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## Chapter 16. Mineral Resources

### 16.1 Introduction

The Mineral Resources Chapter is a component of the Conservation and Open Space Element (Chapter 12), which is one of the seven required General Plan Elements. The purpose of the Mineral Resources Chapter is to identify the County's known mineral resources and support the conservation, development and utilization of these resources. Energy production and conservation are dealt with in the Energy Element (Chapter 15).

### 16.2 Background

Humboldt County is one of the most geologically complex areas in the State. Gold mining became one of the first important industries in this area. Other minerals such as copper, chromium, silver, and zinc were also once produced. One example is the Horse Mountain Copper Mine which operated from around 1907 to 1929. In the past, metallic mineral production varied according to national economic trends. Presently, very little metallic mining is occurring. High production and manufacturing costs limit the prospects for commercial utilization of these minerals.

The 1997 State Division of Mines & Geology Strategic Plan includes the following Mission Statement:

"The mission of the State Mining and Geology Board is to represent the State's interest in the development, utilization and conservation of mineral resources; reclamation of mined lands; development and dissemination of geologic and seismic hazard information; and to provide a forum for public redress."

The Humboldt County Framework Plan has included policy language that supports this Mission since 1984.

#### Mineral Resource Production

Current County mineral resource production is primarily limited to sand, gravel, and rock extraction. Gravel bars and deposits from the large stream and flood plains supply most of the gravel needs of the County. Since costs for these materials are mostly associated with transportation, operations are usually located close to rural and urban development areas and used locally.

Production of sand, gravel, and rock are essential for the continued well-being of the County. They are the basis for much of the construction materials for roads, concrete, streambank protection, erosion control, septic systems, and passive solar projects. Importation of these materials would raise costs and negatively impact the development and maintenance within the County.

Sand and gravel are mined primarily in-stream, with approximately 75% of all production occurring in the Eel River-Van Duzen complex. Rock production occurs in 32 active hard rock quarries scattered throughout the County. Figure 16.1, Rock and Mineral Extraction Sites, generally identifies the rock extraction and in-stream mining sites throughout the County.

## **In-Stream Gravel Mining Regulatory Coordination**

To address State, federal and County permitting requirements in a coordinated way and to implement mitigation required in Program Environmental Impact Reports for in-stream gravel mining, the County established the County of Humboldt Extraction Review Team (CHERT).

The CHERT process serves as a vehicle for interagency cooperation and annually reviews in-stream mining operations for State Surface Mining and Reclamation Act of 1975 (SMARA) compliance. The CHERT review process involves extensive interagency coordination and on-site annual inspections. Through this process the following agencies have input and can annually establish extraction quantities and permit restrictions for in-stream gravel mining operations:

- California Department of Fish and Game through their Streambed Alteration Agreements
- NOAA Fisheries through Endangered Species Act, Section 7, consultation
- U.S. Fish and Wildlife Service through Endangered Species Act, Section 7, consultation
- U.S. Army Corps of Engineers through their Letter of Permission
- California Coastal Commission for operations requiring Coastal Development Permits in Coastal Commission jurisdiction
- County of Humboldt for oversight of Conditional Use Permits, Coastal Development Permits, Reclamation Plans, and Financial Assurances

Additionally, the California Department of Conservation is involved in the review and approval of Reclamation Plans and Financial Assurances.

## **Environmental Protection and Reclamation of Mined Lands**

SMARA established State standards for mining activities and the reclamation of mined lands. These standards require that local governments obtain reclamation plans and set operational standards in granting permits for surface mining. Humboldt County adopted Ordinance #1373 to comply with this State requirement.

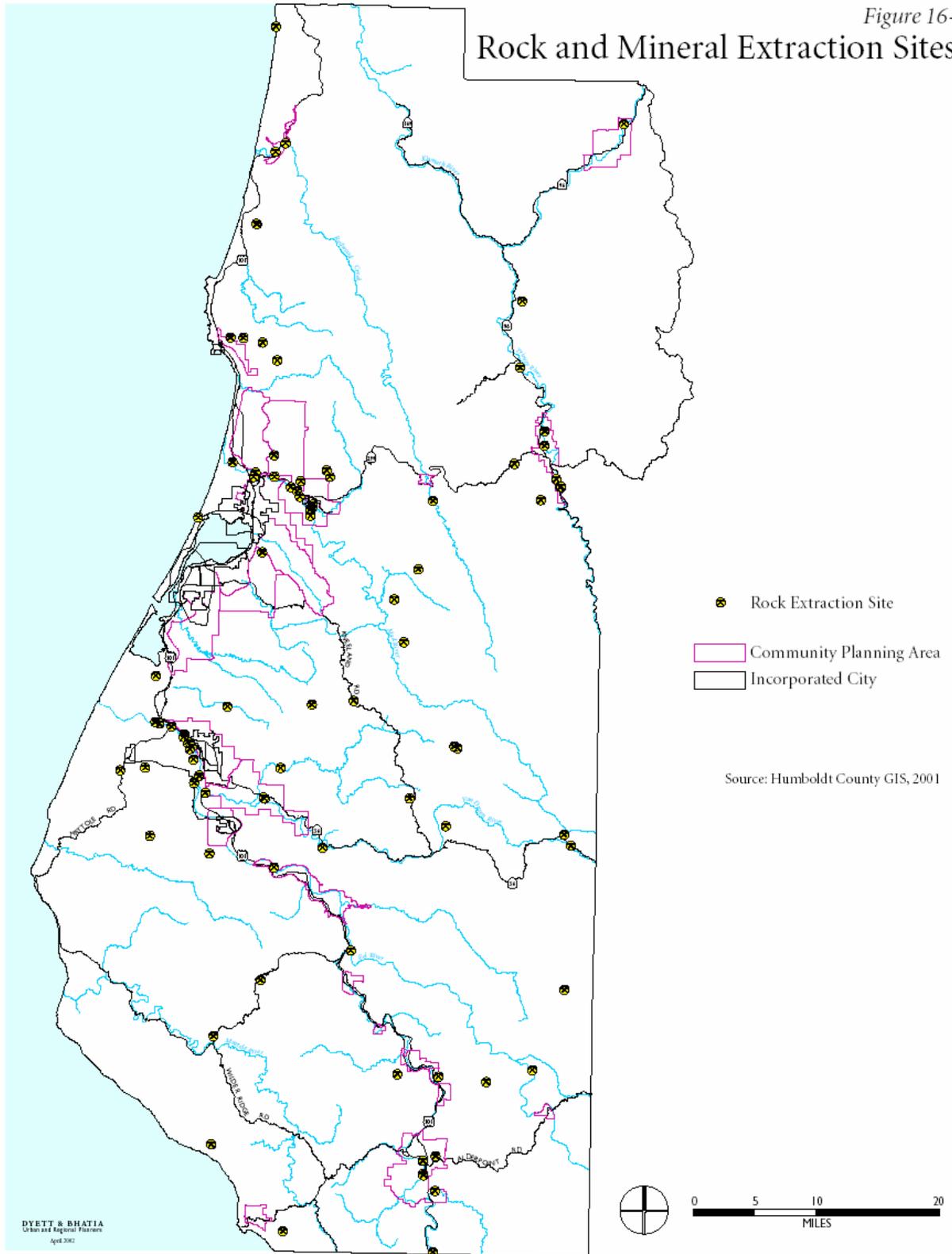
The Surface Mining Standards adopted within the County's Surface Mining Ordinance set environmental protection standards and prevent new mining operations from becoming nuisances to nearby communities and prevent problems of traffic, noise, water quality or visual degradation.

