The consultation process under the Endangered Species Act is scheduled for completion with U.S. Fish and Wildlife Service (USFWS) review and acceptance of the final biological assessment for the levee maintenance project, which was provided to USFWS in advance of release of the Final EIS. Full compliance with cultural resources requirements will be attained with receipt of acknowledgement by the Wyoming State Historic Preservation Office (SHPO) that the proposed O&M action is addressed by the existing agreement between the Corps and the SHPO concerning maintenance work on existing levees. The Corps has requested such documentation from the SHPO.

The proposal for Corps maintenance of the levee system has generated some degree of concern in the local area. Based on input received at the EIS scoping meeting, the local citizenry and officials generally believe that Corps maintenance of the entire levee system, with no exclusions, is necessary. There was significant objection to the Corps' presentation of its plans for a separable elements study, in which costs and benefits of individual components of the levee system would be evaluated separately to determine cost effectiveness. State and Federal fish and wildlife resource agencies indicated concern over the long-term habitat effects of the levees.

The Draft Decision Document and EIS on the proposed action generated extensive public and agency comment. By the end of an extended comment period covering approximately 75 days, the Corps had received a total of 81 comment letters (including statements delivered at a public hearing in the project area) that contained 272 individual comments. The comments predominantly addressed concerns related to six common issues, including mitigation for long-term levee effects, comprehensive planning, EIS scope and alternatives, project configuration, future levees, and quarry development. The Corps has analyzed these comments, revised the EIS text as necessary, and provided responses to all comments in this Final EIS.

Due to the volume of written comments and the minor requirements for EIS text revisions generated by these comments, the Corps has elected to use the "abbreviated" Final EIS format. Consequently, the body of the Final EIS includes a brief introduction (Chapter 1); a presentation of the necessary EIS text changes (Chapter 2); and a complete report on consultation and coordination, including comment letters and responses to Comments (Chapter 3). Aside from the revisions noted, the Draft EIS text remains valid and accurate, and should be retained by interested reviewers. A revised biological assessment and Fish and Wildlife Coordination Act Report are appended to the Final EIS.

The Corps feels that is has provided adequate responses to all of the issues raised by the comments on the Draft EIS, and that its position is consistent with legal and regulatory guidance. Nevertheless, the Corps recognizes that some areas of public controversy are likely to remain, particularly the issue of mitigation for the long-term effects of the levees. Mitigation was clearly the most significant issue, as it was mentioned in 50 of the 81 letters and accounted for nearly 30 percent of all individual comments. The depth of feeling on the mitigation issue is clearly such that some or most of these commentors will not be satisfied with the Corps' response. Briefly, the Corps' position is that it is not obligated under NEPA or the WRDA of 1986 to mitigate for impacts of past actions that are now part of the environmental baseline for the Federal assumption of operation and maintenance of the levees at Jackson Hole. Further, the agency does not currently have the institutional approval or resources to be able to implement such a mitigation program. The O&M Decision Document and EIS have adopted the appropriate scope, and are not the proper mechanism for considering any activity other than the Federal assumption of O&M responsibility for the levees. However, the Corps is willing to include the mitigation issue as part of a new study separate from the levee O&M action and the Snake River in Wyoming General Investigation Study that is currently in preparation. According to new guidance from the Corps' headquarters offices in Washington, D.C., the Corps will request study funding specifically to determine the scope and extent of mitigation required to compensate for levee system effects on fish and wildlife resources. The Corps will make the final determination as to specific items to be included in this study, but will carefully review the USFWS study recommendations presented in the CAR and will consider input from state and local sources. This type of study is the appropriate mechanism for formulation of specific action proposals, which then must go through the normal project approval process. The Corps notes that the agencies and organizations arguing for mitigation for long-term effects of the levees expressed a willingness to work with the Corps to resolve this issue; for this to happen, these parties must recognize the legal and institutional bounds and processes within which the Corps must operate.

Several potential actions associated with long-term needs for levee maintenance could not be addressed in this EIS, due to a lack of planning information at this time. It is very likely that a new quarry will be needed to supply rock for the levees. The Corps has not been able to complete all of the investigations needed to plan for quarry operations and will continue this work into the future. The Corps also sees a possible future need for more extensive one-time debris clearance than would occur as part of routine maintenance, if future flood events should leave significant amounts of trees and other large debris in the channel. A third potential need is for new or improved access to the northern end of the right-bank levees. All of these actions would require considerable interagency coordination to implement, which could not be conducted within the framework of this EIS. Complete studies of these actions will be undertaken in the future, if they are pursued, and will be documented in EIS supplements.

TABLE OF CONTENTS

## LIST OF TABLES



## LIST OF FIGURES

# 1.0 INTRODUCTION

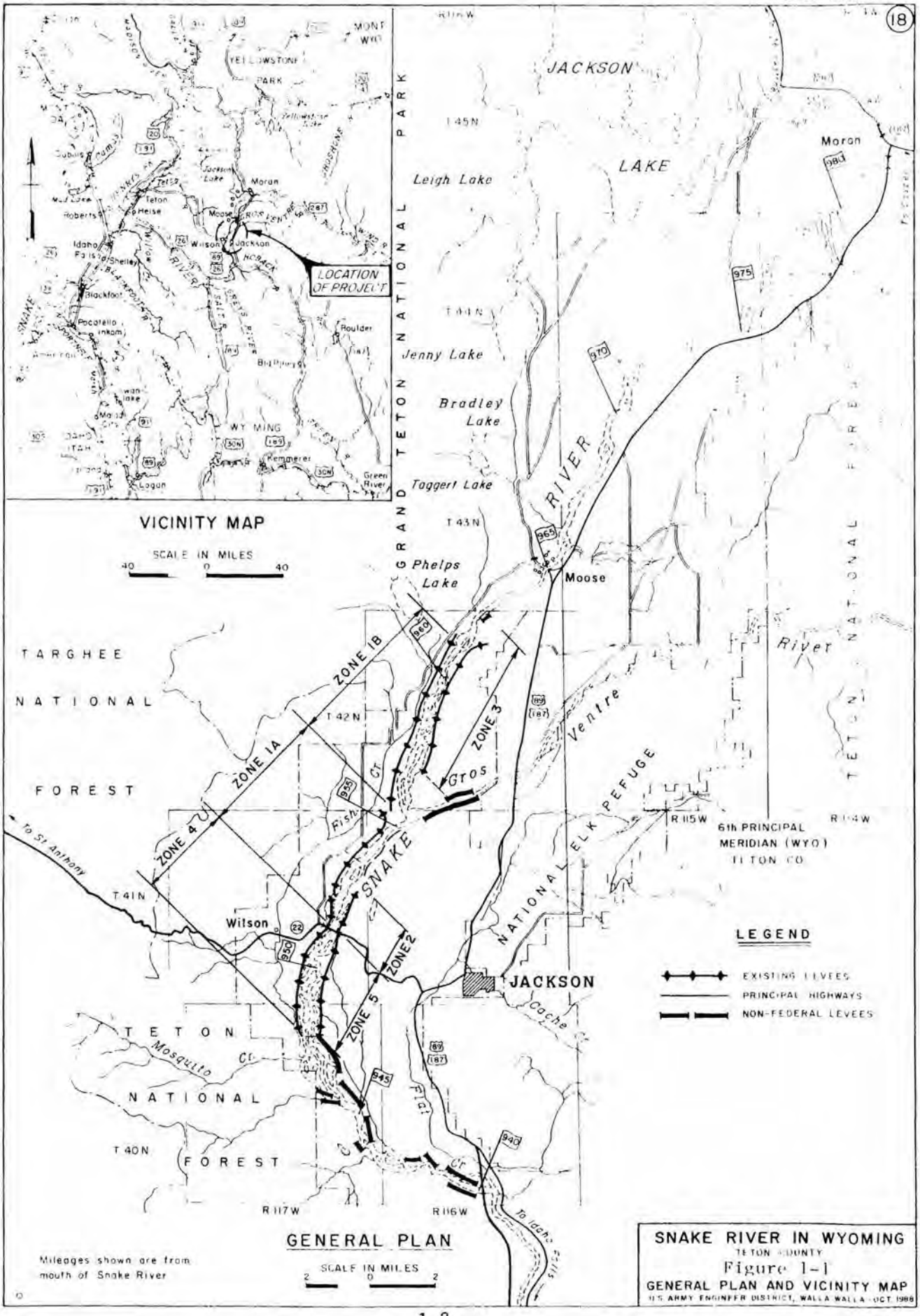
The U.S. Army Corps of Engineers (Corps), Walla Walla District is evaluating a levee maintenance project for the Snake and Gros Ventre Rivers in Jackson Hole, Wyoming (see Figure 1-1 for general location). The proposed action under consideration is for the Corps to assume long-term maintenance responsibility, as a Federal project, for certain levees in Jackson Hole. This final environmental impact statement (EIS) addresses the environmental effects of a levee maintenance project. This EIS has been prepared to meet the requirements of the National Environmental Policy Act (NEPA) of 1969, and subsequent implementing regulations issued by the Council on Environmental Quality (40 CFR 1500) and the Corps of Engineers (33 CFR 230).

The Corps issued a Draft EIS on the proposed action on December 8, 1989, along with a Draft O&M (Operation and Maintenance) Decision Document on the Jackson Hole, Wyoming Flood Protection Project. (Please note that the latter project title was used on the Decision Document, while the Draft EIS officially identified the project as the Snake-Gros Ventre Rivers Levee Maintenance Project. The title has been changed for this Final EIS to be consistent with the Decision Document terminology.) The Draft EIS was open for public review and comment through February 20, 1990.

The Draft Decision Document and EIS on the proposed action generated extensive public and agency comment. By the end of an extended comment period covering approximately 75 days, the Corps had received a total of 81 comment letters (including statements delivered at a public hearing in the project area) that contained 272 individual comments. The comments predominantly addressed concerns related to six common issues, including mitigation for long-term levee effects, comprehensive planning, EIS scope and alternatives, project configuration, future levees, and quarry development. The Corps has analyzed these comments, revised the EIS text as necessary, and provided responses to all comments in this Final EIS.

The comments on these common issues, as well as the remaining individual comments, largely addressed policy and procedural matters. Relatively few comments took exception to data or conclusions presented in the Draft EIS, or requested additional information. Many of the comments that did request further information related to potential actions that have been deferred for future decisions, such as possible development of a new quarry. Consequently, there was no need to make numerous or extensive changes to the Draft EIS text, particularly in the key chapters addressing project alternatives, the affected environment, and environmental consequences.

Due to the volume of written comments and the minor requirements for EIS text revisions, the Corps has elected to use the "abbreviated" Final EIS format provided for in NEPA implementing regulations (33 CFR 230.13(a), 40 CFR 1503.4(c)). The body of the Final EIS contains specific point-by-point revisions to the Draft EIS in Chapter 2, and a complete report on consultation and coordination in Chapter 3. The latter chapter is an expanded version of the corresponding Draft EIS


VICINITY MAP
SCALE IN MILES
40 0 40
LOCATION OF PROJECT
GENERAL PLAN
SCALE IN MILES
2 0 2
Mileages shown are from mouth of Snake River
JACKSON LAKE
Leigh Lake
Jenny Lake
Bradley Lake
Taggert Lake
Phelps Lake
Moose
Moran
JACKSON
Wilson
TETON
Mosquito Cr.
Cache
Fish Cr.
SNAKE RIVER
GROS VENTRE RIVER
ZONE 1A
ZONE 1B
ZONE 2
ZONE 3
ZONE 4
ZONE 5
GRAND TETON NATIONAL PARK
TARGHEE NATIONAL FOREST
TETON NATIONAL FOREST
NATIONAL ELK REFUGE
T 45N
T 44N
T 43N
T 42N
T 41N
T 40N
R 117W
R 116W
R 115W
R 114W
6th PRINCIPAL MERIDIAN (WYO)
TETON CO
To St Anthony
To Idaho Falls
LEGEND
EXISTING LEVEES
PRINCIPAL HIGHWAYS
NON-FEDERAL LEVEES
SNAKE RIVER IN WYOMING
TETON COUNTY
Figure 1-1
GENERAL PLAN AND VICINITY MAP
U.S. ARMY ENGINEER DISTRICT, WALLA WALLA - OCT 1988

chapter (Chapter 6 in the original document) that includes all comment letters and responses to comments. The biological assessment and Fish and Wildlife Coordination Act Report (CAR) that were circulated as part of the Draft EIS have also been revised and appended to the Final EIS. Aside from the revisions noted, the Draft EIS text remains valid and accurate, and should be retained by interested viewers.

## 2.0 REVISIONS TO THE DRAFT EIS

As described in Chapter 1, comments on the Draft EIS necessitated relatively minor changes to the text. Rather than reproduce the entire text with revisions, the Corps has elected to include only the specific revisions in this "abbreviated" Final EIS. An errata sheet format is used for this material, in which the subject matter of the change is briefly summarized and referenced to a specific comment on the Draft EIS; this is followed by a page- and paragraph-specific text insert, deletion, or modification. These revisions are organized in order of their sequence within the Draft EIS text.

Number of levees (Comment 58-3).

Page 2-2, paragraph 3:

Change twelve to fourteen and 5.5 miles to 6.5 miles in sentence 4.

Identification of levees (Comment 58-3).

Page 2-3, Figure 2-1:

Change Soule to Sewell, delete destroyed notation.

Page 2-3, Figure 2-1:

Show South Park and State Highway Department as separate levees.

Levee maintenance standards (Comments 11-14, 20-16, 26-7).

Page 2-9, revise last two sentences of paragraph 2 to read as follows:

Levees will be maintained to the condition that existed prior to high water in 1986. In some cases that will involve rehabilitating levee sections to conform to the respective 1986 embankment, riprap and toe characteristics for the various federal and nonfederal levees; these are described in more detail in the decision document. Rehabilitation may also involve modifications, such as constructing embankments with flatter slopes, to improve the efficiency or effectiveness of levee sections. These rehabilitation actions would only maintain the existing level of flood protection, and would not result in raising any levees to afford more protection. No specific plan for levee rehabilitation has been developed by the Corps at this time. Any major change in levee design and flood protection standards would require separate project justification and environmental review.

Timing of maintenance activities (Comments 9-19, 11-5, 11-13).

