FINDING OF NO SIGNIFICANT IMPACT
MULTI-USE TRAIL

BACKGROUND

In compliance with the *National Environmental Policy Act* (NEPA), the National Park Service (NPS) prepared an environmental assessment to examine alternatives and environmental impacts associated with the proposal to construct a new, non-motorized, multi-use trail at Lake Meredith National Recreation Area. Declining water levels at Lake Meredith have reduced the amount of public access to the reservoir, resulting in an overall reduction in the availability of recreational opportunities for visitors. The demand for recreational uses such as hiking and mountain biking continues to increase regionally and nationally, and the recreation area represents a large portion of the publicly available land in the Texas panhandle region. Currently, few hiking and biking trails are established in the recreation area. The recreation area also lacks interpretive facilities allowing visitors to learn about the natural and cultural resources giving the recreation area its identity and demonstrating its significance. Adequate interpretive opportunities are an important method of providing public education and promoting the stewardship of park resources. In addition, wildfires pose a substantial threat to public safety in and around the recreation area. Multi-use trails in the project area will serve as a firebreak and will provide an increased level of access for firefighting crews in the event of a wildfire.

A new multi-use trail is needed to address the lack of land-based recreational opportunities in the region, to increase the availability of interpretive resources in the recreation area, to improve access for emergency response personnel, and to provide a firebreak at the urban-wildland interface.

SELECTION OF THE PREFERRED ALTERNATIVE

Two alternatives were evaluated in the environmental assessment including alternative A (No Action) and alternative B (Construct a Multi-Use Trail). Alternative B is the NPS preferred alternative and the selected action because it best meets the purpose and need for the project as well as the project objectives: (1) provide emergency service access to areas of the park that are difficult to access, to reduce response times and improve visitor safety; (2) establish a firebreak at the urban interface to improve the safety of park neighbors and visitors; (3) work cooperatively with interested user groups to create advocates for the national recreation area and to assist in the establishment and maintenance of the trail; (4) establish and maintain a multi-use trail with minimal impact on the natural environment and avoids impairment and unacceptable impacts; and (5) provide a recreational trail to increase hiking and mountain biking opportunities in the park and the region.

Under alternative B, the recreation area will construct a multi-use trail, to provide visitors with additional recreational and educational opportunities, increased emergency access, and a partial firebreak at the urban-wildland interface. The recreation area will also install amenities such as interpretive signage, kiosks, bike racks, and trash receptacles. The multi-use trail will consist of five phases of primitive trails totaling approximately 22 miles and will be available for pedestrian

and bicycle use. The bike component to the multi-user trail will be considered a new use within the park unit and will require special promulgation through rulemaking before the project is implemented. Phase one will be located in the Harbor Bay and Fritch Canyon area; phase two will be between Harbor Bay and Short Creek; phase three will be located between Short Creek and South Turkey Creek; phase four will start at the mouth of South Turkey Creek and continue up the canyon; and phase five will be located between Fritch Fortress and the northern portion of phase one. Construction of each phase will occur as funding becomes available.

The trail will be designed to blend into the natural surroundings through the use of native materials and a primitive surface (no hardened surfaces and approximately two to four feet wide in most areas) to minimize soil and vegetation impacts and offer visitors an improved interpretive experience at the recreation area. The final trail alignment within the 50-foot-wide corridor will consider topography, slope, drainages, and other resources to provide visitors with a safe and aesthetically pleasing trail. Due to the primitive nature of the trail, the single-track width, and the steep topography in the project area, wheelchair access to many areas along the multi-use trail may not be possible.

