

3.17 GRAVEL PITS

3.17.1 Summary

Implementation of Alternative 1 (No Action) would result in no additional vegetation management activities and associated road building. Gravel would still be in demand across the project area for maintenance of the current transportation system and other Forest Service facilities such as campgrounds and parking lots. Maintenance and construction of roads for other governmental agencies would also likely call for use of existing sources. Gravel would also be needed for site development and maintenance and construction of roads within private parcels of land. None of the gravel pits included in this analysis would be available to meet the need for gravel resources.

Implementation of Alternatives 2, 3 or 4 (action alternatives) would result in vegetation management activities that could require the use of gravel for the associated management of the transportation system. The five gravel pits included in this analysis would be available to meet the needs of this project and the need for gravel for other public and private developments. The difference in the amount of material that would be extracted between the action alternatives would be minimal if any.

Implementation of Alternatives 2, 3 or 4 would also result in the reclamation of the Fall Lake Gravel Pit. This pit is located near the Fall Lake Campground and the Stub Lake Hiking Trail passes through it. Rehabilitation would enhance visual quality for the trail and potentially improve floral and faunal habitat within the pit area.

3.17.2 Introduction

Aggregate from gravel pits produces materials that are used in road construction and maintenance; trail construction and maintenance; and site development for both public and private facilities. This use creates a demand for gravel within the Glacier Project Area. This project proposes to approve the extraction of gravel from five existing gravel pits and to rehabilitate one depleted gravel pit. Gravel pits are in various locations within the project area.

3.17.3 Analysis Area

This section describes the gravel resources proposed for utilization within the Glacier Project Area and addresses the direct, indirect, and cumulative effects of material extraction from the gravel pits, including the No-action Alternative. The boundary for the direct, indirect, and cumulative effects is the project area because this is where the material is located and where a majority of the gravel would be used. The analysis considers potential effects for the next ten years because all of the proposed activities would be completed during that time period.

The six existing gravel pits within the project area have a combined estimated volume of 260,000 cubic yards. The pits that will be utilized currently encompass an area of 21.9 acres.

3.17.4 Affected Environment

Glacial deposits in the Glacier Project Area vary from shallow to bedrock soils, to deep moraines and deep sand and gravel deposits. Deep sand and gravel deposits are the typical locations for the extraction of mineral material. Because of the topography of the bedrock formations and glacial activity in the area these deposits occur in various locations.

A few areas within the project area have deep sand and gravel deposits. One of these areas runs from south west to north east along and across the Fernberg Road. The other area occurs towards the east end of the Spruce Road. These areas contain large volumes of gravel of varying qualities suitable for road construction. Some material would also be suitable for crushing.

The existing pits occupy 10.4 acres and are used by the Forest Service for road building and maintenance. These pits are also used by local communities. A list of the active gravel pits in the Glacier Project Area is included as Table 3.17-1.

Pit Name	Current Pit Size*	Potential Pit Size*	Quantity of Material Available**	Proposed 10-year Expansion*	Quantity of Gravel needed in next 10 years **
Madden Creek	2.4	4.5	50,000	0.11	2,760
Nickel Lake North	1.8	2.4	10,000	0.07	1,200
Nickel Lake South	1.9	5.0	50,000	0.17	2,785
Snowbank Lake	4.1	5.7	50,000	0.21	6,920
South Farm Lake	0.2	4.3	100,000	0.06	1,440
Total	10.4	21.9	260,000	0.62	15,105

* acres

** cubic yards

The Fall Lake Pit is located near the Fall Lake Campground. The Stub Lake Hiking Trail passes through the pit. This pit is no longer suitable for use and should be rehabilitated.

3.17.5 Environmental Consequences

There is an increasing demand for sand and gravel from the existing pits within the project area. Most of this demand is for relatively small volumes of material for construction, reconstruction, and maintenance of roads and trails and for small construction projects such as parking lots and boat ramps. There is also a need for material for development of private land, projects such as septic systems and driveways. The demand for this type of use is less than 2,000 cubic yards annually.