Page 2-10, insert as paragraph 3 (following description of nine maintenance activities):

> Maintenance activities will be scheduled with consideration of wildlife protection needs to the extent possible, with the objective of avoiding big game wintering periods and critical nesting periods. Activities for which there will normally be scheduling flexibility include rock quarrying and stockpiling, levee rehabilitation, debris clearance, culvert cleaning, vegetation removal, and possibly access road maintenance. The timing of spring snow removal, levee patrols, and emergency actions is dictated by weather and river flow patterns, and is generally inflexible.

Regulation of mining and reclamation (Comment 14-1, 14-2).

Page 2-11, insert at end of paragraph 3:

> These studies will be fully coordinated with the Federal and State resource agencies in order to address environmental concerns. The State of Wyoming regulates mining and reclamation of material sites, and such activities are subject to the Wyoming Environmental Quality Act. Therefore, the quarry review process will also be carefully coordinated with the Wyoming Department of Environmental Quality.

Area subject to avulsion.

Page 2-13, footnote 1:

> Change 2,000 acres to 2,700 acres.

Levees to be maintained (Comment 24-3, 58-3).

Page 2-16, revise Table 2-1 as indicated on the following page:

Mitigation.

Page 2-17, change last sentence in paragraph 5 to read:

> Long-term project effects related to the presence of the levees, and overall mitigation of these effects, will be addressed in a separate mitigation study for which the Corps will request funding.

TABLE 2-1 (R)

LEVEE MAINTENANCE RESPONSIBILITY[1/]
BY ALTERNATIVE

| Levee Segment Name | Alternative A No Action | Alternative B All Levees |
|---|---|---|
| NON-FEDERAL | | |
| State Highway Department | 0 | F |
| South Park | 0 | F |
| Evans | 0 | F |
| State Game and Fish Intermittent | 0 | F |
| Upstream State Game and Fish | 0 | F |
| Spring Creek | 0 | F |
| Sewell | | F |
| Lower Taylor Creek | 0 | F |
| Lower Imeson | 0 | F |
| Middle Imeson | 0 | F |
| Middle Taylor Creek | 0 | F |
| Upper Taylor Creek | 0 | F |
| Upper Imeson | 0 | F |
| Federal Levee Extension | 0 | F |
| 95 Ranch | 0 | F |
| Hansen | 0 | F |
| Lucas | 0 | F |
| Nelson | 0 | F |
| FEDERAL | | |
| Federal, Upper Left Bank | 0 | F |
| Federal, Lower Left Bank | 0 | F |
| Federal, Right Bank | 0 | F |

1/ F indicates levees to be maintained by the Corps as a Federal project.
O indicates levees assumed to be maintained by other parties, principally Teton County.

Potential annual flood damages.

Page 2-19, Table 2-2, Alternative A and B socioeconomic entries:

Change $0.14 million to $0.13 million and avulsion threat in non-federal levee reaches after year 10.

Habitat values for aquatic invertebrates (Comment 27-15).

Page 3-15, add to end of paragraph 1:

Kiefling (1990) recently conducted a cursory sampling of organic invertebrate numbers in snag and riffle habitat areas of the Snake River above and below Wilson. Field samples in April yielded 1.9 times more invertebrate organisms per snag than in comparable riffle areas, while August measurements indicated a 3.6:1 snag:riffle ratio in number of organisms.

Elk wintering area (Comment 20-8).

Page 3-18, paragraph 2, change last sentence to read:

About 75 to 100 elk also winter on range near the project area south of the Wyoming Highway 22 bridge near Wilson.

Bighorn sheep winter range (Comment 20-9).

Page 3-19, paragraph 5, change last sentence and add insert as follows:

The Flat Creek-Slide Lake area is crucial winter range for more than 100 bighorn sheep. The actual number wintering on the potential quarry site ranges between 40 and 50. This location is the only steep face canyon wall in the immediate area with southerly exposures that sheep can utilize.

Trumpeter swans (Comment 11-23)

Page 3-21, paragraph 5:

Change last sentence to indicate that the number of swans had been reported as increasing.

Page 3-21, add to end of paragraph 5:

However, a significant population decline occurred on the Henrys Fork of the Snake River during the winter of 1989-1990, and was attributed to a reduction of foraging habitat from ice cover that formed during extremely low river flows. The USFWS is currently

evaluating a resulting petition from the Idaho Wildlife Society to list the trumpeter swan under the Endangered Species Act (Stewart 1990, personal communication; see Letter 11, Appendix C).

Page 3-22, paragraph 2, change first sentence to read:

In general, good wintering habitat for trumpeter swans within the project area is limited by the absence of aquatic vegetation and calm water.

Peregrine falcon foraging (Comment 11-24).

Page 3-24, paragraph 5, revise second sentence to read:

However, the project area provides forage habitat for peregrine falcons, and three to four adults and subadults have been observed in the area south of Wilson Bridge during the last six years (USFWS 1988).

Snag removal effects (Comment 27-15).

Page 4-9, paragraph 3, insert after sentence 2:

A recent study of snag habitat in the Snake River near Wilson indicated that 30 percent of the in-channel snags were providing good fish cover (Kiefling 1990). These field studies also reported that snags in the Snake River are likely to be associated with higher numbers of aquatic organisms than riffle areas, representing an important food source for fish. In some streams, the complete removal of snags has apparently resulted in reduced production of major food species by at least 50 percent.

Palustrine forest tree species (Comment 11-29).

Page 4-10, paragraph 6, revise first sentence to read:

Palustrine forests along the Snake River include a mixture of cottonwoods, willow, lodgepole pine, Engelmann spruce, and blue spruce.

Effects of wetland loss on birds (Comment 11-32).

Page 4-14, insert at end of paragraph 1:

Constriction of channel movement by the presence of the levees has also contributed to the loss of oxbow and side-channel wetlands through siltation and eutrophication. This has reduced habitat available for waterfowl and other wetland-dependent wildlife, a process that will continue unless drainage patterns are changed.

Elk wintering area (Comment 11-33).

Page 4-14, paragraph 5, change Fish Creek to Flat Creek in first sentence.

Floodplain value and damages.

Page 4-21, paragraph 1, change sentence 3 to read:

> The total value of the residential, agricultural, transportation and utility improvements within the floodplain behind the Federal levee system is estimated at over $183 million (in 1989 dollars).

Page 4-21, paragraph 1:

> Change nearly $3.5 million to over 3.5 million. Change $562,000 to $622,000. Change $73,000 to $191,000.

Raising or extending levees.

Page 4-21, paragraph 3, change sentence 10 to read:

> Unless the levee system were raised and/or extended, which is not included as part of the proposed action, development in South Park would only be likely to occur in areas above the floodplain.

Floodplain value and damages.

Page 4-22, revise Table 4-1 as indicated on the following page:

Mitigation.

Page 4-28, revise last sentence of paragraph 2 to read:

> Long-term project effects related to the presence of the levees, and overall mitigation of these effects, will be addressed in a separate mitigation study for which the Corps will request funding. In developing the scope for this study, the Corps will carefully review the study recommendations presented by the USFWS in the CAR (items 1-9 on pages 80 and 81 of the final CAR), as well as studies needed to address long-term mitigation recommendations (items 1-15 on pages 85-88). The Corps will also consider input from the Wyoming Game and Fish Department, Teton County, and other appropriate agencies and organizations. However, responsibility for all final decisions on the scope of the study will rest solely with the Corps.

TABLE 4-1 (R)

PRELIMINARY FLOODPLAIN

VALUE AND DAMAGE ESTIMATES[1/]

($1,000)

| Levee System Component | Floodplain Property Value[2/] | Average Annual Flood Damage[3/] |
|---|---|---|
| Snake River Federal Levees | $ 183,436 | $ 3,548 |
| Snake River Nonfederal Levees | N/A | 622 |
| Gros Ventre River Levees | N/A | 191 |
| Total | $ N/A | $ 4,361[4/] |

Sources: Corps 1987a; Main Report, Tables 1 and 2

1/ In 1989 dollars.

2/ Total estimated value of residential and miscellaneous structures, transportation and utility facilities, and agricultural improvements. Does not include value of land, value of fish or other environmental resources.

3/ Estimated annualized value of flood damages that would occur if levees were not present. Includes estimates of damage to fish habitat and damages due to avulsion.

4/ Does not include avulsion damage in the Federal levee reach or avulsion damage that might occur in the Snake or Gros Ventre Rivers non-federal levee reaches after year 10.

Compliance with statutes and regulations.

Page 7-2, Table 7-1:

Change entry for Fish and Wildlife Coordination Act from PC to FC.
Change entry for Endangered Species Act from FC to PC.

References (Comment 27-15).

Page 9-4, insert after Jackson and Von Haveren:

Kiefling, John W. 1990. Snake River Snag Evaluation. Administrative report, project 01-00-001. Wyoming Game and Fish Department, Fish Division, Jackson, Wyoming. Unpublished.

# 3.0 CONSULTATION AND COORDINATION

The Corps of Engineers has consulted with interests in Jackson Hole, primarily the responsible resource agencies and Teton County, on numerous occasions concerning maintenance of levees along the Snake and Gros Ventre Rivers. This consultation occurred both prior to and in conjunction with the preparation of this EIS. Consultation efforts undertaken to date are summarized below. Actions that took place prior to the initiation of the NEPA process are described in Section 3.1. Scoping and other coordination activities that occurred during the preparation of the draft EIS are summarized in Section 3.2. The distribution list for the EIS is presented in Section 3.3. Public and agency reviews of the Draft EIS, including specific comments and responses, are addressed in Sections 3.4 through 3.6.

## 3.1 COORDINATION PRIOR TO EIS

The Corps has coordinated with various parties concerning maintenance of the Jackson Hole levees since the passage of the authorizing legislation, the Water Resources Development Act of 1986 (PL 99-662) in November of 1986. Consultation activities have occurred intermittently since that time, and have primarily involved Teton County officials and the Wyoming Congressional delegation. Meetings and correspondence on the levee maintenance project have largely addressed the decision of which specific levee segments to include in a Federal maintenance project, and the Corps' schedule for making this decision.

## 3.2 SCOPING AND COORDINATION

The NEPA process was officially initiated with a scoping meeting sponsored by the Corps and held at the Teton County Courthouse on January 31, 1989. Federal, State, and local agencies and key local interest groups were notified of the meeting by telephone or letter. The scoping meeting addressed both a debris clearance project, addressed in a separate and prior environmental assessment, and the levee maintenance project. Corps staff made presentations concerning the nature of the problem, the alternatives under consideration, and the NEPA process and expected documentation, as well as answering questions from other meeting participants.

The scoping meeting was attended by a total of 27 persons (excluding Corps and contractor staff) representing Federal and State agencies, Congress, local government, interest group organizations, the media, and the general public. The following organizations were identified by participants signing the meeting roster:

Office of U.S. Senator Alan Simpson
Office of U.S. Senator Malcolm Wallop
USDA, Forest Service
USDI, Bureau of Land Management
USDI, Bureau of Reclamation
USDI, Fish and Wildlife Service
USDI, National Park Service

Wyoming Game and Fish Department
Teton County Commissioners
Teton County Planning Office
Teton County Road Department
Jackson Hole Alliance
Trout Unlimited
Jackson Hole Guide (newspaper)
Jackson Hole News (newspaper)

In response to requests made at the meeting, the Corps subsequently distributed a scoping package. This package included a scoping statement for each project and a summary of the scoping meeting. The scoping package was distributed to meeting attendees, those who were invited to the meeting but did not attend, and a few additional parties identified as a result of scoping discussions.

Additional consultation and coordination took place throughout the preparation of the EIS. The Corps consulted with the Fish and Wildlife Service concerning potentially affected threatened and endangered species, and preparation by FWS of a separate Fish and Wildlife Coordination Act report on the levee maintenance project. All of the agencies represented at the scoping meeting were contacted for follow-up scoping input or resource data by the Corps and/or its environmental contractor. The Corps also held an in-progress review meeting in Jackson on June 6, 1988. The purpose of this meeting was to discuss future program requirements among Corps staff and Teton County officials. While resource agencies were not specifically included by the Corps, Teton County was free to invite other parties to attend.

## 3.3 DISTRIBUTION OF EIS

The draft environmental impact statement was sent for review and comment to all agencies, organizations, and individuals involved in the proposed project and to other interested groups and individuals. The following is a list of all those who received the draft document. The final EIS will be sent to appropriate Federal, State, and local agencies and to those who provided comments on the draft. Copies will be provided to others upon request.

### U.S. Congress

Senator Alan K. Simpson, Washington, D.C.
Senator Malcolm Wallop, Washington, D.C.
Representative Craig Thomas, Washington, D.C.