The trail will be constructed using natural materials found at the project site and will not require imported surfacing or paving material. Some areas of the trail will require the use of motorized equipment such as trail dozers and wheelbarrows. In areas of extreme slope, retaining walls will be required to avoid excessive grading. Retaining walls will be constructed with natural materials such as stone or logs. In areas with steep slopes, the trail will be constructed using a "full-bench" design. A full bench is constructed by cutting the full width of the tread into the hillside removing the excavated soil. Although this method requires more excavation, it results in a more stable and durable trail tread requiring less maintenance. Erosion control measures will be installed with the trail where needed. Some areas of the new trail, primarily near canyon walls and on slopes, will require channeling drainage away from eroded surfaces using berms or swales. Materials to be used to gain elevation and prevent erosion on the new trail will be local natural materials and may include rock, soil, and logs. These materials may also be used as necessary throughout the trail to control erosion or protect resources, or both. One area of the trail in phase one will require the installation of a primitive log bridge to avoid an intermittent drainage and to reduce erosion in the area.

Areas near the proposed trailheads will be temporarily used for construction staging, material stockpiling, portable restroom, and equipment storage. Staging will be located in previously disturbed areas, and fenced or taped off from visitor contact. The exact location of the staging area will be determined following final trail design and the area will be restored to its original condition following completion of construction activities. The NPS will facilitate trail construction with the assistance of local trail clubs and volunteer groups. Final design and construction will be completed in accordance with the guidance provided in the 2007 NPS publication, "Guide to Sustainable Mountain Trails" (NPS 2007a) and other available literature on sustainable trails.

The trail will be managed to allow for only non-motorized uses, including hiking and biking. Horses and motorized vehicles will not be allowed on the trail and pets will be permitted only when leashed. The NPS will maintain the trail and conduct safety patrols as funding and priorities permit. Volunteer assistance will be used for ongoing trail maintenance whenever

available. Rulemaking for allowing bike use on this trail has been occurring during and will be finalized following the environmental planning process.

MITIGATION MEASURES

The following mitigation measures have been developed to minimize the degree and/or severity of adverse effects, and will be implemented during all activities associated with the proposed action, as needed:

- Construction activities will be scheduled to minimize construction-related impacts upon visitors. Areas not under construction will remain accessible to visitors as much as is safely possible.

- Trail crews will be required to appoint a foreman to oversee trail maintenance activities. The NPS will coordinate with foremen and any volunteers to monitor trail construction per NPS standards. Specifically, NPS will monitor and/or direct water bar placement, drainage placement, brushing and clearing, revegetation, where to obtain fill and other materials for trails, and how to apply fill materials such as soil, gravel, rocks, etc. Trail foremen will be responsible for ensuring crews perform the necessary work in accordance with NPS instructions and standards.

- To minimize the amount of ground disturbance, staging and stockpiling areas will be located in previously disturbed areas, away from visitor use areas to the extent possible. All staging and stockpiling areas will be returned to pre-construction conditions following construction.

- Revegetation efforts will strive to reconstruct the natural spacing, abundance, and diversity of native plant species in the trail corridor. No foreign materials with the potential to introduce invasive plant species will be brought into the area.

- A construction zone, staging areas, and work zones will be identified and demarcated with construction tape or some similar material prior to any construction activities. The tape will define the zone and confine the activity to the minimum area needed for implementing the project.

- All crew members and volunteers assisting in the trail work efforts will be educated about the importance of avoiding impacts to sensitive resources that have been flagged for avoidance, which may include natural and cultural resources.

- Should construction unearth previously undiscovered cultural resources, work will be stopped in the area of discovery and the recreation area will consult with the Texas State Historic Preservation Officer and the Advisory Council on Historic Preservation, as necessary, according to 36 CFR 800.13, *Post Review Discoveries*. In the unlikely event that human remains are discovered during construction, provisions outlined in the *Native American Graves Protection and Repatriation Act* (1990) will be followed.

- According to NPS *Management Policies 2006*, the NPS will strive to construct the trail with a sustainable design to minimize potential environmental impacts. Development

will not compete with or dominate recreation area features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity. To the extent possible, the design and management of the trail will emphasize environmentally sensitive construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings.

