Decision Notice and Finding of No Significant Impact for Sixteen Rock Pits and Additional Reclamation on the Coconino National Forest

USDA Forest Service
Coconino National Forest
Coconino and Yavapai Counties, Arizona

Buck Butte Pit Design
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Introduction

This decision is based on an Environmental Assessment of 37 rock pit sites and potential reclamation of 7 additional rock pit sites across the Coconino and Kaibab National Forests. There is a need to maintain rock surfacing on unpaved roads throughout the Coconino and Kaibab National Forests to facilitate safe driving conditions and provide adequate drainage to minimize erosion in moderate and high traffic areas. There are currently existing sources of surface rock throughout the two national forests, but these sources are limited, require very long distances for hauling, and need to be reviewed for potential development and operation through the NEPA process. There are also commercial rock sources in nearby communities of Flagstaff and the Verde Valley, but material types are limited and use of these sources is prohibitively expensive due to the long hauling distances. Long-distance transportation of materials across unpaved roads from these sources also results in increased impacts of the very kind that rock pit materials are intended to mitigate. The purpose of this project is to identify and consider the establishment and ongoing use of strategically located rock sources over the next 20 years. This project is consistent with the provisions in the “Disposal of Mineral Material” regulations at 36 CFR 228 Subpart C. Implementing the project will provide sources for sand, gravel, and aggregate materials to the Coconino and Kaibab National Forests that are local, economically feasible, and of the required quality. This will allow for road maintenance and improvements for operational efficiency and resource protection in a cost effective manner. Since erosion of poorly maintained roads results in the largest single source of impact to watershed condition and downstream water quality, this project is expected to lead to improved road conditions and thus reduce impacts from existing roads on watershed condition and water quality.

The environmental assessment (EA) documents the analysis of three alternatives to meet this need. This decision focuses on 16 of the 18 rock pits analyzed for development and/or operation on the Coconino National Forest and includes the reclamation of three rock pits. To be clear, all rock pits authorized for operation and development will be required to include reclamation according to the provisions outlined in 36 CFR 228.56, “Operating Plans” and the reclamation plan (Appendix 1). The Forest Service is ultimately responsible for reclamation. Reclamation responsibilities may be included in mineral permits issued to third parties or reclamation activities may be included in contracts issued by the agency, in which case the agency will oversee reclamation activities. Those pits specifically identified for reclamation include existing pits that are to be prioritized for reclamation where additional operation is not likely to occur in the existing pit footprint.

Mineral material production amounts from these pits projects will be recorded on an annual basis through the national mineral materials database (INFRA) to provide records of in-service use, free-use to other entities, or commercial sales.

Decision and Reasons for the Decision

Based upon my review of all alternatives, I have decided to implement a blended alternative of Alternatives B (Proposed Action) and C (Rock Pit Development with Additional Reclamation), which includes the development and operation of 16 rock pits on the Coconino National Forest and the reclamation of 3 existing rock pits. This blended alternative includes authorization of 16 of the 37 rock pits analyzed for development and/or operation (see Table 1, Figure 1) and 3 of the 7 rock pits analyzed for reclamation (see Table 2). This decision also authorizes development, use, and maintenance of the access roads needed to access the pits (Table 3). It is expected that the other 22 rock pits analyzed in alternatives B and C will be authorized through separate decision notices. I chose to authorize reclamation of only 3 of the 7 existing rock pits based on an engineering assessment of the feasibility of the rock pits to be reclaimed given current resources and reclamation needs and benefits.
Sixteen Rock Pits and Additional Reclamation on the Coconino National Forest

If additional resources become available through grant funding or other means to reclaim the additional four rock pits, this decision will not preclude future decisions authorizing these actions.

The blended alternative is a mix between Alternative B, which identified no existing pits for additional reclamation, and Alternative C, which identified 7 existing pits for additional reclamation. Since this decision includes a portion of the rock pits analyzed for development and operation, and this decision is within the range of rock pits considered for reclamation, the effects from this alternative are expected to be within the scope and range of effects analyzed in the range of alternatives in the Environmental Assessment.

Table 1. Rock Pits authorized for development and/or operation in this decision

<table>
<thead>
<tr>
<th>Name</th>
<th>Admin. Unit</th>
<th>Status</th>
<th>Current Pit Area (acres)</th>
<th>New Area (acres)</th>
<th>Total Acres</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>222 Pit</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>12.9</td>
<td>0</td>
<td>12.9</td>
<td>Basalt material; will include blasting &amp; crushing.</td>
</tr>
<tr>
<td>Big Draw</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>1.9</td>
<td>2.8</td>
<td>4.7</td>
<td>Basalt. Access exists (not a system road).</td>
</tr>
<tr>
<td>Buck Butte</td>
<td>Mogollon Rim Ranger District</td>
<td>Existing</td>
<td>5.8</td>
<td>8.7</td>
<td>14.5</td>
<td>Clay and cinders. Cinder are screened and combined with the clay onsite; active pit used by Coconino County.</td>
</tr>
<tr>
<td>Bushy Knoll</td>
<td>Mogollon Rim Ranger District</td>
<td>New</td>
<td>0</td>
<td>13.8</td>
<td>13.8</td>
<td>Crushed basalt and some cinders; burned in Bushy Fire (1991); limited vegetation cover.</td>
</tr>
<tr>
<td>Cinch Hook</td>
<td>Mogollon Rim Ranger District</td>
<td>Existing</td>
<td>7.9</td>
<td>10.7</td>
<td>18.6</td>
<td>Basalt. Requires blasting and crushing. Includes a high wall that should be addressed.</td>
</tr>
<tr>
<td>Lockwood</td>
<td>Mogollon Rim Ranger District</td>
<td>Existing</td>
<td>4.6</td>
<td>5.0</td>
<td>9.6</td>
<td>Limestone. Requires blasting and crushing.</td>
</tr>
<tr>
<td>Macks</td>
<td>Mogollon Rim Ranger District</td>
<td>Existing</td>
<td>0.5</td>
<td>4.6</td>
<td>5.1</td>
<td>Rim &amp; limestone gravels - no processing needed;</td>
</tr>
<tr>
<td>Name</td>
<td>Admin. Unit</td>
<td>Status</td>
<td>Current Pit Area (acres)</td>
<td>New Area (acres)</td>
<td>Total Acres</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------------------</td>
<td>------------------</td>
<td>-------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Oak Grove</td>
<td>Mogollon Rim Ranger District</td>
<td>Existing</td>
<td>4.5</td>
<td>5.2</td>
<td>9.7</td>
<td>little vegetation since Pot fire.</td>
</tr>
<tr>
<td>Perry Lake</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>6.9</td>
<td>0</td>
<td>6.9</td>
<td>Cinders. Pit in use.</td>
</tr>
<tr>
<td>Pine Hill Cinders</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>2.2</td>
<td>1.7</td>
<td>3.9</td>
<td>Basalt/crushed basalt.</td>
</tr>
<tr>
<td>Riordan Pit</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>20.9</td>
<td>0</td>
<td>20.9</td>
<td>Cinders. Heavily used – has been in continuous use for decades</td>
</tr>
<tr>
<td>Salmon Lake</td>
<td>Red Rock Ranger District</td>
<td>New</td>
<td>0</td>
<td>10.8</td>
<td>10.8</td>
<td>Basalt. Blasting &amp; screening required; Access exists (not a system road).</td>
</tr>
<tr>
<td>Snafu</td>
<td>Mogollon Rim Ranger District</td>
<td>New</td>
<td>0</td>
<td>10.7</td>
<td>10.7</td>
<td>Rim &amp; limestone gravels. No processing required; little vegetation since Pot fire.</td>
</tr>
<tr>
<td>Thomas 2</td>
<td>Flagstaff Ranger District</td>
<td>New</td>
<td>0</td>
<td>19.3</td>
<td>19.3</td>
<td>Basalt. Access exists (not a system road).</td>
</tr>
<tr>
<td>Turkey Knob</td>
<td>Mogollon Rim Ranger District</td>
<td>New</td>
<td>0</td>
<td>7.7</td>
<td>7.7</td>
<td>Basalt. Needs access road maintenance.</td>
</tr>
<tr>
<td>Willard Springs</td>
<td>Flagstaff Ranger District</td>
<td>Existing</td>
<td>8.5</td>
<td>1.9</td>
<td>10.4</td>
<td>Crushed basalt.</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sixteen Rock Pits and Additional Reclamation on the Coconino National Forest

