

**ADDENDUM TO ECONOMIC ANALYSIS OF CRITICAL HABITAT
DESIGNATION FOR THE PREBLE'S MEADOW JUMPING MOUSE**

June 2003

June 3, 2003

EXECUTIVE SUMMARY

1. In July 2002, the U.S. Fish and Wildlife Service (Service) proposed designation of critical habitat under the Endangered Species Act of 1973, as amended (the Act) for the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) on approximately 57,446 acres in Wyoming (Albany, Converse, Laramie, and Platte Counties), and Colorado (Boulder, Douglas, El Paso, Jefferson, Larimer, Teller and Weld Counties). The Act requires the Service to prepare an economic analysis of the critical habitat designation. The Service released a *Draft Economic Analysis of Critical Habitat Designation for the Preble's Meadow Jumping Mouse* (hereafter *DEA*) for public review and comment in January 2003.
2. The primary purpose of this Addendum is to address issues raised in public comments to the *DEA*, where appropriate, and to incorporate additional information received through communications with Action agencies and other stakeholders. This Addendum considers newly available information and revisits the assumptions and analytic conclusions presented in the *DEA* in light of this new information.

Key Findings

Major Effects of the Proposed Rule

3. The *DEA* estimated that the economic impact associated with implementation of section 7 for the Preble's meadow jumping mouse (PMJM) would range from \$74 million to \$172 million over ten years (or \$7 million to \$17 million annually).¹ The *DEA* also estimated that 82 percent of these costs would stem from project modifications, administrative consultations and technical assistance costs associated with residential and related development projects, while less than one percent of costs would result from agricultural activities in areas proposed for designation.
4. Based on newly available information, this Addendum revises the economic impact estimates presented in the *DEA*. Specifically, this Addendum increases the total section 7 impacts to land use activities within the proposed critical habitat designation by \$4 million to \$12 million over the next ten years. Dams and reservoirs make up 52 percent of this change (\$6 million), followed by habitat conservation plans (HCPs) (22 percent or \$3 million), utilities (12 percent or \$1 million), and Warren Air Force Base (WAFB) (11 percent or \$1 million). Gravel mining, and forest management plans and other U.S. Forest Service (USFS) activities represent the remaining three percent (less than \$1 million) of additional costs. Therefore, the total economic impact associated with the implementation of section

¹ Annualized estimates have been converted to present values using a seven percent discount rate and include impacts that are co-extensive with other aspects of section 7 of the Act (see Exhibit 7-3 of the *DEA*).

7 for the PMJM is expected to range from \$79 million to \$183 million over ten years (or \$8 million to \$18 million annually). Nearly 80 percent of these costs are expected to stem from potential project modifications, administrative consultations and technical assistance costs associated with residential and related development projects, while less than one percent of costs are expected to stem from agricultural activities in areas proposed for designation. The remainder of the costs are associated with transportation, national fire plans, forest management plans and other USFS activities, utilities, recreation, bank stabilization, and activities at the WAFB and Rocky Flats Environmental Technology site.

Costs Associated with Residential and Related Development Activity in Colorado

5. Impacts to residential and related development projects are expected to result from administrative costs associated with the consultation process, costs of project delays, and costs of mitigative measures to protect habitat. Over 98 percent of these costs are borne by third parties (i.e., the landowner, the land developer, or the housing consumer). Predicting which parties bear the cost of these measures is difficult. Given the availability of *substitute* housing sites in the study area, total residential development (i.e., the number of new housing units constructed) is not likely to decline as a result of the critical habitat designation for the PMJM. It is likely, however, that project delays and required project modifications will result in some impacts (or increased costs) either to the landowner, the land developer, or (possibly) the housing consumer. For example, if the full measure of these costs is borne by the landowner in an area designated as critical habitat, then the value of the land is likely to decrease; that is, the seller will receive a lower price under the designation than without the designation for the same land. Alternatively, if the full measure of these costs is borne by the land developer, then the total dollar *profits* to the developer could decrease by approximately six percent to 30 percent.² Thus, in this scenario the developer experiences lower profit margins, but the price to the home buyer remains the same. In the event that the housing consumer bears the full measure of these cost impacts, the purchaser could experience a 1.5 percent increase in home prices, albeit with a potential concurrent increase in amenities, including more open space or larger lot size.³ It is important to note, however, that these amenities may be offset by *disamenities*, including a decrease in actual home size (i.e., in square footage). This analysis suggests that consumers in the immediate area surrounding the critical habitat are not likely to experience an increase in home prices.

² This calculation can be found in Section 4, page 4-23.

³ Ibid.

6. Although the distribution of costs across landowners, developers, and home buyers is difficult to predict, the effects of these potential shifts in land values, developer profits, and housing prices represent the overall change in social welfare resulting from the proposed rule. In other words, these impacts represent changes in producer and consumer surplus.
7. No public comments were received on the *DEA* regarding the economic impacts to residential and related development activity in Colorado. Consequently, this Addendum does not modify the economic impacts presented in the *DEA* for residential and related development activity in Colorado.

Costs Associated with Possible Changes in Agricultural Activity in Wyoming

8. Several commenters stated that the *DEA* excluded a discussion of three key impacts to the agricultural industry in Wyoming: (1) the opportunity cost of forgone Federal funding; (2) the decreased value of land; and (3) impacts to agricultural landowners under the special 4(d) rule. This Addendum carefully considers each of these potential impacts but concludes that impacts to the agricultural industry are likely to be modest.
9. First, while some landowners may choose to forgo Federal funding as a result of the designation, the overall use of operational and conservation funding will not decrease in the region as other landowners will utilize available funding. Second, impacts to agriculture operational costs and land values are not anticipated as long as the 4(d) rule remains in effect. Impacts to land values associated with potential future conversion of agricultural lands to development are anticipated to be modest because proposed critical habitat is located beyond town centers, which are the areas experiencing growth and pressure to convert agricultural land to other uses. Third, data collected in the course of this analysis reveals that landowners are not experiencing impacts under the 4(d) rule and that many landowners are relying on an extension of this rule to avoid future adverse impacts to agricultural and irrigation ditch maintenance activities resulting from section 7 implementation for the PMJM. Since no impacts to agricultural operations, agricultural land values, or the overall use of Federal operational and conservation funding are anticipated, this analysis finds there are no regional impacts associated with this designation. Therefore, this Addendum does not modify the estimated economic impacts to agricultural activities associated with the implementation of section 7 for the PMJM.
10. The *DEA* concluded that most of the forecast economic impacts to agricultural activities in Wyoming were likely to result from sections 9 and 10 of the Act following the expiration of the special 4(d) rule in May 2004. However, the Service has decided to extend the amended special 4(d) rule for a period of ten years. This Addendum finds that the extension of the 4(d) rule minimizes all impacts to landowners associated with those activities exempt under the rule and not subject to a Federal nexus, since the 4(d) rule extension lifts the section 9 take and section 10 HCP requirements for exempted activities.

Therefore, this Addendum removes the impacts associated with sections 9 and 10 of the Act for 4(d) exempt activities from the analysis of impacts to agricultural activities in Wyoming (*DEA*, Appendix B).

Costs Associated with Other Activities

11. Several commenters stated that the *DEA* excluded a discussion of several land use activities that may be impacted by the designation of critical habitat for the PMJM. Specifically, newly available information modifies the economic impacts to WAFB, utility, HCP, dam/reservoir, gravel mining, and USFS activities as follows:
 - **F.E. Warren Air Force Base** - The *DEA* estimated 28 to 31 informal consultations during the next ten years at a total cost of \$794,000 to \$1,121,000. This Addendum revises these estimates to reflect additional consultations for ongoing or planned activities within the streamside management zone established by the proposed designation, and a decrease in the number of consultations anticipated for trail maintenance activities. Consequently, this Addendum estimates a total of two formal and 83 to 86 informal consultations associated with base activities during the next ten years at a total cost of \$1,536,000 to \$2,446,000.
 - **Utilities** - The *DEA* estimated approximately 83 formal and nine informal consultations associated with utility activities in Colorado and Wyoming during the next ten years at a total cost of \$1,322,000 to \$2,260,000. This Addendum revises these estimates to reflect one additional consultation anticipated for a natural gas pipeline project in Wyoming. This Addendum also revises the methodology for cost estimates for project modifications in Colorado. Therefore, this Addendum estimates a total of 83 formal and ten informal consultations associated with utility activities at a total cost of \$2,036,000 to \$3,744,000.
 - **Habitat Conservation Plans** - The *DEA* did not estimate the cost to develop and implement county-level HCPs in Colorado due to uncertainty regarding the timing and scope of these HCPs. Public comments on the *DEA* provided details that Boulder County and the City of Boulder, the City and County of Denver's Board of Water Commissioners, Douglas County, and El Paso and the City of Colorado Springs HCPs are likely to be completed in Colorado in the near future. Consequently, this Addendum revises the *DEA* to incorporate the development, implementation, and administrative consultation costs for these four HCPs. The total cost associated with the development and implementation of these HCPs is estimated to range from \$2,577,000 to \$2,618,000.

- **Dams/Reservoirs** - The *DEA* did not estimate economic impacts to three planned municipal water reservoirs due to uncertainty whether these projects would be completed within the ten-year time frame of the analysis. Public comments provided details to quantify economic impacts to the Halligan Reservoir project, resulting in one formal consultation. The total economic impact to this project may range from \$181,000 to \$6,183,000.
- **Gravel Mining** - The *DEA* did not include an estimate of the economic impacts to gravel mining activities in Colorado and Wyoming due to uncertainty whether these projects would require consultation with the Service. Public comments provided details that one gravel mining operation in Colorado is likely to require a formal consultation with the Service during the next ten years. The total economic impact to this gravel mining operation may range from \$15,500 to \$25,500.

Public comments also identified one mining operation in Wyoming, a limestone mine just outside unit NP5, that may require a formal consultation with the Service during the next ten years. The operation maintains an active mining permit for the removal of limestone stockpiles on site. The mine is closed and the company plans to construct an industrial facility on the site. While plans are in the early stages, the company anticipates completing construction within the next ten years. Due to uncertainty regarding whether or not this project would affect critical habitat for the PMJM and would require a consultation, costs associated with this project are not included in this analysis.

The Wyoming Department of Environmental Quality (DEQ) anticipates permitting up to two sand and gravel mines annually over the next ten years in areas proposed as critical habitat for the PMJM. The Wyoming DEQ requires operators to prepare and submit a wildlife survey to the Service for review and comment in order to obtain a mining permit. Therefore, this analysis anticipates 20 instances of technical assistance for gravel mining activities at a total cost of \$12,800 to \$37,200 over the next ten years .

- **U.S. Forest Service** - The *DEA* did not estimate the economic impact associated with consultations on forest plan revisions for three National Forests that fall within the proposed critical habitat for the PMJM. The USFS anticipates initiating three formal consultations associated with these forest plan revisions at a total cost of \$78,300 to \$87,300. The USFS also provided new information that it plans to initiate one drought-related formal consultation associated with the potential overgrazing of riparian areas at a total cost of \$15,500 to \$25,500.