### Federal Agencies

Advisory Council on Historic Preservation, Golden, Colorado
Agricultural Stabilization and Conservation Service, Casper, Wyoming
Bureau of Land Management, Cheyenne, Wyoming
Bureau of Land Management, Pinedale, Wyoming
Bureau of Reclamation, Boise, Idaho

Bureau of Reclamation, Burley, Idaho
Bureau of Reclamation, Jackson, Wyoming
Coast Guard, Seattle, Washington
Department of Commerce, Washington, D.C.
Department of Energy, Washington, D.C.
Department of Health and Human Services, Atlanta, Georgia
Department of Housing and Urban Development, Denver, Colorado
Department of the Interior, Denver, Colorado
Department of the Interior, Washington, D.C.
Environmental Protection Agency, Denver, Colorado
Environmental Protection Agency, Washington, D.C.
Federal Emergency Management Agency, Denver, Colorado
Federal Emergency Management Agency, Washington, D.C.
Federal Highway Administration, Denver, Colorado
Fish and Wildlife Service, Billings, Montana
Fish and Wildlife Service, Cheyenne, Wyoming
Fish and Wildlife Service, Helena, Montana
Fish and Wildlife Service, Boise, Idaho
Fish and Wildlife Service, Denver, Colorado
Fish and Wildlife Service, Jackson, Wyoming
Forest Service, Jackson, Wyoming
Forest Service, St. Anthony, Idaho
Forest Service, Ogden, Utah
Geological Survey, Cheyenne, Wyoming
Geological Survey, Denver, Colorado
National Park Service, Moose, Wyoming
National Park Service, Denver, Colorado
Soil Conservation Service, Cheyenne, Wyoming

State of Wyoming Agencies

Department of Environmental Quality, Cheyenne
Disaster and Civil Defense, Cheyenne
Highway Department, Cheyenne
Highway Department, Jackson
Game and Fish Department, Cheyenne
Game and Fish Department, Jackson
Game and Fish Department, Lander
Geological Survey, Laramie
Governor's Office, Cheyenne
State Engineer's Office, Cheyenne
State Historic Preservation Officer, Cheyenne
State Planning Coordinator-Clearinghouse, Cheyenne
University of Wyoming - Water Resources Research Institute, Laramie
Water Development Commission, Cheyenne

Teton County Agencies

Teton County Commissioners, Jackson
Teton County Civil Defense Coordinator, Jackson
Teton County Engineer, Jackson

Teton County Levee Supervisor, Jackson
Teton County Planning Office
Teton County Sheriff's Office, Jackson
Teton County Search and Rescue, Jackson

Other Local Agencies

Jackson Fire Department, Jackson
Office of the Mayor, Jackson

Environmental Organizations

Greater Yellowstone Coalition, Bozeman, Montana
Jackson Hole Alliance for Responsible Planning, Jackson, Wyoming
Jackson Hole Ducks Unlimited, Jackson, Wyoming
Jackson Hole Land Trust, Jackson, Wyoming
National Parks and Conservation Association, Salt Lake City, Utah
The Nature Conservancy, Jackson, Wyoming
The Sierra Club, Jackson, Wyoming
Trout Unlimited, Jackson, Wyoming
Wyoming Outdoor Council, Inc., Cheyenne, Wyoming

Business Organizations

Barker-Ewing Scenic Tours, Inc., Jackson, Wyoming
Biota Research and Consulting, Wilson, Wyoming
Camp Creek Tackle Shop, Jackson, Wyoming
Dave Hansen White Water Float Trips, Jackson, Wyoming
Flagg Ranch, Moran, Wyoming
Float Trips, Jackson, Wyoming
Fort Jackson Float Trips, Jackson, Wyoming
Grand Teton Lodge Company, Moran, Wyoming
Heart Six Ranch, Moran, Wyoming
High Country Flies, Jackson, Wyoming
Jack Dennis Outdoor Shop, Jackson, Wyoming
Jim Hill Fishing Outfitters, Jackson, Wyoming
Lewis and Clark Expeditions, Jackson, Wyoming
Mad River Boat Trips, Inc., Jackson, Wyoming
National Park Float Trips, Jackson, Wyoming
Parklands Expeditions, Inc., Jackson, Wyoming
Sands Wild Water River Trips, Jackson, Wyoming
Signal Mountain Lodge, Moran, Wyoming
Sleeping Indian Outfitters, Bondurant, Wyoming
Snake River Park Whitewater, Jackson, Wyoming
Snake River Ranch, Wilson, Wyoming
Solitude Float Trips, Moose, Wyoming
Spotted Horse Ranch, Jackson, Wyoming
Teton Expeditions, Inc. Rigby, Idaho
Triangle X Ranch, Moose, Wyoming

Libraries

Laramie County Library, Cheyenne, Wyoming
State Library, Cheyenne, Wyoming
Teton County Library, Jackson, Wyoming
University of Wyoming Library, Laramie, Wyoming

News Media Organizations

High County News, Paonia, Colorado
Jackson Hole Guide, Jackson, Wyoming
Jackson Hole News, Jackson, Wyoming
KIDK-TV, Idaho Falls, Idaho
KIFI-TV, Idaho Falls, Idaho
KISU-TV, Pocatello, Idaho
KMER, Jackson, Wyoming
KMTN, Jackson, Wyoming
KOVE/KDLY, Lander, Wyoming
KPVI-TV, Pocatello, Idaho
KSGT, Jackson, Wyoming
Teton Valley News, Driggs, Wyoming
The Post Register, Idaho Falls, Idaho
Wyoming State Journal, Lander, Wyoming

Individuals

John Branca, Jackson, Wyoming
A.G. Edwards, Jackson, Wyoming
Kelly Lockhart, Jackson, Wyoming

## 3.4 REVIEW OF DRAFT EIS

The Draft EIS was officially filed with the U.S. Environmental Protection Agency on December 8, 1989, and approximately 290 copies of the document were then distributed for public and agency review. The distribution package included both the draft decision document on the proposed levee operation and maintenance project and the full draft EIS. Biological assessments addressing threatened and endangered species, prepared by the Corps, and a Fish and Wildlife Coordination Act report prepared by the U.S. Fish and Wildlife Service were included as appendices to the Draft EIS. The Corps initially set February 6, 1990 as the close of the comment period, allowing 60 days for public and agency review of the Draft EIS; general NEPA implementing regulations specify a minimum review period of 45 days (40 CFR 1506.10). In response to public and agency requests for time extensions, the Corps later agreed to accept and respond to comments on the Draft EIS that were received by February 20, 1990.

To facilitate public involvement and agency consultation concerning the Draft EIS, the Corps held informal workshops and a formal public hearing in Jackson, Wyoming on January 30, 1990. Corps staff and a representative from the Corps' environmental contractor were available to answer questions and discuss the project documents at separate morning and afternoon workshop sessions on that date. A total of approximately 25 to 30 agency staff and members of the public attended the two workshops. The public hearing held on the evening of January 30 was attended by more than 30 people, 11 of whom made statements for the public record concerning the project. The public hearing was recorded by a professional reporting service and a written transcript of the hearing was prepared. Many of the people attending the hearing had also been to one or both of the workshop sessions; overall, 46 separate individuals completed registration cards for these public involvement activities.

By the time the Corps closed comment on the Draft EIS, the agency received a total of 78 separate comment letters. Eight of the statements delivered at the public hearing were duplicated or incorporated in comment letters. The remaining three statements represented the only formal comments by those individuals, and were treated the same as comment letters for the purpose of preparing responses. This resulted in a final total of 81 comment letters.

Corps and contractor staff reviewed the 81 comment letters and identified substantive comments on each letter. Letters were assigned sequential identification numbers (1 through 81), and all comments within each letter were also numbered sequentially. This process resulted in the identification of a total of 272 individual comments among all 81 letters. Letter numbers, sources and dates are all listed in Table 3-1, along with the number of comments per letter and a summary tabulation. Copies of the full text of the letters, indicating the identification and coding of comments, are presented in Section 3.5. Responses to comments are discussed and provided in Section 3.6.

## 3.5 DRAFT EIS COMMENT LETTERS

Copies of all comment letters received on the Draft O&M Decision Document and EIS are provided in Appendix C. This includes portions of the public hearing record that represent original comments not incorporated in written submittals by the same party. Each page of each comment letter is marked with a letter identification number (corresponding to Table 3-1), and all substantive comments are marked and numbered. Responses to these comments in Section 3.6 correspond to this comment coding system. Attachments submitted with the main comment letter are also duplicated if they contain substantive comments or if they provide information directly related to a comment in the main letter. The complete printed record of all comments received on the Draft EIS is maintained by the Walla Walla District of the Corps of Engineers, and is available for public review at the District offices.

TABLE 3-1

DRAFT EIS COMMENTS

| Letter No. | Source | Date | No. Comments |
|---|---|---|---|
| FEDERAL AGENCIES | | | |
| 1 | U.S. Department of Agriculture, Forest Service | 2-6-90 | 5 |
| 2 | U.S. Department of Agriculture, Soil Conservation Service | 1-3-90 | 1 |
| 3 | U.S. Department of Agriculture, Soil Conservation Service | 1-8-90 | 0 |
| 4 | U.S. Department of Commerce, National Oceanic and Atmospheric Administration | 2-7-90 | 1 |
| 5 | U.S. Department of Health and Human Services, Public Health Service | 1-22-90 | 2 |
| 6 | U.S. Department of Housing and Urban Development | 12-28-89 | 1 |
| 7 | U.S. Department of the Interior, Bureau of Indian Affairs | 1-12-90 | 1 |
| 8 | U.S. Department of the Interior, Bureau of Mines | 2-1-90 | 1 |
| 9 | U.S. Department of the Interior, Fish and Wildlife Service | 2-15-90 | 19 |
| 10 | U.S. Department of the Interior, National Park Service | 1-30-90 | 2 |
| 11 | U.S. Department of the Interior, Office of the Secretary | 2-16-90 | 36 |
| 12 | U.S. Department of Transportation, Federal Highway Administration | 2-2-90 | 2 |
| 13 | U.S. Environmental Protection Agency | 2-5-90 | 1 |
| STATE AGENCIES | | | |
| 14 | Wyoming Department of Environmental Quality | 1-10-90 | 2 |
| 15 | Wyoming Department of Environmental Quality | 1-19-90 | 3 |
| 16 | Wyoming Emergency Management Agency | 12-29-89 | 1 |
| 17 | Wyoming Game and Fish Department | 1-3-90 | 0 |
| 18 | Wyoming Game and Fish Department | 1-30-90 | 1 |
| 19 | Wyoming Office of the Governor | 2-5-90 | 0 |
| 20 | Wyoming Game and Fish Department | 2-5-90 | 17 |
| 21 | Wyoming Geological Survey | 1-10-90 | 2 |
| 22 | Wyoming Public Service Commission | 1-24-90 | 3 |
| 23 | Wyoming State Archives, Museums and Historical Department | 1-4-90 | 1 |

TABLE 3-1 (Continued)

DRAFT EIS COMMENTS

| Letter No. | Source | Date | No. Comments |
|---|---|---|---|
| | LOCAL AGENCIES | | |
| 24 | Teton County | 1-6-90 | 7 |
| | PUBLIC ORGANIZATIONS | | |
| 25 | Greater Yellowstone Coalition | 2-6-90 | 9 |
| 26 | Jackson Hole Alliance for Responsible Planning | 2-5-90 | 11 |
| 27 | Trout Unlimited, Jackson Hole Chapter | 2-2-90 | 19 |
| 28 | Trout Unlimited, Wyoming Council | 1-30-90 | 2 |
| 29 | University of Wyoming, Department of Geography and Recreation | 2-5-90 | 3 |
| 30 | Wyoming Wildlife Federation | 2-6-90 | 3 |
| | INDIVIDUALS AND BUSINESSES | | |
| 31 | Scott E. Albrecht (Rivermeadows, Inc.) | 2-14-90 | 1 |
| 32 | Alice H. and Briggs M. Austin | 2-4-90 | 2 |
| 33 | Agnes P. Baker | 2-10-90 | 1 |
| 34 | Terry Beaver | 2-10-90 | 2 |
| 35 | Franz J. Camenzind (Camenzind Productions) | 2-11-90 | 3 |
| 36 | Stephanie Crockett | 2-15-90 | 2 |
| 37 | Paula Denissen (Camas Rental Management Ltd.) | 2-5-90 | 1 |
| 38 | Katharine E. Duffy | 2-15-90 | 2 |
| 39 | Ronald E. Dutton (Wyoming Fly Casters) | 2-14-90 | 1 |
| 40 | Skip Eshehnan (name and spelling unclear) | 2-13-90 | 1 |
| 41 | Nancy FitzSimmons | 2-13-90 | 2 |
| 42 | Joseph Bryan Gebler | 2-9-90 | 4 |
| 43 | Robert Gill, Kelly Lockhart and Elizabeth Lockhart (Porter Trust) | 2-5-90 | 5 |
| 44 | John M. Good | 2-15-90 | 1 |
| 45 | Clifford P. Hansen | 2-5-90 | 6 |
| 46 | Ann Harvey | 2-14-90 | 4 |
| 47 | Ed Ingold | 2-9-90 | 1 |
| 48 | Rick Jansen | 2-9-90 | 2 |

TABLE 3-1 (Continued)

DRAFT EIS COMMENTS

| Letter No. | Source | Date | No. Comments |
|---|---|---|---|
| 49 | David M. Johns | 2-5-90 | 5 |
| 50 | James R. Jones (High Country Flies) | 2-14-90 | 1 |
| 51 | Barry A. Louik | 2-15-90 | 2 |
| 52 | Patrick Matheny | 2-15-90 | 3 |
| 53 | Edward McGarrity | 2-6-90 | 1 |
| 54 | Mary Mead | 2-5-90 | 4 |
| 55 | David W. Meyers | 2-13-90 | 1 |
| 56 | Marion L. Meyers | 2-13-90 | 1 |
| 57 | Debe J. Piatak | 2-9-90 | 1 |
| 58 | William B. Resor (Snake River Associates and Fall Creek Associates) | 2-5-90 | 6 |
| 59 | David Richerson | 2-6-90 | 0 |
| 60 | Laura E. Riensche | 2-5-90 | 4 |
| 61 | I. Scott Sand (name and spelling unclear) | | 1 |
| 62 | David Saurman | | 2 |
| 63 | Carl M. Scrivens | 2-14-90 | 1 |
| 64 | Phil Shepard | 2-14-90 | 1 |
| 65 | Richard Spotts | 2-12-90 | 6 |
| 66 | Jim Springer | | 2 |
| 67 | Kim Springer | 2-15-90 | 3 |
| 68 | John R. Swanson | 2-9-90 | 1 |
| 69 | Kim Vletas (Westbank Anglers) | 2-14-90 | 1 |
| 70 | Paul von Gontard (Melody Hereford Ranch) | 2-5-90 | 3 |
| 71 | John E. Wilbrecht | 2-15-90 | 1 |
| 72 | John R. Wullich | 2-4-90 | 3 |
| 73 | Dusty Zaunbrecher | 2-13-90 | 1 |
| HEARING RECORD | | | |
| 74 | Bland Hoke, Teton County Commissioner | 1-30-90 | 3 |
| 75 | Robert Ablondi | 1-30-90 | 4 |
| 76 | Paul Bruun, Jackson Hole Fishing Guides Association | 1-30-90 | 4 |

TABLE 3-1 (Continued)
DRAFT EIS COMMENTS

| Letter No. | Source | Date | No. Comments |
|---|---|---|---|
| LATE LETTERS | | | |
| 77 | U.S. Department of the Interior, Fish and Wildlife Service Director | 2-22-90 | 2 |
| 78 | Trout Unlimited, (National) Executive Director | 2-14-90 | 4 |
| 79 | David McDonald | | 1 |
| 80 | Floyd Schneider | 2-19-90 | 1 |
| 81 | Daniel Silver | 2-19-90 | 1 |

SUMMARY OF COMMENTS

| Source | No. Letters | No. Comments |
|---|---|---|
| Federal Agencies | 13 | 72 |
| State Agencies | 10 | 30 |
| Local Agencies | 1 | 7 |
| Public Organizations | 6 | 47 |
| Individuals and Businesses | 43 | 96 |
| Hearing Record | 3 | 11 |
| Late Letters | 5 | 9 |
| Total | 81 | 272 |

For organizational convenience, the letters are arranged according to the source categories indicated in Table 3-1. Letters within each category are generally presented in alphabetical order. Five letters received late, after all other comments had been coded and sorted, are included at the end of the list rather than with the appropriate source category.

