

Monitoring Plan for Sandia Travel Management

This section contains the monitoring plan for the Sandia Travel Management Project, and is based on the selected alternative in the project decision notice. There are two required monitoring objectives, and several that will be implemented as time and funding allows.

Required Monitoring Objectives

Monitoring Objective – Enforcement and Education

Monitoring Type:

- Effectiveness – determine if education and enforcement efforts are effective in promoting compliance with the motor vehicle designations on the MVUM.

Priority: *High* – many people who commented are concerned non compliance with the designations. Compliance is also important to realizing the natural resource benefits from prohibiting cross country travel.

Methodology: Determine if motorized vehicle users are complying with the road and trail designations. Train and coordinate with district employees and volunteers to prepare and submit incident reports to law enforcement when people are observed or reported to be in violation with vehicle designations or new unauthorized routes are created.

Frequency or Duration: Daily, when district recreation employees or volunteers are patrolling area roads and trails.

Data Storage: Data will be stored in the LEMAR law enforcement data base.

Reporting procedures: Data analysis and trends will be reported as part of the Forest monitoring report.

Projected Cost: \$5000 annually.

Personnel Needed: District recreation staff, volunteers.

Responsible Individual(s): Forest Recreation Program Manager/District Recreation Staff.

Monitoring Objective – Physical Closures and Restoration of Unauthorized Roads and Trails not Designated on the MVUM

Monitoring Type:

- Implementation – To report on the progress with unauthorized roads and trails not designated on the MVUM.
- Effectiveness – To report on the effectiveness of these closures.

Priority: *High* – The decision was made to close and rehabilitate unauthorized roads and trails as funds and time permit.

Methodology: To identify and prioritize routes to be closed or rehabilitated annually, including methods to be used. Prepare an annual report of which activities were implemented. For two years after implementation, monitor to determine the effectiveness of closures.

Frequency or Duration: Annually.

Data Storage: Data will be stored at the Sandia Ranger District.

Reporting procedures: Annual report will be included as part of the Forest Annual Monitoring report.

Projected Cost: \$1000 annually.

Personnel Needed: District recreation and resource staff.

Responsible Individual(s): District Recreation Staff.

Monitoring Objective – Heritage Resources**Monitoring Type:**

- Effectiveness – are the designated routes and motorized recreation affecting heritage resource sites?

Priority: *High* - heritage resources are nonrenewable and easily damaged, laws and regulations exist to help protect these resources. These include the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection and Repatriation Act (NAGPRA). Culturally important heritage resources fall under this purview of the NHPA, AIRFA, and the Sacred Lands Executive Order (EO 13007). Native American graves are protected under NAGPRA.

Methodology: Monitoring not specified as part of the Section 106 consultation report or NEPA decision document will be conducted as part of the day-to-day activities of the professional cultural resource specialists. When archaeologists are in the field conducting surveys for timber sales or fuelwood sales, for example, they will be using System roads and trails. The archaeologists will use these opportunities to observe and report on motorized vehicle activities, the effectiveness of the protocol, and potential impacts to heritage resources. Any incidents of damage to historic properties from motor vehicle use will be reported, and the archaeologists will draw upon the protection measured outlined in Section IX above to ensure the effects are avoided or minimized until mitigation measures, if needed, are developed and implemented in consultation with SHPO. Results of these informal monitoring activities will be discussed in the annual meetings with the SHPOs as provided for in Section XIII(D) of the Programmatic Agreement.

Frequency or Duration: When archaeologists are in the field conducting surveys for other projects such as fuels reduction projects, they will be using System roads and trails.

Data Storage: Data (reports) will be stored on the Cibola National Forest and may be protected due to the sensitive nature and location of cultural resources.

Reporting procedures: As sites are inspected monitoring reports will be prepared and sites will be sent to applicable management agencies, including the SHPO.

Projected Cost: \$2,000.00 a year to perform site condition surveys on sites that have the potential to be affected by Travel Management designations

Personnel Needed: Forest and District Heritage Resource Specialists

Responsible Individual(s): Forest Heritage Program Manager/District Archaeologist

Optional Monitoring Objectives

The following monitoring objectives will be implemented as time and funding allows.

Monitoring Objective – Measuring Soil Compaction/Trail Rutting

Monitoring Type:

- Implementation – are mitigations implemented as prescribed?
- Effectiveness – are mitigations effective at limiting rutting? Are the mitigations effective at limiting gullying within and adjacent to trails? Do mitigations make trail unrideable? (i.e. are people cutting new trails to avoid mitigation features?)

Priority: *Medium* – the FS needs to be sure that rutting problems are being addressed through the assigned mix of mitigations. This is important in allowing for use while maintaining the resource.

