CHAPTER 2: ALTERNATIVES

The NEPA requires federal agencies to explore a range of reasonable alternatives that address the purpose of and need for the action. The alternatives under consideration must include the "no-action" alternative as prescribed by 40 CFR 1502.14. Action alternatives may originate from the proponent agency, local government officials, or members of the public at public meetings or during the early stages of project development. Alternatives may also be developed in response to comments from coordinating or cooperating agencies.

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The alternatives analyzed in this document, in accordance with NEPA, are the result of internal and public scoping as well as public comment on the draft plan/EIS. These alternatives meet the management objectives of the national recreation area while also meeting the overall purpose of and need for the proposed action. Alternative elements that were considered but were not technically or economically feasible, did not meet the purpose of and need of the project, created unnecessary or excessive adverse impacts on resources, and/or conflicted with the overall management of the national recreation area or its resources were dismissed from further analysis.

The NPS explored and objectively evaluated four alternatives in this plan/EIS:

Alternative A: No Action – Continuation of Current Management—Under the no-action alternative management of ORV use and access at the national recreation area would continue under current management strategies based on the 2007 *Interim OHV Use Plan* (NPS 2007a) as well as through the regulations contained in 36 CFR 7.57 and the Superintendent's Compendium. ORV use would continue to be permitted throughout Rosita Flats below the 3,000-foot elevation line and at Blue Creek along the creek bottom from cutbank to cutbank. No additional management tools such as zoning, permits, or use limits would be implemented.

Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes—Under alternative B the national recreation area would, in part, base the designation of routes and areas on a zoning system, with one of the purposes being the separation of visitor uses that have the potential to conflict with one another. Established zones could include camping only, hunting, resource protection, low-speed, and beginner. At Rosita Flats, two areas would be established as an ORV "area" and open to ORV use: 1) the area south of the river (currently denuded of vegetation) and 2) the area east of Bull Taco Hill. Access to the riverbed from the ORV use area south of the river would be from designated access points only. Outside the two ORV use areas, ORV use would be permitted only on designated, marked routes. At Blue Creek, ORVs would be allowed only on sandy bottom areas and designated routes, with ORV use prohibited on vegetated areas.

Alternative C: Management through Use of a Permit System at Current ORV Use Areas—Under alternative C the national recreation area would manage ORV use through a permit system as well as through the establishment of use limits. Permits would include a fee and initially there would be no limit on the number of permits issued. ORV routes and areas would be the same as those under alternative B, except that there would be one designated ORV use area in Rosita Flats, instead of two.

Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas—Under alternative D the national recreation area would, in part, base the designation of routes and

areas on a zoning system, with one of the purposes being the separation of visitor uses that have the potential to conflict with one another, similar to the system under alternative B. In addition, a fee permit system would be instituted that would allow the national recreation area to provide additional enforcement and amenities in the ORV use area, but would not establish use limits.

Details of the management actions associated with these alternatives are specified in "Table 2: Alternative Elements Summary." The following sections describe the elements common to all alternatives and further describe the specific actions under each alternative, including the no-action and action alternatives.

ELEMENTS COMMON TO ALL ALTERNATIVES

The following describes alternative elements common to all alternatives, including the no-action alternative.

OPERATOR/VEHICLE REQUIREMENTS

Vehicles operating in any ORV use area of the national recreation area must have an ORV use decal, per Texas state law.

All-terrain vehicle (ATV)-specific operator and vehicle requirements, per Texas state law, include the following:

- ATV operators must wear eye protection and helmets approved by the Texas Department of Transportation.
- ATV operators must possess valid safety certificates issued by the state of Texas under Section 663.031 of the Texas Transportation Code.
- Any ATV operator under the age of 14 must be accompanied by a parent or guardian.
- ATV operators may not carry passengers unless the vehicle is designed by the manufacturer for carrying passengers.

NATIONAL PARK SERVICE REGULATIONS

Title 36 of the CFR, "Parks, Forests, and Public Properties," is applicable in all national park units, including Lake Meredith National Recreation Area. These regulations include those in Title 36 applicable to the operation of ORVs in the park and those applicable to individuals recreating at the park. Of particular note are the provisions of 36 CFR 1.5 and 1.6, which state that the superintendent may impose public use limits or may close all of the park or a portion of a park area to all public use or to a specific use or activity, may designate areas for a specific use or activity, may impose conditions or restrictions on a use or activity, and may establish a permit, registration, or reservation system.

SUPERINTENDENT'S COMPENDIUM

The provisions detailed in Superintendent's Compendium define recreation area–specific regulations imposed under the discretionary authority of the superintendent of the recreation area. These provisions, as described below, are common to all alternatives, and may vary annually as the contents of the compendium change.

TABLE 2: ALTERNATIVE ELEMENTS SUMMARY

Alternative	Brief Alternative Description	Designated Vehicle Routes/Areas – Land Management	Zone System (separation of visitor uses)	Permit Requirements	Use Limits	Hours of Vehicle Operation	Vehicle Requirements	Equipment Requirements	Speed Limits	Education/ Outreach Component	Camping, Campfires, and Other Amenities	Waste Disposal	Monitoring and Enforcement
Alternative A: No Action – Continuation of Current Management	Continuation of management by the 2007 *Interim OHV Use Plan* and regulations contained in the Superintendent's Compendium.	ORV use permitted at two designated areas: Rosita Flats—use authorized below the 3,000-foot elevation line. Blue Creek—use authorized in and along the creek bottom (cutbank to cutbank).	ORVs permitted in two areas in the national recreation area (Rosita Flats and Blue Creek)—in those areas, no separation of visitor uses.	No NPS vehicle permit required to operate an ORV at Rosita or Blue Creek ORV use area. A decal would be required by the state for all motorized vehicles, but not administered by the national recreation area.	No use limits in designated ORV use areas.	No limitations on the times when vehicles can operate in Rosita Flats and Blue Creek ORV use areas.	Each ATV user younger than 14 must be accompanied by a parent or guardian. ORVs may not carry passengers unless the ORV is designed by the manufacturer for carrying passengers.	All ATV operators must wear eye protection and helmets approved by the Texas Department of Transportation. Each ATV operator must possess a valid safety certificate issued by the state of Texas under Section 663.031 of the Texas Transportation Code.	No speed limits other than on national recreation area roads, as established in the CFR.	No interpretation provided at Rosita Flats or Blue Creek. Bulletin boards with campground rules and regulations and other national recreation area information located at Blue Creek and Rosita Flats. Education through visitor contact with rangers, maintenance staff, other national recreation area staff, and on-site educational opportunities. Trash bags provided on busy weekends. A site bulletin regarding ORV use at headquarters and at ranger station, and also at the Blue Creek and Rosita Flats bulletin boards on a larger scale. The bulletin boards are currently out of date.	Camping permitted at Rosita Flats and Blue Creek, without designated camping areas. Campfires regulated under the Superintendent's Compendium. Further restrictions in place during high fire-danger times (following the county burn bans). Amenities provided: Blue Creek: picnic tables, trash receptacles, pit toilets. Rosita Flats: picnic tables, trash receptacles (at entrance).	Blue Creek: Trash pickup from mid-April to September on a daily basis and as needed (two to three times per week) from October to April. Rosita Flats: Trash pickup once per week.	Rules and regulations related to ORV use at Rosita Flats and Blue Creek enforced by national recreation area law enforcement officers. Continuation of current methods of enforcement, including patrolling Rosita Flats, with more frequent patrols at Blue Creek due to the remote nature of Rosita Flats. Interagency law enforcement at large events.

Alternative	Brief Alternative Description	Designated Vehicle Routes/Areas – Land Management	Zone System (separation of visitor uses)	Permit Requirements	Use Limits	Hours of Vehicle Operation	Vehicle Requirements	Equipment Requirements	Speed Limits	Education/ Outreach Component	Camping, Campfires, and Other Amenities	Waste Disposal	Monitoring and Enforcement
Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Create zones in Rosita Flats and Blue Creek for various uses. In addition, implement a permit system for educational purposes that would be easy for the visitor to obtain and at no cost.	ORV use permitted at Blue Creek. The use area at Blue Creek redefined as • ORVs would only be allowed on sandy bottom areas and designated routes (figures 6 and 7 in the "Description of the Action Alternatives") section. • ORV use prohibited on vegetation. • Designated routes and camping areas marked by carsonite posts. ORV use permitted at Rosita Flats and redefined as • Area south of river (currently denuded) open to ORV use, with no designated access points to the riverbed area. • Other ORV use (outside the area described above) allowed only on designated, marked routes. ORVs could access the riverbed area only from marked and designated access points off designated ORV routes. Driving on vegetation prohibited. Zoning system applied as a "layer" to these use areas, as described in the next column.	Establish a zone system in Blue Creek and Rosita Flats ORV use areas to provide for a separation of visitor uses. Zones include • ORV routes/areas. • Camping-only zones with vehicle access provided to the area but no recreational vehicle use allowed. Speeds limited to 15 mph within camping-only zones. Camping-only zones are shown on figures 6 and 7 in the "Description of the Action Alternatives" section. • Designated hunting areas zoned for an ORV closure during rifle season (would not apply to ORV use for hunting). On average, these closures would last two to eight weeks (up to two months). • New low-speed, beginner zone at loop in Rosita Flats area. • At Blue Creek a new low-speed zone for family use on either side of the Farm to Market (FM) 1913 bridge (see speed limits). • A resource protection zone in Rosita Flats where vehicles with a wheel width greater than 64 inches would not be permitted.	No-cost educational permit required for access to ORV use areas. Same permit for both ORV use areas. No limit on the number of permits issued. Permit could be obtained easily (i.e., online, at the visitor's center, and at local shops, like existing boat permits), or from rangers in the field. Permit would consist of a piece of paper or brochure and would contain ORV regulations and information. The permit would need to be signed by the operator and kept in the vehicle.	Same as alternative A.	No operation of non-registered motorized vehicles in designated campground zones/areas 10:00 p.m.–6:00 a.m. All ORVs must display lighted headlights and taillights after dark.	Same as alternative A, plus: All ORVs must have a muffler, spark arrester, and functioning headlights and taillights. Muffler requirements—96 decibel limit for ORVs. Park rangers to use decibel meters to measure.	Same as alternative A, plus: All ATVs must have a triangular orange flag on top of an 8-foot pole attached to the back of the ATV.	Speed limit of 15 mph in camping-only zones. Outside these areas, a speed limit of 35 mph on all ORV routes and 55 mph on sandy bottom flats. A lower speed limit (could be 15 mph) within sight of the bridge at Blue Creek (about a half mile in either direction)—signs painted on bridge pillars (creates a low-speed use zone for families to play in the water; see "zone system" column). In Rosita Flats, provide a lower speed limit for beginner loop (less than 20 mph).	Same as alternative A, plus: • Provide safety literature and trash bags to users. ORV and other rules could be printed on the trash bags. Rangers seek out visitors and provide this information and increase visitor contacts • Provide ORV safety programs in schools and attend Fritch Howdy Neighbor Day. • Increase education about ORVs at community events the national recreation area staff attends. • Add ORV education to Water Safety Day. • Provide signs to local businesses containing Lake Meredith National Recreation Area ORV use area map and rules. • Increase educational signs in ORV use areas. • Establish a volunteer group to assist with cleanup and other efforts. • Develop "tread lightly" pamphlet for ORV use.	Designated camping zones with lower speed limit. Picnic tables and fire pits in these areas as funding allows (not funded through the permit system). No camping in designated ORV routes or areas. No additional amenities provided beyond alternative A (except for designated camping areas).	Same as alternative A, plus: Add waste management issues to educational components.	Law enforcement staff levels increased. ORV use outside designated routes and areas could cause routes/areas to close temporarily. Post signs prohibiting ORV use in areas of isolated pools during times of drought.

Alternative	Brief Alternative Description	Designated Vehicle Routes/Areas – Land Management	Zone System (separation of visitor uses)	Permit Requirements	Use Limits	Hours of Vehicle Operation	Vehicle Requirements	Equipment Requirements	Speed Limits	Education/ Outreach Component	Camping, Campfires, and Other Amenities	Waste Disposal	Monitoring and Enforcement
Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Manage ORV use (including level of use) with a permit system with a fee at Rosita Flats and Blue Creek. Develop a monitoring plan and criteria for use limits.	Blue Creek: Same as alternative B. Rosita Flats: Same as alternative B, except there is no designated ORV use area east of Bull Taco Hill.	Same as alternative A.	Fee permit required to access the ORV use areas. Price structure consistent with boat permits. Permits available for $4/day, $10/three days, and $40/year. Same permit for both ORV use areas. Potential for limits on number of permits based on results of use limit studies. Permits available via mail, at headquarters, online, or at other vendors. A kiosk and "Iron Ranger" could be used to supply daily permits. Permit would take the form of a bumper sticker on the ORV (even those brought in by trailer). Provide permit holders with a Lake Meredith National Recreation Area ORV regulations brochure.	Develop use limits based on indicators and standards developed through the GMP planning process. Criteria developed and monitored to determine when the use limit is reached. Develop monitoring plan to describe these studies and how the implementation of use limits would be achieved.	Same as alternative B.	Same as alternative B.	Same as alternative B.	Same as alternative B.	Same as alternative B, plus: interpretive wayside program starting at Blue Creek and expanding as necessary. Cost of program covered by permit fee.	Designated camping areas with lower speed limits would be established for tent and vehicle camping. Establish fire pits and designated campsites using funds from permit fees. No camping on designated ORV routes. Outside designated camping areas, tent camping would be permitted in areas that have no vegetation or previously disturbed vegetation. Visitors in these areas would be required to walk into their campsites because vehicles must be parked off vegetation along designated ORV routes or areas. Pit toilets, fire rings, and picnic tables in the designated camping areas would be provided, on a phased basis. While these would be the priority, other amenities could include shade shelters, emergency call stations, and additional kiosks and bulletin boards for more information.	Same as alternative B.	Law enforcement staff levels increased and additional law enforcement resources provided using funds from permit fees. Explore options for having law enforcement staff located closer to the Rosita Flats ORV use area. Develop a monitoring plan that looks at vegetation, erosion, and other predetermined factors. Aerial imagery to track new visitor-created routes/ noncompliance. ORV use outside designated routes and areas could cause routes/areas to close temporarily.