Public comment also indicated special use authorizations issued by the USFS for recreational and non-recreational activities should be included. This Addendum

revises these estimates to reflect up to five additional formal consultations for special use authorizations in the Arapaho-Roosevelt National Forest in Colorado. The total economic impact of these special use authorization permits may range up to \$127,000.

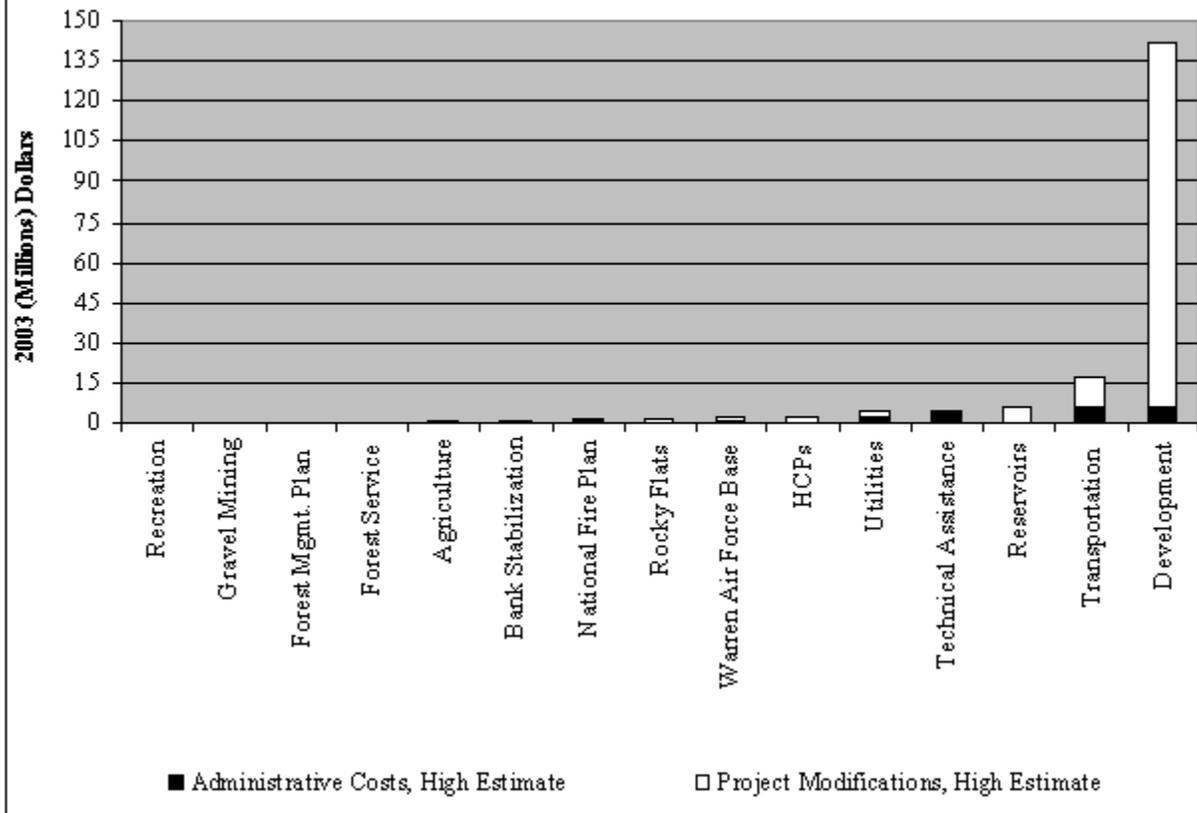
Benefits Associated with Protection of the Area Proposed as Critical Habitat

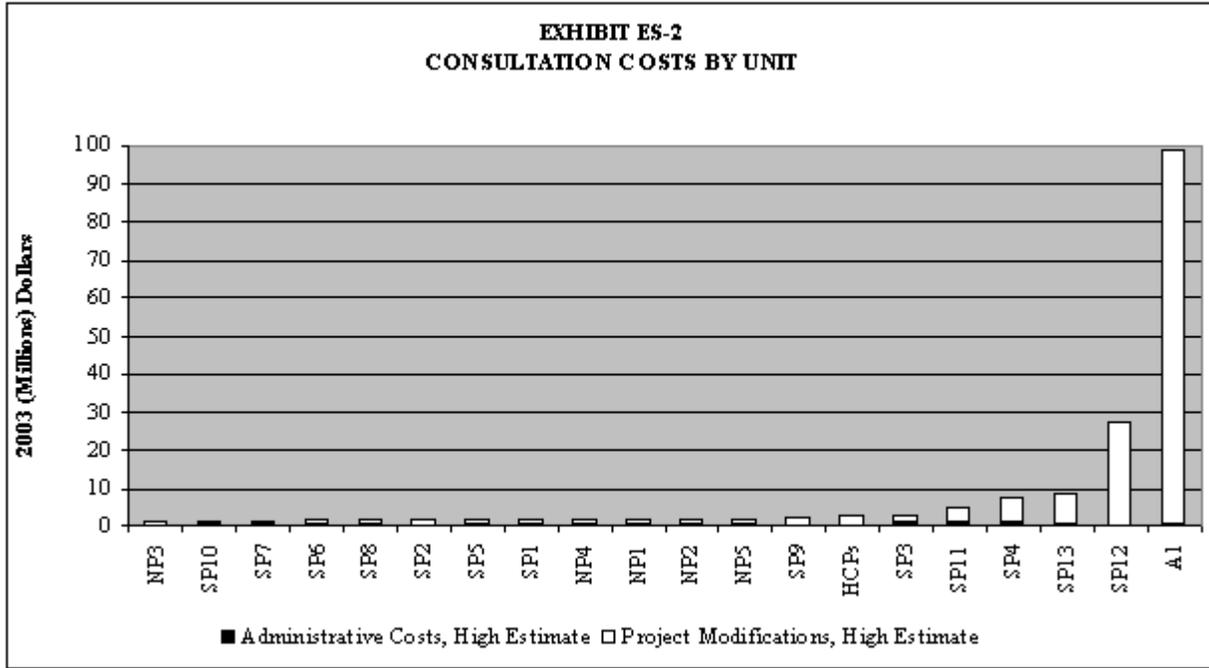
12. Certain categories of benefit may derive from the listing of the PMJM and the designation of critical habitat. Survival and conservation of the species may lead to benefits such as enhanced existence values. Protecting the PMJM habitat may produce benefits such as preservation of habitat suitable for recreational uses, habitat improvement for other species, and the preservation of existing open space. Insufficient information exists to quantify the benefits of habitat protection. However, studies published in the economics literature attempt to estimate the impacts of open space on adjacent or nearby properties using hedonic property valuation techniques. While these studies do not predict the effect of PMJM habitat protection on property values in Wyoming or Colorado, they do support the notion that preservation of open space may generate benefits to the public.
13. Several comments from individuals and groups were received on the *DEA* regarding the potential benefits of critical habitat. These comments are addressed in Section 8 of this Addendum.

Summary

14. Exhibit ES-1 provides the relative contributions of each land use activity to the total anticipated consultation costs. The lower section of each bar in this exhibit represents the administrative cost and the top portion the project modification cost.
15. Exhibit ES-2 provides a summary of the total estimated consultation, technical assistance and project modification costs likely to be associated with the listing and proposed critical habitat designation for the PMJM, by unit, over the next ten-years. Most of these costs are in units A1 (the Arkansas River Drainage in El Paso County, Colorado) and SP12 (West Plum Creek in Douglas County, Colorado), together comprising approximately 73 percent of the estimated total cost of the designation.
16. Exhibit ES-3 provides an overview of the total section 7 costs associated with the listing and designation of critical habitat for the PMJM by state, over a ten year period.

**EXHIBITES-1
CONSULTATION COSTS BY ACTIVITY TYPE**





**ES-3
PRESENT VALUE TOTAL SECTION 7 COSTS
(TEN YEARS)**

	Total Section 7 Costs	
	Low	High
Wyoming Total Activity Costs	\$11,086,000	\$14,941,000
Colorado Total Activity Costs	\$67,679,000	\$168,528,000
TOTAL COST	\$78,765,000	\$183,469,000
Present Value (7%)	\$55,321,000	\$128,861,000
Annualized (7%)	\$7,876,000	\$18,347,000

Note: This table presents nominal costs as well as the discounted present value of total costs based on a seven percent discount rate with the assumption that total costs are distributed evenly over the ten-year period. Discounted costs are then annualized assuming that total costs will be evenly distributed across the ten-year period.

INTRODUCTION

17. In July 2002, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat under the Endangered Species Act of 1973, as amended (the Act) for the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) on approximately 57,446 acres in Wyoming (Albany, Converse, Laramie, and Platte Counties), and Colorado (Boulder, Douglas, El Paso, Jefferson, Larimer, Teller and Weld Counties). Because the Act calls for an economic analysis of the critical habitat designation, the Service released a *Draft Economic Analysis of Critical Habitat Designation for the Preble's Meadow Jumping Mouse* (hereafter *DEA*) for public review and comment in January 2003.⁴
18. The primary purpose of this Addendum is to update the *DEA* to address issues raised in public comments to the *DEA*, where appropriate, and to incorporate additional information received through personal communications with Action agencies and other stakeholders. As such, the Addendum considers newly available information and revisits the assumptions and analytic conclusions presented in the *DEA* in light of this new information.

REVISIONS TO THE DRAFT ECONOMIC ANALYSIS

19. The following sections describe the implications of, and responses to, public comments to the *DEA*. Additionally, certain topics addressed in the analysis were revisited and additional information gathered. Section numbers presented in the headers of this Addendum refer to the section numbers of the *DEA*.

SECTION 1 INTRODUCTION AND BACKGROUND

1.3 Framework and Methodology

20. Several commenters stated that the ten-year time frame utilized for the economic analysis was inappropriate. Specifically, the commenters stated that the use of a ten-year time period for the analysis creates unrealistic cost estimates since species typically are not delisted within ten years. These commenters suggested that a longer time period, such as 25,

⁴ Copies of the *Draft Economic Analysis of Critical Habitat Designation for the Preble's Meadow Jumping Mouse* are available by appointment during normal business hours at the U.S. Fish and Wildlife Service's Colorado Ecological Services Field Office, 755 Parfet Street, Suite 361, Lakewood, CO 80215, or on the Internet at <http://mountain-prairie.fws.gov/preble>.

50, or 100 years would be more accurate for the analysis.⁵ While these concerns are understandable and noted, this Addendum does not extend the time frame for the economic analysis beyond the ten years utilized in the *DEA*. The ten-year time frame was chosen for the *DEA* because, as the time horizon for an economic analysis is expanded, the assumptions on which the projected numbers of projects are based become increasingly speculative. As a result, it is difficult to predict not only the numbers of projects, but also the cost estimates for the associated consultations, beyond a ten-year window. Consequently, any attempt to extend the economic analysis beyond the ten-year time window would be speculative.