## **Incompatible Land Uses**

In the 1980s and early 1990s numerous surface mining conditional use permits were issued with a permit term of 15 years, subject to renewal. More recently, a number of these permits have come up for renewal, and through the renewal notification and hearing process it has become apparent that there are more concerned neighboring property owners. In one instance, it was found that approximately 72% of parcels adjacent to an active extraction operation or haul route had changed ownership since the initial permit issuance. In order to insure the continued production of essential mineral resources, all mining operations and haul routes need protection from incompatible land uses.

Figure 16-1

# Rock and Mineral Extraction Sites



## 16.3 Goals and Policies

### Goals

- MR-G1. Long-Term Supply of Mineral Resources.** To assure the long-term availability of adequate supplies of mineral resources, to protect mineral resource areas from incompatible land uses and to minimize adverse environmental impacts. \*

### Policies

- MR-P1. Mapping Mineral Deposits.** Maintain and update maps of the County's identified mineral deposits. \*
- MR-P2. Future Development Planning.** Plan future development such that it will not interfere with the utilization of identified mineral deposits. \*
- MR-P3. Reclamation for Alternative Uses.** Ensure adverse environmental effects are prevented or mitigated to the fullest extent feasible and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses under the General Plan. \*
- MR-P4. Production and Conservation.** Encourage the production and conservation of minerals, while preserving to the maximum extent feasible the values relating to recreation, watershed, wildlife, range and forage, science, and aesthetic enjoyment. \*
- MR-P6. Community Character.** Prevent the disruption of community character in siting and planning mineral resource extraction operations. \*
- MR-P7. Mineral Haul Routes.** Require mineral haul routes to avoid incompatible areas such as landslides, highly erodible soils, residential areas, and schools, if feasible. \*
- MR-P8. Conflict Reduction.** Permit conditions for mineral extraction operations should address allowable dust and noise levels, hours of operation, fencing, traffic, access, setbacks and other means to reduce conflicts with adjacent development. \*
- MR-P9. Sand and Gravel Extraction and Mean Annual Recruitment.** Annual in-stream gravel extraction prescriptions shall be based on a management strategy of not exceeding the Mean Annual Recruitment of a river segment. (modified FRWK 2533.9).
- MR-P11. Water Diversion Projects.** Evaluate significant water diversion projects that reduce the replenishment rate of gravel in streams in light of the impact they would have on local mineral supply in Humboldt County. (modified FRWK 2533.11)
- MR-P15. Right to Mine.** Discretionary projects adjacent to permitted surface mining extraction sites or along existing haul routes shall be required to file a notice of the right to mine. The notice shall advise owners and subsequent interests in ownership

that the existing mining operations has a permitted right to continued mining operations.

## 16.4 Standards

- MR-S1. Surface Mining Standards.** Surface mining - See Surface Mining and Reclamation Act Ordinance, Title III, Div. 9, County Ordinance #1373. \*
- MR-S2. Timberland Conversion.** Timberland Conversion as a consequence of surface mining activities - Must meet the requirements of the Forest Practices Act. \*
- MR-S3. Mineral Resource Combining Zone.** Establish a Mineral Resource (-MR) combining zone to facilitate implementation of the County's regulations for surface mining, conservation and reclamation. The purpose of the -MR combining zone is to ensure compatibility of adjacent uses. The -MR combining zone shall be applied to parcels with permitted surface mining operations and to parcels adjacent to permitted surface mining extraction sites and along existing haul routes.
- MR-S4. Permitted Land Use Designations.** Mining operations and subsequent reclamation activities shall be conditionally permitted in all land use designations and implementing zoning districts.
- MR-S6. Borrow Pits.** The operation of borrow pits on Resource Production Lands (timber, agriculture) for non-commercial purposes is considered a principle use necessary to maintain the primary use of the land. \*
- MR-S7. Subdivision.** The subdivision to create parcels which are for the primary purpose of providing road and construction materials shall be consistent with this plan. \*

## 16.5 Implementation Measures

- MR-IM1. Permit and Ordinance.** The County will maintain the conditional use permit requirement for mineral, oil and gas production operations and utilize the County Surface Mining and Reclamation Ordinance. \*
- MR-IM2. Mapping.** The Planning Department shall utilize the mapping in Policy 2533.1 when reviewing permit applications to:

Prevent development which would preclude utilization of those deposits.