Figure 1. Rock Pits authorized in this decision on the Coconino National Forest

Pits approved in this decision may also be used by other organizations such as county, city, or state entities, when approved under a mineral materials contract (36 CFR 228.43 "Policy governing
disposal”) with required terms and conditions. The approval of mineral material contracts for non-Forest Service entities may occur when the scope and range of effects from pit development and/or operation is within the effects disclosed in the Rock Pits Environmental Analysis and the sale/disposal terms are in accordance with provisions in 36 CFR 228.43. We received several communications from private companies hoping to develop rock pits for commercial use of materials. While this decision does not prohibit the potential use of any rock pit authorization for this purpose, the commercial use of a rock pit site would need to be within the scope and range of effects disclosed in the Environmental Assessment, would need to meet the provisions for either a competitive or negotiated sale under the federal regulations (36 228.57, Types of Disposal”) and could not conflict with the rock material needs, plans and operations of the Forest and those already operating under permit. Furthermore, the Coconino National Forest may or may not determine that use of any given pit approved in this decision is eligible for use by another entity based on the Forest’s need for aggregate materials in the foreseeable future or other pertinent factors that may affect the management of the pit or national forest.

Table 2. Existing rock pits authorized for reclamation

<table>
<thead>
<tr>
<th>Pit Name</th>
<th>Size (acres)</th>
<th>Unit</th>
<th>Comments</th>
<th>Reclamation description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashurst Lake</td>
<td>6.8</td>
<td>Flagstaff Ranger District</td>
<td>The pit is adjacent to heavy-use dispersed campsites and is often used for unauthorized off-highway vehicles (OHV) use.</td>
<td>Full reclamation: revegetate and discourage unauthorized OHV use at the pit and surrounding area.</td>
</tr>
<tr>
<td>Bald Mesa #2</td>
<td>3.2</td>
<td>Mogollon Rim Ranger District</td>
<td>Pit is located adjacent to a Mexican spotted owl (MSO) Protected Activity Center and regularly gets unauthorized OHV use.</td>
<td>Full reclamation: revegetate and discourage unauthorized OHV use.</td>
</tr>
<tr>
<td>Lockwood</td>
<td>4.6</td>
<td>Mogollon Rim Ranger District</td>
<td>This pit is adjacent to a proposed expansion area. Benefits of reclamation will be an improvement in Northern goshawk habitat. Portions of the existing pit will be used during blasting, crushing, and sorting activities at the adjacent expansion area. The Lockwood pit will require substantial fill</td>
<td>Reclaim the Lockwood pit in coordination with the expansion area. Concurrent reclamation is encouraged so that materials removed from the expansion area could be used to facilitate reclamation of the existing pit.</td>
</tr>
</tbody>
</table>

1 Any permits that approve use of aggregate materials from the rock pits in this decision will include the same resource protection measures (e.g. hauling restrictions) that are included in the proposal.
<table>
<thead>
<tr>
<th></th>
<th>and top soil material for successful reclamation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>14.6 acres</td>
</tr>
</tbody>
</table>
Figure 2. Rock Pits in this decision approved for reclamation activities
### Table 3. Road development or road improvement approved for pit access

<table>
<thead>
<tr>
<th>Name</th>
<th>Temp Roads (mi)</th>
<th>Road improvement (mi)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>222 Pit</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Big Draw</td>
<td>0.04</td>
<td>0</td>
<td>Access exists to this pit site on an existing road with improvements. A portion of the road that has grown over is considered a temporary road.</td>
</tr>
<tr>
<td>Buck Butte</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Bushy Knoll</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Cinch Hook</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Lockwood</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Macks</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Oak Grove</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Perry Lake</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Pine Hill Cinders</td>
<td>0.01</td>
<td>0</td>
<td>Access exists to this pit site on an existing road, but it is not identified as a system road.</td>
</tr>
<tr>
<td>Riordan Pit</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Salmon Lake</td>
<td>0.08</td>
<td>0</td>
<td>Will require construction of an access road.</td>
</tr>
<tr>
<td>Snafu</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td>Thomas 2</td>
<td>0.15</td>
<td>0</td>
<td>Access exists to this pit site on an existing road with improvements (i.e. culverts, lead out ditches), but it is not currently identified as a system road.</td>
</tr>
<tr>
<td>Turkey Knob</td>
<td>0</td>
<td>1.5</td>
<td>Access road requires improvement for access by heavy machinery.</td>
</tr>
<tr>
<td>Willard Springs</td>
<td>0</td>
<td>0</td>
<td>Existing system road provides access</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>0.28</strong></td>
<td><strong>1.5</strong></td>
<td></td>
</tr>
</tbody>
</table>
This decision authorizes pit development and additional reclamation of 3 pits analyzed in Alternative C: Pit Development with Additional Reclamation. Alternatives B and C included analysis of development and/or operation of 37 rock pits, whereas only Alternative C analyzed reclamation of 7 existing rock pits. This decision authorizes 16 of those 37 pits for development and/or operation (affecting approximately 180 acres) and 3 of the 7 rock pits for additional reclamation (approximately 15 acres). This decision only approves a portion of the rock pit development analyzed in alternative B and C, and reclamation analyzed in Alternative C. As such, it does not preclude or prevent authorization of additional rock pits for development and/or operation, nor does it preclude authorization of reclamation activities of the four rock pit reclamation sites not included here. The reason this decision is limited to 16 of the 37 rock pits analyzed is to allow the proposed use of rock pits located and managed on the Kaibab National Forest to be authorized by the Kaibab National Forest supervisor. The two pits analyzed for development and/or operation on the Coconino National Forest that are not included in this decision have been identified in comments from the public and have been included in a separate decision so that issues associated with these pits can be more directly addressed through the pre-decisional objection process (36 CFR 218), if these issues have not been adequately addressed in the Final Environmental Assessment.

The pits I have approved here will be developed and operated in accordance with resource protection measures, which are built from public input to avoid, minimize, and mitigate impacts to forest resources. Issues from public comment and tribal consultation have been addressed by modifying pit locations and boundaries to avoid impacts to Forest Resources. Concerns about hauling noise and effects to sensitive wildlife have been addressed by limiting the hauling of materials from rock pits during the breeding season within ¼ mile of Mexican spotted owl protected habitat. In addition, the removal of trees has been limited to outside the breeding season to avoid effects to all breeding birds, including migratory birds. We also heard from several individuals and organizations that identified the need for pit reclamation. This is why my decision was to choose a blended version of alternatives B and C, which includes reclamation of 3 pits to improve habitat and watershed conditions. I have also approved a reclamation plan (Appendix 1) as part of this decision to guide the reclamation process and monitoring steps for returning the rock pit locations to a natural state.

This decision meets the purpose and need of the project to provide safe driving conditions and adequate drainage to minimize erosion in moderate and high traffic areas in a cost efficient manner. The proposed rock pits are strategically located throughout the Coconino National Forest to provide aggregate materials for road maintenance needs while minimizing hauling distances. This decision also allows for reclamation of three existing rock pits, which will also meet the purpose and need of facilitating watershed improvement by reducing erosion through the process of reclamation and reforestation in areas that are currently unvegetated and in the case of Ashurst and Bald Mesa #2 pits, which are a source of ongoing unauthorized off-highway vehicle use.