21. Additionally, a few commenters criticized the use of a “national economic model” in the economic analysis. Specifically, these commenters stated that this national economic model does not apply to Wyoming because local factors affect their economy differently than other areas of the nation.⁶ The *DEA* utilized a cost model to estimate the *administrative costs* associated with technical assistance efforts, informal, and formal consultations. This cost model was developed using historical section 7 files from a number of Service field offices around the country. However, this model was used as the basis for cost estimates only in instances where area- and species-specific costs were not available. Specifically, area- and species-specific per-project cost estimates were utilized for the following activities: Service technical assistance efforts, Natural Resources Conservation Service (NRCS) administrative consultation costs, and project modification costs. Approximately 12 percent of the total section 7 costs are administrative costs, and four percent of these administrative costs represent area- and species-specific per-project costs. Thus, almost 90 percent of the total section 7 costs estimated in this analysis are developed from area- and species-specific costs. The *DEA*'s reliance on area- and species-specific cost estimates, where available, reflects the use of the best commercial information available and consideration for the socioeconomics of the area. Therefore, this Addendum does not alter the model utilized to estimate some administrative costs likely to result from the designation of critical habitat for the Preble's meadow jumping mouse (PMJM).

⁵ Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003; Comment letter from Karen Rose, February 27, 2003; Comment letter from John A. Kolanz, for the City of Greeley, February 27, 2003; and Comment letter from Robert B. Hoff, February 12, 2003.

⁶ Comment letter from Ed Werner, February 26, 2003; and Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003.

SECTION 2 RELEVANT BASELINE INFORMATION

2.1 Socioeconomic Profile of the Critical Habitat Area

2.1.2 Colorado

22. One commenter indicated that the payroll numbers presented in this section appeared to be in error.⁷ The *DEA* incorrectly reported the payroll numbers for Colorado in millions. The payroll numbers for Colorado are actually reported in thousands.

SECTION 5 ECONOMIC IMPACTS OF SECTION 7 ON AGRICULTURAL ACTIVITIES IN WYOMING

23. The *DEA* concluded that most of the forecast economic impacts to agricultural activities in Wyoming were likely to result from sections 9 and 10 of the Act following the expiration of the special 4(d) rule in May 2004.⁸ Subsequent to this analysis, the Service has decided to extend the amended special 4(d) rule for a period of ten years.⁹ This Addendum finds that the extension of the 4(d) rule minimizes all impacts to landowners associated with those activities exempt under the rule and not subject to a Federal nexus, since the 4(d) rule extension lifts the section 9 take and section 10 habitat conservation plan (HCP) requirements for exempted activities. As such, impacts associated with sections 9 and 10 of the Act for 4(d) exempted activities are removed from the analysis (*DEA*, Appendix B).
24. Several commenters stated that the *DEA* excluded an analysis of three key impacts to the agricultural industry in Wyoming: (1) the opportunity cost of forgone Federal funding; (2) the decreased value of land; and (3) impacts to agricultural landowners under the special 4(d) rule. The following section discusses these potential impacts.

⁷ Comment letter from Shirley J. Casey, February 27, 2003.

⁸ Draft Economic Analysis of Critical Habitat Designation for the Preble's Meadow Jumping Mouse, Appendix B, January 2003.

⁹ Personal communication with U.S. Fish and Wildlife Service, Division of Endangered Species, March 2003.

Section 5.2 Estimated Impacts of Section 7 on Haying and Grazing Activities

25. Several commenters stated that lost opportunity costs exist when agricultural landowners forgo Federal operational and conservation funding in order to avoid a Federal nexus, and therefore consultation with the Service.¹⁰ However, while this may be an issue for some individual landowners, overall use of operational and conservation funding within the region is not expected to change as a result of the designation. The NRCS has confirmed that Federal operational and conservation funding rarely goes unused in this region, and that any forgone funding will likely be used by other landowners within the same county.¹¹ Since the overall use of operational and conservation funding within the four Wyoming counties containing proposed critical habitat for the PMJM is not anticipated to decline, this Addendum does not estimate, nor anticipate, any regional lost opportunity costs for forgone Federal operational and conservation funding that would be associated with the designation.
26. A few commenters stated that the proposed critical habitat designation for the PMJM will cause decreased land values in Wyoming.¹² These commenters raise two issues: (1) the proposed critical habitat designation may impose operational costs on agricultural activities that may affect the value of land sold for agricultural purposes; and (2) the proposed designation may result in decreased values associated with the speculative nature of agricultural lands (i.e., potential for sale and conversion to an alternative use, such as residential development).
27. A variety of factors impact the value of land in Wyoming, including climate, elevation, water rights, population density, recreation and scenic values, and timber, mineral, and oil and gas resources.¹³ Furthermore, the demand for agricultural lands has increased

¹⁰ Comment letter from Farthing Ranch Company, February 27, 2003; Comment letter from Y Cross Ranch (Manny Monseratte), February 26, 2003; Comment letter from True Ranches (Renee Taylor), February 28, 2003; Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003; Comment letter from Dave Freudenthal, Governor of Wyoming, February 27, 2003; Comment letter from Wyoming Department of Agriculture, February 24, 2003; Comment letter from the Laramie County Conservation District, September 11, 2003; Comment letter from Karen Rose, February 27, 2003; Comment letter from Wyoming Game and Fish Department, February 19, 2003; Comment letter from Eli Bebout, September 16, 2003; and Comment letter from Pat Cullen, September 16, 2003.

¹¹ Personal communication with Dick Rintamaki and Frank Ripple, Natural Resources Conservation Service, April 2, 2003; personal communication with Lois VanMark, Farm Service Agency, 2002.

¹² Comment letter from Karen Rose, February 27, 2003; and comment letter from William S., Garrett, Wyoming, February 26, 2003.

¹³ Bastion, Chris, Matthew Fleming, Sully Taulealea, and John Hewlett, Wyoming Farm, Ranch, and Rural Land Market: 1999-2001, University of Wyoming Agricultural Experiment Station.

slightly due to increased interest in agricultural lands for alternative uses, such as “development potential, recreation, or scenic rural homes.”¹⁴

28. Proposed critical habitat for the PMJM is likely to have only a modest impact on agricultural operations and the value of lands sold for agricultural purposes. The value of agricultural lands will be greatly reduced if farmers and ranchers cannot irrigate their lands.¹⁵ However, there will likely be no impacts to agricultural operations and land values as long as the 4(d) rule remains in effect.¹⁶ While there is growth pressure in these counties, a speculative impact on land values is not anticipated because proposed critical habitat is located a significant distance from town centers and is thus not experiencing development pressure. Therefore, impacts to the speculative value of lands within proposed critical habitat for the PMJM are also anticipated to be modest.
29. A few commenters stated that the *DEA* excluded a discussion of impacts incurred by landowners operating under the special 4(d) rule.¹⁷ However, this analysis was unable to identify any impacts experienced by landowners under the 4(d) rule.
30. Specifically, the Wheatland Irrigation District (WID) stated that its irrigation ditch cleaning operations were not impacted by the 4(d) rule restriction (i.e., that only a 1/4 mile section of ditch may be cleaned or maintained annually for each linear mile of ditch). The WID also stated that they would only experience an increase in maintenance costs, associated with a decrease in the amount of burning and increase in the use of flushing and dipping, when the special 4(d) rule expired.¹⁸ Similarly, a few private landowners stated that they may experience a decrease in land values and profits following the expiration of the special

¹⁴ Bastian, Chris, Matthew Fleming, Sully Taulealea, and John Hewlett, *Wyoming Farm, Ranch, and Rural Land Market: 1999-2001*, University of Wyoming Agricultural Experiment Station.

¹⁵ Personal communication with Mark Reid, Laramie County Planning Department, May 2, 2003; personal communication with Deborah Smith, Albany County Assessor, May 2, 2003. The land proposed as critical habitat in Converse County is Federal land and thus is not available for sale. The Platte County Assessor was unavailable to discuss impacts on land values in Platte County.

¹⁶ Personal communication with Mark Reid, Laramie County Planning Department, May 2, 2003; personal communication with Deborah Smith, Albany County Assessor, May 2, 2003.

¹⁷ Comment letter from Ed Werner, February 26, 2003; Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003; and Comment letter from Eli Bebout, September 16, 2003.

¹⁸ Personal communication with Don Britton, Wheatland Irrigation District, October 2002; Personal communication with Bill Klein, October 2002; and Personal communication with Juan Reyes, MR Angus Ranch, October 2002.

4(d) rule if they were precluded from conducting all irrigation ditch maintenance activities. This would decrease or curtail the flow of water to their cropland.

31. In addition, data collected in the course of this analysis reveals that many landowners are relying on an extension of the 4(d) rule to avoid future adverse impacts to agricultural operations and irrigation ditch maintenance activities because of protections for the PMJM.¹⁹ Since no impacts to agricultural operations, agricultural land values, or the overall use of Federal operational and conservation funding are anticipated, this analysis finds that there are no regional impacts associated with this designation. Therefore, this analysis does not modify the estimated economic impacts to agricultural activities associated with the implementation of section 7 for the PMJM.

SECTION 6 ECONOMIC IMPACTS OF SECTION 7 ON OTHER ACTIVITIES

32. Several commenters stated that the *DEA* excluded a discussion of several land use activities that may be impacted by the designation of critical habitat for the PMJM. This section addresses the potential impacts to these land use activities.

6.3 F.E. Warren Air Force Base

33. The Department of the Air Force commented on the *DEA*'s analysis of impacts to the F.E. Warren Air Force Base (WAFB) in unit SP2, stating that the finding that all future consultations will occur under the listing of the PMJM is incorrect. According to the Department of the Air Force, the proposed critical habitat designation for the PMJM will increase the number and complexity of consultations for base activities because the critical habitat designation will subject most of the activities within the proposed streamside management zone to consultation.²⁰
34. The *DEA* reported 28 to 31 informal consultations during the next ten years for various activities on the WAFB. The *DEA* also reported that all 28 to 31 informal consultations were anticipated due to the listing of the PMJM. However, comments from the Department of the Air Force reminded WAFB personnel that planned activities in the area proposed as a streamside management zone may be impacted by the proposed designation. Specifically, WAFB anticipates an increase in the number of consultations

¹⁹ Comment letter from True Ranches (Renee Taylor), February 28, 2003; Comment letter from Dave Freudenthal, Governor of Wyoming, February 27, 2003; Comment letter from Rob Weppner, January 21, 2003.

²⁰ Comment letter from Stan Rogers, Department of the Air Force, Headquarters Air Force Space Command, February 27, 2003.

reported in the *DEA* as a result of the following on-going or planned activities within the proposed streamside management zone:

- One formal consultation for a bridge repair/replacement project. Timing restrictions may require the WAFB to conduct this activity in the winter, during the PMJM hibernation season. The WAFB would need to utilize a heated canopy or implement other measures to keep the concrete warm. For similar projects in the past, these measures increased total project costs by 50 percent. The WAFB estimates the total project cost at \$1,000,000 and additional project modification costs of \$500,000.
- One formal consultation for the construction of a nature trail along the entire length of Crow Creek. Timing restrictions and habitat enhancement requirements, including the use of signs to educate trail users about the PMJM and its habitat, cost \$20,000 for a prior trail construction project 1,000 feet in length. Extrapolating this cost to the entire length of Crow Creek would result in increased project costs of \$100,000.
- The WAFB grades its campsites twice each year during the spring and summer months.²¹ The WAFB anticipates up to 50 informal consultations for campsite and gravel road grading activities. If timing restrictions preclude the grading of some campsites then the WAFB will not be able to use these sites and may lose \$450,000 in annual revenues. However, the Service does not foresee precluding grading activities at the campsites.²² Therefore, this potential loss in revenue is not included in the total cost estimate for WAFB resulting from section 7 implementation for the PMJM. Costs associated with timing restrictions for road grading activities are anticipated to be negligible.
- Two programmatic informal consultations for camping area and road clearance mowing activities. No project modifications are anticipated for these activities.
- Three informal consultations associated with interior modifications to the military dog kennel, construction of a small storage facility, and general landscape maintenance. No project modifications are anticipated for these projects because they are located outside of riparian areas.