## 6.6 RESPONSE TO COMMENTS

The majority of the individual comments on the Draft EIS centered upon a relatively small number of key issues and concerns. To avoid repetition of extensive responses to these comments, master responses were prepared for six common issues that were identified from review of the comments. The six common issues and their responses are described below. In the subsequent presentation of individual comments and responses, all of the individual written comments that relate to one of these common issues are referred to the appropriate master response. Specific responses are provided to all of the individual comments that did not represent a common issue.

### 3.6.1 Common Issues

#### 1. Mitigation

Mitigation for the long-term impacts of the existing levee system was by far the dominant issue raised among the individual comments. At least one comment on mitigation was contained within 50 of the 81 comment letters received. A total of approximately 80 individual comments addressed mitigation, accounting for nearly 30 percent of all individual comments identified.

The comments on mitigation reflected a variety of wording and addressed several specific aspects of the mitigation issue. At a minimum, most of the comments simply requested or demanded that mitigation for long-term impacts be provided. Some of these comments were couched in terms of protecting or preserving Snake River habitats without specific use of the term mitigation, but were interpreted to have equivalent meaning. Many comments also requested that the Corps adopt specific mitigation measures, and provided an itemized list or referred to the measures recommended by the Fish and Wildlife Service in the Coordination Act Report (CAR) appended to the EIS.

A number of the mitigation comments, particularly those from some agencies and organizations, raised issues of legal and regulatory responsibilities and interpretations. Some comments simply maintained that the Corps had a responsibility to mitigate long-term impacts, and/or that this should be done with full federal funding. Some comments alleged that the Corps was neglecting its responsibility under NEPA to provide mitigation. Many of the comments addressing responsibility for mitigation focused on specific authorities and obligations provided by Sections 840, 906, and 1135 of the Water Resources Development Act of 1986. Comments in this group included statements that the O&M decision constituted a "new" project that requires mitigation as part of the project, or requests that the Corps

commit to pursue or implement mitigation under Sections 906 and 1135. A few commentors noted a distinction between mitigation of past impacts versus current and future impacts, and argued that the O&M decision required mitigation as part of the project for any impacts occurring subsequent to the decision.

Response:

The Corps' position on impact mitigation is similar to that indicated in the Draft EIS. Specifically, the Corps has adopted measures to mitigate for the identifiable effects of the O&M decision, which are those environmental consequences that are departures from the environmental baseline at the time the O&M decision would be implemented. Given the current environmental baseline, these consist of the effects resulting from the maintenance activities themselves. These are discussed in Section 4.4 in the Draft EIS and correspond to recommended measures 16 a-c from the CAR. Long-term effects resulting from the construction of the levee system beginning in the 1950s are logically and legally a separate issue that should and will be addressed through an appropriate and separate process. In response to the concerns addressed by the public and resource agencies, the Corps Headquarters has determined that the agency will request study funding specifically to determine the scope and extent of mitigation required to compensate for effects on fish and wildlife resources. This is a modification to the position stated in the Draft EIS, which was that the issue of long-term effects and their mitigation would be addressed in the Upper Snake River in Wyoming General Investigation Study (the GI Study) currently in preparation by the Corps.

In taking this position, the Corps is not refusing to acknowledge that long-term effects resulting from the presence of the levees have occurred (these are explicitly identified in the Draft EIS) or that mitigation for these effects should be considered. The Corps is merely operating within the bounds of the authorities and resources available to it, and responding to identified needs in order of priority. The Corps has specific Congressional authority to assume O&M responsibilities for the Jackson Hole levees, and also has the resources (specific Congressional appropriations) to implement this decision. Congress, Teton County and the local public (by consensus) have identified the O&M transfer as a high-priority need, so the Corps is proceeding the implement that action for the 1990 flood season.

Conversely, the Corps has only very general authority (through WRDA Sections 906 and 1135) to implement mitigation for impacts that are part of the environmental baseline. More importantly, the Corps has no resources available to it at this time to implement such mitigation. Nationwide, the agency does not currently have Administration approval for any 906 or 1135 mitigation budget requests, nor are there any Congressional appropriations for 906 or 1135 programs. Obtaining the means to implement the requested mitigation program will be a lengthy process. The Corps sees no value or logic to linking mitigation for long-term impacts to proceeding with the O&M decision. Linkage of the two issues would have negative consequences by delaying Corps action on

levee maintenance, at a significant cost to Teton County. The Snake River environment would not be benefited, as the long-term effects would still continue and the timetable for resolution of the mitigation issue would not be advanced by delaying the O&M action. Therefore, the Corps is not opposing mitigation per se, but is simply opposing use of the O&M decision as an inappropriate vehicle to remedy the environmental costs of historical actions. The O&M Decision Document and EIS provide the proper mechanism for consideration of Federal assumption of O&M responsibility only, and no other activities should be considered within this scope.

Regardless of the institutional obstacles to expanding the scope of the O&M action to include long-term mitigation, there are practical, technical factors that would prevent the inclusion of a long-term mitigation program as part of the O&M project. To date, the past effects of the levees have been identified in qualitative terms, but the magnitudes, timing and specific locations of these effects are not currently known. Detailed studies of some of these effects have been underway for some time but are not yet completed, while additional targeted studies are needed in other subject areas. Completion of these studies is necessary before mitigation needs can be identified, and specific needs are prerequisite to developing a mitigation program. Given the current state of knowledge, the mitigation issue is not ripe for full resolution at this time. Again, insistence on addressing mitigation now would only delay the O&M action. The Corps notes that no commentors voiced opposition to Corps maintenance of the levees, while many supported the O&M action and did not wish to see a delay in its implementation. Linkage of the O&M project with mitigation for long-term effects is inconsistent with the latter position.

Several comments claimed that the Corps was neglecting its responsibility under NEPA to provide mitigation for impacts of its actions. The Corps takes exception to these comments, and notes that the Draft EIS proposes mitigation for changes from the environmental baseline that are attributable to the O&M action. NEPA regulations do require that the project alternatives discussion include "appropriate mitigation measures not already included in the proposed action or alternatives" (40 CFR 1502.14(f)); the Corps maintains that additional mitigation measures not already addressed in the Draft EIS are not appropriate to the proposed O&M action, because they address changes triggered decades ago that are now part of the environmental baseline. The regulations also require that EIS discussions of environmental consequences address means to mitigate adverse impacts that are not included in project alternatives (40 CFR 1502.16(h)); such means are discussed in Section 4.4 of the Draft EIS, along with a proposed vehicle for their consideration.

The recent U.S. Supreme Court decision in the case of Robertson v. Methow Valley Citizens Council (No. 87-1703, 1989) provides further authoritative response on the issue of mitigation responsibilities under NEPA. Justice Stevens' opinion for the unanimous court held that "NEPA does not impose a substantive duty on agencies to mitigate

adverse environmental effects or to include in each EIS a fully developed mitigation plan." The court drew a distinction between the procedural requirement to discuss mitigation so as to fully address environmental consequences and a (nonexistent) "substantive requirement that a complete mitigation plan be actually formulated and adopted."

The Methow Valley case also provides guidance relative to another aspect of the mitigation issue, which concerns off-site effects that cannot be mitigated unless nonfederal agencies with jurisdiction over the off-site area take appropriate action. A number of the mitigation comments requested implementation of specific implementation measures along various Snake River tributary streams and on floodplain lands behind the levees. In particular, several comments requested the Corps to take action to control development of floodplain lands and prevent resulting habitat loss and degradation. The Corps submits that such areas and actions are under the jurisdiction of state and local agencies, particularly Teton County, and are beyond the authority of the Corps. Moreover, the Supreme Court noted in the Methow Valley decision that it would be improper and inconsistent with NEPA to prevent federal agencies from acting until nonfederal agencies had adopted measures needed to mitigate anticipated indirect effects.

As indicated in the Draft EIS, and at public forums in Jackson in January 1990, the Corps intends to follow appropriate procedures and authorities for resolution of the issue over mitigation for long-term effects of the Jackson Hole levee system. Following new guidance from the Corps' headquarters offices in Washington, D.C., the Corps will request specific funding for a study of mitigation needs attributable to the Jackson Hole levee system. In response to public and agency requests concerning the study process, the Corps has agreed to separate this study from the Snake River in Wyoming General Investigation Study. The Corps is also committing to solicit public and agency input in developing the scope for the mitigation study and reviewing the study results. The Corps will specifically consider the USFWS study and mitigation recommendations presented in the CAR, along with study recommendations from other sources, but reserves the authority to make all final decisions on the scope of the mitigation study. Upon completion of the mitigation study, the Corps will prepare a report identifying the scope and extent of mitigation required, including a mitigation plan. Implementation of any mitigation plan would require separate appropriation of funds by Congress. These actions would be coordinated with the appropriate interested agencies and organizations, and would be subject to the standard environmental review process.

2. Comprehensive Long-Range Planning

Approximately 15 to 20 comments addressed in some manner the issue of comprehensive, long-range planning for the upper Snake River. As with mitigation, there was some variability with respect to comment wording and specific requested action. Some comments requested that the Corps undertake or lead a broad, areawide plan for management of the Snake River and adjacent lowlands that included all disciplinary concerns and governmental jurisdictions. Other requests were not as sweeping, but nevertheless supported a need for planning long-term measures that

would address flood-control requirements while (usually) offering more protection for environmental resources. Many of these comments also stressed the need to treat the river and its associated terrestrial resources as an integrated ecosystem.

Some comments in this group did not explicitly mention long-range planning, but clearly carried the same message. Examples include comments that the existing levees were not adequate for long-term flood control needs, or that actions needed to maintain an effective levee system well into the future had not been identified. Some comments simply registered criticism or opposition to unplanned, ad-hoc levee construction, as had occurred in the past.

Response:

The Corps acknowledges that the Draft O&M Decision Document and EIS does not prescribe a detailed blueprint for a flood-control management system covering the next several decades. However, the Corps maintains that it is proceeding to address Jackson Hole flood control needs and actions in a sound, orderly, systematic and timely manner. In general, the agency recognizes that a number of potential actions will require investigation and decisions before all long-term needs can be adequately addressed. The Corps is taking the logical approach of considering actions in order of priority, and as information needed to support decisions can be developed.

At present, the Corps is responding to a specific, short-term action requirement for which it has authority, namely assuming maintenance responsibility for the Jackson Hole levees. The Corps has sufficient information on which to base a decision on the proposed action, and has conducted the environmental, economic and engineering studies necessary to support the action defined in the EIS scope. Moreover, all public and agency input received by the Corps indicates that there is a clear local consensus in favor of Corps O&M of the levees, and implementation of this action without delay.

There are a multitude of other acknowledged, potential or perceived needs related to the Jackson Hole levees that have been identified to date by the Corps and other interested parties. These include mitigation for the long-term environmental effects of the levees; development of a new quarry to provide riprap for the levees; new access to a portion of the levee system; removal of built-up gravel from the channel; use of gabions rather than riprap; and all manner of modifications to the levee system itself, ranging from completion of a continuous levee system with full 100-year protection to removal of levees. These potential actions are not yet ripe for decision because there is insufficient information on which to plan or evaluate them. There also is a wide range of public opinion on the merits of these potential actions, and no apparent consensus in most cases. Therefore, the rational approach is to take actions in a sequential manner as information and support become available.

The engineering studies conducted by the Corps indicate that the proposed O&M regime for the existing levee system should provide adequate protection from flooding and avulsions over at least the next 10 years (the total estimated life of the project for economic analysis is 50 years). That assessment provides ample opportunity to conduct future studies, develop plans, and implement actions that will address flood control and related needs within the project area. The Corps has already initiated a General Investigation Study for the upper Snake River area, which will be conducted with scoping input from affected local parties. The GI Study and any follow-on studies or plans resulting from it will comprise a responsible and integrated approach to long-term planning for flood protection in Jackson Hole.

It should be noted that some of the comments addressing comprehensive, long-range planning suggest action that greatly exceeds the scope of the Corps' authority. To fully implement the requests for a broad-based, multi-jurisdictional, comprehensive plan for the "Snake River ecosystem" would require special Congressional direction. The Corps does not now have the authority to require the full participation of all affected jurisdictions in such a river basin planning effort, were it so inclined. The Corps also suspects that any formal proposal for this type of planning effort would meet with extensive local and statewide opposition.

3. Draft EIS Scope and Alternatives

A number of parties commented that the Draft EIS was inadequate with respect to scope and alternatives. Some of these comments went no further than general statements to this effect, but most addressed specific factors or alternatives that the commentors thought should have been included in the document. These specific requests included consideration of levee removal or breaching; an alternative to complete the levee system; flood control alternatives to the levees, such as new setback levees or nonstructural measures; and inclusion of all levees, damaged or undamaged, in the project maintenance alternative. The general tone of comments on the scope of the EIS, apart from mention of alternatives, appeared to be that the geographic scope was limited to just the river itself and ignored adjacent land resources.

Response:

Scoping for the levee maintenance EIS was conducted in accordance with pertinent Council on Environmental Quality and Corps regulations on implementation of NEPA (40 CFR 1501.7 and 33 CFR 230.12, respectively). A notice of intent to prepare a Draft EIS was published in the Federal Register, a scoping meeting open to the public was held in Jackson on January 31, 1989, and a scoping package describing the EIS approach and scoping meeting results was subsequently distributed.

The Draft EIS investigated the issues and alternatives that were identified in the scoping process. The geographic scope of the EIS is appropriately broad, extending to all of Jackson Hole and adjacent mountains where necessary; the analysis of project effects included at

a minimum all floodplain resources, and was specifically not limited to just the areas between the levees. Section 2.3 of the Draft EIS explains why two alternatives initially identified during scoping, i.e., maintaining only some subset of the levees and raising some levees to provide 100-year flood protection, were eliminated from detailed impact analysis in the EIS. This material also documented rationale for not allocating detailed consideration to extending the levees, building new setback levees, and dredging gravel from the streambed to increase channel capacity.

Some of the Draft EIS comments in this group repeated or paralleled scoping input received by the Corps. Other issues, such as breaching or removing levees and completing a continuous levee system, were not raised during the scoping process. The Draft EIS was developed in accordance with NEPA regulations concerning scoping and project alternatives (40 CFR 1501.7 and 1502.14), and is not deficient for omitting alternatives that were not suggested during scoping.