Other Alternatives Considered
In addition to the selected alternative, I considered several other alternatives. A comparison of these alternatives can be found in chapter 2 the EA.

Alternative A: No Action
Under Alternative A (No Action), none of the 37 material pits would be developed and operated to provide cinders, gravel, and other aggregate materials for surfacing of unpaved roads for maintenance purposes. Existing rock sources and commercial sources would be used for temporary road construction (approved through other site-specific NEPA decisions) and maintenance of existing roads. Because road surfacing materials are currently limited, temporary road construction and maintenance
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Development and expansion of rock pits involves disturbance of the surface conditions. First the existing vegetation is removed and then heavy equipment such as excavators, bulldozers, and backhoes move and stockpile topsoil and non-source materials onsite. Extraction, processing, and transport depend on the source material. Basalt and limestone pits require crushing and sorting and thus tend to be larger than cinder pits so that adequate processing and stockpiling of materials can occur on-site. Many pits require several acres of localized disturbance. In other instances, where rock outcrops exist or there is an existing pit, vegetation removal and earth moving is minimal. Cinder materials usually require the least amount of processing and, in some instances, may be mixed with other materials to make longer lasting road surfacing. Typically, cinders are screened to achieve the desired gradation. Once fully processed, materials are loaded onto a dump truck or other hauling vehicle by backhoe, conveyer belt, or other equipment to transport the rock. The space needed for processing equipment, stockpiling materials, and loading is included in the acres reported for each rock pit.

Basalt and limestone rock usually requires blasting, mechanical extraction, crushing, and screening to provide materials of the size and consistency needed for road surfacing. A production cycle or crush and stockpile operation usually involves 2-3 days of drilling followed by a single blast and then onsite processing. Charges are typically detonated 10 to 20 feet below ground. Blasted material is extracted with front-end loaders and possibly a dozer or excavator. The material is then passed through a multi-phase portable crushing unit often consisting of a jaw crusher, power screen, conical crusher and conveyer belt system. Much of this process operates at a constant noise level under normal operation and is classified as non-impact equipment. However, mobile equipment such as dozers and front loaders operate in a cyclic fashion in which a period of full power is followed by a period of reduced power, creating varying sound levels. The material is processed to meet FS specifications for surface coarse aggregates, and stockpiled using elevated conveyor belts. These operations typically take about 20-25 working days with the crusher and other equipment (i.e., loader, dozer, excavator, or backhoe) operating 8-10 hours per day during daylight hours. The average amount of material produced during a crush and stockpile operation is approximately 25,000 tons or 17,000 cubic yards. Each forest will have an operationally active pit every other year, alternating between the Kaibab and Coconino NFs. Sometimes one of the national forests will have a second pit in operation in the same year. Operations have been limited to 1 of 3 dedicated pits per forest in recent years. The work is contracted, so annual operations can vary with available funding.

A number of project-specific resource protection measures have also been identified as part of the proposed action. These resource protection measures are designed to avoid, minimize, and mitigate potential impacts from development and operation of the proposed rock pits and rock pit expansions.
Table 4. Resource protection measures to avoid and minimize impacts of rock pit development and operation.

<table>
<thead>
<tr>
<th>Resource Protection Measure</th>
<th>Category</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trucks hauling materials will be limited to no more than 25 miles per hour on all forest roads, and 10 miles per hour within 0.25 miles of all signed campgrounds and trailheads.</td>
<td>Air quality / Safety</td>
<td>Reduces noise and dust during hauling.</td>
</tr>
<tr>
<td>Before ground disturbing activities begin, inspect material sources on site annually (or before disturbance for new sites), and ensure they are weed-free before use and transport. Treat weed-infested sources for eradication, and strip, stockpile, and treat contaminated materials before using pit materials.</td>
<td>Invasive Species</td>
<td>Prevent establishment and spread of invasive weed populations</td>
</tr>
<tr>
<td>If treatments are not successful or not possible, ground disturbance associated with rock pit sites will be located away from noxious or invasive weed populations to avoid spread.</td>
<td>Invasive Species</td>
<td>Prevent establishment and spread of invasive weed populations</td>
</tr>
<tr>
<td>Soil disturbance will be avoided to the extent practicable.</td>
<td>Invasive species / water &amp; air quality</td>
<td>Prevents impacts to soil, vegetation, and wildlife.</td>
</tr>
<tr>
<td>Equipment (other than for hauling) will be inspected and cleaned before entering rock pit areas to prevent introduction of invasive weeds.</td>
<td>Invasive Species</td>
<td>Prevent establishment and spread of invasive weed populations</td>
</tr>
<tr>
<td>Monitor and treat noxious or invasive weed populations following project implementation annually for at least three years to ensure that any weeds transported to the site are detected and controlled.</td>
<td>Invasive Species</td>
<td>Prevent establishment and spread of invasive weed populations</td>
</tr>
<tr>
<td>Prevent any new noxious or invasive weed species from becoming established, contain or control the spread of known weed species, and eradicate species that are the most invasive and pose the greatest threat to the biological diversity and watershed condition (Coconino National Forest Plan, p. 23). Maintain stockpiled, uninfested material in a weed-free condition.</td>
<td>Invasive Species</td>
<td>Prevent establishment and spread of invasive weed populations</td>
</tr>
<tr>
<td>Entrances to active rock pit sites will be gated to prevent inappropriate motor vehicle use, dumping, or other activities.</td>
<td>Recreation / Safety</td>
<td>Decrease noise, protect public safety and minimize impacts to forest resource in and around rock pit sites.</td>
</tr>
<tr>
<td>All rock pit sites have been surveyed. All identified cultural resource sites that are potentially eligible for the National Register of Historic Places within or adjacent to the rock pit boundary shall be flagged prior to implementation. Flagged sites shall be fully avoided. In addition to flagging, rock pit sites including Kaibab 4A Pit, Double A Pit, Big Aso Pit, and Deadhorse Pit shall include fencing along the pit boundary to minimize the potential for indirect impacts to resources outside of the pit boundary.</td>
<td>Cultural Resources</td>
<td>Reduces disturbance footprint, protects cultural and historic sites, and retains seed sources for eventual reestablishment of residual plant cover, potentially enhancing fruit, seed, and plant production.</td>
</tr>
<tr>
<td>Sensitive plant populations will be avoided when constructing temporary roads.</td>
<td>Sensitive Plants</td>
<td>Prevents direct impacts to sensitive plant species.</td>
</tr>
<tr>
<td>Green tree harvest or snag removal will be seasonally restricted during the period April 1st to August 15th to the extent practicable to avoid potential nest and roost destruction and loss of immature cavity nesters, migratory birds, and roosting bats.</td>
<td>Wildlife</td>
<td>Minimize direct wildlife and nesting bird impacts, and reduces noise during the breeding season.</td>
</tr>
<tr>
<td>Resource Protection Measure</td>
<td>Category</td>
<td>Purpose</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activities within ½ mile of MSO recovery and protected habitat will be surveyed to protocol to determine occupancy by owls.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to MSOs.</td>
</tr>
<tr>
<td>No ground disturbance from rock pit development or operation will occur in known protected activity centers (PACs), or within one quarter mile of nests and roosts during the nesting season.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to MSOs.</td>
</tr>
<tr>
<td>Reclamation activities on the Bald Mesa #2 pit will not occur during the MSO breeding season.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to MSOs.</td>
</tr>
<tr>
<td>Hauling materials from rock pits will occur outside of the MSO nesting season in or within ¼ miles of PACs.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to MSOs.</td>
</tr>
<tr>
<td>Pit development and operation within occupied northern goshawk PFAs may occur when surveys have indicated there are no active nests. If surveys identified an occupied nest, all operational activities and hauling will be avoided March 1 - September 30th.</td>
<td>Wildlife</td>
<td>To minimize impacts to Northern goshawk.</td>
</tr>
<tr>
<td>Scattered patches of untreated slash within ½ mile of dependable water will be retained in known or potential turkey nesting areas.</td>
<td>Wildlife</td>
<td>Minimize impacts to wildlife habitat.</td>
</tr>
<tr>
<td>Should a California condor occur in the pit boundaries during operations, all activities will stop immediately and the appropriate FS personnel will be contacted. Sighting locations will be forwarded to the Peregrine Fund and the USFWS.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to California condors.</td>
</tr>
<tr>
<td>If a Northern goshawk is detected at a rock pit location at any time, the local District biologist will be contacted prior to any additional activity to confirm goshawk activity in the area and determine additional mitigations, if necessary, to limit impacts to nesting goshawks.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to nesting Northern goshawks</td>
</tr>
<tr>
<td>No pit development or operation in or adjacent to known eagle nests or roosts, or areas identified as important nest or roost habitat.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to golden and bald eagles.</td>
</tr>
<tr>
<td>Newly discovered eagle roosts or nests near pit locations will be protected with a 300-foot no cut zone around the roost.</td>
<td>Wildlife</td>
<td>To avoid or minimize potential impacts to golden and bald eagles.</td>
</tr>
<tr>
<td>Best management practices (BMPs) are designed to prevent or reduce the amount of water pollution generated by non-point sources to a level compatible with water quality goals. BMPs will be incorporated into applicable cutting, burning, and road building activities. Authority and guidance to prescribe and implement BMPs is defined in FSM 2501, 2530, FSH 2509.22 and the Forest Plan.</td>
<td>Soil and Watershed</td>
<td>To avoid and minimize impacts to water quality and watershed integrity.</td>
</tr>
<tr>
<td>All operators at a proposed rock pit site must obtain coverage under an Arizona Pollutant Discharge Elimination System Permit (AZPDES) and establish and implement a stormwater pollution prevention plan (SWPPP), if required to comply with State water requirements based on the magnitude of the specific rock pit operation.</td>
<td>Soil and Watershed</td>
<td>To avoid and minimize impacts to water quality and watershed integrity.</td>
</tr>
<tr>
<td>Erosion control work will be kept current immediately preceding expected seasonal periods of precipitation or runoff.</td>
<td>Soil and Watershed</td>
<td>To avoid and minimize impacts to water quality and watershed integrity.</td>
</tr>
</tbody>
</table>
**Decision Notice and Finding of No Significant Impact**