²¹ The Service believes that campsite grading activities could be addressed in a programmatic consultation, reducing costs. Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, May 5, 2003.

²² Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, April 25, 2003.

- Five informal consultations for parking lot maintenance activities. The Service will likely request that the WAFB minimize the project footprint and avoid storing equipment within the riparian area.²³ There are no added costs associated with these protective measures.

35. The *DEA* anticipated seven informal consultations for nature trail maintenance activities. However, the Service has stated that the initiation of a consultation would only be expected in instances where heavy machinery is required, or if erosion is a concern.²⁴ Based on this information, the WAFB decreased its estimate to two informal consultations during the next ten years for nature trail maintenance activities.²⁵ Timing restrictions and habitat enhancement requirements may increase the costs of these projects by \$10,000.²⁶

36. Collectively, the WAFB anticipates two formal and 83 to 86 informal consultations associated with base activities during the next ten years. The administrative consultation costs associated with these informal and formal consultations range from approximately \$216,000 to \$1,126,000. Project modifications for these consultations are expected to cost an additional \$1,320,000, and represent 54 to 86 percent of total consultation and project modification costs for these activities. The total estimated cost of these consultations, including project modifications, ranges from \$1,536,000 to \$2,446,000. Consultation costs will be borne by the Service and the WAFB, while all project modification costs will be borne by the WAFB.

6.4 Utilities

Wyoming

37. The *DEA* mentioned that the Service anticipates consulting with the Federal Energy Regulatory Commission (FERC) at least once during the next ten years in association with the potential need for a new natural gas pipeline for the Medicine Bow Lateral pipeline project. However, the *DEA* did not quantify consultation costs associated with this project

²³ Personal communication with Cathy Pesenti, F.E. Warren Air Force Base, April 3, 2003.

²⁴ Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, April 3, 2003.

²⁵ Personal communication with Cathy Pesenti, F.E. Warren Air Force Base, April 3, 2003.

²⁶ Timing restriction and habitat enhancement requirements for the seven informal consultations associated with nature trail maintenance activities were anticipated to increase project costs by \$20,000. Therefore, the revised cost estimate of \$10,000 for timing restriction and habitat enhancement requirements reflects a \$10,000 reduction in cost from the costs reported in the *DEA*.

due to insufficient information and uncertainty regarding project plans. According to FERC, while current natural gas pipeline project plans are unknown, it is possible that a natural gas pipeline project could be planned during the next ten years.²⁷ This project may cross proposed critical habitat units NP3, NP5, and SP3.²⁸ For a project of this magnitude and scope, the administrative cost of this section 7 consultation involving the Service, ACOE, and the Wyoming Interstate Company, Ltd. may range from \$3,500 to \$15,500.²⁹ This consultation will likely involve utilization of FERC's Best Management Practices (BMPs) and may involve the following: survey for the PMJM and, if any are found in the project area, the implementation of timing windows, utilization of directional drilling, or re-routing the pipeline.³⁰ However, due to large uncertainty associated with the location and scope of this future project, project modifications are not estimated for this project.

38. A few commenters stated that the *DEA* omitted impacts to electric and gas transmission lines, well drilling, and mineral rights in Wyoming.³¹ The Wyoming Geological Survey office provided GIS data plotting oil and gas fields and transmission lines.³² Laying proposed critical habitat for the PMJM over this oil and gas data revealed that three companies own oil and gas pipelines that cross proposed critical habitat, Wyoming Interstate Company, Kaneb Pipeline Company, and Conoco Phillips.
39. Wyoming Interstate Company owns the Medicine Bow Lateral pipelines. As stated above, one informal consultation is anticipated in regard to an expansion to the Medicine Bow Lateral pipeline.
40. The Kaneb Pipeline Company owns three pipelines that cross units SP3, NP3, and NP5. Kaneb Pipeline Company does not anticipate any new pipeline construction within the areas proposed as critical habitat for the PMJM over the next ten years. While routine

²⁷ Personal communication with Alisa Lyken, Federal Energy Regulatory Commission, March 2003.

²⁸ Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, December 2002.

²⁹ Administrative cost model used in the *DEA*.

³⁰ Rerouting a pipeline to avoid jeopardizing the PMJM or adversely modifying its critical habitat could add approximately one million dollars per linear mile to the total project cost. Personal communication with Alisa Lyken, Federal Energy Regulatory Commission, March 3, 2003.

³¹ Comment letter from Karen Rose, February 27, 2003; and Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003.

³² Oil and Gas Map of Wyoming, Rodney De Bruin, Wyoming Geological Survey, 2002.

maintenance on the pipelines is anticipated, no Federal permits are required for maintenance activities because the company owns right-of-ways for all critical habitat areas crossed by the pipelines. If the company did have to excavate a pipeline in a riparian area for maintenance activities, the company would utilize the directional drill method to replace the pipeline at no additional cost to the project.³³

41. The Conoco Phillips company owns three pipelines that cross units NP3 and NP5. Efforts to contact Conoco Phillips to determine whether the company plans to construct any new pipelines in the areas proposed as critical habitat for the PMJM were not successful. In light of FERC's uncertainty regarding the number of future pipeline construction projects and the fact that Kanab Pipeline Company is not planning any new pipeline projects in the area, this analysis assumes that no new pipelines will be constructed by Conoco Phillips in proposed critical habitat for the PMJM over the next ten years.

42. No oil, water injection, or water supply wells have been drilled in units NP1, NP2, SP1, or SP2. There are 50 wells located in unit NP3 but all of these wells have been plugged, with the last well plugged in 1994. In unit NP5 there are 12 producing oil wells, two water injection wells, and one water supply well. In a portion of the Borie Field in unit SP3 there are three producing oil wells and one water injection well, and four producing wells and two shut-in wells to the north of Lone Tree Creek. All of the oil wells are located within 40 to 50 year old oil fields. The Wyoming Oil and Gas Commission does not anticipate any new permits for oil, water injection, or water supply wells over the next ten years.³⁴

43. Therefore, this Addendum concludes that no impacts are anticipated to electric and gas transmission, well drilling, and mineral rights activities over the next ten years as a result of proposed critical habitat for the PMJM in Wyoming.

Colorado

44. No consultations for utilities are anticipated in addition to the 79 formal consultations estimated in the *DEA*. However, an alternative approach to quantify project modifications was suggested and implemented in this Addendum. While, the total estimated administrative cost range remains unchanged, \$1,225,000 to \$2,015,000, the new methodology quantifies project modification costs, adding \$711,000 to \$1,469,400 to utility activity costs.

³³ Personal communication with Dale Smith, Kanab Pipeline Company, May 2, 2003.

³⁴ Personal communication with Don Likwartz, Wyoming Oil and Gas Commission, April 30, 2003 and May 7, 2003.

45. Two commenters stated that the *DEA* underestimated the costs associated with utilities in Colorado.³⁵ Specific comments suggested the number, extent, and mitigation recommendations for future utility projects were underestimated.³⁶ The commenter did not provide additional information but suggested project modification costs developed for residential and related development could be used to derive project modification costs for utilities. This is a reasonable approach if:

- These projects are not associated with residential and related development, as these projects were captured in the *DEA* as part of residential and related development;
- These projects are located in areas similar to those that are developing; and
- Projects are similar in size and type of impact to those of small scale residential and related development.³⁷

46. This analysis is based on a hypothetical “typical” utility project. The specifications for this typical utility project are derived from the characteristics of “average” utility projects that have completed the consultation process for the PMJM.

- The average utility project disturbs over four acres of habitat;
- The average utility project restores and enhances approximately 1.4 acres of habitat; and
- The average utility project mitigates roughly 0.2 acres of habitat.

47. Based on past formal consultations, it is reasonable to expect that the Service will recommend mitigation in the context of some utility projects. As outlined in the small scale residential development section in the *DEA*, mitigation activities may include: setting aside conservation lands on- and off-site; the purchase of conservation easements; habitat creation;

³⁵ Comment letter from Ronda L. Sandquist, for Perry Park and Sanitation District and Louviers Mutual Service Company, February 27, 2003; and Comment letter from Steven P. Jeffers, for Water Users Association of District No. 6, January 21, 2003.

³⁶ Comment letter from Ronda L. Sandquist, for Perry Park and Sanitation District and Louviers Mutual Service Company, February 27, 2003.

³⁷ This analysis assumes mitigation and habitat enhancement and restoration costs per acre developed to model small scale development costs can be applied to utility projects. Past utility projects which went through the consultation process for PMJM more closely resemble small scale development, in size of impact and mitigation and enhancement recommendations, than large scale development projects.

erecting construction fencing; cessation of grazing; and educational efforts. Using the costs associated with these mitigation activities results in average mitigation costs of \$10,000 to \$23,000 per acre mitigated, or \$2,000 to \$4,600 per project.

48. Based on a review of past formal consultations, it is also reasonable to expect the Service will recommend habitat restoration. As outlined in the small scale residential development section, habitat restoration and enhancement activities may include habitat restoration, enhancement, and revegetation. Using the costs associated with these habitat restoration and enhancement activities results in average habitat restoration and enhancement costs of \$5,000 to \$10,000, or \$7,000 to \$14,000 per project.
49. The suggested approach is reasonable to apply to utility projects as they are similar in impact size, type, and location to small scale development projects. Using this approach the total per effort costs associated with potential project modifications for utility projects may range from \$9,000 to \$18,600 per project, or \$711,000 to \$1,469,400 over the next ten years.

6.8 Habitat Conservation Plans

Wyoming

50. In light of the extension of the special 4(d) rule, this Addendum concludes that HCPs will not be developed over the next ten years for exempt activities in Wyoming (i.e., rodent control; ongoing agricultural activities, including farming and ranching; maintenance of existing landscaped areas; diversion of water associated with existing water rights; certain noxious weed control activities; and ditch maintenance activities). However, it is possible that HCPs may be developed and implemented over the next ten years for activities in Wyoming that are not exempt from sections 9 and 10 of the Act by the special 4(d) rule (i.e., residential or industrial development). Due to uncertainty regarding the scope of and interest in such HCPs, the costs associated with the development and implementation of these HCPs are not quantified in this Addendum.