Prevent the disruption of adjacent development by siting and planning for mineral resource extraction operations ensuring the elimination or reduction of nuisances and hazards in regards to noise, dust, traffic and public health and safety. \*

- MR-IM3. Hearing Notification.** Notification for use permit hearings is provided to landowners within 300 feet of a project's boundaries. For mining operations the Planning Department should provide expanded notice for landowners affected by the mining operation and hauling routes. \*

- MR-IM4. Development Consultant.** The County should hire a consulting firm qualified in surface mining and reclamation practices to advise the County when large surface mineral deposits are proposed for development. This should include but is not limited to: EIR preparation, mitigation measures and reclamation plans. The consultant's fees should be paid via reimbursements from the mine developers. \*
- MR-IM5. Combining Zone.** Develop and utilize Mineral Resources Combining Zone to facilitate implementation of the County's regulations for surface mining, conservation and reclamation. The purpose of the -MR combining zone is to ensure compatibility of adjacent uses. The -MR combining zone shall be applied to parcels with permitted surface mining operations and to parcels adjacent to permitted surface mining extraction sites and along existing haul routes.

NOTE: the section below will fall out of the 'final' version found in the GP, but will be critical to the process of review.

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## **16.6 Staff Analysis and Alternatives**

### **State Requirements**

Government Code Section 65302(e) requires that a general plan include an open-space element as provided in Article 10.5 of the Government Code, commencing with Section 65560. Section 65560(b) describes open-space land as including "open space used for the managed production of resources, including ...areas containing major mineral deposits, including those in short supply." Planning for the conservation and preservation of open-space lands via a comprehensive open-space program and plan includes inventory of resources, conservation measures, an action program, and consistency of the open space plan with building permits issued, subdivision maps approved, and open-space zoning ordinances adopted (Government Code §§ 65563-65567).

### **Background and Staff Recommendation**

#### **Metallic Minerals**

Humboldt County is one of the most geologically complex areas in the State. Gold mining became one of the first important industries in this area. Other minerals such as copper, chromium, silver and zinc were also once produced. One example is the Horse Mountain Copper Mine which operated from around 1907 to 1929. In the past, metallic mineral production varied according to national economic trends. Presently very little metallic mining is occurring. High production and manufacturing costs limit the prospects for commercial utilization of these minerals.

#### **Construction Minerals**

Current County mineral resource production is primarily limited to sand, gravel, and rock extraction. Since costs for these materials are mostly associated with transportation, operations are usually located close to rural and urban development areas and used locally.

Gravel bars and deposits from the large stream and flood plains supply most of the gravel needs of the County. Throughout the County, there is rock material suitable for road beds. This is used extensively by the County Public Works Department as well as the timber industry. There are few locations of high quality rock necessary for rip rap material and jetty construction. New sources of this material are in demand. Other materials such as limestone and clays have been utilized for various purposes in the past but the demand is presently very limited. Sand, gravel, and rock, being necessary to construction and development, are an essential component for the continued well-being of the County. They are the basis for much of the construction materials for roads, concrete, streambank protection, erosion control, septic systems and passive solar projects. Importation of these materials would raise costs and negatively impact the development and

maintenance within the County. It is important to protect specific sites and haul routes against land use incompatibilities to assure the continued utilization of this resource.

As a part of the data on file at the Planning Division, the mineral resources map, Figure 16.1, Rock and Mineral Extraction Sites, locates sand, gravel, and quarry operations in Humboldt County. These mapped sites will allow for compatibility review when processing permits to avoid land use incompatibilities.

## **SMARA**

The State Surface Mining and Reclamation Act of 1975 (SMARA) brought about a State policy for the reclamation of mined lands. That policy requires local governments to obtain reclamation plans as a condition for granting the permits required before surface mining may proceed. Minimum standards have been set forth by the State for both the surface mining permit and the reclamation plan. Humboldt County has adopted its Ordinance #1373 to fulfill this State requirement.

Surface Mining Standards adopted within the County's Surface Mining Ordinance prevent new mining operations from becoming nuisances to nearby communities and prevent problems of traffic, noise, water quality or visual degradation.

## **In-stream Gravel Mining Regulatory Oversight**

Surface mining in Humboldt County, including in-stream gravel extraction, has been regulated under SMARA throughout the implementation of the Humboldt County Framework Plan adopted in 1984. However, more recently, there have been some significant changes in the way in-stream gravel mining operations are managed. In-stream gravel mining operations require Conditional Use or Special Permits and in some cases Coastal Development permits from the County and must have a reclamation plan acceptable to the County and the State Department of Conservation. In-stream mining is also governed by the California Department of Fish and Game through Streambed Alteration Agreements (SAA) and the US Army Corps of Engineers (Corps) Letter of Permission (LOP). A coordinated process was developed to address all of these agency permitting requirements.

To address these State, Federal and County permitting requirements in a coordinated way and to implement mitigation required in Program Environmental Impact Reports for in-stream gravel mining, the County has established the County of Humboldt Extraction Review Team (CHERT) review of in-stream gravel mining. Such review is authorized by SMARA (Public Resources Code, Division 2, Chapter 9, Section 2774 (b)), the *Interim Monitoring Program for the Lower Eel and Van Duzen Rivers* adopted by the Humboldt County Board of Supervisors on July 2, 1996, and the 1992 *Memorandum of Agreement* (MOA) and *Programmatic Environmental Impact Report on Gravel Removal from the Lower Mad River* certified by the Humboldt County Board of Supervisors on May 31, 1994. The *Final Program EIR on Gravel removal from the Lower Eel River* was adopted in July, 1992, and covers both the lower Eel River and the lower Van Duzen River.