The Corps acknowledges that the Draft EIS presents a limited range of alternatives. Nevertheless, the EIS meets the NEPA regulatory requirements to "rigorously explore and objectively evaluate all reasonable [emphasis added] alternatives," and briefly discuss the reasons why other alternatives were eliminated from detailed consideration (40 CFR 1502.14). Given the current environmental and flood control situation in Jackson Hole, the Corps maintains that there are no reasonable alternatives beyond those analyzed in the EIS. Most commentors who addressed the notion of levee removal recognized that it would not be feasible, due to the existing level of development behind the levees. Proposals to complete, extend, or raise the levees are likewise not reasonable alternatives for the maintenance action, and do not merit consideration under NEPA until future studies (such as the Upper Snake River GI study) demonstrate that such actions would be feasible and cost-effective. As confirmed by Corps Headquarters' review, the O&M Decision Document and EIS have adopted the appropriate scope and are not the proper mechanism for considering any activity other than the Federal assumption of O&M responsibility for the levees.

4. Levee Evaluation and Project Configuration

A fourth distinct group of related comments questioned or criticized the evaluation of the levees presented in the O&M Decision Document, and the resulting configuration of the proposed project. Most comments of this nature were from individuals who owned land within the Snake or Gros Ventre River floodplains, and reflected concerns over the degree of flood protection afforded their properties.

This overall group of comments was relatively evenly divided among four specific facets of the project configuration issue. Several commentors disagreed with the way the Corps subdivided the levee system into separable elements for economic analysis. These comments generally stated that the definition of separable elements was inconsistent between the Federal and nonfederal levees. The second sub-issue among this group of comments concerned levees that the Corps did not propose

to maintain, specifically levees that had been damaged in the 1986 flood. Several comments addressed the design standards to which the levees would be maintained. Some commentors argued that all levees should be maintained to 100-year flood protection standards, while others asked for clarification of standards or expressed concern over what standards might be employed. The fourth related issue among this group related to references in the Draft O&M Decision Document to construction of channel blocks or plugs to prevent avulsions. Most of the comments on channel blocks questioned whether they had been adequately addressed in the economic and environmental analyses.

Response:

The definition of separable elements has been discussed with staff at the Washington level from both Corps Headquarters and the Assistant Secretary of the Army's Office. The separable elements shown in the Draft O&M Decision Document were confirmed as appropriate by all parties concerned, in the context of the definition of separable elements stated in Sec. 103(f) of PL 99-662. However, since all of the nonfederal levees, including the Sewell Levee and that portion of the Middle Taylor Creek Levee existing prior to the 1986 flood, are economically justified, the definition of separable elements does not affect the configuration of the preferred alternative.

The Sewell and Middle Taylor Creek levee sections mentioned above were generally at issue in those comments addressing levees excluded from the preferred alternative. After further consideration of existing levee conditions and the language of PL 99-662, the Corps has determined that it will maintain all levees that were present and functional in 1986 prior to high water in that year (the 1986 flood). Consequently, the Sewell Levee and the lower portion of the Middle Taylor Creek Levee are considered as part of the preferred alternative for the Final EIS. The Decision Document and EIS have been modified to reflect this change.

Similarly, "existing conditions" prior to the 1986 flood will define the levee design standards to be followed in the O&M program. However, the Federal levees, nonfederal levees and levee repair sections all vary considerably in their design and actual construction, and as-built drawings do not exist for significant sections constructed during emergencies. The design standard for the Federal levees is indicated in Figure 2-2 of the Draft EIS, and will be maintained in the future. Embankment slopes for the nonfederal levees vary from 1V on 1H to 1V on 3H, and depth of riprap toe also varies. The same applies to levee repair sections, although the recent repair standard includes a 54-inch-thick riprap zone toed in 5 feet below the river thalweg.

In general, these conditions will be maintained where they existed in the field prior to the 1986 flood. Maintenance of standards will be somewhat flexible to allow adjustments to fit conditions at a particular repair location. For example, it may be desirable to economize the standard design by varying the riprap blanket thickness, depth of toe-in, or embankment slope. References in the draft

documents to maintenance of standard design specifications have been clarified to indicate the application to site-specific, preflood 1986 conditions. Maintenance of design standards specifically does not include upgrading all levees to the Federal levee standard and 100-year flood protection. Any major change in levee design and flood protection standards would require separate project justification and environmental review.

The Corps has also concluded that maintenance of the existing levee system, as is, will prevent foreseeable potential avulsions (over the next 10 years) that would conceivably present a need for channel plugs. Therefore, channel plugs are not currently included as part of the O&M project, and references to their use in the Draft Decision Document have been removed. The costs for channel plugs have also been removed from the economic analysis. Because channel plugs will not be part of the O&M project, there are no additional environmental impacts that require analysis in the EIS. It is conceivable that a need for channel plugs could be identified at some time in the future. If this happened, development of channel plugs would be pursued under the appropriate legal authority and would be subject to NEPA review at that time.

5. Future Levee System Modifications

Approximately 12 to 15 comments addressed potential future modifications to the levee system. These comments were generally divided into two groups, those opposing construction of any new levees and those requesting new or extended levees. Of the latter, many mentioned specific locations where levees should be built or extended, while some requested completion of the levee system. A number of comments in this group were very similar to some of these associated with Common Issue No. 3. However, comments assigned to Common Issue No. 5 made no specific reference to the EIS scope or alternatives.

Response:

The response to this issue essentially duplicates portions of the responses to Common Issues No. 2 and 3. Construction of new levees or levee extensions was determined to fall outside the set of reasonable alternatives for the O&M project. Any comments relating to such future levee system modifications are therefore not germane to the proposed action, which addresses only maintenance responsibility and not the potential future configuration of the levee system. However, such views on new or extended levees are appropriate for consideration in the GI study.

6. Quarry Development

The Corps received approximately 20 comments addressing the proposed development of a new quarry and its treatment in the Draft EIS. Most of these comments related to substantive matters, primarily material that reviewers felt should have been included in the text. Some comments made general references to environmental concerns or

constraints for quarry development at the set of sites identified in the EIS. Other comments mentioned or requested analysis of site-specific resource conflicts. Several agencies recommended against developing a quarry at one or more of the sites identified by the Corps. A final sub-issue within this group of substantive comments concerned quarry alternatives. One comment questioned the quarry site screening approach and the resulting site alternatives. At least two comments recommended continued use of the existing quarry, and two reviewers suggested bank protection measures that would not require a quarry to supply rock.

A few comments addressed procedural aspects of quarry development. These comments stated that quarry development issues should be addressed now, rather than be deferred to a future date. Some also contended that the Draft EIS was deficient in not fully assessing the effects of quarry development.

Response:

The Draft EIS clearly stated the Corps' intended approach with respect to quarry development. Rock quarrying and stockpiling was identified as a levee maintenance activity; the apparent need for a new quarry was briefly discussed; two existing quarries and four new sites were identified as potential future sources of riprap supply; available information on existing environmental conditions at the six sites was summarized; and the impacts of quarry development were described in very general terms. The Draft EIS indicated that action on quarry development was being deferred to allow completion of necessary studies, and that a supplemental EIS fully addressing quarry development would be prepared after the studies were completed. The Draft EIS material on quarry development was not intended or represented as adequate documentation of NEPA review for quarry development. It was intended to contribute to scoping for the future supplement by eliciting comment on environmental issues associated with quarry development.

Consequently, comments addressing information needs and other substantive requirements for environmental analysis of quarry development are premature (although comments identifying site-specific environmental concerns are helpful at this time). The Corps is obligated to prepare an EIS supplement on quarry development that complies with the applicable NEPA regulatory requirements. As such, this future SEIS will address need for a quarry; present reasonable alternatives, including continued use of existing sites, and explain how they were developed; provide a thorough discussion of the affected environment; and analyze all environmental impact issues identified through scoping.

The Corps disagrees with the procedural comments to the effect that quarry development should be fully addressed in the O&M project EIS. The NEPA regulations clearly provide for preparation of EIS supplements when the agency makes substantial changes to the proposed action (40 CFR 1502.9(c)); a future decision to develop a new quarry, rather than

continuing to use the existing quarry, would constitute such a substantial change. The regulations also encourage agencies to use tiering of environmental documents to efficiently focus on the actual issues ripe for decision at each level of review, and indicate that tiering may be appropriate for different stages of actions (40 CFR 1502.20, 1508.28). As described in the response to Common Issue No. 2, the act of accepting O&M responsibility for the levee system is ripe for decision at this time, but quarry development and numerous other issues are not yet ripe for review.

### 3.6.2 Individual Comments and Responses

Responses to comments contained in letters addressing the Draft EIS are presented below. A response to each of the 272 individual comments is provided, although in many cases the response refers to one of the master responses to a common issue. The response format is to identify each letter by letter number and source; introduce each coded comment in sequential order with a brief reference to the subject matter of the comment; and follow each comment with a specific response.

Letter 1, U.S. Department of Agriculture, Forest Service

1-1 Rationale for quarry site screening

Full treatment of this issue will be included in a supplemental EIS on quarry development, which will address a suitable range of alternatives. The Draft EIS (p. 2-11) indicated that the Hansen and Walton sites would both be included among the alternatives considered, and that the Walton site would continue to be used in the near term. See also response to Common Issue No. 6.

1-2 Forest standards and quarry costs.

The Corps acknowledges receipt of this information on standards and will consider this material and its cost implications in future quarry studies.

1-3 Environmental concerns at quarry sites.

See response to Common Issue No. 6. The Corps appreciates identification of concerns that will need to be addressed in the quarry development SEIS.

1-4 Quarry development costs.

See response to Common Issue No. 6.

1-5 Permits, review for quarry testing.

The Corps appreciates this information on the permit process, and will coordinate with the Forest Service on quarry testing.

Letter 2, U.S. Department of Agriculture, Soil Conservation Service (1-3-90).

2-1 No comment.

No response necessary.

Letter 3, U.S. Department of Agriculture, Soil Conservation Service (1-8-90).

No substantive comments.

Letter 4, U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

4-1 Coast and Geodetic Survey monuments.

The Corps acknowledges receipt of this information. The Corps does not foresee any maintenance activities that would disturb these monuments, but will coordinate with the C&GS as appropriate.

Letter 5, U.S. Department of Health and Human Services, Public Health Service.

5-1 No significant public health impacts.

No response necessary.

5-2 Need OSHA compliance.

The Corps recognizes the need for OSHA compliance and pollution abatement in quarry operations. Until such time as a new or expanded quarry is developed by the Corps, the State of Wyoming and Teton County will continue to operate the existing quarry and presumably comply with these requirements. OSHA compliance and pollution abatement will also be fully addressed in the future SEIS on quarry development.

Letter 6, U.S. Department of Housing and Urban Development.

6-1 Maintenance supported, DEIS adequate.

No response necessary.

Letter 7, U.S. Department of the Interior, Bureau of Indian Affairs.

7-1 No comment.

No response necessary.

Letter 8, U.S. Department of the Interior, Bureau of Mines.

8-1 No comment.

No response necessary.

Letter 9, U.S. Department of the Interior, Fish and Wildlife Service.

9-1 Objective of biological assessment.

The text of the assessment (page A-1) has been revised to correctly state the objective of the assessment.

9-2 Critical eagle nesting period.

The assessment text has been modified to note that the critical nesting season begins in February, rather than early March.

9-3 Timing of primary disturbance effect on eagles.

The text has been clarified to indicate the basis for the conclusion as to the primary effect on eagles occurring during the early spring. This statement was not based on any biological justification, and none is needed. It simply reflects the schedule of routine maintenance activities, which will occur in early spring before high flows and again in late summer or fall.

9-4 Support for no effect determination for Hansen Quarry.

The text has been clarified to avoid the impression that an effect determination relative to the Hansen Quarry is attempted or represented. The Corps acknowledges that full studies of potential quarry effects have not been conducted, and that a biological assessment for this activity will need to be included in the future SEIS on quarry development. See also response to Common Issue No. 6.

9-5 Effect on foraging eagles.

The text has been clarified to indicate that avoidance of emergency action sites by foraging bald eagles would be temporary and highly localized, and should have no measurable effect on their ability to forage.

9-6 No information on nesting and wintering at quarry.

See responses to Comment 9-4 and Common Issue No. 6.

9-7 Peregrine hack sites and eyries in northwest Wyoming.

This information has been included in the text.

9-8 Use 1989 data on peregrines.

This new information has been included in the text. The Corps would like to note that FWS suggestions for data contacts on peregrines were followed in preparing the Draft EIS; these contacts only provided information though 1985.

9-9 Address all hack sites, and include all potential project impacts on peregrines.

The additional discussion requested by the comment has been incorporated into the text.

9-10 Restate effect determination after additional analysis.

The text has been clarified, as requested. The two paragraphs separately addressed nesting and foraging opportunities. See also response to Comments 9-8 and 9-9.

9-11 Evaluation of effects on whooping cranes.

The original text has been supplemented as requested.

9-12 Add grizzly bear effect determination, address coordination.

The text has been modified to clearly state the "no effect" conclusion, and to indicate that the Corps will coordinate with the FWS in the rare event of a grizzly bear sighting.

9-13 Follow proper Endangered Species Act procedure.

The Corps believes that it has followed proper regulatory procedures for ESA compliance, and continues to do so. The Corps has sent a letter to the FWS renewing and updating prior requests for project-specific species requests, and reminding the FWS that prior such requests were contained in a February 15, 1989 letter and the March 2 scope of work for the CAR prepared by the FWS for the Corps. The draft biological assessment has been clarified and revised in response to FWS suggestions; a copy has been included with the Final EIS, and additional copies of the assessment have been forwarded to FWS under separate cover. The Corps has consistently accepted and proposed to follow the regulatory guidance for Section 7 consultation on emergency actions, which provides for expedited, informal consultation at the time of the emergency. The Corps has indicated to FWS staff that it will attempt to notify and consult with the FWS when emergency actions near eagle nests are necessary, but that flood-fighting response must be immediate and cannot be delayed if FWS personnel are not available. Making any further commitment on consultation would ignore the nature of flood emergencies and go beyond the requirements of the regulations.

9-14 Inadequate discussion of induced development effects.

The Corps is aware of the definitions of the terms cited in the comment, and observed these definitions in preparing the Draft EIS. The Draft EIS clearly indicated that the Jackson Hole levees have promoted or contributed to development of the floodplain, and that this has had indirect effects in the form of habitat loss and wildlife disturbance.