Colorado

51. Four county, city, and other municipal entity HCPs in Colorado are likely to be completed in the near future. Public comments requesting land exclusion from critical habitat based on soon-to-be-completed HCPs provided time lines for completion of county, city, and other municipal entity HCPs in Colorado.³⁸ As it can be demonstrated that these HCPs are motivated, in part by, critical habitat designation, the costs of developing the HCPs and the added costs of management should be included in the economic analysis, along with the section 7 administrative costs and project modification costs captured in the *DEA*.³⁹
52. Specific information provided by the cities, counties, and other municipal entities on their HCPs include:
- Boulder County and the City of Boulder are currently working on a draft HCP and anticipate completion at the end of 2003 or the beginning of 2004.⁴⁰ The cost of the HCP will be approximately \$397,000.⁴¹

³⁸ Comment letter from M. Cole Emmons, for El Paso County, Bob Crifasi, for the City of Boulder, Cheryl Matthews, for Douglas County, and Peter Fogg, for Boulder County, January 21, 2003; Comment letter from Cheryl Matthews, for Douglas County, January 21, 2003; Comment letter from Jennifer McCurdy, for Denver Board of Water Commissioners, January 21, 2003; Comment letter from Thomas G. Bender, for the Larimer County Board of Commissioners, January 21, 2003; and Comment letter from Paul R. Tice, for the City of Colorado Springs, and M. Cole Emmons, for El Paso County, February 27, 2003.

³⁹ These cost of project modifications included in the HCPs, although most likely attributable to section 10, are included in the economic analysis of total section 7 costs as the HCPs can be documented as being motivated, at least in part, by critical habitat designation.

⁴⁰ Personal communication with Peter Fogg, Boulder County, March 28, 2003. Personal communication with Bob Crifasi, City of Boulder, April 2, 2003.

⁴¹ The Service has awarded a Federal grant to the County and City of Boulder, under section 6 of the Act, in the amount of \$298,000. Grants to states and territories must include a minimum contribution by the grantees equal to 25 percent of estimated project costs. Contributions can be in-kind, i.e., stafftime, or financial assistance. Thus, the total cost to complete the HCP will be approximately \$397,000. Since only 25 percent of the cost of developing the HCP are incurred by the county or city, a significant impact to small entities is not anticipated.

There is a strong possibility that the City of Boulder will develop a separate HCP. No final decision has been reached by the city. Because the section 6 grant was awarded to both the county and the city, this analysis assumes there would be no additional cost to complete separate HCPs. Personal communication with Bob Crifasi, City of Boulder, April 2, 2003.

- The City and County of Denver’s Board of Water Commissioners submitted a draft HCP to the Service in February 2003.⁴² The public comment period on the draft closes in April 2003 and completion of the HCP is anticipated before publication of the final rule designating critical habitat for the PMJM. The cost to date of the HCP is approximately \$234,000. Because the draft HCP is in its final stages, the Denver Board of Water Commissioners anticipates that additional costs to complete the final HCP will be minimal.
- Douglas County is currently working on a draft HCP and anticipates completion in June 2004.⁴³ The cost of the HCP will be approximately \$847,000.⁴⁴
- El Paso County, the City of Colorado Springs, and Colorado Springs Utilities are currently working on a draft Regional HCP and anticipate submitting the draft to the Service in the summer of 2003.⁴⁵ The cost of the Regional HCP will be approximately \$1,090,000.⁴⁶

53. In summary, the total cost associated with Regional HCPs not included in the *DEA*, are anticipated to range from \$2,577,000 to \$2,618,000. These costs include:

- The cost associated with the development of HCPs (\$2,568,000).

⁴² Personal communication with Jennifer McCurdy, Denver’s Board of Water Commissioners, April 1, 2003.

⁴³ Personal communication with Cheryl Matthews and Brooke Fox, Douglas County, April 1, 2003.

⁴⁴ The Service has awarded a \$400,000 Federal grant to Douglas County, under section 6 of the Act. See footnote 35 for further discussion of section 6 grants. Personal communication with Cheryl Matthews and Brooke Fox, Douglas County, April 1, 2003.

⁴⁵ Comment letter from M. Cole Emmons, for El Paso County, Bob Crifasi, for the City of Boulder, Cheryl Matthews, for Douglas County, and Peter Fogg, for Boulder County, January 21, 2003; Comment letter from Cheryl Matthews, for Douglas County, January 21, 2003.

⁴⁶ The Service has awarded a \$600,000 Federal grant to El Paso County, the City of Colorado Springs, and Colorado Springs Utilities, under section 6 of the Act. See footnote 41 for further discussion of section 6 grants. The State of Colorado has also awarded a grant in the amount of \$100,000. The total cost to complete the HCP will be approximately \$1,090,000. Personal communication with Kirsta Scherrf-Norris, Colorado Springs Utilities, April 2, 2003 and April 15, 2003.

- The administrative cost of the intra-agency section 7 consultations, which are part of the permit approval process, will range from \$2,300 to \$12,600 per consultation, or \$9,200 to \$50,400 in total administrative consultation costs.⁴⁷
 - Project modifications recommended in the HCP have been previously quantified in the *DEA*.⁴⁸ Additional project modifications beyond those contained in the HCPs are unlikely to be recommended as part of the section 7 consultation process.⁴⁹
54. The Regional HCPs could provide individual permittees with regulatory certainty and streamline the permitting process by providing agreed upon criteria and protective measures. While these benefits cannot be quantified at this time due to the high level of uncertainty regarding the future permitting process, they are expected to lessen the cost of the designation.
55. Costs and benefits of the HCPs cannot be assigned on a unit basis, however, the following units will be affected by the Regional HCPs:
- The Boulder County and City of Boulder HCP includes activities that will affect unit SP8.
 - The City and County of Denver's Board of Water Commissioners HCP includes activities that will affect units SP8, SP10, SP12, and SP13.
 - The Douglas County HCP includes activities that will affect units SP11, SP12, and SP13.
 - The El Paso County, the City of Colorado Springs, and Colorado Springs Utilities Regional HCP includes activities that will affect unit A1.

⁴⁷ Administrative cost model used in the *DEA*.

⁴⁸ The *DEA* quantifies the cost of project modifications resulting from individual section 7 consultations. This Addendum anticipates that these modifications will be completed as part of the HCP instead, and that no additional modifications will be required as part of future section 7 consultations.

⁴⁹ Personal communication with Biologists, U.S. Fish and Wildlife Service, Colorado Ecological Services Field Office, April 2003.

6.9 Dams/Reservoirs

Colorado

56. A formal consultation is anticipated for the Halligan Reservoir project. Although this project was discussed in the *DEA*, the cost of section 7 consultation was not quantified originally because construction was not expected to begin during the next ten years. This Addendum incorporates information received during public comment, and the total section 7 costs of this project are expected to range from \$181,300 to \$6,182,700.
57. Commenters stated that reservoirs would be completed within the ten-year time frame, and should be included in the analysis.⁵⁰ Sufficient information was provided during the public comment period to quantify section 7 impacts to the Halligan Reservoir project. However, potential costs associated with other municipal water reservoirs, including the ACOE's Chatfield Reservoir and the Milton Seaman Reservoir, also discussed in the *DEA*, are not quantified due to a lack of sufficient information. Additional information regarding possible expansion projects to the Seaman Reservoir is provided in the following discussion.⁵¹

Halligan Reservoir

58. Construction of the Halligan Reservoir may begin as early as 2007.⁵² This project will be located in unit SP4 and will require a section 404 permit from the ACOE. The administrative cost of the formal section 7 consultation with the Service, ACOE, and the City of Fort Collins will range from \$15,500 to \$25,500.⁵³ According to current project estimates, a minimum of 64 acres (for a pool size of 15,000 acre-feet), and a maximum of 256 acres (for a pool size of 40,000 acre-feet) of PMJM habitat may be inundated by the reservoir.⁵⁴

⁵⁰ Comment letter from Brian Janonis, for the City of Fort Collins, February 24, 2003; Comment letter from Stephen R. Smith, for the North Poudre Irrigation Company, February 25, 2003; Comment letters from John A. Kolanz, for the City of Greeley, January 13, 2003 and February 27, 2003; Comment letter from Thomas G. Bender, for Larimer County Commissioners, February 25, 2003; and Comment letter from Roy D. Hugie, for the Ayers Associates, February 25, 2003.

⁵¹ "Granted, questions still remain about the scope, timing, and to some degree, location, of such facilities..." Comment letter from John A. Kolanz, for the City of Greeley, February 27, 2003.

⁵² Comment letter from Brian Janonis, for the City of Fort Collins, February 24, 2003.

⁵³ Administrative cost model used in the *DEA*.

⁵⁴ Comment letter from Brian Janonis, for the City of Fort Collins, February 24, 2003.

59. The Service is likely to recommend mitigation as a project modification. Two mitigation options available to the City of Fort Collins are the purchase of land or the purchase of a conservation easement. As detailed in the reservoir's feasibility study, it is estimated that mitigation ratios will range between 1.5 to 4.5 acres for every acre of PMJM habitat impacted, the value of land will average \$2,000 per acre, and the value of a conservation easement will equal 50 to 75 percent of the value of the land, or \$1,000 to \$1,500 per acre.⁵⁵ An additional fund will be needed for the long term management of the land, \$800 per acre. Based on these assumptions, the City of Fort Collins would need to purchase a conservation easement covering between 96 and 1,152 acres to meet mitigation recommendations. The project modification costs of this option would range from \$165,800 to \$2,498,600.⁵⁶ Alternatively, the City of Fort Collins could purchase between 144 and 2,304 acres to meet mitigation recommendations, based on the assumption 1.5 to 2.0 acres are required to obtain one acre of habitat. The project modification costs of this option would range from \$357,200 to \$6,157,200.⁵⁷ Including the administrative cost of consultation, the total cost of section 7 consultation is expected to be less than one to 16 percent of total project costs (\$37 million).⁵⁸

Milton Seaman Reservoir

60. There are currently two options available for the expansion of the Milton Seaman Reservoir. Under the first option, the City of Greeley increases the capacity of the existing reservoir to 40,000 acre-feet, with construction beginning in the next 10 to 15 years.⁵⁹ Under the second option, the Northern Colorado Water Conservancy District (NCWCD) constructs a new dam at the site of the existing Milton Seaman Reservoir, increasing capacity to 220,000 acre-feet, with construction beginning in the next six years.⁶⁰ While both options are considered viable, the City of Greeley and the NCWCD are in the early planning stages, and each party is considering other project alternatives.

⁵⁵ ECI. 2002. Halligan Reservoir Enlargement Projects Feasibility Study Final Report.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Comment letter from Brian Janonis, for the City of Fort Collins, February 24, 2003.

⁵⁹ Personal communication with John A. Kolanz, the City of Greeley, April 24, 2003.

⁶⁰ Personal communication with Carl Brouwer, Northern Colorado Water Conservancy District, April 25, 2003.

