LIST OF APPENDICES

APPENDIX R-1
SHPO SECTION 106 CONCURRENCE

The required Section 106 of the National Historic Preservation Act consultation has been completed.

State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNI
Division Director

August 6, 2008

Blaine Miller
Bureau of Land Management
Price Field Office
125 South 600 West
Price UT 84501

RE: Price Field Office Resource Management Plan

In Reply Please Refer to Case No. 06-1069

Dear Mr. Miller

The Utah State Historic Preservation Office received your request for our comment on the above-referenced project on July 7, 2008. From the information you provided, USPO concurs with the determinations of the RMP for the Price Field Office

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at (801) 533-3555 or jdykman@utah.gov.

As ever,

James L. Dykmann
Acting Deputy State Historic Preservation Officer - Archaeology

UTAH STATE HISTORY

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APPENDIX R-2
MONITORING AND METHODOLOGY SECTION

Resource	Suggested Monitoring and Methodology
Air Quality	Monitoring of air quality and other conditions conducted by the Utah Division of Air Quality, in coordination with Utah DEQ, will be used to determine whether BLM actions that may contribute to air quality concerns (mainly prescribed fire or slash burning) may proceed or be deferred until conditions improve. In addition, as part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) network, visual air quality in Bryce Canyon National Park and Canyonlands National Park monitor visibility. These monitoring data will be reviewed, as appropriate. The number of BLM actions contributing to any violation of national air quality standards will be tracked annually if available (expected to generally be none given BLM's).
Soil Resources	A sample of all projects with the potential to affect soil resources will be evaluated on a periodic basis to determine if best management practices or identified mitigation measures were followed and if they were effective. Results will be reported in the Annual Program Summary and Planning Update. The number of allotments/acres that met the Upland and Riparian standards in the Utah Standards for Rangeland Health and the total number of allotments/acres assessed will also be reported in the Annual Program Summary and Planning Update.
Water Resources	The BLM will work with the State Division of Water Quality to monitor water quality. Review the water quality data from instream monitoring stations annually. In addition, use the rangeland health assessment process, particularly Standard 4 according to Interpreting Indicators of Rangeland Health, Rangeland Health Standards and Guidelines, and BLM Manual 4180 and Handbook H-4180-1. Water quality monitoring would be conducted at the established water quality sampling stations on a priority basis using indicators that are chosen in coordination with the State Division of Water Quality, These indicators include temperature, nutrients, turbidity, sediment, dissolved oxygen, and stream channel condition. The protocol is outlined in the USDI - BLM National Field Manual for the Collection of Water Quality Data. Implement and monitor effectiveness of BMPs to protect the quality and beneficial uses of water at the project level. BMPs

Resource	Suggested Monitoring and Methodology
	will be monitored and evaluated on implementation and effectiveness as part of the project or activity plan.
Vegetation	Measure trends in vegetative production, structure, and composition, soil/site stability, watershed function, and integrity of biotic community. Use the rangeland health assessment process prescribed in the most current approved versions of Interpreting Indicators of Rangeland Health, Rangeland Health Standards and Guidelines, and BLM Manual 4180 and Handbook H-4180-1 guiding implementation of the rangeland health standards. Determine level of PFC using the Rangeland Health Assessments. Conduct periodic measurements of plant composition, vigor, and productivity, as well as the amount and distribution of plant cover and litter. Monitoring of existing condition of vegetation would consist of identifying ecological sites, determining ecological status, determining soil types, vegetation mapping, baseline inventory, and assembling existing basic information.
	Monitor for seedling establishment, seedling and sapling survival, and understory herbaceous plant diversity. Monitor for effectiveness of treatments in rare plant communities that receive restoration treatments or conifer removal. Effective monitoring methods should be used (e.g., Sampling Vegetation Attributes Technical Reference TR-1734-4, or Herrick, J.E., et al, 2005, Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems).
	Monitor riparian condition and functional status. Conduct Proper Functioning Condition (PFC) Assessment per TR 1737-9 and TR 1737-15 (assessment for streams) and TR 1737-11 and TR 1737-16 (assessments for lakes/wetlands) to assess the functionality of riparian and wetland areas. Concurrent with assessment of PFC, determine existing or potential natural community for all riparian and wetland sites, according to guidelines specified in Riparian Area Management, Greenline-Riparian-Wetland Monitoring, Technical Reference 1737-8, (1993.) An ecological site inventory would also be conducted for riparian-wetland sites as specified in Riparian Area Management, Procedures for Ecological Site Inventory—with Special Reference to Riparian-Wetland Sites, (Steve Leonard, et al; BLM Technical Reference 1737¬7, 1992.) Measure the amount and distribution of plants across a channel cross-section using riparian transects; document visual changes over time on the condition of the stream corridor using photo points.
	Conduct annual monitoring for new noxious weeds, concentrating

Resource	Suggested Monitoring and Methodology
	in areas where ground disturbing activities have occurred, and where the public or agency personnel have reported sightings. Visit known noxious weed sites that are identified for treatment, and evaluate for effectiveness of control (annually). Monitor for both invasiveness and impacts. Monitor for new satellite populations of noxious weeds beyond existing noxious weed infestations/populations. Visit known sites not identified for treatment on a rotational basis over three years. For all known sites and any newly discovered sites, locate with a global positioning system (GPS) unit, photograph, measure, and determine the need for future treatment. Survey all burned areas (natural and prescribed) over 20 acres for noxious weeds for three years following the burn.
Special Status Species (Threatened, Endangered, and Sensitive)	Monitoring for listed and non-listed special status species and their habitats would be developed where land use and human disturbances have been identified as having potential for adverse impacts. In accordance with conservation measures, agreements, and consultation efforts with the USFWS, monitor listed species regularly. Long-term monitoring would be conducted using methods chosen in coordination with the USFWS and Utah Division of Wildlife Resources. Visual reconnaissance would be used to obtain general information on the habitats of special status plants. Individual federally listed species populations and habitats would be monitored annually or bi-annually.
	Monitor stream habitat to detect changes every 5 to 10 years in streams with historic or currently occupied roundtail chub, bluehead sucker, and flannelmouth sucker habitat, in cooperation with UDWR.
Fish and Wildlife	In conjunction with other federal, state, or private agencies, continue to monitor wildlife populations in the planning area. Do this for individual species such as mule deer, elk, and pronghorn; and groups of species associated with source habitats such as sagebrush-steppe, juniper, and mixed conifer forest. Periodically determine the adequacy of existing data (i.e. species, habitats, etc.) for supporting management decisions. Periodically assess the effectiveness of a sampling of different vegetation treatments and disturbance actions to determine effectiveness of management decisions.
Wildland Fire Ecology	Monitoring will determine whether fire management strategies,

Resource	Suggested Monitoring and Methodology
	practices, and activities are meeting resource management objectives and concerns. Fire management plans and policies will be updated as needed to keep current with national and state fire management direction. Scheduled program reviews (post-season fire review) will be conducted to evaluate fire management effectiveness in meeting goals and to re-assess program direction. Pre-fire condition and post-fire effects will be determined by monitoring vegetative response to treatments and progress towards meeting objectives. Monitoring methods may include fuels and vegetation transects, photo points, density, cover and frequency plots, and ocular estimates. As available, applicable remote sensing data will also be incorporated into ecological condition monitoring. The number of acres in Condition Class 1, 2, and 3 will be re-evaluated during the watershed assessment process, and tracked and reported in the Annual Program Summary and Planning Update. Wildfire rehabilitation effectiveness monitoring studies will be encouraged to determine whether emergency rehabilitation objectives are met. Monitoring requirements and methods will be project specific.
Cultural Resources	Establish a comprehensive monitoring program emphasizing: • Cultural sites that have been previously identified as being impacted (e.g., from vandalism, erosion, grazing, or other) • Cultural sites identified on maps, brochures, or other media that bring the site into public awareness • Sites that are known to be popular for public visitation (e.g., public use site) • A representative sample of sites known to be prone to impacts from predictable sources (e.g., vandalism, recreation, grazing, or development). As noted in CUL-7, areas for new field inventories would be prioritized as follows: • Areas of special cultural designation (e.g., ACECs, RNAs, NHLs, and National Register sites) that have not been fully inventoried • Resources eligible for the NRHP at a national level of significance that have not been fully inventoried • Cultural resources sites identified for public use • Five-mile vulnerability zones surrounding cities and towns and 400 feet from the centerline on designated

Resource	Suggested Monitoring and Methodology
	OHV trails. A representative sample of significant cultural sites will be monitored at least once every three years (1-3 years), and a mitigation plan based on the results of the monitoring will be developed if necessary. Periodic ground patrols will be used year-round to reduce or prevent pot-hunting. Major sites will be periodically inspected to document any damage and identify future stabilization needs. Management plans will be developed for significant properties requiring protection or stabilization when identified. Assistance to institutions doing research or collection of specimens will be encouraged. Monitoring and recording of specimen locations will continue. Cultural resources will continue to be inventoried and evaluated as part of project level planning to achieve the objective of protecting significant properties from impact by proposed federally funded or authorized actions. This inventory and evaluation includes application of the National Register criteria to cultural properties and consultation with the State Historic Preservation Officer (SHPO), Tribal Governments, and Advisory Council on Historic Preservation, as appropriate per current regulations, policy, and the UT-BLM-SHPO Protocol Agreement.
Paleontological Resources	Monitor the highest priority scientifically significant paleontological sites for trend and condition. Conduct non-Section 106 proactive inventories intermittently as resources allow. Prioritize paleontological resource inventories in the following areas: • High resource potential • Medium resource potential • Low resource potential. Monitor high-significance (scientific or interpretive) sites with fossil resources that are not feasible or desirable to excavate or collect when possible to document their condition. Frequency of monitoring action for identified sites would be determined by the physical nature of the resource and potential threats. The number of localities visited on an annual basis and their condition will be reported in the Annual Program Summary and Planning Update.
Visual Resources	Any project design features or mitigation measures identified to address visual resource management concerns will be monitored to ensure compliance with established VRM classes. Where appropriate, monitoring will include the use of the visual contrast rating system, described in BLM Manual 8400 during project

Resource	Suggested Monitoring and Methodology
	review and upon project completion to assess the effectiveness of project design features and any mitigating measures. The number of areas/projects monitored for compliance with VRM objectives will be reported in the Annual Program Summary and Planning Update.
Non-WSA Lands with Wilderness Characteristics	Monitor impacts to the five wilderness characteristics areas, focusing on those areas with a higher potential for impacts. Monitor impacts from OHV use annually. On a project-by-project basis, monitor impacts to wilderness characteristics. Assess impacts to naturalness and solitude (e.g., actual counts of visitors, OHV tracks, dispersed camping impacts or foot prints). The reports of surveillance visits and any impacts to wilderness condition (acres of surface disturbance, OHV use off designated roads, etc…) will be kept on file in the office and findings reported in the Annual Program Summary and Planning Update.
Drought and Natural Disasters	During periods of prolonged drought or in areas that have experienced natural disasters, increase monitoring noted under the other resources, uses, and special designations to ensure that RMP goals and objectives are met during these periods of increased vulnerability.
Forestry and Woodland Products	Record accomplishments for providing wood products in the Timber Sale Information System database and MIS reporting.
Livestock Grazing	Use the rangeland health assessment process prescribed in the most current approved versions of Interpreting Indicators of Rangeland Health, Rangeland Health Standards and Guidelines, and BLM Manual 4180 and Handbook H-4180-1 guiding implementation of the rangeland health standards. The number of allotments/acres that meet the Standards for Rangeland Health and the total number of allotments/acres assessed will be reported in the Annual Program Summary and Planning Update.
	Assess Rangeland Health (qualitative) with an interdisciplinary team every 10 years or at the time of permit renewal. Report acres moving toward or away from meeting standards as part of meeting RMP objectives. Photo points: Taken at repeatable locations showing changes over time.
Recreation	Monitoring of recreation resources will be directed primarily toward SRMA's. Objective of monitoring will be to ensure continuity of recreation experience and opportunity and the healthy ecosystems, cultural resources and landscapes upon

Resource	Suggested Monitoring and Methodology
	which the experience is based. Conduct periodic patrols of popular undeveloped use areas where recreation use is concentrated. Include patrols to check boundaries, signing, and visitor use; ensure visitor compliance with rules and regulations; evaluate user conflict; establish baseline data and observation points to determine current impacts from recreational use; and develop studies to help determine appropriate levels and patterns of recreational use and the influences of other resource uses. Focus field monitoring on visitation levels, compliance with rules, regulations, and permit stipulations for specific sites, dispersed uses, and prescribed standards and guidelines. Permits issued to commercial services will be monitored for compliance of permit stipulations and post-use requirements. Use visitor surveys, traffic counters, surveillance at developed recreation sites, documentation of user conflicts, and photo documentation of the changes in resource conditions over time. Monitoring may also include collection of data from visitor comments and complaints, or information request calls or emails. Use monitoring data to manage visitor use, develop plans and projects to reduce visitor impacts, and to provide appropriate facility or transportation system design.
OHV	Travel management and OHV use monitoring within the planning area will focus on compliance with specific route and area designations and restrictions, with primary emphasis on those routes or areas causing the highest levels of user conflicts or adverse impacts to resources. Various methods of monitoring may be employed including; aerial monitoring, ground patrol, "citizen watch," and appropriate methods of remote surveillance such as traffic counters, etc. Evaluate trail impacts on natural resources through visual inspections, photo at problem areas (erosion, users short cutting, etc). Use trail traffic counters where appropriate to determine visitor use levels. Involve volunteers to assist in trail monitoring where appropriate and feasible. Periodically check that routes meet the objectives set forth in the RMP to ensure resource conditions such as water quality, wildlife/fish habitat, or recreational values are maintained and available to communities and users, and ensure resource values are not compromised. Route or area closures will be regularly monitored for compliance. Cooperation with other agencies in travel management and OHV use monitoring will continue to be emphasized, and improved wherever possible.

Resource	Suggested Monitoring and Methodology
Transportation	Periodically check that roads meet the objectives set forth in the RMP to ensure resource conditions are maintained and available to communities and users, and ensure resource values are not compromised. Update the Transportation Plan as monitoring needs are found.
Lands and Realty	Land use authorizations will be monitored through periodic field examinations to ensure compliance with the terms and conditions of the authorizing document. On-the-ground monitoring will occur after issuance of the authorization and periodically throughout the life of the authorization as required by current policy, regulation or law. Records as to the status of the authorizations are tracked through the current BLM tracking system. Management and realty personnel will periodically review status of authorizations and compliance. The number of use authorizations monitored annually and the number of those in compliance with terms and conditions of the authorization in any given fiscal year will be recorded in the Annual Program Summary and reported in the current BLM tracking system. Land ownership adjustment actions will be monitored through the current BLM tracking system. Changes in land ownership affecting BLM lands or interests in lands will be recorded on the current BLM plats, maps and databases. The number of acres acquired and/or disposed of through land exchanges, acquisitions, sales, and Recreation and Public Purpose Act patents will be reported in the current BLM tracking system. Periodic on-the-ground inspections and discussions of the corridors and use areas will be conducted to ensure they are being managed correctly and that conflicting uses are not occurring which could preclude the use of these locations for their intended purpose. Any new mineral withdrawals from operation of the public land laws and/or mineral laws will be reported in the current BLM tracking system and Planning Update, as will any withdrawal revocations.
Minerals and Energy	Monitoring for leasable minerals will be done to ensure compliance with applicable laws, regulations, conditions of leases, and the requirements of approved exploration/development plans/applications for permit to drill. Monitoring activities will include: 1. Periodic field inspections of leasable mineral activities. Inspections will be conducted to determine compliance with applicable laws, regulations, lease stipulations, and the

Resource	Suggested Monitoring and Methodology
	requirements of approved exploration and development plans, applications for permit to drill, and sundry notices. 2. Monitoring of oil and gas drilling/production activities in the planning area. Total gross surface disturbance and net surface disturbance from drilling will be tracked on a case by case basis. Monitoring of mining operations will be done to ensure compliance with 43 CFR 3809, 3802 and 3715 and other regulations and conditions of approval, specifically preventing "unnecessary or undue degradation". When applicable and practical, Plan and Notice review, inspections and associated compliance work will be coordinated with the Utah Division of Oil, Gas and Mining (DOGM). Coordination with Utah DOGM will help ensure adequate monitoring. Each Plan of Operation and Notice has or will have mitigation measures that cover the life of the operation. Field inspections will look for compliance with these measures and include monitoring weed control, reclamation of disturbed areas, revegetation and protection of the environment and public health and safety. Findings for each inspection will be documented and placed in the case file. Any non-compliance items will be noted and appropriate regulatory procedures followed. The number of explorations/operations monitored and the number in compliance will be reported in the Annual Program Summary and Planning Update. Monitoring of salable minerals will be done to ensure compliance with applicable laws, regulations, BLM policy contained in BLM Manual Section 3600 and Handbook H-3600- 1. Field inspections of common use areas, exclusive sale sites and other operations will be done on a periodic basis and will determine compliance with applicable laws, regulations, and the requirements of the approved mining plan. Inspections will specifically note compliance with reclamation, weed control and the protection of the environment and public health and safety. Operations in sensitive environmental areas or operations with a high potential for greater than usual impacts will be inspected more often. Identification and resolution of salable mineral trespasses will also be performed. The number of mineral material sites monitored and the number of these sites in compliance will be reported in the Annual Program Summary and Planning Update.
Wild and Scenic Rivers	Conduct monitoring, including periodic patrols to check boundaries, signing, and visitor use to ensure that outstandingly remarkable values are not compromised on the suitable WSR

Resource	Suggested Monitoring and Methodology
	segments. Inspect planned projects as well as on-the-ground projects for compliance to maintain WSR integrity. Monitor the upper and lower boundaries of each WSR at a minimum of once per year, document with photos at permanent locations at the on-stream boundaries. Every other year inspect random segments of the interior of each WSR for compliance to maintain WSR integrity.
Wilderness Study Areas	Wilderness Study Areas will be monitored in accordance with direction provided in the Interim Management Policy for Lands Under Wilderness Review (BLM Handbook H-8550-1), Chapter 2 section D. The policy requires monitoring of all WSAs at least once per month during the months the area is accessible by the public. Suitable monitoring methods will include both aerial and ground surveillance. As allowed by the IMP, alternative monitoring schedules may be prepared and implemented if approved by the State Director.
Other Designations	Following development of the comprehensive management plan for the National Historic Trail, the prepared Activity Trail Plan will include monitoring for the segments within the Price Field Office. Monitoring should include inspection of planned projects as well as on-the-ground projects for compliance to maintain remaining trail integrity. Assure that the VRM objectives for public lands seen along the trail are met. Monitor any interpretive signs installed along the Old Spanish National Historic Trail for wear or vandalism.

APPENDIX R-3
STIPULATIONS FOR SURFACE DISTURBING ACTIVITIES

DESCRIPTION OF SURFACE STIPULATIONS

Where applicable, surface stipulations will be appended to land use authorizations, permits, and leases issued on BLM-administered lands. The measures apply to operations that require use of heavy equipment, excluding casual use activities, such as for administrative uses and maintenance. These stipulations apply to the Proposed RMP and not the other alternatives.

Three surface stipulations could be applied to land use authorizations: (1) no surface occupancy (NSO), (2) timing limitation (TL), and (3) controlled surface use (CSU).

- Areas identified as NSO will be unavailable to placement of surface facilities such as oil and gas wells, and will be avoidance areas for location of public utilities, and will be closed to new road construction.
- Areas identified for TL stipulations will be closed to surface use including construction and developmental activities during the identified timeframes. TL stipulation areas will be open to operational and maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.
- Areas identified as CSU will require proposals be authorized only according to the controls or constraints specified. Controls will be applicable to all surface use activities, such as oil and gas development and operation, mineral material sales, and public utility location.

These surface stipulations would also be incorporated into the environmental analyses for BLM-initiated projects.

EXCEPTIONS, MODIFICATIONS, AND WAIVERS

The BLM Authorized Officer (AO) can except, modify, or waive surface stipulations. BLM will coordinate as necessary with the appropriate agency or entity, such as the School and Institutional Trust Lands Administration (SITLA), Utah Division of Wildlife Resources (UDWR), U.S. Fish and Wildlife Service (USFWS), and Carbon and Emery counties. A holder of a land use authorization document can be excepted from the stipulation on a one-time basis. A modification can be a change in the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently excepts the surface stipulation.

The environmental analysis for oil and gas development (e.g., analysis for the approval of applications for permit to drill [APD]) must address proposals to except, modify, or waive a surface stipulation. To except, modify, or waive a stipulation, the environmental analysis would have to show that (1) the circumstances or relevant resource values in the area had changed following issuance of the lease, (2) less restrictive requirements could be implemented that would protect the resource of concern, and (3) operations could be conducted without causing unacceptable impacts.

Table R3-1 shows resources of concern and stipulations including exceptions, modifications, and waivers.

Table R 3-1. Stipulation Table

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
No Surface Occupancy			
NSO within 1/2 mile of greater sage-grouse leks.		Sage-grouse leks	**Exception:** The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for current or subsequent reproductive display, including daytime loafing/staging activities, and/or would not result in development of a permanent aboveground structure within 1/2 mile of a lek. **Modification:** The AO may modify the NSO area in extent if an environmental analysis finds that a portion of the NSO area is nonessential to site utility or function, or if further analysis shows that the size or location of the lek has changed, or that the proposed action could be conditioned to not impair the function or utility of the site for current or subsequent reproductive display including daytime loafing/staging activities. **Waiver:** A waiver may be granted if there are no active lek sites and it is determined the sites have been completely abandoned or destroyed or occur outside the initial identified area, as determined by BLM.
NSO within 1/2 mile of known Mexican Spotted Owl (MSO) nests.		Known owl nest areas	**Exception:** The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification:** The AO may modify the NSO area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening. **Waiver:** A waiver may be granted if the MSO is de-listed and the area is determined as not necessary for the survival and recovery of the MSO.

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
NSO on slopes greater than 40 percent.		Slopes greater than 40 percent	**Exception:** If after an environment analysis the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan would have to include: • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. **Modification:** None **Waiver:** None
No surface disturbance or occupancy would be maintained around natural springs to protect the water quality of the spring. The distance would be based on geophysical, riparian, and other factors necessary to protect the water quality of the springs. If these factors cannot be determined, a 660-foot buffer zone would be maintained.		Springs	**Exception:** An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification:** None **Waiver:** None
No new surface disturbance (excluding fence lines) would be required in areas equal to the 100-year floodplain or 100 meters (330 feet) on either side from the centerline, whichever is greater, along all perennial and intermittent streams, streams with perennial reaches, and riparian areas.		Intermittent/ perennial streams	**Exception:** An exception could be authorized if (a) there are no practical alternatives, (b) impacts could be fully mitigated, or (c) the action is designed to enhance the riparian resources. **Modification:** None **Waiver:** None
NSO for cultural values within areas of critical environmental concern (ACEC) to retain the cultural character and context of the area.		ACEC with cultural R&I values	**Exception:** The AO may grant an oil and gas exception if it is determined that no other economical and technical feasible access is available to reach and drain the fluid mineral resources of the area. A block cultural survey must be completed and a treatment plan developed and submitted to BLM and the State Historic Preservation Office (SHPO) for their approval. The plan must contain measures to mitigate surface disturbance and reduce visual intrusion. **Modification:** None **Waiver:** None

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
NSO within Trail Springs/Lost Springs Wash segment of the Old Spanish National Historic Trail to retain the historic character of the trail.		Trail Springs/Lost Springs Wash segment	**Exception:** The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the historic character of the trail. **Modification:** None **Waiver:** None
NSO within developed recreation and administrative sites not consistent with the purpose of the site, including those authorized under a Recreation and Public Purpose Act.		Developed recreation sites and administrative sites	**Exception:** An exception would be granted for surface disturbance that supports the recreation or administrative objectives of the site. **Modification:** None **Waiver:** None
Timing Limitations			
Mule deer and elk winter range would be closed seasonally.	December 1 to April 15	Crucial winter habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable for or unoccupied during winter months by deer/elk and there is no reasonable likelihood of future winter range use.
Mule deer fawning and elk calving areas would be closed seasonally.	May 15 to July 5	Crucial fawning and calving areas. Located within the crucial summer habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to deer and elk populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the fawning and calving habitat is unsuitable or unoccupied by deer/elk and there is no reasonable likelihood of future use.

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
Desert bighorn sheep and Rocky Mountain bighorn sheep spring/lambing range would be closed seasonally.	April 15 to June 15	Desert bighorn sheep and Rocky Mountain bighorn sheep crucial yearlong habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to Desert bighorn sheep and Rocky Mountain bighorn sheep populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the habitat is determined to be unsuitable for lambing and there is no reasonable likelihood of future use as bighorn lambing grounds.
Moose winter range would be closed seasonally.	December 1 to April 15	Crucial yearlong moose habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or range conditions if certain criteria are met and if activities would not cause undue stress to moose populations or habitats. **Modification:** Season may be adjusted depending on climatic and range conditions. **Waiver:** A waiver may be granted if the winter range habitat is unsuitable or unoccupied during winter months by moose and there is no reasonable likelihood of future winter range use.
Raptor nesting complexes and known raptor nest sites would be closed seasonally.	February 1 to July 15	Known raptor nest sites (within ½ mile of nests occupied within past 3 years) and raptor crucial cliff-nesting complex habitats	**Exception:** The AO may grant an exception if the raptor nest in question is deemed to be inactive by May 31 and if the proposed activity would not result in a permanent structure or facility that would cause the subject nest to become unsuitable for nesting in future years. **Modification:** Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver:** This stipulation may be waived if, in cooperation with the UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 3 years.

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
Migratory bird nesting areas would be closed seasonally. Birds designated as BLM Special Status Species would have the highest priority.	April 15 to August 1	High-value breeding habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or habitat conditions if activities would not cause undue stress to migratory bird populations. **Modification:** Season may be adjusted depending on climatic and range conditions. Distance may be adjusted if natural features provide adequate visual screening. **Waiver:** None
Allow no surface disturbing or otherwise disruptive activities within 2 miles of a known greater sage-grouse lek.	March 15 to July 15	Sage-grouse leks and associated nesting/brood-rearing habitats	**Exception:** The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the habitat for nesting or early brood-rearing activities. **Modification:** Season may be adjusted depending on climatic and habitat conditions. Disturbance could occur if the activity were proposed to occur within the buffer, but would occur in non-sagebrush habitat, i.e., the activity could be allowed if it was not in sage-grouse habitat and did not in some other way disturb nesting or brood-rearing activity. **Waiver:** This stipulation may be waived if, in cooperation with UDWR, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.
Sage-grouse wintering areas would be closed seasonally.	December 1 to March 14	Sage-grouse crucial winter habitat	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic and/or habitat conditions if certain criteria are met and if activities would not cause undue stress to wintering greater sage-grouse **Modification:** Season may be adjusted depending on climatic and habitat conditions. **Waiver:** This stipulation may be waived if, in cooperation with the State wildlife agency, it is determined that the site has been permanently abandoned or unoccupied for a minimum of 5 years.

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
High-country watershed areas would be closed seasonally.	December 1 to April 15	Areas above 7,000 feet in elevation	**Exception:** Upon review and monitoring, the AO may grant exceptions because of climatic conditions if activities would not cause undue damage to soils or roads. **Modification:** Season may be adjusted depending on climatic and vegetation conditions. **Waiver:** Activities may be allowed as long as all surface disturbing activities are conducted before seasonal closure.
Controlled Surface Use			
In surface disturbing proposals regarding construction on slopes of 20 percent to 40 percent, include an approved erosion control strategy and topsoil segregation/restoration plan. Such construction must be properly surveyed and designed by a certified engineer and approved by the BLM prior to project implementation, construction, or maintenance.		Slopes between 20 and 40 percent	**Exception:** If after an environment analysis the AO determines that it would cause undue or unnecessary degradation to pursue other placement alternatives, surface occupancy in the area may be authorized. In addition, a plan from the operator and BLM's approval of the plan would be required before construction and maintenance could begin. The plan must include: • An erosion control strategy • GIS modeling • Proper survey and design by a certified engineer. **Modification:** Modifications also may be granted if a more detailed analysis, e.g., Order I soil survey conducted by a qualified soil scientist, finds that surface disturbance activities could occur on slopes between 20 and 40 percent while adequately protecting areas from accelerated erosion. **Waiver:** None
Within VRM II areas, surface disturbing activities would comply with BLM Manual Handbook 8431-1 to retain the existing character of the landscape.		VRM II areas	**Exception:** Recognized utility corridors are exempt. Temporary exceedance may be allowed during initial development phases. **Modification:** None **Waiver:** None
Cultural resources inventories (including point, area, and linear features) would be required for all federal undertakings that could affect cultural resources or historic properties in areas of both direct and indirect impacts.		All areas	**Waiver of Inventory** Although complete Class III inventories would be performed for most land use actions, a field manager could waive inventory for any part of an Area of Potential Effect when one or more of the following conditions exist: • Previous natural ground disturbance has modified the surface so extensively that the likelihood of finding cultural properties is

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
			negligible. (Note: This is not the same as being able to document that any existing sites may have been affected by surface disturbance; ground disturbance must have been so extensive as to reasonably preclude the location of any such sites.) • Human activity within the last 50 years has created a new land surface to such an extent as to eradicate locatable traces of cultural properties. • Existing Class II or equivalent inventory data are sufficient to indicate that the specific environmental situation did not support human occupation or use to a degree that would make further inventory information useful or meaningful. • Previous inventories must have been conducted according to current professionally acceptable standards. • Records are available and accurate and document the location, methods, and results of the inventory. • Class II "equivalent inventory data" includes an adequate amount of acreage distributed across the same specific environmental situation that is located within the study area. • Inventory at the Class III level has previously been performed, and records documenting the location, methods, and results of the inventory are available. Such inventories must have been conducted according to current professionally acceptable standards. • Natural environmental characteristics (such as recent landslides or rock falls) are unfavorable to the presence of cultural properties. • The nature of the proposed action is such that no impact can be expected on significant cultural resources. • Conditions exist that could endanger the health or safety of personnel, such as the presence of

Type of Stipulation	Seasonal Stipulation	Areas Where Stipulations Apply	Exception, Modification, Waiver
			hazardous materials, explosive ordnance, or unstable structures.
An assessment of fossil resources would be required on a case-by-case basis, mitigating as necessary before and/or during surface disturbance.		All areas	**Exception:** The AO may grant an exception if the area has previously been inventoried and an assessment completed. **Modification:** None **Waiver:** None
Any surface use or occupancy within designated critical habitat would be strictly controlled through close scrutiny of any surface use plan filed to protect habitat values and the use of the area by Mexican spotted owls. Modifications to the Surface Use Plan of Operations may be required for the protection of these resources. This limitation may apply to operation and maintenance of producing wells.		Designated critical habitat	**Exception:** The AO may grant an exception if an environmental analysis demonstrates that the action would not impair the function or utility of the site for nesting or other owl-sustaining activities. **Modification:** The AO may modify the CSU area in extent if an environmental analysis finds that a portion of the area is nonessential to site utility or function or if natural features provide adequate visual or auditory screening. **Waiver:** A waiver may be granted if the species is de-listed and the critical habitat is determined as not necessary for the survival and recovery of the species.

APPENDIX R-4
LETTER FROM USFWS RELATED TO BIOLOGICAL OPINION

The required consultation by the Threatened and Endangered Species Act has been completed. A copy of Biological Opinion can be found on the attached CD.

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

October 27, 2008

In Reply Refer To
FWS/R6
ES/UT
07-F-0005
6-UT-08-F-026

Memorandum

To: Field Office Manager, Bureau of Land Management, Price Field Office, 125 South 600 West, Price, UT 84501

From: Utah Field Supervisor, U.S. Fish and Wildlife Service, Ecological Services, West Valley City, Utah

Subject: Biological Opinion for BLM Resource Management Plan (RMP), Price Field Office (PFO)

This document transmits the Fish and Wildlife Service's (USFWS) Biological Opinion based on our review of potential activities described under the Resource Management Plan of the Utah Bureau of Land Management (BLM) Price Field Office's (PFO) and their potential effects on the federally threatened Mexican spotted owl (*Strix occidentalis lucida*), Last Chance townsendia (*Townsendia aprica*), Winkler pincushion cactus (*Pediocactus winkleri*), Maguire daisy (*Erigeron maguirei*), Jones cycladenia (*Cycladenia humilis* var. *jonesii*), Uinta Basin hookless cactus (*Sclerocactus glaucus*) and the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), razorback sucker (*Xyrauchen texanus*), Barneby reed-mustard (*Schoenocrabe barnebyi*), Wright fishhook cactus (*Sclerocactus wrightiae*), and San Rafael cactus (*Pediocactus despainii*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). In addition, this document includes the Conference Opinion for the candidate species yellow-billed cuckoo (*Coccyzus americanus occidentalis).* Critical habitat was designated for the Mexican spotted owl on February 01, 2001 and was re-designated August 31, 2004 (66 FR 8530, 69 FR 53181). Critical habitat was designated for the southwestern willow flycatcher on October 12, 2004 (69 FR 60705). Your July 21, 2008 request for formal consultation for all aforementioned species was received on July 23, 2008.

Price FO BLM Resource Management Plan proposed activities are categorized into the following 15 programs:

Air Quality
Cultural Resources
Paleontological Resources
Fire and Fuels Management
Forestry and Woodland Management
Hazardous Materials Management
Lands and Realty Management
Recreation Management
Riparian, Soils and Water Management
Special Status Species Management
Special Management Areas
Vegetation Resources
Visual Resources
Wild Horse and Burro Management
Transportation and Access Management

This Biological Opinion and Conference Opinion is based on information provided in the July 21, 2008 Biological Assessment, personal communications between the USFWS's biologists and the BLM's biologists, telephone conversations, email correspondence, conference calls, planning meetings, and other sources of information. A complete administrative record of this consultation is on file at this office.

Consultation History

This section summarizes significant steps in the consultation process. Additional correspondence, and email transmissions, that occurred between February 12, 2008, and September 25, 2008 are documented in the administrative record for this consultation.

- January 29, 2008: BLM electronically sent a draft Biological Assessment for the Price BLM Field Office Resource Management Plan to the USFWS for review;
- February 2008 through April 11, 2008: The USFWS reviewed and provided comments on the draft Biological Assessments;
- July 23, 2008: We received the final version of the PFO Biological Assessment and began formal consultation.

APPENDIX R-5 —BEST MANAGEMENT PRACTICES FOR RAPTORS AND THEIR ASSOCIATED HABITATS IN UTAH, AUGUST 2006

I. INTRODUCTION

Raptors, or *Birds of Prey*, are found on public lands throughout Utah. Approximately 31 species of raptors utilize public lands for at least a portion of their life cycle. These include 20 diurnal raptors, including the eagles, hawks, falcons, osprey, turkey vulture and California condor; and 11 mostly nocturnal owl species. At least 16 of the diurnal raptors are known to nest, roost and forage on public lands; while 2 others are probable nesters within the southern part of the state. The California condor is known to utilize public lands for roosting and foraging, but is not currently known to nest within the state. The rough-legged hawk is a winter resident that uses public lands for foraging. All of the owl species nest, roost and forage on public lands in Utah.

Eight of Utah's raptors are considered to be Special Status Species by the BLM, and currently receive enhanced protection, in addition to the regulatory authority provided by the Migratory Bird Treaty Act (MBTA), which covers all raptor species. The bald eagle and Mexican spotted owl are listed as Federally threatened species and are afforded the protection, as well as the Section 7 consultation requirements, of the Endangered Species Act (ESA). The bald eagle is currently being proposed for delisting by the Fish and Wildlife Service. Both the bald eagle and golden eagle are protected by the provisions of the Eagle Protection Act. The California condor is a Federally endangered species, however, the birds found in southern Utah are part of an Experimental Non-essential Population reintroduced to northern Arizona under Section 10(j) of the Endangered Species Act. The BLM is required to treat the condor as a species proposed for listing for Section 7 purposes of the ESA. The northern goshawk is managed by a multi-agency Conservation Agreement. The ferruginous hawk, short-eared owl and burrowing owl are listed as Wildlife Species of Concern by the Utah Division of Wildlife Resources (UDWR, May 12, 2006), and are therefore recognized as BLM state-sensitive species under the Bureau's 6840 Manual. The BLM's 6840 Policy states that "*BLM shall…ensure that actions authorized, funded, or carried out…do not contribute to the need for the species to become listed"*.

Future raptor management on BLM lands in Utah will be guided by the use of these best management practices (BMPs), which are BLM-specific recommendations for implementation of the U.S. Fish and Wildlife Service, Utah Field Office's *"Guidelines for Raptor Protection From Human and Land Use Disturbances"* (*"Guidelines"*). The *"Guidelines"* were originally developed by the Fish and Wildlife Service in 1999, and were updated during 2002 to reflect changes brought about by court and policy decisions and to incorporate Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds.* The *"Guidelines"* were provided to BLM and other land-managing agencies in an attempt to provide raptor management consistency, while ensuring project compatibility with the biological requirements of raptors, and encouraging an ecosystem approach to habitat management.

These best management practices, or specific elements of the BMPs which pertain to a proposal, should be attached as Conditions of Approval to all BLM use authorizations which have the potential to adversely affect nesting raptors, or would cause occupied nest sites to become unsuitable for nesting in subsequent years.

Raptor management is a dynamic and evolving science, and consequently, as the science evolves, these BMPs will undergo subsequent revision. As more information becomes available through implementation

of these raptor BMPs, and as our knowledge of raptor life cycle requirements increases, findings will be incorporated into future revisions of the BMP document. Additionally, BLM and the Department of Energy are initiating a 3-year Raptor Radii study which will test traditional spatial and seasonal nest buffers during actual oil and gas development activities for a select suite of species. Study results would be incorporated into new BMP revisions as well.

To adequately manage raptors and their habitats, and to reduce the likelihood of a raptor species being listed under the Endangered Species Act (ESA), BLM-authorized or proposed management activities and/or land disturbing actions would be subject to the criteria and processes specified within these BMPs. The implementation of raptor spatial and seasonal buffers under the BMPs would be consistent with Table 2 of the "*Guidelines"*, included here as Attachment 2. As specified in the "*Guidelines"*, modifications of spatial and seasonal buffers for BLM-authorized actions would be permitted, so long as protection of nesting raptors was ensured. State and/or Federally-listed, proposed, and candidate raptor species, as well as BLM state-sensitive raptor species, should be afforded the highest level of protection through this BMP process; however, all raptor species would continue to receive protection under the Migratory Bird Treaty Act. Modification of the buffers for threatened or endangered species would be considered pending results of Section 7 Consultation with USFWS.

As stated in the "*Guidelines"*, spatial and seasonal buffers should be considered as the best available recommendations for protecting nesting raptors under a wide range of activities state-wide. However, they are not necessarily site-specific to proposed projects. Land managers should evaluate the type and duration of the proposed activity, the position of topographic and vegetative features, the sensitivity of the affected species, the habituation of breeding pairs to existing activities in the proposed project area, and the local raptor nesting density, when determining site-specific buffers. The BLM would be encouraged to informally coordinate with UDWR and USFWS anytime a site-specific analysis shows that an action may have an adverse impact on nesting raptors. The coordination would determine if the impact could be avoided or must be mitigated, and if so, to determine appropriate and effective mitigation strategies.

Potential modifications of the spatial and seasonal buffers identified in the *"Guidelines"* may provide a viable management option. Modifications would ensure that nest protection would occur, while allowing various management options which may deviate from the suggested buffers within the *"Guidelines"*, which, if adequately monitored, could provide valuable information for incorporation into future management actions.

Seasonal raptor buffers from Attachment 2 should be reviewed by local raptor nesting authorities who are knowledgeable of raptor nesting chronologies within their local area. For those nesting raptors for which local nesting chronologies remain uncertain, the seasonal buffers provided in Attachment 2 should serve as the default. However, for those raptor species whose known nesting chronologies differ from the seasonal buffers provided in Attachment 2, the local seasonal buffers may be utilized as a modification of the "*Guidelines"*.