## **CHERT Formation and Role**

The County of Humboldt Extraction Review Team (CHERT) was established pursuant to the *Interim Monitoring Program and Adaptive Management Practices for Gravel Removal from the Lower Eel and Van Duzen Rivers*, adopted July 2, 1997 by the Humboldt County Board of Supervisors. Within this framework, the CHERT consists of at least five members with expertise in fluvial hydrology, fluvial geomorphology, fisheries and botany. The CHERT members are appointed by the Humboldt County Board of Supervisors and serve as an agent for the County for the purpose of providing reviews of operating proposals for permitted, vested, or exempted extraction operations identified in Program Environmental Impact Reports (PEIR) for in-stream gravel extraction within the County. These reviews are required as part of the Adaptive Management Strategy necessary for addressing potential environment impacts associated with in-stream gravel mining operations pursuant to the California Environmental Quality Act. In this way, CHERT serves as a means of ensuring annual determination of compliance with mitigation required in the program EIRs for in-stream gravel mining on the lower Mad, Van Duzen and lower Eel Rivers.

Following are the significant features of the CHERT:

- CHERT is responsible for reviewing operating proposals for permitted, vested, or exempted extraction operations identified in the PEIRs.
- CHERT reviews operations to determine whether data are being collected according the specified standards.
- Each year the CHERT determines the total amount of annual extraction recommended in annual prescriptions. This determination is dependent upon reclamation, net recruitment, potential bank erosion, individual bar replenishment, individual bar morphology as well as all other pertinent river conditions, resources, and trends which shall be deemed relevant by CHERT to this monitoring program.
- Each year, following each extraction season, the CHERT prepares a post-extraction information report which is made public.

## **Management Strategy**

The management strategy for in-stream gravel mining is based on the concept of "mean annual recruitment" (MAR) wherein the amounts permitted for extraction each year for a given river segment overall are not to exceed the mean amount of aggregate replenished by natural process over the previous year. This approach allows for in-stream gravel extraction without a net lowering of river bed elevations.

## **Annual Reviews**

In summary, CHERT provides the annual site specific recommendations for extraction quantities, site specific minimization measures, and mitigation, that tier to the general project design features and mitigation measures as described in the U. S. Army Corps of Engineers (Corps) Letter of Permission (LOP). The LOP requires this link to the independent scientific review process for assessing annual changes in site conditions in order to reduce impacts to listed species and designated critical habitat.

Under the LOP procedure, the Corps requires that applicants first consult with the County of Humboldt Extraction Review Team (CHERT) before submitting complete applications to the Corps for review to determine whether the excavation activity qualifies under the LOP procedure. CHERT, a team of riverine scientists (which is composed of hydrologists, geomorphologists and fisheries biologists, and whose review and recommendations are also required as part of the County and State regulatory processes), will help identify areas of concern and locations for cross-section monitoring. If the activity qualifies under Letter of Permission, the Corps will authorize it for the duration of the LOP procedure. However, each permittee must also submit yearly monitoring data regarding extraction amounts, cross-sectional information, biological monitoring and aerial photos, and obtain an annual approval.

### **Interagency Coordination**

The CHERT process serves as a vehicle for interagency cooperation and annually reviews in-stream mining operations for compliance. The CHERT review process involves extensive interagency coordination and on-site annual inspections. Through this process the following agencies have input and can annually establish permit restrictions for in-stream gravel mining operations:

- California Department of Fish and Game through their Streambed Alteration Agreements.
- NOAA Fisheries through Endangered Species Act Section 7 consultation.
- U.S. Fish and Wildlife Service through Endangered Species Act Section 7 consultation.
- U.S. Army Corps of Engineers through their Letter of Permission.
- California Coastal Commission for operations requiring Coastal Development Permits in Coastal Commission jurisdiction.
- County of Humboldt for oversight of Conditional Use Permits, Coastal Development Permits, Reclamation Plans and Financial Assurances.

Additionally, the California Department of Conservation is involved in the review and approval of Reclamation Plans and Financial Assurances.

The CHERT review serves as a vehicle for this interagency coordination and as an independent scientific review and recommendation process. CHERT annually reviews the extraction plans for all permitted in-stream gravel mining operations in the County. Review of major changes in operations is coordinated with appropriate State and Federal Agencies. The Corps makes the final determination on whether to authorize a permit under their LOP.

### **Endangered Species Act Consultation**

Due to annual changes in stream flows, and in sediment transport and deposition within stream channels, the LOP creates a framework, describing project design features, mitigation and monitoring, and requiring the applicants to consult with CHERT prior to submitting applications to the Corps. The Corps, in their review process, confers with NOAA Fisheries and the U. S. Fish and Wildlife Service (USFWS) regarding Endangered Species Act (ESA) Section 7 consultation. The ESA Section 7 consultation addresses critical habitat concerns and restrictions for endangered or threatens species, such as salmonids and snowy plover. USFWS and NOAA Fisheries recommend conditions to be placed on the Corps permit for protection of these species.

CHERT recommends extraction quantities and site-specific minimization measures on an annual basis. The goal of the independent scientific review provided by CHERT is to protect river form and function, while recommending extraction quantities that are within the estimated long-term average annual sustained yield amount for a specific river.

### **Mean Annual Recruitment**

As noted above, the management strategy for in-stream gravel mining is based on the concept of "mean annual recruitment" (MAR) wherein the amounts permitted for extraction each year for a given river segment overall are not to exceed the amount of aggregate replenished by natural process over the previous year. Studies related to mean annual recruitment and current permitted extraction amounts have shown that currently the Mad River and Van Duzen River segments in Humboldt County are permitted to the extent allowable under the management strategy of mean annual recruitment ceilings. These river segments are unlikely to see any new permits for in-stream gravel mining operations in the next twenty years, as the existing permitted operations account for the available mean annual recruitment. For the Eel River, there remains to be a definitive determination of a mean annual recruitment extraction ceiling, however, currently permitted mining operations on the river have not resulted in a lowering of river bed elevations. Any proposed new in-stream gravel mining operations on the Eel River would need to be supported by a comprehensive environmental review which includes a rigorous determination of mean annual recruitment, analysis of current extraction volumes, and development of extraction targets which would not exceed the river's mean annual recruitment over all operators.