ALTERNATIVES CONSIDERED

Two alternatives were evaluated in the environmental assessment including the no-action alternative and one action alternative. Under alternative A (No Action), the multi-use trail will not be constructed. Alternative B (Construct a Multi-Use Trail) is the preferred alternative, as described in the previous section.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

Alternative B is the environmentally preferred alternative. The environmentally preferred alternative is determined by applying the six criteria suggested in NEPA section 101. According to these criteria, the environmentally preferred alternative should: (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) ensure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Alternative B is the environmentally preferred alternative because it best addresses these six evaluation factors. Alternative A will meet some of the criteria for the environmentally preferred alternative as there will be no construction that could potentially degrade soils or vegetation. However, alternative A will not provide a range of beneficial uses, take steps to encourage sharing of amenities, or provide increased public health and safety through a firebreak and increased emergency response access. Alternative B will provide a primitive trail that will enhance recreational and educational opportunities for visitors to Lake Meredith. Although there will be impacts to soils and vegetation, they will be less than major and will be balanced with a new method of enjoying and appreciating park resources. Construction of the trail under alternative B will also result in improvements to public health and safety from the installation of a firebreak and increased access for emergency response teams and firefighting crews.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR 1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Implementation of the preferred (selected) alternative will result in some adverse impacts; however, the overall benefit of the project, particularly to public health and safety and visitor experience, outweighs these negative effects. The adverse effects are summarized as follows.

Construction of the trail will involve land disturbing activities resulting in short-term, moderate, adverse impacts to soils due to the amount of ground disturbance required to complete the project. Following construction, the existence and continued use of the trail will result in long-term, minor to moderate adverse impacts to soils. Impacts on water quality from sedimentation will be long-term, negligible, and adverse. Minor, temporary, adverse impacts on recreation area management and operations will result from the diversion of staff and resources during trail construction.

The overall benefit of implementing the preferred (selected) alternative is that visitor experience will be improved to a moderate degree as the diversity and amount of recreational opportunities at Lake Meredith and in the region will be greatly expanded. Use of the trail as a firebreak for wildfire control and to facilitate emergency response and access will result in long-term benefits to the safety of visitors and area residents.

The degree to which the proposed action affects public health or safety.

The preferred alternative will have an overall beneficial effect on public health and safety, as portions of the multi-use trail will function as a firebreak at the urban-wildland interface, thus providing protection to park visitors and adjacent communities. The trail will also provide increased access in and around the project area for first aid crews, search and rescue teams, and firefighters.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The preferred alternative will not impact unique characteristics of the area including park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas because these resources do not exist in the project area. The preferred alternative will avoid damage to historic or cultural resources that exist within the project area and will be fully compliant with Section 106 of the *National Historic Preservation Act*. The multi-use trail will avoid all wetland features.

The degree to which the effects on the quality of the human environment are likely to be highly controversial.

Throughout the planning process, the proposal to construct a new multi-use trail was not controversial and the anticipated effects are not expected to generate any controversy.

The degree to which the possible effects on the quality on the human environment are highly uncertain or involve unique or unknown risks.

The effects of constructing a primitive multi-use trail are fairly straightforward and do not pose a high level of uncertainty. The environmental process has not identified any effects that may involve highly unique or unknown risks.

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The preferred alternative is not expected to set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

Cumulative effects were analyzed in the environmental assessment and no significant cumulative impacts were identified.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The multi-use trail will avoid impacts to significant scientific, cultural, and historic resources. The NPS will continue to coordinate with the Texas State Historic Preservation Office throughout the design and construction phase of the project to ensure that it conforms to Section 106 of the *National Historic Preservation Act*. Many archeological surveys were completed within the project area between 1974 and 2004, but during the Section 106 NHPA consultation for phase one of the proposed multi-use trail, the most important was the 2001 survey by Susanna and Paul Katz entitled, "Archaeological Survey, Fritch Fortress to Harbor Bay Prescribed Burn Area, Lake Meredith National Recreation Area, Hutchinson and Moore Counties, Texas." Only phase one of the proposed multi-use trail has been located on the ground using a GPS unit. During the consultation with the Texas State Historic Preservation Officer (SHPO), the proposed trail location was modified to avoid areas of concern as a mitigation strategy for possible exposure of known archeological sites. On May 2, 2010, the NPS sent a letter to the Texas SHPO requesting concurrence that modifications to the trail alignment will not affect the two sites near the route, nor will it adversely affect the site near the route. On May 4, 2010, the Texas SHPO concurred with the NPS finding.