<table>
<thead>
<tr>
<th>Resource Protection Measure</th>
<th>Category</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>There will be no disturbance from mechanical equipment within 50 feet on either side of a designated protected stream course (perennial streams).</td>
<td>Soil and Watershed</td>
<td>To avoid and minimize impacts to water quality and watershed integrity.</td>
</tr>
<tr>
<td>Refueling and maintenance of project motorized equipment will occur at least 200 feet away from any channel.</td>
<td>Soil and Watershed</td>
<td>To avoid impacts to water quality and wildlife.</td>
</tr>
<tr>
<td>No more than 500 gallons of fuel will be stored at any one pit location at any given time. Fuel storage containers must be located within a secondary containment area that can accommodate 110 percent of the contents of the tank. All fueling of vehicles will be done on a designated protected, upland site.</td>
<td>Soil and Watershed</td>
<td>To avoid impacts to water quality and wildlife.</td>
</tr>
<tr>
<td>One 50-gallon spill kit (or two 30-gallon spill kits) must be located on-site during use of all heavy equipment.</td>
<td>Soil and Watershed</td>
<td>To avoid impacts to water quality and wildlife.</td>
</tr>
<tr>
<td>No permanent structures will be constructed as part of any rock pit; although at least one self-contained portable toilet is required to be on-site during all operations.</td>
<td>Soil and Watershed</td>
<td>To protect water quality and prevent unnecessary impacts to vegetation and wildlife.</td>
</tr>
<tr>
<td>Mine pit areas will be designed to be internally draining during mining activity.</td>
<td>Soil and Watershed</td>
<td>To avoid and minimize impacts to water quality.</td>
</tr>
<tr>
<td>Where there is topsoil that is first removed to access the aggregate material source, this soil shall be stockpiled for reclamation. Soil will be stockpiled intratum and replaced so that the &quot;A&quot; horizon is back on the surface.</td>
<td>Soil and Watershed</td>
<td>To facilitate reclamation efforts.</td>
</tr>
<tr>
<td>Standing trees and shrubs will be left in strategic locations along the perimeter of the pit to serve as screening.</td>
<td>Scenic Resources</td>
<td>To minimize impacts to scenic integrity and wildlife.</td>
</tr>
<tr>
<td>Two to three foot berms will be constructed with topsoil to create a gradual grade change from the pit to the adjacent road, the berms will be seeded with native grasses to prevent erosion. If necessary to minimize visual and noise impacts, shrub or tree planting may occur as well. Berms and tree planting should be located to fill in gaps between trees that are left on the perimeter.</td>
<td>Scenic Resources / Soil and Watershed</td>
<td>To minimize impacts to scenic integrity and wildlife.</td>
</tr>
</tbody>
</table>

**Alternative C: Pit Development with Additional Reclamation**

Alternative C includes the same rock pit operation and development as Alternative B, but includes reclamation of 7 pits that have been identified as having potential impacts to watershed function or other forest resources.

The pits for reclamation include existing rock pit sites that continue to affect forest resources such as wildlife habitat, water quality, scenic value, or other resource values. The following criteria were used to identify pits to include in this alternative for reclamation:

- Affects sensitive wildlife habitat
- Affects water quality
- Source of unauthorized motor vehicle use
- Source of unauthorized dumping
- Affects scenic integrity
- In use for staging, processing, or material extraction
- Potential future source of aggregate material
Sixteen Rock Pits and Additional Reclamation on the Coconino National Forest

- Potential future use for other activities such as community slash pile

Using these criteria, approximately 7 pits were identified for further study on the Coconino and Kaibab National Forests. Of these 7 pits, the Lockwood Pit, is also proposed for expansion. In this situation there could be concurrent reclamation, where portions of the pit which have been mined are reclaimed while operations in adjacent areas continue.

Alternatives Considered but Eliminated from Detailed Study

In addition to the alternatives considered in detail in the Environmental Assessment, there were additional alternatives that were either initially considered or eliminated from detailed study, or were previous versions of one of the alternatives that did not adequately address one or more issues identified during the planning process and thus did not merit detailed study.

Alternatives with Youngs Canyon Pit

Youngs Canyon Pit was originally included in the proposed action. This pit was later removed from the proposed action based on the potential impacts to cultural resources, pronghorn habitat, and concerns related to the nearby Walnut Canyon National Monument that could not all be effectively avoided or mitigated. Given a careful balancing of the potential benefits of materials from the pit, the need for aggregate road surfacing materials in this part of the Forest, and un-mitigatable impacts; the pit was removed from analysis due to the likelihood of irreversible and irretrievable impacts without a resulting clear benefit.

Alternatives with Marteen Pit

Both action alternatives (Alternative B and C) were modified to remove Marteen Pit from further analysis based on cultural resource surveys and tribal consultation. Based on the surveys, it became apparent that development and operation of the site is not feasible without impacting one or more cultural resource sites that could be eligible for the National Register for Historic Places. Since these impacts would violate the Coconino Forest Plan and would require further consultation with tribal groups and with the State Historic Preservation Office under the National Historic Preservation Act, it was decided to remove this pit from analysis in both action alternatives.