Criteria that would need to be met, prior to implementing modifications to the spatial and seasonal buffers in the "*Guidelines"*, would include the following:

1. Completion of a site-specific assessment by a wildlife biologist or other qualified individual. See example (Attachment 1)
2. Written documentation by the BLM Field Office Wildlife Biologist, identifying the proposed modification and affirming that implementation of the proposed modification(s) would not affect nest success or the suitability of the site for future nesting. Modification of the *"Guidelines"* would not be recommended if it is determined that adverse impacts to nesting

raptors would occur or that the suitability of the site for future nesting would be compromised.

3. Development of a monitoring and mitigation strategy by a BLM biologist, or other raptor biologist. Impacts of authorized activities would be documented to determine if the modifications were implemented as described in the environmental documentation or Conditions of Approval, and were adequate to protect the nest site. Should adverse impacts be identified during monitoring of an activity, BLM would follow an appropriate course of action, which may include cessation or modification of activities that would avoid, minimize or mitigate the impact, or, with the approval of DWR and USFWS, BLM could allow the activity to continue while requiring monitoring to determine the full impact of the activity on the affected raptor nest. A monitoring report would be completed and forwarded to UDWR for incorporation into the Natural Heritage Program (NHP) raptor database.

In a further effort to provide additional support and expertise to local BLM Field biologists, a network of biologists from various agencies with specific expertise in raptor management has been identified and included as Attachment 3. The personnel identified have extensive backgrounds in raptor management issues and are available, upon request, to assist BLM Field biologists on a case by case basis. Field biologists are encouraged to use this network, via informal conference, with one or more of the individuals identified. This coordination should be clearly distinguished from the consultation process required under Section 7 of the ESA. Individuals on the expert panel should not be expected to provide formal advise, but should serve as a sounding board for discussing potential affects of a proposal, as well as potential mitigation measures on specific projects which may be useful to BLM biologists.

II. HABITAT ENHANCEMENT

As recommended in the *"Guidelines"*, raptor habitat management and enhancement, both within and outside of buffers, would be an integral part of these BMPs, with the understanding that in order for raptors to maintain high densities and maximum diversity, it is necessary that the habitat upon which they and their prey species depend be managed to promote healthy and productive ecosystems. Habitat loss or fragmentation would be minimized and/or mitigated to the extent practical and may include such measures as; drilling multiple wellheads per pad, limiting access roads and avoiding loop roads to well pads, effective rehabilitation or restoration of plugged and abandoned well locations and access roads that are no longer required, rehabilitation or restoration of wildland fires to prevent domination by non-native invasive annual species, vegetation treatments and riparian restoration projects to achieve Rangeland Health Standards, etc.

In some cases, artificial nesting structures, located in areas where preferred nesting substrates are limited, but where prey base populations are adequate and human disturbances are limited, may enhance some raptor populations, or may serve as mitigation for impacts occurring in other areas.

III. PROTECTION OF NEST SITES AND BUFFER ZONES

As stated in the *"Guidelines"*, protection of both occupied and unoccupied nests is important since not all raptor pairs breed every year, nor do they always utilize the same nest within a nesting territory. Individual raptor nests left unused for a number of years are frequently reoccupied, if all the nesting attributes which originally attracted a nesting pair to a location are still present. Nest sites are selected by breeding pairs for the preferred habitat attributes provided by that location.

Raptor nest buffer zones are established for planning purposes because the nest serves as the focal point for a nesting pair of raptors. The buffer should serve as a threshold of potential adverse affect to nest

initiation and productivity. Actions proposed within these buffer zones are considered potentially impacting and, therefore, trigger the need for consideration of site-specific recommendations.

Seasonal (temporal) buffer zones are conservation measures intended to schedule potentially impacting activities to periods outside of the nesting season for a particular raptor species. These seasonal limitations are particularly applicable to actions proposed within the spatial buffer zone of a nest for short duration activities such as, pipeline or powerline construction, seismic exploration activity, vegetative treatments, fence or reservoir construction, permitted recreational events, etc., where subsequent human activity would not be expected to occur.

Spatial buffer zones are those physical areas around raptor nest sites where seasonal conservation measures, or surface occupancy restrictions may be applied, depending on the type and duration of activity, distance and visibility of the activity from the nest site, adaptability of the raptor species to disturbance, etc. Surface occupancy restrictions should be utilized for actions which would involve human activities within the buffer zone for a long duration (more than one nesting season) and which would cause an occupied nest site to become unsuitable for nesting in subsequent years.

Unoccupied nests

All Activities, including All Mineral Leases: Surface-disturbing activities, occurring outside of the breeding season (seasonal buffer), but within the spatial buffer, would be allowed during a minimum three-year nest monitoring period, as long as the activity would not cause the nest site to become unsuitable for future nesting, as determined by a wildlife biologist. Facilities and other permanent structures would be allowed, if they meet the above criteria.

Some examples of typical surface disturbing actions, occurring outside of the seasonal buffer, which may not be expected to affect nest production or future nesting suitability, would include; pipelines, powerlines, seismographic exploration, communication sites, an oil or gas well with off-site facilities which does not require routine visitation, recreation events, fence or reservoir construction, vegetative treatments, and other actions with discreet starting and ending times, and for which subsequent human activity or heavy equipment operation within the spatial buffer would not be expected to occur, or could be scheduled outside of the seasonal buffer in subsequent years.

Surface disturbing activities that would be expected to potentially affect nest production or nest site suitability, include; oil and gas facilities requiring regular maintenance, sand and gravel operations, road systems, wind energy projects, mining operations, and other actions requiring continual, random human activity, or heavy equipment operation during subsequent nesting seasons.

A nest site which does not exhibit evidence of use, such as; greenery in the nest, fresh whitewash, obvious nest maintenance or the observed presence of adults or young at the nest, for a period of three consecutive years, (verified through monitoring), would be deemed abandoned and all seasonal and spatial restrictions would cease to apply to that nest. All subsequent authorizations for permanent activities within the spatial buffer of the nest could be permitted. If the nest becomes reoccupied after authorized activities are completed, conservation measures would be considered to reduce potential adverse affects and to comply with the Migratory Bird Treaty Act and the Eagle Protection Act.

The three-year non-use standard varies from the "*Guidelines*" suggested seven-year non-use standard before declaring nest abandonment. This variation is based upon a similar standard which has been applied for over 20 years in two administrative areas within Utah. Empirical evidence would suggest the three-year non-use standard has been effective in conserving raptor species. The three-year standard has

been applied without legal challenge or violation of "Take" under the Migratory Bird Treaty Act or the Eagle Protection Act.

Because prey base populations are known to be cyclic, and because raptor nest initiation or nesting success can be affected by drought and other random natural events, care should be taken when applying the 3-year non-activity standard. The 3-year nest occupancy monitoring requirement should be viewed as a minimum time period during those years of optimal raptor nesting conditions. During sub-optimal raptor nesting years, when nesting habitat may be affected by drought, low prey base populations, fire, or other events, the monitoring standard should be increased to allow raptors the opportunity to reoccupy nesting sites when nesting conditions become more favorable.

Occupied Nests

All Activities: Land use activities which would have an adverse impact on an occupied raptor nest, would not be allowed within the spatial or seasonal buffer.

IV. CONSIDERATION OF MITIGATION MEASURES

Alternatives, including denial of the proposal, should be identified, considered and analyzed in a NEPA document anytime an action is proposed within the spatial buffer zone of a raptor nest. Selection of a viable alternative that avoids an impact to nesting raptors should be selected over attempting to mitigate those impacts. If unavoidable impacts are identified, mitigation measures should be applied as necessary to mitigate adverse impacts of resource uses and development on nesting raptors. Monitoring of the effectiveness of the mitigation measures should be mandatory and should be included as a Condition of Approval.

V. SPECIFIC STRATEGIES TO BE IMPLEMENTED REGARDING OTHER RESOURCE USES

The following are management strategies designed to reduce or eliminate potential conflicts between raptors and other resource uses. This is a list of examples and is not intended to be an all-inclusive list. In all cases, when an activity on BLM lands is proposed, and a NEPA document developed, the site-specific analysis process identified in Attachment 1 may be implemented to identify and either avoid or mitigate impacts to raptors from the proposal. These strategies apply to both BLM and applicant-generated proposals. The strategies are as follows:

A. Cultural Resources

Excavation and studies of cultural resources in caves and around cliff areas should be delayed until a qualified biologist surveys the area to be disturbed or impacted by the activity for the presence of raptors or nest sites. If nesting raptors are present, the project should be rescheduled to occur outside of the seasonal buffer recommended by the "*Guidelines*".

B. Forestry and Harvest of Woodland Products

Timber harvest would be subject to NEPA analysis and would be conducted in a manner that would avoid impacts to raptor nests. This could also apply to areas identified for wood gathering and firewood sales.

C. Hazardous Fuel Reduction/Habitat Restoration Projects

Hazardous fuels reduction projects and shrubsteppe restoration projects should be reviewed for possible impacts to nesting raptors. Removal of trees containing either stick nests or nesting cavities, through prescribed fire, or mechanical or manual treatments, should be avoided.

It is important to note that certain raptor species are tied to specific habitat types, and that consideration must be made on a site-specific basis when vegetation manipulation projects are proposed, to determine which raptor species may benefit and which may be negatively affected by the vegetation composition post-treatment.

D. Livestock Grazing

Manage rangelands and riparian areas in a manner that promotes healthy, productive rangelands and functional riparian systems. Rangeland Health Assessments should be conducted on each grazing allotment, and rangeland guidelines should be implemented where Rangeland Health Standards are not being met, to promote healthy rangelands.

Locations of sheep camps and other temporary intrusions would be located in areas away from raptor nest sites during the nesting season. Placement of salt and mineral blocks would also be located away from nesting areas.

Season of use, kind of livestock, and target utilization levels of key species affect vegetative community attributes (percent cover, composition, etc.) and influence small mammal and avian species diversity and density. While not all raptor species would be affected in the same way, livestock management practices which maintain or enhance vegetative attributes, will preserve prey species density and diversity which will benefit the raptor resource.

E. OHV Use

Special Recreation Management Areas (SRMAs) that are developed for OHV use would not be located in areas that have important nesting, roosting, or foraging habitat for raptors.

Off highway vehicle use would be limited to designated roads, trails and managed open areas. Lands categorized as “Open” for OHV use should not be in areas important to raptors for nesting, roosting, and foraging

When proposals for OHV events are received, the area to be impacted, would be surveyed by a qualified wildlife biologist to determine if the area is utilized by raptors. Potential conflicts would be identified and either avoided or mitigated prior to the issuance of any permit.

F. Oil and Gas Development

The Code of Federal Regulations (CFR), 43 CFR 3101.1-2, allows for well site location and timing to be modified from that requested by the lessee to mitigate conflicts at the proposed site, and states that the location can be moved up to 200 meters and the timing of the actual drilling can be delayed for up to 60 days to mitigate environmental concerns. The regulation also allows BLM to move a location more than 200 meters, or delay operations more than 60 days to protect sensitive resources, with supporting rationale and where lesser restrictions are ineffective. The Site Specific Analysis (Attachment 1) would provide the supporting rationale. Provisions are also present within Sections 3 and 6 of the Standard Lease Form which require compliance with existing laws and would allow the BLM to impose additional

restrictions at the permitting phase, if the restrictions will prevent violation of law, policy or regulation, or avoid undue and unnecessary degradation of lands or resources.

G. Realty

Lands proposed for disposal which includes raptor nesting, roosting, or important foraging areas would be analyzed and evaluated for the relative significance of these resources before a decision is made for disposal or retention.

A priority list of important raptor habitat areas, especially for Federally listed or state sensitive raptor species, on state and private lands should be developed and utilized as lands to be acquired by BLM when opportunities arise to exchange or otherwise acquire lands.

Lands and realty authorizations would include appropriate conservation measures to avoid and/or mitigate impacts to raptors.

H. Recreation

Development of biking trails near raptor nesting areas would be avoided.

Rock climbing activities would be authorized only in areas where there are no conflicts with cliff nesting raptors.

In high recreation use areas where raptor nest sites have been made unsuitable by existing disturbance or habitat alteration, mitigation should be considered to replace nest sites with artificial nest structures in nearby suitable habitat, if it exists, and consider seasonal protection of nest sites through fencing or other restrictions.

Dispersed recreation would be monitored to identify where this use may be impacting nesting success of raptors.

I. Wild Horse Program

In areas where wild horse numbers are determined to be in excess of the carrying capacity of the range, removal of horses, as described in the various herd management area plans, would continue, to prevent further damage to rangelands.

VI. INVENTORY AND MONITORING

Each Field Office should cooperatively manage a raptor database, with UDWR and USFWS, as part of the BLM Corporate database. Raptor data should be collected and compiled utilizing the Utah Raptor Data Collection Standards developed by the Utah State Office, so that personnel from other agencies can access the data. Appropriate protocols for survey and monitoring should be followed, when available. This database should be updated as new inventory and monitoring data becomes available. The data should also be forwarded to UDWR and the Natural Heritage Program, which has been identified as the central repository for raptor data storage for the State of Utah.

Use of Seasonal Employees and volunteers, as well as “Challenge Cost Share” projects, should be utilized to augment the inventory and monitoring of raptor nests within a planning area, with the data entered into the above-mentioned databases at the close of each nesting season. Project proponents, such as energy

development interests, would be encouraged to participate and help support an annual raptor nest monitoring effort within their areas of interest.

Active nest sites should be monitored during all authorized activities that may have an impact on the behavior or survival of the raptors at the nest site. A qualified biologist would conduct the monitoring and document the impacts of the activity on the species. A final report of the impacts of the project should be placed in the EA file, with a copy submitted to the NHP. The report would be made available for review and should identify what activities may affect raptor-nesting success, and should be used to recommend appropriate buffer zones for various raptor species.

As data are gathered, and impact analyses are more accurately documented, "adaptive management" principles should be implemented. Authorization of future activities should take new information into account, better protecting raptors, while potentially allowing more development and fewer restrictions, if data indicates that current restrictions are beyond those necessary to protect nesting raptors, or conversely indicates that current guidance is inadequate for protection of nesting raptors.

ATTACHMENT 1: SITE SPECIFIC ANALYSIS DATA SHEET

Observer(s)_____**Date**_____

1. **Conduct a site visit to the area of the proposed action and complete the raptor nest site data sheet according to BLM data standards**.

2. Area of Interest Documentation (**Bold** items require completion, other information is optional)

State_____**Office**_____**Management Unit**_____

Project ID#_____

Location (Description)

Legal T_____, R_____, Sec.____, 1/4,_____, 1/4,_____or UTM Coordinates

Latitude_____Longitude_____

Photos Taken Y( ) N( )

Description of photos:

_____
_____
_____
_____
_____

Raptor Species_____Confirmed_____Unconfirmed_____
Distance From Proposed Disturbance to: Nest _____
Perch_____
Roost_____

Line of Site Evaluation From: **Nest**_____
Perch_____
Roost_____

Extent of Disturbance: Permanent_____Temporary_____

Distance from Nest/Roost Acreage_____

Length of Time_____ Timing Variations_____ Disturbance Frequency_____

Other Disturbance Factors: Yes (If yes, explain what and include distances from nest to disturbances) No_____

Approximate Age of Nest: New_____ **Historical**: (Number of Years)_____

Evidence of Use (Describe):

Habitat Values Impacted: _____

Proportion of Habitat Impacted (Relate in terms of habitat available):_____

Estimated Noise Levels of Project (dB):_____

Available Alternative(s) (e.g., location, season, technology): _____

Associated Activities:_____

Cumulative Effects of Proposal and Other Actions in Habitat Not Associated With the Proposal: _____

Potential for site Rehabilitation: High_____Low_____

Notes/Comments:_____

Summary of Proposed Modifications:

Possible modifications to the spatial and seasonal buffers within the *USFWS Guidelines* include the following:_____

Rationale: _____

Summary of Proposed Mitigation Measures:

Possible mitigation measures related to the proposal include the following: _____

Rationale:_____

Summary of Alternatives Considered:

Possible alternatives to the proposal include the following: _____

Rationale:

Recommendation to FO Manager Based on Above Findings:

Field Office Wildlife Biologist Date

ATTACHMENT 2: NESTING PERIODS AND RECOMMENDED BUFFERS FOR RAPTORS IN UTAH

Species	Spatial Buffer (miles)	Seasonal Buffer	Incubation, # Days	Brooding, # Days Post-Hatch	Fledging, # Days Post-Hatch	Post-fledge Dependency to Nest,# Days[1]
Bald eagle	1.0	1/1–8/31	34–36	21–28	70–80	14–20
Golden eagle	0.5	1/1–8/31	43–45	30–40	66–75	14–20
N. Goshawk	0.5	3/1–8/15	36–38	20–22	34–41	20–22
N. Harrier	0.5	4/1–8/15	32–38	21–28	42	7
Cooper's hawk	0.5	3/15–8/31	32–36	14	27–34	10
Ferruginous hawk	0.5	3/1–8/1	32–33	21	38–48	7–10
Red-tailed hawk	0.5	3/15–8/15	30–35	35	45–46	14–18
Sharp-shinned hawk	0.5	3/15–8/31	32–35	15	24–27	12–16
Swainson's hawk	0.5	3/1–8/31	33–36	20	36–40	14
Turkey vulture	0.5	5/1–8/15	38–41	14	63–88	10–12
California condor	1.0	NN yet	56–58	5–8 weeks	5–6 months	2 months
Peregrine falcon	1.0	2/1–8/31	33–35	14–21	35–49	21
Prairie falcon	0.25	4/1–8/31	29–33	28	35–42	7–14
Merlin	0.5	4/1–8/31	28–32	7	30–35	7–19
American kestrel	NN[2]	4/1–8/15	26–32	8–10	27–30	12
Osprey	0.5	4/1–8/31	37–38	30–35	48–59	45–50
Boreal owl	0.25	2/1–7/31	25–32	20–24	28–36	12–14
Burrowing owl	0.25	3/1–8/31	27–30	20–22	40–45	21–28
Flammulated owl	0.25	4/1–9/30	21–22	12	22–25	7–14
Great horned owl	0.25	12/1–9/31	30–35	21–28	40–50	7–14
Long-eared owl	0.25	2/1–8/15	26–28	20–26	30–40	7–14
N. saw-whet owl	0.25	3/1–8/31	26–28	20–22	27–34	7–14
Short-eared owl	0.25	3/1–8/1	24–29	12–18	24–27	7–14
Mexican spotted owl	0.5	3/1–8/31	28–32	14–21	34–36	10–12
N. pygmy owl	0.25	4/1–8/1	27–31	10–14	28–30	7–14
W. screech owl	0.25	3/1–8/15	21–30	10–14	30–32	7–14
Common barn-owl	NN[2]	2/1–9/15	30–34	20–22	56–62	7–14

[1] Length of post-fledge dependency period to parents is longer than reported in this table. Reported dependency periods reflect the amount of time the young are still dependent on the nest site (e.g., they return to the nest for feeding).
[2] As a result of apparent high population densities and ability to adapt to human activity, a spatial buffer is not currently considered necessary for maintenance of American kestrel or common barn-owl populations. Actions resulting in direct mortality of individual bird or take of known nest sites are unlawful.

ATTACHMENT 3: UTAH RAPTOR MANAGEMENT EXPERTS FROM VARIOUS AGENCIES

The following list of personnel from various agencies in Utah, are recognized experts in the field of raptor ecology or have extensive field experience in managing raptor resources with competing land uses. The list is provided to inform BLM field biologists and managers of this network of specialized expertise that may be able to assist, as time permits, with specific raptor management issues. Individuals in this Utah Raptor Network, also have well-established contacts with an informal extended network of highly qualified raptor ecologists outside the state (i.e. USGS, State Wildlife Agencies, and Universities etc.) which could provide an additional regional perspective.

It should be pointed out that this list is not intended to replace or interfere with established lines of communication but rather supplement these lines of communication.

Utah BLM	**David Mills**	**david_mills@blm.gov**	**435-896-1571**
Utah BLM	**Steve Madsen**	**steve_c_madsen@blm.gov**	**801-539-4058**
Utah DWR	**Dr. Jim Parrish**	**jimparrish@utah.gov**	**801-538-4788**
Utah DWR (NERO)	**Brian Maxfield**	**brianmaxfield@utah.gov**	**435-790-5355**
USFWS	**Laura Romin**	**laura_romin@usfws.gov**	**801-975-3330**
HawkWatch Intl	**Jeff Smith**	**jsmith@hawkwatch.org**	**801-484-6808**

ATTACHMENT 4: REFERENCES CITED

Code of Federal Regulation; 43 CFR 3101.1-2, Leasing Regulations.

Endangered Species Act (ESA), 16 USC 1513-1543.

Migratory Bird Treaty Act (MBTA), 16 USC 703-712.

Romin, Laura A. and James A. Muck, 2002, "Utah Field Office Guidelines for Raptor Protection From Human and Land Use Disturbances." U.S. Department of the Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

United States Department of the Interior, Bureau of Land Management. 1997. Standards for Rangeland Health and Guidelines for Grazing Management; 1997.

U.S. Department of the Interior, Bureau of Land Management; 6840 Manual.

APPENDIX R-6
EMERGENCY STABILIZATION AND REHABILITATION PROGRAM DEFINITIONS

Emergency Stabilization

Planned actions within one year of a wildland fire to stabilize and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life or property resulting from the effects of fire, or to repair/replace/construct physical improvements necessary to prevent degradation of land or resources.

Rehabilitation

Post-fire efforts (<3-years) to repair or improve lands unlikely to recover to a management approved condition from wildland fire damage, or to repair or replace minor facilities damaged by fire.

Restoration

The continuation of rehabilitation beyond the initial three years of rehabilitation funding or the repair or replacement of major facilities damaged by the fire. Restoration is funded using appropriated or supplemental funding (for DOI form other than the wildland fire appropriation).

Seeding/mulching to prevent erosion

Seeding to prevent permanent impairment of critical habitat for Federal and state listed, proposed or candidate threatened and endangered species

Seeding to prevent establishment of invasive plants

Structural measures to slow soil and water movement

Stabilize critical heritage resources

Protective fences or barriers to protect treated or recovering area

Replacing/repairing (minor) facilities essential to public health and safety

Conducting assessments of habitat and significant heritage sites in those areas affected by emergency stabilization treatments

Tree planting to reestablish burned habitat, reestablish native tree species lost in fire, regenerating Indian trust commercial timberland

Repair damage to minor facilities (campgrounds, exhibits, fences, guzzlers, etc.)

Habitat restoration

Invasive plant treatment

Road/trail maintenance

Heritage site restoration

Fence replacement

Replacement of major infrastructure (visitor center, residences, administration offices, work centers) burned in the fire

Watershed restoration

APPENDIX R-7
STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING MANAGEMENT FOR BLM LANDS IN UTAH

Introduction

In America's West, rangelands are the dominant landscape. Sometimes overlooked and under-appreciated, rangelands contribute significantly to the quality of life of residents and visitors alike. BLM's 200 million + acres of rangeland have long been valued for livestock grazing and mining, but rangelands now are also prized for their recreation opportunities, wildlife habitats, watershed, cultural values, and scenery.

During the western migration of the mid and late 1800s, rangelands attracted settlers who wanted to build a new life of ranching, farming, business, and mining. As settlement continued, competition for land and water intensified. Land was put to uses that were not sustainable over the long term, and insufficient thought was given to future needs.

With time, competing interests have changed and intensified. Over the past 125 years, significant public values have been placed at risk. Irreplaceable topsoil has been lost, habitats are diminished, and clean water supplies are coming into question. A new focus is emerging from this continuing uncertainty, one that looks at sustainability of ecosystems rather than production of commodities. The land itself is in jeopardy, and the variety of products and values that this land has produced may not be sustained for future generations of Americans unless ecosystems are healthy and productive.

It is time for a change, and BLM is changing to meet the challenge. BLM is now giving management priority to maintaining functioning ecosystems. This simply means that the needs of the land and its living and nonliving components (soil, air, water, flora, and fauna) are to be considered first. Only when ecosystems are functioning properly can the consumptive, economic, political, and spiritual needs of man be attained in a sustainable way. To achieve these ends, BLM has developed the following Fundamentals of Rangeland Health and their companion rules-Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah.

Fundamentals of Rangeland Health

As provided by regulations, developed by the Secretary of the Interior on February 22, 1995, the following conditions must exist on BLM Lands:

(a) Watersheds are in, or making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energyflow,are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category I and 2 Federal candidate and other special status species.

In 1997, the BLM in Utah developed rules to carry out the Fundamentals of Rangeland Health. These are called Standards for Rangeland Health and Guidelines for Grazing Management. Standards spell out conditions to be achieved on BLM Lands in Utah, and Guidelines describe practices that will be applied in order to achieve the Standards.

Standard 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform.

As indicated by:

a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.
b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.
c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions.

Standard 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

As indicated by:

a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative cover adequate to protect stream banks and dissipate streamflow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.
b) Vegetation reflecting: Desired Plant Community, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover and other habitat needs for dependent animal species.
c) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.
d) Active floodplain.

Standard 3. Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved.

As indicated by:

a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival.
b) Habitats connected at a level to enhance species
c) Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of nonnative species.
d) Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community [DPC], where identified in a land use plan conforming to these Standards, or (2) where the DPC is identified a community that equally sustains the desired level of productivity and properly functioning ecological processes.

Standard 4. BLM will apply and comply with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM Lands will support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and groundwater (BLM will continue to coordinate monitoring water quality activities with other Federal, State and technical agencies).
As indicated by:

a) Measurement of nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and other water quality parameters.
b) Macro-invertebrate communities that indicate water quality meets aquatic objectives.

Guidelines for Grazing Management

1. Grazing management practices will be implemented that:
   a) Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions;
   b) Promote attainment or maintenance of proper functioning condition riparian/wetland areas, appropriate stream channel morphology, desired soil permeability and infiltration, and appropriate soil conditions and kinds and amounts of plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.
   c) Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow;
   d) Maintain viable and diverse populations of plants and animals appropriate for the site;
   e) Provide or improve, within the limits of site potentials, habitat for Threatened or Endangered Species;
   f) Avoid grazing management conflicts with other species that have the potential of becoming protected or special status species;
   g) Encourage innovation, experimentation and the ultimate development of alternatives to improve rangeland management practices;
   h) Give priority to rangeland improvement projects and land treatments that offer the best opportunity for achieving the Standards.
2. Any spring or seep developments will be designed and constructed to protect ecological process and functions and improve livestock, wild horse and wildlife distribution.
3. New rangeland projects for grazing will be constructed in a manner consistent with the Standards. Considering economic circumstances and site limitations, existing rangeland projects and facilities that conflict with the achievement or maintenance of the Standards will be relocated and/or modified.

4. Livestock salt blocks and other nutritional supplements will be located away from riparian/wetland areas or other permanently located, or other natural water sources. It is recommended that the locations of these supplements be moved every year.
5. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands non-intrusive, nonnative plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, can not achieve ecological objectives as well as nonnative species, and/or (d) cannot compete with already established native species.
6. When rangeland manipulations are necessary, the best management practices, including biological processes, fire and intensive grazing, will be utilized prior to the use of chemical or mechanical manipulations.
7. When establishing grazing practices and rangeland improvements, the quality of the outdoor recreation experience is to be considered. Aesthetic and scenic values, water, campsites and opportunities for solitude are among those considerations.
8. Feeding of hay and other harvested forage (which does not refer to miscellaneous salt, protein, and other supplements) for the purpose of substituting for inadequate natural forage will not be conducted on BLM lands other than in (a) emergency situations where no other resource exists and animal survival is in jeopardy, or (b) situations where the Authorized Officer determines such a practice will assist in meeting a Standard or attaining a management objective.

9. In order to eliminate, minimize, or limit the spread of noxious weeds, (a) only hay cubes, hay pellets, or certified weed-free hay will be fed on BLM lands, and (b) reasonable adjustments in grazing methods, methods of transport, and animal husbandry practices will be applied.
10. To avoid contamination of water sources and inadvertent damage to non-target species, aerial application of pesticides will not be allowed within 100 feet of a riparian/wetland area unless the product is registered for such use by the EPA.
11. On rangelands where a standard is not being met, and conditions are moving toward meeting the standard, grazing may be allowed to continue. On lands where a standard is not being met, conditions are not improving toward meeting the standard or other management objectives, and livestock grazing is deemed responsible, administrative action with regard to livestock will be taken by the Authorized Officer pursuant to CFR 4180.2(c).
12. Where it can be determined that more than one kind of grazing animal is responsible for failure to achieve a Standard, and adjustments in management are required, those adjustments will be made to each kind of animal, based on interagency cooperation as needed, in proportion to their degree of responsibility.
13. Rangelands that have been burned, reseeded or otherwise treated to alter vegetative composition will be closed to livestock grazing as follows: (1) burned rangelands, whether by wildfire or prescribed burning, will be ungrazed for a minimum of one complete growing season following the burn; and (2) rangelands that have been reseeded or otherwise chemically or mechanically treated will be ungrazed for a minimum of two complete growing seasons.

14. Conversions in kind of livestock (such as from sheep to cattle) will be analyzed in light of Rangeland Health Standards. Where such conversions are not adverse to achieving a Standard, or they are not in conflict with BLM land use plans, the conversion will be allowed.

APPENDIX R-8
LIVESTOCK GRAZING ALLOTMENTS AND ASSOCIATED FORAGE PREFERENCE ALLOCATION

Table R8-1 lists livestock grazing allotments and associated forage preference allocation.

Table R8-1. Livestock Grazing Allotments and Associated Forage Preference Allocation

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
Airport	24001	20	43
Bear Canyon	24006	100	0
Beaver Creek	34007	300	25
Bench	34008	88	182
Big Pond	00023	2,947	3
Big Springs	24009	48	36
Black	35003	19	8
Black Dragon	35004	3,223	1,690
Blind Canyon	34010	30	0
Box Flat	34011	410	0
Buckhorn	55005	3,627	1,885
Buckmaster	34013	858	113
Buckskin	24014	99	65
Calf Canyon	34016	199	0
Cat Canyon	24019	172	203
Chimney Rock Flat	44022	1,200	0
Clarks Valley	34024	567	1,569
Clawson Dairy	25008	65	0
Cleveland Summer	34025	1,833	1,626
Cleveland Winter	24026	419	137
Coal Creek	34027	750	1,190
Coal Wash	25009	386	21
Consumers Wash	34028	444	210
Coon Spring	34029	293	227
Corner	34030	53	91
Cove	25010	60	0
Cove Creek	24031	750	250

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
Cow Canyon	34032	65	44
Cowley	35013	59	30
Crandall Canyon	34033	104	104
Crawford	35014	214	0
Day	35015	14	0
Deadman	34035	24	7
Deep Wash	35016	148	0
Desert	34034	1,410	358
Don Cox	35011	72	0
Dripping Spring	34037	1,029	558
Dry Canyon	34038	640	274
Dry Wash	25017	560	0
East Grimes	35020	314	11
Elmo	34041	102	52
Fausett	34045	16	14
Ferron Mills	35021	90	18
Fish Creek	34046	25	10
Fuller Bottom	35023	629	218
Globe Link	35025	437	463
Grassy Trail	24048	50	90
Green River	34049	3,038	1,783
Haley Canyon	34051	117	0
Hambrick Bottoms	35026	2,005	0
Hayes Wash	24053	342	446
Head of Sinbad	35027	781	102
Hiawatha	24052	54	76
Hondo	15099	224	0
Horsebench	35028	923	0
Horseshoe N.	35029	1,697	0
Huff Bench	4104	159	108
Humbug	34055	3,020	1,002
Humphrey	35030	4	0
Icelander	24056	3,016	4,364
Iriart	34057	72	28
Iron Wash	35031	4,565	0
Jacobson	35032	18	24

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
Jensen	34058	20	5
Jensen (Calvin)	45034	9	5
John, Cox	25012	147	63
Johnson	35035	182	61
Johnson Huff Hollow	24059	213	230
Jorgensen (Floyd)	35036	18	0
Keel	34060	30	10
Kimball Canyon	24061	24	16
Kyune I	14128	448	0
Kyune II	24062	380	0
Link Canyon	35038	288	133
Little Holes	35039	80	0
Little Park	34066	242	258
Little Valley	35040	179	69
Lone Tree	35041	5,271	422
Long Bench	4103	20	0
Lookoff	34068	80	0
Lucky Lemon Flat	24069	362	69
Marakis	24070	16	0
Marsing	24071	87	40
Mathis Wash	14133	294	191
McCarty Canyon	35042	174	0
McKay Flat	35043	1,274	0
Mervin	15097	42	0
Mesquite Wash	35044	86	0
Mexican Bend	35045	980	371
Miller Canyon	35046	192	35
Miller Creek	34074	376	269
Molen Pasture	35047	186	0
Molen Tanks	35048	311	180
Mounds	24076	759	987
Mud Springs	34077	2,320	1,424
Mudwater	24078	15	1
Neva	25050	149	0
North Clarks Valley	24079	295	533
North Ferron	35051	875	1

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
North Herring Flat	35052	34	41
North Hollow	34080	12	13
North Huntington	35053	46	0
North Olsen Lake	34081	221	120
North Sid and Charley	35054	1,009	271
North Sids Mountain	35055	90	10
North Sinbad	35056	3,204	165
North Spring	34082	127	0
North Wolf Hollow	25058	8	0
Northwest Ferron	35057	118	3
Oil Dome	25059	36	0
Oil Well Draw	34083	527	861
Oil Well Flat	25060	2,730	0
Olsen (E)	15061	20	0
Olsen (GL)	25062	250	18
Oviatt	24084	63	25
Pace Canyon	24085	80	20
Patmos	34087	47	7
Peacock	25064	56	19
Pine Canyon	24089	50	10
Pinnacle Bench	34090	119	57
Poison Spring Bench	24091	240	191
Pole Canyon	34092	144	30
Porphyry Bench	34093	64	102
Price Canyon—East	24086	354	0
Price Canyon—West	34094	523	0
Price River N.	34095	64	66
R. J.	25066	82	34
Range Creek	24096	286	190
Range Mountain	24097	120	168
Red Canyon	35067	2,249	0
Red Seeps	25068	1,611	856
Reid	15069	12	0
Rochester	25071	206	22
Rock Canyon	24100	16	0
Rock Canyon	25072	235	5

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
Rock Creek	14101	689	1,207
Saddle Horse Canyon	25073	222	125
Sage Flat	4102	332	111
Saleratus	25074	1,838	382
Salt Wash	15075	2,998	1,775
San Rafael River	25076	2,002	866
Saucer Basin	25077	1,102	1,053
Sheep Canyon	14103	696	45
Soldiers Canyon	24105	835	1,659
Sorensen	25079	630	0
South Ferron	15080	245	0
South Herring Flat	25081	113	0
South Olsen Lake	14106	251	65
South Sid and Charley	15082	945	0
South Sids Mountain	15083	165	123
South Wolf Hollow	25084	30	50
Spring Canyon	24107	212	174
Staker	14108	70	13
Stone Cabin	4109	1,625	875
Straight Hollow	15085	42	10
Sulfur Canyon	14111	241	183
Summerville	14110	1,001	0
TDJ	25088	27	0
Taylor Flat	25087	1,449	0
Temple Mountain	5089	618	247
Trail Canyon	14112	420	0
Trail Springs	14113	596	74
Tuttle	25090	30	0
Van Duesen	14131	57	39
Vic Price	25065	124	0
Victor	4114	255	175
Washboard	4115	358	458
Wattis	14118	41	10
Wellington	14119	48	38
West Fork	00002	150	0
West Grimes	15091	295	175

Allotment Name	Allotment Number	Livestock Preference in Animal Unit Months (AUM)	
		Active	Suspended
West Huntington	25092	42	18
West Orangeville	25093	288	175
Wilberg	25094	108	0
Wildcat	14121	35	20
Willow Creek	14122	210	68
Woodhill	14123	205	462
Wood Hollow	15096	799	656
Total		**99,520**	**39,701**
Allotments With No Forage Allocated to Livestock			
Bunderson	35006	Unallocated	
Case	25007	Unallocated	
Closed to Grazing	14129	Unallocated	
Gooseberry	14132	Unallocated	
Gordon Creek Withdrawal	14130	Unallocated	
Gray Canyon Wildland	34042	Unallocated	
Lila Canyon	34065	Unallocated	
OEJ	35068	Unallocated	
Peterson	24088	Unallocated	
Rimrock	24098	Unallocated	
Unallotted Lands	15101	Unallocated	

APPENDIX R-9
SPECIAL RECREATION MANAGEMENT AREAS AND RECREATION OPPORTUNITY SPECTRUM CLASSIFICATION STANDARDS

Table R9-1. Desolation Canyon Special Recreation Management Area

Market Strategy	Destination
Market	International, national, regional, and local visitors (including numerous commercial groups) seeking the premier wilderness river recreation experience in the lower 48 states.
Niche	Desolation and Gray Canyons of the Green River provide a week-long, high-quality wilderness experience. This special recreation management area (SRMA) also provides cultural and heritage experiences with a wealth of prehistoric and historic resources. It is a National Historic Landmark because it is the least changed segment of the Green and Colorado River Systems explored by John Wesley Powell. Visitors can experience the wild landscape as Powell did.
Management Goals	Maintain the natural character of the canyon. Provide equitable access to a limited resource. Provide a quality, wilderness experience between Sand Wash and Nefertiti. Protect the scientific value of cultural resources while allowing for their enjoyment.
Management Objectives	Continue management under the 1979 River Management Plan. Continue dialog with the Ute Tribe on river management issues including permitting and access to Tribal Lands and exercise of BLM's scenic easement on the former Naval Oil Shale Reserve (NOSR) lands. Improve interdistrict cooperation with the Vernal Field Office and the Moab Field Office and clarify roles and responsibilities as they relate to law enforcement, oil and gas leasing, off-highway vehicle (OHV) designations, and other resource uses affecting recreation experience in the SRMA.

TARGETED OUTCOMES		
Primary Activities	**Experiences**	**Benefits**
• Backcountry river-running • Backcountry hiking • Rock art viewing • Cultural site visitation • Swimming • Camping • Wilderness education • Commercial river-running • River-related research	• Achievement/stimulation • Sense of leadership • Risk taking • Family togetherness • Learning about nature • Enjoyment of natural settings • Introspection • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape personal/social pressures • Teaching others • Sense of place • Solitude/self-awareness and reliance	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Greater respect for cultural resources and wild places • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage including landscape heritage • Enhanced lifestyle ***Economic:*** • Reduced health maintenance costs • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue ***Environmental:*** • Maintenance of distinct recreation setting character • Reduced looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes • Conservation of entire sustainable ecosystems • Reduced spread of invasive weeds • Reduced human impacts such as litter, social trails, and vegetation trampling

Table R9-2 Desolation Canyon Special Recreation Management Area – Gray Canyon Recreation Management Zone

Market Strategy	Destination
Market	Regional, and local visitors (including commercial groups) seeking an accessible and wilderness-like river recreation experience.
Niche	The Gray Canyon Recreation Management Zone (RMZ) provides a day-long river experience in a semi-primitive environment.
Management Goals	Provide opportunity for day use-oriented recreation below Nefertiti Rapid. Maintain the natural character of the canyon. Allow for higher density of groups and larger group sizes than in the remainder of the SRMA.
Management Objectives	Continue management under the 1979 River Management Plan. Improve interdistrict cooperation with the Moab Field Office and clarify roles and responsibilities as they relate to law enforcement, oil and gas leasing, off-highway vehicle (OHV) designations, and other resource uses affecting recreation experience in the RMZ.