Section 106 consultation for phases two, three, four, and five of the trail will be completed after phase one has been constructed and when the exact trail location within the 50-foot corridor has been determined for the subsequent phases. Although a cultural landscape inventory has not been conducted for the national recreation area, there are no historic structures in the project area and therefore no known cultural landscapes exist that could be impacted by the proposal.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the *Endangered Species Act* of 1973.

A list of federally listed species that may occur in or near the recreation area was obtained from the USFWS website on March 9, 2009. Based on this list, no federally listed threatened, endangered, proposed or candidate species are known or likely to inhabit the project area. Further, no critical habitat is currently designated within the recreation area. However, the USFWS recently initiated evaluation of potential critical habitat for the Arkansas River shiner within the recreation area, from the confluence of Coetas Creek with the Canadian River and west to the boundary of the park unit. Although the Arkansas River shiner has recently been found in the recreation area, there is no suitable habitat within the project area for the proposed multi-use trail.

Because no federally listed threatened, endangered, proposed, or candidate species are known or likely to inhabit the project area and no designated critical habitat is located within or near the project area, there will be no effects on any endangered or threatened species or its habitat.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The action will not violate any federal, state, or local laws or environmental protection laws.

PUBLIC INVOLVEMENT NATIVE AMERICAN CONSULTATION

The environmental assessment was made available for public review and comment during a 30-day period ending February 19, 2010. To notify the public of this review period, a press release was sent to local newspapers. Copies of the document were sent to certain agencies and interested parties, made available in local repositories, and posted on the Internet at http://parkplanning.nps.gov/lamr. Three comments were received during this review period. All were from unaffiliated individuals who wished to express their support for construction of the multi-use trail as a needed improvement and benefit to the national recreation area. One commenter provided suggestions for management of the existing trail between Harbor Bay and Turkey Creek, as well as additional elements to consider for management of the preferred alternative, including improving the boat ramps, implementing different regulations for the trails towards Fritch Fortress and Turkey Creek, and continuing the proposed trail system around Dolomite Point Road that will connect the road system to Harbor Bay. No comments were received from Native American tribes. Substantive comments centered additional alternative elements. These comments are addressed in the attached Errata sheet. The FONSI and Errata sheet will be made available to these commenters and the general public.

CONCLUSION

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement. The preferred alternative will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts ranging from short- to long-term, and negligible to moderate. There are no unmitigated adverse effects

on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, the NPS has determined that an environmental impact statement is not required for this project and thus will not be prepared.

Approved:

John Wessels
Director, Intermountain Region, National Park Service

1/17/12
Date

ERRATA SHEETS
Multi-Use Trail Environmental Assessment
Lake Meredith National Recreation Area

According to NPS policy, substantive comments are those that 1) question the accuracy of the information in the EA, 2) question the adequacy of the environmental analysis, 3) present reasonable alternatives that were not presented in the EA, or 4) cause changes or revisions in the proposal.

Some substantive comments may result in changes to the text of the EA, in which case, they are addressed in the *Text Changes* section of the Errata Sheets. Other substantive comments may require a more thorough explanatory response and are addressed in the *Response to Comments* section. NPS has responded to all substantive comments in either or both of these sections.

Substantive comments to the environmental assessment centered on suggestions for management of the existing trail between Harbor Bay and Turkey Creek as well as additional elements to consider for management of the preferred alternative. These comments, which are addressed below, resulted in some changes to the text of the environmental assessment.