The source of disagreement appears to be the Corps' conclusion as to the degree of this effect in the future. Briefly, the Draft EIS explains that 100-year flood protection behind the Federal levees is already recognized by the Federal Emergency Management Agency, so continued maintenance of these levees by the Corps will have no incremental influence on development in these areas beyond what was incurred when the levees were built. The EIS notes that the nonfederal levees generally provide minor levels of discontinuous flood protection. Given the long-term Federal policy to discourage development within 100-year floodplains, the

Corps has no rational basis to predict that the existing nonfederal levees will provide a significant stimulus to floodplain development.

9-15 Clarify Section 7 compliance for emergency actions.

The text has been clarified, to note that the Corps will follow consultation procedures for emergency actions that are consistent with the regulations. See response to Comment 9-13.

9-16 Request appraisal of activities.

The Corps has coordinated frequently and extensively with the FWS to date during development of the project, and will continue to do so as maintenance is implemented and future decisions are evaluated.

9-17 Insufficient biological data for no effect determination.

See responses to Comments 9-3, 9-4, 9-5, 9-6, and 9-10.

9-18 Develop long-range environmental planning and mitigation program.

See response to Common Issue No. 1.

9-19 Adopt CAR mitigation recommendations, develop eagle nest site management plans.

See response to Common Issue No. 1. As indicated in the Draft EIS, the Corps proposes to adopt recommended mitigation measures 16a-c from the final CAR to the extent practicable and feasible in conducting maintenance activities. The EIS text has been expanded to provide a more detailed explanation of how levee maintenance activities will be conducted with respect to bald eagle nest locations. Snow plowing and levee patrol are crucial maintenance activities that must be performed during the spring at all locations along the levee system, without regard to the buffer zone guidelines around nests. These activities will be done using the same equipment and procedures as for the past 20 or more years, which have not had any apparent effect on eagle nesting. Levee rehabilitation will not be done anywhere during the nesting season, and other nonemergency actions will be conducted so as to observe the buffer zone guidelines. As indicated in previous comments, the Corps will coordinate with the FWS and WGF regarding eagle concerns over nonroutine (including emergency) actions. This coordination will include expedited, informal consultation before the action and formal consultation after the fact. Given the simple nature of the maintenance activities and the firm requirements of the maintenance schedule, the Corps sees no need to prepare specific nest site management plans.

Letter 10. U.S. Department of the Interior, National Park Service.

10-1 Address right bank levee access.

The Corps appreciates the NPS concern over this access issue, but still believes that this issue is not yet ripe for decision. (See responses to Common Issues No. 1, 2 and 6 for further discussion of the timing of project-related issues.) The Corps has not yet identified the specific level of access that will be necessary, and recognizes that additional environmental analysis will be required. Rather than incorporate uncertain plans and incomplete analysis in the O&M EIS, the Corps would prefer to explore access possibilities with the NPS and cooperatively develop mutually agreeable plans. Due consideration of Park resources, coordination with the NPS and NEPA compliance for the access issue will all be accomplished, but this must occur through an EIS supplement. In the interim, the Corps would not declare an emergency situation and cross Park lands without consideration of Park resources. The Corps would certainly coordinate with NPS officials in such cases, and will comply with the environmental review requirements for emergency actions.

10-2 Address impacts of O&M on park, coordinate with NPS.

The types of impacts to the Park from O&M and emergency activities will be the same as those occurring anywhere else and described in the Draft EIS. The magnitude and timing of these impacts will largely depend upon the unpredictable severity of future floods and the likelihood of damage to the levee section within the Park boundary. This levee section will be plowed and patrolled early in the year, which will only involve occasional traffic along the top of the levee as in past years. The only other routine actions likely to occur would be culvert cleaning and removal of large vegetation rooting on the levee itself. Emergency actions or levee rehabilitation, if required within the Park, would involve temporary effects relating to the presence of construction crews and equipment. All activities (emergency and non-emergency) occurring on Park lands will be closely coordinated with NPS officials prior to beginning operations.

Letter 11. U.S. Department of the Interior, Office of the Secretary.

11-1 DEIS impact description general and unquantified.

The Corps acknowledges that the EIS is much more qualitative than quantitative. As the FWS is aware, specific studies of long-term habitat change sponsored by the Corps have been underway for some time but are not yet complete. The results of these studies will greatly enhance the understanding of overall levee impacts. While these results would be helpful, they are not critical to the analysis of the decision at hand. As the Corps maintained in the Draft EIS and elsewhere in response to comments, the impact

issues that are germane to the proposed action are those associated with the O&M activities. These activities and their impacts have been clearly defined in the EIS. All other impacts associated with the levees relate to long-term changes that were triggered decades ago and are now part of the environmental baseline. These effects have been identified and described in the EIS to the best of the Corps' current ability, but it is not mandatory that these effects be quantified to evaluate the action currently under consideration. The incomplete information in question is not "essential to a reasoned choice among alternatives" (40 CFR 1502.22) and therefore need not be included in the EIS.

11-2 Cumulative impacts not addressed, specifically floodplain development.

The Corps disagrees with this comment, and believes that all direct, indirect, induced, and cumulative effects of the proposed action have been adequately identified and addressed to the appropriate level. Both short- and long-term effects were clearly identified in the Draft EIS, and the types of effects from potential future Corps actions. Full analysis of these potential actions has been deferred to future EIS supplements, consistent with NEPA regulations and the intent to conduct environmental review of staged actions at appropriate times. Moreover, the additional information requested by the comment would have no bearing on the decision whether to undertake O&M responsibility for the levees. See also the response to Common Issues No. 1 and 6 and Comment 9-14.

11-3 Coordinate with FWS on activities potentially affecting eagles.

The Corps' position on coordination is described in the responses to Comments 9-13, 9-15, and 9-19. Similar information in the EIS text has been expanded.

11-4 Willingness of Corps to coordinate.

See response to Comment 11-3.

11-5 Develop site-specific eagle nest plans using federal/state guidelines.

See response to Comment 9-19.

11-6 Biological assessment procedures and data.

See responses to comments contained in Letter 9.

11-7 Long-term effects on wildlife and habitat.

The first portion of this comment appears to reflect a misunderstanding of the statements made in the Draft EIS summary. The particular statement in question (from Draft EIS

# FINAL
# ENVIRONMENTAL
# IMPACT STATEMENT

## JACKSON HOLE, WYOMING
## FLOOD PROTECTION PROJECT

APRIL 1990

U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT

p. iv, paragraph 2) is part of a paragraph addressing the short-term effects of the maintenance activities. The ensuing paragraph summarizes the long-term effects of the levees themselves. Please note that the latter paragraph states that the levees "have had significant effects on the structure of the river and its associated aquatic and riparian habitats."

Other portions of the Draft EIS similarly parallel the points from the Draft CAR that are reiterated in this comment, including transition of cottonwood/willow habitat to more xeric communities, erosion of forested islands, reduction in species diversity, influences of flooding on spawning habitat, induced floodplain development, and so on. However, the Corps is not in complete technical agreement with all of the specific conclusions presented in the CAR. In particular, the CAR contention that the proposed maintenance action would accelerate or increase the long-term environmental changes is unfounded. This conclusion is largely based on the assumption that the O&M project would provide a greater degree of flood protection than presently occurs. A greater degree of flood protection would only be realized by raising or extending the levees, which is specifically not a part of the proposed O&M project. The purpose and need discussion of the Draft EIS makes no reference to enhancing the degree of flood protection, while the text does indicate (and the Final EIS emphasizes) that the existing level of flood protection only would be maintained.

11-8 Commit to mitigation of ongoing and future long-term impacts.

See response to Common Issue No. 1.

11-9 FEIS should describe impacts to Grand Teton National Park.

See responses to Comments 10-1 and 10-2.

11-10 Levee removal alternatives should be evaluated in FEIS.

See response to Common Issue No. 3. In concept, the GI Study is the appropriate vehicle to consider removal of the right bank levee with the Park, or any other section of levee. However, it is very doubtful that further study would demonstrate the feasibility of removing the levee within the Park. While it is true that there are few or no developments in need of protection immediately behind the upstream 11,600 feet of the right bank levee, this is an integral part of the right bank levee. This levee section provides the tie to natural high ground which prevents flood flows from flanking the levee on the upstream end and spreading out into the developed area in the right bank floodplain below the Grand Teton National Park boundary. Since the Corps has no current authority to construct new levees, relocating the tie to existing high ground downstream of the Park boundary is not possible at this time. To ensure the integrity of the right bank levee, the portion within the Park boundary must be maintained in its current location.

11-11 Address right bank access in Grand Teton National Park.

See responses to Comments 10-1 and 11-10. It should further be noted that the occurrence of levee-damaging floods is not low, contrary to the comment. While the levees are designed to protect against floods with recurrence intervals of up to 100 years (equivalent to 28,600 cfs at Wilson), they can be and are damaged by much lesser flood flows. While the right bank levee in question has been damaged much less than the opposite left bank levee, the historical construction record (Draft Decision Document, Plate 8) nevertheless shows seven separate repairs in this section between 1965 and 1986; multiple repairs have been required at two separate locations.

11-12 State impacts to park, commitment to coordinate with NPS.

See response to Comment 10-2.

11-13 Timing of maintenance activities re: wildlife protection needs.

See response to Comment 9-19. Maintenance activities that need not be done at a specific time of year can and will be scheduled to fit wildlife protection needs. However, timing of activities such as snow removal, levee patrol, and flood fighting is dictated by natural conditions beyond the control of the Corps.

11-14 Do complete impact analysis if levees upgraded.

See response to Common Issue No. 4. The text has been modified slightly to clarify the intent of this statement. The understanding that the levee system would be maintained only to the present level of protection is essentially correct; the flood protection level standard is that which existed prior to high water in 1986. The reference to design standards is intended to indicate that the effectiveness of some levee sections, particularly repair sections built to varying slope and toe profiles, could be improved without raising the height of the levees, or increasing the level of flood protection.

11-15 Alternate quarry sites.

See response to Common Issue No. 6.

11-16 Mitigation for levee system and channel block impacts.

See response to Common Issues No. 1 and 4. The levee system will not be upgraded (in terms of flood protection level) as part of the O&M project, nor will channel blocks be constructed.

11-17 Commitment to mitigation.

See response to Common Issue No. 1.

11-18 Disagree with conclusion on channel morphology.

The table is correct as originally worded--there will be no change from present channel morphology evolution, which has been and will be influenced by the levees (as recognized in the Draft EIS). As noted previously, reference to channel blocks as part of the proposed action has been deleted.

11-19 Effects of growth on habitat loss, cottonwood/willow.

Table 2-2 acknowledges succession and conversion of cottonwood and willow stands under the vegetation entries and influence on floodplain development under socioeconomics.

11-20 Conservation measures for nesting eagles.

See responses to Comments 9-13 and 9-19.

11-21 Entry on induced growth in floodplain in Table 2-2.

This item is included with the socioeconomics entry in Table 2-2, consistent with the discussion of this issue in Section 4.3.3 of the Draft EIS.

11-22 Crucial winter range at quarry sites.

See response to Common Issue No. 6

11-23 Additional information on trumpeter swans.

The text has been supplemented as requested.

11-24 Peregrine falcon foraging habitat.

The statement in question has been revised to reflect this point.

11-25 Whooping crane information.

The text has been modified as requested.

11-26 Channel morphology needs relative to fish and wildlife.

The material in question is a part of the EIS discussion of physical resources in general and flood protection in particular. Discussion of fish and wildlife needs is not necessary or appropriate at this location.

11-27 Channel morphology conclusion.

See response to Comment 11-7. Section 4.1.2 of the Draft EIS distinguishes between the long-term effects of levees on channel morphology (Section 4.1.2.1) and the effects of the maintenance activities (Section 4.1.2.2).

11-28 Analysis of spawning habitat loss.

The comment appears to misconstrue the statement in the Draft EIS. The EIS does not attempt to claim that the levees have not been a major cause of spawning habitat loss; it simply states that available, documented information does not indicate such a situation. The 1980 Erickson source cited in the EIS was the only research encountered that specifically addressed this issue, and it identified both positive and negative effects of flooding on spawning habitat. The Corps was recently informed by John Kiefling of WGF (personal communication, March 2, 1990) that Wiley's (1969) results indicated that a total of 12 miles of side channels or braided reaches usable for spawning had been cut off by levee construction, while WGF personnel estimate that 4 to 5 miles of stream channels near Three-Channel Spring Creek were similarly cut off. (Wiley's results were reported on page 4-8 of the Draft EIS in a discussion of rearing habitat loss.)

The Corps is aware of no further information addressing the issue of habitat loss. While the Wiley and WGF figures provide an approximate indication of the amount of habitat loss, there does not appear to be an available estimate of the existing habitat base against which a comparison could be made. The location and amount of spawning habitat in the Snake River system has shifted markedly over time with changes in the river channel, both before and after levee construction. The requested analysis of spawning habitat loss cannot be conducted to any greater extent, but further analysis would have no bearing on making a reasoned choice among alternatives in any case.

11-29 Cottonwood community changes.

The text has been modified to include reference to Engelmann spruce. The EIS text already discusses transition of cottonwood communities in several locations. The results of the floodplain mapping and analysis have been provided to the FWS for inclusion in the final CAR, which is appended to the Final EIS.

11-30 Vegetation effects.

The paragraph in question begins "Beyond the long-term effects of the levees themselves, potential effects of the levee maintenance activities ..." This one paragraph specifically addresses only the effects of the maintenance activities, and should not be misconstrued. It is preceded by four paragraphs discussing the long-term effects of the levees, including the effects mentioned in the comment.

11-31 Crucial winter habitat in riparian areas.

The Draft EIS text appears to be sufficient in this respect; Section 4.2.3.1 identifies moose, deer, and elk as users of the area, and Section 3.2.3.1 describes the habitat requirements of these species, as identified by the FWS and WGF. Please note that the CAR indicates that crucial winter range for mule deer is not located within the project area (p. 91).

11-32 Wetland loss effect on birds.

Information to this effect has been added to the text.

11-33 Flat Creek wintering area.

The text has been changed as indicated.

11-34 Secondary effects of development on eagles.

The Draft EIS references the nest abandonment at the Solitude Subdivision. The additional detail on nest relocation has been added to the biological assessment. There clearly remains a difference of opinion on the development influence of discontinuous levee sections that provide low levels of flood protection. Eagle nests are concentrated in the non-Federal levee portion of the project area. Most of the non-Federal levees provide only 10-year or annual flood protection, and some are barely discernible in the field. The Corps doubts that these low-profile structures that require frequent emergency repairs would provide much security to most potential home buyers or builders. The requests from landowners to raise and extend the non-Federal levees can probably be taken as an indication that people perceive a low level of flood protection in this area, and feel that increased flood protection is needed to make development of these properties feasible.