TARGETED OUTCOMES		
Primary Activities	**Experiences**	**Benefits**
• Backcountry river-running • Swimming • Camping • Fishing • Commercial river-running • River-related research	• Achievement/stimulation • Sense of leadership • Risk taking • Family togetherness • Learning about nature • Enjoyment of natural settings • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape personal/social pressures • Teaching others • Sense of place • Solitude/self-awareness and reliance	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Greater respect for wild places • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage • Enhanced lifestyle ***Economic:*** • Reduced health maintenance costs • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue ***Environmental:*** • Maintenance of distinct recreation setting character • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes • Reduced human impacts such as litter, social trails, and vegetation trampling

Table R9-3. Cleveland-Lloyd Dinosaur Quarry Special Recreation Management Area

Market Strategy	Destination Recreation-Tourism
Market	National, regional, and local visitors seeking an authentic and educational experience at a world renowned, working, productive dinosaur quarry. Regional school groups seeking outdoor education experience.
Niche	Cleveland-Lloyd Dinosaur Quarry (CLDQ) is the world's largest and most significant discovery of dinosaurs from the Jurassic period. It has produced more than 12,000 bones representing more than 70 individual animals and 12 species. Forty-six individual allosaurs from this location is one of the most complete series collections of any species of dinosaur. The large number of predators recovered is itself unique and an unsolved scientific mystery. The visitor can see a working dinosaur quarry and experience the scientific process and the history of paleontology in the natural environment. Eighty acres of the site is a designated National Natural Landmark. A series of trails provide opportunity to view and learn about landscape and geology and view dinosaur bones and tracks in situ on the ground surface. The visitor center and guided walks provide appreciation and understanding of the history of life on earth.
Management Goals	Provide up-to-date exhibits and displays to keep up with the evolving state of knowledge. Continue to facilitate CLDQ research, particularly publication of results. Celebrate science and learning at BLM's first interpretive visitor center.
Management Objectives	Complete exhibits for the expanded visitor center and update interpretive signs and information in outdoor venues within 3 years from the signing of the Record of Decision (ROD). Increase visitation though marketing efforts with the Dinosaur Diamond National Scenic Byway, University of Utah, and College of Eastern Utah (CEU) Prehistoric Museum.

TARGETED OUTCOMES

Primary Activities	**Experiences**	**Benefits**
• Paleontological site visitation • Heritage tourism • Hiking • Viewing interpretive exhibits • Recreational learning • Picnicking • Hiking with interpretation	• Authentic experience at a working dinosaur quarry • Family togetherness • Learning about nature • Introspection • Exercise/physical fitness • Escape physical pressure • Sense of place • Achievement/stimulation • Enjoy nature through all the senses • Creativity • Interacting with people • Stewardship and hospitality	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for natural heritage • Reduced numbers of at-risk youth • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced health maintenance costs ***Environmental:*** • Maintenance of distinct recreation setting character • Reduced looting and vandalism of paleontological sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes and open spaces

Table R9-4. Labyrinth Canyon Special Recreation Management Area

Market Strategy	Destination
Market	International, national, regional, and local visitors (including numerous commercial groups) seeking a multi-day, primitive river recreation experience without the risks and challenges presented by whitewater river segments.
Niche	This river segment provides 64 miles of flatwater river recreation. The highly scenic, 4- to 6-day trip traverses open rolling terrain and transitions into a deeply incised dramatic canyon. Trip is well suited to beginning and inexperienced users seeking a primitive river trip with minimal on-water hazards. Unique cultural and landscape features.
Management Goals	Maintain the natural character of the canyon. Protect the scientific value of cultural resources while allowing for their enjoyment. Avoid carrying capacity issues by stressing Leave No Trace principles.
Management Objectives	Continue to work with the Utah State Division of Forestry, Lands, and Fire and Utah State Parks to promote river access and facilitate visitor use through education about safety and resource protection.

TARGETED OUTCOMES

Primary Activities	Experiences	Benefits
• Backcountry river-running especially canoe travel • Backcountry hiking • Rock art viewing • Cultural site visitation • Swimming • Camping • Wilderness education • Commercial river-running • River-related research	• Achievement/stimulation • Sense of leadership • Risk taking • Family togetherness • Learning about nature • Enjoyment of natural settings • Introspection • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape personal/social pressures • Teaching others • Sense of place • Solitude/self-awareness and reliance	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Greater respect for cultural resources and wild places • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage including landscape heritage • Enhanced lifestyle ***Economic:*** • Reduced health maintenance costs • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue ***Environmental:*** • Maintenance of distinct recreation setting character • Reduced looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes • Conservation of entire sustainable ecosystems • Reduced spread of invasive weeds • Reduced human impacts such as litter, social trails, and vegetation trampling

Table R9-5. San Rafael Special Recreation Management Area

Market Strategy	Undeveloped Recreation-Tourism with Portions that are Destination Strategy Associated with OHV Routes
Market	National, regional, and local visitors seeking a high-quality sight-seeing adventure in an expansive, undisturbed, and uninhabited natural setting located in a region of well-known national parks.
Niche	The San Rafael offers visitors the chance to experience remote, expansive, intact landscapes with little interaction and few restrictions. Attractions include scenery dominated by the geology of the San Rafael Swell and paleontological sites. The SRMA also offers heritage tourism of cultural sites including Prehistoric Indian sites and prolific Fremont and Barrier Canyon-style rock art. There are also remnants of settlements, bootlegging, and the outlaw era. There is also a wealth of historic mining artifacts including significant uranium mining related to the development of nuclear weapons and the Cold War.
Management Goals	Integrate management between the BLM and other agencies to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.
Management Objectives	Complete a SRMA plan to manage for visitors' activities and experiences within 5 years from the signing of the ROD.

TARGETED OUTCOMES

Primary Activities	Experiences	Benefits
• Driving for pleasure • ATV trail riding • Dispersed Camping (motorized and non-motorized) • Rock art viewing • Cultural site visitation • Heritage tourism • Backcountry hiking and backpacking • Canyoneering • Horseback riding • Wilderness therapy and education • Scenic overlooks • River-running on the San Rafael and Muddy Rivers	• Family togetherness • Learning about nature • Introspection • Nostalgia • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape social pressure • Teaching others • Sense of place • Achievement/stimulation • Sense of leadership • Risk taking	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage • Reduced numbers of at-risk youth • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced health maintenance costs ***Environmental:*** • Maintenance of distinct recreation setting character • Reduce looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes and open spaces

Table R9-6. San Rafael Special Recreation Management Area – Buckhorn/Wedge Recreation Management Zone

Market Strategy	Destination Recreation-Tourism
Market	National, regional, and local visitors seeking a high-quality sight-seeing adventure in an expansive, undisturbed, and uninhabited natural setting located in a region of well-known national parks.
Niche	The Buckhorn/Wedge RMZ offers visitors the chance to experience remote, expansive, intact landscapes with little interaction and few restrictions. Attractions include scenery dominated by the geology of the San Rafael Swell and paleontological sites. The RMZ also offers heritage tourism of cultural sites including Prehistoric Indian sites and prolific Fremont and Barrier Canyon-style rock art. There are also remnants of settlements, bootlegging, and the outlaw era. There is also a wealth of historic mining artifacts including significant uranium mining related to the development of nuclear weapons and the Cold War. This RMZ serves as a more easily accessible experience than more remote portions of the SRMA. Also serves as staging area, with higher levels of development such as camping and trailheads to access the more remote areas. Provides for larger and greater numbers of groups than the SRMA in general.
Management Goals	Integrated management between the BLM and National Park Service (NPS) to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.
Management Objectives	Complete a SRMA plan to manage for visitors' activities and experiences within 5 years from the signing of the ROD.

TARGETED OUTCOMES

Primary Activities	**Experiences**	**Benefits**
• Driving for pleasure • ATV trail riding • Dispersed Camping (motorized and non-motorized) • Rock art viewing • Cultural site visitation • Heritage tourism • Backcountry hiking and backpacking • Canyoneering • Horseback riding • Wilderness therapy and education • Scenic overlooks • River-running on the San Rafael River.	• Family togetherness • Learning about nature • Introspection • Nostalgia • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape social pressure • Teaching others • Sense of place • Achievement/stimulation • Sense of leadership • Risk taking	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage • Reduced numbers of at-risk youth • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced health maintenance costs ***Environmental:*** • Maintenance of distinct recreation setting character • Reduce looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes and open spaces

Table R9-7. San Rafael Special Recreation Management Area – Sinbad/Swaseys Cabin/Sids Mountain Recreation Management Zone

Market Strategy	Destination Recreation-Tourism
Market	National, regional, and local visitors seeking a high-quality sight-seeing adventure in an expansive, undisturbed, and uninhabited natural setting located in a region of well-known national parks.
Niche	The Sinbad/Swaseys Cabin/Sids Mountain RMZ offers visitors the chance to experience remote, expansive, intact landscapes with little interaction and few restrictions. Attractions include scenery dominated by the geology of the San Rafael Swell and paleontological sites. The SRMA also offers heritage tourism of cultural sites including Prehistoric Indian sites and prolific Fremont and Barrier Canyon-style rock art. There are also remnants of settlements, bootlegging, and the outlaw era. There is also a wealth of historic mining artifacts including significant uranium mining related to the development of nuclear weapons and the Cold War. This RMZ serves as a more easily accessible experience than more remote portions of the SRMA. Also serves as staging area, with higher levels of development such as camping and trailheads to access the more remote areas. Provides for larger and greater numbers of groups than the SRMA in general.
Management Goals	Integrated management between the BLM to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.
Management Objectives	Complete a SRMA plan to manage for visitors' activities and experiences within 5 years from the signing of the ROD.

TARGETED OUTCOMES

Primary Activities	**Experiences**	**Benefits**
• Driving for pleasure • ATV trail riding • Dispersed Camping (motorized and non-motorized)Rock art viewing • Cultural site visitation • Heritage tourism • Backcountry hiking and backpacking • Horseback riding • Wilderness therapy and education • Scenic overlooks	• Family togetherness • Learning about nature • Introspection • Nostalgia • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape social pressure • Teaching others • Sense of place • Achievement/stimulation	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage • Reduced numbers of at-risk youth • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced health maintenance costs ***Environmental:*** • Maintenance of distinct recreation setting character • Reduce looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes and open spaces

Table R9-8. San Rafael Special Recreation Management Area – Temple Mountain Recreation Management Zone

Market Strategy	Destination Recreation-Tourism
Market	National, regional, and local visitors seeking a high-quality sight-seeing adventure in an expansive, undisturbed, and uninhabited natural setting located in a region of well-known national parks.
Niche	The Temple Mountain RMZ offers visitors the chance to experience remote, expansive, intact landscapes with little interaction and few restrictions. Attractions include scenery dominated by the geology of the San Rafael Swell and paleontological sites. The SRMA also offers heritage tourism of cultural sites including Prehistoric Indian sites and prolific Fremont and Barrier Canyon-style rock art. There are also remnants of settlements, bootlegging, and the outlaw era. There is also a wealth of historic mining artifacts including significant uranium mining related to the development of nuclear weapons and the Cold War. This RMZ serves as a more easily accessible experience than more remote portions of the SRMA. Also serves as staging area, with higher levels of development such as camping and trailheads to access the more remote areas. Provides for larger and greater numbers of groups than the SRMA in general.
Management Goals	Integrated management between the BLM and National Park Service (NPS) to provide outstanding recreational opportunities and visitor experiences while protecting natural and cultural resource values.
Management Objectives	Complete a SRMA plan to manage for visitors' activities and experiences within 5 years from the signing of the ROD.

TARGETED OUTCOMES

Primary Activities	**Experiences**	**Benefits**
• Driving for pleasure • ATV trail riding • Dispersed Camping (motorized and non-motorized) • Rock art viewing • Cultural site visitation • Heritage tourism • Backcountry hiking • Canyoneering • Horseback riding • Wilderness therapy and education • Scenic overlooks • River-running on the Muddy River	• Family togetherness • Learning about nature • Introspection • Nostalgia • Exercise/physical fitness • Physical rest • Escape physical pressure • Escape social pressure • Teaching others • Sense of place • Achievement/stimulation • Sense of leadership • Risk taking	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Personal appreciation and satisfaction • Improved physical health ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage • Reduced numbers of at-risk youth • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced health maintenance costs ***Environmental:*** • Maintenance of distinct recreation setting character • Reduce looting and vandalism of historic and prehistoric sites • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes and open spaces

Table R9-9. Nine Mile Canyon Special Recreation Management Area

Market Strategy	Destination
Market	International, national, regional, and local visitors seeking readily accessible heritage tourism experiences in scenic landscapes via street legal vehicle access for primarily day trips.
Niche	Nine Mile Canyon is internationally significant for its concentration of archaeological sites. Most prevalent are the rock art and structural sites left by the Fremont people. In Nine Mile the visitor can experience more than 8,000 years of human interaction with a distinct, natural landscape. A succession of cultures has used the canyon as a storehouse of natural resources and a transportation corridor. In addition to the Indian cultures, the canyon is significant for its history. It is a microcosm for the settlement of the west including military history, ranching and settlement, relationship of the government with native cultures, and energy extraction. It also contains important family heritage resources for Carbon County and the Uinta Basin.
Management Goals	Maintain the natural character of the canyon. Protect the scientific value of cultural resources while allowing for their enjoyment. Provide quality interpretation to increase the appreciation and protection of cultural resources. Reduce conflicts between visitors and private land owners and energy development in the canyon.
Management Objectives	Continue management under the 1995 Special Recreation and Cultural Management Area (SRCMA) Plan. Continue dialog with Native American Tribes over tribal concerns and viewpoints.

TARGETED OUTCOMES

Primary Activities	Experiences	Benefits
• Rock art viewing • Archaeological site visitation • Driving for pleasure • Historic site visitation • Hiking • Mountain biking • Social gathering • Historical reenactments • Recreational learning • Wildlife viewing	• Achievement/stimulation • Autonomy—enjoying exploring on one's own • Family togetherness • Learning about nature • Enjoyment of natural settings • Introspection—contemplating human relationship with the land • Exercise/physical fitness • Escape physical pressure • Escape personal/social pressures • Teaching others • Sense of place and history • Self-awareness and reliance • Nostalgia/family heritage	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Greater respect for cultural resources and wild places • Improved appreciation and awareness of different cultures ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage including landscape heritage • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue • Reduced visitor damage to private land resources ***Environmental:*** • Reduced looting and vandalism of historic and prehistoric sites • Greater protection of cultural resources • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes • Conservation of entire sustainable ecosystems • Reduced human impacts such as litter, social trails, and vegetation trampling • Increased awareness of human interaction with natural landscapes

Table R9-10. Range Creek Special Recreation Management Area

Market Strategy	Destination
Market	International, national, regional, and local visitor's heritage tourism experiences in scenic landscapes. Visitors who enjoy more difficult, rugged, and primitive conditions than are encountered in Nine Mile Canyon. Visitors who are serious heritage tourism enthusiasts, not mere sightseers.
Niche	Range Creek is internationally significant for its concentration of archaeological sites. Most prevalent are the rock art and structures left by the Fremont people. Range Creek is unique because of its remoteness and the large number of pristine, undisturbed archaeological sites. Because of its remoteness, Wilderness Study Area (WSA) status, and limited access, users frequently rely on paid guide services or are willing to engage in arduous hiking or horseback riding. Most of this SCRMA is WSA, and the primitive nature of the landscape is emphasized.
Management Goals	Maintain the natural character of the canyon. Protect the scientific value of cultural resources while allowing for their enjoyment. Provide quality interpretation to increase the appreciation and protection of cultural resources. Provide an exclusive and physically challenging opportunity.
Management Objectives	Continue to work with the State of Utah on the development of management for visitation, resource protection, research, and interim management policy (IMP) compliance.

TARGETED OUTCOMES

Primary Activities	**Experiences**	**Benefits**
• Rock art viewing • Archaeological site visitation • Historic site visitation • Hiking • Recreational learning • Wildlife viewing • Archaeological research • Guided interpretive tour	• Achievement/stimulation • Autonomy—enjoying exploring on one's own • Learning about nature • Enjoyment of natural settings • Introspection—contemplating human relationship with the land • Exercise/physical fitness • Teaching others • Sense of place and history • Self-awareness and reliance • Risk taking—difficult terrain to navigate	***Personal:*** • Psychological (mental health maintenance) • Personal development and growth • Greater respect for cultural resources and wild places • Improved appreciation and awareness of different cultures • Improved health and fitness ***Household and Community:*** • Greater household awareness of and appreciation for cultural heritage including landscape heritage • Enhanced lifestyle ***Economic:*** • Positive contributions to local-regional economic stability • Increased local job opportunities • Greater diversification of local job offerings • Increased local tourism revenue ***Environmental:*** • Reduced looting and vandalism of historic and prehistoric sites • Greater protection of cultural resources • Sustaining community's cultural heritage • Increased awareness and protection of natural landscapes • Conservation of entire sustainable ecosystems • Increased awareness of human interaction with natural landscapes

Table R9-11. Price Field Office Extensive Recreation Management Area

Market strategy	Community
Market	Primarily local visitors seeking short term outdoor experience.
Niche	Provides opportunity for wide variety of experience and opportunity. Venue for activities and events that may not be appropriate in SRMAs.
Management Goals	Provide opportunities for a wide variety of recreation experiences, activities, and benefits in a manner that protects visitor health and safety, resource protection, and seek to reduce conflicts between other land uses and other recreation users groups.
Management Objectives	Manage this ERMA to provide opportunities for a wide variety of motorized, mechanized, non-motorized, and non-mechanized recreational activities largely free from heavily restrictive regulations and management constraints in a variety of settings ranging from slot canyons, open landscapes with broad scenic vistas, slick rock expanses and slopes, badlands, rangelands, woodlands, forests, and wildland/urban interface. Route designations would allow visitors to access most terrain by motorized vehicle, while leaving large expanses of undeveloped back country in which to “lose oneself.” Implement criteria for SRPs to ensure that visitor safety is protected and resource conditions are maintained while providing for readily available recreational opportunities.

Table R9-12. Recreation Opportunity Spectrum Classification Standards

Criteria	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Physical Setting						
Remoteness*	1 mile from any interstate, state, county, or BLM system roads or isolated by topography.	1 mile from interstate, state, county, or BLM system roads or isolated by topography.	¼ mile from interstate or state roads.	Could include areas within 1 mile of interstate, state, county, or BLM roads.	No distance criteria.	No distance criteria.
Minimum Size*	5,000 acres	2,000 acres	1,000 acres	No size criteria.	No size criteria.	No size criteria.
Evidence of Humans	Essentially unmodified natural environment.	Natural setting with some subtle modifications.	Natural setting with moderate alterations.	Natural setting with easily noticed to dominant modifications.	Modified natural setting with dominant modifications continually noticeable.	Structurally dominated setting with natural elements subordinate.
	Evidence of only non-motorized trails acceptable.	Evidence of non-motorized trails. Little or no evidence of motorized routes.	Strong evidence of motorized trails, routes, and roads.	Strong evidence of maintained roads and highways.	Strong evidence of maintained roads and highways.	Strong evidence of maintained streets, roads, and highways.
	Structures are very rare.	Structures are rare and isolated.	Isolated structures.	Scattered structures noticeable from travel routes.	Structures are readily apparent.	Structures are the dominant feature.
Social Setting						
User Density	Less than six parties encountered per day on trails. Less than three parties encountered in camping areas.	Less than 15 parties encountered per day on trails. Less than six parties encountered in camping areas.	Low to moderate encounters with other parties.	Moderate to high frequency of encounters with other parties.	High frequency of encounters with other parties.	Near constant encounters with other parties.
Managerial Setting						
Managerial Presence	Very low levels of onsite management.	Onsite management is present but subtle.	Onsite management is present but subtle.	Onsite management is noticeable but designed to blend with the natural environment.	Onsite management obvious and extensive, frequently blending with the natural environment.	Onsite management is obvious and extensive.

* Distances and minimum sizes are for general reference only. Actual minimum sizes and distances for each class may vary depending on topography and adjacent Recreation Opportunity Spectrum (ROS) class.

APPENDIX R-10
EVALUATION CRITERIA

EVALUATION FACTORS—COMMERCIAL, COMPETITIVE, AND ORGANIZED GROUP SPECIAL RECREATION PERMITS (SRP) (OUTSIDE OF SPECIAL AREAS[1])

Sensitivity of the Site and Associated Features to Expected Uses and Impacts

Soils and Vegetation

Low–Site and associated features demonstrate resilience and resistance to anticipated impacts

Moderate–Site and associated features demonstrate some ability to resist/recover from impacts

High–Site and associated features demonstrate limited ability to resist/recover from impacts

Associated Features (such as cultural, paleontological, visual, wildlife resources)

None–No associated features

Moderate–Some associated features present, existing protection is adequate

High–Resource conflict exists at the site

Potential Environmental Effects

Low–Effects of a temporary nature and surface disturbance of less than 1 acre

Moderate–Effects lasting less than 1 year, surface disturbance less than 5 acres

High–Effects lasting more than 1 year, surface disturbance more than 5 acres

Size of Area

Small–Less than 5 acres

Medium–5 to 40 acres

Large–More than 40 acres

[1] *Special Areas are areas designated by Congress, the Secretary of the Interior, or BLM State Director where permits and fees may be required for recreational use.*

Exclusive Use Area

No–No exclusive use of any area will be required

Yes–An area of exclusive use will be required to support the permitted activity

Duration of Use

Short–1 day or less

Moderate–2 to 6 days

Long–More than 6 days

Anticipated Number of Participants/Vehicles

Low–Less than 25 people/Less than 25 vehicles

Medium–25 to 100 people/25 to 50 vehicles

High–More than 100 people/More than 50 vehicles

Competitive Event

Y–The event or activity is competitive in nature

N–The event or activity is non-competitive

Mechanical Equipment Required

Y–Vehicles or other mechanized equipment required in support of activity

N–No vehicles or other mechanized equipment required

Bureau of Land Management (BLM) Monitoring and Inspection Requirements

None–No significant pre- or post-permit oversight activities required

Low–Pre- or post-permit activities require less than 8 hours BLM oversight

High–Pre- or post-permit activities require more than 8 hours BLM oversight

Table R10-1. Permit Classification

Evaluation Factors	Permit Class			
	I	II	III*	IV*
Soils and Vegetation	Low	Low/Moderate	Moderate	High
Associated Features	None	None/Moderate	Moderate	High

Evaluation Factors	Permit Class			
	I	II	III*	IV*
Environmental Effects	Low	Low/Moderate	Moderate	High
Size	Small	Medium	Medium	Large
Exclusive Use	No	No	No	Yes
Duration	Short	Short/Moderate	Moderate	Long
Participants	Low	Low/Medium	Medium	High
Competitive	No	No	Yes	Yes
Mech. Equip.	No	Yes or No	Yes	Yes
Monitoring and Inspection	None	None/Low	Low	High
Examples	Group Camping, Guided Hunting, Organized Groups, Scout Camporees	Commercial River Rafting, Fat Tire Bike Fest, Van & Bus Tours on System Roads	Off-Highway Vehicle (OHV) Tours, All Terrain Vehicle (ATV) Jamboree, Non-Motorized Competitive Events	Festivals, Motorized Competitive Events,

* Class III and IV events are more likely to require cost recovery because of the probability of these events requiring more than 50 hours of BLM staff time for permit administration.

Table R 10-2. Permit Types Allowed by Recreation Opportunity Spectrum (ROS) Class

ROS Class or Special Recreation Management Area (SRMA)/Extensive Recreation Management Area (ERMA)	Special Recreation Permit Class Allowed			
	I	II	III	IV
Primitive	Yes	Yes or No	No	No
Semi-Primitive Non-Motorized	Yes	Yes or No	Yes or No	No
Semi-Primitive Motorized (SPM)	Yes	Yes	Yes	No (Exceptions for travel through SPM on linear features)
Roaded Natural	Yes	Yes	Yes	Yes
Rural	Yes	Yes	Yes	Yes

Table R 10-3. Permit Types Allowed by SRMA

(Objectives and prescriptions in the Alternatives further define the allowability of SRPs in each SRMA)

SRMA/ERMA	Special Recreation Permit Class Allowed			
	I	II	III	IV
Desolation Canyon	Yes	Yes	No	No

SRMA/ERMA	Special Recreation Permit Class Allowed			
	I	II	III	IV
Cleveland-Lloyd Dinosaur Quarry	Yes	Yes	No	No
San Rafael Swell	Yes	Yes	Yes	Yes
Labyrinth Canyon	Yes	Yes	Yes	No
Nine Mile Canyon*	Yes	Yes	No	No
Price ERMA	Yes	Yes	Yes	Yes

*Under Alternatives where designated as an SRMA

WHEN IS AN SRP FOR ORGANIZED GROUPS REQUIRED IN THE PRICE FIELD OFFICE?

There are no Bureauwide or statewide thresholds based on group size, dictating whether an organized group permit is required. Such thresholds or other criteria for organized group permits are established through land use planning. Plans should also identify areas or sites where large, organized groups are appropriate and where they are not.

In the Price Field Office, organized groups numbering above the following group size criteria, gathering at a single location for more than 2 hours,[2] are required to contact the BLM before their event to determine if an SRP would be required.

Group Size Criteria

In WSAs–More than 14 people

All other areas–More than 24 people, unless and until an individual SRMA Plan prescribes a different group size

After reviewing the activity and location with the organizers, BLM will determine whether or not a permit is required. If a permit is not required, BLM may document this determination in the form of a Letter of Agreement. The factors BLM will use to determine whether a permit is required are shown in Table J-4.

Table R10-4. Matrix for Determining the Need for an Organized Group SRP

Criteria	Permit Not Required	Permit Required	Deny as Proposed
Is the use appropriate to the site?	Yes. Site very conducive to the proposed use, provided for in planning.	Site is appropriate for group size and activity, not specifically provided for in plan.	No. Site is not appropriate for use as proposed. Does not comport with recreation planning goals, violates ROS class or experience prescriptions.
Does the activity further recreation program goals and objectives?	Yes	Yes	No

[2] *Two-hour/single location criteria conform to Utah State Law definitions for mass gatherings. (R392-400).*

Criteria	Permit Not Required	Permit Required	Deny as Proposed
Is monitoring needed?	Nothing beyond one simple site visit.	Monitoring beyond a one-time site visit required.	Long-term monitoring of one or more resources required.
Health and Safety Concerns?	None	Concerns for event participants or other public land users.	Unmitigated, high risk to human health and safety. Unreasonable risk especially to non-participants.
Bonding desirable to cover reclamation, damage to government property or resources?	No	Bonding desirable or required.	
Insurance desirable to protect the U.S. Government from claims by group participants or third parties?	No. Liability exposure is negligible.	Insurance is desirable because of possible claims for personal injury or property damage.	
Special services required, such as law enforcement, fire protection, exclusive use of public lands, reserved sites?	No	Yes	

USING A LETTER OF AGREEMENT FOR ORGANIZED GROUPS WHERE AN SRP IS NOT REQUIRED

BLM uses significant discretion in determining whether or not an organized group needs an SRP. Such broad discretion often puts BLM in the position of having to decide whether an organized group should be required to have an SRP. An Organized Group SRP should be required if any of the following criteria apply:

- There is a concern for health and safety.
- There is a management concern for cultural or natural resources or facilities on public land.
- The organized group requires services such as law enforcement, fire protection, onsite monitoring of resources or activities, exclusive use, or other specialized management.
- When organized group use is taking place in an area that is appropriate, and there are no major concerns over the activity, BLM may consider preparing a Letter of Agreement for the activity.

A Letter of Agreement is—

- Documentation of BLM's determination that a permit is not required.
- An opportunity for the organized group to better plan its activity in a manner that does not require permit issuance and oversight.
- Documentation that the organized group contacted and worked with BLM to plan its activity.
- An opportunity to obtain information about the activity and obtain visitor use statistics.
- An opportunity to resolve conflicts with other authorized users of the public land.

- An opportunity for the organized group to better understand the agency's concerns for resources and appropriate use of public land.

A Letter of Agreement is not—

- An authorization to use public land.
- An enforceable document. If the group fails to adhere to the agreement, the agency has no recourse. The group would then be a candidate for SRPs in the future because the SRP terms and conditions are binding and enforceable; however law enforcement action may be taken if the group violates law or regulation.
- Below is an example of a Letter of Agreement, which may be modified to account for specific management situations. In no case should this Letter of Agreement be construed as an authorization to use public lands. If an authorization is required, it would be appropriate to use an SRP or a recreation use permit (for developed sites only).

LETTER OF AGREEMENT

FOR ORGANIZED GROUP RECREATION USE

Between

FIELD MANAGER

PRICE FIELD OFFICE

BUREAU OF LAND MANAGEMENT

and

CARBON COUNTY BSA DISTRICT

Welcome to the public lands! We hope you enjoy your visit.

The Bureau of Land Management is responsible for the balanced management of your public lands and resources. Management is based upon the principles of multiple use and sustained yield, a combination of uses that takes into account the long-term needs of future generations for renewable and non-renewable resources. These resources include recreation; range; timber; minerals; watershed; fish and wildlife; wilderness; and natural, scenic, scientific, and cultural values.

SRPs (Special Recreation Permits) may be required for organized groups using public lands. Criteria used to determine if a permit is necessary include concern for health and safety, need to properly manage lands and resources, and need to coordinate with other public land users. Based on our evaluation of your planned activity, such a permit does not appear to be necessary.

Type of Activity: Boy Scouts of America District Camporee. Camping and day loop hikes.

Place: Hidden Splendor

Date and Time: August 23–24, 2004

Number of People: 200

Activity Contact Person: J. Audubon Woodlore Phone: (720) 555-5000

BLM Contact Person: Ira Planner Phone: (435) 636-3600

Certain actions are necessary to have a safe and successful outing with a minimum impact on the environment:

All sites are filled on a "first-come, first-served" basis. Plan ahead to ensure that your group can secure a spot without interfering with other visitors.

Avoid building new fire rings; **USE A FIRE PAN** to eliminate scars on the soil. **GATHERING OF WOOD** for campfires is **PROHIBITED.** Burn wood to ashes and douse with water, making sure that your fire is **DEAD OUT** and that the area is restored to a natural condition before leaving. If you are a vehicle-based camp, haul out all charcoal and ash from your fire pan.

Proper disposal of human waste is critical. At your activity, this will be accomplished by **PROVIDING TEMPORARY TOILET FACILITIES OR USING TOILETS AT THE CAMPGROUND.** One toilet for every 25 persons attending will be required at all sites serviced by vehicle.

Help us clean up public lands. **REMOVE ALL TRASH**. Picking up trash left by less thoughtful people helps maintain the scenic beauty of your public lands.

If any directional signs are erected as part of this activity, they will be removed at the completion of the activity.

Natural hazards and phenomenon could be encountered that present risks to the participants. Participants must be advised of hazards that might be encountered and risks associated with the activity.

Nothing in this agreement shall be construed to imply permission to build any structure or conduct any activity not specifically named.

Disorderly or otherwise objectionable conduct, such as harassment of wildlife, livestock, or other lawful users of public land will not be tolerated and could be the basis for denial of similar agreements in the future.

Precautions must be made to protect natural resource values, cultural or historic objects, aesthetic values, and any facilities on public lands.

If there is any question concerning regulations on public lands, please contact our office immediately.

This agreement is not an authorization to use public lands. Failure to abide by all activity parameters in this agreement may result in permits being required for future activities.

_____ _____

Activity Organizer Signature Date

_____ _____

Field Office Manager Date

APPENDIX R-11
PARCELS FOR DISPOSAL THROUGH SALE

The following tables identify parcels available for disposal through sale, identify the authority and rationale under which the sale would be performed, and include any needed notes. All potential disposals through sale must meet the goals and objectives of other resource programs identified in the RMP.

Table R 11-1. San Rafael Resource Area RMP—Parcels Designated for Sale Under Various Authorities

Parcel	Legal Description			
	Township	Range	Section	Subsection
Authorities: Various, including Federal Land Policy and Management Act (FLPMA) Section 203(a)(1). **Rationale:** Parcels are isolated from the large blocks of federal land by either land ownership pattern or physical features and are difficult and uneconomic to manage. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
1	17 S.	9 E.	9	NW4SW4SE4SW4
2	17 S.	9 E.	34	S2SW4
3	18 S.	9 E.	3	Lots 1 and 2SW4NE4 SE4SW4NW4SE4
4	18 S.	8 E.	21	NW4SE4
5	18 S.	8 E.	21	N2NW4SE4NW4 NE4SW4SW4SE4
6	18 S.	8 E.	20	NE4NE4
7	18 S.	8 E.	23	SE4SE4
			26	NE4NE4
8	18 S.	8 E	12	E2SE4
	18 S.	9 E.	7	N2SW4SE4SW4 SW4SE4
			18	N2NE4
9	18 S.	9 E.	10	E2NE4
10	18 S.	9 E.	9	SE4E2SW4
11	18 S.	9 E.	17	W2SE4
			20	NW4NW4NW4NE4
12	18 S.	9 E.	20	S2NW4SW4NE4
13	19 S.	7 E.	14	NW4NE4E2NW4
14	19 S.	8 E.	7	Lot 2NE4SW4SW4SE4
15	19 S.	8 E.	11	SE4SE4
			12	SW4SW4
16	19 S.	8 E.	17	NW4NW4
17	19 S.	8 E.	17	E2SW4
18	19 S.	8 E.	20	Lots 1 to 4NE4SW4

Parcel	Legal Description			
	Township	Range	Section	Subsection
			21	NE4E2NW4SW4NW4NE4SW4NE4SE4
19	19 S.	8 E.	31	N2NE4SE4NE4SE4E2SW4SW4SW4
	20 S.	7 E.	1	N2NESE4
	20 S.	8 E.	6	N2N2S2SE4SW4SW4SE4
			7	W2NE4NE4NW4
20	20 S.	7 E.	4	SE4NE4
21	20 S.	7 E.	27	NW4NW4
22	20 S.	7 E.	12	SW4NE4NW4SE4
23	21 S.	6 E.	25	SE4SW4S2SE4
24	21 S.	6 E.	27	NW4NE4
25	21 S.	6 E.	27	Lot 1SW4NE4
26	21 S.	7 E.	31	NW4SW4
27	22 S.	6 E.	11	NE4NE4SE4NW4
28	22 S.	6 E.	14	SW4NW4NW4SW4
			15	Lot 1
29	22 S.	6 E.	18	SW4SE4
			19	W2NE4NW4SE4
Authorities: Various, including FLPMA Section 203(a)(1) (community expansion). **Rationale:** Because of their higher elevation, these lands would serve purposes such as infrastructure needs and related large-scale development that could not be met on non-federal lands. Disposal of these lands would be limited to these purposes. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
30	19 S.	7 E.	26	S2SW4
			35	W2NW4, NW4NE4NW4
31	19 S.	7 E.	35	S2NE4NW4, NE4NE4NW4
32	22 S.	6 E.	4	Lot 6
33	22 S.	6 E.	4	Lots 5 and 7
NOTE: Lots 5 and 6 rights-of-way (ROW) issued to Emery Water Facility				
Authorities: Parcel managed for disposal under available disposal authorities, including FLPMA Section 203(a)(1) (other characteristics). **Rationale:** An old barn and parts of three newer homes were constructed in trespass on this parcel, which is within Emery city limits. Disposal of this parcel would be limited to the affected lands and curtilage in trespass. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
34	22 S.	6 E.	4	Parcel 37 (ROW issued to Emery Water)

Parcel	Legal Description			
	Township	Range	Section	Subsection
Authorities: Various, including FLPMA Section (203)(a)(3) (economic development). **Rationale:** Utah Power and Light Company (UP&L) has indicated interest in purchasing these lands to use in conjunction with operation of the Huntington and Hunter Power Plants. UP&L identified these lands because of their location in relation to existing facilities. Disposal of these lands would be limited to UP&L or their successors for this purpose only. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
35	19 S.	8 E.	22	SE4NE4, E2SE4, SW4SE4, SE4SW4
			27	NE4, E2NW2, E2SE4, SW4SE4

Table R 11-2. Price River Resource Area MFP—Parcels Designated for Sale Under Various Authorities

Parcel	Legal Description			
	Township	Range	Section	Subsection
Authorities: Various, including FLPMA Section 203(a)(1). **Rationale:** The lands listed below are considered to be high-priority antelope range; however, the antelope population is small and the lands are not often used. This isolated parcel has been identified as a management problem for several years, particularly from the standpoint of unauthorized grazing and trash dumping. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
2	17 S.	10 E.	1	Lots 2, 3, 4, S2N2, SW4
Authorities: Various, including FLPMA Section 203(a)(1). **Rationale:** The following lands contain significant amounts of sand and gravel. There are either presently permits for the removal of gravel from these lands or applications have been received to purchase gravel. Disposal of the surface before removal of the gravel could interfere with mining and vice versa. The estimated monetary return from the sale of the gravel is expected to exceed the surface value. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
4	15 S.	11 E.	17	W2, SW4SE4, Lot 3
	16 S.	10 E.	9	N2
			10	NW4, N2SW4
Authorities: Various, including FLPMA Section 203(a)(1). **Rationale:** There are no known resource conflicts with disposal of the following lands; however, disposal, particularly sale, of some of the larger blocks in T. 16 S., R. 10 E. would eliminate some small grazing allotments, which could have a negative economic impact on a few grazing permittees. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
5	12 S.	10 E.	22	N2SW4
6	12 S.	13 E.	15	S2SW4
7	13 S.	9 E.	12	NE4NE4
8	13 S.	9 E.	12	SW4NE4
9	13 S.	9 E.	13	NE4
10	13 S.	10 E.	7	Lot 11
11	13 S.	10 E.	7	E2SW4
12	13 S.	10 E.	8	Lot 4

Parcel	Legal Description			
	Township	Range	Section	Subsection
13	13 S.	10 E.	17	S2NW4
14	13 S.	10 E.	17	S2
15	13 S.	10 E.	18	Lot 1
16	13 S.	10 E.	18	Lot 2
17	13 S.	10 E.	18	S2NE4
18	13 S.	10 E.	18	E2NW4
19	14 S.	12 E.	15	W2NW4
20	15 S.	11 E.	7	S2SE4
21	15 S.	11 E.	8	S2SW4
22	15 S.	13 E.	1	Lot 4
23	15 S.	13 E.	17	NW4SW4
24	15 S.	13 E.	18	NE4SE4
25	15 S.	13 E.	18	W2SE4
26	16 S.	10 E.	3	Lot 4
27	16 S.	10 E.	3	SW4NW4
28	16 S.	10 E.	3	N2NW4SW4
29	16 S.	10 E.	4	Lot 1
30	16 S.	10 E.	4	Lot 2
31	16 S.	10 E.	4	Lot 3
32	16 S.	10 E.	4	Lot 4
33	16 S.	10 E.	4	NW4SW4
34	16 S.	10 E.	4	N2NE4SE4
35	16 S.	10 E.	5	N2SE4
36	16 S.	10 E.	5	SW
37	16 S.	10 E.	5	SW4SE4
38	16 S.	10 E.	8	N2
39	16 S.	10 E.	8	NE4SW4
40	16 S.	10 E.	8	NW4SE4
41	16 S.	10 E.	8	N2SE4SW4
42	16 S.	10 E.	8	N2SW4SE4
43	16 S.	10 E.	11	S2NE4
44	16 S.	10 E.	11	S2NW4
45	16 S.	10 E.	11	SW4
46	16 S.	10 E.	11	W2SE4
47	16 S.	10 E.	14	SE4NE4
48	16 S.	10 E.	15	S2NW4

Parcel	Legal Description			
	Township	Range	Section	Subsection
49	16 S.	10 E.	15	SW4
50	16 S.	10 E.	22	NE4NW4
51	16 S.	14 E.	3	Lot 2
52	16 S.	14 E.	9	SW4NE4
53	17 S.	9 E.	1	Lot 4
54	17 S.	9 E.		S2NW4
55	20 S.	15 E.	36	Lot 5
56	20 S.	16 E.	19	NE4NE4
57	20 S.	16 E.	19	SE4SE4
58	21 S.	16 E.	4	Lot 5
59	21 S.	16 E.	5	Lot 1
60	21 S.	16 E.	5	Lot 2
61	21 S.	16 E.	5	Lot 3
62	21 S.	16 E.	5	Lot 4
63	21 S.	16 E.	5	Lot 5
64	21 S.	16 E.	5	Lot 6
65	21 S.	16 E.	5	Lot 8
66	21 S.	16 E.	5	Lot 10
67	21 S.	16 E.	5	Lot 11
68	21 S.	16 E.	5	Lot 12
69	21 S.	16 E.	5	Lot 14
70	21 S.	16 E.	5	Lot 16
Authorities: Various, including FLPMA Section 203(a)(1). **Rationale:** The lands listed below have all been identified as critical or high-priority habitat for deer, elk, and sage-grouse at some time during the year. Some of the lands also contain small riparian areas; however, most of these lands are small isolated tracts that are difficult to manage. Where greater sage-grouse habitat and riparian resources would be identified, these lands would not be available for disposal through sale. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
72	12 S.	8 E.	3	Lot 1
73	12 S.	8 E.	9	SW4NW4
74	12 S.	8 E.	9	SE4SW4
75	12 S.	8 E.	10	NW4NW4
76	12 S.	8 E.	17	S2NE4
77	12 S.	8 E.	17	S2NW4
78	12 S.	8 E.	18	Lot 1
79	12 S.	8 E.	18	Lot 2
80	12 S.	8 E.	18	S2NE4