Text Changes

The following is new text, added to the section titled, "Alternatives Considered but Dismissed from Further Consideration" in the EA:

Page 29, Utilize deer trail on west side of south Turkey Creek – The NPS did not initially consider the deer trail between south Turkey Creek and Dolomite Point road. This trail is only readily visible during hunting season and in part follows an intermittent creek bed. To make this trail sustainable it will have to be rerouted out of the stream bed and the saddle in which it is located. The surrounding terrain is very rocky and steep, making proper construction difficult. As such, it was dismissed from further consideration as part of the constructed trail, but could continue being used as a portage route.

Substantive Comments

The following table includes substantive comments that were received during public review of the environmental assessment and NPS responses to these comments. The substantive comments are presented as either direct excerpts (representative quotes) from the original comments or as text that has been paraphrased from the original comments. The comments and responses are organized according to the issue discussed, and then further organized by comment identification number.

Comment ID #	Representative Quotes	Responses
Description of Alternatives Carried Forward		
1	The terrain and use potential for the trails towards Fritch Fortress are sufficiently different from the trails towards Turkey Creek that they should have different regulations.	Consistency in regulation application makes it easier for visitors to understand what is allowed. The trail was divided into five phases for construction and compliance. The phases represent developmental portions of just one trail and it will be managed as the multi-use trail.
2	There is a short deer trail between Turkey Creek and Dolomite Point road. Consideration should be given to continuing the proposed trail system around to this road. This will connect the road system in Alibates to Harbor Bay and yield a very long mountain bike or horseback opportunity.	The NPS did not initially consider the deer trail between south Turkey Creek and Dolomite Point road. Deer have a tendency to follow a path of least resistance when making trail not follow trail guide lines or creating "sustainable trails." Addition of topic under: Alternatives Considered but Dismissed from Further Consideration. Please see the text that was added to the EA on this subject.
3	Something definitely needs to be done, although the area of improvement to boat ramps does not need to be forgotten!! This lake can still be used if proper actions are taken to the boat ramps, salt cedars, CRMWA cities switching to their water wells and upper river maintenance of beaver and silt dams.	Management of the lake and related boat ramps is outside the scope of this planning effort. Although not within the scope of this effort, the NPS in conjunction with the Canadian River Municipal Water Authority (CRMWA) have sprayed over 8,500 acres of saltcedar within Lake Meredith National Recreation Area (2008 and 2009). Park staff are continually working to remove saltcedars that are in close proximity to cottonwood galleries and monitoring the affects of the aerial spraying. Boat ramps have not been neglected since 2004; Fritch Fortress and the Marina boat ramps have been extended approximately 300 feet each. When the water rises to 63 feet there will be four locations to launch boats. This will not have been true prior to NPS boats ramp extension work. Maintenance of the river channel and water use issues is outside of NPS control.

Comment ID #	Representative Quotes	Responses
Alternatives Considered but Dismissed From Further Consideration		
4	Conversely, the existing trail between Harbor Bay and Turkey Creek is fairly flat and is plenty wide in most places to accommodate horsemen and single-track mountain bikers passing one another. Like the Coetas Creek and Devils Canyon trails, it should be open to equestrian activities as well as hikers and bicyclists. Also, a large portion of the land between Harbor Bay and Turkey Creek is open to hunting. Hunting dogs used in this area should not be leashed.	There is no existing authorized trail between Harbor Bay and South Turkey Creek. A "social trail" may be forming due to the low lake levels at this time. Establishing a new trail must consider not only existing lake conditions, but conditions when the water level rises. Thus, the purposed trail will be established above the low water mark. A trail at this level will be relatively narrow with few spots to yield. Therefore, it was determined there will be the potential for visitor safety issues and conflict among users and equestrian use of the multi-use trail was dismissed. Hunting is allowed in portions of the park where the multi-uses trail will be constructed. During designated hunting seasons, hunting dogs have been allowed off leash. If this becomes a point of conflict between visitor user groups, the Superintendent's compendium will address this issue.