### **Asbestos**

Several permitted upland rock quarries in the County have recently come up for renewal, and a new issue has emerged based on recent information developed by the State Department of Conservation on serpentine rock formations and the possibility of such rock formations to contain asbestos. For example, for the Klamath River Aggregates permit renewal, based on field investigations conducted by the North Coast Air Quality Management District (District), it was determined that chrysotile asbestos-bearing serpentine exists on portions of the project site and at peripheral sites. Report amounts based on area percent quantities vary from 1.75 to 30 percent. According to the California Air Resources Board Asbestos Airborne Toxic Control Measure for Asbestos Containing Serpentine (ATCM), "asbestos-containing material" is defined as material that has an asbestos content of 0.25% or greater." Dioritic intrusive rock that is targeted for quarrying was found to contain no detectable asbestos as reported by the analytical laboratory.

Due to the presence of serpentine bearing asbestos at the site, quarrying operations were required to comply with the District's Authority to Construct Permit Nos. NAC-392 and NAC-395, including the Dust Mitigation Plan and Addendum to the Dust Mitigation Plan, throughout the duration of quarrying activities.

The issue of serpentine-bearing overburden and in-place serpentine remains a concern for potential new and some existing upland rock quarries as they come up for renewal. The State Department of Conservation has published a map of serpentine-bearing rock locations within Northern California which may be used as a general guide to where asbestos-

containing rocks may be found. However, more precise rock analysis may be required for sites within the vicinity of serpentine rock formations.

### **Compatibility with Adjacent Land Uses (Moving to the Nuisance)**

In the 1980s and early 1990s numerous surface mining conditional use permits were issued with a permit term of fifteen years, subject to renewal. More recently, a number of these permits have come up for renewal, and through the renewal notification and hearing process it has become apparent that there are more concerned neighboring property owners than for the initial permit issuance. In one instance, it was found that approximately 72% of parcels adjacent to an active extraction operation or haul route had changed ownership since the initial permit issuance. A number of these changes in ownership represented the sale of vacant parcels which were later developed for residential uses. These new residential owners then become concerned that there is an active mining operation in the vicinity of their residences and claim that it is a nuisance through the hearing process, even though the mining operations had been conducted under the conditions of their previous permit for many years. This issue has brought to the forefront the need to address compatibility of surface mining operations with adjacent uses, and the need to advise potential future property owners of existing mining operations.

### **Terrace Mining**

In addition to in-stream gravel mining, there is another method of gravel extraction which has been described as the excavation of pits on the adjacent floodplain or river terraces and is also known as "terrace mining." Dry pits are located above the water table. Wet pits are below, depending on the elevation of the floodplain or terrace relative to the base flowwater elevation of the channel. Their isolation from an adjacent active channel may be only short term. During a sudden change in channel course during a flood, or as part of gradual migration, small levees may be breached and the channel will shift into the gravel pits. Studies in other areas have shown that terrace mining can have significant environmental consequences. In Humboldt County, floodplain terraces consist largely of prime agriculture lands used for grazing cattle and dairy operations. In the past, existing in-stream and upland quarry operations have been able to accommodate local gravel needs, and terrace mining has not been a key source for gravel in the County. Terrace mining, if conducted in Humboldt County, could have significant impacts on agricultural operations and could adversely affect river channel morphology. Potential sources of rock products for Humboldt County include upland rock quarries, in-stream gravel mines, terrace mining or importation. Because of Humboldt County's relative isolation and constraints of existing transportation infrastructure, importation of gravel has not been considered a viable alternative source. Upland rock quarries are limited in the type and amounts of rock products that can be provided. Of the remaining two sources, in-stream gravel mining (versus terrace mining) is preferred as it does not have the conflicts with agricultural land uses that would result from terrace mining.

### **Staff Recommendation**

The mineral resources policies in the current Framework General Plan have guided these activities over the past twenty years and are still appropriate today. Staff recommends continuation of

these existing policies, standards and implementation measures (Policies P1 through P13, Standards S1 and S5, and Implementation Measures IM1 through IM5). Additionally, during the development of the General Plan Update and through the process of permitting surface mining projects the following mineral resources issues were identified:

- *Designation and protection of sufficient sand and gravel resources*
- *Reclamation and other mitigation of mining impacts*
- *Protection of new and existing mining operations from potential new residential uses (Right to Mine)*
- *Protection of other uses adjacent to mining operations*

New policies and objectives have been suggested or developed to address these issues. Discussion of some of these policies is included in more depth below, and comments on policy, standards and implementation measure alternatives are included in the Alternatives Comparison Chart. Staff recommends adoption of Policies, Standards and Implementation Measures to address: compatibility of mineral extraction sites (P15, S3 and IM5).

## **Alternatives**

**Plan Alternative A** includes additional policies and measures which address: identification of non-metallic mineral materials throughout the County (P16); as well as restricting export of mineral materials under certain conditions (P17, P20, and S5). This Alternative includes policies addressing regulation of extraction of mineral resources to ensure that they are efficiently conserved for Humboldt County uses. For some uses rock products are required to meet certain standards for hardness, e.g. certain Caltrans projects or jetty rock. There is a concern that hard rock resources of rock with certain hardness requirements may be limited in the County and their precise availability is unknown at this time. Alternative A would also require analysis of mineral extraction permitting based on watershed (to ensure that no one watershed suffers a disproportionate share of extraction operations) and assessment of cumulative effects of extractions to determine if future needs will be met when the County General Plan is next updated. (P18, P19 and P21).

**MR-P16. Identification of Non-Metallic Mineral Materials.** The County shall request the State Department of Conservation to conduct a County-wide study to assess the location and value of non-metallic mineral materials. Once completed, the County may recognize these material resources in the General Plan and zone their locations and the surroundings to allow for mineral resource management.

**MR-P17. Hard Rock Extraction Ceiling.** Establish ceiling for hard rock extraction pending completion of a completed California Geological Survey of mineral materials for Humboldt County.

**MR-P18. Cumulative Effects.** Based upon the inventory shown by the California Geological Survey of mineral materials, cumulative effects of extractions shall be analyzed and future needs projected every time the County General Plan is updated.