Alternative	Brief Alternative Description	Designated Vehicle Routes/Areas – Land Management	Zone System (separation of visitor uses)	Permit Requirements	Use Limits	Hours of Vehicle Operation	Vehicle Requirements	Equipment Requirements	Speed Limits	Education/ Outreach Component	Camping, Campfires, and Other Amenities	Waste Disposal	Monitoring and Enforcement
Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas	Develop a permit system with a fee to allow NPS to provide additional amenities and increase enforcement in the two ORV use areas. No user capacity established.	ORV use permitted at Blue Creek as described under alternative B. ORV use permitted at Rosita Flats and redefined as • Area south of river (currently denuded) open to ORV use. Designated access points to the riverbed area would be established. • Area east of Bull Taco Hill open to ORV use. • Other ORV use (outside the area described above) allowed only on designated, marked routes. ORVs could access the riverbed area only from marked and designated access points off designated ORV routes. Driving on vegetation prohibited. A zoning system would be applied as a "layer" to these use areas, as described in the next column.	Establish a zone system in Blue Creek and Rosita Flats ORV use areas to provide for a separation of visitor uses. Zones include • ORV routes/areas. • Camping-only zones with vehicle access provided to the area but no recreational vehicle use allowed. Speeds limited to 15 mph within camping-only zones. Camping-only zones are shown on figures 6 and 7 in the "Description of the Action Alternatives" section. • Designated hunting areas zoned for an ORV closure during rifle season (would not apply to ORV use for hunting). On average, these closures would last two to eight weeks (up to two months). • New low-speed, beginner zone at loop in Rosita Flats area. • At Blue Creek a new low-speed zone for family use on either side of the FM 1913 bridge (see speed limits). • A resource protection zone in Rosita Flats where vehicles with a wheel width greater than 64 inches would not be permitted.	Fee permit required to access the ORV use areas. Price based on consistency with boat permits. Permits available for $4/day, $10/three days, and $40/year. Same permit for both ORV use areas. Permits available via mail, at headquarters, online, or at other vendors. A kiosk and "Iron Ranger" could be used supply daily permits. Permit would take the form of a bumper sticker on the ORV (even those brought in by trailer). Permit holders would also receive a Lake Meredith National Recreation Area ORV regulations brochure.	Same as alternative A.	Same as alternative B.	Same as alternative B.	Same as alternative B.	Speed limit of 15 mph in camping-only zones. Outside these areas, a speed limit of 35 mph on all ORV routes and 55 mph on sandy bottom flats. A lower speed limit (could be 15 mph) within sight of the bridge at Blue Creek (about a half mile in either direction)—signs painted on bridge pillars (creates a low-speed use zone for families to play in the water; see "zone system" column). In Rosita Flats, provide a lower speed limit for beginner loop (less than 20 mph).	Same as alternative B, plus: Install fencing and signs around ORV use boundary at Rosita Flats to better define ORV use in this area.	Designated camping zones with lower speed limit. Picnic tables and fire pits as funding allows (through the permit system) in these areas. No camping in designated ORV routes or areas. Pit toilets, fire rings, and picnic tables in the designated camping zones provided, on a phased basis. While these would be the priority, other amenities could include shade shelters, emergency call stations, and additional kiosks and bulletin boards for more information.	Same as alternative B.	Law enforcement staff levels increased and additional law enforcement resources provided using funds from permit fees. Explore options for having law enforcement staff located closer to the Rosita Flats ORV use area. Develop a monitoring plan that looks at vegetation, erosion, and other predetermined factors. Aerial imagery to track new visitor-created routes/ noncompliance. ORV use outside designated routes and areas could cause routes/areas to close temporarily.

CAMPFIRES

The Superintendent's Compendium would continue to regulate camping-related activities, such as campfires, with additional restrictions during high fire-danger times (bans in Rosita Flats and Blue Creek follow county bans).

EDUCATION AND OUTREACH

Under all alternatives, the national recreation area would continue to

- Provide a bulletin board at Blue Creek and Rosita Flats with campground rules and regulations and other national recreation area information
- Provide education through visitor contact with rangers, maintenance staff, and other national recreation area staff, and through on-site educational opportunities
- Provide trash bags to visitors on busy weekends
- Develop a bulletin on ORV use areas and regulations, available at the national recreation area headquarters and at ranger stations (this information would also be displayed on the Blue Creek and Rosita Flats bulletin boards on a larger scale).

NO-ACTION ALTERNATIVE

The "no-action" alternative was developed because it could be a viable choice in the range of reasonable alternatives. It sets a baseline of existing and potential future impacts against which to compare the impacts of each action alternative. For this plan/EIS, alternative A (no action) represents a continuation of the current management as described in the *Interim OHV Use Plan* (NPS 2007a). Table 2 compares the actions that would be taken under each alternative.

ALTERNATIVE A: NO ACTION – CONTINUATION OF CURRENT MANAGEMENT

Under alternative A (no action), the national recreation area would continue to manage ORV use at Rosita Flats and Blue Creek per the 2007 *Interim OHV Use Plan*, as well as through the regulations contained in 36 CFR 7.57 and the Superintendent's Compendium as authorized under the national recreation area's special regulation at 36 CFR 7.57. This alternative would maintain the ORV use areas at Blue Creek, along the creek bottom, officially known as "cutbank to cutbank" (see figure 4), and at Rosita Flats below the 3,000-foot elevation line (see figure 5). No specific ORV routes would be established in either ORV use area.

User and operator requirements described under "Elements Common to All Alternatives" would continue to be implemented and enforced. There would also continue to be no limitation on the operating hours of vehicles in Rosita Flats and Blue Creek. There would be no established speed limits for ORV use in Rosita Flats or Blue Creek other than those on national recreation area roads as established in the CFR.

Alternative A would include camping opportunities throughout Rosita Flats and Blue Creek. There are currently no officially designated camping areas at either site, and camping could occur anywhere the visitor can access. Campfires would continue to be regulated under the Superintendent's Compendium, and could be restricted further during times of high fire danger, which follow when county burn bans are in effect. Existing amenities in these areas, such as picnic tables and trash receptacles, as well as pit toilets at Blue Creek, would be maintained, but none would be added.

The national recreation area would continue to provide waste disposal services at Blue Creek and Rosita Flats at the same frequency as under current conditions. At Blue Creek, trash pickup would occur on a daily basis from mid-April to September and as needed, typically two to three times per week, from October to April. At Rosita Flats, trash pickup would occur once a week year-round.

Rules and regulations related to ORV use at Rosita Flats and Blue Creek would be enforced by park law enforcement officers. Current methods of enforcement that would continue include patrolling Rosita Flats, with more frequent patrols at Blue Creek due to the remote nature of Rosita Flats. During high visitor-use times or special events, the NPS may coordinate with other agencies in the area for additional law enforcement support.

No additional ORV management measures, such as the establishment of user zones, use limits, or a permit system (beyond what is already required by the state), would be established.

Interpretation services would not be provided in Rosita Flats and Blue Creek. Additional education, research, and monitoring would occur as described under “Elements Common to All Alternatives.”

ACTION ALTERNATIVES

The action alternatives would establish designated ORV routes and areas, with some alternatives integrating additional ORV management techniques such as zoning, use limits, and permits.

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

The following describes elements of the management actions common to all action alternatives—alternatives B, C, and D.

Operator/Vehicle Requirements—Additional operator/vehicle requirements would be implemented and would include the following:

- All ORVs would be required to have a functioning muffler system, a qualified spark arrester (ATVs only), and functioning headlights and taillights. If a vehicle does not have functioning headlights or taillights, it would be permitted to operate during the day, but not after dark.
- Vehicle mufflers on ORVs that allow more than 96 decibels of sound would be prohibited. Noise levels would be measured 20 inches from the vehicle exhaust, pursuant to the SAE J1287 standard.
- All ATVs would be required to have a triangular orange flag on top of an 8-foot pole attached to the back of the vehicle.
- All ORVs would be required to display lighted headlights and taillights after dark.

Waste Disposal—The NPS would continue to provide waste disposal services at Blue Creek and Rosita Flats and would develop new educational programs/materials for clarifying issues such as proper waste disposal techniques.

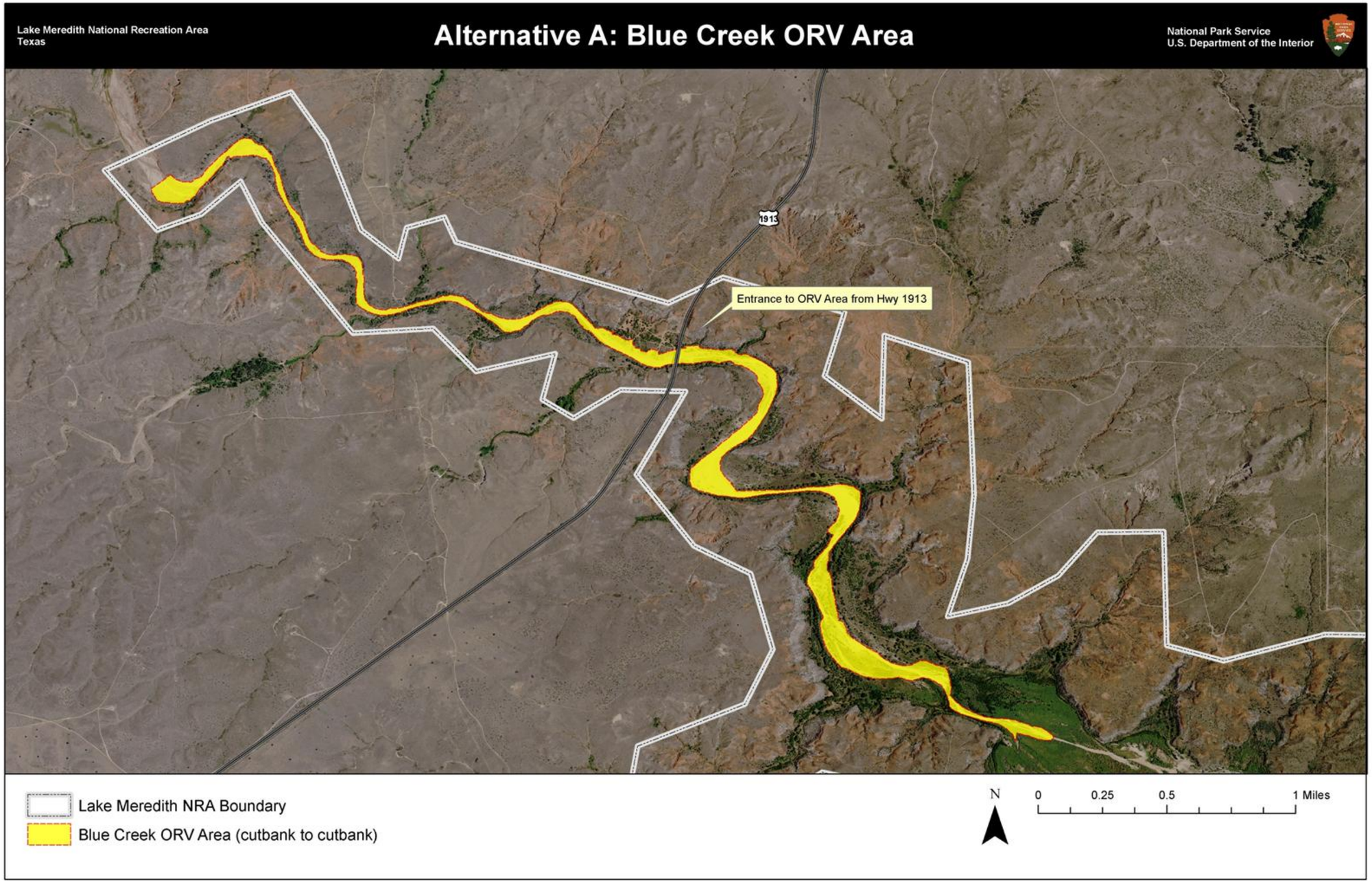

FIGURE 4: ALTERNATIVE A: BLUE CREEK OFF-ROAD VEHICLE USE AREA

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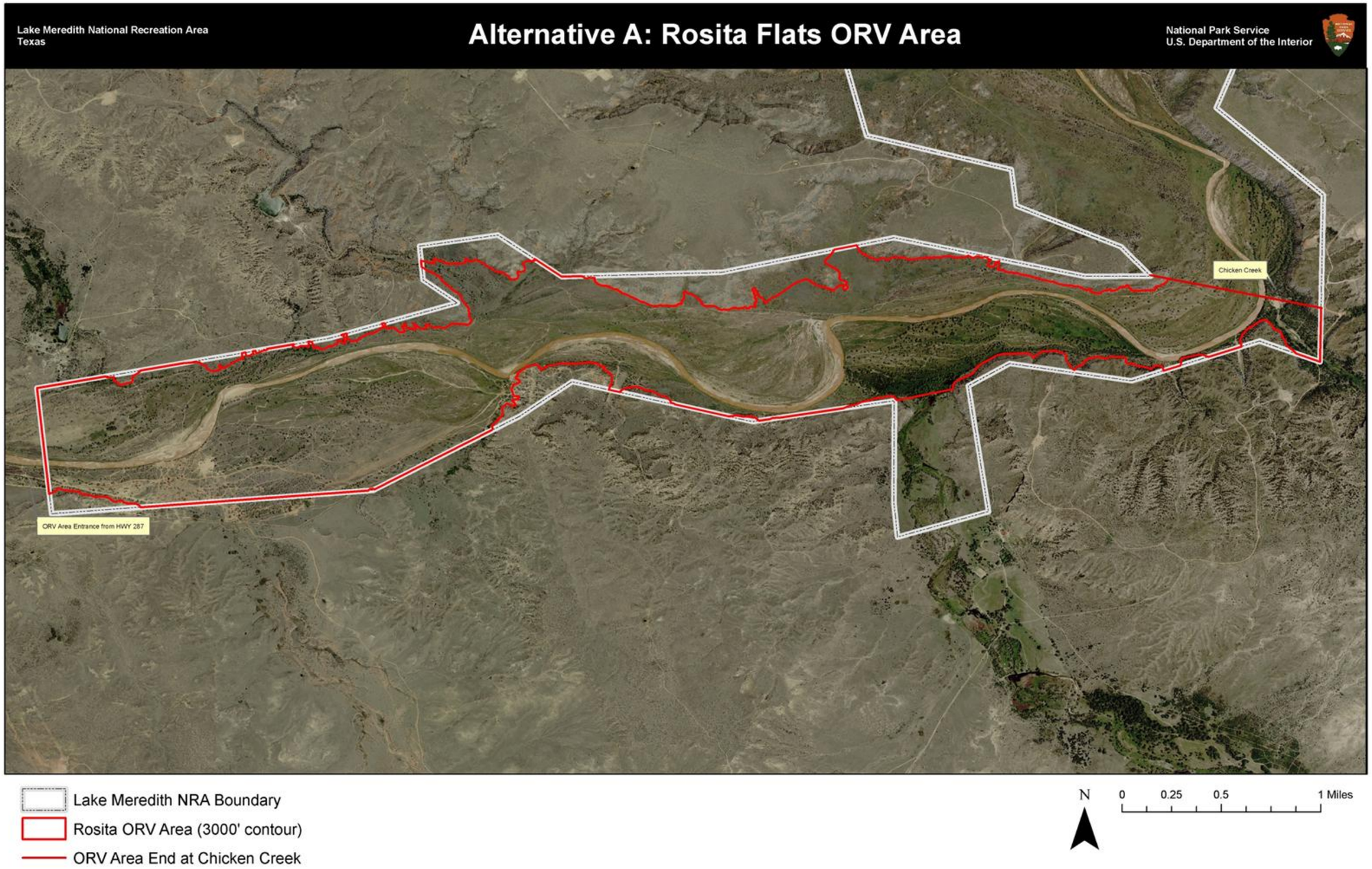

FIGURE 5: ALTERNATIVE A: ROSITA FLATS OFF-ROAD VEHICLE USE AREA

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Hours of Vehicle Operation—Under the action alternatives, there would continue to be no limitation on the operating hours of vehicles in Rosita Flats and Blue Creek except for in the designated camping areas, where non-registered motorized vehicles (such as ATVs/UTVs, dune buggies, etc.) would be prohibited from operating between 10:00 p.m. and 6:00 a.m. Visitors would be able to use their vehicles to access their camping site entrances and exits, but otherwise, quiet hours in campground areas would be between 10:00 p.m. and 6:00 a.m.

Glass Bottle Ban—All action alternatives would include a glass bottle ban in the Rosita Flats and Blue Creek ORV use areas.