61. The City of Greeley is in the early planning stages of expanding the capacity of the Seaman Reservoir to 40,000 acre-feet.⁶¹ While the project has been discussed for decades, an environmental review was completed in 1999 and the City is currently taking bids to update the 1993 engineering report. The City is exploring other alternatives, and the permitting process is not expected to begin for another 10 to 15 years. Should the City stop exploring alternatives and proceed with the expansion option, the schedule would be accelerated to five years. Approximately 640 acres of PMJM habitat could be inundated by the project.⁶² Based on the assumptions used to calculate impacts to the Halligan Reservoir, costs could range from \$1,728,000 to \$6,624,000 for a conservation easement, and \$4,032,000 to \$16,128,000 to purchase mitigation lands. Since it is unknown which project, if any, will be constructed these costs are not included in the analysis.
62. The NCWCD began meeting in 1997 to discuss the New Seaman Reservoir project.⁶³ Currently three alternatives are being evaluated, the Glade Reservoir, the New Seaman Reservoir, and the Mainstem Reservoir, and the evaluation process should be completed within the year. The NEPA permitting process will follow the evaluation of alternatives, and this will take two to three years. The NEPA process will be followed by project design and finance, which will take two years. Construction is planned to begin in five to six years, and will take three to six years to complete. The current proposal calls for a 350 foot tall roller compacted concrete dam on the North Fork of the Poudre River with 220,000 acre-feet of storage capacity. Approximately 2,560 acres of PMJM habitat could be inundated by the project.⁶⁴ Based on the assumptions used to calculate impacts to the Halligan Reservoir, costs could range from \$6,912,000 to \$26,496,000 for a conservation easement, and \$16,128,000 to \$64,512,000 to purchase mitigation lands. Since it is unknown which project, if any, will be constructed these costs are not included in the analysis.

⁶¹ Personal communication with John A. Kolanz, the City of Greeley, April 24, 2003.

⁶² ERO Resources Corporation and Miller Ecological Consultants, Inc.. 1999. Preliminary Environmental Review of the Proposed Expansion of Seaman Reservoir. This study estimated 1,280 acres of potentially suitable PMJM habitat would be inundated by the construction of a 80,000 acre foot capacity reservoir. Assuming half of the acreage would be affected by a reservoir half the size 640 acres would be affected.

⁶³ Personal communication with Carl Brouwer, Northern Colorado Water Conservancy District, April 25, 2003.

⁶⁴ ERO Resources Corporation and Miller Ecological Consultants, Inc.. 1999. Preliminary Environmental Review of the Proposed Expansion of Seaman Reservoir.

6.10 Gravel Mining

Wyoming

63. A few commenters stated that the *DEA* omitted an evaluation of impacts to gravel mining in Wyoming.⁶⁵ Pete Lien and Sons owns a limestone mine just outside unit NP5.⁶⁶ The company owns an active mine permit for the removal of limestone stockpiles located at the site. The Service has told the company that removal of limestone stockpiles from the site will not affect the PMJM or its habitat.⁶⁷ While the mine is closed, the site is near a railroad siting and the company anticipates constructing an industrial facility on the land. While construction plans are in the early stages, options for the facility include ready-mix concrete, lime, construction aggregate, hydrated lime, masonry block, and steel.⁶⁸ Depending on how close to the riparian area this facility is placed, a section 404 permit from the ACOE may be required. Due to uncertainty regarding whether or not this project would affect critical habitat for the PMJM and require consultation, costs associated with this project are not included in this analysis.
64. Pete Lien and Sons also maintains the railroad spur on its land. The railroad runs along the Horse Creek drainage. The company's land is located 800 feet from the stream channel. While the company has been maintaining the spur without a section 404 permit from the ACOE, these maintenance activities may require such a permit in the future.⁶⁹ Due to uncertainty regarding whether or not this project would involve a Federal nexus and affect critical habitat for the PMJM, any costs associated with this project are not included in this analysis.
65. The Wyoming Department of Revenue mapped all sand and gravel mines permitted by the Wyoming Department of Environmental Quality (DEQ) in 2002. There are three permitted sand and gravel mines in unit NP3. Permits for mining operations are issued by the State unless the operations involve wetlands and/or discharges to surface water bodies.

⁶⁵ Comment letter from Karen Rose, February 27, 2003; Comment letter from Paul R. Kruse, for the Albany, Converse, Goshen, Laramie, and Platte Counties' Commissions, February 27, 2003; and Comment letter from Melissa Young, for the Colorado Rock Products Association, February 27, 2003.

⁶⁶ Comment letter from Melissa Young, for the Colorado Rock Products Association, February 27, 2003.

⁶⁷ Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, April 2003; personal communication with Lecia Craft, Pete Lien and Sons, May 2, 2003.

⁶⁸ Personal communication with Lecia Craft, Pete Lien and Sons, May 2, 2003.

⁶⁹ Personal communication with Lecia Craft, Pete Lien and Sons, May 2, 2003.

Activities within wetlands may require a section 404 permit by ACOE, and thereby can involve a Federal nexus. Direct discharges can require a NPDES permit, issued by the State. Unless the State proposes issuing a NPDES permit that is not in compliance with State and Federal water quality standards, or terms of the NPDES permit are violated, U.S. EPA does not become involved in individual permitting actions. Therefore, consultations regarding NPDES permits are unlikely. However, each operator applying for a permit must prepare a wildlife survey and submit the survey to the Service for review and comment.⁷⁰ The DEQ anticipates permitting up to 20 sand and gravel mines over the next ten years.⁷¹ Therefore, 20 instances of technical assistance are anticipated regarding permit compliance for mining operations at a total cost of \$12,800 to \$37,200 over the next ten years.

Colorado

66. This Addendum anticipates one formal consultation in Colorado regarding gravel mining, with total section 7 costs ranging from \$15,500 to \$25,500. The *DEA* discussed the possibility of four gravel mining operations, currently in production, that may be affected by critical habitat. The cost of consultation or delay (\$276,000 to \$368,000) was not included due to the high level of uncertainty regarding whether or not these projects would require a consultation.
67. A few commenters stated that the analysis underestimated the impacts to gravel mining in Colorado.⁷² Specifically, Lafarge West Incorporated's Bluestone aggregate production operation in unit SP9 will more than likely require a section 7 consultation with the Service, resulting from Federal nexuses with the ACOE and Department of Energy (DOE).⁷³ The administrative cost of this section 7 consultation with the Service, ACOE, DOE, and Lafarge West Incorporated will range from \$15,500 to \$25,500.⁷⁴

⁷⁰ Personal communication with John Wagner, Wyoming Department of Environmental Quality, April 24, 2003 and May 7, 2003; personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, May 8, 2003.

⁷¹ Personal communication with John Wagner, Wyoming Department of Environmental Quality, April 24, 2003 and May 7, 2003.

⁷² Comment letter from Melissa Young, for the Colorado Rock Products Association, February 27, 2003; and Comment letters from Jeffrey W. Schwarz, for Lafarge West, Inc., January 21, 2003, and February 27, 2003.

⁷³ Comment letters from Jeffrey W. Schwarz, for Lafarge West, Inc., January 21, 2003, and February 27, 2003. Personal communication with Cliff Franklin, Department of Energy, Rocky Flats Environmental Technology Site, April 1, 2003.

⁷⁴ Administrative cost model used in the *DEA*.

68. Commenters indicated that the analysis should account for increased aggregate prices, increased aggregate production costs, and lost opportunity costs.⁷⁵ It is unlikely that section 7 consultation will result in an increase in aggregate prices. The Bluestone site is not currently in operation,⁷⁶ and there are 85 aggregate operations in the region with 343 million tons of aggregate reserves.⁷⁷ It is likely section 7 consultation will increase aggregate production costs and result in opportunity costs associated with the reduced life of an operation. As information to quantify these costs was not available, these costs are not included in this analysis.⁷⁸
69. One other commenter stated that additional gravel mining consultations would occur during the next ten years.⁷⁹ However, specific information on the number of proposed operations in critical habitat that would require section 404 permits from the ACOE was not available.⁸⁰

⁷⁵ Comment letters from Jeffrey W. Schwarz, for Lafarge West, Inc., January 21, 2003, and February 27, 2003.

⁷⁶ Personal communication with Cliff Franklin, Rocky Flats Field Office Personnel, April 1, 2003.

⁷⁷ Nasser, Khalil. 1987. Supply/Demand Analysis of Aggregates in the Denver Metro Area. Jefferson County Planning and Zoning Department.

The Denver metro area includes Denver, Adams, Arapahoe, Boulder, Douglas, Weld, and Jefferson Counties, and Clear Creek.

⁷⁸ Personal communication with Melissa Young, Colorado Rock Products Association, April 1, 2003.

The *DEA* estimated the consultation process could delay gravel extraction by 18 months to two years. To quantify the potential loss associated with this delay, the present value of delayed profits is estimated. Based on a market price of \$2.00 per ton for gravel at an extraction rate of 2.25 million tons per year, annual revenues would be \$4.5 million. Profit margins for a sand and gravel mining operation of this size are estimated to be 12.6 percent, \$567,000, (RMA 2001). Using a seven percent discount rate, a delay in extraction by 18 months to two years would result in opportunity costs ranging from \$69,000 to \$92,000. This analysis does not include the costs of delay for this project since it is years away from permitting and the firm is aware of consultation requirements. Thus, section 7 consultation is unlikely to delay the project beyond the statutory 135 day time frame to complete the formal consultation.

⁷⁹ Comment letter from Melissa Young, for the Colorado Rock Products Association, February 27, 2003.

⁸⁰ Personal communication with Melissa Young, Colorado Rock Products Association, April 1, 2003; Personal communication with Rena Brand, ACOE Personnel, Littleton Office, March 28, 2003.

6.13 Forest Management Plans and other U.S. Forest Service (USFS) Activities

70. This analysis anticipates three formal consultations regarding the revision of forest plans for the Medicine Bow-Routt, Arapaho-Roosevelt, and Pike-San Isabel National Forests.⁸¹ The administrative cost of these section 7 consultations between the USFS and the Service will range from approximately \$26,100 to \$29,100 per consultation, or a total administrative cost of \$78,300 to \$87,300.⁸² The following units are affected by consultations on these forest plans:

- Medicine Bow-Routt Forest Plan: NP1, NP2, NP4, and SP1
- Arapaho-Roosevelt Forest Plan: SP4, SP5, SP6, and SP7
- Pike-San Isabel Forest Plan: SP12, SP13, and A1

71. The Medicine Bow forest plan revision includes standards and guidelines to avoid or minimize harm to the PMJM and its habitat, which include:

- Surveying for occupancy within suitable PMJM habitat or not removing shrub or grass cover for more than 1/3 mile per each mile along linear riparian zones; and
- Avoid placing new recreation sites, trails, or roads within the riparian zone in PMJM suitable habitat. Additionally, the USFS will review existing roads in designated critical habitat for possible closure or relocation.⁸³

72. The USFS designed these PMJM standards and guidelines so that they would not substantially increase project costs. However, the USFS noted that individual projects will experience some impact as a result of implementing these standards and guidelines and that the level of impact will likely vary by project.⁸⁴

⁸¹ Personal communication with Tim Byer, U.S. Forest Service, Medicine Bow-Routt National Forest, Douglas Ranger District, March 25, 2003; personal communication with Denny Bohan, U.S. Forest Service, Pike-San Isabel National Forest, personal communications with Biologists, U.S. Fish and Wildlife Service, March 25, 2003.

⁸² Personal communication with Dennis Lowry, U.S. Forest Service, Arapaho-Roosevelt National forest, April 2, 2003.