Parcel	Legal Description			
	Township	Range	Section	Subsection
81	12 S.	8 E.	18	SE4NW4
82	12 S.	8 E.	18	NE4SE4
83	12 S.	8 E.	27	SE4NE4
84	12 S.	8 E.	34	Lot 3
85	12 S.	8 E.	34	Lot 4
86	12 S.	8 E.	34	NE4NE4
87	12 S.	12 E.	17	S2NE4
88	12 S.	12 E.	17	E2NW4
89	12 S.	12 E.	21	SW4NE4
90	12 S.	12 E.	29	SE4SE4
91	12 S.	12 E.	33	SW4
92	12 S.	12 E.	33	W2SE4
93	12 S.	12 E.	35	SE4
94	13 S.	8 E.	4	NE4NE4
95	13 S.	8 E.	8	SW4SE4
96	13 S.	8 E.	9	N2NE4
97	13 S.	8 E.	9	SE4NE4
98	13 S.	8 E.	9	NE4SE4
99	13 S.	8 E.	10	W2NW4
100	13 S.	8 E.	16	NW4NE4
101	13 S.	8 E.	20	NE4NE4
102	13 S.	8 E.	21	NE4NW4
103	13 S.	9 E.	7	E2NE4
104	13 S.	9 E.	11	NE4
105	13 S.	9 E.	11	SW4
106	13 S.	9 E.	11	W2SE4
107	13 S.	9 E.	14	S2NE4
108	13 S.	9 E.	14	NW4
109	13 S.	9 E.	14	N2SW4
110	13 S.	9 E.	14	SW4SW4
111	13 S.	9E.	14	SE4
112	13 S.	9 E.	15	NE4NE4
113	13 S.	9 E.	15	S2NE4
114	13 S.	9 E.	15	W2NW4
115	13 S.	9 E.	15	SE4
116	13 S.	12 E.	13	SW4SW4

Parcel	Legal Description			
	Township	Range	Section	Subsection
117	13 S.	13 E.	26	SW4NE4
118	13 S.	13 E.	26	SE4NW4
119	13 S.	13 E.	26	SW4SE4
120	13 S.	13 E.	27	NW4NE4
121	13 S.	13 E.	33	SW4NW4
122	13 S.	13 E.	35	NW4NE4
123	14 S.	14 E.	8	SW4SE4
124	14 S.	14 E.	17	SW4NW4
125	14 S.	14 E.	17	N2SE4
126	14 S.	14 E.	24	NW4SW4
127	14 S.	14 E.	25	NW4NW4
128	14 S.	15 E.	8	SE4SE4
129	14 S.	15 E.	28	E2NE4
130	14 S.	15 E.	33	SE4SW4
131	14 S.	15 E.	33	N2SE4
132	14 S.	15 E.	33	SW4SE4
133	15 S.	14 E.	7	S2NE4
134	15 S.	14 E.	7	NE4SE4
135	15 S.	14 E.	7	E2NW4SE4
136	15 S.	14 E.	7	E2SW4SE4
137	15 S.	14 E.	7	E2SE4
138	15 S.	14 E.	8	Lot 5
139	15 S.	14 E.	8	Lot 6
140	15 S.	14 E.	8	Lot 7
141	15 S.	14 E.	8	SW4NE4
142	15 S.	14 E.	8	SE4NW4
143	15 S.	14 E.	8	E2SW4
144	15 S.	14 E.	8	NW4SE4
145	15 S.	14 E.	17	Lot 1
146	15 S.	14 E.	17	W2NE4
147	15 S.	14 E.	17	E2NW4
148	15 S.	14 E.	20	SW4NE4

Table R11-3. Additional Parcels Designated for Sale Under Various Authorities in the Price RMP

PARCEL	LEGAL DESCRIPTION			
	Township	Range	Section	Subsection
Authorities: Various, including FLPMA Section 203(a)(1) (community expansion). **Rationale:** The Castle Valley Special Service District of Emery County has expressed interest in acquiring this parcel because it is the only parcel of public land in the new Ferron City sewage pipeline and lagoon system. This parcel is isolated outside the fence line for the grazing allotment. Disposal of this parcel would be limited to this purpose. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
1	20 S.	7 E.	24	NE4NE4
		8 E.	19	Lot 1
Authorities: Various, including lease and disposal under the R&PP Act of 1926. **Rationale:** This parcel is adjacent to the existing Ferron City/Millsite Golf Course and is desired in order to expand the Golf Course to 18 holes. Disposal of this parcel would be limited to this purpose. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
2	20 S.	6 E.	12	E2SE4SE4
		7 E.	7	W2SE4SW4, SW4NE4SE4SW4, W2SE4SE4SW4, E2W2SE4SE4
			18	Lots 1, 2, and 3
Authorities: Various, including lease and disposal under the R&PP Act of 1926. **Rationale:** This parcel contains the historic Woodside Cemetery. Some Emery County residents desire to be buried there with their family members. Cemetery needs to be managed and maintained by an entity within the county structure. Disposal of this parcel would be limited to this purpose. **Note:** All legal descriptions identify lands in the Salt Lake Meridian.				
3	18 S.	14 E.	9	NE4NW4SW4

APPENDIX R-12
STATE OF UTAH LETTER ADDRESSING AIR QUALITY

State of Utah

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

June 6, 2008

Selma Sierra
State Director
BLM Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

Dear Director Sierra:

This letter addresses air quality mitigation strategies for the six proposed Resource Management Plans being updated within the State of Utah. The state appreciates BLM's interest in this important issue.

It is the policy of the State of Utah to protect public health and the environment from the harmful effects of air pollution, to ensure that the air in Utah meets standards established under federal and state law, and to maintain an environment that is conducive to continued economic vitality and growth.

The Department of Interior monitors ozone at National Parks in the intermountain west, including: Mesa Verde National Park in Colorado, Grand Canyon National Park in Arizona, Great Basin National Park in Nevada, and Canyonlands National Park in Utah. These sites reflect conditions in areas that have not been subject to intensive development and are therefore generally indicative of background conditions. Monitoring data at these locations demonstrates a gradual upward trend in ozone levels, raising questions about ozone levels region-wide. The state believes additional information is needed regarding current conditions and the potential impacts from increasing development activity, including oil and gas activity. This information should inform future BLM decision making, but managers should not defer management actions in anticipation of better information.

Fortunately, ozone related impacts can be reduced if certain mitigation measures are required on new oil and gas related emission sources. In fact, several neighboring states currently encourage application of just such measures. BLM should include interim nitrogen oxide control measures provided by the state as a required condition of lease approval. These control measures are consistent with control measures suggested by neighboring states and jurisdictions. The state recognizes that performance standards will continue to evolve and supports technological flexibility, provided control measures are at least as effective as those in place elsewhere within the region at the time of site-specific authorization. Performance standards representing the current regional standard can be found in the *Four Corners Air*

Quality Task Force Report of Mitigation Options, DRAFT: Version 7, June 22, 2007. These standards are 2 g/bhp-hr for engines less than 300 HP and 1 g/bhp-hr for engines over 300 HP.

The State of Utah will continue to work with the BLM and others through efforts such as the Four Corners Task Force to address these issues. The state appreciates your cooperation in working to protect air quality related values. If you have any questions about our position, please contact me at (801) 537-9802.

Sincerely,

John Harja
Director
Public Lands Policy Coordination
5110 State Office Building
Salt Lake City, Utah 84114-1107
(801) 537-9802

Cheryl Heying
Director
Division of Air Quality
150 North, 1950 West
Salt Lake City, Utah 84114
(801) 536-4000

APPENDIX R-13
UNSUITABILITY FOR MINING FEDERAL LANDS IN THE PRICE MANAGEMENT AREA

INTRODUCTION

As part of the objectives of the Federal Government to provide for leasing of coal under the Mineral Leasing Act of 1920, as amended, regulations were established to provide policy and procedures for considering development of coal deposits through a leasing system involving land use planning and environmental analysis. This document summarizes the federal coal management decisions for the planning area and documents the unsuitability criteria applied to potential coal lands for future development. A brief summary of the process used to arrive at the coal management decisions is included. It is intended to help the public understand the federal coal management program as it applies to the planning area and to show the requirements that must be met under 43 CFR 3400. These planning decisions will guide the development of the federal coal resource in this area for the next 15 to 20 years.

To implement competitive coal leasing according to 43 CFR 3420, the Bureau of Land Management (BLM) established, in 1979, a number of federal coal production regions. The coal fields within this planning area are included in the Uinta-Southwestern Utah Coal Region. A regional coal team was established to guide the competitive leasing process in the region. Initially, coal leasing was to be implemented through a regional leasing process where potential coal tracts were delineated, ranked, and offered for lease to meet leasing targets established by the Secretary of the Interior. Later, the Department recognized that most coal leases were being offered as maintenance tracts for existing operations; therefore, the Uinta-Southwestern Utah Coal Region was decertified and a decision was made to continue leasing using the leasing on application procedures outlined in 43 CFR 3425. Coal tracts are being leased in response to applications initiated by industry.

COAL PLANNING PROCESS

The land use plan guides the Secretary on making coal leasing decisions. Identification of areas acceptable for further consideration for coal leasing is a major land use planning decision. The lands for further consideration are identified through a four-part screening process (43 CFR 3420.1-4). The first step in this process is to identify only lands that have coal development potential. The second step is to review federal lands during land use planning using the unsuitability criteria set forth in 43 CFR 3461 to determine which areas are unsuitable for all or stipulated methods of mining. The third step is to evaluate multiple land use decisions (trade-offs) that could eliminate lands from leasing that contain resources presently deemed more important than coal. The fourth step is to consult with the surface owner for private surface lands overlying federal coal.

For the Price Resource Management Plan (RMP), the lands suitable for further consideration for leasing were identified using the following steps and criteria:

Step 1: Identification of Coal Development Potential

Lands in the planning area that have coal development potential are presented in Map 41 of the *Coal Resources Report* (Tabet 2003) as colored areas showing development in two timeframes, 2003–2017 and 2018–2032. These areas combined constitute the coal development potential identified for the timeframe of this planning effort. Included in these potential areas are current coal leases and unleased federal coal

where development could occur by 2032. These areas will be brought forward for the coal unsuitability review.

Step 2: Unsuitability Review

BLM considered 20 criteria (based mostly on resource values) as outlined in 43 CFR 3461 to determine whether those lands identified as having development potential were suitable for development. These criteria were applied in a broad sense in the previous land use plans (*San Rafael RMP* and *Price River MFP* with coal amendments). Unsuitability determinations from the previous reviews will be carried forward unchanged for the current planning effort. In addition, much of the Wasatch Plateau coal field, except the northeast corner, is National Forest system land, and unsuitability was addressed in the 1986 Manti-La Sal National Forest Land and Resource Management Plan.

In applying each criterion to the high development potential lands, the phrase "shall be considered unsuitable for all or certain stipulated methods of coal mining involving surface coal mining operations" is shortened to "shall be considered unsuitable." Some criteria have exceptions or exemptions as listed in the regulations. If the exemption or exception for a specific criterion can be applied, the coal lands being evaluated would not be considered unsuitable and could be considered for leasing.

The regulations outlining the procedures for unsuitability determinations provide that "federal lands with coal deposits that would be mined by underground mining methods shall not be assessed as unsuitable where there would be no surface coal mining operations" (43 CFR 3461.1 (a)). Surface coal mining operations are defined in 43 CFR 3400.0-5 (mm) as "activities conducted on the surface of lands in connection with a surface coal mine or surface operations and surface impacts incident to an underground mine." In other words, unsuitability criteria will be applied to all coal lands that are potentially recoverable by surface mining methods (i.e., where earthen material above the coalbeds is physically moved to access the coalbeds and those areas where associated support facilities and structures are located). "Surface operations and surface impacts" applies to the support facilities and structures built on the surface for underground mines and the surface disturbance that it causes; therefore, lands will generally be considered unsuitable for further consideration for leasing if the expected mining activities would result in direct impacts on the surface. Most of the areas identified as having development potential represent deep coal deposits with no clearly defined areas where surface impacts would occur and are generally exempted from the restrictions of the unsuitability criteria.

For this planning effort, the unsuitability criteria were applied to the areas with surface mining development potential. As a result, the areas for assessment were significantly reduced. Except for one small 120-acre parcel in the Wasatch Plateau, all the coal is deep in the coal fields of Book Cliffs and Wasatch Plateau, where development is anticipated, with little potential for surface facilities. The Emery coal field along the southwest border of the planning area has some areas with surface mining potential in the flat lands south of the town of Emery known as Walker Flat. The *Coal Resources Report* (Tabet 2003) did not identify this area as having development potential, but the State of Utah expressed interest in obtaining these lands through an exchange, which indicates that they could possibly be developed in the life of the plan.

CRITERION 1

All federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Recreation Areas, land acquired with money derived from the Land and Water Conservation Fund, National Forests, and federal lands in incorporated cities, town, and villages.

Analysis

With the exception of National Forest lands, there are no lands within the planning area that include any of the stated land systems or categories. The National Forest lands overlay much of the Wasatch Plateau coal field and the unsuitability criteria were applied to the 1986 Manti-La Sal National Forest Land and Resource Management Plan. An exception to this unsuitability criterion would apply to National Forest lands because any potential surface impacts and operations will be incident to an underground mine. In the *San Rafael RMP*, 160 acres of federal lands incorporated within the town of Emery, Emery County, Utah, were identified as unsuitable. These unsuitable acres are outside the current potential development area but inside the Emery Known Recoverable Coal Resource Area (KRCRA). It is not likely they will be developed during the planning period; however, this unsuitable determination should be continued even when underground mining under the 160 acres (used for water storage tanks and communication sites) would not be desirable. Negotiations were underway to title the land over to private ownership but the outcome is not known at this time.

CRITERION 2

Federal lands that are within rights-of-way or easements, or within surface leases for residential, commercial, industrial, or other public purposes, on federally owned surface shall be considered unsuitable.

Analysis

No coal lands under any rights-of-way or easements across the Book Cliffs coal field and the public land area of the Wasatch Plateau coal field were found to be unsuitable because of the underground mining exemption. The Emery coal field inside the planning area has one right-of-way in the Walker Flat surface mining potential area; however, this right-of-way was for a powerline for mining purposes to the reclaimed Dog Valley Mine and has now been removed. Thus, this right-of-way fits exceptions (ii) and (iii) in that the line was for mining purposes and the purpose for the right-of-way is not being used.

CRITERION 3

Federal land affected by Section 522(e) (4) and (5) of the Surface Mining Control and Reclamation Act (SMCRA) shall be considered unsuitable. This includes lands within 100 feet of the outside line of the right-of-way of a public highway, within 100 feet of a cemetery, within 350 feet of any occupied public building, school, church, community or institutional building or public park, or within 300 feet of an occupied building.

Analysis

No coal lands were found unsuitable in the Book Cliffs coal field and the public land area of the Wasatch Plateau coal field because of the underground mining exemption. Highways I-70 and U-10 cross approximately 2 and 3.5 miles respectively of public lands above the Emery coal field that could potentially be surface mined. Highway I-70 (500-foot wide right-of-way), Highway U-10 (400-foot wide right-of-way), and the lands within 100 feet of the outside line of both rights-of-way are unsuitable for surface mining.

These lands could be suitable for leasing with stipulations to protect public highways from any damage associated with underground mining. Approximately 7 miles of other public roads cross over the Emery coal field that could potentially be surface mined. These could be unsuitable for surface mining within 100 feet of the outside line of the right-of-way of the public road. No cemeteries, public buildings,

schools, churches, community or institutional buildings, public parks, or occupied dwellings are known to exist on any public lands overlying the high potential development areas of any of the coal fields.

CRITERION 4

Federal lands designated as wilderness study areas (WSA) shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation.

Analysis

No WSAs exist in the Wasatch Plateau or Emery coal fields. Approximately 445 acres of the Turtle Canyon WSA overlies a high development potential area, the Lila Canyon/Little Park lease area located at the farthest southeast portion of the Book Cliffs coal field. Of these 445 acres, 139 acres are already under lease and are subject to valid existing rights. The other 306 acres of unleased federal coal with high development potential are not determined unsuitable because of the underground mining exemption, particularly because the coal under this area is deep (1,500 or more feet) and cannot be surface-mined. Under the third screen for further leasing considerations, however, the BLM policy as established under the Wilderness Interim Management Policy (IMP) withdraws all mineral leasing from WSAs; therefore, 306 acres of the Book Cliffs coal field are withdrawn from further consideration because of WSAs.

CRITERION 5

Scenic federal lands designated by visual resource management (VRM) analysis as Class I (an area of outstanding scenic quality or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable.

Analysis

No lands were found unsuitable in the Book Cliffs coal field and the public lands of the Wasatch Plateau coal field because of the underground mining exemption. Approximately 160 acres of public lands along the I-70 corridor overlying the Emery coal field that have potential for surface mining methods are identified under the No Action and C alternatives as VRM Class I areas. VRM Class I areas are unsuitable for surface coal mining methods with the exception that a lease may be issued if the surface management agency determines that surface coal mining operations will not significantly diminish or adversely affect the scenic quality of the designated area.

CRITERION 6

Federal lands under permit by the surface management agency and being used for scientific studies involving food or fiber production, natural resources or technology demonstrations and experiments shall be considered unsuitable for the duration of the study, demonstration or experiment, except where mining could be conducted in such a way as to enhance or not jeopardize the purposes of the study, as determined by the surface management agency, or where the principal scientific user or agency give written concurrence to all or certain methods of mining.

Analysis

No lands under any of the coal fields are being used for these types of studies.

CRITERION 7

All publicly owned places on federal lands that are included in the National Register of Historic Places shall be considered unsuitable. This criterion applies to any areas that the surface management agency determines, after consultation with the Advisory Council on Historic Preservation and the State Historic Preservation Office, are necessary to protect the inherent values of the property that made it eligible for listing in the National Register.

Analysis

There are no known sites within the three coal fields with high development potential. Although the Rochester-Muddy petroglyph site is on the National Register of Historic Places and is in the Emery coal fields, it is outside the area of any potential development. This petroglyph site was assessed as unsuitable for surface mining methods in the *San Rafael RMP* and should be brought forward in this planning effort with the same prescriptions—suitable for further leasing but with no surface disturbance within 1/4 mile of the site, and no underground mining allowed within this 1/4-mile buffer without consultation with the Advisory Council on Historic Preservation and State Historic Preservation Office.

CRITERION 8

Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

Analysis

There are no federal lands within the three coal fields with high development potential that are designated as National Natural Landmarks.

CRITERION 9

Federally designated critical habitat for threatened or endangered (T&E) plant and animal species, and habitat for federal T&E species, which is determined by the Fish and Wildlife Service (USFWS) and the surface management agency to be of essential value, and where the presence of T&E species has been scientifically documented, shall be considered unsuitable.

Analysis

Some areas of T&E species and habitat overlay areas of the Book Cliffs coal field; however, the underground mining exemption applies to these lands. No T&E species and habitat overlay areas of the Emery coal field with surface mining methods potential.

CRITERION 10

Federal lands containing habitat determined critical or essential for plant or animal species listed as T&E by the state pursuant to state law shall be considered unsuitable.

Analysis

No areas of critical habitat for state-designated T&E species overlay any of the coal fields. Areas will need to be reviewed in the future and before leasing.

CRITERION 11

A bald or golden eagle nest or site on federal lands that is determined to be active and an appropriate buffer zone of land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with USFWS.

Analysis

Some known active golden eagle nest sites are on the Book Cliffs coal field and public lands on the Wasatch Plateau coal fields. These sites were not declared unsuitable because of the underground mining exemption. There are no known active golden eagle nest sites located in the potential surface mining area of the Emery coal field. Future leasing near or including active golden eagle nests will have surface disturbance conditions imposed for buffer zones around active eagle nest sites.

CRITERION 12

Bald and golden eagle roost and concentration areas on federal lands used during migration and wintering shall be considered unsuitable.

Analysis

There are no known bald or golden eagle roosts or concentration areas within the three coal fields. Eagles do visit the area during winter, but no critical habitat areas have been identified.

CRITERION 13

Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest and a buffer zone of federal land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with USFWS.

Analysis

There are known nest sites on the Book Cliffs coal field and public lands of the Wasatch Plateau coal fields. These lands were not declared unsuitable because of the underground mining exemption. Known nest sites also occur in the Emery coal fields (analysis of actual number and sites is not yet complete). The nest sites and buffer zones around the sites are unsuitable for surface mining. These areas are suitable for future leasing with imposed surface disturbance restrictions around the nest sites.

CRITERION 14

Federal lands that are high priority habitat for migratory bird species of high federal interest on a regional or national basis, as determined jointly by the surface management agency and USFWS, shall be considered unsuitable.

Analysis

Migratory bird species of high federal interest are found or have the potential to occur within the three coal fields. These lands were not declared unsuitable because of the underground mining exemption.

Areas of high priority habitat for migratory bird species are suitable for future leasing but with stipulations to protect habitat from surface disturbances.

CRITERION 15

Federal lands which the surface management agency and the state jointly agree are fish and wildlife habitat for resident species of high interest to the state, and which are essential for maintaining these priority wildlife species, shall be considered unsuitable.

Examples of such lands that serve a critical function for the species involved include (i) active dancing and strutting grounds for sage-grouse, sharp-tailed grouse, and prairie chicken, (ii) winter ranges crucial for deer, antelope, and elk, (iii) migration corridor for elk, and (iv) extremes of range for plant species.

Analysis

Areas of public lands in the planning area that the surface management agency and the state have agreed are essential for maintaining high interest fish and wildlife habitat and are in areas with potential coal development are not declared unsuitable because of the underground mining exemption. These areas are suitable for future leasing with stipulations for no or restricted surface activities and development.

CRITERION 16

Federal lands in riverine, coastal and special flood plains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of mining.

Analysis

There are no lands in the high coal development potential areas of the Book Cliffs coal field that underlie lands with this criterion. Public lands in the Wasatch Plateau coal fields and the Emery coal field are not unsuitable for mining because of the underground mining exemption.

There are approximately 60 acres of public land within the surface mining potential area of the Emery coal field that are in the 100-year flood plain of Ivie Creek. These acres are unsuitable for surface mining; however, future leasing for surface mining could occur with special stipulations to protect life and property within these flood plains.

CRITERION 17

Federal lands that have been committed by the surface management agency to use as municipal watersheds shall be considered unsuitable.

Analysis

There are some public lands inside the Book Cliffs coal field and within the Wasatch Plateau coal field that have been committed by BLM as municipal watersheds. These lands are not unsuitable because of the underground mining exemption. Municipal watersheds for Huntington, Orangeville, and Ferron are on some public lands within this coal field but outside the National Forest boundary. Again, these lands are either already under coal leases or not unsuitable because of the underground mining exemption. There are no lands within any committed municipal watersheds in the Emery coal field.

CRITERION 18

Federal lands with national resource waters, as identified by states in their water quality management plans, and a buffer zone of federal lands 1/4 mile from the outer edge of the far banks of the water, shall be unsuitable.

Analysis

The Utah Division of Water Resources has not identified any federal lands with national resource waters.

CRITERION 19

Federal lands identified by the surface management agency, in consultation with the state in which they are located, as alluvial valley floors according to the definition in 43 CFR 3400.0-5 (a) of this title, the standards in 30 CFR Part 822, the final alluvial valley floor guidelines of the Office of Surface Mining Reclamation and Enforcement when published, and approved state programs under the Surface Mining Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable. Additionally, when mining federal land outside, and alluvial valley floor would materially damage the quantity or quality of water in surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

Analysis

No alluvial valley floors overlay federal coal lands of either the Book Cliffs coal field or the public lands of the Wasatch Plateau coal field. The Office of Surface Mining Reclamation and Enforcement tentatively identified 300 acres of BLM land as alluvial valley floor along Muddy, Quitchupah, and Ivie Creeks that are within the Emery coal field but outside the Emery potential surface mining area. These lands are not unsuitable for surface mining because of the underground mining exemption. These tentatively identified alluvial valley floors are suitable for future coal leasing with stipulations to ensure the underground mining would not "…interrupt, discontinue, or preclude farming…" of these areas. (Quotation is from Criterion 19 above.)

CRITERION 20

Federal lands in a state to which is applicable a criterion (i) proposed by the state or Indian tribe located in the planning area, and (ii) adopted by rulemaking by the Secretary, shall be considered unsuitable.

Analysis

Neither an Indian tribe nor the State of Utah has proposed and the Secretary has not adopted any other criteria.

Note: A small (approximately 120 acres) parcel of federal coal lands that lie in the Wasatch Plateau coal fields but outside the National Forest has potential for development with surface mining methods. The area is located aside Pleasant Valley near Clear Creek, Carbon County, Utah. No unsuitability determination was made as the surface estate is privately held and outside the purview of federal unsuitability. Future consideration for coal leasing on this tract moves to screen #4, surface owner consultation.

APPENDIX R-14
FLUID MINERAL DEVELOPMENT BEST MANAGEMENT TYPICAL PRACTICES

Best Management Practices (BMP) are state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. BMPs are applied to management actions to aid in achieving desired outcomes for safe, environmentally sound resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. For each proposed action, a number of BMPs may be applied as necessary to mitigate expected impacts. The following typical environmental Best Management Practices (BMP) may be applied on individual Applications for Permit to Drill and associated rights-of-way in the Price Field Office on a case-by-case basis. These procedures are consistent with current national guidance and the Surface Operating Standards and Guidelines for Oil and Gas Development (Gold Book), 2007. This list is not all inclusive and may be modified over time as conditions change and new practices are identified.

- Interim reclamation of the well and access road will begin as soon as practicable after a well is placed in production. Facilities will be grouped on the pads to allow for maximum interim reclamation. Interim reclamation will include road cuts and fills and will extend to within close proximity of the wellhead and production facilities.
- All above ground facilities including power boxes, building doors, roofs, and any visible equipment will be painted a color selected from the latest national color charts that best allows the facility to blend into the background.
- All new roads will be designed and constructed to a safe and appropriate standard, “no higher than necessary” to accommodate intended vehicular use. Roads will follow the contour of the land where practical. Existing oil and gas roads that are in eroded condition or contribute to other resource concerns will be brought to BLM standards within a reasonable period of time.
- Final reclamation of all oil and gas disturbance will involve recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography and revegetating all disturbed areas.
- Raptor perch avoidance devices will be installed on all new powerlines and existing lines that present a potential hazard to raptors.
- All powerlines to individual well locations (excluding major power source lines to the operating oil or gas field) and all flow lines will be buried in or immediately adjacent to the access roads where feasible.
- In developing oil and gas fields, all production facilities may be centralized to avoid tanks and associated facilities on each well pad where necessary to address resource issues.
- Multiple wells will be drilled from a single well pad wherever feasible.
- Noise reduction techniques and designs will be used to reduce noise from compressors or other motorized equipment.
- Seasonal restrictions on public vehicular access will be evaluated where there are wildlife conflict or road damage/maintenance issues.
- Monitoring of wildlife to evaluate the effects of oil and gas development
- Avoiding placement of production facilities on hilltops and ridgelines;
- Screening facilities from view;
- Bioremediating oil field wastes and spills; and
- Using common utility or Right-of-Way corridors containing roads, powerlines, and pipelines.

APPENDIX R-15
VISUAL RESOURCE MANAGEMENT

Visual resource management is the system by which the BLM classifies and manages scenic values and visual quality of public lands. The system is based on research that has produced ways of assessing the natural attributes of the landscape in objective terms. After inventory and evaluation, lands are given visual ratings (management classes), which determine the amount of modification allowed to the basic elements of the landscape.

Inventory and Evaluation of Visual Resource Management

The visual resource inventory process (BLM Handbook 8410-1) provides BLM managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. These inventory classes represent the relative value of the visual resource.

Visual Resource Management Classes

Visual resource management classes represent the degree of acceptable visual change within a characteristic landscape. A class is based on the physical and sociological characteristics of any given homogeneous area and serves as a management objective. The four classes are described below:

Class I

- preserve the existing character of the landscape
- does not preclude very limited management activity
- level of change to the characteristic landscape should be extremely low and must not attract attention

Class II

- retain the existing character of the landscape
- management activities may be seen, but should not attract the attention of the casual observer

Class III

- partially retain the existing character of the landscape
- areas where changes in the basic elements (form, line, color, or texture) caused by a management activity should not dominate the view of the casual observer
- changes to the landscape may attract attention but may not dominate the landscape.

Class IV

- Provide for the management activities that require major modification of the existing character of the landscape
- Changes may be dominant landscape components

Rehabilitation Area Objective

Areas in need of rehabilitation should be flagged during the inventory process. The level of rehabilitation will be determined through the RMP process by assigning the VRM class approved for that particular area.

APPENDIX R-16
WILD AND SCENIC RIVERS STUDY PROCESS

I. INTRODUCTION

The Wild and Scenic Rivers Act (October 2, 1968, Public Law 90-542) establishes the National Wild and Scenic Rivers System, designed to preserve free-flowing rivers with outstandingly remarkable values (ORV) in their natural condition for the benefit of present and future generations, balancing the nation's water resource development policies with river conservation and recreation goals.

The Act states, "In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas…" [Section 5(d) (1)]. Federal agencies consider potential rivers by evaluating a river's eligibility, tentative classification, and suitability for designation under the Act. This study process is part of the resource management planning effort for the Price Field Office (PFO).

Eligibility and tentative classification consist of an inventory of existing conditions. Eligibility is an evaluation of whether or not a river or river segment is free flowing and possesses one or more ORVs. If found eligible, a river is analyzed to determine its current level of development (e.g., water resources projects, shoreline development, and accessibility) and segmented accordingly. Each river segment is given one of three tentative classifications—Wild, Scenic, or Recreational—based on the degree of development. The final procedural step, suitability, provides the basis for determining whether or not to recommend a river as part of the National Wild and Scenic Rivers System.

On December 13, 1994, an Interagency Agreement was signed by the Bureau of Land Management (BLM) (Utah State Office), the U.S. Department of Agriculture (USDA) Forest Service (Intermountain Region), and the National Park Service (Rocky Mountain Region). The agreement calls for the three agencies to "work cooperatively to define common criteria and processes for use in determining the eligibility and suitability of Utah rivers for potential inclusion by Congress in the [National Wild and Scenic Rivers System]." The product of this agreement is the *Wild and Scenic River Review in the State of Utah: Process and Criteria for Interagency Use* guidance published in June 1996. This publication supplements the Act by providing clear, specific criteria for identifying eligible rivers.

Guidance used for this study is also contained in the Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management, Bureau of Land Management Manual–8351. In addition, various technical papers published by the Interagency Wild and Scenic Rivers Coordination Council relating to the evaluation of rivers were used. These publications can be found at www.nps.gov/rivers/publications.html.

II. ELIGIBILITY AND TENTATIVE CLASSIFICATION

Eligibility Determination Considerations

For a river to be eligible for inclusion in the national system of rivers, the Wild and Scenic Rivers Act specifies that the criteria described below be met.

These criteria not only apply to each potentially eligible river but also to their immediate environment, which is defined as a river corridor extending a quarter mile from both sides of the high water mark. For

purposes of the eligibility inventory, attention was not given to land ownership other than to ensure that at least some portion of a river segment crosses federal lands administered by the PFO. The status of land ownership, however, is evaluated as a consideration in the suitability step of the study process and is presented in detail in Section III of this appendix.

Free-Flowing Character

To be considered a free-flowing river, a river must be a flowing body of water, or estuary, or section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes (Wild and Scenic Rivers Act Section 16 (a)). A river can be any size or length and does not have to be floatable or boatable. For purposes of eligibility determination, a river's flow is sufficient as long as it sustains or complements the ORV(s) for which the river has been found eligible. The body of water must be existing or flowing in a natural condition without major modification of the waterway, such as channelization, impoundment, diversion, straightening, rip-rapping, or other modification of the waterway; however, some minor modifications can be allowed, such as low dams, diversion works, and minor structures (Wild and Scenic Rivers Act, Section 16 (b)). The river can lie between impoundments or major dams.

Outstandingly Remarkable Values

The Act specifies that rivers "with their immediate environment, must possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar value" (Wild and Scenic Rivers Act, Section 1 (b)).

The "Process and Criteria for Interagency Use" further describes values and characteristics of each ORV that are used to determine which values are outstandingly remarkable and at least regionally significant. The following summarizes the characteristics of each value that would render it rare, unique, or exemplary:

- **Scenic**: Diversity of view, special features, seasonal variations, and cultural
- **Recreational**: Diversity of use, experience quality, length of season, access, level of use, attraction, sites and facilities, and associated opportunities
- **Geologic**: Feature abundance, diversity of features, educational/scientific importance
- **Fish**: Habitat quality, diversity of species, values of species, abundance of fish, natural reproduction, size and vigor of fish, quality of experience, cultural/historic importance, recreational importance, access
- **Wildlife**: Habitat quality, diversity of species, abundance of species, natural reproduction, size and vigor of fish, quality of experience, cultural/historic importance, recreational importance, access
- **Historic**: Significance, site integrity, education/interpretation, and listing in or eligibility for National Register of Historic Places
- **Cultural**: Significance, current uses, number of cultures, site integrity, education/interpretation, and listing in or eligibility for National Register of Historic Places
- **Ecological**: Species diversity, ecological function, rare communities, and educational/scientific.

Because these values must be at least regionally significant to be considered outstandingly remarkable, a region of comparison is necessary to guide the evaluation of a value's significance. On May 8, 2002, an

interagency team consisting of representatives of various National Forests, National Parks, and BLM offices within Utah concluded that using applicable ecological sections, or combinations of these sections, would be the most appropriate way of delineating regions of comparison.

Ecological sections provide clear parameters of major ecological systems as defined by geology, topography, climate, and are typically the most distinct, visible features of the landscape. They offer an excellent context with relative consistency of scenic, wildlife, and other values for comparison, and are large enough to encompass areas with similar values without forcing comparison of disparate values.

For this evaluation, BLM decided that the Tavaputs Plateau, Northern Canyonlands, and Utah High Plateaus and Mountains ecological sections (Clealand et al. 1997, Summary National Hierarchical Framework of Terrestrial Ecological Units: ECOMAP, USDA Forest Service, Washington, DC) would be most appropriate for comparing values of streams within the PFO. These sections, which include Carbon and Emery counties, are combined to form a region of comparison that largely coincides with the portion of the Colorado Plateau within Utah. Several of the streams evaluated for eligibility flow through more than one of these three ecological sections.

It is important to note that the region of comparison is intended only to guide the evaluation and not to be used invariably.

Tentative Classification

Eligible rivers are given a tentative classification. The Wild and Scenic Rivers Act provides for three possible classifications: Wild, Scenic, or Recreational. These classifications, when applied to eligible rivers, are based on the type and degree of human development associated with the river and adjacent lands present at the time of inventory. They also prescribe what management activities would be allowed to occur along a river, as long as no ORV is compromised.

- **Wild:** The Wild classification, the most restrictive of management activities, is given to rivers free of impoundments and those generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Water quality must meet minimum criteria for desired types of recreation except where such criteria would be exceeded by natural background conditions and aesthetics and capable of supporting propagation of aquatic life normally adapted to habitat of the stream.
- **Scenic:** The Scenic classification is given to rivers that are generally free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped but accessible in places by roads.
- **Recreational:** The Recreational classification, the least restrictive, is given to rivers easily accessible by road or railroad, and may have some development along their shorelines, and substantial evidence of human activity.

BLM may consider alternative tentative classifications at the time of evaluating suitability in accordance with BLM Manual 8351.33C to resolve potential conflicts with other management objectives (whether BLM's or those of another official entity), provide continuity of management prescriptions, or because of other management considerations within the river area. Final classification of a river segment is determined if and when a river is designated for inclusion in the National Wild and Scenic Rivers System.

Eligibility Determinations Process

Coordination

In November 1997, a Memorandum of Understanding (MOU) was signed between the State of Utah and BLM by former Governor Mike Leavitt, and former BLM State Director William Lamb, to establish a cooperative effort for Wild and Scenic River study processes for BLM Field Offices in Utah. Emery County had previously established a cooperative agreement with BLM for land use planning in an MOU signed April 29, 1996. Likewise, Carbon County agreed to cooperate in a similar MOU signed August 26, 2003. These agreements enabled BLM to extend an interdisciplinary team of specialists, formed for this study process, to include representatives from these governments. In addition to numerous internal meetings, a series of meetings were held with cooperating agencies to review potentially eligible rivers.

Rivers Considered

All streams identified on a 1:100,000 scale map of the planning area were considered for potential eligibility. From these streams, BLM focused on those identified as potentially eligible. Other sources provided lists of potentially eligible rivers. Table R16-1 is a list of all rivers specifically identified for consideration from their various sources.