Replacement of Hostetter Tank Pit with Hostetter 2 Pit

Both action alternatives (Alternative B and C) were modified to remove Hostetter Tank Pit from analysis and include the adjacent Hostetter 2 Pit. Cultural resource and engineering surveys found the Hostetter Tank Pit would result in unavoidable and un-mitigatable impacts to cultural resources and water quality. Furthermore, access to the originally proposed Hostetter Tank Pit would require construction of a new road at considerable cost, which would affect the ability of the Forest to secure aggregate material in a cost-effective manner. In its stead, the much smaller Hostetter 2 Pit was identified and analyzed as part of both Alternatives B and C. Hostetter 2 is within ½ mile of Hostetter Tank Pit, but is easily accessible from Forest Service Road 418, and would provide aggregate material in a location with few other options.

Modification of pit boundaries for Double A, Big Aso, Deadhorse, and Dillman pits

Both action alternatives (Alternative B and C) were modified to change the boundaries of four pits: Double A, Big Aso, Deadhorse, and Dillman pits. The boundaries of these four pits were modified based on surveys and subsequent tribal consultation that identified potential cultural resource sites that could be eligible for the National Register of Historic Places. In addition to modifying the boundaries to avoid impacts to these potential cultural resources, the forests agreed to fence the boundaries of
these pits (except for Dillman) as an additional mitigation measure to decrease the potential for impacts to the sites from rock pit extraction and processing activities.

Replacement of Thomas Pit with Thomas 2 Pit

Both action alternatives (Alternative B and C) were modified to remove Thomas Pit from analysis and include the nearby Thomas 2 pit to avoid impacts to the MSO and its habitat. Surveys and analysis found that the location of the Thomas Pit could result in direct impacts to the MSO and its habitat. The MSO is a threatened species protected under the Endangered Species Act. In addition, the Coconino National Forest Plan, as amended (1987), includes language to avoid impacts to protected habitat. To avoid these unavoidable conflicts while still providing a source of aggregate material in a portion of the Forest with no other sources, the Thomas 2 Pit was identified nearby to replace the Thomas Pit. The location of the Thomas 2 pit is expected to result in a smaller and less direct effect to the MSO and its habitat.

Public Involvement and Scoping

The NEPA process and the associated Forest Service implementing regulations provide for an open public involvement process. The NEPA phase of a proposal begins with public and agency scoping. Scoping is the process used to identify major issues and to determine the extent of environmental analysis necessary for an informed decision to be made concerning a proposed action. Issues are identified, alternatives are developed, and the environmental analysis is conducted and documented.

The public scoping process began April 5, 2011 when the scoping letter was mailed. One scoping public meeting was held in Flagstaff on April 25, 2011 to gather public comments on the Proposed Action. Nine people attended the scoping meeting. The scoping period ended on May 6, 2011, however, several comments were received after that date. All comments received to date are included in the content analysis.

Public outreach, meeting notices and advertisement related to scoping efforts included:

The posting of legal notices in the Arizona Daily Sun in Flagstaff and the Red Rock News in Sedona

- Email of the scoping notice to 77 individuals, groups and agencies
- Mailing letters to 672 people, groups and agencies
- Mailing letters to 23 tribes to request tribal consultation
- A news release that was sent to the local media
- Posting a notice on the US Forest Service website and on the Schedule of Proposed Actions

The scoping process generated 2 letters from agencies, 19 completed comment forms from individuals, and 5 phone calls (4 from individuals and 1 from an organization). The clear majority of comments were from individuals.

The comments are in the administrative record for this project.

The information from scoping was used to develop a total of three alternatives, which were then analyzed in a preliminary Environmental Assessment, released for public comment on June 30, 2013 via a published legal notice. Input was received from 5 individuals or organizations during the 30-day comment period.
Several of these comments identified concerns with proposed rock pit development at the proposed Saddle Mountain and Hostetter 2 rock pit sites. Additional field meetings were held in September 2013 with those that provided comments at these two locations to further discuss identified issues and concerns.

**Tribal Consultation**

On May 3, 2011 the Forest Service requested tribal consultation by sending a letter to 23 tribal groups with information on the proposed rock pit project. The rock pit project was also included on the Schedule of Proposed Actions for both the Kaibab and Coconino National Forests, which is distributed quarterly to tribal groups to share information and identify potential projects of interest or concern. One response was received from the Hopi Tribe, which didn’t identify any specific concerns, but indicated that they would like to participate in tribal consultation and would appreciate more information once cultural resource surveys and reports for the project were complete.

The complete cultural resource survey reports for the proposed project were sent to the Hopi Tribe on December 30, 2013. This spurred additional discussions, which ultimately led to the removal of Youngs Canyon Pit, and the modification of several other pit boundaries including the Double A, Big Aso, Deadhorse, Kaibab 4A, and Dillman pits. Specifications were also added to the resource protection measures to add fencing (except for Dillman Pit) around those features identified in surveys so that adjacent pit operation and development will avoid any direct impacts to potential sites.

An additional discussion with the Hopi Tribe occurred in April 2016. The tribe recognized the project had been modified during the consultation process. They inquired as to whether the Hostetter 2 pit was within the San Francisco Peaks mineral withdrawal area, which also corresponds to the Traditional Cultural Property boundary. The location of the Hostetter 2 pit is located outside both of these boundaries.

**Issues**

Using the comments from the public, other agencies, and tribes, the interdisciplinary team identified several issues regarding the effects of the proposed action. Main issues of concern and how they have been addressed includes the following:

- Development of new pits without first addressing existing pits that may be causing erosion and thus watershed impacts
  
  - During the scoping process comments were received stating that the Forest Service should first look into reclaiming existing pits causing erosion and watershed impacts before or in addition to development of new pits to address watershed impacts from roads. To address this concern, Alternative C was developed. This alternative was developed by identifying existing pits most likely to be causing erosion, which could be contributing to watershed impacts. Reclamation of these pits was then considered and analyzed in Alternative C. See the description of Alternative C for information on how pits were identified for reclamation.

- Noise and dust affecting residents of Kendrick Park associated with operation of the Saddle Mountain Pit.
  
  - This issue was addressed through a field meeting with residents in 2013 and additional analysis of potential noise and dust impacts of the operation of Saddle Mountain Pit. In September of 2013, the Coconino and Kaibab Forest Engineer met with residents of
Kendrick Park to explain that the Saddle Mountain pit operation would likely include minimal noise from machinery operating at the pit given its distance from residences, the presence of noise-dampening vegetation, and since the pit contains cinder materials that would require minimal processing and would only include occasional use (an estimated frequency of 2-4 weeks per year).

In addition, there are resource protection measures in place to minimize noise impacts such as speed limits and restrictions on vegetation removal throughout the summer.

- Cultural resource concerns and potential watershed impacts from the Hostetter Tank Pit
  - Cultural resource and engineering surveys found the Hostetter Tank Pit would result in unavoidable and unmitigatable impacts to cultural resources and water quality. Furthermore, the access to originally proposed Hostetter Tank Pit would require construction of a new road at considerable cost, which would affect the ability of the Forest to secure aggregate material in a cost-effective manner. To address these concerns the location of the proposed Hostetter Tank Pit was removed from analysis and replaced with Hostetter 2 Pit. The location of Hostetter 2 was surveyed for cultural resources and was determined to avoid all potential impacts to archaeological and historic sites and is located outside of the San Francisco Peaks Traditional Cultural Property. The location of Hostetter 2 Pit is also much more convenient from an access and transportation perspective, as it is a short distance from Forest Road 418, which is a well-maintained forest road that can be used for hauling.

- Potential wildlife impacts and noise impacts to the nearby Kachina Peaks Wilderness associated from development and operation of the Hostetter 2 Pit
  - These issues were closely considered and analyzed with information from this analysis updated in the Final Environmental Assessment. Analysis about the potential noise impacts from pit development and operation to the nearby Kachina Peaks Wilderness was added to the Final Environmental Assessment (EA). The EA also include site specific analysis about how the Hostetter 2 Pit location would affect local elk populations and visibility from the adjacent 418 road.