Speed Limits—Speed limits in Rosita Flats and Blue Creek would be 35 mph on designated routes and areas, on sandy bottom flats the speed limit would be 55 mph, and in designated camping areas the speed limit would be 15 mph.

Temporary Route and Area Closures—The Superintendent may temporarily close ORV routes and areas if resource conditions warrant. This could include closing areas that become overly rutted or closing an area after heavy rains to prevent resource damage. Once the resource condition has been corrected or conditions improve, the area would be reopened to ORV use.

Arkansas River Shiner Protection Measures

Under the action alternatives, the national recreation area would take additional steps to ensure the protection of the Arkansas River shiner. These include, but are not limited to, the following:

- Parking or staging of vehicles of any kind would be confined to areas outside the wetted channel of the Canadian River.
- ORV use within park boundaries would be restricted to designated routes. Access to the river would be allowed only from designated access points.
- ORV use zones would be established in Rosita Flats in two areas currently devoid of vegetation. One is south of the Canadian River and the other is east of Bull Taco Hill. Outside of these areas, ORVs would be permitted only on designated, marked routes. ORVs may access the riverbed area only from marked and designated access points off the designated ORV routes (alternative D only).
- A resource protection zone of approximately 1,040 acres would be established north and east of the Bull Taco Hill ORV use area to protect vegetation and reduce oil erosion. This zone would permit only vehicles with a wheel width of 64 inches or less (applies to alternatives B and D only).
- Every two to four years, aerial photography would be used to determine if use is occurring outside of designated routes and areas.
- Educational materials would be provided when the visitor receives a permit (either with cost or at no cost, depending on the alternative). Educational messages would include information about the prohibition of driving in isolated pools or entering and leaving the river at undesignated access points, as well as other information about the Arkansas River shiner. These materials could also contain the statement, “The U.S. Fish and Wildlife Service (USFWS) recommends during low water that ORV users do not drive in the river or isolated pools but may cross the channel when needed.”

Isolated pools are areas of water that have no connectivity between them, thus no flow entering or leaving the pool.

- Four to six times per week, on-the-ground NPS law enforcement would patrol and monitor for prohibited driving in isolated pools and the wetted channel, as well as other ORV violations. Monitoring for incidental take of Arkansas River shiner would occur at this time. Additional law enforcement patrols may occur as funding from ORV permits becomes available under the various alternatives.
- The national recreation area would monitor the shiner population every three to five years to ensure that additional management is not necessary.
- The superintendent always retains the authority to close any portion of the national recreation area for protection of park resources.
- The NPS shall develop and implement an appropriate monitoring plan for reporting progress in development of the property and implementation of the reasonable and prudent measures. Population monitoring for the Arkansas River shiner would occur every three to five years, as funding permits. The content, schedule, and format of the monitoring plan would be at the discretion of the NPS, but would take place no less than once every five years.
- The NPS would provide sufficient guidance to its employees and contracted employees to minimize incidental take and to ensure compliance with the terms and conditions of the biological opinion (USFWS 2014).
- Additional educational materials concerning Arkansas River shiner protection could be provided on existing park bulletin boards and any boards or kiosks added to campground areas to further awareness of Arkansas River shiner conservation.

Cultural Resource Protection—Within the recreation area, archeological resources in ORV routes or areas would be protected and access to these resources would be restricted. Should additional resources be discovered within ORV routes or areas, the resources would be protected from ORV use.

Education and Outreach

The current education and interpretation efforts related to ORV use at Blue Creek would be expanded under all action alternatives to also include

- Providing literature and trash bags to users. Literature would contain basic safety messages (speed limits, etc.). ATV rules and other national recreation area rules could be printed directly on the trash bags. NPS field staff would visit each campsite to provide this information and increase visitor contacts.
- Providing ATV safety programs in schools, including more education about ORV use at community events the national recreation area staff attends, such as the Howdy Neighbor Day in Fritch.
- Including ORV education when providing information at the annual Water Safety Day program.
- Providing information containing Lake Meredith National Recreation Area ORV use area maps and rules to local retail establishments for display.
- Increasing the number of educational signs in ORV use areas and increasing patrols.
- Establishing a volunteer group to assist with cleanup and other efforts.
- Continuing to work with Texas Off-road Association on additional outreach efforts.
- Developing “tread lightly” pamphlets for ORV use.

Research and Monitoring

Under all action alternatives, national recreation area staff would monitor ORV use areas to identify ORV use outside designated routes and areas. National recreation area staff would monitor ORV use on the ground throughout the year and close visitor-created ORV routes and areas by using physical barriers, signs, etc., as appropriate. During monitoring, national recreation area staff would look for new trails and new signs of disturbance, including broken fence lines. Monitoring would also include a review of law enforcement records to determine how many citations are being issued for off-trail use.

Additional monitoring would be done by aerial photography. Photos would be taken of both ORV use areas every two to four years, depending on funding. National recreation area staff would use these aerial photographs to identify ORV use occurring outside designated routes and areas. National recreation area staff would provide physical barriers, signs, etc., as appropriate to prohibit ORV use on any new visitor-created routes. Additional patrols would likely resume as well. In addition, if park staff suspect off-trail use is occurring, periodic photos (known as photo points) would be taken to detect changes in the resource condition over time and the area would be closed if it is determined that the resource is being damaged.

Following the conservation recommendations in the biological opinion (USFWS 2014), the NPS would make efforts to ensure that instream survey monitoring for Arkansas River shiner within Rosita Flats is continued at a frequency that would continue to provide valuable information to the scientific community, but would not overly stress the local population. This information could be used to direct resource management decisions, as well as recovery efforts of the Arkansas River shiner population. As funding is available, efforts would be made to survey areas upstream of Rosita Flats (with landowner permission), which might be more adversely impacted in the absence of resource protection. Information on habitat conditions within this area might be useful in explaining fluctuations in Arkansas River shiner populations downstream in Rosita Flats.

User Capacity

The NPS defines user capacity as the types and levels of visitor use that can be accommodated while sustaining the quality of park resources and visitor experiences consistent with the purposes of the park. Managing user capacity in national parks is inherently complex and depends not only on the number of visitors but on where visitors go and what they do. In managing user capacity, the NPS employs a variety of management tools and strategies rather than relying solely on regulating the number of people in a park area. In addition, the ever-changing nature of visitor use in parks requires an adaptive approach to user capacity management.

The NPS defines user capacity as the types and levels of visitor use that can be accommodated while sustaining the quality of park resources and visitor experiences consistent with the purposes of the park.

The ongoing GMP effort for Lake Meredith National Recreation Area and Alibates Flint Quarry National Monument establishes a parkwide user capacity program. This program includes indicators and standards for ORV use areas in Lake Meredith National Recreation Area. Indicators and standards are measurable features that are monitored to track changes in resource conditions and visitor experiences. The indicators and standards help the NPS ensure that desired conditions are being met.

Table 3 includes the indicators, standards, and potential future management strategies that could be implemented in the ORV use areas. After the most appropriate indicators were identified, standards that represent the minimum acceptable condition for each indicator were assigned. The standards incorporate

qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, staff management experience, and scoping on public preferences.

TABLE 3: SUMMARY OF USER CAPACITY INDICATORS, STANDARDS, AND POTENTIAL MANAGEMENT STRATEGIES APPLICABLE TO OFF-ROAD VEHICLE USE AREAS

Indicator	Zone	Standard	Management Strategies
Number of breaches to the designated boundary per month	ORV Semi-primitive	No more than six breaches of designated ORV boundary per month	Educate users on impacts of leaving designated ORV use areas Remotely monitor trails (for example, with cameras) Require permits Implement temporary closures
Change in campsite condition class	Developed ORV Rural Semi-primitive	No less than 15% above condition class 4 based on site condition assessment (to be measured annually)	Educate visitors in a program that includes the use of designated sites and the prohibition on camping outside designated areas; tools could include flyers, press releases, public events such as with hunters, and information postings at the visitor contact station and on waysides Mark designated campsites, survey with global positioning system equipment, and incorporate the results in the geographic information system to provide a baseline Increase enforcement
Number of incidences of camping outside designated areas	Developed ORV Rural Semi-primitive	Zero tolerance for camping in undesignated areas	Same as strategies for change in campsite condition class
Number of ticketed incidents related to damage of park resources per six-month period	Park-wide	No more than one ticketed violations related to park resources per six-month period	Provide pre-incident education Increase patrols based on locations of incidents / increase number of signs Implement more intensive mitigation measures based on resource impacted, such as applying coating that prevents graffiti from sticking, or rerouting trails Close facilities or areas if incidents continue
Number of incidences of vehicles traveling outside the designated road or route	Cultural Developed ORV Rural	Three informal roads within 0.5 mile of designated road or route	Educate visitors to increase awareness of the impacts associated with travelling on undesignated roads Increase number of signs, with Carsonite® poles Increase the number of patrols Close area to mitigate resource damage Physical damage and productivity

As monitoring of conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and social conditions. If ORV use levels and patterns change appreciably, NPS staff might need to identify new indicators to ensure that desired conditions are achieved and maintained. This iterative learning and refining process, a form of adaptive management, is a strength of the NPS user capacity management program.

DESCRIPTION OF THE ACTION ALTERNATIVES

ALTERNATIVE B: ZONE SYSTEM – SEPARATION OF VISITOR USES, WITH A PERMIT FOR EDUCATIONAL PURPOSES

Under alternative B the national recreation area would, in part, base the designation of routes and areas on a zoning system, with one of the purposes being the separation of visitor uses that have the potential to conflict with one another. As shown on figures 6 and 7, ORV routes and areas would be established as follows:

- **Blue Creek—**ORVs would be allowed only on sandy bottom areas and designated routes (see figure 6), with ORV use prohibited on vegetated areas. Routes and areas where ORV use is allowed would be marked by carsonite posts.
- **Rosita Flats—**The area south of the river (currently denuded of vegetation) would be established as an ORV area and would be open to ORV use. Access to the riverbed from this ORV use area would be from designated access points only. A second ORV use area would be established east of Bull Taco Hill. Outside these ORV use areas, ORV use would be permitted only on designated, marked routes. ORVs could access the riverbed area only from marked and designated access points off the designated ORV routes. In the ORV use area and on ORV routes, driving on vegetated areas would be prohibited.

Alternative B would also institute a zoning system that would be a “layer” on top of these routes and areas, further managing use. The following zones would be established:

- **Camping Only—**As shown on figure 6, areas would be established in Blue Creek and Rosita Flats that would be managed for camping. This management would include allowing ORVs in these zones only for camping and access purposes, prohibiting other recreational ORV use. These areas would be clearly marked with posts and cables. A 15 mph speed limit would be enforced in this zone to reduce the potential for conflicts between users. The road to the designated camping area in Rosita Flats would be improved, but not paved, to assist in the evacuation of visitors during rainstorms when the area becomes muddy.
- **Hunting—**At Rosita Flats and Blue Creek, areas that are already designated for hunting during rifle season would also be closed to recreational ORV use during this season. Hunters using ORVs for access for hunting would be allowed and would be required to stay on designated routes. The rifle hunting season (deer/general gun season) would be expected to last approximately eight weeks (two months) per year. During these months, ORV users who are not hunting would not be allowed in this zone.
- **Resource Protection—**A resource protection zone would be established in Rosita Flats north and east of the Bull Taco Hill ORV use area to protect vegetation and reduce soil erosion. This zone would permit only vehicles with a wheel width of 64 inches or less.
- **Low-speed—**At Blue Creek, a low-speed zone would be established on either side of the FM 1913 bridge, as many families recreate in this area and a lower speed limit would reduce the potential for conflicts between ORVs and non-ORV users. Low-speed zones would not be established at Rosita Flats.
- **Beginner—**At Rosita Flats, a “beginner” loop would be established to provide an opportunity for new riders to recreate in an area with others of a similar skill level. In this zone, the speed limit would be lower than 20 mph. Beginner zones would not be established at Blue Creek.

User and operator requirements described under “Elements Common to All Alternatives” and “Elements Common to All Action Alternatives” would be implemented and enforced.

Alternative B would allow camping throughout Rosita Flats and Blue Creek in designated camping-only zones (see figures 6 and 7), which would provide picnic tables and fire pits as funding permits. Camping would be prohibited outside these areas, including within designated ORV routes and areas. Existing amenities outside camping-only zones, such as picnic tables and trash receptacles, would be maintained, but no new ones would be added. The NPS would also explore the option of having “camp hosts” in the designated camping areas to assist visitors and provide information on the ORV rules and regulations in these areas. As discussed under “Elements Common to All Action Alternatives,” use would be restricted in the camping area from 10:00 p.m. to 6:00 a.m. to create quiet hours. At Rosita Flats, the road leading to the designated camping area would be improved, but not paved, to assist in the evacuation of visitors during rainstorms when the area becomes muddy.

The speed limit for ORVs in Rosita Flats and Blue Creek would be 15 mph in designated campground areas (camping-only zones). In addition, speed limit adjustments would be made in certain zones to reduce the potential for visitor use conflicts. These recommendations would include lowering the speed limit in sight of the bridge at Blue Creek (about a half mile in either direction) to 15 mph, and posting the speed limit on signs painted on bridge pillars. This lowered speed limit would create a low-speed zone so visitors could safely recreate in the water. In addition, at Rosita Flats, the beginner zone would include a reduced speed limit of 20 mph or less to provide a safer environment for new ORV users.

Rules and regulations related to ORV use at Rosita Flats and Blue Creek would be enforced by national recreation area law enforcement officers. During high visitor-use times or special events, the NPS may coordinate with other agencies in the area for additional law enforcement support. In addition, the national recreation area would increase law enforcement staff levels in an effort to increase the frequency of patrols. To encourage compliance, portions of ORV use areas could be closed to the public temporarily if evidence of ORV use is found outside designated routes and areas.

Education and outreach efforts at Blue Creek and Rosita Flats would be the same as those under “Elements Common to All Action Alternatives,” and would also include posting fences and signs around the ORV use boundary at Rosita Flats to better define where ORV use is allowed in this area.

Additional restrictions would include prohibiting ORV use in isolated pools of water during times of drought (when federally protected fish could be using the pools for habitat) and posting signs to inform the public of this restriction. Glass bottles would also be banned in the Rosita Flats and Blue Creek ORV use areas (see “Elements Common to All Action Alternatives”).

Alternative B would include a no-charge permit system, with no limit on the number of permits issued. To obtain the permit, ORV owners would be required to read education materials and sign for their permits. By signing for permits, users would be acknowledging they have read, understood, and agreed to abide by the rules of ORV use in the national recreation area. The signed permit materials must be kept in the vehicle being used in the national recreation area. Each permit would be valid for a one-year period for use at Blue Creek and Rosita Flats, and could be obtained easily (i.e., online, at the visitor center, or at local shops—similar to the current boat permit process—or from national recreation area rangers in the field). If a rider were found off designated trails, the NPS would recommend to the courts that the permit be revoked for the remainder of the year. If a rider violates the rules in either of the ORV use areas (Rosita Flats and Blue Creek) three times, the national recreation area would recommend to the court suspension of their permit privileges.