Table R16-1. Documentation of Eligibility: Free-Flowing Rivers Considered

River Name	Source for Consideration*	Segment Description
Barrier Creek	a, b, d	Canyonlands National Park boundary to mouth at Green River
Bear Canyon Creek	e	Headwater to mouth at Rock Creek
Buckhorn Wash	e	Road crossing at Buckhorn Flat to mouth at San Rafael River
Buckskin Canyon Creek	e	Headwaters to mouth at Rock Creek
Cane Wash	b, d, e	Head of wash to mouth at San Rafael River
Chimney Canyon	e	Head of canyon to mouth at Muddy Creek
Coal Creek	e	Length of reach
Coal Wash	e	Confluence of North and South Forks of Coal Wash to mouth at North Salt Wash
Cottonwood Canyon	e	Head of canyon to mouth at Nine Mile Creek
Cottonwood Wash	b, d, e	Head of wash to county road where wash exits reef
Desert Seep Wash	d	Desert Lake Waterfowl Management Area to mouth at Price River
Devils Canyon	b, d, e	Road crossing to mouth at South Salt Wash
Dry Canyon	e	Head of Canyon to mouth at Nine Mile Creek
Dugout Creek	e	Length of reach
Eagle Canyon	b, d, e	Springs at head of canyon to Secret Mesa road crossing
		Secret Mesa road crossing to confluence with North Salt Wash
Fish Creek	e	Scofield Reservoir to confluence with White River

River Name	Source for Consideration*	Segment Description
Flat Canyon	d	Headwaters to mouth at Green River
Goodwater Canyon	e	Length of reach
Gordon Creek	d, e	Confluence of Bob Wright and Mud Water Canyons to mouth at Price River
Grassy Trail	d, e	Length of reach
Green River	a, b, d, e	County line near Nine Mile Creek to Chandler Canyon
		Chandler Canyon to Florence Creek
		Florence Creek to Nefertiti boat ramp
		Nefertiti boat ramp to I-70 bridge
		I-70 bridge to mile 91 below Ruby Ranch
		Mile 91 below Ruby Ranch to Hey Joe Canyon
		Hey Joe Canyon to Canyonlands National Park Boundary
Icelander Creek	d	Town of Sunnyside to mouth at Grassy Trail Creek
Iron Wash	d	From spring to mouth at Strait Wash
Ivie Creek	d, e	Highway 10 to mouth at Muddy Creek
Jack Creek	d, e	Headwaters to mouth at Green River
Keg Spring Canyon	e	Head of canyon to mouth at Green River
Last Chance Wash	d	Last Chance Wash Cutoff Road (925) to mouth at Salvation Creek
Lockhart Draw	e	Head of draw to mouth at San Rafael River
McCarty Canyon	b, d	Length of reach
Mesquite Wash	e	Head of wash to mouth at North Salt Wash
Molen Seep Wash	d	Through Molen Reef to mouth at North Salt Wash
Muddy Creek	e	Manti-La Sal National Forest boundary to I-70**
	a, b, d, e	I-70 to Lone Tree Crossing
		Lone Tree Crossing to South Salt Wash
		South Salt Wash to county road downstream of North Caineville Reef
Nates Canyon	e	Length of reach
Nine Mile Creek	d, e	Headwaters to confluence with Minnie Maude Creek
	a, d, e	Confluence with Minnie Maude Creek to Bulls Canyon
		Bulls Canyon to mouth at Green River
North Fork Coal Wash	e	Head of wash to Fix It Pass route
		Fix It Pass route to confluence with South Fork Coal Wash
North Salt Wash	b, d, e	Confluence with Horn Silver Gulch to mouth at San Rafael River
Oil Well Draw	e	Length of reach
Pace Creek	e	Length of reach
Price River	e	Confluence of Fish Creek and White River to Price City water treatment plant

River Name	Source for Consideration*	Segment Description
		Price City water treatment plant to Poplar Street bridge in Helper
		Poplar Street bridge in Helper to Mounds bridge
	a, e	Mounds bridge to Book Cliffs escarpment
	a, b, d, e	Book Cliffs escarpment to mouth at Green River
Quitchupah Creek	d, e	Manti-La Sal National Forest boundary to mouth at Ivie Creek
Range Creek	a, b, d, e	Headwaters to Trail Canyon
		Trail Canyon to drill holes below Turtle Canyon
		Drill holes below Turtle Canyon to mouth at Green River
Red Canyon	e	Length of reach
Rock Creek	d, e	North Fork headwaters to mouth at Green River
	d	Length of South Fork
Saddle Horse Canyon	b, d	Length of reach
Salt Wash	d	Headwaters to mouth at Muddy Creek
Salvation Creek	d	Headwaters to mouth at Muddy Creek
San Rafael River	a, b, d, e	Confluence of Ferron and Cottonwood Creeks to Fuller Bottom
		Fuller Bottom to Johansen corral
		Johansen corral to Lockhart Wash
		Lockhart Wash to Tidwell Bottom
		Tidwell Bottom to mouth at Green River
Soldier Creek	e	Length of reach
South Fork Coal Wash	e	Head of wash to Eva Conover route
		Eva Conover route to confluence with North Fork Coal Wash
South Salt Wash	e	Length of reach
Spring Canyon	e	Length of reach
Three Canyon (Carbon County)	d	Headwaters to mouth at Green River
Three Canyon (Emery County)	e	Length of reach
Trail Canyon	d	Headwaters to mouth at Green River
Two Mile Canyon	e	Length of reach
Virgin Springs Canyon	e	Length of reach
Willow Creek	e	Length of reach

River Name	Source for Consideration*	Segment Description

* The key below indicates the Source for Consideration:
a—Nationwide Rivers Inventory List
b—American Rivers Outstanding Rivers List
c—1970 USDA/US Department of the Interior List
d—Utah Rivers Council/Southern Utah Wilderness Alliance List
e—Identified by federal agencies, state, tribal, or other governments
F—Identified during public scoping of Resource Management Plan (RMP)
** River segment determined not to be free flowing because of presence of impoundments and dropped from further consideration

Identification of Outstandingly Remarkable Values

BLM reviewed all potentially eligible rivers to determine which possess ORVs. Table R16-2 identifies and describes these values for each river.

Table R 16-2. Documentation of Eligibility: Identification of Outstandingly Remarkable Values of Potentially Eligible Rivers

Barrier Creek

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Rock art panels in the adjacent Horseshoe Canyon Unit of Canyonlands National Park are the type-site for Barrier Canyon rock art styles. Other rock art sites are present downstream to the confluence with the Green River. Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Recreational

The most well-known features of Barrier Creek are in the Canyonlands National Park extension. This is a popular destination for visitors willing to hike 2 miles and 800 vertical feet to visit the Great Gallery pictographs. This canyon has cultural sites throughout its length and provides significant opportunity to view these sites. Barrier Creek is also a popular side canyon hike for people traveling through Labyrinth Canyon. They are rewarded for their efforts with a clean water stream with wetlands and cottonwoods. There are many technical climbing routes in this canyon, including the spectacular Tyrolean traverse and free rappel featured in the first Eco-Challenge.

Ecological

This isolated segment is undisturbed except by foot travel. As a natural preserve, it is an excellent example of a desert riparian, vegetative community. The water table underlying the San Rafael Desert seeps at hanging gardens along the canyon walls that enclose the rich, verdant riparian zone

Bear Canyon Creek

Fish

This creek possesses an outstandingly remarkable fish value because of its high-quality fish habitat. The introduction of native Colorado River cutthroat trout, a rare species (listed as sensitive by BLM and the State of Utah), has been approved by the State of Utah Resource Development Coordination Committee (RDCC) and is expected to be implemented in the reasonably foreseeable future. The stream provides excellent fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Existing fish species are abundant below the cascades but are currently absent above the cascades where the Colorado River cutthroat trout will be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches. The quality of the fishing experience is high because of the scenic and pristine nature of the stream and canyon. (There is a beautiful cascade about 1 mile above the confluence with Rock Creek.) Bear Canyon Creek has low recreational use but could be important to anglers wanting a remote fishing experience.

Buckhorn Wash

Historic

Values consist of sites that retain their original character; are associated with farming or ranching, transportation, and the Civilian Conservation Corps; which are important for interpreting associated historic events. Many sites are eligible for the National Register of Historic Places.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites retain integrity and are important for interpreting regional prehistory. The Buckhorn Rock Art Site is already listed on the National Register of Historic Places. Many other sites are eligible for the National Register.

Recreational

The recreation opportunity here is “Roaded Natural” in the Recreational Opportunity Spectrum. A drive through with a few stops gives the visitor a significant sampling of the splendors of canyon country, in general, and the San Rafael Swell, in particular. In addition to a dramatic canyon, the recreational user has the opportunity to visit dinosaur tracks and bones, prehistoric sites representing 8,000 years of cultures, and cold war relics in the form of the Morrison Knudson tunnels and uranium exploration. It has the great variety of attraction sites in very a short canyon that makes the recreational opportunity outstandingly remarkable. In addition to the “windshield tourism” opportunity, there are several technical climbing routes in the canyon.

Scenic

The visual experience of entering Buckhorn Wash is particularly dramatic. The distant horizon is almost immediately replaced by topographic grandeur. The canyon provides scenic displays of geologic layers,

sequentially exposed, rising to towering benches, varnished walls, high pour-offs, and deep alcoves. A rincon remains as an isolated pinnacle. A verdant riparian zone marking the canyon bottom provides a striking contrast to the stark desert scene. This canyon is inventoried as Class "A" scenery because of these features.

Wildlife

The wash provides ideal habitat for Desert bighorn sheep, mule deer, and numerous migratory birds. The wash, lined with riparian vegetation, provides water and forage for these species. The wash is considered a good choice for observing the Desert bighorn sheep as they graze along the wash bottom, scree slopes, and cliffs on either side of the wash.

Buckskin Canyon Creek

Fish

This creek possesses an outstandingly remarkable fish value because of its high-quality fish habitat. The introduction of native Colorado River cutthroat trout, a rare species (listed as sensitive by the BLM and the State of Utah), has been approved by the RDCC and is expected to be implemented in the reasonably foreseeable future. The stream provides excellent fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Existing fish species are abundant below the cascades but are currently absent above the cascades where the Colorado River cutthroat trout will be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches. The quality of the fishing experience is high because of the scenic and pristine nature of the stream and canyon. (There are scenic cascades about 2 miles rincon above the confluence with Rock Creek.) Buckskin Canyon Creek has low recreational use but could be important to anglers wanting a remote fishing experience.

Cane Wash

Cultural

This wash contains a significant example of Barrier Canyon rock art. Other features are unknown but likely present. The rock art site is eligible for listing on the National Register of Historic Places.

Recreational

This wash is a popular hike and horseback ride from the San Rafael Bridge Recreation Site or as an alternate route to the Little Grand Canyon of the San Rafael River. This wash also provides for recreational petrified wood collection. BLM determined that this value is not at least regionally significant.

Scenic

A huge fin of the Wingate Formation is located in the lower portion of the wash and was formed by erosion on one side by Cane Wash and the other by the San Rafael River. High on this fin is a window in the rock, which is visible from the Wedge Overlook. Much of the wash is incised within the surrounding stone or is bordered by high cliffs and alcoves. Cane Wash would be categorized as Class "A" scenic quality under BLM's Visual Resource Management (VRM) system.

Chimney Canyon

Upon evaluating Chimney Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Coal Creek

Upon evaluating Coal Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Coal Wash

Historic

Values consist of sites that retain their original character, are associated with ranching and mining; and which are important for interpreting associated historic events.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

Large sand dunes climb high on the Navajo sandstone escarpments that narrowly enclose the meandering wash bottom. BLM determined that this value is not at least regionally significant.

Recreational

Coal Wash is a popular destination for motorized recreationists, hikers, and horseback riders because of its rich

scenic, wildlife, and cultural features. BLM determined that this value is not at least regionally significant.

Cottonwood Canyon

Upon evaluating Cottonwood Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Cottonwood Wash

Cultural

This area has evidence of significant occupation and use by prehistoric peoples (mainly rock art) representing more than one cultural period (Archaic, Fremont, and Numic). Some features are significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

Cottonwood Wash is an incised bifurcated canyon cutting through the eastern side of northern San Rafael Reef. It is exceedingly scenic because of the color and variation of the striking geological setting, the intermittent live water, and cottonwood trees.

Desert Seep Wash

Upon evaluating Desert Seep Wash, BLM determined that its stream did not possess values that are at least regionally significant.

Devils Canyon

Wildlife

This narrow canyon and surrounding slickrock topography provides ideal habitat for Desert bighorn sheep.

Recreational

This canyon provides an easily accessible, primitive opportunity to hike through one of the premiere slot canyon narrows in the San Rafael Swell. BLM determined that this value is not at least regionally significant.

Scenic

Ponderosa pines provide contrast against sandstone domes textured by the cross bedding of petrified dunes. The domes drain into beautifully sculpted, slot canyon narrows. This canyon is inventoried as Class “A” scenery because of these features.

Dry Canyon

Upon evaluating Dry Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Dugout Creek

Upon evaluating Dugout Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Eagle Canyon

Scenic

Dark pockets of Ponderosa pines provide contrast to the soft tones of the sandstone walls. Eagle Canyon Arch highlights the upper portion of the canyon, which opens to a picturesque serpentine valley of sandstone domes, slickrock, and vegetated sand dunes. Narrow side drainages are also studded with Ponderosa pines. Below a huge, dramatic pour-off the canyon narrows to a meandering slot, exposing scenic patterns of sandstone cross-bedding. This canyon is inventoried as Class “A” scenery because of these features.

Information was provided to BLM identifying geology as an ORV. Upon evaluating this information, BLM determined that this value was not at least regionally significant.

Fish Creek

Fish

This segment is a high-quality coldwater fishery. Designated a Blue Ribbon Fishery, this segment has substantial regulatory protection under Utah Division of Wildlife Resources (UDWR) proclamation rules and agreements. Releases from Scofield Reservoir are arranged to sustain the fishery, and instream flow rights are under consideration.

Flat Canyon

Upon evaluating Flat Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Goodwater Canyon

Upon evaluating Goodwater Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Gordon Creek

Historic

Gordon Creek (original known as Garden Creek) is the location of the first historic era settlement in Carbon County. One ranch site is associated with one of the three original settlers. Values include sites associated with community development and decline, farming or ranching, communication, transportation, irrigation, and the Civilian Conservation Corps. They retain original character and are eligible for nomination to the National Register of Historic Places as a district for both its historic and prehistoric values.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. Because of the short period of historic occupation, the sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory and comparing prehistoric and historic agricultural settlement patterns of the same area.

Grassy Trail

Upon evaluating Grassy Trail, BLM recognized that the stream has unique geologic features but determined that this value is not at least regionally significant.

Green River

Upper Green River (Desolation and Gray Canyons):

Cultural

The upper segments of Green River show evidence of significant occupation and use by prehistoric peoples. It includes rock art and other features that remain significant to some Native American populations today. It also includes some of the area of study used by Noel Morss in defining the Fremont culture. The prehistoric use represents more than one cultural period (Archaic, Fremont, and Numic). The sites have been largely isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places. Flat Canyon Archaeological District, within Desolation Canyon, is listed on the Register.

Historic

Much of this river corridor is a National Historic Landmark because of its recognition as the least changed of the river corridors associated with John Wesley Powell and the exploration of the Green and Colorado Rivers. Other historic values are associated with settlement, farming or ranching, mining, Prohibition, recreational river running, waterworks, and reclamation. Sites have been largely isolated and therefore retain their original character.

Recreational

A trip though Desolation and Gray Canyons of the Green River, consecutive canyons within the Tavaputs Plateau, is a premier, wilderness recreation experience. The 84-mile trip from Sand Wash to Swaseys Beach is world renowned. Located in Utah's deepest canyon and largest WSA, Desolation and Gray Canyons offer outstanding white water boating with roughly 60 rapids and riffles. There is also ample opportunity for land-based activity such as hiking in the more than 60 side canyons. BLM receives more than 3,000 applications per year for the 450 available trip permits issued to self-outfitted users. Eighteen commercial outfitters market trips through these canyons both nationally and internationally.

Scenic

At more than 1 mile deep, Desolation Canyon is Utah's deepest canyon, cutting through the youngest exposed strata on the Colorado Plateau. Desolation and Gray Canyons consist of complexes of many canyons draining to the Green River. Outstanding scenic values are dictated primarily by the domination of geologic features. In addition to canyon walls rising thousands of feet, there are also many interesting rock formations such as arches and hoodoos. Although the landscape is mostly dry and austere, pleasing contrasts are found in the green ribbon of life along the river and the hanging gardens and pockets of huge fir trees scattered within the cliffs. Desolation Canyon is inventoried by BLM as being Class "A" scenic quality under the BLM's VRM system.

Geologic

The Upper Green River is an outstanding example of an antecedent river cutting through structural geology that should have been impassable to it. As the land surface rises toward the south, the Green River continues to flow to the south and decreases in elevation despite the trend of the surrounding landscape. This results in the deepest canyon in Utah—Desolation Canyon. The corridor of the Green River in this stretch also provides the region's best examples of reattachment bars and separation bars formed by the processes of fluvial geomorphology in bedrock

canyons.

Fish

This portion of the Green River provides habitat for four federally listed fish species—Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker. Of notable significance, this river contains designated critical habitat for the Colorado pikeminnow. Spawning areas for this species have been confirmed within this river, which is also considered important for Colorado pikeminnow young.

Know populations of humpback chub and razorback sucker have been confirmed within this river, while bonytail chub is suspected to occur. This river is considered regionally important for the recovery of these four federally listed species.

Wildlife

This portion of the Green River is considered to have remarkable value for both avian and terrestrial wildlife populations. With regard to avian species, this river corridor is regionally significant, both for its diversity of avian species and for supporting habitats for federally listed and BLM Sensitive avian species.

Confirmed present federally listed species include bald eagle, Mexican spotted owl and southwestern willow flycatcher. BLM Sensitive Species known to occur include peregrine falcon, yellow-breasted chat, and yellow-billed cuckoo. The river corridor is presently used by bald eagles during the winter but is also considered potential nesting habitat. Mexican spotted owls have been verified nesting within this river corridor. The corridor designated critical habitat for Mexican spotted owls is believed to be significant for their expansion.

The Green River segment is also important for bighorn sheep, mule deer, and elk. The entire corridor is regionally significant as lambing habitat for the Rocky Mountain bighorn sheep and considered important winter range for mule deer and elk.

Ecological

The Green River hosts a variety of avian, terrestrial, and aquatic species populations. The river and its properly functioning riparian area provide a corridor of habitat through an otherwise arid region for many sensitive and federally listed species of birds and fish, and populations of bighorn sheep, deer, elk, black bear, mountain lion, and beaver. The corridor supports rare plant species, including a recently discovered species of columbine. The stability of this ecosystem, largely unchanged since the passage of John Wesley Powell, contributed to the designation of Desolation Canyon National Historic Landmark.

Lower Green River (Labyrinth Canyon):

Cultural

This area has evidence of significant occupation and use by prehistoric peoples and includes some of the area of study used by Noel Morss in defining the Fremont culture. Its rock art and other features remain significant to some Native American populations today. The prehistoric use represents more than one cultural period (Archaic, Fremont, and Numic). The sites have been largely isolated, retain integrity, and are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Historic values include sites associated with early river exploration, recreational and commercial river running, farming and ranching, mining, waterworks, and reclamation. Sites have been largely isolated and therefore retain their original character.

Recreational

Labyrinth Canyon of the Green River is roughly 68 miles in length. The character of this canyon is completely different from Desolation Canyon. This stretch of river has no rapids, making it suitable for canoe paddling. It provides a 4- to 7-day backcountry paddling experience. There are also great opportunities for dispersed camping and hiking to cultural sites, unique geologic features, and other attractions. Roughly 7,000 people per year take this popular trip. The section is also suitable for powerboat use at some water levels and provides for much of the annual Friendship Cruise route, a powerboat event that has been held for decades. This section of the Green River has been widely reported on in the popular press in newspapers from coast to coast and in specialty publications such as *Paddler Magazine*.

Scenic

Scenic values are largely a product of the geology. The Green River meanders through a deeply incised canyon. Explorer John Wesley Powell named the canyon for its many intricate twists and turns. At Bowknot Bend, one travels a distance of 7 river miles to end within a quarter mile of the starting point. Varnished cliffs are cut in places by the narrow mouths of shaded side canyons where mature cottonwood trees are harbored. In the lower parts of the canyon, vertical cliffs of Windgate sandstone rise 1,000 feet above the river. Dramatic topography, dizzying cliffs bisected by the Green River and its associated ribbon on life in an otherwise barren landscape make this corridor Class “A” scenery under BLM’s VRM system.

Fish

This portion of the Green River provides habitat for four endangered fish, including spawning habitat for the Colorado pikeminnow. The river contains critical habitat as designated by the U.S. Fish and Wildlife Service (USFWS) for these species.

Paleontology

Dinosaur bones visible in Morrison Formation outcrop have been reported by reliable sources (Dr. Paul Bybee, Professor of Geology at Utah Valley State College in Orem, Utah). They are reported to be visible from the river.

Icelander Creek

Upon evaluating Icelander Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Iron Wash

Upon evaluating Iron Wash, BLM determined that its stream did not possess values that are at least regionally significant.

Ivie Creek

Upon evaluating Ivie Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Jack Creek

Upon evaluating Jack Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Keg Spring Canyon

Cultural

This area has evidence of significant occupation and use by prehistoric peoples, and includes probably the most scientifically important site in the area. The prehistoric use represents more that one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

This canyon is scenic, tightly confined in slickrock walls that are punctuated with enticing alcoves and dramatic amphitheaters. The lively little stream adds a water feature, and brilliant green vegetation winds through a landscape of rock, and its association with the Green River makes for Class “A” scenery quality under the BLM’s VRM system.

Recreational

This canyon is less visited, with access for hikers primarily from Labyrinth Canyon of the Green River and some from Antelope Valley Road. This canyon provides an opportunity to experience solitude in an area rich in scenic quality. BLM determined that this value is not at least regionally significant.

Last Chance Creek

Upon evaluating Last Chance Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Lockhart Draw

Upon evaluating Lockhart Draw, BLM determined that this stream did not possess values that are at least regionally significant.

McCarty Canyon

Upon evaluating McCarty Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Mesquite Canyon

Wildlife

The canyon provides ideal habitat for Desert bighorn sheep and small mammals. The canyon with cliffs and slickrock provide exemplary escape cover and forage for Desert bighorn sheep as evidenced by the number present in the canyon.

Scenic

The narrow canyon alternates between towering walls and slickrock domes that provide outstanding scenes. Side canyons have patches of Ponderosa pine and juniper providing striking contrast in pattern and color. This canyon is inventoried as Class “A” in BLM’s VRM system because of these features.

Molen Seep Wash

Upon evaluating Molen Seep Wash, BLM determined that its stream did not possess values that are at least regionally significant.

Muddy Creek

Historic

Values consist of sites associated with uranium exploration and mining, which are important for interpreting associated historic events. They retain original character. Many sites are eligible for the National Register of Historic Places.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. It includes some of the area of study used by Noel Morss in defining the Fremont culture. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Recreational

Muddy Creek offers mostly a primitive and semi-primitive recreation opportunity. When water flows are adequate, Muddy Creek provides a challenging whitewater experience. During low flows, it provides hikers with an opportunity to traverse through the heart of the San Rafael Swell. The Chute, a deep, narrow slot through which Muddy Creek flows, is one of the most popular floating and hiking routes in the San Rafael Swell. This area is well known and draws visitors from throughout the nation.

Scenic

This segment traverses a variety of geologic strata providing variety in landform and color. Dramatic cliffs rising hundreds of feet dominate the view and are decorated with rock formations, such as pinnacles, arches, and hoodoos. The Chute of Muddy Creek provides exceptional slot canyon scenes, with the creek meandering from wall to wall.

Nates Canyon

Upon evaluating Nates Canyon, BLM determined that this stream did not possess values that are at least regionally significant.

Nine Mile Creek

Historic

Nine Mile Creek provides one of the best examples of a Non-City of Zion settlement, an unusual pattern in Utah. Values include sites associated with community development and decline, fur trade and exploration, farming or ranching, military history, communication, transportation, irrigation, and Civilian Conservation Corps. These sites retain original character and their values are important for interpreting associated historic events. This area is currently being nominated to the National Register of Historic Places for both its historic and prehistoric values.

Cultural

Nine Mile Canyon has the greatest concentration of prehistoric rock art in the world. It also has some of the most visible and best preserved remains of the Fremont culture. It is part of the study area Noel Morss used in defining the Fremont culture. Rock art and other features remain significant to some Native American populations today. The prehistoric use represents more than one cultural period (Archaic, Fremont, and Numic). The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Nine Mile Canyon is eligible for the National Register and is currently being nominated for this special designation.

Scenic

Nine Mile Canyon was dedicated as a backcountry byway in 1990. The main visual features are the dramatic topography of high canyon walls, dissected by steep-sided canyons and punctuated with isolated buttes, mesas, and outcrops. A lush riparian zone of willow and cottonwood marks the canyon bottom. A series of farms and ranches add a rural appearance to an otherwise very wild looking landscape. Prehistoric rock art adorn the canyon walls adding intrinsic interest to foreground views. Water features include the flowing stream and beaver ponds. This canyon is inventoried as Class “A” scenery under BLM’s VRM system for its dramatic topography, picturesque vegetation, and water features. The numerous cultural sites invite the eye to wander and study the details and small-scale scenery in this immense canyon.

North Fork Coal Wash

Historic

Values consist of sites associated with ranching and mining, which are important for interpreting associated historic events. They retain original character.

Cultural
This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic
A sandstone landscape of domes, pinnacles, alcoves, and extended cliff lines drop into the incised canyon bottom. Groves of pinyon and juniper opening to grassy parks are terraced over the cottonwood-lined canyon bottom. The enormous reach of Slipper Arch provides a premier scenic feature.

Recreational
Coal Wash is a popular destination for off-highway vehicle (OHV) users, hikers, and horseback riders because of its rich scenic, wildlife, and cultural features. BLM determined that this value is not at least regionally significant.

North Salt Wash

Cultural
This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features are significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Wildlife
This canyon provides habitat for a number of wildlife species, including Desert bighorn sheep, mule deer, prairie falcons, and red-tailed hawks. The riparian vegetation in the bottom of this canyon, along with the intermittent water, provide important habitat for these species.

Scenic
The cottonwood-lined canyon has a scenic combination of sandstone cliffs, alcoves, and a rincon that is augmented by live water, rock art, and stable vegetated sand dunes.

Recreational
This area is a popular destination for hiking and horseback riding because of the scenic, wildlife, and cultural features described above. BLM determined that this value is not at least regionally significant.

Oil Well Draw

Upon evaluating Oil Well Draw, BLM determined that its stream did not possess values that are at least regionally significant.

Pace Creek

Upon evaluating Pace Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Price River

Historic
Historic values are associated with settlement, farming or ranching, and transportation (early railroads), which are important for interpreting associated historic events. Most sites have been somewhat isolated and therefore retain their original character. Many sites are eligible for the National Register of Historic Places.

Cultural
This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Fish
From the confluence of Lower Fish Creek and White River downstream through Helper, this river provides a potentially high-quality coldwater fishery. There is a plan currently underway (in conjunction with a Total Maximum Daily Load) to improve the fishery and correct temperature discrepancies that exist in part of the reach. The river is stocked annually with trout as far downstream as the Helper gauging station. In the last decade, habitat improvement projects, such as the construction of stone pool-forming structures, have been completed along the Helper parkway by UDWR with the support of Trout Unlimited. UDWR has also spent effort and money on improvements to direct access to the river along Highway 6, which provides access along most of this reach, to enhance opportunities to fish. The White River watershed is also currently undergoing restoration by UDWR partly for the purpose of improving the fishery below its confluence with the Price River.

The lower Price River segment is considered to be important for several federally listed fish species. The mouth of this river segment is important habitat for young Colorado pikeminnow. bonytail chub, and razorback sucker might also use this river segment.

Wildlife

The lower Price River is important to numerous avian wildlife species, notably the Mexican spotted owl, peregrine falcon, and southwestern willow flycatcher. The river segment provides excellent nesting and roosting habitat for the Mexican spotted owl and the peregrine falcon, although these species have not been confirmed present to date. The river segment is also important lambing habitat for the Rocky Mountain bighorn sheep.

Geologic

Exposed in the walls of the lower canyon of the Price River are excellent examples of delta sediments deposited during the Cretaceous period. The repeated retreat and advance of the inland seaway is vividly recorded in the exposures of the Mesa Verde Group. Major oil companies bring geologists on field trips to this escarpment to study these exposures.

Quitchupah Creek

The creek's riparian zone supports wildlife and ecological values; however, BLM determined that these values are not at least regionally significant.

Range Creek

Historic

Historic values are associated with settlement, farming, or ranching, which are important for interpreting associated historic events. Sites have been largely isolated and therefore retain their original character. Many sites are eligible for the National Register of Historic Places.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). It includes rock art and other features that remain significant to some Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

Unlike most of the side canyons entering the Green and Colorado Rivers, Range Creek carved a "U" shaped rather than a "V" shaped valley. In this canyon, lush, river bottom land suddenly gives way to dramatic cliffs and mountains that rise 4,000 feet to the top of the Tavaputs Plateau. The canyon passes though several life zones, from high alpine forest and meadows down to a salt shrub desert. The pattern of vegetation habitat types and the way they vary with elevation and slope aspect create a varied and interesting scene. Dramatic topography and unusual rock formations split by a mountain stream creates a stimulating visual experience. This canyon is inventoried as Class "A" scenery under BLM's VRM system for its dramatic topography, varied relief, geologic structures, vegetation, and water features.

Wildlife

The Range Creek segment is unique and regionally significant for the diversity of avian and terrestrial wildlife. The upper drainage provides summer range for mule deer and elk while the lower drainage provides winter range for these species. The lower drainage is important lambing habitat for Rocky Mountain bighorn sheep. The Range Creek drainage is designated critical habitat for the Mexican spotted owl although occupied territories have yet to be confirmed.

Red Canyon

Upon evaluating Red Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Rock Creek

Scenic

Of the more than 60 tributary canyons to Desolation and Gray Canyon, Rock Creek provides the most dramatic and exceptionally high quality scenery. There is tremendous topographic relief as the canyon rises more than 5,000 feet from the mouth of the creek to the top of the plateau. The canyon bottom has a verdant riparian zone along a clear, coldwater creek. The creek itself has a pool and drop structure, cascading in places, providing intrinsically interesting sights accented by the sounds of flowing, splashing water. The canyon walls are resplendent. Lower elevation pinyon and juniper give way to Douglas fir at the mid- to higher elevations. These stands of dark green timber are punctuated with outcrops and ledges of red sandstone. All these features add up to Class "A" scenery under the BLM's VRM system.

Recreational

Rock Creek, a much anticipated respite for river travelers, is the most visited area in Desolation Canyon. Visitors are attracted to the cool, clear, refreshing waters meandering through the lush riparian zone in addition to the well-preserved historic structures. Rock Creek offers the most popular hike in Desolation Canyon. Hikers enjoy the varied scenery and the abundant rock art seen along the canyon walls. A coldwater fishery rounds out the variety of recreational opportunity to be experienced along Rock Creek.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). It includes rock art and other features that remain significant to some Native American populations today. The sites have been largely isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Rock Creek provides an example of historic homesteading. The historic architecture and manipulated landscape are well-preserved. Many sites are eligible for the National Register of Historic Places.

Fish

Rock Creek contains increasingly rare and highly desirable coldwater fish habitat. It is capable of sustaining wild hatcheries of environmentally sensitive fish species. Water quality is high and is often used by recreational boaters as a source of culinary water. The introduction of native Colorado River cutthroat trout, a rare species (listed as sensitive by the BLM and the State of Utah), has been approved by the State's RDCC and is expected to be implemented in the reasonably foreseeable future. The stream provides ideal fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Fish are abundant below cascade features but are currently absent above the cascades where the Colorado River cutthroat trout are planned to be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches or larger. The scenic and pristine nature of the stream and canyon also contribute to the high quality of the fishing experience. The upper reaches of Rock Creek receive low recreational use but could be important to anglers wanting a remote fishing experience.

Saddle Horse Canyon

BLM identified Saddle Horse Canyon to have quality riparian vegetation and scenic values but it does not consider these values to be at least regionally significant

Salt Wash

Upon evaluating Salt Wash, BLM determined that its stream did not possess values that are at least regionally significant.

Salvation Creek

Upon evaluating Salvation Creek, BLM determined that this stream did not possess values that are at least regionally significant.

San Rafael River

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Values include sites associated with farming or ranching, transportation, and the Civilian Conservation Corps, which are important for interpreting associated historic events. They retain original character. The Swinging Bridge is listed on the National Register of Historic Places. Other sites are eligible for the National Register.

Scenic

The Little Grand Canyon is named for its grandeur. Here, the San Rafael has carved a dramatic canyon of rock with very little vegetation on the canyon walls. The green ribbon of the riparian zone provides respite from the barren canyon. In addition to the geologic scenic features, the canyon provides wildlife viewing opportunities and numerous cultural sites.

Deep, narrow canyon walls dominate the scenery through the Black Boxes. The confined river meandering the few yards from wall to wall is visually unique—a slot canyon on a grand scale.

These features add up to Class "A" scenic quality under the BLM's VRM system.

Recreational

This river provides a great variety of recreational opportunities. The segment through the area known as the Little

Grand Canyon of the San Rafael offers a greater variety of experiences than any other segment in the PFO. At higher water levels, it is floated by a variety of watercraft, from canoes and kayaks to small rafts. In addition to boating, this segment is also traversed by backpackers and equestrians. There are greatly dispersed campsites and attraction sites throughout this segment.

The segment downstream of Swinging Bridge is known as the Black Boxes, named for the Upper and Lower Black Box Canyons of the San Rafael. Here, the San Rafael traverses canyons that are hundreds of feet deep and tens of feet wide. At lower water levels, the Black Boxes provide a moderately difficult canyoneering experience. Canyoneers find themselves hiking, climbing and rock scrambling, and swimming on a typical trip. At high water, the canyons are the domains of the high-end expert kayakers. At high flows, these canyons provide one of Utah's most challenging kayak runs. This attraction is know nationally and written up in regional guidebooks and on canyoneering websites.

Wildlife

The San Rafael River provides habitat for a number of wildlife species, including Desert bighorn sheep, migratory birds, mule deer, chukar, and fish. Portions of this river are important to the Desert bighorn sheep and mule deer because they provide water and forage, while the riparian vegetation along the river provides important nesting and foraging habitat. Peregrine falcons are known to nest on the high cliffs bordering the river where they find prey (migratory birds). The San Rafael River provides habitat for a number of fish, including the federally endangered Colorado pikeminnow and State-sensitive roundtail chub. A portion of this river flows through steep walled canyons that are considered potential habitat for the endangered Mexican spotted owl.

Soldier Creek

Upon evaluating Soldier Creek, BLM determined that this stream did not possess values that are at least regionally significant.

South Fork Coal Wash

Historic

Values consist of sites associated with ranching and mining, which are important for interpreting associated historic events. They retain original character.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

The varying landscape is accentuated by near and distant pinnacles detached from sandstone fins; high, varnish-stained pour-offs; wind-scooped alcoves; and Ponderosa pines stark against pale cliffs. Middleground and background features provide a balanced, horizontal relief.

Recreational

Coal Wash is a popular destination for OHV users, hikers, and horseback riders because of its rich scenic, wildlife, and cultural features. BLM determined that this value is not at least regionally significant.

South Salt Wash

Upon evaluating South Salt Wash, BLM determined that its stream did not possess values that are at least regionally significant.

Spring Canyon

An arch in Spring Canyon provides a geologic value, and the canyon provides an opportunity for hiking but neither is considered by BLM to be at least regionally significant. Rock art near the mouth of Spring Canyon is within a quarter mile of the San Rafael River and supports the cultural value for that eligible river.

Three Canyon (Carbon County)

Upon evaluating Three Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Three Canyon (Emery County)

Upon evaluating Three Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Trail Canyon

Upon evaluating Trail Canyon, BLM determined that its stream did not possess values that are at least regionally significant.

Two Mile Canyon Two Mile Canyon contains scenic quality and a unique geologic feature, Five Hole Arches but BLM has determined that these values are not river-related.
Virgin Springs Canyon BLM recognized the presence of recreational, wildlife, and cultural values but determined these values are not at least regionally significant.
Willow Creek Upon evaluating Willow Creek, BLM determined that this stream did not possess values that are at least regionally significant.

Rivers Determined Eligible

Table R16-3 lists rivers that were determined to be free flowing and possess ORVs that are regionally or nationally significant, and, therefore, are eligible for inclusion in the National Wild and Scenic Rivers System. (Reasons for tentative classification are provided on Table C–4.) Some rivers are found to possess ORVs; however, because these rivers are determined to be ephemeral in nature, flowing unpredictably only during flood events, they were not carried forward as eligible.

Table R16-3. Rivers Determined Eligible To Be Designated for Inclusion in the National Wild and Scenic Rivers System

Segment Name	Segment Description	Outstandingly Remarkable Value(s)	Tentative Classification	Percent of River Corridor That Is BLM-Administered Land
Barrier Creek	Canyonlands National Park boundary to mouth at Green River	recreational, cultural, ecological	Wild	99
Bear Canyon Creek	Headwaters to mouth at Rock Creek	fish	Wild	43
Buckskin Canyon Creek	Headwaters to mouth at Rock Creek	fish	Wild	51
Cane Wash	Head of wash to mouth at San Rafael River	cultural, scenic	Scenic	89
Coal Wash	Confluence of North and South Forks of Coal Wash to mouth at North Salt Wash	cultural, historic	Recreational	100
Cottonwood Wash	Head of wash to county road at T. 20 S., R. 13 E., Sec. 14	scenic, cultural	Wild	80
Fish Creek	Scofield Reservoir to confluence with White River	fish	Scenic	15

Segment Name	Segment Description	Outstandingly Remarkable Value(s)	Tentative Classification	Percent of River Corridor That Is BLM-Administered Land
Gordon Creek	Confluence of Bob Wright and Mud Water Canyons to mouth at Price River	cultural, historic	Scenic	44
Green River*	County line near Nine Mile Creek to Chandler Canyon	scenic, recreational, wildlife, historic, cultural, fish, geologic, ecological	Wild	66
	Chandler Creek to Florence Creek	scenic, recreational, wildlife, historic, cultural, fish, geologic, ecological	Scenic	
	Florence Creek to Nefertiti boat ramp	scenic, recreational, wildlife, historic, cultural, fish, geologic, ecological	Wild	
	Nefertiti boat ramp to Swaseys boat ramp	scenic, recreational, wildlife, historic, cultural, fish, geologic, ecological	Recreational	
	Swaseys boat ramp to I-70 bridge	scenic, recreational, wildlife, historic, cultural, fish, geologic, ecological	Recreational	
	I-70 bridge to mile 91 below Ruby Ranch	scenic, recreational, historic, enriching, fish, paleontologic	Scenic	
	Mile 91 below Ruby Ranch to Hey Joe Canyon	scenic, recreational, historic, cultural, fish	Wild	
	Hey Joe Canyon to Canyonlands National Park boundary	scenic, recreational, historic, cultural, fish	Scenic	
Keg Spring Canyon	Head of canyon to mouth at Green River	scenic, cultural	Wild	91
Muddy Creek	I-70 to Lone Tree Crossing	scenic, recreational, historic, cultural	Wild	92
	Lone Tree Crossing to South Salt Wash	scenic, recreational, historic, cultural	Scenic	
	South Salt Wash to county road below San Rafael and North Caineville Reefs	scenic, recreational, historic, cultural	Wild	

Segment Name	Segment Description	Outstandingly Remarkable Value(s)	Tentative Classification	Percent of River Corridor That Is BLM-Administered Land
Nine Mile Creek	Minnie Maude Creek to Bulls Canyon	historic, cultural, scenic	Recreational	44
	Bulls Canyon to mouth at Green River	historic, cultural, scenic	Wild	
North Fork Coal Wash	Head of wash to Fix It Pass route	scenic, cultural, historic	Wild	85
	Fix It Pass route to confluence with South Fork Coal Wash	scenic, cultural, historic	Recreational	
North Salt Wash	Confluence with Horn Silver Gulch to mouth at San Rafael River	scenic, wildlife, cultural	Wild	97
Price River	Confluence of Fish Creek and White River to Poplar Street bridge in Helper	Fish	Recreational	68
	Mounds bridge Book Cliffs escarpment	cultural, historic	Scenic	
	Book Cliffs escarpment to mouth at Green River	cultural, geologic, wildlife, fish	Wild	
Range Creek	Headwaters to Trail Canyon	cultural, scenic, historic, wildlife	Wild	55
	Trail Canyon to drill holes at T. 17 S., R. 16 E., Sec. 27	cultural, scenic, historic, wildlife	Recreational	
	Drill holes at T. 17 S., R. 16 E., Sec. 27 to mouth at Green River	cultural, scenic, historic, wildlife	Wild	
Rock Creek	North Fork headwaters to mouth at Green River	scenic, recreational, cultural, historic, fish	Wild	70

Segment Name	Segment Description	Outstandingly Remarkable Value(s)	Tentative Classification	Percent of River Corridor That Is BLM-Administered Land
San Rafael River	Confluence of Ferron and Cottonwood Creeks to Fuller Bottom	cultural, scenic, recreational, historic, wildlife	Scenic	82
	Fuller Bottom to Johansen corral	cultural, scenic, recreational, historic, wildlife	Wild	
	Johansen corral to Lockhart Wash	cultural, scenic, recreational, historic, wildlife	Scenic	
	Lockhart Wash to Tidwell Bottom	cultural, scenic, recreational, historic, wildlife	Wild	
	Tidwell Bottom to mouth at Green River	cultural, scenic, recreational, historic, wildlife	Scenic	
South Fork Coal Wash	Head of wash to Eva Conover route	scenic, cultural, historic	Wild	94
	Eva Conover route to confluence with North Fork Coal Wash	scenic, cultural, historic	Recreational	

*BLM lands on the east side of the Green River corridor are administered by the Moab Field Office. The Price Field Office considered and included in the eligibility determinations for the Green River any ORVs present on those BLM lands.

Tentative Classification

Upon a determination of eligibility, the rivers were given a tentative classification. Table R16-4 describes the reason each river was given its tentative classification.