⁸³ Medicine Bow National Forest Land and Resource Management Plan - Draft, accessed on March 25, 2003 at www.fs.fed.us/r2/mbr/resourcemgmt/mbrevision/plan.shtml

⁸⁴ Personal communication with Tim Byer, Medicine Bow-Routt National Forest, Douglas Ranger District, March 25, 2003.

73. The Service anticipates requesting additional protective measures for projects completed under the forest plan, but will require additional information on the types of projects to be covered by the forest plan in order to make this determination.⁸⁵ At a minimum, the Service recommended additional protective measures for the PMJM in its comments on the draft forest plan. Specifically, the Service recommended that no more than 1/4 mile of suitable habitat per mile be burned within one calendar year. Furthermore, the Service commented that the USFS should conduct all burning operations during the PMJM hibernation period (September 15 to May 15) and conduct on-site surveys using the Ocular Plant Composition sampling method R2-2200-OP (USDA Forest Service 1996) to determine if specific success criteria have been met. In regard to recreation sites and trails, and road projects within riparian zones, the Service recommended that the USFS revegetate areas affected by ground disturbing activities with native grasses and shrubby plant species.⁸⁶
74. The Arapaho-Roosevelt and Pike-San Isabel forest plans are in the initial stages of review and revision.⁸⁷ As such, uncertainty exists regarding the types of standards and guidelines the USFS will include in these forest plans for protection of the PMJM and its habitat.
75. The USFS also anticipates initiating one drought-related formal consultation regarding the potential overgrazing of riparian areas on USFS lands within the Medicine Bow-Routt National Forest.⁸⁸ The USFS anticipates that 20 allotments may be subject to over-use because of the drought, but the USFS anticipates grouping all 20 allotments into one formal consultation. The administrative cost associated with this section 7 consultation with the Service, USFS, and third parties is likely to range from \$15,500 to \$25,500. The USFS anticipates reseeded the areas subject to over-use in order to mitigate the short-term adverse effects resulting from the grazing activities. Due to uncertainty associated with the amount of reseeded necessary to mitigate the adverse effects of overgrazing, the USFS is unsure of

⁸⁵ Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, March 25, 2003.

⁸⁶ Memorandum to Mary Peterson, Forest Supervisor, Medicine Bow-Routt National Forests from Jodi Bush, Acting Field Supervisor, U.S. Fish and Wildlife Service, Cheyenne Field Office, February 28, 2003.

⁸⁷ Personal communication with Denny Bohan, U.S. Forest Service, Pike-San Isabel National Forest, April 1, 2003; personal communication with Dennis Lowry, U.S. Forest Service, Arapaho-Roosevelt National Forest, April 2, 2003.

⁸⁸ Personal communication with Tim Byer, U.S. Forest Service, Medicine Bow-Routt National Forest, Douglas Ranger District, March 25, 2003.

the cost associated with these efforts.⁸⁹ Alternatively, the Service anticipates recommending the construction of fencing with water breaks to exclude cattle from riparian areas during drought conditions, and reseeded if an area is severely overgrazed. However, the Service requires additional information on the scope of the project and the condition of the habitat on these allotments in order to determine the type of mitigation measures necessary.⁹⁰

76. A commenter stated that the *DEA* does not address the impact of special use authorizations issued by the USFS for existing reservoirs and ditches in the Arapaho-Roosevelt National Forest.⁹¹ Permits are required for the construction of new structures (power lines, reservoirs, etc.) and certain recreation activities. Consultation can be required for both new permits and permit renewals.⁹² If the Seaman Reservoir is expanded, as discussed above, a special use authorization will be required and is likely to result in a section 7 consultation.⁹³ Up to five formal consultations may be initiated for recreational and non-recreational special use authorization permits.⁹⁴ The administrative costs associated with these consultations will total up to \$127,500.⁹⁵ These administrative costs could occur in units SP4, SP5, SP6, and SP7.

SECTION 7 ESTIMATED TOTAL COSTS OF SECTION 7 IMPLEMENTATION FOR THE PMJM

77. This section presents an analysis of the section 7 costs associated with the PMJM and its proposed critical habitat, by unit. This analysis parallels that presented in Section 7 of the *DEA*. The consultation, project modification, and total cost table presented in Section 7 of the *DEA* has been modified to reflect the supplemental information provided above.

⁸⁹ Personal communication with Tim Byer, U.S. Forest Service, Medicine Bow-Routt National Forest, Douglas Ranger District, March 25, 2003.

⁹⁰ Personal communication with Biologist, U.S. Fish and Wildlife Service, Cheyenne Field Office, March 25, 2003.

⁹¹ Comment letter from John A. Kolanz, for the City of Greeley, January 13, 2003, and February 27, 2003.

⁹² Personal communication with Hal Gibbs, U.S. Forest Service, Forest Supervisor Arapaho-Roosevelt National Forest, April 29, 2003.

⁹³ Personal communication with John Kolanz, the City of Greeley, April 24, 2003.

⁹⁴ Personal communication with Ellen Hodges, U.S. Forest Service personnel Arapaho-Roosevelt National Forest, April 30, 2003.

⁹⁵ Administrative cost model used in the *DEA*.

7.2 Estimated Total Costs of Section 7

78. The cost estimates presented in Exhibit 7-2 are a function of the assumed number of consultations, technical assistance, and project modifications associated with activities affecting the proposed critical habitat for the PMJM, along with the per effort costs outlined in Exhibit 3-1 of the *DEA*, presented by critical habitat unit. This Addendum adds approximately \$4.3 million to \$11.9 million to the total section 7 costs presented in the *DEA*. Dams and reservoirs make up 52 percent of this change (\$6.2 million), followed by HCPs (22 percent or \$2.6 million), utilities (12 percent or \$1.5 million), and WAFB (11 percent or \$1.3 million). Gravel mining, and forest management plans and other USFS activities represent the remaining three percent (\$0.3 million) of additional costs. Most of these costs will be incurred by third parties, such as counties, cities, and municipalities, (\$10.3 million), although 13 percent (\$1.3 million) of these costs will be assumed by the Federal government through section 6 grants for HCP development. Action agencies such as the WAFB and the USFS will incur \$1.3 million of these costs, and the Service will incur less than \$1 million.
79. The economic impact associated with the implementation of section 7 for the PMJM may range from \$79 million to \$183 million over the next ten years, or approximately \$8 million to \$18 million per year. While a range of activities may incur section 7 impacts, a majority of the estimated impacts are anticipated to result from residential development and project modification costs as follows:
- Residential development project costs represent almost 80 percent of these costs.
 - The cost of project modifications account for almost 90 percent of the costs of the designation.
 - Over 70 percent of the costs of the designation are expected to occur in units A1 (the Arkansas River Drainage in El Paso County, Colorado) and SP12 (West Plum Creek in Douglas County, Colorado). Most of these costs are associated with development requiring section 404 permits from the Army Corps of Engineers.

Exhibit 7-2

**TOTAL SECTION 7 COSTS ASSOCIATED WITH THE LISTING OF AND DESIGNATION OF CRITICAL HABITAT FOR THE PMJM BY UNIT,
 Δ INDICATES A CHANGE FROM THE *DEA*
 (TEN YEARS)**

Units	No. of Formal/Informal Consultations	Informal Consultation	Formal Consultation	Project Modification Costs	Total Costs^d
WYOMING					
NP - Δ	11/22	\$89,000 to \$313,000	\$186,000 to \$297,000	\$999,000	Δ \$1,341,000 to \$1,760,000
NP2- Δ	10/22	\$90,000 to \$316,000	\$186,000 to \$298,000	\$999,000	Δ \$1,340,000 to \$1,758,000
NP3- Δ	12/42	Δ \$207,000 to \$485,000	\$219,000 to \$328,000	\$999,000	Δ \$1,499,000 to \$1,979,000
NP4- Δ	10/21	\$86,000 to \$298,000	\$157,000 to \$248,000	\$999,000	Δ \$1,253,000 to \$1,572,000
NP5- Δ	12/42	Δ \$205,000 to \$480,000	\$209,000 to \$311,000	\$999,000	Δ \$1,522,000 to \$2,032,000
SP1- Δ	9/20	Δ \$77,000 to \$281,000	\$149,000 to \$238,000	\$999,000	Δ \$1,233,000 to \$1,536,000
SP2- Δ	3/88	Δ \$198,000 to \$1,115,000	\$41,000 to \$68,000	Δ \$1,320,000	\$1,567,000 to \$2,521,000
SP3- Δ	11/24	Δ \$94,000 to \$356,000	\$167,000 to \$270,000	\$999,000	Δ \$1,331,000 to \$1,783,000
Subtotal	78/282	\$1,046,000 to \$3,645,000	\$1,314,000 to \$2,059,000	\$8,313,000	\$11,086,000 to \$14,941,000
COLORADO					
SP3	14/2	\$7,000 to \$31,000	\$217,000 to \$357,000	Δ \$258,000 to \$680,000	\$535,000 to \$1,193,000
SP4- Δ	33/3	\$11,000 to \$47,000	Δ \$411,000 to \$817,000	Δ \$391,000 to \$6,936,000	\$927,000 to \$8,068,000
SP5- Δ	30/2	\$7,000 to \$31,000	Δ \$365,000 to \$740,000	Δ \$176,000 to \$670,000	\$651,000 to \$1,686,000
SP6- Δ	29/2	\$7,000 to \$31,000	Δ \$349,000 to \$715,000	Δ \$151,000 to \$615,000	\$601,000 to \$1,582,000
SP7- Δ	28/2	\$7,000 to \$31,000	Δ \$334,000 to \$689,000	Δ \$126,000 to \$560,000	\$564,000 to \$1,509,000
SP8	17/8	\$28,000 to \$124,000	\$263,000 to \$433,000	Δ \$317,000 to \$809,000	\$691,000 to \$1,560,000
SP9- Δ	1/0	unknown	Δ \$16,000 to \$26,000	Δ \$1,440,000 to \$1,920,000	\$1,456,000 to \$1,946,000
SP10	17/2	\$7,000 to \$31,000	\$263,000 to \$433,000	Δ \$317,000 to \$809,000	\$650,000 to \$1,420,000

Exhibit 7-2

**TOTAL SECTION 7 COSTS ASSOCIATED WITH THE LISTING OF AND DESIGNATION OF CRITICAL HABITAT FOR THE PMJM BY UNIT,
 Δ INDICATES A CHANGE FROM THE *DEA*
 (TEN YEARS)**

Units	No. of Formal/Informal Consultations	Informal Consultation	Formal Consultation	Project Modification Costs	Total Costs^a
SP11	32/15	\$53,000 to \$233,000	\$538,000 to \$855,000	Δ \$1,248,000 to \$3,724,000	\$1,994,000 to \$5,177,000
SP12- Δ	46/20	\$70,000 to \$310,000	Δ \$1,118,000 to \$1,535,000	Δ \$10,518,000 to \$27,304,000	\$11,922,000 to \$29,657,000
SP13- Δ	13/5	\$18,000 to \$78,000	Δ \$313,000 to \$423,000	Δ \$3,123,000 to \$8,047,000	\$3,511,000 to \$8,682,000
A1- Δ	71/60	\$210,000 to \$930,000	Δ \$2,637,000 to \$3,217,000	Δ \$38,322,000 to \$98,270,000	\$41,600,000 to \$103,430,000
Unassigned HCPs ^b - Δ	4/0	\$0	Δ \$9,000 to \$50,000	Δ \$2,568,000	\$2,577,000 to \$2,618,000
Subtotal	332/122	\$425,000 to \$1,877,000	\$6,833,000 to \$10,290,000	\$58,955,000 to \$152,912,000	\$67,679,000 to \$168,528,000
TOTAL	410/404	\$1,471,000 to \$5,521,000	\$8,147,000 to \$12,349,000	\$67,268,000 to \$161,225,000	\$78,765,000 to \$183,469,000

^a Technical assistance costs are allotted by unit based on the distribution of formal and informal consultations. These costs are included in Total Costs only.