11-35 Direct and indirect effects of levees on eagle territories.

See response to Comment 11-13; the same reasoning applies in this case.

11-36 Previous mitigation comments.

See response to Common Issue No. 1.

Letter 12, U.S. Department of Transportation, Federal Highway Administration.

12-1 No significant impacts.

No response necessary.

12-2 Documents satisfactory.

No response necessary.

Letter 13, U.S. Environmental Protection Agency.

13-1 EIS rating LO, lack of objections.

No response necessary.

Letter 14, Wyoming Department of Environmental Quality (1-10-90).

14-1 Wyoming regulation of mining and reclamation

The text has been modified (page 2-11 of the Draft EIS) to reflect this information.

14-2 Mining subject to state environmental quality act.

The text has been modified to reflect this information.

Letter 15, Wyoming Department of Environmental Quality (1-19-90)

15-1 Water quality protection.

The Corps will observe this classification and take it into account in specific planning for O&M activities.

15-2 Review of quarry SEIS; borrow sites above Wilson discouraged.

DEQ will receive a review copy of the EIS supplement on quarry development, as requested. See also response to Common Issue No. 6.

15-3 Sedimentation ponds.

The Corps appreciates this information. Construction activities requiring sedimentation ponds are only likely to be associated with potential future quarry development, which will be addressed in an EIS supplement.

Letter 16, Wyoming Emergency Management Agency.

16-1 No comments.

No response necessary.

Letter 17, Wyoming Game and Fish Department (1-30-90).

17-1 No substantive comments.

No response necessary.

Letter 18. Wyoming Game and Fish Department (1-30-90).

18-1 Blue Crane-Spring Creek projected fisheries values.

The Corps acknowledges receipt of this information, but does not believe the new data require a change in the economic analysis or the draft document. The only value measure appropriate for a Federal investment decision regarding maintenance of levees to prevent fish loss is willingness-to-pay for the opportunity to catch fish. Fishermen expenditures such as for travel, lodging, food, and equipment are gross expenditures for those goods and services and are not a direct measure of the value of the fishing experience. The material submitted with the comment is technically incorrect in adding the willingness-to-pay value with gross expenditures, which results in mixing two different value measures and considerably overstating the actual value. Further, Game and Fish Department expenditures for Spring Creek rehabilitation are reflected in the Corps' damage estimates by way of number of fish produced.

Flood damages and flood control benefits estimated in the Jackson Hole Draft O&M Decision Document use the suggested source, Binns (1972), for willingness-to-pay data. Binns' value was expressed as a value per mile, $6,080. This was converted to a value per caught fish of $24.10 (in 1989 dollars), using WGF resource and harvest data and the Consumer Price Index. The Corps also notes that use of a higher fishery value would have no effect on the results of the economic analysis, as Federal O&M is already justified with the damage prevention benefits cited in the draft document.

Letter 19. Wyoming Office of the Governor.

No substantive comments.

Letter 20. Wyoming Game and Fish Department (2-5-90).

20-1 Realistic alternatives not evaluated.

See response to Common Issue No. 3.

20-2 Request GI study and quarry site selection in current EIS.

The Corps' rationale for sequencing of actions and tiering of documents is articulated in the responses to Common Issues Nos. 1, 2, 3, and 6.

20-3 Levee maintenance model inadequate.

There is no single model used to predict future levee maintenance needs. The HEC-2 model was used to analyze river hydrology and flooding patterns. Results from this model were combined with over 30 years of historical experience to identify expected future maintenance needs. Basing this comment on heavy deposition of sediment load and debris is not supported by the full body of information on Snake River channel morphology. Some sections of the levee system, particularly below Wilson, have experienced observable aggradation of the channel from such deposits. However, as noted in the Draft EIS (page 3-4), actual field measurements have detected net long-term degradation of the channel in the Federal levee reach.

20-4 Eagle guidelines.

See responses to Comments 9-13 and 9-19.

20-5 Curtis Canyon and Flat Creek quarry sites rejected.

See response to Common Issue No. 6. The Corps appreciates receipt of the information on environmental concerns at the quarry sites.

20-6 Solutions for maintaining cottonwood stands.

See response to Common Issue No. 1.

20-7 Request review of 1976 flood study and model.

These documents will be made available by the Walla Walla District, if WGF will make a specific request indicating who should receive them and where.

20-8 Elk wintering below Highway 22.

The text has been corrected as indicated.

20-9 Bighorn sheep wintering numbers.

The text has been modified to reflect this comment.

20-10 Effect of quarry on bighorn sheep.

See response to Common Issue No. 6.

20-11 Peregrine hack site information.

The biological assessment text has been modified to reflect this information.

20-12 Fisheries corrections for GI study.

The Corps is always open to new or improved technical data on local resources.

20-13 Recommends mitigation per CAR

See response to Common Issue No. 1.

20-14 Long-term project adequacy.

See response to Common Issue No. 2.

20-15 Long-term and indirect impacts.

The Corps disagrees with this comment. The Draft EIS clearly distinguishes between the short-term effects of maintenance activities and the long-term effects of the levees themselves, including indirect effects.

20-16 Upgrading levees to standard specifications.

See response to Common Issue No. 4. The text has been revised to clarify the intent of this statement.

20-17 Mitigation for current and future impacts.

See response to Common Issue No. 1.

Letter 21, Wyoming Geological Survey.

21-1 Teton Canyon, U&I quarries.

The Corps appreciates receipt of this information and will consider it as the future quarry studies are conducted.

21-2 Address seismic potential and effect on levees.

The Corps acknowledges that an earthquake of magnitude 7.5 could occur, and could damage the levees if it did occur. The extent of damage is uncertain, but would most likely be significant only in levee sections where there were enough fine materials present within the embankments that liquefaction would result. Further, this would probably require high water levels adjacent to the levee. Depending upon the time of year of such an event, at most one flood season would pass before any extensive damage could be repaired. An event that would cause portions of the valley to drop 10 to 12 feet would appear to be so severe that direct earthquake damage would affect much more than just the levee system.

The present degree of seismic resistance of the levees is not an issue that can be adequately addressed in the EIS. Modifying the levees to be certain they would withstand a magnitude 7.5 earthquake would require significant reconstruction that would be well beyond the scope of the proposed O&M program, and would require specific authorization. Moreover, additional information on seismic risk and consequences is not essential to a reasoned choice among alternatives. This issue may be appropriate for consideration in the GI study.

Letter 22, Wyoming Public Service Commission.

22-1 Requests no restrictions on public utility service.

The Corps will consider this request as it implements the O&M project. Because no new construction is proposed, no effects on utility service are expected.

22-2 Coordination with utilities.

The Corps will coordinate with utilities as necessary. See response to Comment 22-1.

22-3 Compensation for damage.

The Corps acknowledges this position on responsibility for damages and will observe standard notification procedures for field activities.

Letter 23, Wyoming State Archives, Museums and Historical Department.

23-1 Quarry effects, issues for SEIS.

No response necessary concerning existing quarry. See response to Common Issue No. 6 regarding future quarry development.

Letter 24, Teton County

24-1 Support preferred alternative.

No response necessary.

24-2 Separable elements.

See response to Common Issue No. 4. Federal O&M of the non-Federal levees south of the Wilson Bridge is justified regardless of whether the right and left banks are evaluated separately or together.

24-3 Maintenance of levees existing prior to 1986.

See response to Common Issue No. 4. The text has been modified to indicate that levees existing prior to high water in 1986 will be maintained, and to identify those levees.

24-4 Include mitigation.

See response to Common Issue No. 1.

24-5 Complete levees to South Park Bridge.

See responses to Common Issues No. 3 and 5.

24-6 Road and bridge cost information.

Information on road and bridge repair costs is helpful and will be used in the General Investigation Study. Federal assumption of operation and maintenance is well justified with the repair costs used, and benefits for prevention of road and bridge damage are small relative to prevention of residential damage in the Federal levee area and avulsion prevention benefits in the non-Federal levee areas.

24-7 Disadvantages of Teton Pass quarry site.

See response to Common Issue No. 6.

Letter 25, Greater Yellowstone Coalition.

25-1 Comprehensive planning.

See response to Common Issue No. 2

25-2 Scope of review too narrow.

See response to Common Issue No. 3

25-3 Public involvement in future decisions.

No response necessary.

25-4 Long-term mitigation program.

See response to Common Issue No. 1.

25-5 Long-term river objectives and control needs.

See response to Common Issue No. 2.

25-6 Alternatives to levees.

See response to Common Issue No. 3.

25-7 Address gravel sites in EIS.

See response to Common Issue No. 6.

25-8 Comprehensive planning before O&M decision.

See response to Common Issue No. 2.

25-9 Task force to guide planning.

See response to Common Issue No. 2. Such a task force may be a desirable approach to planning and management, but it is beyond the scope of the Corps' authority.

Letter 26, Jackson Hole Alliance.

26-1 Agree with O&M decision.

No response necessary.

26-2 Mitigation responsibility.

See response to Common Issue No. 1.

26-3 EIS mitigation posture inadequate.

See response to Common Issue No. 1.

26-4 Planning for long-term environmental effects.

See response to Common Issue No. 2.

26-5 Long-term mitigation plan.

See response to Common Issue No. 1.

26-6 Net impact conclusion.

The anticipated project impacts referenced in the comment are also acknowledged in the Draft EIS, but these are part of the environmental baseline at the time of the proposed action.

26-7 Additional impacts depending on design standards, channel plugs.

The Final EIS text has been clarified concerning maintenance of design standards. Channel plugs are not being proposed as part of the project and have not been added to the project description. No further impact analysis is necessary. See also response to Common Issue No. 4.

26-8 Impact of channel plugs.

See response to Common Issue No. 4 and Comment 26-7. The Corps has concluded that channel plugs will not be a part of the maintenance program, therefore no additional impacts will occur.

26-9 Continued ad-hoc construction.

See response to Common Issue No. 2. Again, note that channel plugs are not part of the proposed action.

26-10 Environmental and B/C analysis logic.

The environmental and economic analyses are necessarily founded on different standards, based on the respective regulatory guidance for each subject. The purpose of the environmental analysis is to evaluate the differences between alternatives so as to support a reasoned decision. As explained in the response to Common Issue No. 3, there are only two reasonable alternatives for the proposed action; in this context, removal of the levees is not a reasonable alternative.

With respect to the economic analysis, Federal policy is to only maintain flood control structures that are cost effective. Economic analysis therefore requires comparison of damages under the with- and without-levee condition, not comparison of the with-levee condition to the existing condition. An economic analysis that would be the functional equivalent of the environmental analysis would involve comparison of the costs of Corps O&M to the costs of Teton County O&M. Congress made this issue moot with passage of the 1986 WRDA.

26-11 Adopt CAR mitigation.

See response to Common Issue No. 1.

Letter 27, Trout Unlimited, Jackson Hole Chapter.

27-1 Support preferred alternative.

No response necessary.

27-2 Mitigation conclusion unacceptable.

See response to Common Issue No. 1.

27-3 Supports CAR recommendations.

See response to Common Issue No. 1.

27-4 Public review of GI study.

The Corps indicated at the public workshops and hearing in Jackson on January 30, 1990 that it would voluntarily seek scoping input when it initiates the GI Study. Further, any significant action proposals resulting from the GI Study would be subject to NEPA review, including requirements for public involvement in the review process.

27-5 Fish mitigation measures.

See response to Common Issue No. 1. The Corps already agreed in the Draft EIS to implement item 5 on this list.

27-6 Levee removal best environmental alternative, but not feasible.

As noted in the response to Common Issue No. 3, the Corps also concluded that a levee removal alternative would not be reasonable.

27-7 Mitigation responsibility and funding.

See response to Common Issue No. 1.

27-8 Interpretation of WRDA Section 840 and 906; public review.

See response to Common Issue No. 1 and Comment 27-4.

27-9 O&M decision constitutes new project.

See response to Common Issue No. 1.

27-10 Snag and drag mitigation commitment.

The feasibility of creating new in-water habitat as mitigation for removal of snags is highly dependent on site-specific river conditions and future snag removal needs, both of which are impossible to address in this EIS. The general objective will be one-for-one replacement of usable pool area.

27-11 Mitigation responsibility.

See response to Common Issue No. 1.

27-12 Consideration of mitigation in GI study.

The text has been revised slightly to clarify the mitigation study process, in light of new direction from Corps Headquarters concerning funding for a seprate mitigation study.

27-13 Positive flood effects on spawning.

The positive effects of flooding on spawning habitat were reported in the Draft EIS, in Section 4.2.1.1.

27-14 O&M decision constitutes a new project.

See response to Common Issue No. 1.

27-15 New data on snag habitat value.

These data were requested from WGF and have been incorporated in the text.

27-16 Mitigation of trout effects.

See response to Common Issue No. 1.

27-17 Increasing agricultural use and sediment.

The Corps does not have any specific evidence that agricultural use has been increasing in association with the levees. Given the overall trend of conversion of agricultural land to residential use, it would appear that sediment from agriculture should be decreasing.

27-18 New data on snag habitat value.

See response to 27-15.

27-19 Mitigation.

See response to Common Issue No. 1.

Letter 28, Trout Unlimited, Wyoming Council.

28-1 Support preferred alternative, with mitigation.

See response to Common Issue No. 1.

28-2 O&M decision constitutes a new project.

See response to Common Issue No. 1.

Letter 29, University of Wyoming, Department of Geography and Recreation.

29-1 Concur with GYC comprehensive plan recommendation.

See response to Common Issue No. 2.

29-2 Mitigation measures.

See response to Common Issue No. 1.

29-3 Invitation to relevant research talk.

The Corps appreciates being informed of this opportunity. No further response necessary.

Letter 30. Wyoming Wildlife Federation.

30-1 Neglect of responsibility due to extent of uncertainty.

See response to Comment 11-1. The Corps is not neglecting its responsibility under NEPA because additional information is not essential to the decision on whether to assume O&M responsibility for the levees.

30-2 Commitment to mitigation in EIS.

See response to Common Issue No. 1.

30-3 Breaching levees for rejuvenation of wetlands.

See response to Common Issue No. 3.

Letter 31. Scott E. Albrecht.

31-1 Include mitigation per FWS.

See response to Common Issue No. 1.

Letter 32. Alice and Briggs Austin.

32-1 Development effects, loss of cottonwoods, and river degradation not considered.

See responses to Common Issue No. 1 and Comments 11-2 and 11-7.