Table R16-4. Documentation of Eligibility: Tentative Classification of Eligible Rivers

Segment Name	Segment Description	Tentative Classification	Reason for Classification
Barrier Creek	Canyonlands National Park boundary to mouth at Green River	Wild	Primitive area within Horseshoe Canyon WSA
Bear Canyon Creek	Headwaters to mouth at Rock Creek	Wild	Primitive area within Desolation Canyon WSA
Buckskin Canyon Creek	Headwaters to mouth at Rock Creek	Wild	Primitive area within Desolation Canyon WSA
Cane Wash	Head of wash to mouth at San Rafael River	Scenic	Much of reach is paralleled by OHV route; lower portion is within Sids Mountain WSA
Coal Wash	North and South Forks of Coal Wash to confluence with North Salt Wash	Recreational	Presence of OHV route

Segment Name	Segment Description	Tentative Classification	Reason for Classification
Cottonwood Wash	Head of wash to county road at T. 20 S., R. 13 E., Sec. 14	Wild	Primitive area within Mexican Mountain WSA
Fish Creek	Scofield Reservoir to confluence with White River	Scenic	Presence of railroad, mostly inconspicuous and has low traffic
Gordon Creek	Confluence of Bob Wright and Mud Water Canyons to mouth at Price River	Scenic	Road, gas field development present, but mostly inconspicuous; segment crossed by railroad trestle and powerlines
Green River	County line near Nine Mile Creek to Chandler Canyon	Wild	Primitive area; majority of segment forms boundary for Desolation Canyon WSA
	Chandler Creek to Florence Creek	Scenic	Presence of road inconspicuous except for short stretches; annual traffic on road is seasonal and very minimal
	Florence Creek to Nefertiti boat ramp	Wild	Primitive area that forms boundary for Desolation Canyon WSA
	Nefertiti boat ramp to I-70 bridge	Recreational	Presence of roads, developed recreation sites, agricultural development and structures, private residences, and the town of Green River
	I-70 bridge to mile 91 below Ruby Ranch	Scenic	Some road access; presence of private ranches
Keg Spring Canyon	Mile 91 below Ruby Ranch to Hey Joe Canyon	Wild	Primitive area with a portion forming boundary for Horseshoe Canyon WSA
	Hey Joe Canyon to Canyonlands National Park boundary	Scenic	Paralleled by road inconspicuous except for short stretches
	Head of canyon to mouth at Green River	Wild	Primitive area within Horseshoe Canyon WSA
Muddy Creek	I-70 to Lone Tree Crossing	Wild	Primitive area
	Lone Tree Crossing to South Salt Wash	Scenic	Presence of road and spur roads
	South Salt Wash to county road below San Rafael and North Caineville Reefs	Wild	Majority is within Muddy Creek WSA and adjacent to Crack Canyon WSA; primitive area with route access to river corridor at Tomsich Butte and Hidden Splendor Mine
Nine Mile Creek	Minnie Maude Creek to Bulls Canyon	Recreational	Presence of road, private ranches, and agricultural development and structures
	Bulls Canyon to mouth at Green River	Wild	Primitive area

Segment Name	Segment Description	Tentative Classification	Reason for Classification
North Fork Coal Wash	Head of wash to Fix It Pass route	Wild	Primitive area within Sids Mountain WSA
	Fix It Pass route to confluence with South Fork Coal Wash	Recreational	Presence of OHV route
North Salt Wash	Confluence with Horn Silver Gulch to mouth at San Rafael River	Wild	Primitive area largely within Sids Mountain WSA
Price River	Confluence of Fish Creek and White River to Poplar Street bridge in Helper	Recreational	Presence of Highway 6, railroad, bridges; and residential, commercial, industrial, and municipal development
	Mounds bridge Book Cliffs escarpment	Scenic	Crossing of Highway 6 and railroad, facilities at Woodside, two private ranches, and a few access roads
	Book Cliffs escarpment to mouth at Green River	Wild	Except for road present for short distance within escarpment, the area is primitive and largely within Desolation Canyon WSA
Range Creek	Headwaters to Trail Canyon	Wild	Primitive area
	Trail Canyon to drill holes at T. 17 S, R. 16 E., Sec. 27	Recreational	Presence of road and private ranches
	Drill holes at T. 17 S., R. 16 E., Sec. 27 to mouth at Green River	Wild	Primitive area with large portion within Desolation Canyon WSA
Rock Creek	North Fork headwaters to mouth at Green River	Wild	Primitive area within Desolation Canyon WSA
San Rafael River	Confluence of Ferron and Cottonwood Creeks to Fuller Bottom	Scenic	Accessible by road; presence of gauging station and enclosure with swing panels
	Fuller Bottom to Johansen corral	Wild	Primitive area within Sids Mountain WSA
	Johansen corral to Lockhart Wash	Scenic	Accessible by road; presence of bridge and developed recreation site
	Lockhart Wash to Tidwell Bottom	Wild	Primitive area within Mexican Mountain WSA
	Tidwell Bottom to mouth at Green River	Scenic	Crossing of I-70, SR 24, and county road; additional road access in places
South Fork Coal Wash	Head of wash to Eva Conover route	Wild	Primitive area within Sids Mountain WSA
	Eva Conover route to confluence with North Fork Coal Wash	Recreational	Presence of OHV route

III. SUITABILITY

Determination of Suitability

Rivers determined to be eligible for inclusion into the National Wild and Scenic Rivers System are further evaluated to determine their suitability for inclusion into the national system.

The purpose of the suitability step of the study process is to determine whether or not eligible rivers would be appropriate additions to the national system by considering tradeoffs between corridor development and river protection. Suitability considerations include the environment and economic consequences of designation and the manageability of a river if it were designated by Congress.

The Price Proposed RMP/Final EIS evaluates impacts that would result if the eligible rivers were determined suitable and managed to protect their free-flowing nature, tentative classification, and ORVs. It also addresses impacts that would result if the eligible rivers were not determined suitable and their values were not provided protective management. The range of alternatives include the No Action Alternative, which does not address or provide for decisions on suitability but leaves rivers eligible, and Alternatives C and E, which finds all eligible rivers suitable. Alternative A finds none of the eligible rivers as suitable, while Alternatives B and Proposed RMP find some eligible rivers as suitable. Alternative tentative classifications are also evaluated.

In addition to the impact analysis addressed by alternative, the following suitability considerations are applied to each eligible river in Table 0-3:

- Characteristics that do or do not make the area a worthy addition to the national system
- Status of land ownership and use in the area
- Uses, including reasonably foreseeable potential uses, of the area and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the national system of rivers, and the values that could be foreclosed or diminished if the area were not protected as part of the national system
- Interest by federal, tribal, State, local, and other public entities in designation or non-designation of a river, including the extent to which the administration of the river, including the costs thereof, can be shared by the above mentioned entities
- Ability of the agency to manage and protect the values of a river area if it were designated, and other mechanisms to protect identified values other than Wild and Scenic Rivers designation
- The estimated cost, if necessary, of acquiring lands, interests in lands, and administering the area if it were included in the national system
- The extent to which administration costs will be shared by local and State governments.

Coordination

A series of BLM meetings were held from June 2003 through December 2004 to support the suitability step of the study process. Cooperating agencies also attended these meetings and participated in this process.

Suitability Study

Public comments received on the Draft RMP/EIS have been used to improve the documentation of the suitability considerations discussed below and the documentation of impacts that would result from the various alternatives. The actual determination of whether or not each eligible river segment is suitable is a decision that will be made in the Record of Decision for the Price RMP.

Barrier Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river segment possesses outstandingly remarkable cultural, recreational, and ecological values. These values are described in detail below.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Rock art panels in the adjacent Horseshoe Canyon Unit of Canyonlands Nation Park are the type-site for Barrier Canyon rock art styles. Other rock art sites are present downstream to the confluence with the Green River. Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Recreational

The most well-known features of Barrier Creek are in the Canyonlands National Park extension. This is a popular destination for visitors willing to hike 2 miles and 800 vertical feet to visit the Great Gallery pictographs. This canyon has cultural sites throughout its length and provides significant opportunity to view these sites. Barrier Creek is also a popular side canyon hike for people traveling through Labyrinth Canyon. They are rewarded for their efforts with a clean water stream with wetlands and cottonwoods. There are many technical climbing routes in this canyon, including the spectacular Tyrolean traverse and free rappel featured in the first Eco-Challenge.

Ecological

This isolated segment is undisturbed except by foot travel. As a natural preserve, it is an excellent example of a desert riparian, vegetative community. The water table underlying the San Rafael Desert seeps at hanging gardens along the canyon walls that enclose the rich, verdant riparian zone.

2. Land ownership and current use

Ownership within the river corridor is 99-percent federal (BLM lands) with a small portion (1 percent) of State lands.

This river segment is within Horseshoe Canyon WSA and is managed according to the *Interim Management Policy (IMP) for Lands Under Wilderness Review*. The IMP does not allow for new developments or surface disturbing activity. The river corridor provides a popular hike, with the opportunity to observe scenic and cultural treasures.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct and/or adverse effects on the ORVs (cultural, recreational, and ecological) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures, would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild; however, no such development is currently proposed or foreseeable within this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. None are currently proposed.

This segment of Barrier Creek is almost exclusively within the WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream into the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs, in addition to protection already afforded by the WSA status. Failure to include Barrier Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS, such as those for the Area of Critical Environmental Concern (ACEC) and Special Recreation Management Area (SRMA), would also preserve and enhance such values, if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of Barrier Creek that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence; however, to date, the remoteness and difficult access have limited visitation. Resources are fragile and would suffer degradation if visitation were to increase with designation. Wild and Scenic River designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The free-flowing nature of this stream is not currently at risk, and all identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would

be associated with the establishment of the Lower Green River ACEC and Labyrinth Canyon SRMA. Protection is also currently afforded the river because it is almost entirely within the Horseshoe Canyon WSA, which is managed according to the IMP. The status of the WSA, SRMA, ACEC, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

No funding for acquisition would be needed because there is no private land within the river corridor. State lands could be identified for possible acquisition through exchange. The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies and monitoring and additional BLM presence in the area.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Bear Canyon Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses an outstandingly remarkable fish value because of its high-quality fish habitat. The introduction of native Colorado River cutthroat trout, a rare species (listed as sensitive by the BLM and State of Utah), has been approved by RDCC and is expected to be implemented in the reasonably foreseeable future. The stream provides excellent fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Existing fish species are abundant below the cascades but are currently absent above the cascades where the Colorado River cutthroat trout will be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present, and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches. The quality of the fishing experience is high because of the scenic and pristine nature of the stream and canyon. (There is a scenic cascade about 1 mile above the confluence with Rock Creek.) Bear Canyon Creek has low recreational use but could be important to anglers preferring a remote fishing experience.

2. Land ownership and current use

Ownership within the river corridor is 43-percent federal (BLM lands), 34-percent State, and 23-percent private.

Upper reaches of this river are used for livestock grazing. The majority of the river involving federal lands is within Desolation Canyon WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future.

3. Uses, including reasonably foreseeable uses that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Much of the public lands within this segment of Bear Canyon Creek are within the Desolation Canyon WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future. Designation of the stream would provide additional protection to the fish value.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded by the WSA status. Failure to include Bear Canyon Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (high-quality fish habitat) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild; however, no such development is currently proposed or foreseeable within the federal portions of this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. None are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of Bear Canyon Creek that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Manageability of Bear Canyon Creek, if designated, would be limited by the low percentage of public lands within the stream corridor.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs on public lands could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the Desolation Canyon WSA. The river corridor within the WSA is managed according to the IMP. Protection is also currently afforded river values by Desolation Canyon SRMA. The status of the WSA, SRMA, and other management prescriptions is subject to change as result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change. The isolation of the stream as a result of very limited public access and extreme topography inevitably provides another protective circumstance.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (34 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding; however, 23 percent of the segment is private, and funding would be necessary for purchase if the management plan identified it as a need and the private landowner were willing to sell.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Buckskin Canyon Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses an outstandingly remarkable fish value because of its high-quality fish habitat. The introduction of native Colorado River cutthroat trout, a rare species (listed as sensitive by the BLM and the State of Utah), has been approved by the RDCC and is expected to be implemented in the reasonably foreseeable future. The stream provides excellent fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Existing fish species are abundant below the cascades but are currently absent above the cascades where the Colorado River cutthroat trout will be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches. The quality of the fishing experience is high because of the scenic and pristine nature of the stream and canyon. (There are beautiful cascades about 2 miles above the confluence with Rock Creek.) Buckskin Canyon Creek has low recreational use but could be important to anglers wanting a remote fishing experience.

2. Land ownership and current use

Ownership within the river corridor is 51-percent federal (BLM lands), 4-percent State, and 45-percent private.

Upper reaches of this river are used for livestock grazing. The majority of the river involving federal lands is within Desolation Canyon WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Much of the public lands within this segment of Buckskin Canyon Creek are within the Desolation Canyon WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future. Designation of the stream would provide additional protection to the fish value.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded by the WSA status. Failure to include Buckskin Canyon Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (excellent fish habitat) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild; however, no such development is currently proposed or foreseeable within the federal portions of this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, wildlife, or fish values within the designated segment. None are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of the Buckskin Canyon Creek area that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Manageability of Buckskin Canyon Creek, if designated, would be limited by the low percentage (about 51 percent) of public lands within the stream corridor.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs on public lands could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the Desolation Canyon WSA. The river corridor within the WSA is managed according to the IMP. Protection is also currently afforded river values by Desolation Canyon SRMA. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change. The isolation of the stream because of limited public access and extreme topography inevitably provides another protective circumstance.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies and monitoring and additional BLM presence in the area. State lands (4 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding; however,

45 percent of the segment is private, and funding would be necessary for purchase if the management plan identified it as a need, and the private landowner were willing to sell.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made clear that they would not share management costs of designated streams.

Cane Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable cultural and scenic values. These values are described in detail below.

Cultural

This wash has an outstanding example of Barrier Canyon rock art. Other features are unknown but likely present. The rock art site is eligible for listing on the National Register of Historic Places.

Scenic

A huge fin of the Wingate Formation is in the lower portion of the wash and was formed by erosion on one side by Cane Wash and the other by the San Rafael River. High on this fin is a window in the rock, which is visible from the Wedge Overlook. Much of the wash is incised within the surrounding stone or is bordered by high cliffs and alcoves. Cane Wash would be categorized as Class "A" scenic quality under BLM's VRM system.

2. Land ownership and current use

Ownership within the river corridor is 89-percent federal (BLM lands) and 11-percent State lands.

Present within or along the majority of Cane Wash is a designated OHV route, so vehicle-based recreation occurs on the route. The lower portion of Cane Wash is within Sids Mountain WSA and managed according to the IMP. Hiking and horseback riding are common because of the area's scenic and cultural treasures. The area is also used for livestock grazing.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

The lower reach of Cane Wash is within the Sids Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded the lower portions of the river corridor by the WSA status. Within the WSA, failure to include Cane Wash in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions

considered in the Price Proposed RMP/Final EIS would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision. For portions of the corridor outside of the WSA, the level of protection necessary to ensure preservation of the scenic value would not be provided.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and scenic) or free-flowing condition. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. No such projects inside or outside of the river area are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of Cane Wash that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. Wild and Scenic River designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could, for the most part, be effectively managed under land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with visual and cultural resource management and the San Rafael SRMA. The exception would be an area comprising roughly one-fifth of the length of the corridor where a VRM IV classification would be applied to the scenic value. Protection is also currently afforded a portion of the stream corridor by Sids Mountain WSA. The river corridor within the WSA is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (11 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Coal Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river segment possesses outstandingly remarkable historic and cultural values. Historic values consist of sites associated with ranching and mining, which are important for interpreting associated events. They retain their original character. This area also has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

2. Land ownership and current use

Ownership within the corridor is entirely federal (BLM lands).

An OHV route follows the wash bottom, and it is a popular route for vehicle-based recreation. Other uses include more primitive types of recreation, such as hiking and horseback riding, livestock grazing, and wildlife habitat. Much of this segment is within Sids Mountain WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

This segment of Coal Wash is largely within the Sids Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The corridor of the stream, including the portion within the WSA, serves as an OHV route. This circumstance would put at odds the protection of the stream's values and the opportunity for OHV travel within the corridor. If the stream were congressionally designated for inclusion in the National Wild and Scenic Rivers System, and OHV travel was determined to degrade the quality of the water or affect the cultural and historical values, it would not be allowed.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded the lower portions of the river corridor by the WSA status. Failure to include this segment of Coal Wash in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and scenic) or free-flowing condition. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. No such projects inside or outside of the river area are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that potential water use of this or any eligible stream could be affected; however, there are no current or foreseen water uses of this portion of Coal Wash that would be affected. Individual citizens and groups have also expressed much concern that the designation of this stream would affect the use of the OHV route within the corridor, if not preclude its use altogether.

Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Management of Coal Wash, if designated, would pose a substantial challenge to the presence of the popular OHV route that follows the stream's corridor. Continued vehicle use of this route would likely be in conflict with protection of the outstandingly remarkable historical and cultural values. The route might also hinder the Wild and Scenic Rivers Act's objective of maintaining or enhancing a designated stream's water quality.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the San Rafael Swell SRMA. Protection is also currently afforded river values by Sids Mountain WSA. The river corridor within the WSA is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Cottonwood Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river segment possesses outstandingly remarkable cultural and scenic values. These values are described in detail below.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples (mainly rock art) representing more than one cultural period (Archaic, Fremont, and Numic). Some features are significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They

are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

Cottonwood Wash is an incised bifurcated canyon, cutting through the eastern side of northern San Rafael Reef. It is exceedingly scenic because of the color and variation of the striking geological setting, the intermittent live water, and cottonwood trees.

2. Land ownership and current use

Ownership within the river corridor is 80-percent federal (BLM lands) and 20-percent State lands.

Current uses include primitive types of recreation, such as hiking, horseback riding, and rock art viewing, and livestock grazing. This river segment is within Mexican Mountain WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/ Final EIS.

The BLM portion of Cottonwood Wash is within the Mexican Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded the lower portions of the river corridor by the WSA status. Failure to include Cottonwood Wash in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and scenic) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild. No such development is currently proposed or foreseeable within the federal portions of this segment considering, the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. None are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that potential water use of this or any eligible stream could be affected; however, there are no current or

foreseen water uses of Cottonwood Wash that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence; however, to date, the remoteness and difficult access have limited visitation. Resources are fragile and would suffer degradation if visitation were to increase with designation. Wild and Scenic River designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the San Rafael Swell SRMA. Protection is also currently afforded river values by Mexican Mountain WSA. The river corridor within the WSA is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands could be identified for possible acquisition through exchange, which would require no funding.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Fish Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This segment is a high-quality coldwater fishery. Designated a Blue Ribbon Fishery, this segment has substantial regulatory protection under UDWR proclamation rules and agreements. Releases from Scofield Reservoir are arranged to sustain the fishery, and instream flow rights are under consideration.

2. Land ownership and current use

Ownership within the river corridor is 15-percent federal (BLM lands), 58-percent private, and 27-percent State lands or other lands.

Current uses of the river and area include a railroad corridor, dispersed recreation, livestock grazing, coldwater fishery, private timber harvesting, and wildlife habitat. It also provides a corridor for railroad transportation, water diversion, and development.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Outfitting and fishing could be enhanced as a result congressional designation of this river. Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs (coldwater fishery); however, inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (coldwater fishery), water quality, or free-flowing condition. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. No dams are currently proposed but additional diversions and other water development could be proposed in the future given the importance of this water source to downstream users.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that potential water use of this or any eligible stream could be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

With the large amounts of private land included in this segment, there is a potential for conflicts between protection and the future need for water development. Local citizens have also raised concerns that congressional designation of Fish Creek could eliminate current uses, such as livestock grazing and timber harvesting, which is unlikely unless these uses are degrading water quality.

Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Because only 15 percent of the river area is federally owned, management of this river as Wild and Scenic by BLM would not be practical.

This river is a Blue Ribbon Fishery. Because this river is indispensable to the water supply of Carbon County, current county zoning and regulations are adequate to ensure non-degradation of the watershed and associated values.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area.

State lands (involving 27 percent of the river area) could be identified for possible acquisition through exchange, which would require no funding; however, if BLM were to pursue acquisition of private lands (involving 58 percent of the river area), costs would be excessive.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Gordon Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable historic and cultural values. Gordon Creek (original known as Garden Creek) is the location of the first historic era settlement in Carbon County. One ranch site is associated with one of the three original settlers. Values include sites associated with community development and decline, farming or ranching, communication, transportation, irrigation, and the Civilian Conservation Corps. They retain original character and are eligible for nomination to the National Register of Historic Places as a district for both its historic and prehistoric values.

This area also has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. Because of the short period of historic occupation, the sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory and comparing prehistoric and historic agricultural settlement patterns of the same area.

2. Land ownership and current use

Ownership within the river corridor is 44-percent federal (BLM lands), 39-percent State lands, and 17-percent private.

The river corridor is within a developed coalbed natural gas field. Other uses include recreation, particularly horseback riding, hiking, and OHV travel; livestock grazing; and wildlife habitat. Gordon Creek is also developed for irrigation water, and enters a residential area at its lower reach.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

The Price River Water Conservancy District has proposed that a water storage reservoir be constructed within this segment. Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and historic) or free-flowing condition. (Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment.)

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional determination of this stream. Local and state agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Manageability of Gordon Creek if designated would be limited by the low percentage of public lands (44 percent) within the stream corridor.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (39 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding; however, 17 percent of the segment is private, and funding would be necessary for purchase if the management plan identified it as a need and the private landowner were willing to sell.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Green River

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

The Green River possesses outstandingly remarkable scenic, recreational, wildlife, historic, cultural, fish, geologic, and ecologic values, many of which are nationally significant. These values for the upper and lower segments of Green River are described in detail in below.

Upper Green River

Cultural

The upper segments of Green River show evidence of significant occupation and use by prehistoric peoples. It includes rock art and other features that remain significant to some Native American populations today. It also includes some of the area of study used by Noel Morss in defining the Fremont culture. The prehistoric use represents more than one cultural period (Archaic, Fremont, and Numic). The sites have been largely isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places. Flat Canyon Archaeological District, within Desolation Canyon, is listed on the Register.

Historic

Much of this river corridor is a National Historic Landmark because of its recognition as the least changed of the river corridors associated with John Wesley Powell and the exploration of the Green and Colorado Rivers. Other historic values are associated with settlement, farming or ranching, mining, Prohibition, recreational river running, waterworks and reclamation. Sites have been largely isolated, and therefore, retain their original character.

Recreational

A trip though Desolation and Gray Canyons of the Green River, consecutive canyons within the Tavaputs Plateau, is a premier, wilderness recreation experience. The 84-mile trip from Sand Wash to Swaseys Beach is world renowned. Located in Utah's deepest canyon and largest WSA, Desolation and Gray Canyons offer outstanding white water boating with roughly 60 rapids and riffles. There is also ample opportunity for land-based activity, such as hiking in the more than 60 side canyons. BLM receives more

than 3,000 applications per year for the 450 available trip permits issued to self-outfitted users. Eighteen commercial outfitters market trips through these canyons both nationally and internationally.

Scenic

At more than 1 mile deep, Desolation Canyon is Utah's deepest canyon, cutting through the youngest exposed strata on the Colorado Plateau. Desolation and Gray Canyons consist of complexes of many canyons draining to the Green River. Outstanding scenic values are dictated primarily by the domination of geologic features. In addition to canyon walls rising thousands of feet, there are also many interesting rock formations such as arches and hoodoos. Although the landscape is mostly dry and austere, pleasing contrasts are found in the green ribbon of life along the river and the hanging gardens and pockets of huge fir trees are scattered within the cliffs. Desolation Canyon is inventoried by BLM as being Class "A" scenic quality under the BLM's VRM system.

Geologic

The Upper Green River is an outstanding example of an antecedent river cutting through structural geology that should have been impassable to it. As the land surface rises towards the south, the Green River continues to flow to the south, and hence decrease in elevation despite the trend of the surrounding landscape, which results in the deepest canyon in Utah—Desolation Canyon. The corridor of the Green River in this stretch also provides the region's best examples of reattachment bars and separation bars formed by the processes of fluvial geomorphology in bedrock canyons.

Fish

This portion of the Green River provides habitat for four federally listed fish species—Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker. Of notable significance, this river contains designated critical habitat for the Colorado pikeminnow. Spawning areas for this species have been confirmed within this river, which is also considered important for pikeminnow young.

Known populations of humpback chub and razorback sucker have been confirmed within this river, while bonytail chub is suspected to occur. This river is considered regionally important for the recovery of these four federally listed species.

Wildlife

This portion of the Green River is considered to have remarkable value for both avian and terrestrial wildlife populations. With regard to avian species, this river corridor is regionally significant, both for its diversity of avian species and for supporting habitats for federally listed and BLM Sensitive avian species.

Confirmed federally listed species present include bald eagle, Mexican spotted owl and southwestern willow flycatcher. BLM sensitive species known to occur include peregrine falcon, yellow-breasted chat, and yellow-billed cuckoo. The river corridor is presently used by bald eagles during the winter but is also considered potential nesting habitat. Mexican spotted owls have been verified nesting within this river corridor. The corridor, designated critical habitat for Mexican spotted owls, is believed to be significant for their expansion.

The Green River segment is also important for bighorn sheep, mule deer, and elk. The entire corridor is regionally significant as lambing habitat for the Rocky Mountain bighorn sheep and considered important winter range for mule deer and elk.

Ecological

The Green River hosts a variety of avian, terrestrial, and aquatic species populations. The river and its properly functioning riparian area provide a corridor of habitat through an otherwise arid region for many Sensitive and federally listed species of birds and fish, and populations of bighorn sheep, deer, elk, black bear, mountain lion, and beaver. The corridor supports rare plant species, including a recently discovered species of columbine. The stability of this ecosystem, largely unchanged since the passage of John Wesley Powell, contributed to the designation of Desolation Canyon National Historic Landmark.

Lower Green River

Cultural

This area has evidence of significant occupation and use by prehistoric peoples and includes some of the area of study used by Noel Morss in defining the Fremont culture. Its rock art and other features remain significant to some Native American populations today. The prehistoric use represent more than one cultural period (Archaic, Fremont, and Numic). The sites have been largely isolated and retain integrity and are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Historic values include sites associated with early river exploration, recreational and commercial river running, farming and ranching, mining, waterworks, and reclamation. Sites have been largely isolated and therefore retain their original character.

Recreational

Labyrinth Canyon of the Green River is roughly 68 miles in length. The character of this canyon is completely different from Desolation Canyon. This stretch of river has no rapids, making it an ideal for canoe paddling. It provides a 4- to 7-day backcountry paddling experience. There are also plenty of opportunities for dispersed camping and hiking to cultural sites, unique geologic features, and other attractions. Roughly 7,000 people per year take this popular trip. The section is also suitable for powerboat use at some water levels and provides for much of the annual Friendship Cruise route, a powerboat event that has been held for decades. This section of the Green River has been widely reported on in the popular press in newspapers from coast to coast and in specialty publications such as *Paddler Magazine*.

Scenic

Scenic values are largely a product of the geology. The Green River meanders through a deeply incised canyon. Explorer John Wesley Powell named the canyon for its many intricate twists and turns. At Bowknot Bend, one travels a distance of 7 river miles to end within a quarter mile of the starting point. Varnished cliffs are cut in places by the narrow mouths of shaded side canyons where mature cottonwood trees are harbored. In the lower parts of the canyon, vertical cliffs of Windgate sandstone rise 1,000 feet above the river. Dramatic topography, dizzying cliffs bisected by the Green River and its associated ribbon on life in an otherwise barren landscape make this corridor Class “A” scenery under BLM’s VRM system.

Fish

This portion of the Green River provides habitat for four endangered fish, including spawning habitat for the Colorado pikeminnow. The river contains critical habitat as designated by USFWS for these species.

Paleontology

Dinosaur bones visible in Morrison Formation outcrop have been reported by reliable sources (Dr. Paul Bybee, Professor of Geology at Utah Valley State College in Orem, Utah). They are reported visible from the river.

2. Land ownership and current use

Ownership within the eligible river corridor is 66-percent federal (BLM lands), 18-percent Indian reservation, 1-percent State lands, and 15-percent private. Although the west bank is mostly BLM owned, the east bank of the river corridor in Desolation and Gray Canyons is Uintah and Ouray Indian Reservation for about 66 miles. A large majority of the private land is concentrated near the town of Green River.

The upper river segment through Desolation and Gray Canyons is managed according to the Desolation and Gray Canyons River Management Plan (1979), which provides for the allocation of private and commercial boating trips. The segment through Labyrinth Canyon is also managed for recreational boating through an MOU between the BLM and the State of Utah.

Desolation and Gray Canyons receive high levels of primitive recreation use from early spring to late fall. Six private and commercial river launches of up to 25 people per launch are permitted every day of the high-use season (May 15 to August 15). Total user day capacity for the area is 35,000 user days per season. Desolation Canyon SRMA has been established to give focus to recreation management along the river corridor and side canyons.

The river corridor and adjacent lands through Labyrinth Canyon, also a SRMA, attracts a large number of recreationists seeking a scenic river float. Roughly 3,000 to 4,000 visitors experience this flatwater float annually.

About 66 of the roughly 80 miles of eligible river through Desolation and Gray Canyons either form the eastern boundary of Desolation Canyon WSA or bisect it. Also, roughly 22 of the 50 miles of river between the mouth of the San Rafael River and where the river enters Canyonlands National Park (the stretch of river through Labyrinth Canyon) form the eastern boundary of Horseshoe Canyon WSA. The river corridor within the WSAs is managed according to the IMP.

Downstream of where the river exits Gray Canyon, below Swaseys Rapid, the river is considered a navigable waterway with State jurisdiction. Much of the lands between Swaseys Rapid and the confluence with the San Rafael River is private, used for agriculture, and has residential, commercial, and municipal development in and around the town of Green River. There is a large diversion dam at Tusher Wash, upstream of the town of Green River. A wide variety of activities occur within the river corridor.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded portions of the river corridor by its WSA status. Those portions of the Green River corridor within WSAs have been recommended by BLM to Congress for wilderness designation. Designation of this river for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of these areas.

Local municipalities, industries, and other water users have expressed concerns that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within

the designated river segments, but also upstream or downstream of these segments; however, for the reasons discussed below, congressional designation of the Green River for inclusion in the National Wild and Scenic Rivers System would be expected to have no effect on water use, allocation, or flow regimes.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occur within the designated segment and have direct or adverse effects on the ORVs or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild. This wild classification is in keeping with the scenic easement committed to in a MOU between the U.S. Department of the Interior and the Ute Tribe of the Uintah and Ouray Reservation for transfer of previous oil shale reserve lands on the east bank of the river to the Ute Tribe (described in more detail below). No development is currently proposed or foreseeable within the federal portions of this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife within the designated segment. None are currently proposed.

Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, stating that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.

Under normal operations, reservoir releases through Flaming Gorge power plant, the primary influence of river flows outside of spring run-off flows, range from 800 to 4,600 cubic feet per second (cfs). These flows adhere to the interim operating criteria for Flaming Gorge Dam established by the Bureau of Reclamation in September 1974. Under these criteria, the Bureau of Reclamation agreed to provide (1) a minimum flow of 400 cfs at all times, (2) flows of 800 cfs under normal circumstances and for the foreseeable future, and (3) flows exceeding 800 cfs when compatible with other Colorado River Storage Project reservoir operations. These minimum flows are maintained to enhance the use of the river for fishing, fish spawning, and boating (United States Department of the Interior 2003).

The Bureau of Reclamation completed the final EIS on the operation of Flaming Gorge Dam in February 2006. The purpose of the proposed action in the *Record of Decision, Operation of Flaming Gorge Dam, Final Environmental Impact Statement, February 26, 2006*, is to protect and assist in recovery of the populations and designated critical habitat of the four endangered fishes, while maintaining all authorized purposes of the Flaming Gorge Unit of the Colorado River Storage Project, including those related to the development of water resources in accordance with the Colorado River compact. Table 0-3 identifies components of the outstandingly remarkable fish value for the Green River. BLM supports these recommendations and recognizes that the proposed minimum flow release from Flaming Gorge Dam would be sufficient to maintain or enhance the values for which the river was determined eligible. Because this minimum flow release would be adequate to maintain the ORVs, BLM sees no need for and would not pursue a federal reserved water right in any recommendation that is forwarded to Congress.

On the other hand, failure of Congress to include these segments of the Green River in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue. Likewise the Desolation Canyon National Historic Landmark, the Desolation Canyon and Labyrinth Canyon SRMAs, and current ACECs along lower portions of the Green River provide for the protection and enjoyment of certain values within the river corridor. With the exception of the Desolation Canyon National Historic Landmark, the status of the WSAs, SRMAs, ACECs, and other management prescriptions are subject to change as a result of

congressional action or future revisions to land use plans. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted congressional designation of the Green River.

The BLM Vernal Field Office found their Lower Green River segment, which ends at the Carbon/Uintah County line as "suitable" as a "scenic" WSR segment in their 1994 Diamond Mountain RMP. This segment is immediately north of the PFO.

The Navajo Tribe supports designation of the Green River, recognizing the river as a Traditional Cultural Property.

Members of the Uintah and Ouray Indian Reservation Ute Tribal Council have expressed concerns pertaining to the effects of designation on potential use of tribal lands within the designated corridor; however, there is an agreement in place between the tribe and the Department of the Interior to administer the river corridor, including Reservation lands, consistent with "Wild" Wild and Scenic River classification. (The agreement is discussed in more detail under the below criterion.)

The State of Utah has also expressed concerns regarding the designation of the Green River; however, it is supportive of designating portions of the Green River only if the Department of the Interior does not seek to acquire a federal reserved water right to ensure a minimal instream flow for the river. The State recognizes that the proposed minimum flow releases from Flaming Gorge Dam would be sufficient to maintain or enhance the river values that make the river eligible for designation and that no change in water use or allocation would be necessary or prudent.

Emery County, instead of expressing outright support for the designation of the Green River, is resolved to accept designation under the same conditions as those specified by the State of Utah.

Carbon County, however, opposes "all facets" of Wild and Scenic river designation within the county. Carbon County's Master Plan states that it intends to "work with fully informed local elected officials to identify impacts [on] the local economy and lifestyles, then register written and verbal opposition to any Wild and Scenic River designations whatsoever in the County." Carbon County further identifies as a strategy addressing Wild and Scenic rivers to "express to all concerned that Carbon County is not interested in any kind of compromise on this issue; compromise is too often seen as support" (Carbon County 2005). Recent correspondence indicates that a concession might be made by Carbon County on certain segments of the Green River if the PFO were to not find suitable other portions of the river in an area Carbon County considers to have mineral development potential.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this river if it were designated, particularly with adequate funding. Congressional designation of the Green River for inclusion in the National Wild and Scenic Rivers System would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational and other management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

Designation of the Green River would not result in a substantial shift in management of the river corridor from current management, particularly those portions of the Green River within Desolation, Gray, and

Labyrinth Canyons. The Desolation and Gray Canyons River Management Plan is consistent with the objectives of congressional Wild and Scenic river designation. Other protective management prescriptions currently in place that would complement National Wild and Scenic Rivers System management, if designated, are those for OHV use, fluid minerals leasing, SRMAs, ACECs, WSAs, the National Historic Landmark, riparian habitat, and visual resources. The current management would provide a high degree of continuity and make the adjustment to Wild and Scenic management easy because current objectives are substantially similar to those of congressional designation.

The U.S. Department of the Interior and the Ute Tribe of the Uintah and Ouray Reservation (among other government entities) signed the Memorandum of Understanding Concerning the Transfer of Naval Oil Shale Reserves Numbered 2, dated February 11, 2000. As part of the MOU agreement, a "Green River Protective Corridor" was established, which conveyed a scenic easement to the U.S. Department of the Interior for the river area lying within one-quarter mile east of the Green River within the Hill Creek Extension of the Uintah and Ouray Reservation. This MOU included a commitment by the Ute Tribe to administer this corridor consistent with the Wild tentative classification, while preserving and protecting its values. This MOU is clearly, if not intentionally, consistent with potential congressional Wild and Scenic river designation.

Another MOU between the State of Utah and BLM provides for the cooperative management of recreational boating through Labyrinth Canyon. The MOU established a permit system to ensure the scenic river experience is maintained, while reducing some of the negative impacts, whether on recreational or other river values, associated with a popular river float. This cooperative management would be perpetuated and likely enhanced if the Green River were congressionally designated.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could be effectively managed with existing and other land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. With exception of the Desolation Canyon National Historic Landmark, the status of the WSAs, SRMAs, ACECs, and other management prescriptions are subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. Funding is not expected to be sought for the acquisition of private land (given willing sellers) because adequate management of the designated segments would not require acquisition of these lands.

7. The extent to which administration costs will be shared by local and State governments

Local governments have made clear it that they would not share management costs if the Green River were designated.

The State of Utah would probably limit its support to the cooperative management of Labyrinth Canyon in accordance with the MOU between the State and the BLM.

Keg Spring Canyon

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable scenic and cultural values. These values are described in detail below.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples, and includes probably the most scientifically important site in the area. The prehistoric use represents more that one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

This canyon is wonderfully scenic, tightly confined in slickrock walls that are punctuated with enticing alcoves and dramatic amphitheaters. The stream adds a water feature and green vegetation winds through a landscape of rock. These features, and the canyon's association with the Green River, make for Class "A" scenery quality under the BLM's VRM system.

2. Land ownership and current use

Ownership within the river corridor is 91-percent federal (BLM lands) and 9-percent State lands.

This stream is within Horseshoe Canyon WSA and managed according to the IMP, which provides for primitive recreation. The IMP does not allow for new developments or surface disturbing activity. The stream corridor offers a scenic, solitary backcountry experience.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (scenic and cultural) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild; however, no such development is currently proposed or foreseeable within this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. None are currently proposed.

This segment of Keg Spring Canyon is almost exclusively within the WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs, in addition to protection already afforded by the WSA status. Failure to include Keg Spring Canyon in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS, such as those for the ACEC and SRMA, would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of Keg Spring Canyon that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence; however, to date, the remoteness and difficult access have limited visitation. Resources are fragile and would suffer degradation if visitation were to increase with designation. Wild and Scenic River designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The free-flowing nature of this stream is not currently at risk, and all identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the establishment of the Lower Green River ACEC and Labyrinth Canyon SRMA. Protection is also currently afforded the river because it is almost entirely within the Horseshoe Canyon WSA, which is managed according to the IMP. The status of the WSA, SRMA, ACEC, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

No funding for acquisition would be needed because there is no private land within the river corridor. State lands could be identified for possible acquisition through exchange. The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs of designated streams.

Muddy Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable historic, cultural, recreational, and scenic values. These values are described in detail below.

Historic

Values consist of sites associated with uranium exploration and mining, which are important for interpreting associated historic events. They retain original character. Many sites are eligible for the National Register of Historic Places.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. It includes some of the area of study used by Noel Morss in defining the Fremont culture. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Recreational

Muddy Creek offers mostly a primitive and semi-primitive recreation opportunity. When water flows are adequate, Muddy Creek provides a challenging white water experience. During low flows, it provides hikers an opportunity to traverse through the heart of the San Rafael Swell. The Chute, a deep, narrow slot through which the Muddy Creek flows, is one of the most popular floating and hiking routes in the San Rafael Swell. This area is well known and draws visitors from throughout the nation.

Scenic

This segment traverses a variety of geologic strata providing a variety in landform and color. Dramatic cliffs raising hundreds of feet dominate the view. These are decorated with picturesque rock formations, such as pinnacles, arches, and hoodoos. The Chute of Muddy Creek provides exceptional slot canyon scenes, with the creek meandering from wall to wall.

2. Land ownership and current use

Ownership within the river corridor is 92-percent federal (BLM lands), 7-percent State lands, and 1-percent private lands.

Uses include livestock grazing and trailing, recreation, and wildlife habitat. Much of Muddy Creek flows through Muddy Creek and Crack Canyon WSAs and is managed according to the IMP, which provides for primitive recreation. The Muddy Creek corridor is also within areas managed as an ACEC (Muddy Creek) and a SRMA (San Rafael Swell).

A number of activities that occur outside (upstream) of the eligible segments of Muddy Creek bear on the water volume and water quality of these segments. As is typical of water uses in the more rural areas of Utah, agriculture is the largest water user, followed by municipal and industrial uses, with the latter having potential to increase over time with expanding development.