**MR-P19. Watershed Effects.** Evaluation of new applications for surface mining permits shall include distribution of sites so that individual watersheds are not disproportionately impacted.

**MR-P20. Export of Mineral Materials.** To ensure that scarce resources remain available for the benefit of Humboldt County's citizens and other species, extraction of minerals for export from Humboldt County shall be prohibited unless a surplus of a specific commodity is verified.

**MR-P21. Alternative Materials.** Use and development of alternative materials and processes shall be encouraged.

**MR-S5. Hard Rock Extraction Ceiling.** Amounts of hard rock (versus in-stream sand and gravel) permitted for extraction annually shall not exceed 200,000 tons (total of open pit plus quarry) until a California Geological Survey of mineral materials is completed for Humboldt County.

**MR-IM6. Revise County Surface Mining Regulations.** The County Surface Mining Regulations shall be revised along with this Plan Update to establish clear performance standards for exploration, mining operations, reclamation activities, and environmental protection. The revisions shall, at a minimum, include performance standards for hours of operation, noise levels, traffic routes and levels, road maintenance and funding, visual buffers, minimum setbacks from property lines and incompatible land uses, management of hazardous materials, air and water quality standards, setbacks from sensitive habitats, and sediment control. The revisions shall also include expanded notice for landowners affected by the mining operation and hauling routes.

**Plan Alternative C** would continue the policies, standards and implementation measures of the current framework plan, but would not include any new or additional policies or standards. This alternative includes the policies of Alternative D below and would rely on individual, case-by-case permit reviews including CEQA review to address environmental and conservation concerns related to mineral resources.

**Plan Alternative D** is the no project alternative and would result in continuation of the policies, standards and implementation measures of the current framework plan. The following policies, standards and implementation measures from the existing framework plan are included in Alternatives C and D and were either deleted as redundant, or modified to a standard rather than a policy, or replaced with other policies in Alternative B:

**MR-P5. Residual Hazards.** Ensure elimination of residual hazards to the public health and safety. \*

**MR-P10. Bank Protection.** (1) Maintain necessary public or private roads, (2) Protect principal structures in danger from erosion, (3) Protect lands designated Agriculture-Exclusive from erosion. \*

## Discussion

### MR-P28. Identification of non-metallic mineral materials

Discussion: The California Geological Survey (CGS) has a project that provides objective economic-geologic expertise to assist in the protection and development of mineral resources through the land-use planning process. The project is mandated by the Surface Mining and Reclamation Act of 1975 (SMARA). The primary products are mineral land classification maps and reports. Local agencies are required to use the classification information when developing land-use plans and when making land-use decisions. The project is managed by CGS. The CGS has issued *Guidelines for Classification and Designation Petitions* to be followed by individuals or organizations who desire the agency to classify mineral lands that are claimed to contain significant mineral deposits. The petitioner must supply sufficient geologic and economic data to enable the State Geologist to classify the mineral deposit areas that are subject to the petition. Additionally, there are two fees to be paid by the petitioner: 1) a fee of \$5,000 for conducting the preliminary review of the petition application; and 2) a processing fee for conducting the classification study will be required if the petition is accepted. No funding source has been identified for such a petition and the County is not currently in possession of sufficient geologic and economic data for submitting a petition. In order to meet this objective on a long-term basis, a surcharge could be added to all new surface mining approvals, re-approvals and extensions. Also, each new approval, re-approval or extension could be required to submit geologic and economic data to be used for an eventual petition. Surface mining permit terms are typically limited to 16 years. After a fifteen year cycle has passed and all existing and new permittees have contributed to the objective, then a petition would be prepared and submitted to CGS.

### MR-P32. Export of Mineral Materials.

Discussion: According to comments submitted by the Humboldt Watershed Council, hardrock is an irreplaceable resource; millions of years and cataclysmic events are required for hardrock formation. Varieties required for watershed restoration and jetty repair (e.g. blue schist and greenstone) are rare. Implementation of this policy would first require that there be identification and full assessment of supply of various types of mineral materials and an analysis of current and projected needs of such materials. This policy is dependent upon the completion of identification of "hardrock" minerals called for in MR-P39 and would further require an in-depth analytical study of supply, current demand and future demand. The costs of such a study are unknown at this time and no funding source has been identified by the proponents of the propose policy. Additionally, there is currently no legal mechanism for the prohibition of export of mined material, so implementation of this policy would additionally require development of new regulations.

**MR-P33. Alternative Materials.**

Discussion: Examples of alternative materials are recycled tires and plastics; an example of an alternative process is recycling of asphalt during road repair.

<b>Plan Alternatives Comparison Chart</b>							
The "Vote" column is provided for the user to indicate a policy preference. Enter a <b>R</b> etain, <b>D</b> elete or <b>M</b> odify.							
<b>Table 16-1 Plan Alternatives Comparison Chart</b>							
<i>Plan Alternative</i>		<i>Policy, Standard or Implementation Measure</i>				<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
<b>POLICY ALTERNATIVES</b>							
<b>Existing Framework Policy Alternatives</b>							
A	B	C	D	<b>MR-P1. Mapping Mineral Deposits.</b> Maintain and update maps of the County's identified mineral deposits.	*		
A	B	C	D	<b>MR-P2. Future Development Planning.</b> Plan future development such that it will not interfere with the utilization of identified mineral deposits.	*		
A	B	C	D	<b>MR-P3. Reclamation for Alternative Uses.</b> Ensure adverse environmental effects are prevented or mitigated to the fullest extent feasible and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses under the General Plan.	*		
A	B	C	D	<b>MR-P4. Production and Conservation.</b> Encourage the production and conservation of minerals, while preserving to the maximum extent feasible the values relating to recreation, watershed, wildlife, range and forage, science, and aesthetic enjoyment.	*		
		C	D	<b>MR-P5. Residual Hazards.</b> Ensure elimination of residual hazards to the public health and safety.	* Redundant with P-3		
A	B	C	D	<b>MR-P6. Community Character.</b> Prevent the disruption of community character in siting and planning mineral resource extraction operations.	*		
A	B	C	D	<b>MR-P7. Mineral Haul Routes.</b> Require mineral haul routes to avoid incompatible areas such as landslides, highly erodible soils, residential areas, and schools, if feasible.	* Addressed in individual project reviews; County could develop performance standards to address.		