The Forest Service collects \$1.10/cubic yard from five of the six pits and \$2.65/cubic yard from the Snowbank Pit because of the higher quality of material available. Of that fee \$0.95/cubic yard from five of the pits and \$2.50/cubic yard from the Snowbank Pit goes to the United States Treasury. \$0.15/cubic yard from all gravel sales goes into a resource recovery fund that stays on the Superior National Forest and can be used for further development of material sources or for rehabilitation of depleted gravel pits.

3.17.5.1 Direct and Indirect Effects

Alternative 1 (No-action)

The demand for small uses of material from these existing pits would continue and is expected to increase from less than 2,000 cubic yards annually to about 2,000 cubic yards annually. The increase is anticipated because a general increase in public demand is expected as rural development continues. If Alternative 1 is implemented none of the gravel pits would be approved for continued use. The need for gravel would continue by both the Forest Service and other governmental entities. Additionally there would be a continued demand for material for private development. Gravel extraction would be approved on a case by case basis. Additional environmental review would depend on the urgency of the need for material from a particular pit. If material had to be hauled from alternative sources this could result in additional hauling costs for maintenance and road building.

The Fall Lake Pit would not be rehabilitated if Alternative 1 was implemented. This would result in no visual and/or habitat enhancement for the area of the existing pit.

Direct and Indirect Effects Common to All Action Alternatives (Alternatives 2, 3 and 4)

Under all of the action alternatives five active pits would be approved for extraction of gravel and one would be approved for rehabilitation. Pit development plans would be established to provide direction for pit development which would include direction on expansion and rehabilitation. Some pits may not be needed for several years. Specific mitigations would be implemented at each pit based on information from resource specialists. Extraction of the gravel from the pits would occur in an orderly fashion. Some pits may not be developed at this time depending on future needs of gravel and location of other gravel pits in the area. See Table 3.17-1 for information on the amount of gravel available and size of expansion for each pit.

The demand for gravel would increase on average from less than 2,000 cubic yards to about 2,000 cubic yards per year for the action alternatives. This projected increased demand addresses the increase in road maintenance. This increase would be very small as compared to the amount of gravel available from the known sources within the project area. However, gravel is not a renewable resource and making the most efficient use of it requires pit management planning.

Under the action alternatives approximately 16,000 cubic yards would be removed and the total area covered by gravel pits across the project area would expand to about twelve acres.

Under all of the action alternatives the Fall Lake Pit would be rehabilitated. Rehabilitation procedures would come from a pit plan and would be dependent on the desired outcomes of resources such as recreation and wildlife. Since the Stub Lake Hiking Trail passes through the pit likely activities would include visual enhancements and improvements to habitat.

3.17.5.2 Cumulative Effects

The alternatives in conjunction with other past, present and reasonably foreseeable actions on private, federal, state, and county land, would result in cumulative impacts on the mineral resource in and surrounding the project area beyond the level that is already occurring and would constitute an irreversible commitment of the resource. The increase in gravel production required by any of the alternatives along with foreseeable construction projects such as reconstruction and maintenance of roads and highways, new private driveways, new forest system and temporary roads, as well as other projects requiring some type of gravel could be supplied from the abundant gravel resource available with minimal impact. The abundance of gravel in these proposed gravel resources (260,000 cubic yards), as well as other available resources, far exceed the demand.

The existing pits have been in operation for at least twenty years and have impacted approximately 10.4 acres. Approximately 7,735 cubic yards have been removed in the last ten years from the six active pits in the project area.

Rehabilitation of the Fall Lake Pit would enhance approximately 0.2 acre. This would result in benefits for scenery along the Stub Lake Hiking Trail and as a result, improve the overall recreational experience for the users of that trail. Rehabilitation would also result in wildlife and plant habitat improvement for the pit area that could also benefit areas adjacent to the pit.