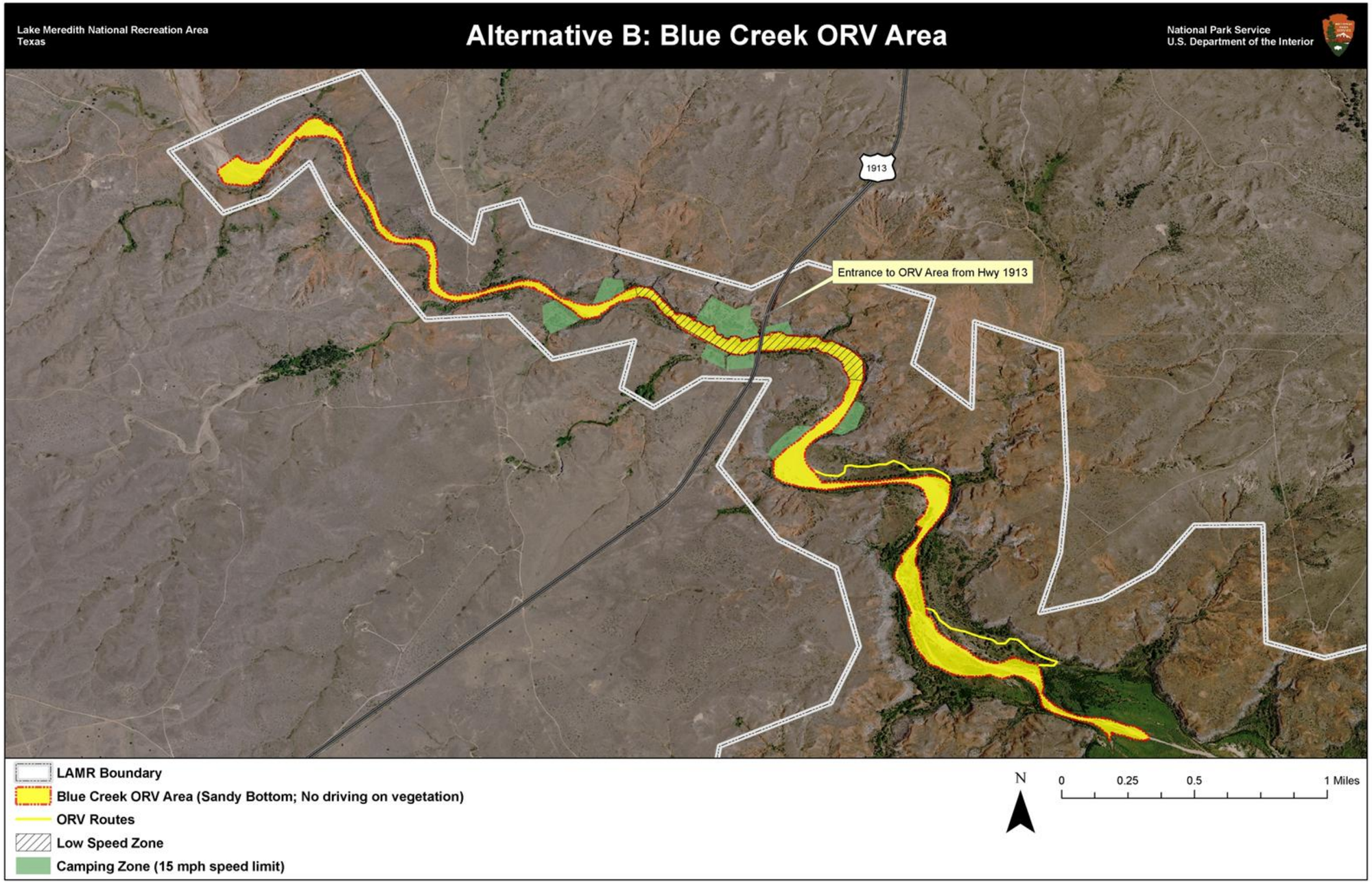

FIGURE 6: ALTERNATIVE B: BLUE CREEK OFF-ROAD VEHICLE USE AREA

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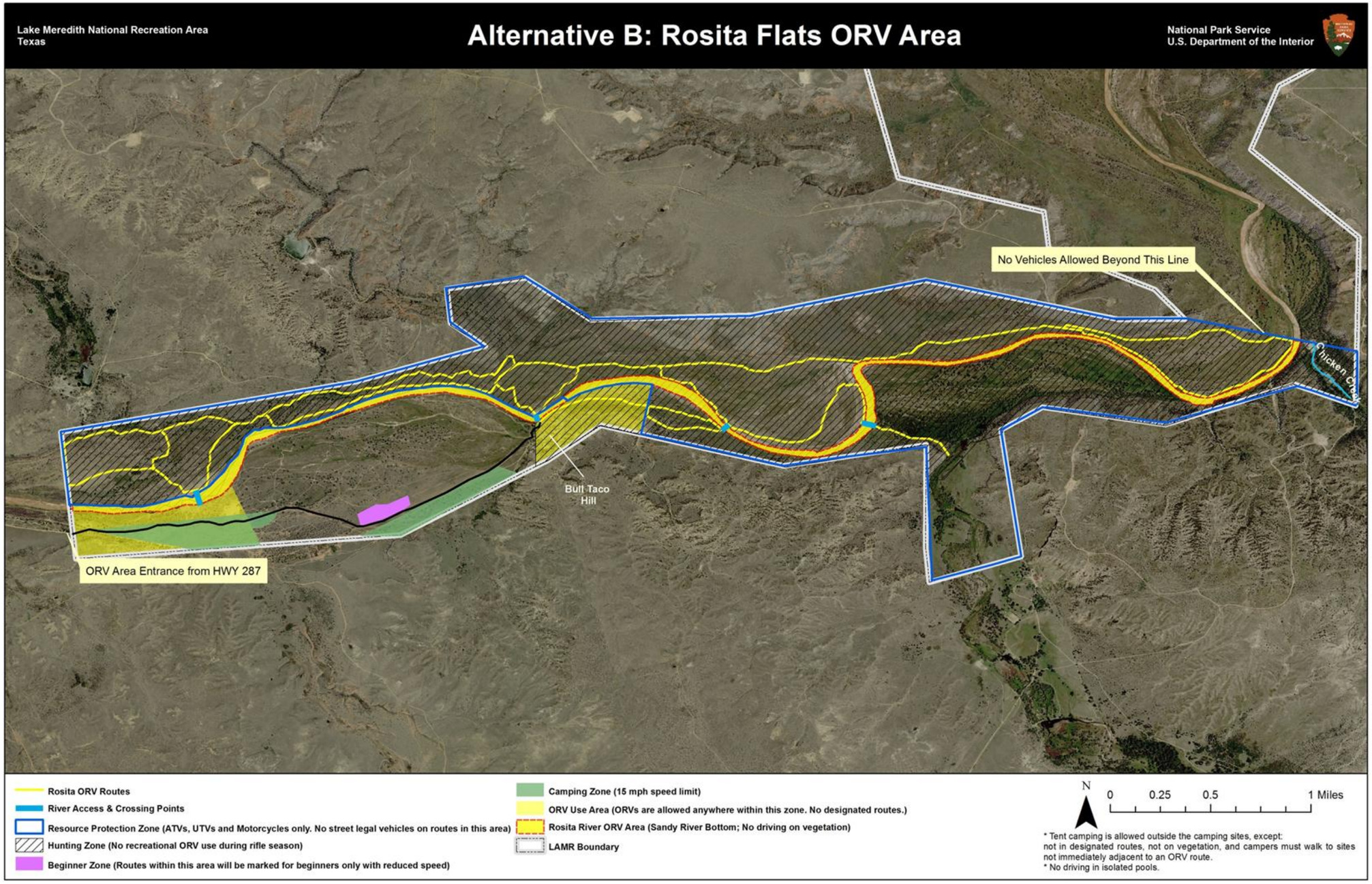

FIGURE 7: ALTERNATIVE B: ROSITA FLATS OFF-ROAD VEHICLE USE AREA

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Alternative B would also include increased coordination with the state of Texas if a new state park adjacent to Rosita Flats is established. This effort would include coordinating the resources of the NPS and the state in this area, particularly law enforcement and interpretive resources. The goal would be to maximize the potential efficiencies that could result from the proximity of the two ORV use areas, as provided for under 16 USC 1a-2(1), "Cooperative Management Agreements." This provision allows for national park system units adjacent to or near a state or local park area to enter into cooperative management where it will "allow for more effective and efficient management of the parks."

ALTERNATIVE C: MANAGEMENT THROUGH USE OF A PERMIT SYSTEM AT CURRENT ORV USE AREAS

Under alternative C, the national recreation area would manage ORV use through a permit system as well as through the establishment of use limits, as described below. The following designated routes and areas would be established (the same as alternative B, except there would be no designated ORV use area east of Bull Taco Hill), as shown on figures 8 and 9:

- **Blue Creek—**ORVs would be allowed only on sandy bottom areas and designated routes (as shown on figure 8), with ORV use prohibited on vegetated areas. Routes and areas where ORV use is allowed would be marked by carsonite posts.
- **Rosita Flats—**The area south of the river (currently denuded of vegetation) would be established as an ORV area and would be open to ORV use. Outside this ORV use area, ORV use would be permitted only on designated, marked routes. Access to the riverbed would be from designated access points only. In the ORV use area and on ORV routes, driving on vegetated areas would be prohibited (see figure 9).

User and operator requirements described under "Elements Common to All Alternatives" and "Elements Common to All Action Alternatives" would be implemented and enforced.

Similar to alternative B, alternative C would include camping in designated camping areas in Rosita Flats and Blue Creek (see figures 8 and 9), with specific campsites established. In these designated camping areas, picnic tables and fire pits would be provided, as funding allows, with funding coming from the permit system, as described below. No vehicle camping (camping in a car, in a trailer, or in another motorized vehicle) would be allowed outside these areas, including in designated ORV routes and areas. Alternative C would permit tent camping (no vehicles) in previously disturbed areas or areas that have no vegetation. Campers would be required to park vehicles in an area away from vegetation along designated ORV routes or areas and walk to where tent camping is permitted to set up their tents. At Rosita Flats, the road leading to the designated camping area would be improved, but not paved, to assist in the evacuation of visitors during rainstorms when the area becomes muddy.

The NPS would also explore the option of having "camp hosts" in the designated camping areas to assist visitors and provide area ORV rules and regulations information. As discussed under "Elements Common to All Action Alternatives," camping areas would be subject to quiet hours from 10:00 p.m. to 6:00 a.m. Aside from designated camping areas, no other type of user zoning would occur under alternative C.

Existing amenities outside designated camping areas, such as picnic tables and trash receptacles, would be maintained. In addition, fees from the permit system (described below) would be used to provide potential additional amenities at Rosita Flats and Blue Creek, including pit toilets, fire rings, and picnic tables. Amenities would be provided on a phased basis, based on the level of use the added amenities receive, which would be an indication of demand for additional amenities. Depending on funding and demand,

other potential amenities could include shade shelters, emergency call stations, and additional information kiosks/bulletin boards.

Education and outreach efforts at Blue Creek and Rosita Flats would be the same as those under "Elements Common to All Action Alternatives." This alternative could also include the installation of an interpretive wayside exhibit program at Blue Creek as funding from the permit fees allows. The wayside program could be expanded if warranted by the level of visitor interest and available funding.

Under alternative C, the NPS would require users to obtain permits for their vehicles (including vehicles transported to the national recreation area on a trailer) before using the ORV use areas. ORV permit fees would recover costs incurred by the national recreation area for resource management, law enforcement, and maintenance associated with the two ORV use areas. The permit cost would be consistent with other permits at the national recreation area. This plan/EIS will not set or determine the cost of the fee permit, but it would likely be similar to the current boat permit ($4 per day, $10 for three days, and $40 for annual permit). An annual family permit would also be available and would be valid for up to four vehicles.

Similar to alternative B, ORV users would be required to read and sign educational materials prior to obtaining a permit. Permits would be available via mail, at headquarters, online, or at other vendors, with the potential for daily permits on site using unstaffed fee collection equipment such as "Iron Rangers." All ORV permits would be valid for use at Blue Creek and Rosita Flats. When first initiated, there would be no limit on the number of permits available; however, a limit could be instituted based on the results of use limit studies, as described below.

As with alternative B, the NPS would recommend to the courts that a permit be revoked for the remainder of the year if a rider were found off designated trails. If a rider violated the rules in either of the ORV use areas (Rosita Flats and Blue Creek) three times, the national recreation area would recommend to the court suspension of their permit privileges.

Alternative C would further manage ORV use by studying the number of ORVs used at the national recreation area and how that use relates to potential impacts on resources and visitor use and experience. To accomplish this, the national recreation area would develop indicators and standards, as discussed under "Elements Common to All Action Alternatives": User Capacity. National recreation area law enforcement officers would enforce rules and regulations related to ORV use at Rosita Flats and Blue Creek. During high visitor-use times or special events, the NPS would coordinate with other agencies in the area for additional law enforcement support. Using ORV permit system fees, the national recreation area would increase law enforcement staff levels in an effort to increase the frequency of patrols as well as providing additional amenities to national recreation area users. The NPS would also explore options for having law enforcement staff located closer to the Rosita Flats ORV use area on a regular basis. To encourage compliance and to allow time for impacted areas to recover, portions of ORV use areas could be closed to the public temporarily if evidence of ORV use is found outside designated routes and areas. In addition to on-the-ground monitoring, aerial photography could be used to track improper ORV use.

As described under alternative B, alternative C would involve management agreements between the national recreation area and the state if a new state park is established.