3. Uses, including reasonably foreseeable uses that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts analysis of the Price Proposed RMP/Final EIS.

If eligible segments of Muddy Creek were found not to be suitable and subsequently not designated by Congress, the values for which the segments were found to be eligible would not necessarily diminish. River segments are largely within Muddy Creek and Crack Canyon WSAs. These lands have been recommended by BLM to Congress for wilderness designation and are currently managed according to the IMP. The IMP's non-impairment standard inevitably affords river values protection. Several other land use prescriptions considered in the Price Proposed RMP/Final EIS, such as Muddy Creek and Lower Muddy Creek ACECs, would also preserve and enhance such values if implemented; however, none of these prescriptions are permanent and are subject to change.

If segments of Muddy Creek were congressionally designated, the ORVs, free-flowing nature of the stream, and water quality would be provided permanent protection. Designation would be compatible with and enhance wilderness use and management of the WSAs. A river management plan would be prepared upon designation. As part of that effort, certain activities can be monitored to ensure that these activities are consistent with the goals of the designation. Despite congressional designation, existing upstream uses would continue to degrade water quality in some cases.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural, historical recreational, and scenic) or free-flowing condition. None are currently proposed. On federal lands within designated river areas classified as wild, other projects, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location; however, no such development is currently proposed or foreseeable within this segment considering much of the area's WSA status. New water-related projects proposed upstream of the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, historical, or cultural values within the designated segment. Such development outside the segment is likely to be proposed because of multiple upstream water uses.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted designation.

State and local governments are unsupportive of congressional designation of this stream. Along with various water users and municipalities, they oppose designation primarily because of perceptions that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments; however, water-related development is unlikely to be proposed within the segment because of the high percentage of federal ownership and the area's WSA status. Any upstream or downstream development would only be affected if it were federal authorized or funded, and even then, only if the project would invade or unreasonably diminish fish, wildlife, recreational, and scenic values identified within the river segment at the time of designation.

Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, stating that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.

5. Manageability of the river if designated, and other means of protecting values

Management of Muddy Creek if designated would be aided by the fact that the large majority (92 percent) of the eligible river corridor is public lands managed by the BLM. The majority of these public lands are currently managed as WSAs, an ACEC, and/or is within a SRMA. The Price Proposed RMP/Final EIS evaluates management prescriptions that would perpetuate these special emphases. If no segments of Muddy Creek were designated, management objectives and prescriptions related to the WSAs, ACEC, and SRMA would provide a level of protection that may be sufficient to protect the river-related values that make the river eligible.

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence; however, to date, the remoteness and difficult access have limited visitation. Resources are fragile and would suffer degradation if visitation were to increase with designation. Congressional Wild and Scenic river designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The identified ORVs could, for the most part, be effectively managed under land use prescriptions being in the Price Proposed RMP/Final EIS should congressional designation not occur and if other protective management prescriptions were implemented. These prescriptions would be associated with visual and cultural resource management and the San Rafael SRMA. Protection is also currently afforded a portion of the stream corridor by Muddy Creek and Crack Canyon WSAs. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change. In the future, the free-flowing nature and water quality of this stream may be at risk from upstream water development.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. Funding is not needed to acquire State lands because exchange could be used. Funding is also not needed for the acquisition of private land (given willing sellers) because only 1 percent of the river area is private, and its acquisition would not be necessary for management of the segment.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have it made clear that they would not share management costs if Muddy Creek were designated.

Nine Mile Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable historic, cultural, and scenic values. This river area, informally referred to as "The World's Longest Art Gallery" is at least nationally significant for its concentration of prehistoric rock art and evidence of Native American habitation. These values are described in detail below.

Historic

Values include sites associated with community development and decline, fur trade and exploration, farming or ranching, military history, communication, transportation, irrigation, and Civilian Conservation Corps. These sites retain original character, and their values are important for interpreting associated historic events. The area is currently being nominated to the National Register of Historic Places for both its historic and prehistoric values.

Cultural

Nine Mile Canyon has the greatest concentration of prehistoric rock art in the world. It also has some of the most visible and best preserved remains of the Fremont culture. It is part of the study area Noel Morss used in defining the Fremont culture. Rock art and other features remain significant to some Native American populations today. The prehistoric use represents more than one cultural period (Archaic, Fremont, and Numic). The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Nine Mile Canyon is eligible for the National Register and is currently being nominated for National Historic Landmark designation.

Scenic

Nine Mile Canyon was dedicated as a backcountry byway in 1990. The main visual features are the dramatic topography of high canyon walls, dissected by steep-sided canyons and punctuated with isolated buttes, mesas, and outcrops. A lush riparian zone of willow and cottonwood marks the canyon bottom. A series of farms and ranches add a rural appearance to an otherwise very wild looking landscape. Prehistoric rock art adorn the canyon walls adding intrinsic interest to foreground views. Water features include the flowing stream and beaver ponds. This canyon is inventoried as Class "A" scenery under BLM's VRM system for its dramatic topography, interesting vegetation, and water features. The numerous cultural sites invite the eye to wander and study the details and small-scale scenery in this immense canyon.

2. Land ownership and current use

Ownership within the eligible river corridor is 44-percent federal (BLM lands), 48-percent private, and 7-percent State lands.

Current uses include farming or ranching; recreation, especially rock art viewing and touring; tourist services and outfitting; oil and gas development; transportation; and utility and a gas pipeline corridor.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/ Final EIS.

This area is promoted for its prehistoric rock art and other cultural and historical values by local and regional tourism boards. Designation would further promote national and public recognition of the cultural, historic, and scenic values, and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on certain values or free-flowing condition. Water-related projects proposed outside the segments would be precluded only if they would invade or unreasonably diminish the historical, cultural, or scenic values

within the designated segment. If the stream were designated, current industrial uses within the stream's corridor, such as oil and gas development, transportation, and pipeline corridors could be limited or precluded depending on the degree that they affect these sensitive values.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to prescriptions included in the Price Proposed RMP/Final EIS regarding the establishment of an ACEC and a SRMA. Failure to include Nine Mile Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the ACEC and SRMA would also preserve and enhance such values if implemented. Such prescriptions would be temporary, and could be changed through plan amendment or plan revision. There is currently a proposal before Congress to designate much of Nine Mile Canyon a National Historic Landmark.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted congressional designation of this stream.

State and local governments are unsupportive of congressional designation of this stream. Along with various water users and municipalities, they oppose designation because of perceptions that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments.

5. Manageability of the river if designated, and other means of protecting values

Manageability of Nine Mile Creek if designated would be limited by the low percentage of public lands within the stream corridor. BLM only manages 44 percent of the corridor. Because of the large amount of industrial activities within the corridor, both current and reasonably foreseeable, and agricultural activities associated with the private lands, management for the protection of the cultural, historical, and scenic values would prove challenging.

On the other hand, given the proposed establishment of the Nine Mile Canyon ACEC, SRMA, other prescriptions proposed in the Price Proposed RMP/Final EIS, the potential National Historic Landmark, and other laws protecting cultural resources, the stream's ORVs would be afforded a large degree of protection. With the exception of the potential National Historic Landmark, the status of the ACEC, SRMA, and other management prescriptions are subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and could include additional studies, monitoring, and increased BLM presence in the area. State lands (7 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding; however, 48 percent of the segment is private, and funding would be necessary for purchase if the management plan identified it as a need and the private landowner were willing to sell.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if Nine Mile Creek were designated.

North Fork Coal Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river segment possesses outstandingly remarkable historic, cultural, and scenic values. These values are described in detail below.

Historic

Values consist of sites associated with ranching and mining, which are important for interpreting associated historic events. They retain original character.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Scenic

A sandstone landscape of domes, pinnacles, alcoves, and extended cliff lines drop into the incised canyon bottom. Groves of pinyon and juniper opening to grassy parks are terraced over the cottonwood-lined canyon bottom. The enormous reach of Slipper Arch provides a premier scenic feature.

2. Land ownership and current use

Ownership within the river corridor is 85-percent federal (BLM lands) and 15-percent State lands.

An OHV route follows the wash bottom, and it is a popular route for vehicle-based recreation. Other uses include more primitive types of recreation, such as hiking and horseback riding, livestock grazing, and wildlife habitat. Much of this segment is within Sids Mountain WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/ Final EIS.

North Fork Coal Wash is within the Sids Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The corridor of the stream, including the portion within the WSA, serves as an OHV route. This circumstance would put at odds the protection of the stream's values and the opportunity for OHV travel within the corridor. If the stream were congressionally designated for inclusion in the National Wild and Scenic Rivers System, and OHV travel was determined to degrade the quality of the water or affect the cultural and historical values, it would not be allowed.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded the lower portions of the river corridor by the WSA status. Failure to include North Fork Coal Wash in the National Wild and

Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they would occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and scenic) or free-flowing condition. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. No such projects inside or outside of the river area are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because they are concerned that potential water use of this or any eligible stream could be affected; however, there are no current or foreseen water uses of North Fork Coal Wash that would be affected. Individual citizens and groups have also expressed much concern that the designation of this stream would affect the use of the OHV route within the corridor, if not preclude its use altogether.

Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Management of North Fork Coal Wash, if designated, would pose a substantial challenge to the presence of the popular OHV route that follows the stream's corridor. Continued vehicle use of this route would likely be in conflict with protection of the outstandingly remarkable historical and cultural values. The route might also hinder the Wild and Scenic Rivers Act's objective of maintaining or enhancing a designated stream's water quality.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the San Rafael Swell SRMA. Protection is also currently afforded river values by Sids Mountain WSA. The river corridor within the WSA is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration cost thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (15 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if North Fork Coal Wash were designated.

North Salt Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable scenic, wildlife, and cultural values. These values are described in detail below.

Scenic

The cottonwood-lined canyon has a scenic combination of sandstone cliffs, alcoves, and a rincon augmented by live water, rock art, and stable vegetated sand dunes.

Wildlife

This canyon provides habitat for a number of wildlife species, including Desert bighorn sheep, mule deer, prairie falcons, and red-tailed hawks. The riparian vegetation in the bottom of this canyon, along with the intermittent water, provide important habitat for these species.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features are significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

2. Land ownership and current use

Ownership within the river corridor is 97-percent federal (BLM lands), with 3-percent State lands located at the mouth of the river.

Uses include recreation, particularly horseback riding and hiking; livestock grazing; and wildlife habitat. This segment is largely within Sids Mountain WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

If eligible segments of North Salt Wash were found not to be suitable and subsequently not designated by Congress, the ORVs (cultural, scenic, and wildlife) for which the segments were found eligible would not necessarily diminish. River segments are largely within Sids Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation and are currently managed according to the IMP, which provides river values a certain level of protection. Several other land use prescriptions considered in the Price Proposed RMP/ Final EIS, such as the San Rafael Swell SRMA, would also preserve and enhance rivers values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

If segments of North Salt Wash were designated, river values would be provided permanent protection. Designation would also be compatible with and enhance wilderness use and management of the WSAs, and would be consistent with other management objectives of the Price Proposed RMP/ Final EIS. A river

management plan would be prepared upon designation that would evaluate the effects of current activities to ensure that they would be consistent with the goals of the designation.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted congressional designation of this stream.

State and local governments are unsupportive of congressional designation of this stream. Along with various water users and municipalities, they oppose designation primarily because of perceptions that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing this stream if it were designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence. Resources are fragile and would suffer degradation if visitation were to increase with designation. Wild and Scenic River designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to deal with recreational management of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

The free-flowing nature of this stream is not currently at risk, and all identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the San Rafael Swell SRMA. Protection is also currently afforded the river because it is largely within Sids Mountain WSA, which is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration cost thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (3 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if North Salt Wash were designated.

Price River

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

The Price River possesses outstandingly remarkable historic, cultural, fish, wildlife, and geologic values. These values are described in detail below.

Historic

Historic values are associated with settlement, farming or ranching, and transportation (early railroads), which are important for interpreting associated historic events. Most sites have been somewhat isolated and therefore retain their original character. Many sites are eligible for the National Register of Historic Places.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Fish

From the confluence of Lower Fish Creek and White River downstream through Helper, this river provides a potentially high-quality coldwater fishery. Currently, a plan is underway (in conjunction with a Total Maximum Daily Load) to improve the fishery and correct temperature discrepancies that exist in part of the reach. The river is stocked with trout annually as far downstream as the Helper gauging station. In the last decade, habitat improvement projects, such as the construction of stone pool-forming structures have been completed along the Helper parkway by UDWR with the support of Trout Unlimited. UDWR has also spent effort and money on improvements to direct access to the river along Highway 6, which provides access along most of this reach, to enhance opportunities to fish. The White River watershed is currently undergoing restoration by UDWR partly for the purpose of improving the fishery below its confluence with the Price River.

The lower Price River segment is considered to be important for several federally listed fish species. The mouth of this river segment is important habitat for young pikeminnow. Bonytail Chub and Razorback Sucker may also use this river segment.

Wildlife

The lower Price River is important to numerous avian wildlife species, notably the Mexican spotted owl, peregrine falcon, and southwestern willow flycatcher. The river segment provides excellent nesting roosting habitat for the Mexican spotted owl and the peregrine falcon, although these species have not been confirmed present to date. The river segment is also important lambing habitat for the Rocky Mountain bighorn sheep.

Geologic

Exposed in the walls of the lower canyon of the Price River are excellent examples of delta sediments deposited during the Cretaceous period. The repeated retreat and advance of the inland seaway is vividly recorded in the exposures of the Mesa Verde Group. Major oil companies bring geologists on field trips to this escarpment to study these exposures.

2. Land ownership and current use

Ownership within the river corridor is 68 percent federal (BLM lands), 8-percent State lands, and 24-percent private lands.

The private lands are predominantly around Helper, Price, Wellington, and Woodside. There is extensive residential, agricultural, industrial, transportation, and municipal development in these areas. In less developed areas, uses include livestock grazing, wildlife habitat, and recreation, particularly fishing, hiking, hunting, horseback riding, and seasonal kayaking. This river is an essential source of culinary and irrigation water for Carbon County. There are a number of diversions throughout this river area. The lower segment of the Price River is within Desolation Canyon WSA and managed according to the IMP. The IMP does not allow for permanent structures or surface disturbing activities.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts analysis of the Price Proposed RMP/ Final EIS.

Local municipalities, industries, and other water users have expressed concerns that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments. Inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural, historical, geologic, fish, and wildlife) or free-flowing condition. Such water-related development is likely to be proposed in the future because of the location of the river along a major roadway and going through several towns.

Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures may be allowed along the segments classified by Congress as Recreational or Scenic as long as they are consistent with the level of development permitted within each of these classifications. Such projects would not be permitted along the lower reach of the Price River if it were designated Wild by Congress. New water-related projects proposed upstream of the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. Such development outside the segment is likely to be proposed because of multiple water uses.

Although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, stating that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.

If the lower segment of Price River were found not to be suitable and subsequently not designated by Congress, the values for which the segments was found to be eligible would not necessarily diminish. River segments are largely within Desolation Canyon WSA. These lands have been recommended by BLM to Congress for wilderness designation and are currently managed according to the IMP. The IMP's non-impairment standard inevitably affords river values protection. Several other land use prescriptions considered in the Price Proposed RMP/Final EIS, such as the Desolation Canyon SRMA, would also preserve and enhance such values if implemented; however, none of these prescriptions are permanent and are subject to change.

If segments of Price River were congressionally designated, the ORVs, free-flowing nature of the stream, and water quality would be provided permanent protection. Designation would be compatible with and enhance wilderness use and management of the WSAs. A river management plan would be prepared upon designation. As part of that effort, current activities can be monitored to ensure that these activities are consistent with the goals of the designation.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted congressional designation of this stream.

State and local governments are unsupportive of congressional designation of this stream. Along with various water users and municipalities, they oppose designation primarily because of perceptions that existing water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments. Water development is likely to be proposed in the future, considering the stream's proximity to a highway and several communities. There are large amounts of State (8 percent) and private (24 percent) lands within the river corridor, and therefore potential for conflicts between protection and the future need for water development.

5. Manageability of the river if designated, and other means of protecting values

The upper segment of the Price River would be especially difficult to manage because of the low percentage of public lands within the corridor and because of the extensive use of the corridor for transportation, power generation, and commercial and residential areas. The middle portion would also be difficult to manage because of the location of private ranches within the river corridor. Although a 200-meter corridor is considered for the Price River in the Price Proposed RMP/Final EIS to protect riparian values from development, the upper and middle reaches of the stream would be open to mineral leasing without special stipulations, would allow for visual intrusions consistent with VRM Class III, and would be without any special management afforded by an ACEC or SRMA designation. Most of the ORVs would be at some risk of compromise.

BLM would be capable of managing the lower stream segment if congressionally designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence on the Price River. Congressional Wild and Scenic river designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to mange recreational and other uses of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

Protection is also currently afforded ORVs in the lower river corridor by Desolation Canyon WSA. The corridor within the WSA is managed according to the IMP, which allows for no new permanent developments or surface disturbing activities. Other land use prescriptions considered in the Price Proposed RMP/Final EIS, such as the Desolation Canyon SRMA, would also preserve and enhance this segment's ORVs if implemented. The status of the WSA, SRMA, and other management prescriptions are subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and could include additional studies, monitoring, and additional BLM presence in the area.

State lands (involving 8 percent of the river area) could be identified for possible acquisition through exchange, so funds would not be needed for their purchase; however, if BLM were to pursue acquisition of private lands (involving 24 percent of the river area)—owners willing—costs would be excessive.

There would be no need for any funding for acquisition if only the lower segment were congressionally designated.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if Price River were designated.

Range Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

Range Creek possesses outstandingly remarkable cultural, historic, scenic, and wildlife values. These values are described in detail below.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). It includes rock art and other features that remain significant to some Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Historic values are associated with settlement, farming or ranching, which are important for interpreting associated historic events. Sites have been largely isolated and therefore retain their original character. Many sites are eligible for the National Register of Historic Places.

Scenic

Unlike most of the side canyons entering the Green and Colorado Rivers, Range Creek carved a "U" shaped rather than a "V" shaped valley. In this canyon, lush, river bottom land suddenly gives way to dramatic cliffs and mountains that rise 4,000 feet to the top of the Tavaputs Plateau. The canyon passes though several life zones, from high alpine forest and meadows down to a salt shrub desert. The pattern of vegetation habitat types and the way they vary with elevation and slope aspect create a varied and interesting scene. Dramatic topography and unusual rock formations split by a mountain stream creates a stimulating visual experience. This canyon is inventoried as Class "A" scenery under BLM's VRM system for its dramatic topography, varied relief, geologic structures, vegetation, and water features.

Wildlife

The Range Creek segment is unique and regionally significant for the diversity of avian and terrestrial wildlife. The upper drainage provides summer range for mule deer and elk while the lower drainage provides winter range for these species. The lower drainage is important lambing habitat for Rocky Mountain bighorn sheep. The Range Creek drainage is designated critical habitat for the Mexican spotted owl although no occupied territories have yet to be confirmed.

2. Land ownership and current use

Ownership within the river corridor is 55-percent federal (BLM lands), roughly 17-percent State lands, and about 28-percent private lands.

Because much of the river area is privately owned and behind locked gates, public access along Range Creek is limited. Utah Division of Wildlife Resources manages much of the corridor along middle portions of the stream. A permit system is in place allowing certain non-motorized, recreational access to these State lands because of the sensitive resources of the area. Uses include ranching, livestock grazing, timber harvesting, wildlife habitat, and recreation, particularly hunting, hiking, and horseback riding. The lower end of Range Creek (lower 1.5 miles) is within Desolation Canyon WSA and managed according to the IMP, which does not allow for new development or surface disturbing activities.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

Two primary objectives for the management of the lands administered by Utah Division of Wildlife Resources are to protect the area's remarkably preserved cultural resources, and to enhance the streams coldwater fisheries habitat and populations. Designation would directly contribute to these objectives while providing for the protection of the other values within the stream corridor.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural, historical, geologic, fish, and wildlife) or free-flowing condition.

Other projects on federal lands within the designated river area, such as construction of roads, recreational facilities, or other structures may be allowed along the segment classified by Congress as recreational. Such projects would not be permitted along the upper and lower reaches of Range Creek if it were designated Wild by Congress.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to the current WSA status of the lower reach of Range Creek and prescriptions included in the Price Proposed RMP/Final EIS regarding the establishment of an ACEC or SRMA. Failure to include Range Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the ACEC, WSA, and management implemental by Utah Division of Wildlife Resources would also preserve and enhance such values. Prescriptions for the ACEC or SRMA would be temporary and could be changed through plan amendment or plan revision.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

State and local governments are unsupportive of congressional designation of this stream. These governments oppose designation primarily because of perceptions that existing water rights could be affected and that opportunities for future water development could be foreclosed.

5. Manageability of the river if designated, and other means of protecting values

If this stream were designated, management would be limited because of the low percentage of public lands within the river corridor.

Utah Division of Wildlife Resources is currently developing a management plan for administration of its lands along the middle portions of the stream corridor. Objectives of this management plan include the preservation of the stream's values. The Price Proposed RMP/Final EIS proposes establishing an ACEC or SRMA adjacent to these State lands to provide specific management prescriptions for the protection of the area's values, primarily the sensitive cultural resources. The Price Proposed RMP/Final EIS also proposes eliminating motorized access along lower portions of Range Creek to protect the stream's riparian zone. Cooperation management of Range Creek between the BLM and Utah Division of Wildlife Resources would be necessary if the stream were to become congressionally designated, which would be productive because current federal and State objectives for the area are consistent.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration cost thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. BLM would not make efforts to acquire State lands. Instead, BLM would seek to work cooperatively with the State of Utah for the management of Range Creek upon designation. If BLM were to pursue acquisition of private lands (involving 28 percent of the river area)—owners willing—costs would be excessive.

7. The extent to which administration costs will be shared by local and State governments

Local governments have made it clear that they would not share management costs if Range Creek were designated. Any cooperative management of Range Creek between BLM and Utah Division of Wildlife Resources would potentially required commitments from both entities for adequate funding.

Rock Creek

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable scenic, recreational, cultural, historic, and fish values. These values are described in detail below.

Scenic

Of the more than 60 tributary canyons to Desolation and Gray Canyon, Rock Creek provides the most dramatic and exceptionally high quality scenery. There is tremendous topographic relief as the canyon rises more than 5,000 feet from the mouth of the creek to the top of the plateau. The canyon bottom has a verdant riparian zone along a clear, coldwater creek. The creek itself has a pool and drop structure, cascading in places, providing intrinsically interesting sights accented by the sounds of flowing, splashing water. The canyon walls are resplendent. Lower elevation pinyon and juniper give way to Douglas fir at the mid- to higher elevations. These stands of dark green timber are punctuated with outcrops and ledges of red sandstone. All these features add up to Class "A" scenery under the BLM's VRM system.

Recreational

Rock Creek, a much anticipated respite for river travelers, is the most visited area in Desolation Canyon. Visitors are attracted to the cool, clear, refreshing waters meandering through the lush riparian zone in addition to the well-preserved historic structures. Rock Creek offers the most popular hike in Desolation Canyon. Hikers value the varied scenery and the abundant rock art along the canyon walls. A coldwater fishery rounds out the variety of recreational opportunity t along Rock Creek.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). It includes rock art and other features that remain significant to some Native American populations today. The sites have been largely isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Rock Creek provides an excellent example of historic homesteading. The historic architecture and manipulated landscape are well preserved. Many sites are eligible for the National Register of Historic Places.

Fish

Rock Creek contains increasingly rare and highly desirable coldwater fish habitat. It is capable of sustaining wild hatcheries of environmentally sensitive fish species. Water quality is high and is often used by recreational boaters as a source of culinary water. The introduction of native Colorado River cutthroat trout, a rare species (listed as Sensitive by the BLM and the State of Utah), has been approved by the State's Resource Development Coordinating Committee and is expected to be implemented in the reasonably foreseeable future. The stream provides ideal fish habitat because of its multiple pools, cascades, and lush riparian vegetation. Fish are abundant below cascade features but are currently absent above the cascades where the Colorado River cutthroat trout are planned to be introduced. The natural reproduction of fish is high in the portion of the stream where fish are present and is expected to be high where fish will be introduced. The size of trout ranges up to 20 inches or larger. The scenic and pristine nature of the stream and canyon also contribute to the high quality of the fishing experience. The upper reaches of Rock Creek receive low recreational use but could be important to anglers wanting a remote fishing experience.

2. Land ownership and current use

Ownership within the river corridor is 70-percent federal (BLM lands), 5-percent State lands, and 25-percent private lands.

Current uses include livestock grazing and recreation. Hiking and rock art viewing are especially popular along lower reaches of the stream. The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future. Most of the river area is within Desolation Canyon WSA and managed according to the IMP, which does not allow for new development or surface disturbing activities. The stream is also within the Desolation Canyon SRMA.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/ Final EIS.

Much of the public lands within this segment of Rock Creek are within the Desolation Canyon WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The introduction of native Colorado River cutthroat trout is expected to be implemented by UDWR in the reasonably foreseeable future. Designation of the stream would provide additional protection to the fish value.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded by the WSA status. Failure to include Rock Creek in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue, and many of the other land use prescriptions considered in the Price Proposed RMP/Final EIS would also preserve and enhance such values if implemented. Such prescriptions would be temporary and could be changed through plan amendment or plan revision.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (high-quality fish habitat) or free-flowing condition. None are currently proposed. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this segment as wild. No such development is currently proposed or foreseeable within the federal portions of this segment considering the area's WSA status. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish fish values within the designated segment. None are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because of concerns that current and potential water use of this or any eligible stream could be affected; however, there are no current or foreseen uses of Rock Creek that would be affected. Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Manageability of Rock Creek, if designated, would be complemented by the fact that the majority of the stream corridor is with the Desolation Canyon WSA and SRMA. The current status of the WSA and SRMA affords the stream's values a certain degree of protection.

The isolation of the stream because of limited public access and extreme topography inevitably provides another protective circumstance. Rock Creek is most accessible by the Green River, involving a multi-day boat trip. From the top of the West Tavaputs Plateau, Rock Creek is accessed through a pack trail down Van Duesen Ridge; however, this route is not available to the general public because access is through private lands.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs on public lands could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the Desolation Canyon WSA. The river corridor within the WSA is managed according to the IMP. Protection is also currently afforded river values by Desolation Canyon SRMA. The status of the WSA, SRMA, and other management prescriptions is subject to change because of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation and could include additional studies, monitoring, and additional BLM presence in the area. State lands (5 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding; however, 25 percent of the segment is private, and funding would be necessary for purchase if the management plan identified it as a need and the private landowner were willing to sell.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if Rock Creek were designated.

San Rafael River

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river possesses outstandingly remarkable cultural, historic, scenic, recreational, and wildlife values and flows through an area nationally recognized for its heritage, recreation, and scenery. These values are described in detail below.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

Historic

Values include sites associated with farming or ranching, transportation, and the Civilian Conservation Corps, which are important for interpreting associated historic events. They retain original character. The Swinging Bridge is listed on the National Register of Historic Places. Other sites are eligible for the National Register.

Scenic

The Little Grand Canyon is named for its grandeur. Here, the San Rafael has carved a dramatic canyon of rock with very little vegetation on the canyon walls. The green ribbon of the riparian zone provides respite from the barren canyon. In addition to the geologic scenic features, the canyon provides great wildlife viewing opportunities and numerous cultural sites.

Deep, narrow canyon walls dominate the scenery through the Black Boxes. The confined river meandering the few yards from wall to wall is visually unique and outstanding—a slot canyon on a grand scale.

These features add up to Class “A” scenic quality under the BLM’s VRM system.

Recreational

This river provides a great variety of recreational opportunities. The segment through the area known as the Little Grand Canyon of the San Rafael offers a greater variety of experiences than any other segment

in the PFO. At higher water levels, it is floated by a variety of watercraft, from canoes and kayaks to small rafts. This segment is also traversed by backpackers and equestrians. There are greatly dispersed campsites and attraction sites throughout this segment.

The segment downstream of Swinging Bridge is known as the Black Boxes, named for the Upper and Lower Black Box Canyons of the San Rafael. Here, the San Rafael traverses canyons that are hundreds of feet deep and tens of feet wide. At lower water levels, the Black Boxes provide a moderately difficult canyoneering experience. Canyoneers find themselves hiking, climbing and rock scrambling, and swimming on a typical trip. At high water, the canyons are the domains of the high-end expert kayakers. At high flows, these canyons provide one of Utah's most challenging kayak runs. This attraction is know nationally and written up in regional guidebooks and on canyoneering websites.

Wildlife

The San Rafael River provides habitat for a number of wildlife species, including Desert bighorn sheep, migratory birds, mule deer, chukar, and fish. Portions of this river are important to the Desert bighorn sheep and mule deer for water and forage while the riparian vegetation along the river provides important nesting and foraging habitat. Peregrine falcons are known to nest on the high cliffs bordering the river where they can find prey (migratory birds). The San Rafael River provides habitat for a number of fish, including the federally endangered Colorado pikeminnow and State-sensitive roundtail chub. A portion of this river flows through steep-walled canyons that are considered as potential habitat for the endangered Mexican spotted owl.

2. Land ownership and current use

Ownership within the eligible river corridor is 82-percent federal (BLM lands), 7-percent State lands, and 11-percent private lands.

Uses within the eligible river corridor include recreation as described above, livestock grazing, wildlife habitat, and some limited ranching. Much of the river is within Sids Mountain and Mexican Mountain WSAs and managed according to the IMP.

A number of activities that occur outside (upstream) of the eligible segments of the San Rafael River influence the water quality and volume of these segments. As is typical of water uses in the more rural areas of Utah, agriculture is the largest water user, followed by municipal and industrial uses, with the latter expected to increase with expanding development.

Calculations of the total water produced in the San Rafael River basin are presented in the *Utah State Water Plan* prepared by UDWR in August 2000. This "yield" is defined as outflow of the basin plus human-caused depletions minus the basin's inflow (if any), or essentially the water a basin would produce without the influence of human activities. The San Rafael River yields 233,000 acre feet of water annually (based on years 1961 to 1990). Of this water yield, roughly 25 percent is depleted through irrigation of crops, and another 14 percent is depleted by industrial use and use by the several communities in Emery County, including Huntington, Cleveland, Castle Dale, and Ferron. The great majority of municipal and industry caused depletion is to accommodate the coal-fired electrical power generated at the Huntington and Hunter power plants. Upon calculating these depletions and those caused by evapo-transpiration, and factoring in any export or import of water to or from other drainages, the output of the San Rafael River, which flows into the Green River, is about 40 percent of the river's yield, translating to about 93,000 acre-feet per year.

Like many areas in Utah, the San Rafael River has a problem in overall supply and use with regard to water rights. Considering the San Rafael River's perfected water rights (308,00 acre feet) versus its yield (233,000 acre feet), the river is heavily over appropriated (State of Utah 2000).

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated, and values that would be diminished if not designated

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded portions of the river corridor by its WSA status. Those portions of the San Rafael River corridor within WSAs have been recommended by BLM to Congress for wilderness designation. Designation of this river for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of these areas. A river management plan would be prepared upon designation that would evaluate the effects of certain activities to ensure that these activities would be consistent with the goals of the designation. In spite of congressional designation, existing upstream uses would continue degrading water quality in some cases.

Local municipalities, industries, and other water users have expressed concerns that existing and future water rights could be affected and that opportunities for future water development could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments. In fact, inclusion of a river in the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs or free-flowing condition. The prospective impoundment described below could be affected. Other projects on federal lands within the designated river area, such as construction of roads, pipelines, or other structures would not be allowed, and the lands would be closed to mineral location if Congress were to classify this river as wild; however, in the preferred alternative considered in the Draft RMP/EIS, the recommendation is that Congress classify the river as Scenic, which would allow for various activities and certain levels of development. No development is currently proposed or foreseeable within the federal portions that are within a WSA. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. How impoundment of water needed for addition power plant units would be affected is described below. Because of the importance of the water for upstream communities, other upstream water projects are also likely.

Regarding existing and future water rights, although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, expressing that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights; however, in the case of the San Rafael River, existing instream flows have already been adjudicated for wildlife purposes. These flows are sufficient to support all of the ORVs; therefore, in any recommendation to Congress, BLM would not recommend that a federal reserved water right be pursued.

PacifiCorp's Huntington and Hunter power plants rely heavily on water from two major tributaries of the San Rafael River—Huntington Creek and Cottonwood Creek, respectively. The ability to generate electricity is directly dependent on PacifiCorp's ability to divert, impound, and otherwise use these sources of water. Up to approximately 6,700 acre feet of water per year is needed to operate one power generating unit. (The Huntington power plant has two units and the Hunter plant has three.) (PacifiCorp 2004).

PacifiCorp is developing a proposal to add a fourth unit to the Hunter plant. If such a plan were implemented, an additional water supply would need to be developed or otherwise made available. The

impoundment of water at a new location is recognized as the most probable potential source (PacifiCorp 2004).

If the San Rafael River were to be designated by Congress, any federal authorized or funded water-related project proposed on a tributary of the river (or anywhere upstream or downstream of designated river segments) must be evaluated to ensure that it would not invade or unreasonably diminish the designated segment's fish, wildlife, recreational, or scenic values identified within the river segment at the time of designation. Designation of the San Rafael River would not preclude the development of upstream or downstream impoundments or other water-related projects as long as this criterion was met.

The UDWR has identified a prospective impoundment site in the upper segment (upstream of Fuller Bottom) of the San Rafael River to be developed for potential demands. Congressional designation of this segment of the San Rafael River would preclude the construction of this impoundment within the designated river corridor.

If eligible segments of the San Rafael River were found not to be suitable and subsequently not designated, the values for which the segments were found to be eligible would not necessarily diminish. River segments are largely within Sids Mountain and Mexican Mountain WSAs. These lands have been recommended by BLM to Congress for wilderness designation and are currently managed according to the IMP, which inevitably affords protection to the ORVs. Several other land use prescriptions being within the Price Proposed RMP/Final EIS, such as the San Rafael Canyon ACEC, would also preserve and enhance such values if implemented.

In addition, a committee was established in Emery County to address the mandates of the Environmental Protection Agency (EPA) to improve water quality in the San Rafael River and other streams. A key objective of this committee is to bring federal, State, private, and local financial assistance to the county's watersheds, which could occur with or without congressional designation of the river; however, congressional designation of the San Rafael River for inclusion in the National Wild and Scenic Rivers System would help meet this objective, providing an opportunity for the various entities to work collaboratively to address the mandates of the EPA while achieving the goals of the Wild and Scenic Rivers Act.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

Some private citizens and regional and national conservation groups have promoted congressional designation of this river.

State and local governments are unsupportive of congressional designation of this stream. Along with various water users and municipalities, they oppose designation primarily because of perceptions that existing and future water rights could be affected and that opportunities for future water development for communities could be foreclosed, not only within the designated river segments, but also upstream or downstream of these segments.

Any upstream or downstream development would only be affected if federally authorized or funded, and even then only if the project would invade or unreasonably diminish fish, wildlife, recreational, and scenic values identified within the river segment at the time of designation. Also, although the Wild and Scenic Rivers Act infers a federal reserved water right upon designation, rather than establishing an amount, it actually imposes a limit, stating that any such right is to be the minimum necessary for the purposes of the Act. Such a right would have to be adjudicated through the State and would be junior to any existing rights.

5. Manageability of the river if designated, and other means of protecting values

BLM would be capable of managing the San Rafael River if congressionally designated, particularly with adequate funding. BLM currently has little to no on-the-ground presence on the river. Congressional Wild and Scenic river designation would increase Utah BLM's ability to compete for agency dollars, and with increased funding and focused management, the agency's ability to manage recreational and other uses of the area would improve. Designation would promote national and public recognition of the values associated with this stream and further the goals and policy established by Congress in the Wild and Scenic Rivers Act.

Management of the San Rafael River if designated would be aided by the fact that the large majority (82 percent) of the eligible river corridor is public lands managed by BLM. The majority of these public lands is currently managed as WSAs, an ACEC, or is within an SRMA. The Price Proposed RMP/Final EIS evaluates management prescriptions that would perpetuate these special emphases. If no segments of the San Rafael River were designated, management objectives and prescriptions related to the WSAs, ACEC, and SRMA would provide a level of protection that might be sufficient to protect the river-related ORVs that make the river eligible; however, these prescriptions are subject to change through congressional action or plan revision, while protection afforded through congressional designation for inclusion in the National Wild and Scenic Rivers System would be permanent. Also, without designation, the free-flowing nature of the stream and water quality would be at some risk from upstream development. Other approaches could be followed, such as using the committee established in Emery County to address the mandates of the EPA to improve water quality in the San Rafael River and other streams.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration costs thereafter would involve plan implementation, and could include additional studies, monitoring, and BLM presence in the area. State lands (involving 7 percent of the river area) could be identified for possible acquisition through exchange, so funds would not be needed for their purchase. If BLM were to pursue acquisition of private lands—owners willing—(involving 11 percent of the river area), costs would be excessive. Funding is not expected to be sought for the acquisition of private land because adequate management of the segments, if designated, would not require acquisition of these lands.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have made it clear that they would not share management costs if the San Rafael River were designated.

South Fork Coal Wash

1. Characteristics that would or would not make it a worthy addition to the National Wild and Scenic Rivers System

This river segment possesses outstandingly remarkable scenic, historic, and cultural values. These values are described in detail below.

Scenic

The varying landscape is accentuated by near and distant pinnacles detached from sandstone fins; high, varnish-stained pour-offs; wind-scooped alcoves; and Ponderosa pines stark against pale cliffs. Middleground and background features provide a balanced, horizontal relief.

Historic

Values consist of sites associated with ranching and mining, which are important for interpreting associated historic events. They retain original character.

Cultural

This area has evidence of significant occupation and use by prehistoric peoples representing more than one cultural period (Archaic, Fremont, and Numic). Some features remain significant to Native American populations today. The sites have been somewhat isolated and retain integrity. They are important for interpreting regional prehistory. Many sites are eligible for the National Register of Historic Places.

2. Land ownership and current use

Ownership within the river corridor is 94-percent federal (BLM lands) and 6-percent State lands.

An OHV route follows the wash bottom, and it is a popular route for vehicle-based recreation. Other uses include more primitive types of recreation, such as hiking and horseback riding, livestock grazing, and wildlife habitat. Much of this segment is within Sids Mountain WSA and managed according to the IMP. The IMP does not allow for new developments or surface disturbing activity.

3. Uses, including reasonably foreseeable uses, that would be enhanced or curtailed if designated; and values that would be diminished if not designated

Uses and values that would be affected by congressional designation are also addressed in the cumulative impacts section of the Price Proposed RMP/Final EIS.

South Fork Coal Wash is within the Sids Mountain WSA. These lands have been recommended by BLM to Congress for wilderness designation. Designation of this stream for inclusion in the National Wild and Scenic Rivers System would be compatible with and enhance wilderness use and management of the area.

The corridor of the stream, including the portion within the WSA, serves as an OHV route. This circumstance would put at odds the protection of the stream's values and the opportunity for OHV travel within the corridor. If the stream were congressionally designated for inclusion in the National Wild and Scenic Rivers System, and OHV travel was determined to degrade the quality of the water or affect the cultural and historical values, it would not be allowed.

Congressional designation would provide permanent protection specifically of the free-flowing condition of the river, its water quality, and ORVs in addition to protection already afforded the lower portions of the river corridor by the WSA status. Failure to include South Fork Coal Wash in the National Wild and Scenic Rivers System would not necessarily diminish the values for which the river was determined eligible inasmuch as the area's WSA status would continue.

Inclusion of a river into the National Wild and Scenic Rivers System could preclude dams or other water-related projects if they occurred within the designated segment and had direct or adverse effects on the ORVs (cultural and scenic) or free-flowing condition. Water-related projects proposed outside the segment would be precluded only if they would invade or unreasonably diminish scenic, recreational, fish, or wildlife values within the designated segment. No such projects inside or outside of the river area are currently proposed.