- Impacts to Mexican spotted owl (MSO) habitat from development and operation of the Thomas Pit
  - To address this concern, the location of the proposed Thomas Pit was removed from analysis and replaced with the Thomas 2 Pit. The location of Thomas Pit is in an area with a great amount of MSO habitat which is lacking sources for aggregate materials. In order to maintain the strategic access to materials for road maintenance while decreasing the potential effects on the owl’s habitat, the Thomas 2 pit was moved to a more advantageous location in the same general area. While this pit would still impact unoccupied MSO recovery habitat, the impacts from this pit have been further mitigated through the application of resource protection measures to limit hauling within ¼ mile of MSO Protected Activity Centers during the breeding season, and by limiting the removal of vegetation outside of the breeding season. A full analysis of potential impacts to MSOs of this pit and all other pits has also been completed for consultation under the Endangered Species Act.
Impacts to archaeological and cultural resources from the development and operation of a number of pits including Marteen Pit, Youngs Canyon Pit, Double A, Big Aso, Kaibab 4A, Deadhorse, and Dillman pits.

- To address the potential impacts to cultural and historic resources all pit areas for development and operation and their access was surveyed. A number of features were identified within the boundaries of the pits, many of which included features that could make them eligible for inclusion on the National Register of Historic Places (NRHP). Where a determination was not made on eligibility for listing on the NRHP, it was assumed that the site or feature was eligible.

In consultation with tribal entities, both the Youngs Canyon and Marteen pits were removed from further analysis to avoid impacts to cultural and historic resources. The boundaries of the other four pits were modified to completely avoid potential cultural resource sites that could be eligible for the National Register of Historic Places. In addition to modifying the boundaries to avoid impacts to these potential cultural resources, the forests agreed to fence the boundaries of these pits (except for Dillman Pit) as an additional mitigation measure to decrease the potential for impacts to the sites from rock pit extraction and processing activities.

Potential impacts of Youngs Canyon Pit to the Walnut Canyon National Monument

- During the scoping process many issues were identified of potential impacts to the Walnut Canyon National Monument from the noise, dust, and traffic resulting from blasting and processing of rock at the Youngs Canyon Pit location. These issues were fully resolved from the removal of the Youngs Canyon Pit from all alternatives analyzed in the Final Environmental Assessment.

Third party development and use of authorized rock pits

- Pits approved in this decision may also be used by other organizations such as county, city, or state entities, when approved under a mineral materials contract (36 CFR 228.43 “Policy governing disposal”). We received many comments from individuals and organizations hoping to apply for and receive a permit to develop the authorized pit location to use the material for either municipal or commercial purposes. While this use of pits by an organization other than the national forest is not prohibited, the agency will review any proposals it receives and base approval on a number of factors. The approval of mineral material contracts for non-Forest Service entities may occur when the scope and range of effects from pit development and/or operation is within the effects disclosed in the Rock Pits Environmental Analysis and the sale/disposal terms are in accordance with provisions in 36 CFR 228.43. In addition to working with Coconino and Yavapai counties, who are already permitted for use of pits on the Kaibab and Coconino National Forests, we received several communications from private companies hoping to develop rock pits for commercial use of materials. While this decision does not prohibit the potential use of any rock pit authorization for this purpose, the commercial use of a rock pit site will need to be within the scope and range of effects disclosed in the Environmental Assessment, will need to meet the provisions for either a competitive or negotiated sale under the

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2 Any permits that approve use of aggregate materials from the rock pits in this proposed action will include the same resource protection measures (e.g. hauling restrictions) that are included in the proposal.
federal regulations (36 228.57 ,Types of Disposal”), and will not conflict with the rock material needs, plans and operations of the national forest and those already operating under permit. Furthermore, the Coconino National Forest may or may not determine that use of any given pit approved in this decision is eligible for use by another entity based on the Forest’s need for aggregate materials in the foreseeable future or other pertinent factors that may affect the management of the pit or national forest.

Finding of No Significant Impact

The following is a summary of the project analysis to determine significance, as defined by Forest Service Handbook 1909.15.05. “Significant” as used in NEPA requires consideration of both context and intensity of the expected project effects.

Context means that the significance of an action must be analyzed in several contexts (i.e. local regional, worldwide), and over short and long time frames. For site-specific actions, significance usually depends upon the effects in the local environment rather than in the world as a whole. This project is limited in scope and duration. The project was designed to minimize environmental effects through the consideration of approximately 100 potential pit locations, of which only those with no direct impact to known Forest resources were carried forward into the proposed action. These pit locations were then surveyed for cultural and historic resources, which resulted in additional modifications by the removal of two pits and the modification of 4 others to avoid impacts to potential sites and features with cultural or historic significance. Lastly, the inclusion of a broad array of resource protection measures were identified and included to avoid or minimize impacts to wildlife, water quality, invasive species, and cultural and historic resources.

Intensity refers to the severity of the expected project impacts and is defined by the 10 points below.

Context

This decision will approve the operation and development of 16 rock pits and reclamation of 3 rock pits in a landscape covering over 1.8 million acres. From a landscape perspective, the imprint of the approved rock pits will affect approximately 0.01% of the area. This means that 0.01% of the vegetation will be impacted for up to the next two decades. Though the effects will be imperceptible at the landscape scale, it will be perceptible at the local scale within 1/4 mile from the pit where the impacts of development, processing, and hauling will occur occasionally and be most evident. Since the pits have been strategically located across the landscape, many of the pits are in areas where direct effects within 1/4 mile have been avoided and minimized. Additionally, the effects of the 16 pits for development/operation will be beneficial by improving road conditions and thus limiting impacts to watershed quality (of which roads and condition of roads is the most important factor). Reclamation of the 3 pits will result in localized beneficial effects as well, at least for specific resources such as the reclamation of the Bald Mesa #2 Pit, which is located adjacent to a MSO Protected Activity Center.

Intensity

The following factors were considered to evaluate intensity.

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

This decision will result in both beneficial and adverse effects. The adverse effects will include impacts to vegetation and soils for several decades. This effect will be limited to the rock pit
development and operation area, which will include less than one hundredth of 1 percent of the landscape. There will also be effects from noise to nearby wildlife, adjacent landowners, and forest visitors in nearby system or non-system recreation sites. These effects will be generally be limited and short-lived in nature. Pit development and operation will occur occasionally through contracts that extract and process the material in 2-4 weeks, followed by hauling that can last several more weeks. The noise will be limited as well because the pits are located more than a quarter mile from any system trails, recreation sites, private lands, or other Forest visitor locations. The maximum values of estimated noise levels for most of the heavy equipment associated with pit development will be in the 50-60 dB range for 0.3 miles distant; approximately equivalent to the noise levels of a refrigerator to conversational speech 1 meter away (Environmental Assessment, Table A, Appendix 5). This decreases further to 40-50 dB range, which is comparable to the noise generated by a running computer or refrigerator, for locations 0.5 miles. These are considered maximum estimates because they do not account for weather, forest, or topography damping the noise further. While these effects may be noticeable, they will not significantly impact any forest resources or visitors.

The pits will result in beneficial effects as well. Because a main objective of the rock pits project is to increase strategic availability of aggregate materials for road maintenance, the number of haul miles driven will be approximately one-third of the miles currently required to haul the materials. This will reduce the amount of carbon released to the environment, and will decrease noise and potential disturbance from the reduced mileage. The reclamation of the 3 rock pits will also benefit wildlife habitat and watershed integrity. These effects are expected to be very small at the landscape level or landscape scale as to be imperceptible, yet they will likely last for several decades.