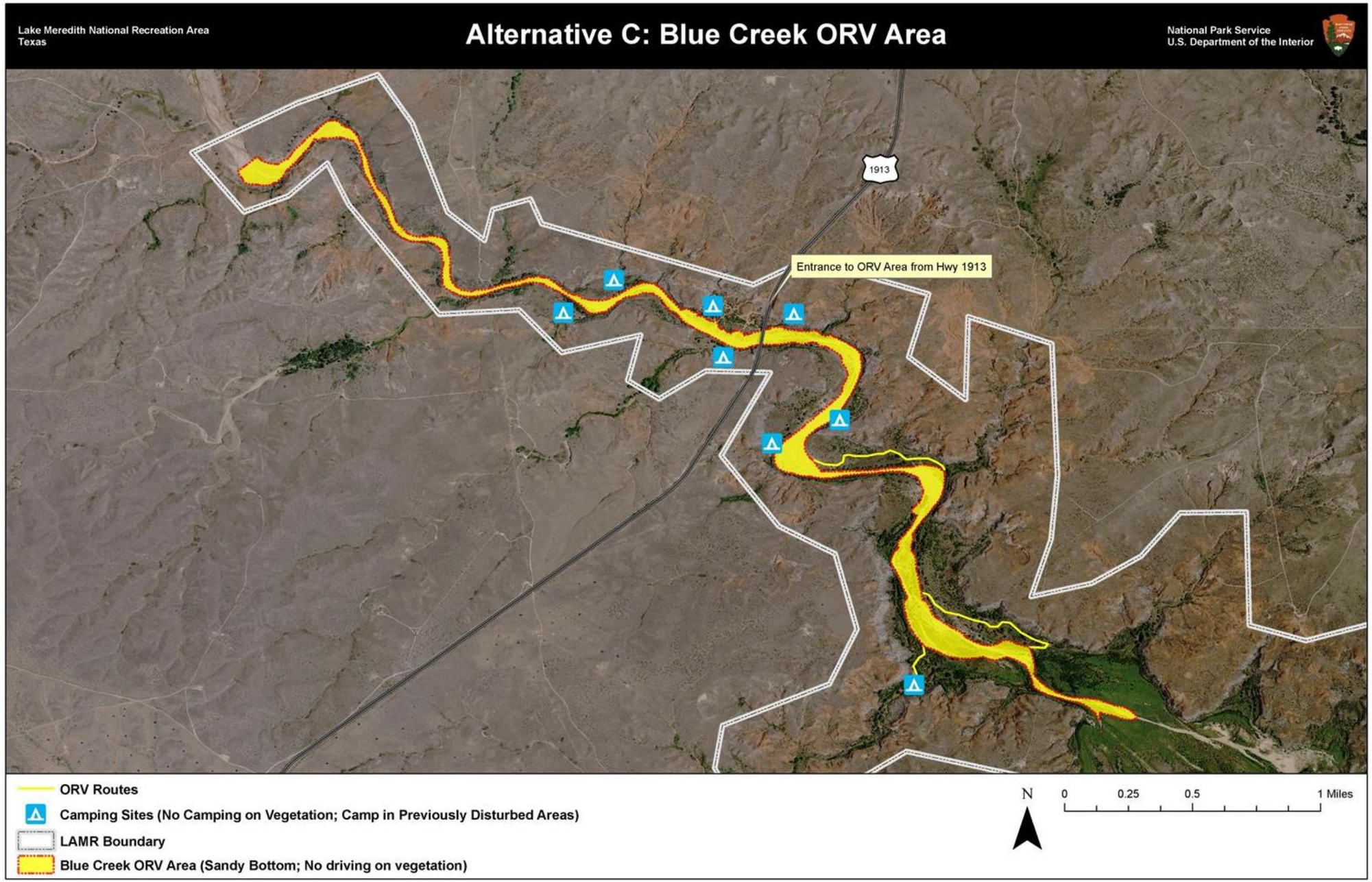

FIGURE 8: ALTERNATIVE C: BLUE CREEK OFF-ROAD VEHICLE USE AREA

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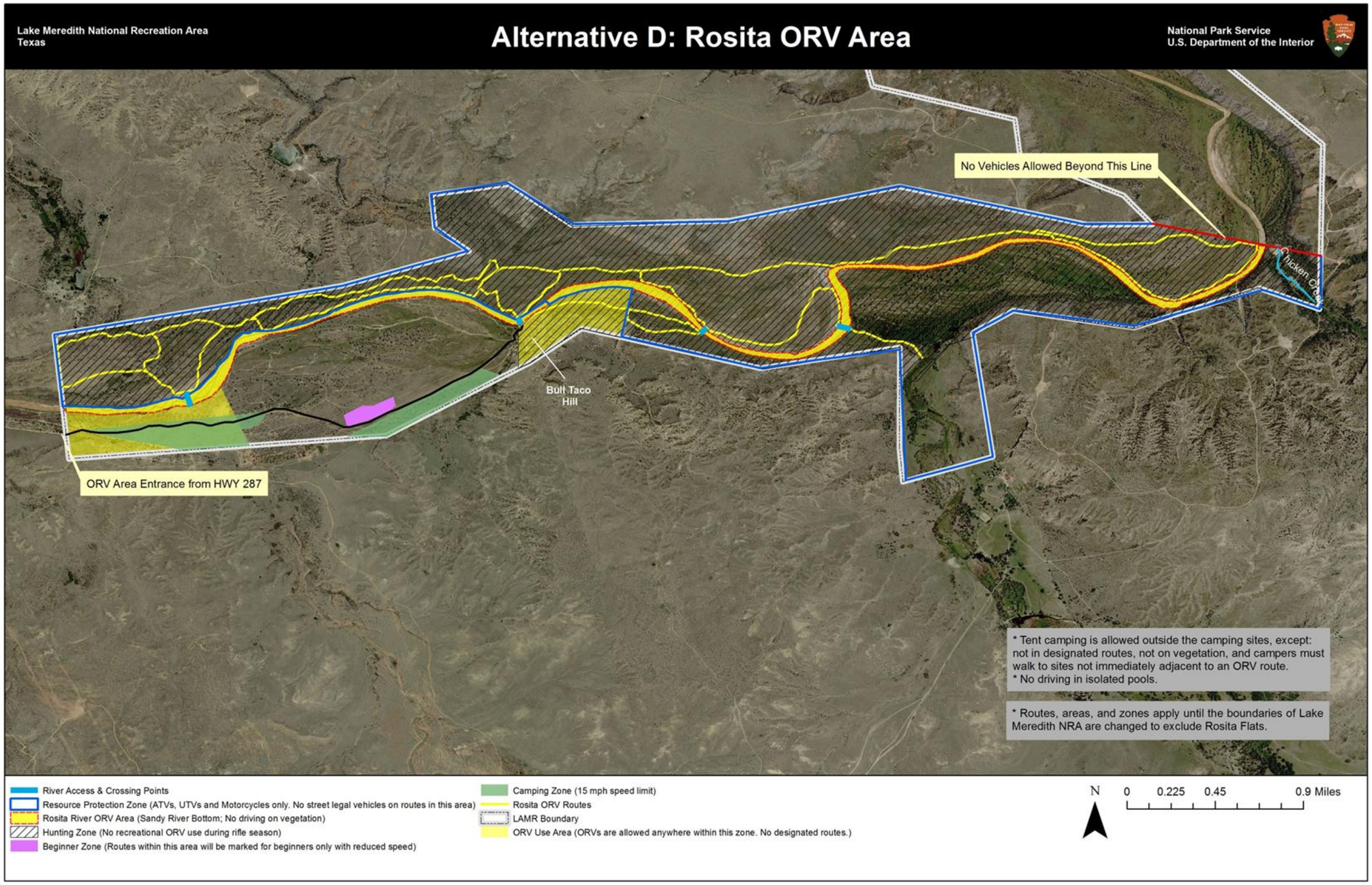

FIGURE 9: ALTERNATIVE C: ROSITA FLATS OFF-ROAD VEHICLE USE AREA

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ALTERNATIVE D: MANAGEMENT THROUGH USE OF A ZONING AND PERMITTING SYSTEM AT CURRENT ORV USE AREAS

Under alternative D the national recreation area would base the designation of routes and areas on a zoning system, with one of the purposes being the separation of visitor uses that have the potential to conflict with one another. As shown on figures 10 and 11, ORV routes and areas would be established as described under alternative B.

User and operator requirements described under “Elements Common to All Alternatives” and “Elements Common to All Action Alternatives” would be implemented and enforced.

Similar to alternative B, alternative D would include camping in designated camping areas in Rosita Flats and Blue Creek (see figures 10 and 11). In these designated camping areas, picnic tables and fire pits would be provided as funding from the permit system allows, as described below. No vehicle camping (camping in a car, in a trailer, or in another motorized vehicle) would be permitted outside these areas, including within designated ORV routes and areas. Alternative D would permit tent camping (no vehicles) in previously disturbed areas or areas that have no vegetation. Campers would be required to park vehicles in an area away from vegetation along designated ORV routes or areas and to walk to where tent camping is permitted to set up their tent. At Rosita Flats, the road leading to the designated camping area would be improved, but not paved, to assist in the evacuation of visitors during rainstorms when the area becomes muddy.

Existing amenities outside designated camping areas, such as picnic tables and trash receptacles, would be maintained. In addition, fees from the permit system (described below) would be used to provide potential additional amenities at Rosita Flats and Blue Creek, including pit toilets, fire rings, and picnic tables. Amenities would be provided on a phased basis. Depending on funding and demand, other potential amenities could include shade shelters, emergency call stations, and additional information kiosks/bulletin boards.

Education and outreach efforts at Blue Creek and Rosita Flats would be the same as those under “Elements Common to All Action Alternatives.” This alternative could also include the installation of an interpretive wayside exhibit program at Blue Creek as funding from the permit fees allows. The wayside program could be expanded if warranted by the level of visitor interest and if funding were available.

Under alternative D, the NPS would require users to obtain a fee permit for their vehicles as described under alternative C.

HOW ALTERNATIVES MEET OBJECTIVES

As stated in “Chapter 1: Purpose of and Need for Action,” all action alternatives selected for analysis must meet all objectives to a substantial degree. The action alternatives must also address the stated purpose of taking action and resolving the need for action; therefore, the alternatives were individually assessed in light of how well they would meet the objectives for this plan and the EIS. Alternatives not meeting the objectives were not analyzed further (see “Alternative Elements Considered but Dismissed from Further Analysis”).

Table 4 compares how each of the alternatives described in this chapter would meet plan objectives. “Chapter 4: Environmental Consequences” describes the effects of each alternative on each impact topic, which are summarized in table 5.

ALTERNATIVE ELEMENTS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

Comments received during scoping and public comments on the draft plan/EIS included suggestions for alternatives or actions within alternatives. For various reasons, some of these alternatives or actions were eliminated from further study. Those alternatives and actions dismissed from further consideration did not meet the definition of a reasonable alternative, as stated by the CEQ. The CEQ states that "reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." In addition, they also meet project objectives, resolve need, and alleviate potentially significant impacts on important resources.

The CEQ states that "reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."

An alternative is not automatically rendered unreasonable if it requires the amending of a park plan or policy; causes a potential conflict with local, state, or federal law; or lies outside the scope of what Congress has approved or funded or outside the legal jurisdiction of the NPS. The rationales for dismissing these alternative elements are presented in this section.

Boundary Change to Exclude Rosita Flats from Lake Meredith National Recreation Area— Throughout the planning process, the NPS has considered requesting a change in the boundary of the national recreation area to exclude Rosita. While the NPS does not oppose a boundary change and can see benefits to a single management unit in the Rosita Area, this option is not being evaluated in this plan/EIS. A potential boundary change has been excluded from the analysis because there are no current opportunities or anticipated funding for a combined management unit or for a state-operated ORV park at this time.

Therefore, any analysis in this document would be too speculative to provide an accurate description of how the lands would be managed subsequent to divestiture. The NPS plans to continue to work collaboratively with the State of Texas in managing ORV use in the Rosita Flats area. At a future date, the NPS is likely to reevaluate this issue because a boundary change would have many benefits for the NPS. If or when the NPS considers a boundary change again, the public would be notified and the NPS would initiate a new NEPA process.

Providing ORV Access from the Route 287 Bridge All the Way to Plum Creek or Blue Creek— Providing a new ORV route from the Route 287 bridge to Plum or Blue Creek would be difficult due to topographic constraints. The remoteness and physical condition of the route would make it difficult for national recreation area rangers and emergency vehicles to respond to health and safety issues. Additionally, a new route would result in new natural resource impacts, including erosion, loss of vegetation, and potential wildlife disturbance in an area that is not currently used for off-road travel. This alternative was dismissed because of the potential impacts on visitor safety as well as on natural resources.