4. Interest of federal, public, State, tribal, local, or other public entity in designation or non-designation, including administration sharing

State and local governments are unsupportive of congressional designation of this stream. Local and State agencies, water users, and municipalities oppose designation primarily because of concerns that potential water use of this or any eligible stream could be affected; however, there are no current or foreseen water uses of South Fork Coal Wash that would be affected. Individual citizens and groups have also expressed much concern that the designation of this stream would affect the use of the OHV route within the corridor, if not preclude its use altogether.

Some private citizens and regional and national conservation groups have promoted the suitability of this stream for congressional designation.

5. Manageability of the river if designated, and other means of protecting values

Management of South Fork Coal Wash, if designated, would pose a substantial challenge to the presence of the popular OHV route that follows the stream's corridor. Continued vehicle use of this route would likely be in conflict with protection of the outstandingly remarkable historical and cultural values. The route might also hinder the Wild and Scenic Rivers Act's objective of maintaining or enhancing a designated streams water quality.

The free-flowing nature of this stream is not currently at risk, and the identified ORVs could be effectively managed under land use prescriptions considered in the Price Proposed RMP/ Final EIS should designation not occur and if the management prescriptions were implemented. These prescriptions would be associated with the San Rafael Swell SRMA. Protection is also currently afforded river values by Sids Mountain WSA. The river corridor within the WSA is managed according to the IMP. The status of the WSA, SRMA, and other management prescriptions is subject to change as a result of congressional action or revised land use plans; therefore, the protection they afford the river values is subject to change.

6. The estimated costs of administering the river, including costs for acquiring lands

The initial costs of administration for the first 3 years would involve management plan preparation. Yearly administration cost thereafter would involve plan implementation and could include additional studies, monitoring, and BLM presence in the area. State lands (6 percent of the segment) could be identified for possible acquisition through exchange, which would require no funding.

7. The extent to which administration costs will be shared by local and State governments

State and local governments have it made clear that they would not share management costs if South Fork Coal Wash were designated.

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APPENDIX R-17
HYDRAULIC CONSIDERATIONS FOR PIPELINES CROSSING STREAM CHANNELS; TECHNICAL NOTE 423

Suggested citations:

Fogg, J. and H. Hadley. 2007. Hydraulic considerations for pipelines crossing stream channels. Technical Note 423. BLM/ST/ST-07/007+2880. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 18 pp. *http://www.blm.gov/nstc/library/techno2.htm.*

U.S. Department of the Interior. 2007. Hydraulic considerations for pipelines crossing stream channels. Technical Note 423. BLM/ST/ST-07/007+2880. Bureau of Land Management, National Science and Technology Center, Denver, CO. 18 pp. *http://www.blm.gov/nstc/library/techno2.htm.*

ABSTRACT

High flow events have the potential to damage pipelines that cross stream channels, possibly contaminating runoff. A hydrologic analysis conducted during the design of the pipeline can help determine proper placement. Flood frequency and magnitude evaluations are required for pipelines that cross at the surface. There are several methods that can be used, including reconnaissance, physiographic, analytical, and detailed methods. The method used must be appropriate for the site's characteristics and the objectives of the analysis. Channel degradation and scour evaluations are required for pipelines crossing below the surface. Proper analysis and design can prevent future pipeline damage and reduce repair and replacement costs.

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INTRODUCTION

In 2002, the U.S. Fish and Wildlife Service raised concerns about the potential for flash floods in ephemeral stream channels to rupture natural-gas pipelines and carry toxic condensates to the Green River, which would have deleterious effects on numerous special-status fish species (Figure 1). In November of the same year, BLM hydrologists visited the Uinta Basin in Utah to survey stream channels and compute flood magnitudes and depths to better understand possible flooding scenarios. From this they developed construction guidance for pipelines crossing streams in Utah. This guidance was later modified so that it was generally applicable to the arid and semiarid lands of the intermountain west. It may also have general applicability in other areas of the western United States. The purpose of this document is to present the modified guidance for placement of pipelines crossing above or below the surface of stream channels to prevent inundation or exposure of the pipe to the hydraulic forces of flood events.

Figure 1. Pipeline breaks during flooding can release condensate toxic to sensitive fish species.

SURFACE CROSSINGS

Pipelines that cross stream channels on the surface should be located above all possible floodflows that may occur at the site. At a minimum, pipelines must be located above the 100-year flood elevation and preferably above the 500-year flood elevation. Two sets of relationships are available for estimating flood frequencies at ungaged sites in Utah. Thomas and Lindskov (1983) use drainage basin area and mean basin elevation for flood estimates for six Utah regions stratified by location and basin elevation (Table 1). Thomas et al. (1997) also use drainage area and mean basin elevation to estimate magnitude and frequency of floods throughout the southwestern U.S., including seven regions that cover the entire State of Utah. Results from both sets of equations should be examined to estimate the 100- and 500-year floods, since either of the relations may provide questionable results if the pipeline crosses a stream near the boundary of a flood region or if the drainage area or mean basin elevation for the crossing exceed the limits of the data set used to develop the equations.

Table 1. Examples of Flood Frequency Equations for Ungaged Sites in Utah

Regression equations for peak discharges for Uinta Basin (from Thomas and Lindskov 1983)			
Discharge Q in cubic feet per second, Area in square miles, Elevation in thousands of feet			
Recurrence interval (yrs)	**Equation**	**Number of stations used in analysis**	**Average standard error of estimate (%)**
2	$Q = 1{,}500\ A^{0.403}\ E^{-1.90}$	25	82
5	$Q = 143{,}000\ A^{0.374}\ E^{-3.66}$	25	66
10	$Q = 1.28 \times 10^{6}\ A^{0.362}\ E^{-4.50}$	25	64
25	$Q = 1.16 \times 10^{7}\ A^{0.352}\ E^{-5.32}$	25	66
50	$Q = 4.47 \times 10^{7}\ A^{0.347}\ E^{-5.85}$	25	70
100	$Q = 1.45 \times 10^{8}\ A^{0.343}\ E^{-6.29}$	25	74

Procedures for estimating 100-year and 500-year flood magnitudes for other States are described in the U.S. Geological Survey's National Flood Frequency Program (Ries and Crouse 2002) (Figure 2). Full documentation of the equations and information necessary to solve them is provided in individual reports for each State. The National Flood Frequency (NFF) Website (http://water.usgs.gov/software/nff.html) provides State summaries of the equations in NFF, links to online reports for many States, and factsheets summarizing reports for States with new or corrected equations. Background information in each State's flood frequency reports should be checked to ensure that application of the equations is not attempted for sites with independent variables outside the range used to develop the predictive equations.

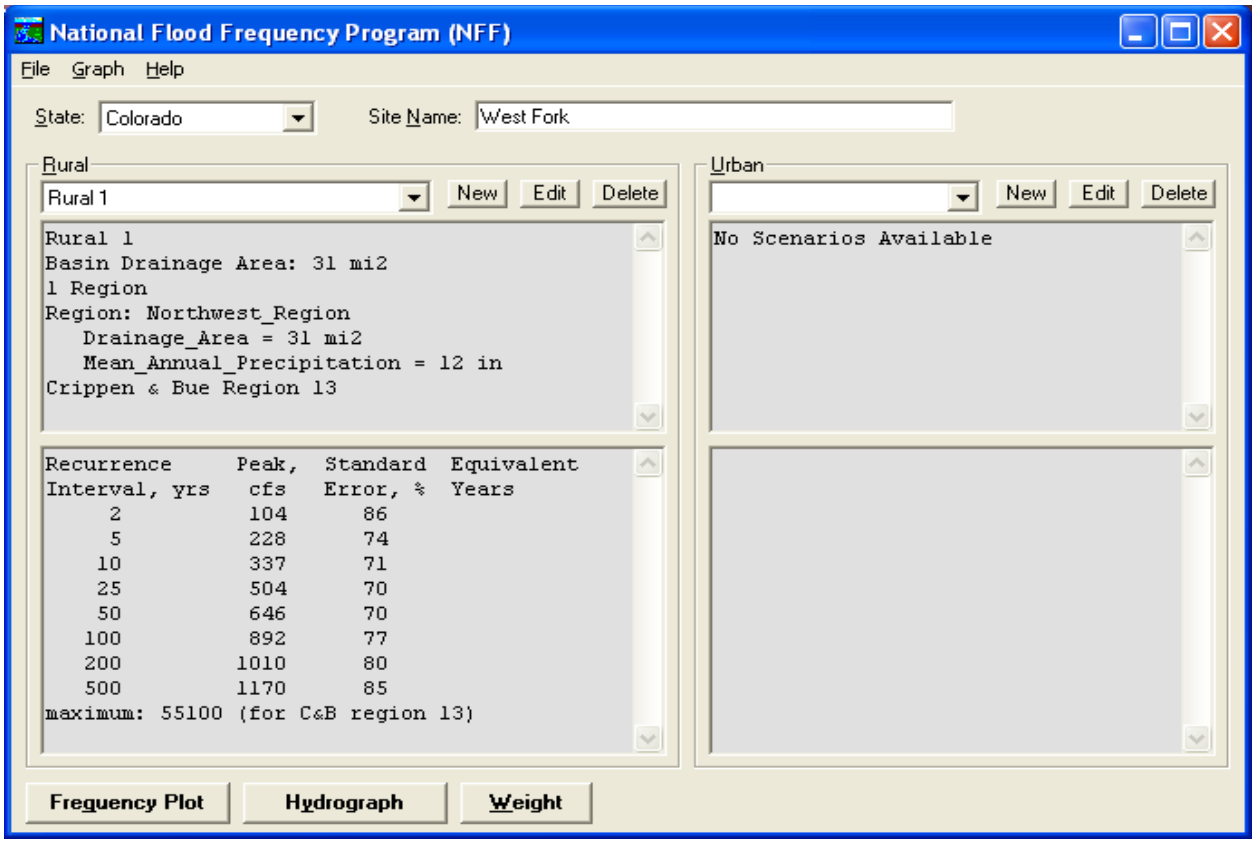

Figure 2. View of the output from NFF.

Once the flood frequency for a site has been estimated, determining the depth of flow associated with an extreme flood (i.e., the elevation of the pipeline at the crossing) may be approached in a number of ways. Procedures for estimating depth of flow for extreme floods in Utah are presented in Thomas and Lindskov (1983). Similar procedures presented in Burkham (1977, 1988) are generally applicable for locations throughout the Great Basin and elsewhere. The reconnaissance, physiographic, analytical, and detailed methods described in those reports will be summarized briefly in this paper. Burkham (1988) describes an additional method (historical method) not presented here, since the data for its use (high-water marks for an extreme historical flood with known discharge and recurrence interval) are rarely available in public land situations for which this guidance is intended.

RECONNAISSANCE METHOD

The reconnaissance method (as the name implies) is a fairly rough and imprecise method for delineating flood-prone areas (Burkham 1988; Thomas and Lindskov 1983). It is most applicable to stable or degrading alluvial channels with multiple terrace surfaces, although such terraces may be difficult to detect on severely degrading streams. In this procedure, the channel of interest is examined to approximate the area that would be inundated by a large flood. A geomorphic reconnaissance of the site is conducted, and it may be supplemented with aerial photos, maps, and historical information available for the reach of interest. In addition to the morphology of the channel, floodplain, and terraces, information on vegetation (e.g., species,

flood tolerance, drought tolerance) and soils (e.g., development, stratification, and drainage) can be helpful for identifying flood-prone areas (Burkham 1988). For best results, the geomorphic analysis should include reaches upstream and downstream of the site and should attempt to determine the general state of the stream channel as aggrading, degrading, or stable. (Additional guidance on detection of stream degradation is presented in the section on subsurface crossings).

In the reconnaissance method, identification of bankfull elevation and the active floodplain (i.e., floodplain formed by the present flow regime) provides **inadequate** conveyance for extreme flood events (Figure 3). Past floodplains or present terraces also must be identified, since these surfaces may be inundated by extreme floods in the present flow regime, especially in arid and semiarid environments. Pipelines should be constructed so that they cross at or above the elevation of the highest and outermost terrace (Figure 4). The highest terrace is unlikely to be accessed in the modern flow regime by any but the most extreme floods.

Practitioners of the reconnaissance method need considerable experience in geomorphology, sedimentation, hydraulics, soil science, and botany. Also, since this method is based on a geomorphic reconnaissance of the site, no flood frequency analysis is required and no recurrence interval can be assigned to the design elevation. An additional drawback to the method is that the accuracy of the results is unknown. However, the reconnaissance method may be the most rational one for delineating flood-prone areas on some alluvial fans and valley floors where channels become discontinuous (Burkham 1988). While this is the quickest approach to designing a pipeline that crosses a channel, it likely will result in the most conservative estimate (i.e., highest elevation and greatest construction cost) for suspension of the pipeline.

Figure 3. Although this pipeline crossed above the bankfull channel indicators, it was not high enough to escape more extreme floods.

Figure 4. This New Mexico pipeline crosses the channel near the elevation of the highest terrace, which places it above even the most extreme flood events.

PHYSIOGRAPHIC METHOD

A slightly more intensive approach to designing pipelines that cross streams is based on the physiographic method for estimating flood depths at ungaged sites described by Thomas and Lindskov (1983) and Burkham (1988). The procedure uses regional regression equations (similar to the flood frequency equations described above) to estimate **maximum** depth of flow associated with a specified recurrence-interval flood (Table 2). Flood depth is then added to a longitudinal survey of the channel **thalweg** in the vicinity of the crossing (10 to 20 channel widths in length), resulting in a longitudinal profile of the specified flood. Elevation of the flood profile at the point of pipeline crossing is the elevation above which the pipeline must be suspended. The method is generally applicable where 1) the project site is physiographically similar to the drainage basins used to develop the regression equations and 2) soil characteristics are the same at the project site as in the basins where the regression equations were developed. While this procedure requires a field survey and calculation of flood depths at points along the channel, it may result in a lower crossing elevation (and possibly lower costs) for the pipeline. Also, since the regional regression equations estimate flood depths for specific recurrence-interval floods, it is possible to place a recurrence interval on the crossing design for risk calculations. However, regional regression equations linking depth of flood to recurrence interval have not been developed for many areas. In States where they have been developed (e.g., Alabama, Colorado, Illinois, Kansas, and Oklahoma), standard errors of the estimates have ranged from 17 to 28 percent, with an average standard error of 23 percent (Burkham 1988).

Table 2. Examples of Depth Frequency Equations for Ungaged Sites in Utah

Regression equations for flood depths for Uinta Basin (from Thomas and Lindskov 1983)			
Flood depth D in feet, Area in square miles, Elevation in thousands of feet			
Recurrence interval (yrs)	**Equation**	**Number of stations used in analysis**	**Average standard error of estimate (%)**
2	$D = 1.03\ A^{0.159}$	16	30
5	$D = 13.3\ A^{0.148} E^{-1.03}$	16	28
10	$D = 68.6\ A^{0.131}\ E^{-1.69}$	16	26
25	$D = 556\ A^{0.128}\ E^{-2.59}$	16	24
50	$D = 1330\ A^{0.123}\ E^{-2.95}$	15	24
100	$D = 1210\ A^{0.130}\ E^{-2.86}$	14	22

ANALYTICAL METHOD

The analytical method described by Burkham (1988) uses uniform flow equations to estimate depth of flow associated with a particular magnitude and frequency of discharge. Typically, a trial-and-error procedure is used to solve the Manning uniform flow equation for depth of flow, given a design discharge (i.e., a flood of specified recurrence interval), a field-surveyed cross section and channel slope, and an estimate of the Manning roughness coefficient (*n*). Numerous software packages are available to facilitate the trial-and-error solution procedure (e.g., WinXSPRO). Since the Manning formula is linear with respect to the roughness coefficient, estimating this coefficient can be a significant source of error and is likely the most significant weakness in this approach. Estimating roughness coefficients (*n* values) for ungaged sites is a matter of engineering judgment, but *n* values typically are a function of slope, depth of flow, bed-material particle size, and bedforms present during the passage of the flood wave. Guidance is available in many hydraulic references (e.g., Chow 1959). Selecting *n* values for flows above the bankfull stage is particularly difficult, since vegetation plays a major role in determining resistance to flow. Barnes (1967) presents photographic examples of field-verified *n* values, and Arcement and Schneider (1989) present comprehensive guidance for calculating *n* values for both channels and vegetated overbank areas (i.e., floodplains). Depth of flow determined with uniform flow equations, such as the Manning equation, represents **mean** depth of flow to be added to the **cross section** at the site of the pipeline crossing.

Burkham (1977, 1988) also presented a simplified technique for estimating depth of flow, making use of the general equation for the depth-discharge relation:

$$d = C\,Q^{f}$$

Values of *f* (the slope of the relationship when plotted on logarithmic graph paper) can be determined from "at-station" hydraulic geometry relationships at gaging stations in the region. Only the upper portion of the gaging-station ratings should be used to derive the slope (*f* value) for application to extreme floods, since a substantial portion of the flow may be conveyed in the overbank area. Alternatively, Burkham (1977, 1988) presents a simplified procedure for estimating *f* that requires only a factor for channel shape. Leopold and Langbein (1962)

computed a theoretical value of 0.42 for natural channels, while Burkham (1988) computed a theoretical value of 0.46 for parabolic cross sections. Burkham (1977) earlier reported an average *f* value of 0.42 from 539 gaging stations scattered along the eastern seaboard and upper Midwest, while Leopold and Maddock (1953) reported an average *f* value of 0.40 for 20 river cross sections in the Great Plains and the Southwest. Park (1977) summarized *f* values from 139 sites around the world and found most values occurred in the range of 0.3 to 0.4. Additional assumptions in Burkham (1977, 1988) enable an estimate of the coefficient *C* in the depth-discharge relationship with only a single field measurement of width and maximum depth at some reference level in the channel (e.g., bankfull stage) (Burkham 1977, 1988). Depth of flow determined from Burkham's simplified technique represents **maximum** depth of flow to be added to the **thalweg** at the cross section.

The analytical methods described by Burkham (1977, 1988) generally will be more accurate than the physiographic and reconnaissance methods described previously; thus, they may result in lower pipeline elevations and construction costs than the previous methods. However, analysis of flood elevations for the most sensitive situations should probably be conducted with the detailed method described below.

DETAILED METHOD

Additional savings in construction costs for pipelines crossing channels may be realized by applying a detailed water-surface-profile model of flow through the crossing site. The water-surface-profile model requires a detailed survey of both the longitudinal channel profile (at least 20 channel widths in length) and several cross sections along the stream (Figure 5). Design flows (e.g., 100-year and 500-year floods) are calculated for the channel at the crossing with the regional regression equations described above and routed through the surveyed channel reach using a step-backwater analysis. The step-backwater analysis uses the principles of conservation of mass and conservation of energy to calculate water-surface elevations at each surveyed cross section. Computed water-surface elevations at successive cross sections are linked to provide a water-surface profile for the flood of interest through the reach of interest. The computations are routinely accomplished in standard software, such as the U.S. Army Corps of Engineers' HEC-RAS model. Whereas the analytical methods described previously assume steady, uniform flow conditions through the reach, a detailed water-surface-profile model is capable of handling both gradually and (to some extent) rapidly varied flow conditions. Since the computation uses a detailed channel survey, it is the most accurate method to use; however, it is likely the most expensive method for the same reason. Burkham (1988) indicates that the error in flood depths predicted from step-backwater analysis can be expected to be less than 20 percent. The step-backwater computations require an estimate of the Manning roughness coefficient (*n*) as an indicator of resistance to flow and assume fairly stable channel boundaries. Estimation of the roughness coefficient (*n*) includes the same considerations discussed previously for the analytical methods. The assumption of fairly stable channel boundaries is not always met with sand-bed channels and is an issue of considerable importance for designing subsurface pipeline crossings as well.

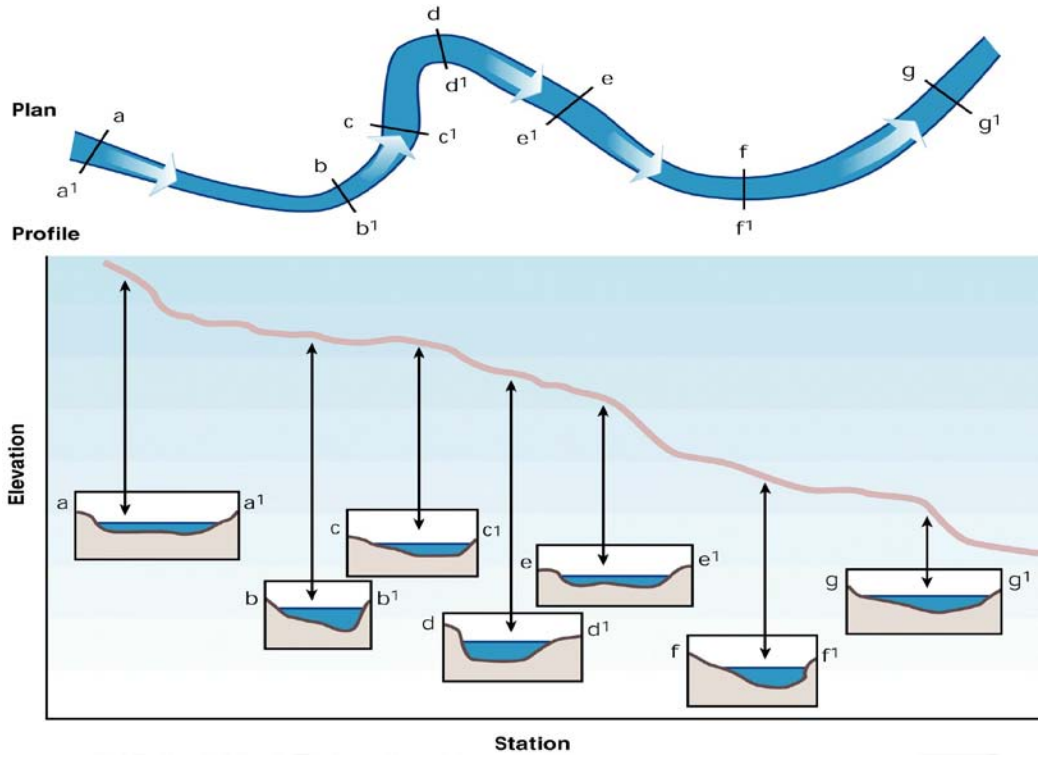

Figure 5. Application of a water-surface-profile model requires both a longitudinal channel profile and several surveyed cross sections (Federal Interagency Stream Restoration Working Group 1998).

Of the methods presented for determining elevation of floods for pipelines crossing channels, the detailed method is the most accurate and should be used for situations with high resource values, infrastructure investment, construction costs, or liabilities in downstream areas. In undeveloped areas, the physiographic and analytical methods may be used to provide quick estimates of flood elevations for sites with fewer downstream concerns. The reconnaissance method provides the roughest estimates but may be all that is warranted in very unstable areas, such as alluvial fans or low relief valley floors (e.g., near playas). The detailed, analytical, and physiographic methods all assume relatively stable channel boundaries but may be used on sand channels with an accompanying loss of accuracy. In very sandy channels, the accuracy of results from the detailed method may not be significantly better than the results from one of the intermediate methods unless a mobile-boundary model is used (Burkham 1988).

SUBSURFACE (BURIED) CROSSINGS

Since many of the pipelines are small and most of the channels are ephemeral, it is commonplace to bury the pipelines rather than suspending them above the streams. The practice of burying pipelines at channel crossings likely is both cheaper and easier than suspending them above all floodflows; however, an analysis of channel degradation and scour should be completed to ensure the pipelines are not exposed and broken during extreme runoff events (Figure 6). Without such an analysis, channels should be excavated to bedrock and pipelines placed beneath all alluvial material.

Figure 6. Channel degradation or scour during flash-flood events may expose buried pipelines, resulting in costly breaks.

Buried pipelines may be exposed by streambed lowering resulting from channel degradation, channel scour, or a combination of the two. Channel degradation occurs over a long stream reach or even the entire drainage network and is generally associated with the overall lowering of the landscape. Degradation also may be associated with changes in upstream watershed or channel conditions that alter the water and sediment yield of the basin. Channel scour is a local phenomenon associated with passage of one or more flood events or site-specific hydraulic conditions that may be natural or human-caused in origin. Either process can expose buried pipelines to excessive forces associated with extreme flow events, and an analysis of each is required to ensure integrity of the crossing.

CHANNEL DEGRADATION

Detection of long-term channel degradation must be attempted, even if there is no indication of local scour. Conceptual models of channel evolution (e.g., Simon 1989) have been proposed to describe a more-or-less predictable sequence of channel changes that a stream undergoes in response to disturbance in the channel or the watershed. Many of these models are based on a "space for time" substitution, whereby downstream conditions are interpreted as preceding (in time) the immediate location of interest, and upstream conditions are interpreted as following (in time) the immediate location of interest. Thus, a reach in the middle of the watershed that previously looked like the channel upstream will evolve to look like the channel downstream

(Federal Interagency Stream Restoration Working Group 1998). Since channel evolution models can help predict current trends where a pipeline crosses a channel, they may indicate areas to be avoided when relocation of the crossing is an option. Most conceptual models of channel evolution have been developed for landscapes dominated by streams with cohesive banks; however, the same processes occur in streams with noncohesive banks, with somewhat less well-defined stages.

Geomorphic indicators of recent channel incision (e.g., obligate and facultative riparian species on present-day stream terraces elevated above the water table) also may be helpful for diagnosing channel conditions. However, long-term trends in channel evolution are often reversed during major flood events, especially for intermittent and ephemeral channels in arid and semiarid environments. Thus, a stream that is degrading during annual and intermediate flood events may be filled with sediment (i.e., it may aggrade) from tributary inputs during a major flood, and channels that are associated with sediment storage (i.e., aggrading) during the majority of runoff events may be "blown out" with major degradation during unusual and extreme large floods.

In some situations, a quantitative analysis of channel degradation may be warranted. Plots of streambed elevation against time permit evaluation of bed-level adjustment and indicate whether a major phase of channel incision has passed or is ongoing. However, comparative channel survey data are rarely available for the proposed location for a pipeline to cross a channel. In instances where a gaging station is operated at or near the crossing, it is usually possible to determine long-term aggradation or degradation by plotting the change in stage through time for one or more selected discharges. The procedure is called a specific-gage analysis (Figure 7) and is described in detail in *Stream Corridor Restoration: Principles, Processes, and Practices* (Federal Interagency Stream Restoration Working Group 1998). When there is no gaging station near the proposed channel crossing, nearby locations on the same stream or in the same river basin may provide a regional perspective on long-term channel adjustments. However, specific-gage records indicate only the conditions in the vicinity of the particular gaging station and do not necessarily reflect river response farther upstream or downstream of the gage. Therefore, it is advisable to investigate other data in order to make predictions about potential channel degradation at a site.

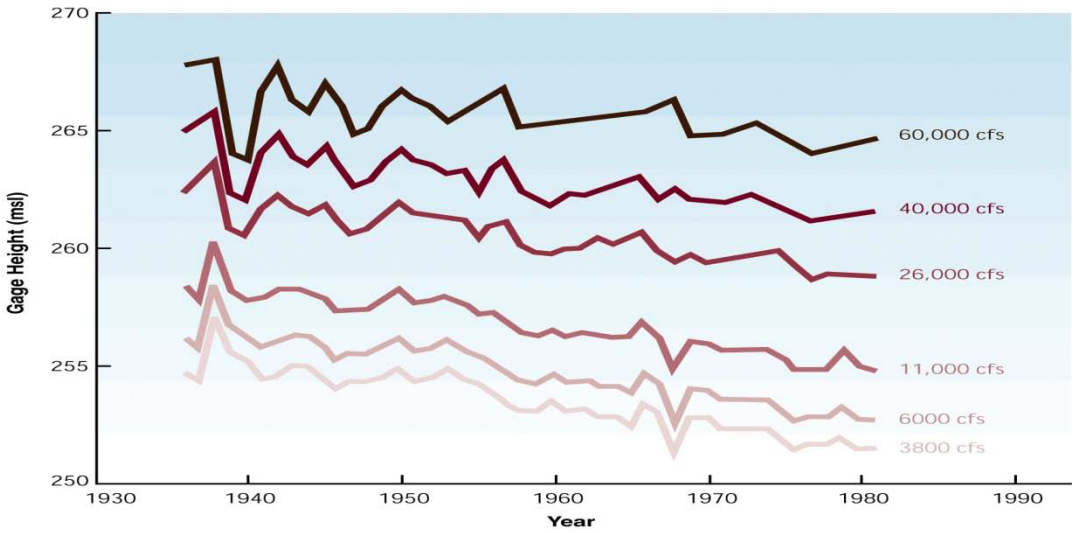

Figure 7. Specific-gage plots of the gage heights associated with index flows through time may indicate general channel lowering in the drainage basin (Federal Interagency Stream Restoration Working Group 1998; Biedenharn et al. 1997).

Other sources of information include the biannual bridge inspection reports required in all States for bridge maintenance. In most States, these reports include channel cross sections or bed elevations under the bridge, and a procedure similar to specific gage analysis may be attempted (Figure 8). Simon (1989, 1992) presents mathematical functions for describing bed-level adjustments through time, fitting elevation data at a site to either a power function or an exponential function of time. Successive cross sections from a series of bridges in a basin also may be used to construct a longitudinal profile of the channel network; sequential profiles so constructed may be used to document channel adjustments through time (Figure 9). Again, bridge inspection reports so used indicate only the conditions in the vicinity of those particular bridges (where local scour may be present) and must be interpreted judiciously for sites upstream, downstream, or between the bridges used in the analysis.

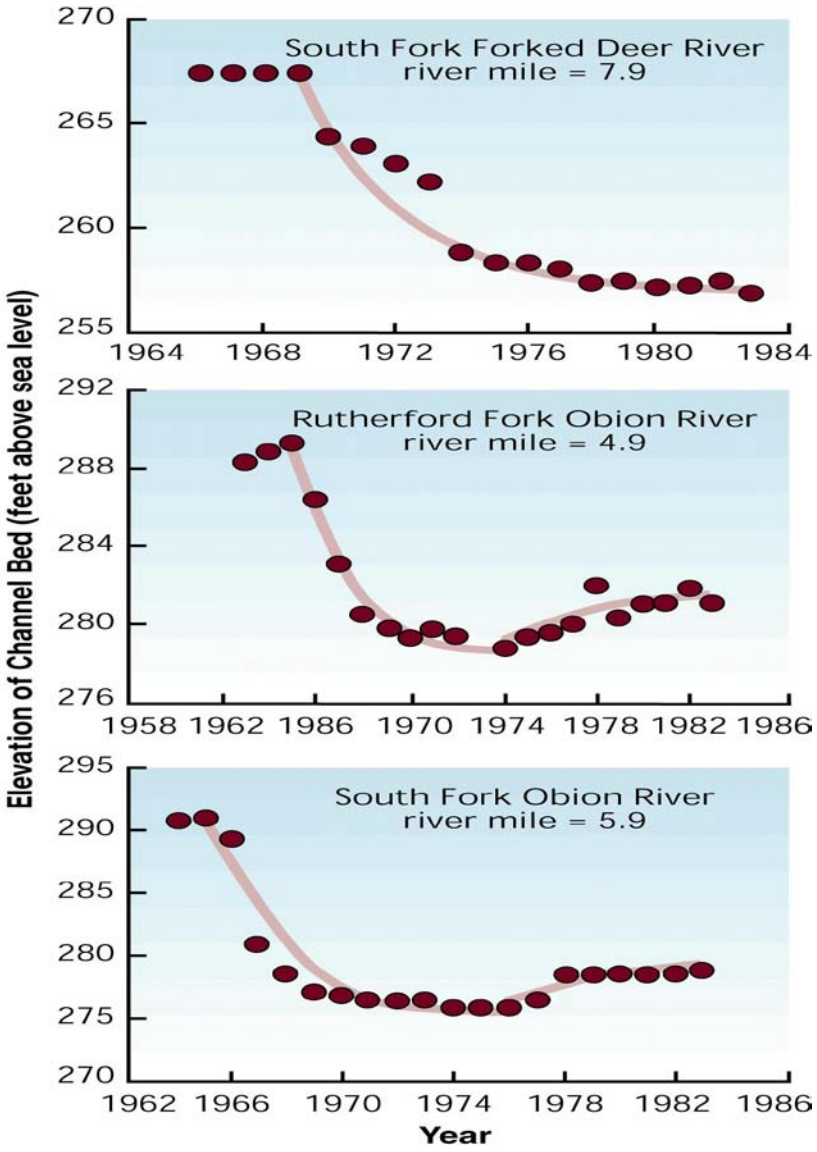

Figure 8. Plots of bed elevation versus time may be developed from biannual bridge inspection reports to document systemwide degradation or aggradation (Federal Interagency Stream Restoration Working Group 1998).

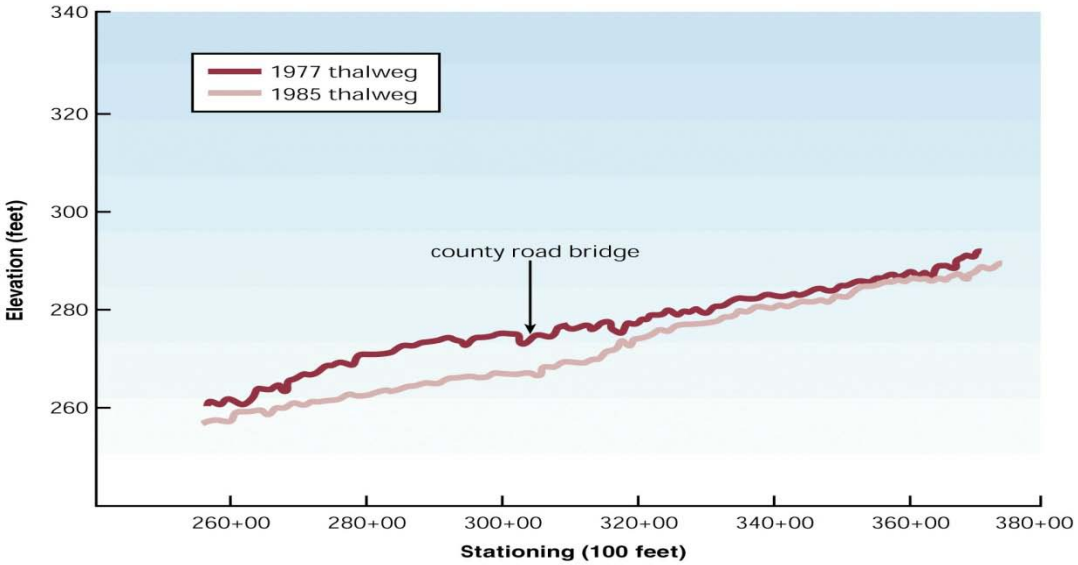

Figure 9. Sequential longitudinal profiles also may be used to document channel lowering through time (Federal Interagency Stream Restoration Working Group 1988; Biedenharn et al. 1997).

In the absence of channel surveys, gaging stations, and bridge inspection reports (or other records of structural repairs along a channel), it may be necessary to investigate channel aggradation and degradation using quantitative techniques described in Richardson et al. (2001) and Lagasse et al. (2001). Techniques for assessing vertical stability of the channel include incipient motion analysis, analysis of armoring potential, equilibrium slope analysis, and sediment continuity analysis. Incipient motion analysis and analysis of armoring potential are equally applicable to both long-term degradation and short-term scour and fill processes, while equilibrium-slope and sediment-continuity analyses are more closely tied to long-term channel processes (i.e., degradation and aggradation).

CHANNEL SCOUR

In addition to long-term channel degradation at subsurface crossings, general channel scour must be addressed to ensure safety of the pipeline. General scour is different from long-term degradation in that general scour may be cyclic or related to the passing of a flood (Richardson and Davis 2001). Channel scour and fill processes occur naturally along a given channel, and both reflect the redistribution of sediment and short-term adjustments that enable the channel to maintain a quasi-equilibrium form. In other words, channels in dynamic equilibrium experience various depths of scour during the rising stages of a flood that frequently correspond to equal amounts of fill during the falling stages, resulting in minimal changes in channel-bed elevation. Where pipelines cross channels, it is important to determine the potential maximum depth of scour so that the pipeline is buried to a sufficient depth and does not become exposed when bed scour occurs during a flood.

General scour occurs when sediment transport through a stream reach is greater than the sediment load being supplied from upstream and is usually associated with changes in the channel cross section. General scour can occur in natural channels wherever a pipeline crosses a constriction in the channel cross section (contraction scour). Equations for calculating

contraction scour generally fall into two categories, depending on the inflow of bed-material sediment from upstream. In situations where there is little to no bed-material transport from upstream (generally coarse-bed streams with gravel and larger bed materials), contraction scour should be estimated using clear-water scour equations. In situations where there is considerable bed-material transport into the constricted section (i.e., for most sand-bed streams), contraction scour should be estimated using live-bed scour equations. Live-bed and clear-water scour equations can be found in many hydraulic references (e.g., Richardson and Davis 2001). In either case, estimates of general scour in the vicinity of the pipeline crossing must be added to the assessment of channel degradation for estimating the depth of burial for the crossing.

Other components of general scour can result from placement of subsurface crossings relative to the alignment of the stream channel. Pipelines crossing at bends in the channel are particularly troublesome, since bends are naturally unstable and tend to collect both ice and debris (which can cause additional constrictions in the flow). Channel-bottom elevations are usually lower on the outside of meander bends and may be more than twice as deep as the average depth in straighter portions of the channel. Crossings in the vicinity of stream confluences also create difficulties, since flood stages and hydraulic forces may be strongly influenced by backwater conditions at the downstream confluence. For example, sediment deposits from tributary inputs may induce contraction scour opposite or downstream of the deposit. Additional complications are introduced where pipelines are located near other obstructions in the channel. Channel-spanning obstructions (e.g., beaver dams or large wood) may induce plunge-pool scour downstream of the structure, and individual obstructions in the channel induce local scour akin to pier scour characteristic of bridge piers at highway crossings.

Even in the absence of contraction scour, general scour will still occur in most sand-bed channels during the passage of major floods. Since sand is easily eroded and transported, interaction between the flow of water and the sand bed results in different configurations of the stream bed with varying conditions of flow. The average height of dune bedforms is roughly one-third to one-half the mean flow depth, and the maximum height of dunes may nearly equal the mean flow depth. Thus, if the mean depth of flow in a channel was 5 feet, maximum dune height could also approach 5 feet, half of which would be below the mean elevation of the stream bed (Lagasse et al. 2001). Similarly, Simons, Li, and Associates (1982) present equations for antidune height as a function of mean velocity, but limit maximum antidune height to mean flow depth. Consequently, formation of antidunes during high flows not only increases mean water-surface elevation by one-half the wave height, it also reduces the mean bed elevation by one-half the wave height. Richardson and Davis (2001) reported maximum general scour of one to two times the average flow depth where two channels come together in a braided stream.

Pipeline crossings that are buried rather than suspended above all major flow events should address all of the components of degradation, scour, and channel-lowering due to bedforms described above. In addition, once a determination is made on how deep to bury the pipeline at the stream crossing, the elevation of the pipe should be held constant across the floodplain. If the line is placed at shallower depths beneath the floodplain, channel migration may expose the line where it is not designed to pass beneath the channel (Figure 10).

Figure 10. Lateral migration of this stream channel during high water excavated a section of pipeline under the floodplain that was several feet shallower than at the original stream crossing.

In complex situations or where consequences of pipeline failure are significant, consideration should be given to modeling the mobile-bed hydraulics with a numerical model such as HEC-6 (U.S. Army Corps of Engineers 1993) or BRI-STARS (Molinas 1990). The Federal Interagency Stream Restoration Working Group (1998) summarizes the capabilities of these and other models and provides references for model operation and user guides where available.

CONCLUSION

Pipelines that cross perennial, intermittent, and ephemeral stream channels should be constructed to withstand floods of extreme magnitude to prevent rupture and accidental contamination of runoff during high flow events. Pipelines crossing at the surface must be constructed high enough to remain above the highest possible floodflows at each crossing, and pipelines crossing below the surface must be buried deep enough to remain undisturbed by scour and fill processes typically associated with passage of peak flows. A hydraulic analysis should be completed during the pipeline design phase to avoid repeated maintenance of such crossings and eliminate costly repairs and potential environmental degradation associated with pipeline breaks at stream crossings.

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