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

This decision is not likely to affect public health or safety. The additional rock pits will allow for a greater level of forest road maintenance, and is expected to also facilitate improve maintenance of existing County Roads, both of which can improve safety while driving for the next two decades. This effect will likely be limited as the roads to receive maintenance using the rock pit materials are those already being maintained at a minimum standard to generally avoid any road hazards likely to result in safety concerns.

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

The rock pit locations were identified to avoid direct impacts to important locations on the landscape with historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. Each rock pit location was surveyed and where historic or cultural resources were identified, rock pits were removed from further analysis or modified to prevent direct impacts. None of the rock pits are located in areas with water or in areas of important ecological value.

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

The effects of extracting, processing, and hauling common variety rock materials for road maintenance are not likely to be controversial. This is a very well-known and established practice on the Coconino National Forest that has been occurring at some magnitude since the establishment of the Forest. There is some concern about impacts of the pit development and processing with respect to noise effects or visibility; however, these effects are relatively known, they have been approximately quantified in the
Environmental Assessment, and have been found to not be uncharacteristically likely to affect the human environment.

5) _The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks._

The effects of developing and operating rock pits are very well known and not uncertain or involving unique risks. Much of the decision allows continued operation or expansion of existing pits, where the effects are not likely to change from the past. Other pits to be developed are generally small and will include effects similar to other areas mined for aggregate rock material over the past century.

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

The effects of extracting, processing, and hauling common variety rock materials for road maintenance are not likely to establish a precedent for future actions. This is a very well-known and established practice on the Coconino National Forest that has been occurring at some magnitude since the establishment of the Forest. This decision authorizes pit operation, development, and reclamation and does not result in a precedent that will affect considerations of future actions.

7) _Whether the action is related to other actions with individually insignificant but cumulatively significant impacts._

There will be cumulative effects at the landscape level from development and operation of other pits, but these will be extremely small and generally imperceptible at the landscape level (<1% of the landscape). At the local level, there are few other projects that will have similar effects to combine cumulatively at any one pit location and result in effects that will be significant as a result of the intensity of effect. The largest, and likely diffuse, cumulative effect resulting from this project will likely be a decrease in sediment in downstream rivers and streams as a result of a cumulative decrease in erosion and sediment flow from roads closed through the 2011 Travel Management decision and implementation. This effect will be mildly beneficial, and thus not likely to be at a level considered significant within the scale of a pit, a watershed, or at the analysis level of both the Kaibab and Coconino National Forests.

8) _The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places or may cause loss or destruction of significant cultural or historical resources._

Surveys were completed for each rock pit location to avoid any entities either listed in the National Register of Historic Places (NRHP) or considered eligible for listing in the NRHP. This resulted in at least two pits being removed from analysis in the Environmental Assessment, and four other pits being modified to exclude areas with potential historic or prehistoric significance. Thus, there will be no adverse effects to historic resources that will result in loss or destruction.

9) _The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act._

A Biological Assessment for the project was written to analyze effects to 26 Endangered, Threatened or Candidate species. In response, a Biological Opinion (BO) was received on September 27, 2016. The BO identified an adverse effect for Mexican spotted owl habitat and its Critical Habitat, due to impacts up to 47.8 acres of unoccupied, recovery habitat as a result of pit development and expansion. Approximately 36.9 acres of this area is on the Coconino National Forest. However, the BO also
Sixteen Rock Pits and Additional Reclamation on the Coconino National Forest

explains, “Adverse effects from the Rock Pits Project are not expected to negatively affect Mexican spotted owl recovery or further diminish the conservation contribution of critical habitat...” Thus, while this decision may adversely affect a small amount of unoccupied Mexican spotted owl recovery habitat, it is not expected to diminish the recovery of this species or result in death, harm or harassment to any individual owl. As a result, the impacts of this decision are not at a level that it would result in significant impacts to Mexican spotted owl populations or recovery.

In addition to the Mexican spotted owl, the Biological Opinion concurred that the rock pit development and operation would result in a determination of “may affect, not likely to adversely affect” for the California condor outside of the 1Oj experimental nonessential population area, and "is not likely to jeopardize" the condor within the 1Oj experimental nonessential population area.

The scale and dispersed nature of rock pit locations limit potential impacts to wildlife and wildlife habitat. Their size and placement on the landscape will be similar to natural disturbances or features that lack vegetation on the landscape. Rock pit development will occur at the scale of non-ponderosa pine inclusions such as aspen and meadows that naturally occur in northern Arizona forests. This is not to suggest that they will serve a purpose similar to other vegetation types, but it is unlikely to result in fragmentation of prey habitat at a level that will affect prey population levels. As a result, the effect of this decision is not likely to affect any one species or habitat at a level that will result in significant effects.

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

The action and resource protection measures are in full compliance with Federal, State, and local law requirements for the protection of the environment.

Conclusion

After considering the environmental effects described in the EA and specialist reports, I have determined that this decision to authorize the development and operation of 16 rock pits and 3 pits for additional reclamation will not have significant effects on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared.

Findings Required by Other Laws and Regulations

Clean Water Act

According to input from the Arizona Department of Environmental Quality, operators for mineral pits will need a valid surface water quality permit issued under the Arizona Pollutant Discharge Elimination System program, such as the Multi-Sector General Permit for stormwater discharges.

The pits authorized in this decision are not in proximity to an impaired water and are not expected to result in measurable surface water impacts. Based on information in the Environmental Assessment, there are no effects expected to impaired waters assessed under the “Status of Water Quality in Arizona 305(b) Assessment and 303(d) Listing Report.”

National Forest Management Act (NFMA)

This decision to authorize development and operation of 16 rock pits and additional reclamation of 3 rock pits is consistent with the intent of the forest plan's long term goals and objectives listed on pages 21 to 26. The project was designed in conformance with land and resource management plan standards
Administrative Review and Objection Rights

This decision was subject to the Pre-decisional Administrative Review Process (Objection Process) pursuant to 36 CFR 218, subparts A and B. No objections were received during the objection filing period for this decision, which ran from July 1 through August 15, 2016.

Implementation

Implementation of this decision may begin immediately. Minor changes may be needed during implementation to better meet onsite resource management and protection objectives. In determining whether and what kind of further NEPA action is required, I will consider the criteria to supplement an existing environmental impact statement in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular, determine whether the proposed change is a substantial change to the intent of the selected alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

For further information concerning the Rock Pits Project, please contact: Mike Dechter, 928-527-3416, mdechter@fs.fed.us.

Approved by:

[Signature]
LAURA JO WEST
Coconino National Forest Supervisor

[Date]

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and incorporates appropriate land and resource management plan guidelines. This project will implement the Forest Management Goals as stated in the Coconino and Kaibab Land and Resource Management Plans, which include direction to: Conduct geological investigations of aggregate material sources for project planning and for road construction maintenance (Coconino LRMP, p. 78). The decision also incorporates a number of resource protection measures for deferring vegetation removal outside of the breeding season to protect migratory birds, require surveys prior to development and operation in MSO habitat, and establish berms and fencing where needed to protect cultural resource sites and ameliorate noise and scenic effects (Land and Resource Management Plan, pages 65, 206-67, 206-25, 206-77, 206-87).

On April 9, 2012, the Department of Agriculture issued a final planning rule for National Forest System land management planning (2012 Rule) [77 FR 68]. On the Coconino National Forest, the Coconino Forest Plan was developed in 1987 under a prior planning rule but has since been amended pursuant to the 2012 Rule. The Forest is currently involved in completed revising the 1987 Forest Plan as well. There are no Forest Plan amendments required under this decision, nor is it expected that the activities authorized here will conflict in any way with the revised Forest Plan.

Other NFMA Requirements - I have determined the selected alternative is consistent with the provisions of the National Forest Management Act as well as other laws and regulations including the Endangered Species Act, Clean Water Act, and the National Historic Preservation Act. Additional documentation of compliance is located in the project record.