^b HCP costs are not assigned to specific units as removal from critical habitat will not result in the reduction of costs. See the discussion of Section 6.8 for a description of units impacted by the HCPs.

Note: Totals may not sum due to rounding.

7.3 Potential Impacts on Small Businesses

80. Under the Regulatory Flexibility Act (RFA)—as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996—whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

81. SBREFA does not explicitly define either “substantial number” or “significant economic impact.” Consequently, to assess whether a “substantial number” of small entities is affected by the proposed designation, the *DEA* considered the relative number of small entities likely to be impacted in the area. Similarly, the *DEA* considered whether or not entities incur a “significant economic impact.” The *DEA* considered only small entities that were expected to be directly affected by the proposed designation. This approach is consistent with several judicial opinions related to the scope of the RFA.⁹⁶

82. The *DEA* recognized that implementation of the Act’s section 7 provisions for the PMJM could have a significant economic impact on five percent of small residential and related development companies and four percent of small agricultural operations. Only one new category of small entities has been identified as being potentially impacted by the intended designation because:

- The F.E. Warren Air Force Base does not meet the definition of a small business or entity because it is a Federal facility.
- The Wyoming Interstate Company does not meet the definition of a small natural gas transport business. The Small Business Administration defines a small natural gas transport business as a company with no more than \$6 million in annual revenues.⁹⁷ The Wyoming Interstate Company is one of several subsidiaries of the El Paso Corporation. The El Paso Corporation reported \$3.9 billion in pro forma earnings

⁹⁶ See *Mid-Tex Elec. Co-Op, Inc. v. FERC*, 773 F.2d 327 (D.C. Cir. 1985) and *American Trucking Ass’n, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999), *aff’d in part and rev’d in part on other grounds*, *Whitman v. American Trucking Ass’n*, 531 U.S. 457 (2001).

⁹⁷ Small Business Administration Standards for Small Businesses, <http://www.sba.gov/size/indextableofsize.html>, accessed on April 4, 2003.

before interest and taxes in 2001, with approximately \$1.4 billion of these earnings reported for the El Paso Pipeline Group.⁹⁸ Therefore, the Wyoming Interstate Company is not a small natural gas transport company.

- None of the counties, cities or municipal entities developing HCPs meet the definition of a small government.⁹⁹ The Small Business Administration defines a small municipality as one having no more than 50,000 residents.¹⁰⁰ Boulder County has a population of 291,288, Denver County 554,446, Douglas County 175,776, and El Paso County 516,929.¹⁰¹
- The City of Fort Collins does not meet the definition of a small government. The Small Business Administration defines a small municipality as one having no more than 50,000 residents.¹⁰² The City of Fort Collins has a population of 126,848.¹⁰³
- Lafarge North America Incorporated is the parent company of Lafarge West Incorporated. Lafarge North America Incorporated does not meet the definition of a small business for mining. The Small Business Administration defines a small mining business as a company with no more than 500 employees.¹⁰⁴ Lafarge North America Incorporated has 15,500 employees.¹⁰⁵
- The impacts to gravel mining operations in Wyoming consist of modest administrative costs associated with the preparation of a wildlife survey and, thus, are

⁹⁸ El Paso Annual Report, http://www.elpaso.com/investor/02_1q/2001annual.pdf, accessed on April 4, 2003.

⁹⁹ 5 U.S.C. § 601 (5).

¹⁰⁰ Small Business Administration Standards for Small Businesses, <http://www.sba.gov/size/indextableofsize.html>, accessed on April 4, 2003.

¹⁰¹ Population estimates are by the US Census Bureau State and County QuickFacts, accessed at <http://quickfacts.census.gov/qfd/>

¹⁰² Small Business Administration Standards for Small Businesses, <http://www.sba.gov/size/indextableofsize.html>, accessed on April 4, 2003.

¹⁰³ City of Fort Collins population, accessed at <http://www.ci.fort-collins.co.us/fcfacts.php?ID=4> on April 4, 2003.

¹⁰⁴ Small Business Administration Standards for Small Businesses, <http://www.sba.gov/size/indextableofsize.html>, accessed on April 4, 2003.

¹⁰⁵ Lafarge North America Incorporated. Accessed at <http://www.lafargenorthamerica.com/LafargeNA.nsf> on April 4, 2003.

not likely to significantly impact small mining businesses operating in the areas proposed as critical habitat for the PMJM.

83. Small businesses in the utility industry could potentially be affected by section 7 protection for the PMJM if the designation leads to significant project modifications or delays. This analysis assumes that 79 unique companies may consult with the Service on utilities projects during the next ten years, or 7.9 businesses per year. There are approximately 166 small utility, electric services, natural gas distribution, and water supply companies in Boulder, Douglas, El Paso, Jefferson, Larimer, Teller, and Weld counties in which critical habitat units are located.¹⁰⁶ Thus, approximately five percent of small utility companies may be affected by section 7 implementation in proposed critical habitat annually.
84. Small businesses in the utility industry could potentially bear a per-business cost of \$9,000 to \$18,600 per consultation. For utility companies with annual sales up to \$1 million, 16 percent of all utility companies, this cost would be greater than or equal to 3.2 percent of annual sales.¹⁰⁷ For utility companies with \$1 million to \$3 million in annual sales, 20 percent of all utility companies, this cost would comprise 1.1 to 1.8 percent of annual sales. For utility companies with \$3 million to \$5 million in annual sales, nine percent of all utility companies, this cost would represent 0.6 percent of annual sales. For utility companies with greater than \$5 million in annual sales, 55 percent of all utility companies, this cost would comprise less than 0.1 to 0.2 percent of annual sales.

SECTION 8 POTENTIAL BENEFITS OF PROPOSED CRITICAL HABITAT

8.3 Benefits Associated with Habitat Protection

Recreation

85. One commenter points to the description of PMJM habitat as uplands with “limited human disturbance” and disputes the *DEA*’s assertion that recreational benefits may arise from preserving such habitat. As noted in paragraph 295 of the *DEA*, recreational opportunities may improve as a result of purchasing mitigation lands, regardless of the general habitat description provided in Section 1.

¹⁰⁶ Census Bureau, County Business Patterns, Accessed at: <http://www.census.gov/epcd/cbp/view/cbpview.html> on May 5, 2003.

¹⁰⁷ This probability is calculated based on national industry statistics obtained from the Robert Morris Associated *Annual Statement of Studies: 2001-2002* and from comparison with the SBA definitions of small businesses.

Ancillary Benefits to other Species that Coexist with PMJM

86. As noted in the *DEA*, habitat protection measures required for the PMJM generally encompass stretches of riparian habitat which incidently may provide ancillary benefits to other species, including birds, that cohabit these areas in Colorado and Wyoming. As noted by the Wyoming Department of Fish and Game, this Addendum acknowledges that some species, including the Colorado butterfly plant, the Ute ladies'-tresses orchid, and certain riparian trees and grasses may not benefit from future project modifications associated with the PMJM. However, on the whole, riparian habitat conservation recommendations such as timing restrictions, minimized time of disturbance, and installing barriers around construction areas contribute generally to habitat protection and collectively act to protect the riparian ecosystem.

Ecosystem Services

87. The Center for Native Ecosystems notes that the protection of PMJM habitat may also provide benefits to the public associated with improved ecosystem services, particularly services provided by riparian habitat areas (e.g., habitat for fish and wildlife, erosion control). While the *DEA* acknowledges that such benefits are likely, the analysis concludes that they cannot be monetized due to a lack of information linking project modifications for the PMJM to a quantifiable future environmental change. For example, to apply the values developed by Loomis *et al.* (2000), information is required on the specific environmental changes expected from future project modifications associated with dilution of wastewater, natural purification of water, erosion control, and habitat for fish and wildlife, respectively. These data do not exist.

Value of Open Space

88. The *DEA* points to the hedonic literature as evidence that increasing the quantity of open space (i.e., greenbelts, wetlands, wildlife corridors, and riparian areas) in a community can lead to enhanced residential property values.
89. A number of commenters point out that sufficient open space already exists in Wyoming, precluding benefits associated with preserving open space in that State. However, the *DEA* only ascribes potential open space benefits to the areas of proposed designation in Colorado where a relative scarcity of open space enhances its value (see paragraphs 287, 292, 293, and footnote #151). The *DEA* acknowledges the abundance of open space in Wyoming.
90. One commenter disputes the *DEA* assertion that the public benefits of preserving open space are reflected in nearby private property values (see Exhibit 8-2), suggesting instead that such private gains are *in addition* to the public gains of open space preservation. As described in Jones *et al.* (1996), the hedonic literature represents a mechanism for

measuring the value associated with environmental amenities (e.g., preservation of open space) by examining changes in the value of local properties (which reflect the capitalized value of the services provided by the property). As stated, “*The environmental amenities are not owned by the property owners, but rather are attributable to public trust resources. ... The hedonic property value method ... derive[s] the value of public environmental amenities enjoyed in conjunction with private property by analyzing how property values vary as amenities vary.*” Thus, in some cases, the public gains of open space in local communities will equal the private gains in nearby property values. Exhibit 8-2 of the *DEA* was provided to reflect what may happen in the areas of intense development pressure within and around critical habitat units in Colorado but cautioned that applying such benefits is difficult due to a lack of data (see paragraphs 292 through 294).

91. Another commenter suggests that the *DEA* should have utilized “benefits transfer” as a means to quantify the potential benefits associated with preserving open space (Exhibit 8-2). As noted in paragraphs 292 through 294, the *DEA* carefully considered the possibility of transferring the economic values obtained from the literature and applying them to the case of critical habitat for the PMJM. To accurately estimate economic impact through a benefits transfer approach two key criteria must be met: first, the economic studies must demonstrate adherence to an agreed-upon set of standards or protocol to ensure reliability of results;¹⁰⁸ and second, the attributes of the environmental good being valued by the study must be substantially similar to the attributes of the policy case (i.e., critical habitat designation for the PMJM). The referenced hedonic literature provides examples of society’s marginal willingness to pay for changes in open space. However, the values reflect a variety of open space attributes and housing market conditions, none of which are substantially similar to the policy question at hand. That is, the *DEA* notes that data do not exist to accurately translate these values to areas that may be affected by critical habitat designation in Colorado. Therefore, application of benefits transfer for the purpose of this analysis is not possible.

¹⁰⁸ For example, see the Office of Management and Budget’s Report to Congress on the Costs and Benefits of Federal Regulations (68 FR 5492).

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