APPENDIX – NON-IMPAIRMENT FINDING

NPS *Management Policies 2006* requires analysis of potential effects to determine whether actions will impair park resources. The fundamental purpose of the national park system, established by the *Organic Act* and reaffirmed by the *General Authorities Act*, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the NPS the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the NPS the management discretion to allow certain impacts within park, that discretion is limited by the statutory requirement that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of these resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment, but an impact will be more likely to constitute an impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact will be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;

- appropriate opportunities to experience enjoyment of the above resources to the extent that can be done without impairing them;

- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The NPS threshold for considering whether there could be an impairment is based on whether an action will have major (or significant) effects.

Impairment findings are not necessary for visitor use and experience, socioeconomics, public health and safety, environmental justice, land use, and park operations, because impairment findings relates back to park resources and values, and these impact areas are not generally considered park resources or values according to the *Organic Act*, and cannot be impaired in the same way that an action can impair park resources and values. After dismissing the above topics, topics remaining to be evaluated for impairment include soils and sedimentation and vegetation. Fundamental resources and values for Lake Meredith National Recreation Area are identified in the Master Plan (1973) and the Strategic Plan (2008). According to these documents, of the impact topics carried forward in this environmental assessment, both soils and sedimentation and vegetation are considered necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in the park's General Management Plan or other relevant NPS planning document.

- **Soils and Sedimentation.** Part of the significance of Lake Meredith National Recreation Area is providing recreation, as well as serving as the water source for 11 cities. Erosion of the soils and sedimentation into the lake reduces water levels and introduces contaminants into this water source. Construction activities associated with establishing the trail surface will involve ground disturbances such as grading, leveling, and filling throughout the length of the trail corridor, which will result in disturbance of soils and potentially, and increase in sedimentation in the lake. Continued use of the multi-use trail will also result in some localized soil erosion and displacement as a result of mountain bike use or heavy pedestrian use. Although soils are a fundamental resource at the park, the preferred alternative will result in only moderate (effects on soils will be readily apparent and require mitigation that will be successful), short-term, and site-specific adverse impacts to soils from construction, and minor to moderate (effects on soils will be detectable to readily apparent and require simple to more complex mitigation that will be successful) long-term, and site-specific adverse impacts to soils from continued use of the trail; therefore, there will be no impairment to paleontological resources.

- **Vegetation.** Part of the significance of Lake Meredith National Recreation Area is to provide habitat for native fauna. Although sparse, vegetation is important to the overall health of the parks and provides habitat for wildlife. It also holds and traps blowing sediment, thereby preventing erosion, and is a primary factor in the park's visual quality and biodiversity. The project involves ground disturbance and potential vegetation damage throughout the majority of the trail corridor. Although the trail will be aligned in such as way

as to avoid native vegetation where possible, the corridor length will make it nearly impossible to prevent impacts to vegetation. Although vegetation is a fundamental resource at the park, the preferred alternative will result in only minor to moderate (impacts will be measurable and will result in a change in the plant community, but will be localized), long-term, site-specific adverse impacts to vegetation; therefore, there will be no impairment to paleontological resources.

In addition, mitigation measures for these resources will further lessen the degree of impact to and help promote the protection of these resources. For soils, trail crew training, proper location of staging and stockpiling areas, scheduling work around storm or wind events, and flagging the boundaries of the construction area will help minimize the amount of soil disturbance or erosion during construction of the trail. During trail operation, NPS and volunteer trail crews will conduct repair and maintenance activities as necessary to reduce erosion and the potential for sedimentation. Specific mitigation measures for soils will include installation of retaining walls, water bars, and soil stabilization through planting of vegetation where practicable. For vegetation, the same mitigation measures used for soils during construction will also be applied. In addition, use of local materials will reduce the potential for the introduction of invasive species to the project area and revegetation of disturbed areas outside the trail surface will occur to replace some of the vegetation lost or damaged during trail construction. In conclusion, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the superintendent's professional judgment there will be no impairment of park resources and values from implementation of the preferred alternative.