Federal regulations at 36 CFR 228 Subpart C - Disposal of Mineral Materials
Sets forth the rules and procedures through which use of the surface of National Forest System lands, in connection with mining and mineral operations, shall be conducted so as to minimize adverse environmental impacts on National Forest System surface resources. This decision is within the guidelines outlined in the mineral material disposal regulations which describe the policy for disposal of mineral materials, the need for operating and reclamation plans for all pits and quarries, when does free-use and competitive/non-competitive sales apply, etc.

Common Varieties of Mineral Materials act of July 31, 1947
Authorizes the Secretaries of the Interior and Agriculture, under such rules and regulations as they may prescribe, to dispose of mineral materials (including but not limited to common varieties of sand, stone, gravel, pumice, pumicite, cinders, and clay) and vegetative materials (including but not limited to yucca, manzanita, mesquite, cactus, and timber or other forest products) on public lands of the United States, if the disposal of such materials is not otherwise expressly authorized by law, is not expressly prohibited by laws of the United States, and would not be detrimental to the public interest.

Mining and Minerals Policy Act of December 31, 1970
States that it is the policy of the Federal Government to foster and encourage the development of economically sound and stable domestic mining, minerals, metal, and mineral reclamation industries; the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security, and environmental needs; mining, mineral, and metallurgical research to promote the wise and efficient use of our natural and reclaimable mineral resources; and the study and development of methods for the disposal, control, and reclamation of mineral waste products and the reclamation of mined land.
Appendix 1: Reclamation Plan

(Described according to 36 CFR 228.56 “Operating Plan” requirements)

Reclamation Objectives

Each rock pit will be managed according to the site-specific plan of operations developed and approved for a specific pit. Each plan of operations must include a specific reclamation plan to address the timely reclamation of the pit. The reclamation plans must be consistent with the reclamation plan information included here.

The objective of reclamation is to ensure that the site is left in a condition that:

1. Does not pose a threat to public health and safety;
2. Protects air and water quality; and
3. Protects wildlife habitat and provides for the establishment of indigenous vegetation that will provide a productive end land use as wildlife habitat.

Operation, reclamation, and closure of the rock pits will comply with any relevant County land use regulations, and all pertinent local, State, and Federal laws, rules, ordinances, and guidelines. Those rules and regulations relevant will be included in the operating plan of each rock pit, approved prior to development.

Reclamation Schedule

Final reclamation will be performed following completion of mineral materials mining at an actively mined site. Where operational conditions permit, reclamation of portions of the site will occur concurrently with mining activity. Reclamation activities according to this plan will be followed for all new pits and any new disturbance at existing pits. Management or reclamation of existing disturbed areas will occur according to Forest Service regulations and policy 36 CFR 228 Subpart C, Disposal of Mineral Materials. Any development of a rock pit site to provide administrative or recreational facilities will require additional environmental analysis through the National Environmental Policy Act process. Prior to developing, opening any new site, existing vegetation will be removed. Where trees greater than 12 inches exist, a minimum number of trees greater than 12 inches will be removed and stacked around the edge of the mine site and along the access road for replacement as large woody debris after mining activities. Once vegetation has been removed and stockpiled, the top 3-6 inches of soil will be stockpiled (where topsoil exists) as berms around the edges of the disturbed area.

Concurrent Reclamation

Concurrent reclamation activities that occur during the management of open pits include management of noxious weeds and control of drainage. Any emergent populations of noxious weed plants will be removed from areas disturbed by project related activities each year during the life of the project before they set seed. Invasive and noxious weed treatments will occur according to the 2004 Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds, Coconino, Kaibab, and Prescott National Forests and Coconino, Mojave, and Yavapai Counties, Arizona. Concurrent reclamation may also include establishment of berms to maintain internal drainage or seeding of native seeds to minimize erosion of soil piles. This may include ripping compacted areas, recontouring, placing growth media in disturbed areas, seeding of disturbed areas with indigenous, certified weed-free seed, and watering revegetated areas as needed to establish the seed. Specific revegetation requirements are included below in 2.5.6 Revegetation.
Post-Mining Reclamation

Post-mineral materials mining reclamation shall consist of removing all equipment and structures, re-contouring disturbed areas, ripping compacted areas (including all temporary roads), seeding, and planting in some areas. Noxious weed management will continue to occur prior to, during, and after mining activities according to the 2004 Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds, Coconino, Kaibab, and Prescott National Forests and Coconino, Mojave, and Yavapai Counties, Arizona.

Re-contouring

Re-contouring is often necessary after mineral materials mining activities to re-form steep slopes to a safe condition and ensure drainage that will reduce run-off to surrounding areas and facilitate regrowth of vegetation. At the conclusion of mineral materials mining activities, the site will be reshaped using overburden from mining activities to approximate the surrounding topography. For safety purposes, the working face will be sloped to no more than a 3:1 (horizontal: vertical) slope. The topography of the site will be shaped for internal drainage to minimize erosion to surrounding areas. Recontouring of slopes within the pit boundaries will be designed to discourage unauthorized recreation use or unauthorized vehicle access. This will be accomplished both while (a) the pit is being actively used and (b) as part of the reclamation activities once usable material has been removed.

Revegetation

The goal of revegetation is to establish vegetation on the reclaimed site with similar density and diversity as the surrounding area or appropriate with the expected land use for the site. Successful revegetation will restore wildlife habitat, as well as prevent soil erosion in the gravel pits, and prevent the establishment of new populations, or spread of existing populations of any non-native weed species. In areas other than cinder pits or basalt outcrops, acceptable re-vegetation will consist of a minimum of 50 percent ground cover (live vegetation or vegetation litter) after at least three growing seasons.

Where feasible, stockpiled top-soil and large woody debris will be well distributed across the re-contoured areas. Reseeding shall occur with a U.S. Forest Service approved seed mix appropriate for the surrounding vegetation. Revegetation will be monitored for compliance (see 2.5.8 Monitoring and Remedial Reclamation Activities below). Failure to meet the success standards may require additional planting and/or weed control, as appropriate.

Seed sources shall be certified weed free. Seed mix can include any of the following certified weed-free native species at a minimum of 5 pounds/acre of pure live seed. Certified weed-free seed mixes may be substituted in the reclamation plan for a specific plan of operations given it is deemed appropriate for the reclamation area. Potential vegetation for individual sites should utilize the Kaibab and Coconino National Forest Terrestrial Ecosystem Survey to identify species to be utilized. Site specific seed mixes will be developed in conjunction with District and/or Forest biologists.

The seed mix depends on the availability of these species. The site should be scarified prior to seeding. Where feasible, protect site with slash spread across the disturbed area to create microclimates and protect from grazing ungulates.

Temporary roads will be rehabilitated after use. This can be done through ripping the entire road bed, placing slash on the trail or cross-ditching (construction of waterbars) to break the energy flow of water. Placing slash on temporary roads is the preferred method to dissipate the energy flow of water.
and disguise the road bed. Waterbars are only to be implemented using equipment with an articulating blade (no skidders) or by hand.

**Public Safety**

Public safety during mining operations will be ensured through access restrictions. Fences and gates may be installed to prevent access to mine sites where it is necessary to prevent potential safety hazards or where it is important to limit disturbance to facilitate re-growth of vegetation. The placement of gates or fencing will occur based on the site-specific conditions at each site. Any fences installed for safety or reclamation purposes will be removed after revegetation goals have been met. Any fences will be constructed to specifications in the Coconino National Forest Plan on page 69.

**Monitoring and Remedial Reclamation Activities**

Reclamation monitoring will occur one year following the completion of initial reclamation activities and at approximately five years after the completion of reclamation activities. If it appears that reclamation efforts are not moving towards desired conditions, additional seeding, planting, or re-contouring may occur based on specific site needs. Eradication of noxious weeds may continue during mining activities or throughout reclamation to minimize the potential for the establishment and spread of weeds.