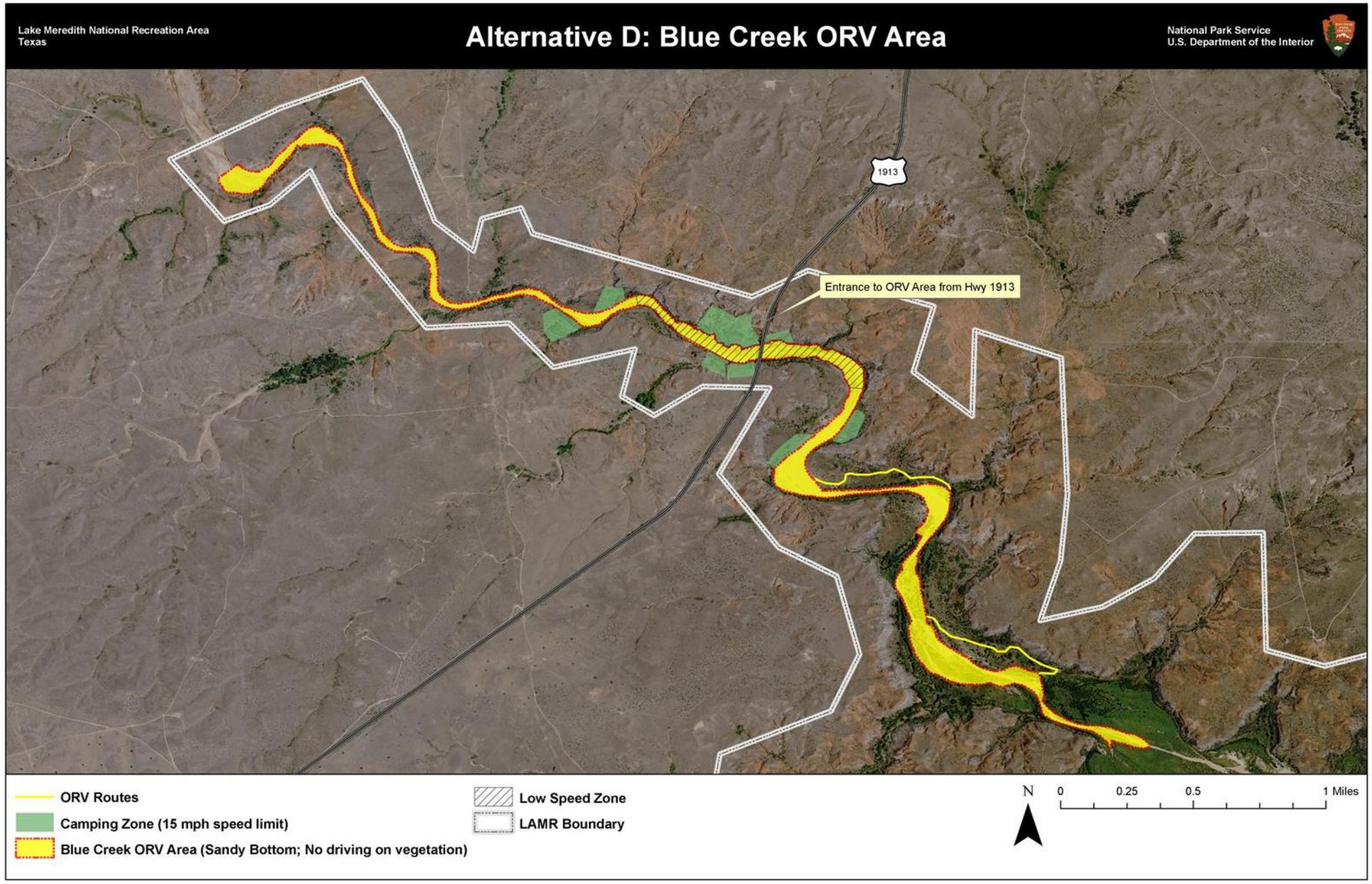

FIGURE 10: ALTERNATIVE D: BLUE CREEK OFF-ROAD VEHICLE USE AREA

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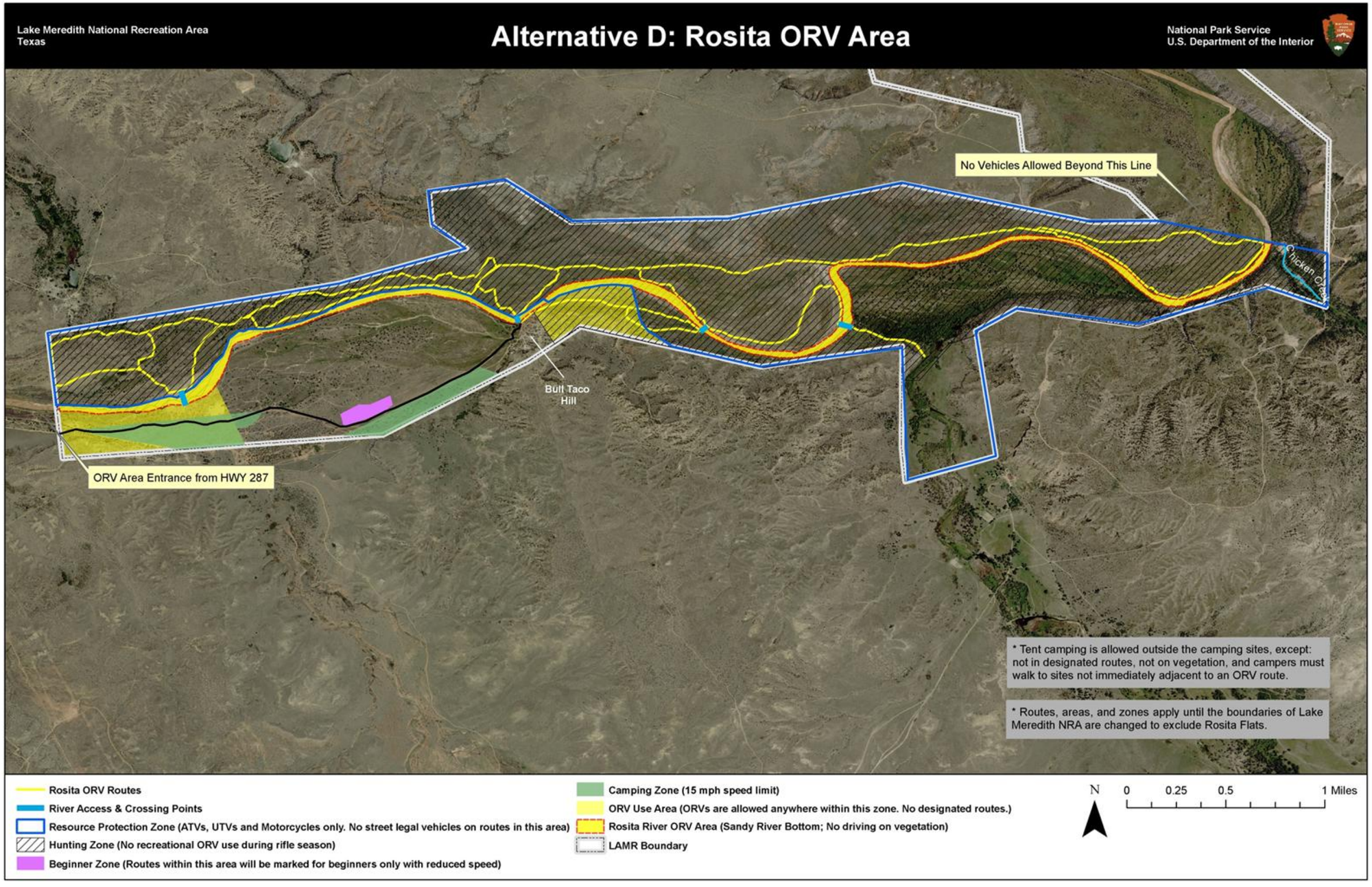

FIGURE 11: ALTERNATIVE D: ROSITA FLATS OFF-ROAD VEHICLE USE AREA

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Providing ORV Access at Mullinaw Creek—The national recreation area determined that additional access should not be provided at Mullinaw Creek due to sensitive resources present in this area. Currently, pedestrians may access this area but motorized vehicles are not allowed. The numerous archeological resources that are located between Mullinaw Creek and Rosita Flats would be disturbed if ORVs were given access. Because NPS is required to protect these resources under the National Historic Preservation Act, as well as under NPS *Management Policies 2006*, this option was considered but dismissed from further analysis.

Seasonal Closures as a Management Element—Seasonal closures to ORVs were considered in certain areas of Rosita Flats and Blue Creek to protect resources. Although the Arkansas River shiner was found in Rosita Flats, sufficient protection would be provided by other elements in the alternatives, such as designated access points to the river, to minimize impacts on this species. Under all alternatives, the superintendent would continue to have authority to enact site-specific resource closures as needed. Because other alternative actions would address Arkansas River shiner protection, seasonal closures were considered but dismissed from further analysis.

Expanding ORV Use to Areas Outside Blue Creek and Rosita Flats—The creation of new ORV use areas was considered, but the national recreation area determined that this ORV plan should focus on ensuring compliance for existing areas before considering new areas. Planning for new ORV use areas would need to occur under a separate planning process, because establishment of new routes and areas is not part of the purpose of and need for this plan. Expanding ORV use to new areas was also dismissed because vehicle use in areas previously untouched by motorized use could result in new resource, visitor use and experience, and staffing impacts. Such impacts could include

- Degradation of water quality and drinking water through increased soil erosion from additional ORV use areas
- Habitat fragmentation from the establishment of additional ORV routes and areas
- Lack of staff to provide services to additional areas
- Exacerbation of existing trespassing problems
- Potential for additional conflicts with other national recreation area visitors and recreational uses.

Expanding ORV access in Blue Creek to Blue East Beach was considered, but sensitive habitat (such as wetlands) near Blue East Beach could be substantially impacted by ORV use. Also, because the area is remote, adequate trash removal or installation of proper toilet facilities by the NPS would be difficult. Any accumulation of trash and human waste would pose a threat to public health because Lake Meredith serves as a public drinking water supply. Further, the remoteness of the site would make it difficult for the NPS to respond to an emergency situation. Therefore, due to potential environmental impacts and human health considerations, providing ORV access to new areas, such as Blue East Beach, was considered but dismissed from further analysis.

Providing Guided Tours—NPS staff providing guided tours of the ORV use areas was considered in the range of alternatives. The NPS determined that visitor use patterns in Rosita Flats and Blue Creek show that visitors tend to come from the local area and use their ORVs for pleasure driving and camping. These users also tend to be repeat visitors already familiar with the use areas. Because of the nature of visitor use in the areas of Blue Creek and Rosita Flats, national recreation area staff did not believe sufficient demand exists for a guided ORV tour; therefore, this element was considered, but not carried forward for analysis. The inclusion of an interpretive wayside exhibit in Blue Creek that would provide information on the natural and historic resources of the national recreation area would capture the essence of this

concept. These wayside exhibits would provide information similar to that available on a guided tour, but would not require staff to lead tours.

Permanent Buildings—The NPS considered constructing various structures, such as a ranger station, in Rosita Flats. Because the area is in a regulated floodplain, which does not allow permanent building construction, any structure for fee collection, interpretation, law enforcement, or other uses was considered but dismissed from further analysis.

Banning Night Driving—The NPS considered banning night driving to reduce noise and the potential for illegal activities in ORV use areas. Because many people camp in the ORV use areas, a ban is not feasible because people need to be able to travel to and from the campground. Therefore, this element was considered but not carried forward for analysis. However, this concept was addressed by including restricted ORV use in designated camping areas between 10:00 p.m. and 6:00 a.m. (to create quiet hours).

Alternative Transportation—The NPS considered providing alternative transportation in the ORV use areas, such as a shuttle for visitors. The national recreation area is a multiple-use area lending itself to visitors bringing in cooking, camping, and recreational equipment, which would be difficult with a shuttle or other form of alternative transportation. Also, visitors access the national recreation area from many different areas, making it difficult to identify effective pickup points for this type of use. For these reasons, the element of instituting an alternative transportation system was considered, but not carried forward for further analysis.

Maintaining and Building Roads—The NPS considered additional road maintenance projects, such as maintaining the road to Blue Creek for trailer access and paving other roads in the ORV use areas. This concept was considered but not carried forward for further analysis because building and maintenance of roads is beyond the scope of this plan, which is to address how ORVs are managed in the national recreation area. Further, road paving cannot occur at Rosita Flats, as suggested by one commenter, because the area is located in a floodplain and building roads in these areas is discouraged by NPS policy and other regulations.

Creating Winch Points—The NPS considered creating new winch points in the national recreation area. In the past, national recreation area staff established winch points in other areas, such as Mullinaw Crossing; however, frequent river shifts at these locations make such improvements unusable. Because Rosita Flats and Blue Creek may have similar issues, it was determined that new winch points would likely experience similar shifts and would become unusable. Because of these shifts the NPS determined that national recreation area resources would be better directed to other projects for the ORV plan. Because of these factors, this element was considered but not carried forward for further analysis.

Installing Lighting in Camping Areas—During public scoping, one commenter requested installation of lighting in the camping areas. Although this may be a convenience for visitors, Section 4.10 of NPS *Management Policies 2006* directs parks to “preserve, to the greatest extent possible, the natural lightscapes of parks, which are natural resources and values that exist in the absence of human-caused light” and to prevent the loss of darkness in national park units. Because NPS policy directs minimal use of lighting, this element was considered but not carried forward for further analysis.

Adding Air Quality Mitigation Measures—During public review of the draft plan/EIS, one commenter suggested that the plan should include air quality mitigation measures such as separation of uses, planned ORV routes, and suspension of ORV use during high wind events. While it has been documented that ORV use contributes to increased atmospheric particulate matter levels in the form of fugitive dust (WESTEC 1979), subtle meteorological dispersion effects in the Texas panhandle are such that these impacts are unlikely to present significant threats to human health. Stable thermal stratification allows

large dust particles to settle out of the air quickly, while allowing smaller particles to remain suspended and presenting potential health risks to sensitive receptors (WESTEC 1979). Atmospheric conditions in the vicinity of Lake Meredith National Recreation Area are characterized by consistent winds of varying speeds. High winds send dust higher into the atmosphere where the dust is dispersed to the surrounding area, away from potential receptors in the area (WESTEC 1979).

The preferred alternative presented in the draft plan/EIS includes many of the air quality elements requested by the commenter. Separation of visitor use under the preferred alternative will be achieved though a zone system and designated routes and areas will be established. The NPS considered suspension of ORV use during excessive wind events, but due to the unpredictable, sporadic, and brief nature of the events in the area, implementation would not be practical. High wind events in the area usually occur quickly and last for a short period, making it difficult to monitor these events and determine when to close areas due to high winds. Wind events can last for a brief period, which would result in the event being over before a closure could be put into place (WESTEC 1979). For these reasons, this element was considered, but not incorporated into the preferred alternative.

No Set Speed Limits, Except around Camping Areas—Objectives of this plan include managing ORV use to minimize conflicts among different ORV users and promoting safe operation of ORVs and safety of all visitors. Within the range of alternatives, the NPS has chosen to include speed limits in certain areas to increase safety and meet these plan objectives.

Designate Motorcycle Only Trails, as well as Trails for Other Specific Uses—Currently, and under all alternatives, there are narrow routes that lend themselves to motorcycle use. These routes are located in Rosita Flats, east of Bull Taco Hill in the floodplain, just outside of the river. Under all alternatives, these routes would still be available and most conducive to motorcycle use; however, they would not be explicitly designated as motorcycle only trails. In regards to other designated trails for specific vehicle types, the NPS believes that due to the variety of trails available, some are more suitable for certain types of vehicles than others, and official designation of these trails for one type of vehicle is not necessary at this time.

CONSISTENCY WITH THE PURPOSES OF NATIONAL ENVIRONMENTAL POLICY ACT

The NPS requirements for implementing the NEPA include an analysis of how each alternative meets or achieves the purposes of the NEPA, as stated in Sections 101(b) and 102(1). CEQ Regulation 1500.2 establishes policy for federal agencies' implementation of NEPA. According to this regulation federal agencies shall, to the fullest extent possible, interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in NEPA (Sections 101(b) and 102(1)); therefore, other acts and NPS policies are referenced as applicable in the following discussion.

1. *Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.*

   All the alternatives proposed would manage ORV use in the national recreation area, but the management tools would vary. Alternative A would not meet natural and cultural resource–related objectives because no ORV routes or areas would be established and ORV use would be allowed to occur anywhere in Blue Creek and Rosita Flats. This use would continue to cause damage to the soils and result in impacts on the natural and cultural resources in this area. Alternative A would not meet the purpose of fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations by allowing this level of use to continue in the national recreation area.

Alternatives B, C, and D would continue to allow ORV use in the national recreation area, but would implement additional management measures to minimize impacts from ORV use on national recreation area resources. All the action alternatives would, at a minimum, establish routes and areas for ORV use in Blue Creek and Rosita Flats that would be clearly marked with carsonite posts or post-and-cable fencing. By establishing these routes and areas, restoration to natural conditions would begin in areas excluded from ORV use. Although all the action alternatives would include ORV routes and areas, these alternatives (B, C, and D) would meet this purpose because management measures would be implemented that include zones to protect resources and reduce visitor conflicts (alternatives B and D), fee permit systems that have an educational component (alternatives C and D), and the possibility of a use limit (alternative C). Because of these additional management measures, alternatives B, C, and D would meet this purpose, but not fully, because ORV use would continue in these areas and some level of impact on national recreation area resources would also continue.

2. *Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.*

   All alternatives meet this purpose to some degree because the national recreation area is currently and would continue to be managed as a safe visitor destination. The action alternatives (alternatives B, C, and D) would increase safety by establishing ORV routes and areas, as well as implementing a glass bottle ban, establishing speed limits in the ORV use areas, and increasing the education and outreach in the national recreation area. Additionally, new vehicle requirements under the action alternatives would contribute to increased safety by including flags and helmets and would improve soundscape conditions by decreasing decibel levels during ORV operation. With the additional safety measures in place, alternatives B, C, and D would meet this purpose.

3. *Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.*

   All the alternatives offer a wide range of visitor use opportunities in the two ORV use areas. It is expected under all alternatives that existing recreation opportunities would continue to be offered and all uses currently occurring would remain at current levels. As discussed above under purposes 1 and 2, although the level of access and opportunities would be similar, the impact each of the alternatives on national recreation area resources would differ. Risks to the health and safety of visitors and the potential degradation of resources due to unmanaged ORV use prevents alternative A from achieving this purpose. Establishing ORV routes and areas and managing ORV use would reduce this degradation and meet this purpose to some degree. Alternatives B, C, and D would offer further management measures (described above), allowing for current levels of use, but with less impact on the national recreation area’s resources, meeting this purpose.

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.*

   Because none of the alternatives would result in adverse impacts on cultural or historic resources that would exceed minor (except for archeology), these topics were dismissed from further analysis in this plan/EIS. Overall, because any adverse impacts on cultural or historic resources (except archeology) would not exceed minor, all alternatives would preserve important historic and cultural aspects of our national heritage in the long term and would meet this purpose to a large degree. In addition, the action alternatives would establish routes and areas for ORV use. These routes and areas would be marked and use outside these routes and areas would not be allowed. Requiring users to stay on designated routes would minimize any contact with the national recreation area’s archeological resources in the ORV use areas and would meet this purpose to a large degree. Alternative A would not designate ORV routes and areas. Without designated routes and areas, ORV use would continue to impact the national recreation area

resources, including soils, water quality, and wildlife and wildlife habitat, among others. Because these impacts would continue to occur, this purpose would not be met under the no-action alternative.

Alternatives that include additional management measures (alternatives B, C, and D) would meet this purpose for natural resources, as discussed under purposes 1 and 2. All the action alternatives would establish similar routes and areas and allow for the uses that are currently occurring, all supporting diversity and variety of individual choice (to a large degree).

5. *Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.*

   Balancing population and resource use under this plan/EIS would include protecting the resources unimpaired for the enjoyment of present and future generations and providing access for visitors to experience the natural resources of the national recreation area. NPS *Management Policies 2006* states that the enjoyment contemplated by the Organic Act is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. Congress, recognizing that enjoyment of national parks by future generations can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant.