<b>Plan Alternatives Comparison Chart</b>						
The "Vote" column is provided for the user to indicate a policy preference. Enter a <b>R</b> etain, <b>D</b> elete or <b>M</b> odify.						
<b>Table 16-1 Plan Alternatives Comparison Chart</b>						
<i>Plan Alternative</i>				<i>Policy, Standard or Implementation Measure</i>	<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
A	B	C	D	<b>MR-P8. Conflict Reduction.</b> Permit conditions for mineral extraction operations should address allowable dust and noise levels, hours of operation, fencing, traffic, access, setbacks and other means to reduce conflicts with adjacent development.	* Partially addressed in County surface mining ordinance standards, other GP standards (Noise Element, Air Quality Element), existing zoning requirements and through individual project reviews; County could develop performance standards to address.	
A	B	C	D	<b>MR-P9. Sand and Gravel Extraction and Mean Annual Recruitment.</b> Annual in-stream gravel extraction prescriptions shall be based on a management strategy of not exceeding the Mean Annual Recruitment of a river segment.	Revision of previous plan policy 2533.9	
		C	D	<b>MR-P10. Bank Protection.</b> (1) Maintain necessary public or private roads, (2) Protect principal structures in danger from erosion, (3) Protect lands designated Agriculture-Exclusive from erosion.	*Covered by other polices and existing regulations.	
A	B	C	D	<b>MR-P11. Water Diversion Projects.</b> Evaluate significant water diversion projects that would reduce the replenishment rate of gravel in streams in light of the impact they would have on local mineral supply in Humboldt County.	*	
		C	D	<b>MR-P12. Borrow Pits.</b> The operation of borrow pits on Resource Production Lands (timber, agriculture) for non-commercial purposes is considered a principle use necessary to maintain the primary use of the land.	* Existing plan policy is considered a standard and is S-6 in Alternative B.	
		C	D	<b>MR-P13. Subdivision.</b> The subdivision to create parcels which are for the primary purpose of providing road and construction materials shall be consistent with this plan.	* Existing plan policy is considered a standard and is S-7 in Alternative B.	

<b>Plan Alternatives Comparison Chart</b>				
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<b>Table 16-1 Plan Alternatives Comparison Chart</b>				
<i>Plan Alternative</i>		<i>Policy, Standard or Implementation Measure</i>	<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
		<b>MR-P14. Establish a Mineral Resource Combining Zone.</b> Establish a Mineral Resource (-MR) combining zone to facilitate implementation of the County's regulations for surface mining, conservation and reclamation.	Implemented as Standard S-3 and implementation measure IM-5.	
A	B	<b>MR-P15. Right to Mine.</b> Discretionary projects adjacent to permitted surface mining extraction sites or along existing haul routes shall be required to file a notice of the right to mine. The notice shall advise owners and subsequent interests in ownership that the existing mining operations has a permitted right to continued mining operations.		
A		<b>MR-P16. Identification of Non-Metallic Mineral Materials.</b> The County shall request the State Department of Conservation to conduct a County-wide study to assess the location and value of non-metallic mineral materials. Once completed, the County may recognize these material resources in the General Plan and zone their locations and the surroundings to allow for mineral resource management.	See discussion section.	
A		<b>MR-P17. Hard Rock Extraction Ceiling.</b> Establish ceiling for hard rock extraction pending completion of a completed California Geological Survey of mineral materials for Humboldt County.		
A		<b>MR-P18. Cumulative Effects.</b> Based upon the inventory shown by the California Geological Survey of mineral materials, cumulative effects of extractions shall be analyzed and future needs projected every time the County General Plan is updated.		
A		<b>MR-P19. Watershed Effects.</b> Evaluation of new applications for surface mining permits shall include distribution of sites so that individual watersheds are not disproportionately impacted.		

**Plan Alternatives Comparison Chart**

The "Vote" column is provided for the user to indicate a policy preference. Enter a **R**etain, **D**elete or **M**odify.

**Table 16-1 Plan Alternatives Comparison Chart**

<i>Plan Alternative</i>				<i>Policy, Standard or Implementation Measure</i>	<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
A				<b>MR-P20. Export of Mineral Materials.</b> To ensure that scarce resources remain available for the benefit of Humboldt County's citizens and other species, export of minerals from Humboldt County shall be prohibited unless a surplus of a specific commodity is verified.		
A				<b>MR-P21. Alternative Materials.</b> Use and development of alternative materials and processes shall be encouraged.		
<b>STANDARDS ALTERNATIVES</b>						
<b>Existing Framework Standard Alternatives</b>						
A	B	C	D	<b>MR-S1. Surface Mining Standards.</b> Surface mining - See Surface Mining and Reclamation Act Ordinance, Title III, Div. 9, County Ordinance #1373.	*	
A	B	C	D	<b>MR-S2. Timberland Conversion.</b> Timberland Conversion for surface mining activities - Must meet the requirements of the Forest Practices Act.	*	
<b>Proposed Standard Alternatives</b>						
A	B			<b>MR-S3. Mineral Resource Combining Zone.</b> Establish a Mineral Resource (-MR) combining zone to facilitate implementation of the County's regulations for surface mining, conservation and reclamation.		
A	B			<b>MR-S4. Permitted Land Use Designations.</b> Mining operations and subsequent reclamation activities shall be conditionally permitted in all land use designations and implementing zoning districts.		