32-2 Mitigation/restoration program.

See response to Common Issue No. 1.

Letter 33. Agnes Baker.

33-1 Maintaining river habitats (mitigation).

See response to Common Issue No. 1.

Letter 34. Terry Beaver.

34-1 Complete ecological study.

The EIS, including the appended CAR prepared by the Fish and Wildlife Service, provide an excellent base of ecological

information. Other studies that are more specifically targeted to ecological changes in the project area have been ongoing for some time, and will be continued in the future.

34-2 Protect species and habitats (mitigation).

See response to Common Issue No. 1.

Letter 35. Franz Camenzind.

35-1 Mitigation.

See response to Common Issue No. 1.

35-2 Public comment on future studies.

See response to Comment 27-4.

35-3 Treat Snake River as an ecosystem.

See response to Common Issue No. 2.

Letter 36. Stephanie Crockett.

36-1 Eagle disturbance, CAR mitigation.

See response to Common Issue No. 1.

36-2 Long-range flood control plan.

See response to Common Issue No. 2.

Letter 37. Paula Denissen.

37-1 Comprehensive plan with ecologically based alternatives.

See responses to Common Issues Nos. 2 and 3.

Letter 38. Katherine Duffy.

38-1 Responsibility for mitigation.

See response to Common Issue No. 1.

38-2 Opposes future levees.

See response to Common Issue No. 5

Letter 39. Ronald E. Dutton.

39-1 Include mitigation, per FWS.

See response to Common Issue No. 1.

Letter 40. Skip Eshehnan.

40-1 Include mitigation, per FWS.

See response to Common Issue No. 1.

Letter 41. Nancy FitzSimmons

41-1 Include broad range of alternatives for ecosystem.

See response to Common Issue No. 3.

41-2 Implement mitigation measures.

See response to Common Issue No. 1.

Letter 42. Joseph Gebler.

42-1 Hydrological and ecological ties of river to floodplain.

The Draft EIS contains extensive discussions of hydrology, channel morphology, and aquatic and terrestrial ecology along the river itself and in adjacent floodplain areas, and recognizes the interrelationships among these resources.

42-2 Mitigation of damages.

See response to Common Issue No. 1.

42-3 Outside agency to conduct assessments.

The Corps has followed regulatory guidance in conducting its own assessments of these resources. Under NEPA, the Corps has the responsibility for assessing the environmental effects of its proposed actions (40 CFR 1500.2, 1500.3, 1507.2(c)). Consultation procedures for the Endangered Species Act direct that agencies prepare biological assessments of their proposed actions (50 CFR 402.01, 402.12) and submit them to the FWS.

42-4 Restoration program (mitigation).

See response to Common Issue No. 1.

Letter 43. Robert Gill, Kelly Lockhart, and Elizabeth Lockhart (Porter Trust).

43-1 Separable elements.

See response to Common Issue No. 4.

43-2 Land value figures used in B/C analysis.

The $75 to $210 per acre damage cited is the estimated physical damage to land and includes such things as debris clean-up and fence repair. As explained in the Draft Decision Document, avulsion damage was estimated at $13,000 per acre, which is the difference between estimated pre-avulsion land value of $13,500 per acre and post-avulsion estimated value of $500 per acre. The pre-avulsion value was derived from sales through September, 1989. Some of these sales involved wooded property with spring creeks, and this was taken into account in arriving at a typical unit land value of $13,500 per acre. In any case, use of a higher land value would not have altered the evaluation results, which justify Corps maintenance of all non federal levees.

43-3 Area subject to avulsions.

The Corps agrees with the statement that the avulsion-prone acreage designated on plates B-2 and B-3 in Appendix B is insufficient. After further review, these plates have been modified to show the significant areas felt to be susceptible to avulsion related flood damages. Although there are additional areas which could be included in this category, they are limited in size and would not affect the study findings. The avulsion-prone acreage in this area is currently calculated at approximately 1,400 acres.

43-4 Damage analysis reflecting land value for development

Federal assumption of operation and maintenance will insure continuation of the level of protection now afforded by levees. The level of protection will not increase or decrease with the proposed action. Therefore, Federal assumption of operation and maintenance wil be neutral with respect to the influence of level of protection on land value. The levels of protection provided by existing non-Federal levees with 3 feet of freeboard are shown on page A-5 of the Draft Decision Document. There has been no prior commitment to provide a system of levees with 100-year flood protection in these areas, so there will be no "degradation" of land values if the General Investigation Study finds that a complete system of 100-year flood protection is not economically feasible.

43-5 Higher fisheries value.

See response to Comment 18-1.

Letter 44. John Good.

44-1 Mitigation.

See response to Common Issue No. 1.

Letter 45. Clifford Hansen.

45-1 Rising land values

The benefit/cost analysis employed land value data from local appraisers that were current through September 1989. These data reasonably reflect recent increases in land values. See also response to Comment 43-2.

45-2 Levee protection on both sides of river.

See response to Common Issue No. 5.

45-3 Levee extensions along Snake River.

See response to Common Issue No. 5.

45-4 Levee extension along Gros Ventre.

See response to Common Issue No. 5.

45-5 Gravel extraction from Gros Ventre.

See response to Common Issue No. 6.

45-6 Continued use of state quarry.

See response to Common Issue No. 6.

Letter 46. Ann Harvey.

46-1 Mitigation.

See response to Common Issue No. 1.

46-2 Ad hoc levee construction, floodplain development.

See response to Common Issue Nos. 1 and 2.

46-3 Task force to lead planning effort.

See response to Comment 25-9

46-4 Comprehensive plan for Snake River and ecosystem.

See response to Common Issue No. 2.

Letter 47. Ed Ingold.

47-1 Pursue mitigation.

See response to Common Issue No. 1.

Letter 48. Rick Jansen.

48-1 River channel cleaning.

This issue is appropriate for consideration in the upcoming GI study.

48-2 Supports building gabions, opposes hauling rock.

See response to Common Issue No. 6.

Letter 49. David Johns.

49-1 Mitigation in preferred alternative.

See response to Common Issue No. 1.

49-2 Analysis of effects on ecosystem.

The Corps believes that the EIS has sufficient analysis of ecosystem effects.

49-3 Preserve/restore riparian areas.

See response to Common Issue No. 1.

49-4 No further floodplain development.

The permitting of floodplain development is a local matter over which the Corps has no authority. See response to Common Issue No. 1.

49-5 1986 act requires mitigation.

See response to Common Issue No. 1.

Letter 50. James Jones.

50-1 Include mitigation per FWS.

See response to Common Issue No. 1.

Letter 51. Barry Louik.

51-1 Restore productivity.

See response to Common Issue No. 1.

51-2 Task force to lead planning effort.

See response to Comment 25-9.

Letter 52, Patrick Matheny

52-1 Mitigation

See response to Common Issue No. 1.

52-2 Opposes future levee construction.

See response to Common Issue No. 5.

52-3 Corps support for wildlife, not taxpayer.

Corps programs are supported by tax dollars. As such, they must compete with other claims on Federal fiscal resources and be justified on the basis of objective criteria.

Letter 53, Edward McGarrity.

53-1 Ecosystem maintenance program.

See response to Common Issue No. 1.

Letter 54, Mary Mead.

54-1 River containment to protect real estate.

See response to Common Issue No. 5.

54-2 Levee protection for spawning habitat.

See response to Common Issue No. 5.

54-3 Threatened trout habitat on Gros Ventre.

No response necessary.

54-4 Area-wide flood control plan.

See response to Common Issue No. 2.

Letter 55, David Meyers.

55-1 Mitigation measures.

See response to Common Issue No. 1.

Letter 56. Marian Meyers.

56-1 Mitigation measures.

See response to Common Issue No. 1.

Letter 57. Debe Piatak.

57-1 Mitigation.

See response to Common Issue No. 1.

Letter 58. William Resor.

58-1 Limitation of scope and alternatives.

See response to Common Issue No. 3.

58-2 Add levee completion alternative.

See response to Common Issue No. 3.

58-3 Selection of levees to maintain.

Table 2-1 has been revised to provide a complete listing of all levee segments that is consistent with their treatment in the Decision Document. Given the identification of levees to maintain based on existing conditions prior to high water in 1986, the two levee sections in question have been added to the proposed action, as indicated in Table 2-1 and elsewhere. See also response to Common Issue No. 4.

58-4 Separable elements.

See response to Common Issue No. 4.

58-5 Additional avalsion analysis.

The estimate of acreage subject to avulsion has been revised upward. See response to Comment 43-3.

58-6 Opposes incomplete maintenance.

See responses to Common Issues Nos. 3, 4 and 5.

Letter 59. David Richerson.

No substantive comments.

Letter 60. Laura Riensche

60-1 Environmentally suitable alternatives.

See response to Common Issue No. 3.

60-2 Adopt restoration program.

See response to Common Issue No. 1.

60-3 Study of river ecology and hydrology.

See responses to Common Issue No. 1 and Comment 42-1.

60-4 Mitigation measures.

See response to Common Issue No. 1.

Letter 61. I. Scott Sand.

61-1 Habitat studies and rehabilitation.

See response to Common Issue No. 1.

Letter 62. David Saurman.

62-1 Mitigation.

See response to Common Issue No. 1.

62-2 Snake River hydrology and ecology studies, long-range plan.

See response to Common Issue No. 2.

Letter 63. Carl Scrivens.

63-1 Effects and values of snag removal.

The snag removal contemplated as part of the proposed action would be a very limited action undertaken periodically if and when problem snags threatened the integrity of the levees. The Corps' 1989 environmental assessment on a comparable debris clearance program demonstrated that such action was needed to prevent damage to the levees and would have minimal effects on fish and wildlife. Note that mitigation for these effects is included as part of the proposed action.

Letter 64. Phil Shepard.

64-1 Mitigation

See response to Common Issue No. 1.

Letter 65, Richard Spotts.

65-1 DES scope and alternatives inadequate.

See response to Common Issue No. 3.

65-2 Cumulative, induced effects.

These impacts have been clearly identified and sufficiently addressed. See responses to Comments 9-14, 11-2, 11-34 and 11-35.

65-3 Mitigation.

See response to Common Issue No. 1.

65-4 Setback levees.

See response to Common Issue No. 3.

65-5 Flood easements.

See response to Common Issue No. 3.

65-6 Comprehensive mitigation measures.

See response to Common Issue No. 1.

Letter 66, Jim Springer.

66-1 Supports Corps maintenance.

No response necessary.

66-2 Mitigation.

See response to Common Issue No. 1.

Letter 67, Kim Springer.

67-1 Supports Corps O&M.

No response necessary.

67-2 Long-range mitigation plan.

See response to Common Issue No. 1.

67-3 Long-range maintenance plan

See response to Common Issue No. 2.

Letter 68. John Swanson.

68-1 Mitigation measures.

See response to Common Issue No. 1.

Letter 69. Kim Vletas.

69-1 Mitigation responsibility.

See response to Common Issue No. 1.

Letter 70. Paul von Gontard.

70-1 Nelson Levy extension.

See response to Common Issue No. 5.

70-2 Protect Snake River at Flat Creek.

See response to Common Issue No. 5.

70-3 Complete levee system.

See response to Common Issue No. 5.

Letter 71. John Wilbrecht.

71-1 Mitigation.

See response to Common Issue No. 1.

Letter 72. John Wullich.

72-1 Mitigation.

See response to Common Issue No. 1.

72-2 Study of hydrology and ecology.

See response to 60-3.

72-3 Mitigation measures.

See response to Common Issue No. 1.

Letter 73. Dusty Zaunbrecher.

73-1 Mitigation.

See response to Common Issue No. 1.

Letter 74. Bland Hoke.

74-1 Importance of Corps O&M.

No response necessary.

74-2 Mitigation.

See response to Common Issue No. 1.

74-3 No tax base in Teton County to support O&M.

No response necessary.

Letter 75. Robert Ablondi.

75-1 Use of gabions

See response to Common Issue No. 2.

75-2 Environmental concerns at quarry sites.

See response to Common Issue No. 6.

75-3 Selective gravel mining.

See response to Common Issue No. 6.

75-4 Validity of flood model results.

The accuracy and limitations of the HEC-2 model used for the hydraulic analysis are clearly stated in Appendix B of the Draft Decision Document. The high cost and time delay needed to improve the specification of the model for the non federal levee reaches are not justified for this level of study.

Letter 76. Paul Bruun.

76-1 Supports selected alternative.

No response necessary.

76-2 Improve trout habitat

See response to Common Issue No. 1.

76-3 Levee raising due to gravel deposition.

See response to Comment 20-3.

76-4 Instream river shaping and bank protection.

See response to Common Issue No. 1.

Letter 77, U.S. Department of the Interior, Fish and Wildlife Service Director

77-1 Long-term levee impacts.

The comment repeats material from the CAR that is similar to impact descriptions presented in the Draft EIS. See also response to Comment 11-7.

77-2 Commitment to mitigation per CAR.

See response to Common Issue No. 1.

Letter 78, Trout Unlimited, (National) Executive Director

78-1 Mitigation as part of preferred alternative.

The comment appears to reflect some degree of misunderstanding or misinformation concerning mitigation as part of the preferred alternative. The proposed action does include mitigation for the effects of actual maintenance activities, but not mitigation for the long-term effects of the levees themselves. However, the Corps has agreed to request funding for a study of mitigation needs relative to long-term effects. See response to Common Issue No. 1.

78-2 FWS mitigation program.

See response to Common Issue No. 1.

78-3 New Corps environmental policy.

See response to Comment 78-1. General Hatch was serious and sincere concerning the intended policy direction of the Corps concerning environmental activities. The Corps' position and approach on this project concerning mitigation of long-term environmental effects, as articulated in the response to Common Issue No. 1, reflects the direction of General Hatch's November 20, 1989 presentation. The Corps hopes that TU will recognize the legal and institutional bounds within which the Corps must operate, and the fact that considerable time is usually required to translate new policy into action.

78-4 Trout Unlimited assistance available.

The Corps appreciates this offer, and TU's cooperation and interest to date.

Letter 79, David McDonald

79-1 Include FWS mitigation plan.

See response to Common Issue No. 1.

Letter 80. Floyd Scheider

80-1 Address BTNF watershed, Snake River silt load.

The needs of the upper and lower watershed on the Bridger-Teton National Forest are the management responsibility of the U.S. Forest Service, and are not appropriate for consideration in the levee O&M project EIS.

Letter 81. Daniel Silver

81-1 Preserve Snake River floodplain and riparian habitats.

See response to Common Issue No. 1.