   For all alternatives visitors would continue to have opportunities to enjoy the national recreation area. As discussed above, alternatives B, C, and D would provide for ORV use in the national recreation area, with management measures (zoning, fee-permit systems, and additional education and outreach) that would provide a level of protection to the national recreation area's resources to allow for their future enjoyment. Alternatives B, C, and D would meet this purpose. Alternative A would meet the purpose because the public would be provided access to the amenities in the national recreation area, but management measures under the no-action alternative may not offer the same level of protection to natural resources as under the action alternatives.

6. *Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.*

   For the reasons discussed above, the action alternatives (alternatives B, C, and D) would enhance the quality of the national recreation area's biological and physical resources through the implementation of additional ORV management measures. The second purpose, "approach the maximum attainable recycling of depletable resources," is less relevant to an ORV management plan because it is geared toward a discussion of "green" building or management practices. There would be no construction related to any of the alternatives, so this purpose would not apply.

   However, as discussed in chapter 1 of this document, each of the alternatives would require that the national recreation area continue to operate under the wise energy use guidelines and requirements stated in the NPS *Management Policies 2006*; Executive Order 13123, "Greening the Government through Effective Energy Management"; Executive Order 13031, "Federal Alternative-Fueled Vehicle Leadership"; Executive Order 13149, "Greening the Government through Federal Fleet and Transportation Efficiency"; and the 1993 NPS *Guiding Principles of Sustainable Design*. Therefore, all alternatives would meet this purpose.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the NEPA Regulations (43 CFR 46) and CEQ's *Forty Questions*, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101[b]) (516 DM 4.10). The CEQ's *Forty Questions* (Q6a) further clarifies the identification of the environmentally preferable alternative, stating, "this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources."

The NPS, in accordance with the NEPA Regulations (43 CFR Part 46) and CEQ's Forty Questions*, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101(b)) (516 DM 4.10).*

Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas. This alternative was identified as the environmentally preferable alternative because it establishes numerous management measures that would reduce the impact of ORV use on the landscape in both Blue Creek and Rosita Flats. These measures include the following:

- The establishment of ORV routes and areas in either sand bottom areas (Blue Creek) or on already disturbed trails. Routes and areas would be clearly marked so users would be better able to avoid unknowingly going off trail.
- The overlay of zones that would reduce the intensity of use in some areas (such as the resource protection zone). In these areas, restrictions on vehicle size would result in less damage to soils and provide a better opportunity for other resources, such as vegetation, to recover.
- Designated river crossings that would better protect Arkansas River shiner habitat in addition to restrictions that would prevent driving in isolated pools during times of drought.
- A permit system that would provide educational materials to users to keep them informed on how they can best use ORV use areas while at the same time promoting resource protection.

As noted in table 4, alternative D meets the objectives related to resources to a large degree based on the above elements. By meeting these objectives, alternative D would cause the least amount of damage to the biological and physical environment. The combination of designated routes, zoning, and a permit system in alternative D would better protect, preserve, and enhance historic, cultural, and natural resources in comparison to the other alternatives.

NATIONAL PARK SERVICE PREFERRED ALTERNATIVE

To identify the preferred alternative, the planning team held discussions based on CEQ guidance for implementing NEPA, which defines the agency's preferred alternative as that alternative "which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors" (CEQ 1981). The deliberations on the preferred alternative considered the purpose of the national recreation area, how well each alternative meets the objectives of the plan/EIS, and the impacts of each alternative.

Alternative A, on the whole, would not meet the majority of the objectives. Without designated ORV routes and areas, ORVs would be able to use Blue Creek and Rosita Flats unrestricted. This type of use would allow new trails to be created and allow for the further erosion of soils and damage to vegetation, and would not meet natural or cultural resource objectives. Under this alternative, no additional management measures would be implemented, such as zoning or permit systems, and objectives related to reducing visitor conflicts would not be met. Because many of the objectives of this plan would not be met, alternative A was not identified as the NPS-preferred alternative.

Alternatives B, C, and D would meet the objectives to a large degree, with some objectives being fully met under each of these alternatives. In regard to visitor use and safety, alternatives B and D would meet these objectives fully due to the establishment of zones that would separate visitor uses. Alternative D would further meet this objective by implementing a fee-permit system, with an educational component to further reduce visitor conflicts. The establishment of the fee-permit system under alternative C would meet these objectives to a large degree, but not as fully as B or D because no zoning system would be established. In terms of management objectives, alternative C would meet these two objectives to a large degree, because a use limit could be established based on desired resource conditions. This use limit would allow for the national recreation area to develop public awareness strategies to build park stewardship. Alternatives B and D would meet the objective for building stewardship to a moderate degree through the increased educational components (also included in alternative C). However, neither alternative B nor D would establish a use limit, and so would not meet that objective. Alternative D would best meet objectives related to natural and cultural resource protection by combining the establishment of designated routes and areas, zoning and/or permit systems, and increased visitor education. Alternatives B and C would partially meet cultural and natural resource protection objectives, but only D would implement the full range of ORV management options to improve resource conditions. For the national recreation area operations, alternatives C and D would fully meet the objective to minimize cost due to cost recovery through the permit system, with alternative B not meeting this objective because of the lack of cost recovery (no permit fees that would help pay for ORV management activities). All alternatives would identify costs of ORV management, but the permit fees in alternatives C and D would help meet these identified needs, fully meeting this objective. The lack of fees under alternative B would result in this alternative meeting this objective only to a large degree.

Because alternative D provides for a variety of management tools (designated routes and areas, zoning, permits with fees, and increased education), the NPS determined that this alternative, on the whole, best meets the objectives of this plan. Alternatives B and C would offer many of the same benefits as alternative D. However, because alternative D provides for the maximum management flexibility and greatest resource protection, it was identified as the preferred alternative rather than alternative B or C.

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TABLE 4: ANALYSIS OF HOW ALTERNATIVES MEET OBJECTIVES

	Alternative A: No Action – Continuation of Current Management	Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas
Visitor Use and Safety				
Manage ORV use to minimize conflicts among different ORV users.	Does not meet this objective because there would be no separation of uses (e.g., camping) in the ORV use areas, no established ORV routes, and no speed limits. Visitors with varying skills, interests, and expectations would use the areas together.	Fully meets this objective by establishing routes for ORV use in both Blue Creek and Rosita Flats. Camping-only zones would be designated, with reduced ORV speed. Low-speed and beginner zones would also be designated to provide areas for riders of specific skill levels. Recreational ORV use would be prohibited during hunting season. These options would separate users, allow increased variety of ORV use, and eliminate the recreational ORV / hunting conflict; a revocable ORV permit would increase the NPS's ability to manage for inappropriate use and could result in reduced visitor conflicts.	Meets this objective to a large degree by designating ORV routes in both Blue Creek and Rosita Flats. Establishes designated camping areas, improves visitor amenities, and could provide "camp hosts" to assist visitors. An ORV permit would increase the NPS's ability to manage for inappropriate use and could result in reduced visitor conflicts. If conditions warrant, a use limit could be implemented.	Fully meets this objective by establishing routes for ORV use in both Blue Creek and Rosita Flats. Camping-only zones would be designated, with reduced ORV speeds. Low-speed and beginner zones would also be designated to provide areas for riders of specific skill levels. Recreational ORV use would be prohibited during hunting season. These options would separate users, allow increased variety of ORV use, and eliminate the recreational ORV / hunting conflict; a revocable ORV permit would increase the NPS's ability to manage for inappropriate use and could result in reduced visitor conflicts. In addition, an ORV permit would increase NPS ability to manage for inappropriate use, and could result in reduced visitor conflict.
Promote the safe operation of ORVs and safety of all visitors.	Meets this objective to some degree by requiring standard rider protection, Texas safety certification, and parental presence for young riders. However, alternative A would not implement speed limits, riders of varying skill level would not be separated, and there would be no requirements for safety items on ORVs.	Fully meets this objective by implementing measures common to alternatives B, C, and D, separating users of various skill levels, establishing speed limits and use zones, and requiring safety items on ORVs and riders. Camping and riding areas would be separated, and recreational ORV use would not be allowed in hunting areas during hunting season; an ORV permit would allow the NPS to better manage unsafe uses in the national recreation area.	Meets this objective to a large degree by implementing measures common to alternatives B, C, and D; camping and riding areas would be separated; an ORV permit would allow the NPS to better manage unsafe uses in the national recreation area; and visitor capacity could be established if conditions warrant.	Fully meets this objective by implementing measures common to alternatives B, C, and D; separating users of various skill levels; establishing speed limits and use zones; and requiring safety items on ORVs and riders. Camping and riding areas would be separated, and recreational ORV use would not be allowed in hunting areas during hunting season; an ORV permit would allow the NPS to better manage unsafe uses in the national recreation area.
Management				
Build stewardship through public awareness and understanding of NPS resource management and visitor use policy and responsibilities as they pertain to the national recreation area and ORV management.	Meets this objective to some degree by continuing NPS education, interpretation, and enforcement in the ORV use areas.	Meets this objective to a moderate degree by increasing education and outreach regarding ORV safety and resource protection, increasing signs in the national recreation area, and establishing a volunteer group to assist with ORV use area cleanup. Establishes resource protection zones that would reduce impacts on vegetation and soils and fence ORV use areas, which would reduce impacts on wildlife.	Meets this objective to a large degree by increasing education and outreach regarding ORV safety and resource protection, increasing signs in the national recreation area, and establishing a volunteer group to assist with ORV use area cleanup. The implementation of a permit system with an educational emphasis would also promote further understanding of national recreation area resources.	Meets this objective to a large degree by increasing education and outreach regarding ORV safety and resource protection, increasing signs in the national recreation area, and establishing a volunteer group to assist with ORV use area cleanup. The implementation of a permit system with an educational emphasis would also promote further understanding of national recreation area resources.
Natural Resources				
Minimize adverse impacts on threatened, endangered, and other protected species and their habitats.	Does not meet this objective because formal plans to reduce direct and indirect impacts on the Arkansas River shiner and its habitat would not be implemented.	Meets this objective to a large degree by establishing resource protection zones that would reduce impacts on vegetation and soils, indirectly benefiting the Arkansas River shiner by reducing erosion and impacts on water quality and through implementation of the measures outlined in the biological opinion. Restricting ORV traffic from isolated pools of water during drought would reduce direct impacts on the Arkansas River shiner and its habitat.	Meets this objective to a large degree by allowing ORV travel only on sandy bottoms and designated routes in Blue Creek and confining ORVs to denuded areas and designated routes in Rosita Flats. Would establish a use limit based on desired conditions for resources (including threatened and endangered) to be identified in ongoing GMP process and would implement species protection measures outlined in the biological opinion.	Meets this objective to a large degree by establishing resource protection zones that would reduce impacts on vegetation and soils, indirectly benefiting the Arkansas River shiner by reducing erosion and impacts on water quality and through implementation of the measures outlined in the biological opinion. Restricting ORV traffic from isolated pools of water during drought would reduce direct impacts on the Arkansas River shiner and its habitat.
Define effective strategies for soil erosion control and the restoration of plant resources to support wildlife populations.	Does not meet this objective because no formal plans to reduce erosion or impacts on vegetation would be established.	Meets this objective to a moderate degree by establishing resource protection zones, designating routes for a variety of ORV uses, restricting ORVs from vegetated areas, and clearly marking areas where ORV use is allowed.	Meets this objective to a moderate degree by allowing ORV travel only on sandy bottoms and designated routes in Blue Creek and confining ORVs to denuded areas and designated routes in Rosita Flats. Would establish a use limit based on desired conditions for resources to be identified in ongoing GMP process.	Meets this objective to a moderate degree by establishing resource protection zones, designating routes for a variety of ORV uses, restricting ORV from vegetated areas, and clearly marking areas where ORV use is allowed.

	Alternative A: No Action – Continuation of Current Management	Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas
National Recreation Area Operations				
Identify ORV plan implementation needs and costs.	Meets objective to a large degree. Through the ORV planning process, all costs for plan implementation would be identified.	Meets objective to a large degree. Through the ORV planning process, all costs for plan implementation would be identified.	Fully meets this objective. Through the ORV planning process, all costs for plan implementation would be identified. In addition, a fee-permit system would allow for a level of cost recovery for administering ORV management at the national recreation area.	Fully meets this objective. Through the ORV planning process, all costs for plan implementation would be identified. In addition, a fee permit system would allow for a level of cost recovery for administering ORV management at the national recreation area.
Minimize national recreation area operations and cost impacts as the result of implementing an ORV plan.	Does not meet this objective because ORV users would not pay fees to support services or restore damage done by ORV use.	Does not meet this objective because ORV users would not pay fees to support services or restore damage done by ORV use.	Meets this objective to a large degree by implementing a fee structure to cover costs of ORV visitor amenities, resource monitoring, and restoration needs associated with ORV use.	Fully meets this objective by implementing a fee structure to cover costs of ORV visitor amenities, resource monitoring, and restoration needs associated with ORV use.