Methodology: Transects perpendicular to the trail will be utilized to measure changes in trail tread (rutting and gullyng). Photo points will be used at the same points and others to attain a visual estimate of changes in a more rapid fashion. Both techniques will utilize continued monitoring at the same points to allow for trends to show up.

Frequency or Duration: The monitoring protocol will likely take about 5 days to set up the permanent monitoring points and another 4-5 days to take initial measurements. Subsequent monitoring is estimated to be 2-4 days. Monitoring should be done at a minimum two times per year – once in the spring during or immediately after “wet” conditions and again in the late fall after the peak riding season. Additional measurement periods could be added if determined to be needed

Data Storage: Data will be stored on the Cibola NF and Grasslands server

Reporting procedures: Data analysis and trends will be included in the Annual Forest Monitoring Report and reported on the Forest Website as needed or as interest warrants

Projected Cost: \$8000 set-up and initial measurements; \$3100 each additional measurement (\$11,100 first year, \$6200 each additional year) for salary, equipment, transportation, data entry and analysis.

Personnel Needed: 2 – GS-05 (min. grade) technicians for field work; 1 – GS-9/11/12 (approx. grade) for data analysis; current staffing does not exactly match grade levels and positions shown.

Responsible Individual(s): set-up (Forest Soil Scientist, Recreation technician), collect (Recreation technician), analyze (Forest Soil Scientist), and evaluate (Forest Soil Scientist)

Monitoring will be conducted to assess impacts and to evaluate the effectiveness of mitigations associated with the level 2 roads and the motorized trail system in the Cedro area. Initial monitoring will assess current conditions in-depth to set a baseline of disturbance and season of use within level 2 roads and trail corridors and adjacent areas. Following baseline monitoring, future work will assess trends in motorized trail and level 2 road use along with soil conditions related to soil moisture and time of year. At least one full year of monitoring will be done prior to making any recommendations on additional mitigations or to determine the conditions that would necessitate implementing closure orders to restrict travel during periods of high moisture. Monitoring will be continued for a minimum of 2 years after this decision to assess use and conditions. After these two years a recommendation will be made as to whether to continue monitoring and at what level depending on restrictions, if any, compliance, and soil conditions.

Monitoring Objective – Air Quality/Fugitive Dust**Monitoring Type:**

- Implementation – are mitigations implemented as prescribed?
- Effectiveness – are mitigations effective at limiting fugitive dust? Is fugitive dust within the levels required by City/County permit and not affecting health and safety?

Priority: *Medium* – many people who commented are concerned about fugitive dust for a variety of reasons. Initial determinations from a field visit with City/County officials indicate that most of the trails will be in the no impact or low impact level with planned mitigations. Monitoring will help to verify the effectiveness of current trail maintenance and any planned mitigations. Monitoring will also help us 1) protect our users, 2) protect nearby homeowners, and 3) better address complaints.

Methodology: Monitoring will include air quality monitoring equipment to assess the levels of particulate matter in the air and changes in these levels with changes in use of the trails. A process will be implemented to record and respond to individual complaints on an as needed basis. This step is already required through the City/County regulations but can be more responsive if complaints are received through the Ranger Station. Visual/video monitoring will be conducted on potential high use days in conjunction with City/County officials to assess impacts in a manner similar to that currently used by the City/County for enforcement.

Frequency or Duration: Fugitive dust is not a continual problem. It is a problem on the driest and windiest days and potentially on the days in conjunction with high vehicle traffic. Therefore monitoring would initially be focused on days with those conditions. Monitoring would continue for at least two years with frequency based on potential for dry, windy days and past determination of high use. At the end of the two years the need for monitoring and future frequency would be examined based on need.

Data Storage: Data will be stored on the Cibola NF and Grasslands server

Reporting procedures: Data analysis and trends will be included in the Annual Forest Monitoring Report and reported on the Forest Website annually for at least the first two years. This will be assessed to determine if the need is ongoing.

Projected Cost: \$13,000 set-up and initial year; \$5000 each additional year of measurement - includes salary, equipment, transportation, data entry and analysis.