<b>Plan Alternatives Comparison Chart</b>					
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<b>Table 16-1 Plan Alternatives Comparison Chart</b>					
<i>Plan Alternative</i>		<i>Policy, Standard or Implementation Measure</i>		<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
A			<b>MR-S5. Hard Rock Extraction Ceiling.</b> Amounts of hard rock (versus instream sand and gravel) permitted for extraction annually shall not exceed 200,000 tons (total of open pit plus quarry) until a California Geological Survey of mineral materials is completed for Humboldt County.		
A	B		<b>MR-S6. Borrow Pits.</b> The operation of borrow pits on Resource Production Lands (timber, agriculture) for non-commercial purposes is considered a principle use necessary to maintain the primary use of the land. *	This was a policy that is actually a standard and is P12 in Alternatives C and D	
A	B		<b>MR-S7. Subdivision.</b> The subdivision to create parcels which are for the primary purpose of providing road and construction materials shall be consistent with this plan. *	This was a policy that is actually a standard and is P13 in Alternatives C and D	
<b>IMPLEMENTATION MEASURE ALTERNATIVES</b>					
<b>Existing Framework Implementation Measure Alternatives</b>					
A	B	C	D	<b>MR-IM1. Permit and Ordinance.</b> The County will maintain the conditional use permit requirement for mineral, oil and gas production operations and utilize the County Surface Mining and Reclamation Ordinance.	* Redundant with existing regulations.
A	B	C	D	<b>MR-IM2. Mapping.</b> The Planning Department shall utilize the mapping in Policy 2533.1 when reviewing permit applications to:  A. Prevent development which would preclude utilization of those deposits.  B. Prevent the disruption of adjacent development by siting and planning for mineral resource extraction operations ensuring the elimination or reduction of nuisances and hazards in regards to noise, dust, traffic and public health and safety. (FRWK 5-2530.2)	* Policy 2533.1 refers to the mineral deposits map which is to be maintained and updated in the General Plan Data Base. Issues are addressed in S-3.

<b>Plan Alternatives Comparison Chart</b>						
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<b>Table 16-1 Plan Alternatives Comparison Chart</b>						
<i>Plan Alternative</i>		<i>Policy, Standard or Implementation Measure</i>		<i>Staff Remarks</i>	<i>Vote: R, D, M</i>	
A	B	C	D	<b>MR-IM3. Hearing Notification.</b> Notification for use permit hearings is provided to landowners within 300 feet of a project's boundaries. For mining operations the Planning Department should provide expanded notice for landowners affected by the mining operation and hauling routes.	* Addressed in existing noticing requirements of the County Surface Mining Ordinance.	
A	B	C	D	<b>MR-IM4. Development Consultant.</b> The County should hire a consulting firm qualified in surface mining and reclamation practices to advise the County when large surface mineral deposits are proposed for development. This should include but is not limited to: EIR preparation, mitigation measures and reclamation plans. The consultant's fees should be paid via reimbursements from the mine developers.	*	
<b>Proposed Implementation Measure Alternatives</b>						
A	B			<b>MR-IM5. Combining Zone.</b> Develop and utilize Mineral Resources Combining Zone to facilitate implementation of the County's regulations for surface mining, conservation and reclamation.	Implements S3.	

<b>Plan Alternatives Comparison Chart</b>				
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<b>Table 16-1 Plan Alternatives Comparison Chart</b>				
<i>Plan Alternative</i>	<i>Policy, Standard or Implementation Measure</i>		<i>Staff Remarks</i>	<i>Vote: R, D, M</i>
A	<p><b>MR-IM6. Revise County Surface Mining Regulations.</b> The County Surface Mining Regulations shall be revised along with this Plan Update to establish clear performance standards for mining operations, reclamation activities, and environmental protection. The revisions shall, at a minimum, include performance standards for hours of operation, noise levels, traffic routes and levels, road maintenance and funding, visual buffers, minimum setbacks from property lines and incompatible land uses, management of hazardous materials, air and water quality standards, setbacks from sensitive habitats, and sediment control.</p>		<p>These issues are dealt with by numerous existing policies, standards and Co., State and Federal regulations and additionally on a project by project basis. Any remaining issues are often so specific that general standards would not be useful. Existing policies, regulations (and their standards) that deal with these issues include: noise (see Noise Element), hazardous materials (State standards), sensitive habitats (Biological Resources Element and existing state and federal regulations), sediment control (Grading Ordinance and Reclamation Plan requirements), road maintenance and funding (Circulation Element), air quality (Air Quality Element and NCUAQMD regulations) and water quality (Water Resource Element and existing State regulations-RWQCB).</p>	

**Preliminary CEQA Analysis**

**Summary**

Mineral and energy extraction will continue to occur at the County's permitted extraction sites. Surface mining and energy extraction operations will continue to be regulated by a myriad of local,

state and federal regulations and policies. There may be a number of newly permitted surface mining or energy extraction sites developed under this general plan.

Impacts associated with permitted extraction activities are not expected to increase significantly due to extensive regulatory requirements and implementation of standards.

## **Mitigation**

### 16.3 Goals & Policies

### 16.4 Standards

### 16.5 Implementation

Policies MR-P1 through P-4, P-6, P-9, Standards MR-S1 and S-2, and Implementation measure MR-IM1 are deemed necessary parts of the mitigation package to avoid significant impacts. Adding MR-P16 through P21, MR-S5, and MR-IM6 would add additional measures and restrictions related to conservation of mineral resources.

## **Conclusion**

The General Plan would provide for population growth which could increase the need for extraction of mineral resources. The increase is not expected to have significantly significant impact levels with the application of local, state and federal regulations, the implementation of polices, the incorporation of mitigation and adherence to standards.

## **Glossary and Definitions**

**CHERT** - County of Humboldt Extraction Review Team

**LOP** - Letter of Permission issued by the U. S. Army Corps of Engineers to authorize gravel extraction

**MAR** - mean annual recruitment or mean amount of aggregate replenished by natural process over the previous year for a given river segment

**PEIR** - Program Environmental Impact Report

**SMARA** - State Surface Mining and Reclamation Act of 1975

**Terrace Mining** - the excavation of pits on the adjacent floodplain or river terraces for purposes of gravel extraction