TABLE 5: ENVIRONMENTAL IMPACT SUMMARY BY ALTERNATIVE

	Alternative A: No Action – Continuation of Current Management	Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas
Soils	Under alternative A, continued ORV use at Blue Creek and Rosita Flats would result in long-term localized major adverse impacts on soils. Incremental contributions to soil erosion would be most notable at the extreme edges of the cutbanks and the eastern extent of the Blue Creek ORV use area and at the edges of the Rosita Flats ORV use area. The long-term minor adverse effects of past, present, and reasonably foreseeable future actions, when combined with the long-term major adverse impacts of alternative A, would result in long-term moderate adverse cumulative impacts on soil resources.	Under alternative B, continued ORV use at Blue Creek and Rosita Flats would result in localized short- and long-term moderate adverse impacts on soils. There would also be long-term beneficial impacts on soils accruing from educational measures provide increased awareness and behavior modification among ORV users. Incremental contributions to soil erosion would result from the intensification of uses in certain areas, such as the proposed beginner zone and designated camping areas, and would impact soils at those locations. However, this impact would potentially be mitigated by the establishment of zoning restrictions. The long-term minor adverse effects of past, present, and reasonably foreseeable future actions, when combined with the long-term moderate adverse impacts of alternative B, would result in long-term moderate adverse cumulative impacts on soils.	Under alternative C, continued ORV use at Blue Creek and Rosita Flats would result in localized long-term moderate adverse impacts on soils. There would also be long-term beneficial impacts on soils accruing from enhanced resource protection measures. Incremental contributions to soil erosion would result from intensification of uses at certain areas and would impact soils at those locations. However, this impact would potentially be mitigated by the establishment of use restrictions such as hike-in-only camping. The long-term minor adverse effects of past, present, and reasonably foreseeable future actions, when combined with the long-term moderate adverse impacts of alternative C, would result in long-term moderate adverse cumulative impacts on soils.	Under alternative D, continued ORV use and management at Blue Creek and Rosita Flats would result in localized long-term minor to moderate impacts. There would also be long-term beneficial impacts on soils accruing from enhanced resource protection measures. Incremental contributions to soil erosion would result from intensification of uses in certain areas and would impact soils at those locations. However, this impact would potentially be mitigated by the establishment of no-camping zones around vegetated areas. The long-term minor adverse effects of past, present, and reasonably foreseeable future actions, when combined with the long-term minor to moderate adverse impacts of alternative D, would result in long-term minor to moderate adverse cumulative impacts on soils.
Vegetation	Localized short- and long-term moderate adverse effects on vegetation would occur under alternative A as a result of localized impacts, including damage to plants; erosion, which can result in further loss of vegetation; reduction in soil productivity, which can affect natural recovery; and the potential introduction or spread of nonnative plants. The parkwide long-term minor to moderate adverse impacts of past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the localized short- and long-term moderate adverse impacts from continued ORV use under alternative A, would result in localized long-term moderate adverse cumulative impacts on vegetation.	Localized short- and long-term minor adverse impacts on vegetation could occur in areas open to ORV use. These adverse impacts would occur in fewer vegetated areas under alternative B because more of the land would be closed to ORVs compared to under alternative A. The designation of ORV routes and areas would allow previously disturbed vegetated areas the opportunity to recover. As a result, there would be long-term beneficial impacts on vegetation associated with closed routes and areas. In combination with the parkwide long-term minor to moderate adverse impacts of past, present, and reasonably foreseeable future actions, cumulative impacts on vegetation would be parkwide, long term, minor, and adverse.	Localized short- and long-term minor adverse impacts on vegetation would occur in areas open to ORV use. However, there would be impacts in fewer vegetated areas because several areas would be closed to ORVs. Vegetation in these closed areas would have the opportunity to recover, resulting in long-term beneficial impacts on vegetation associated with closed routes and areas. In combination with the parkwide long-term minor to moderate adverse impacts of past, present, and reasonably foreseeable future actions, cumulative impacts on vegetation would be parkwide, long term, minor, and adverse.	Localized short- and long-term minor adverse impacts on vegetation could occur in areas open to ORV use. However, impacts would occur in fewer vegetated areas because only designated routes and specific areas would be open to ORVs. Vegetation in these closed areas would have the opportunity to recover, resulting in long-term beneficial impacts on vegetation associated with closed routes and areas. In combination with the parkwide long-term minor to moderate adverse impacts of past, present, and reasonably foreseeable future actions, cumulative impacts on vegetation would be parkwide, long term, minor, and adverse.
Water Resources	Under alternative A, continued ORV use at Blue Creek and Rosita Flats would result in long-term localized moderate adverse impacts on water quality due to ongoing disturbances under current management that would continue to impact surface water quality in the ORV use areas. Sedimentation of surface waters in Lake Meredith would continue to result from the ongoing erosion of soils due to ORV use. The short- and long-term minor adverse and long-term beneficial effects of past, present, and reasonably foreseeable future actions, when combined with the long-term moderate adverse impacts of alternative A, would result in long-term minor adverse cumulative impacts on water resources.	Under alternative B, continued ORV use at Blue Creek and Rosita Flats would result in short- and long-term localized minor to moderate adverse impacts on water resources. Incremental contributions to erosion and resulting sediment delivery to streams would result from the intensification of uses in certain areas and would impact water resources at those locations. However, this impact would potentially be mitigated by the establishment of zoning restrictions. The short- and long-term minor adverse and long-term beneficial effects of past, present, and reasonably foreseeable future actions, when combined with the short- to long-term minor to moderate adverse impacts of alternative B, would result in long-term minor adverse cumulative impacts on water resources.	Under alternative C, continued ORV use at Blue Creek and Rosita Flats would result in short- to long-term localized minor to moderate adverse impacts on water resources. Impacts on water quality would result from the intensification of uses in certain areas and would impact water resources at those locations. However, this impact would potentially be mitigated by the establishment of use restrictions such as hike-in -only camping. The short- and long-term minor adverse and long-term beneficial effects of past, present, and reasonably foreseeable future actions, when combined with the short- to long-term minor to moderate adverse impacts of alternative C, would result in long-term minor adverse cumulative impacts on water resources.	Under alternative D, continued ORV use at Blue Creek and Rosita Flats would result in short- and long-term localized minor adverse impacts on water resources. Incremental contributions to erosion and resulting sediment delivery to streams would result from the intensification of uses in certain areas and would impact water resources at those locations. However, this impact would potentially be offset by the establishment of zoning restrictions. The short- and long-term minor adverse and long-term beneficial effects of past, present, and reasonably foreseeable future actions, when combined with the short- to long-term minor adverse impacts of alternative D, would result in long-term minor adverse cumulative impacts on water resources.
Soundscapes and the Acoustic Environment	The effects of alternative A on soundscapes at Blue Creek would be long term, minor, and adverse. The effects of alternative A on soundscapes at Rosita Flats would be long term, moderate, and adverse. Cumulative impacts on soundscapes would be long term, minor to moderate, and adverse.	The effects of alternative B on soundscapes at Blue Creek would be long term, minor, and adverse. The effects of alternative B on soundscapes at Rosita Flats would be long term, minor, and adverse. Cumulative impacts on soundscapes would be long term, minor, and adverse.	The effects of alternative C on soundscapes at Blue Creek would be long term, minor, and adverse. The effects of alternative C on soundscapes at Rosita Flats would be long term, minor, and adverse. Cumulative impacts on soundscapes would be long term, minor, and adverse.	The effects of alternative D on soundscapes at Blue Creek would be long term, minor, and adverse. The effects of alternative D on soundscapes at Rosita Flats would be long term, minor, and adverse. Cumulative impacts on soundscapes would be long term, minor, and adverse.

	Alternative A: No Action – Continuation of Current Management	Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas
Wildlife and Wildlife Habitat	Localized short- and long-term moderate adverse impacts on wildlife and wildlife habitat would result from species disturbance and displacement, habitat damage and fragmentation, and individual mortality. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the short- and long-term moderate adverse impacts from continued ORV use under alternative A, would result in long-term moderate adverse and long-term beneficial cumulative impacts on wildlife and wildlife habitat.	Although short- and long-term moderate adverse impacts on wildlife and wildlife habitat could occur due to continued use of ORVs in the Rosita Flats and Blue Creek ORV use areas, impacts would be less than under alternative A as a result of increased resource management. The use of a zone system, including a resource protection zone, as well as restrictions on driving in isolated pools in times of drought, designation of ORV access points at the riverbed at Rosita Flats, and implementing other protection measures for the Arkansas River shiner (which would also benefit other species) would result in long-term beneficial impacts on wildlife and wildlife habitat at both ORV use areas. Therefore, overall impacts under alternative B would be short and long term, minor, and adverse. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative B, would result in long-term minor to moderate adverse and long-term beneficial cumulative impacts on wildlife and wildlife habitat.	Although short- and long-term moderate adverse impacts on wildlife and wildlife habitat could occur due to the continued use of ORVs in the Blue Creek and Rosita Flats ORV use areas, the impacts would be less than under alternative A due to increased resource management, resulting in short- and long-term minor adverse impacts under alternative C. The development of a monitoring plan and interpretive wayside program, the implementation of use limits and permitting system, the designation of ORV access points at the riverbed at Rosita Flats, and implementing other protection measures for the Arkansas River shiner (which would also benefit other species) would result in long-term beneficial impacts on wildlife and wildlife habitat at both ORV use areas. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the short- and long-term minor adverse impacts of alternative C, would result in long-term minor to moderate adverse and long-term beneficial cumulative impacts on wildlife and wildlife habitat.	Although the continued use of ORVs at Blue Creek and Rosita Flats would result in localized short- and long-term moderate adverse impacts on wildlife and wildlife habitat, impacts would be less than under alternative A due to increased resource management, resulting in short- and long-term minor adverse impacts under alternative D. The implementation of a zoning system and fee-based permitting system, as well as the enactment of resource protection rules, such as the headlight/taillight and muffler requirements and the prohibition on driving on vegetation, would result in long-term beneficial impacts on wildlife and wildlife habitat at the Blue Creek and Rosita Flats ORV use areas. Additional beneficial impacts would result from prohibitions on driving through isolated pools, establishing designed access point to the river, and implementing protection measures for the Arkansas River shiner (which would also benefit other species). Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the overall short- and long-term minor adverse impacts under alternative D, would result in long-term minor adverse and long-term beneficial cumulative impacts on wildlife and wildlife habitat.
Threatened and Endangered Species / Species of Concern	Under alternative A, short- and long-term moderate adverse effects on the Arkansas River shiner could occur as a result of localized impacts including disturbance, mortality, or damage to/loss of habitat. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the short- and long-term moderate adverse impacts from continued ORV use under alternative A, would result in long-term moderate adverse cumulative impacts on the Arkansas River shiner.	Short- and long-term moderate adverse impacts on the Arkansas River shiner could occur in localized areas due to the continued use of ORVs in the Rosita Flats area. However, the use of a zone system, including a resource protection zone, as well as designating ORV access points at the riverbed and restrictions on driving in isolated pools in times of drought, and the other protection measures outlined in the biological opinion would help mitigate these adverse impacts on Arkansas River shiner habitat. Therefore, overall impacts under alternative B would be short and long term, minor to moderate, and adverse. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative B, would result in long-term minor to moderate adverse cumulative impacts on the Arkansas River shiner.	Short- and long-term moderate adverse effects on the Arkansas River shiner could occur in localized areas due to the continued use of ORVs in the Rosita Flats area. However, the implementation of use limits, a fee-based permit system, the designation of ORV access points at the riverbed, and increased resource management, as well as other protection measures resulting from the biological opinion (USFWS 2014), would help mitigate the adverse impacts of ORV use on the Arkansas River shiner and its associated habitat. Therefore, the overall impacts of implementing alternative C would be short and long term, minor, and adverse. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative C, would result in long-term minor to moderate adverse cumulative impacts on the Arkansas River shiner.	Although the continued use of ORVs at Rosita Flats would result in short- and long-term moderate adverse impacts on the Arkansas River shiner in localized areas, impacts would be less than under alternative A due to increased resource management which would result in long-term beneficial impacts, but there would be long-term minor adverse impacts. The implementation of a zoning system and fee-based permit system as well as the resource protection measures that would be implemented as part of the biological opinion (USFWS 2014), would help mitigate the adverse impacts of ORV use on the shiner at Rosita Flats. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the overall short- and long-term minor to moderate adverse impacts under alternative D, would result in long-term minor to moderate adverse impacts on the Arkansas River shiner.
Archeological Resources	Alternative A would result in continued potential long-term major adverse impacts on archeological resources along or near open ORV use areas, routes, or access points. Cumulative impacts would be long term, major, and adverse.	Alternative B would result in long-term minor adverse potential impacts on archeological resources along or near open ORV areas, routes, or access points. Measures would be implemented to restrict access to the sensitive areas. Cumulative impacts would be long term, minor to moderate, and adverse.	Alternative C would result in long-term minor adverse potential impacts on archeological resources along or near open ORV areas, routes, or access points; where sites do exist, they would be protected with access restrictions. Cumulative impacts would be long-term, minor to moderate, and adverse.	Alternative D would result in long-term minor adverse potential impacts on archeological resources along or near open ORV areas, routes, or access points. Where sites do exist, they would be protected with access restrictions. Cumulative impacts would be long-term, minor to moderate, and adverse.

	Alternative A: No Action – Continuation of Current Management	Alternative B: Zone System – Separation of Visitor Uses, with a Permit for Educational Purposes	Alternative C: Management through Use of a Permit System at Current ORV Use Areas	Alternative D: Management through Use of a Zoning and Permitting System at Current ORV Use Areas
Visitor Use and Experience / Health and Safety	Under alternative A there would be no change to the current visitor use and experience, access, or recreational opportunities. The current safety risk of unregulated ORV use in the national recreation area would remain the same. As a result, impacts on visitor use and experience / health and safety would be long term, moderate, and adverse. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the long-term moderate adverse impacts under alternative A, would result in long-term minor to moderate adverse cumulative impacts on visitor use and experience / health and safety.	Although the establishment of zones and the implementation of a permit system would have adverse impacts for the majority of visitors by requiring visitors to obtain an ORV permit, beneficial impacts would result from the separation of visitor uses, improved safety, and enhanced resource conditions at the national recreation area. A minority of users would experience moderate adverse effects by loss of access to the resource protection zone and temporary loss of the hunting zone in Rosita Flats. Some users could experience long-term negligible to minor adverse impacts because the potential for user conflicts may arise with hunters not using ORVs in the hunting zone. Overall, impacts under alternative B would be long term, minor to moderate, and adverse as well as long term and beneficial for ORV users at the national recreation area. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative B, would result in long-term minor to moderate adverse and long-term beneficial cumulative impacts on visitor use and experience / health and safety.	The proposed permit fee, while being an additional cost to visitors, would create more visitor amenities that would enhance visitor use and experience at the national recreation area. Additionally, a greater presence of law enforcement, as well as the rangers' ability to revoke ORV permits, may cause visitor violations and illegal activity to decrease. As a result, impacts under alternative C would be long term, minor, and adverse, because users would need to adjust to a user fee, as well as long term and beneficial from enhanced safety and additional amenities, ORV rules, and education. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative C, would result in long-term minor adverse and long-term beneficial cumulative impacts on visitor use and experience / health and safety.	The proposed permit fee, while being an additional cost to visitors, would fund more visitor amenities that would enhance visit use and experience at the national recreation area. Additionally, a greater presence of law enforcement and the rangers' ability to revoke ORV permits may cause visitor violations and illegal activity to decrease, which would have beneficial effects on visitor health and safety. Additionally, the establishment of zones and implementation of a permit system would have beneficial impacts for the majority of visitors by separating uses, implementing rules (speed limits, headlights, and orange flags for ATVs), education, improving safety, and enhancing resource conditions at the national recreation area. Overall, impacts under alternative D would be long term, minor to moderate, and adverse, because users would need to adjust to a user fee and a zoning system, and long term and beneficial due to improvements to visitor use and experience / health and safety. Past, present, and reasonably foreseeable future actions both inside and outside the national recreation area, when combined with the impacts of alternative D, would result in long-term minor to moderate adverse and long-term beneficial cumulative impacts on visitor use and experience / health and safety.
Lake Meredith National Recreation Area Management and Operations	Staffing and funding levels would continue at the same levels as currently managed. The total approximate cost of implementing alternative A would be $315,000. Actions under alternative A would result in long-term negligible adverse impacts because there would be no noticeable change in national recreation area management and operations. Past, present, and reasonably foreseeable future actions, when combined with the impacts of implementing alternative A, would result in parkwide long-term negligible to minor adverse impacts on national recreation area management and operations.	The implementation of alternative B would require additional efforts from park staff. Law enforcement staff levels would be increased to ensure compliance with the additional regulations under alternative B. Additionally, there would be an increase in responsibilities for the interpretation and resource management staff. The total approximate cost of implementing alternative B would be $1,775,000. The implementation of alternative B would result in long-term minor to moderate adverse impacts on national recreation area management and operations, with impacts more moderate than minor because a fee permit system would not be in place to help offset additional expenses. Past, present, and reasonably foreseeable future actions, when combined with the impacts of implementing alternative B, would result in long-term minor to moderate adverse impacts.	The implementation of alternative C would require additional efforts from national recreation area staff in the areas of law enforcement, resource management, interpretation, and facilities management, which would in part be offset by fees from the ORV permit. The total approximate cost of implementing alternative C would be $442,500 and would be offset, in part, by money collected in the proposed fee system. The implementation of alternative C would result in long-term minor to moderate adverse impacts, which would be more minor than moderate due to the funding from the permit system. Past, present, and reasonably foreseeable future actions, when combined with the impacts of implementing alternative C, would result in long-term minor to moderate adverse cumulative impacts.	The implementation of alternative D would require additional efforts from park staff in the area of law enforcement, which would in part be offset by fees from the ORV permit. The total approximate cost of implementing alternative D would be $1,775,000. The implementation of alternative D would result in long-term minor to moderate adverse impacts, which would be more minor than moderate due to the funding from the permit system. Past, present, and reasonably foreseeable future actions, when combined with the impacts of implementing alternative D, would result in long-term minor to moderate adverse cumulative impacts.

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