Personnel Needed: Forest Air Quality Specialist (GS-12); Forest Service NM Air Specialist (GS-12); District FMO (GS-11); Regional Air Quality Specialist (GS-13)

Responsible Individual(s): set-up (Forest and State Air Specialist), collect (Forest air Specialist and DFMO), analyze (Forest Air Specialist), and evaluate (State and Regional Air Specialist)

Monitoring Objective – Wildlife

- To ensure that habitat patches between motorized routes do not decrease in size due to illegal motorized trail creation off of designated routes; additionally, ensure that additional edge effects are not introduced to the habitat patches by creation of new motorized routes.
- To ensure that where motorized use is not permitted (for example the La Madera area) monitoring would ensure that illegal motorized use is not impacting wildlife security zones.
- To ensure that exotic species do not increase along the routes, potentially reducing available forage for wildlife species.
- To ensure that trail widths are not increasing, further reducing forage for wildlife.
- Ensure that erosion along motorized routes is not increasing, with the potential to degrade intermittent/ephemeral/perennial riparian systems important as wildlife habitat

Monitoring Type:

- Effectiveness - Are the motorized route designations and prohibition of off-route travel maintaining existing habitat patches?" "Are exotic plant species decreasing, static, or increasing with plan implementation?" "Is trail size increasing with plan implementation...leading to a reduction in wildlife forage?" "Is erosion increasing along the motorized routes...leading to potential negative riparian habitat impacts?"

Priority: *Medium.* These objectives also relate to other resources such as Recreation and Watershed, and Invasive Species.

Methodology:

Unauthorized route creation: Forest Service personnel (or volunteers) routinely utilize field visits with route designation map to determine if new, unauthorized routes are being created; this would further reduce wildlife security zones in existing habitat patches between the designated routes. GPS data would be recorded for entire illegal route, and law enforcement may be contacted to cite violators if they can be identified. This would also be the case in areas closed to motorized vehicles where personnel would monitor for signs on illegal motorized use (tracks).

Frequency=weekly during high use season (March-October); monthly during the remaining low use seasons.

Exotic species- Forest Service personnel and volunteers (under the "Weed Warrior Program) utilize field visits to determine extent and potential spread of noxious and invasive plant species. If these infestations are allowed to become larger, a reduction in native plants utilized as forage (and many times cover) by wildlife species could occur. Personnel trained in weed eradication would GPS infestations and treat with hand methods only such as pulling and cutting of seed heads. Lacking a weed plan at this time, no herbicide use is approved. Yearly training will be provided to volunteers on proper identification of weeds and hand eradication methods. **Frequency=twice during the growing season**

Trail widths-Volunteers or agency trail crews with GPS units, tape measures and cameras could be utilized. Random measuring points can be selected along motorized trail segments and navigated to using a hand-held GPS. A tape measure would record average width at 5m intervals along a 20m belt. Photos would be taken at each interval where the tape is utilized. **Frequency=once yearly during dry weather**

Erosion: reference the watershed monitoring report for cross-section methodologies to measure potential increases in rutting/erosional features (e.g., gully formation)

Data storage: Monitoring folders placed on the network drive would have sub-folders for each methodology with an additional folder for photos and for data in Word tables or Excel/Access database.

Reporting procedures: photos; data forms for each methodology would be created for field data collection. As noted, databases or Word tables could record long-term data. Monitoring will be reported in the forest annual monitoring report.

Projected cost: Since methodologies are multi-disciplinary, base funds from all activities should be sufficient. Where volunteers are used, costs would be minimal-training costs would be low.

Personnel (# and skills): Volunteers and district recreation staff.

Responsible individuals (positions): District trail manager working with wildlife biologist.

Monitoring Objective – Recreation**Monitoring Type:**

- Effectiveness – are travel management designations impacting recreation use and satisfaction over time? Are travel management designations changing the types of recreation activities and users using the Sandia Ranger District over time?

Priority: *High* – many people who commented are concerned about the potential impacts to the quality of the recreation experience for both motorized and non motorized trail users and other area recreationists.

Methodology: The forest participates in the National Visitor Use Monitoring survey every five years. This survey gathers data on the activities that survey respondents participate in and their satisfaction with their recreation experience. The forest will work with the national survey team to add additional survey days and times so that sufficient data is gathered to assess the impacts of travel management decisions. The forest will also work with the national team to include additional questions specific to motorized recreation. While the 2006 survey did not gather enough data to consider satisfaction and use figures specific to Sandia Ranger District, it is still possible to use the 2001 and 2006 surveys for comparisons.

Frequency or Duration: Every five years for at least two cycles. The Cibola is scheduled for the NVUM survey again in 2011.

Data Storage: Data will be stored on the Cibola NF and Grasslands server and with the national NVUM staff.

Reporting procedures: Data analysis and trends will be included in the Cibola National Forest NVUM reports.

Projected Cost: \$30,000 once every five years additional cost above the funding budgeted for the NVUM survey.

Personnel Needed: NVUM surveyors, District and Forest Recreation planners, assistance from NVUM statisticians.

Responsible Individual(s): Forest Recreation Program Manager/District Recreation Staff.