6.0 PREFERRED ALTERNATIVE

The project is the development of an enforceable Mad River instream mining regulatory program that will operate under the authority of SMARA and any existing or future County procedures and ordinances. The purpose of the project is to enhance and protect the aggregate extraction-related environmental riverine resources of the Mad River corridor.

The prefferred project alternative is the development and implementation of a flexible Mad River aggregate management program, monitoring program, and reclamation plans using coordinated extraction prescriptions and reclamation standards which will provide for a moderate rate of recovery (aggradation) at critical sites while protecting or enhancing other river resource values. The details of this plan are presented below.

MAD RIVER ADAPTIVE GRAVEL MANAGEMENT and RESOURCE PROTECTION PLAN

6.1 Goals

The goals of this plan are:

1. to regulate aggregate resource mining on the lower Mad River in a manner that will enhance and preserve the local environment and quality of life,
2. to reduce or eliminate existing aggregate resource mining related cumulative adverse environmental impacts influencing the lower Mad River environs,
3. to encourage and support innovative mining techniques for the production of aggregate,
4. to use an annual in-stream mining reclamation program to annually reclaim, restore, and/or enhance the environmental habitat of the Mad River,
5. to encourage the joint participation of industry, agencies, residents, and interested parties in a well-defined and consistent regulatory process,
6. to provide for effective and systematic monitoring and reclamation of aggregate mining operations along the Mad River.

6.2 Objectives

The specific objectives of this plan are listed below.

1. Air Quality: To maintain the superior air quality of the Mad River valley and to assure that any adverse air quality impacts resulting from aggregate mining are reduced to a level of insignificance.
2. Archaeological: To protect sensitive archaeological sites, both known and undiscovered from adverse impacts resulting from aggregate mining operations.
3. Channel Morphology: To obtain a degree of dynamic equilibrium and channel stability in the lower Mad River channel and to assure that changes in dynamic equilibrium and channel stability resulting from aggregate mining are minimized.
4. Fisheries & Habitat: To safeguard fishery habitat and reduce any adverse agregate mining related cumulative or future impacts to a level of insignificance.
5. Groundwater: To maintain the existing quality of groundwater and groundwater supply and to assure that adverse impacts to or on groundwater that may result from aggregate mining are reduced to a level of insignificance.

6. Hydrology: To assure that aggregate mining does not adversely affect the flow or flood conveyance capability of the Mad River.

7. Quality of Life: To ensure a supply of aggregate material needed to maintain public health and safety, and quality of life.

8. Noise: To reduce as much as practicable, noise impacts which are caused by aggregate mining operations.

9. Public Utilities & Structures: To encourage channel aggradation at select sites inorder to regain structural integrity of all structures along the Mad River that might have suffered due to excessive channel degradation.

10. Recreation: To assure reasonably enjoyable and safe recreational experiences for all users of the river and riverine environment.

11. Traffic: To assure that aggregate and aggregate products are transported safely, and to reduce deterioration of existing transportation systems resulting from aggregate mining to a level of insignificance.

12. Vegetation: To protect significant stands of riparian vegetation from adverse impacts that might result from aggregate mining and to reduce cumulative impacts that have impacted riparian vegetation along the lower Mad River.

13. Viewshed: To protect and enhance, where possible, the aesthetic quality of the Mad River corridor.

14. Water Quality: To reduce adverse water quality impacts that may result from aggregate mining to a level of insignificance.

15. Wildlife and Habitat: To protect wildlife and wildlife habitat, and to assure that any adverse impacts on wildlife and wildlife habitat that may result from aggregate mining, are reduced to a level of insignificance.

6.3 Responsibility

It is the lead agency's responsibility, through SMARA (2711 and 2712) to recognize: that continued surface mining is essential to the economic well-being of society; and that the reclamation of mined lands is essential to prevent or minimize potential adverse effects on the environment and to protect public health and safety.

SMARA (2774b) requires that the lead agency inspect all surface mining operations at least once per year to verify compliance with SMARA. SMARA (2772g) also requires that reclamation plans specify the proposed use of mined land after it has been reclaimed and (2772h) requires the rehabilitation of affected streambed channels and streambanks to a condition that will minimize erosion and sedimentation

6.4 Instream Reclamation Concept

Reclamation, as defined in SMARA 2733, "means the combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations, including adverse surface effects incidental to underground mines, so that mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety."

In many cases the mine site is dedicated to mining for a number of years, subject to annual erosion control and other reclamation requirements, and then reclaimed for an appropriate alternate land use. But, instream mining is different.

In the case of instream sand and gravel mining during low-flow periods, the expected and immediate proposed uses of the mined land will be those beneficial uses of a functioning stream channel, year-round during both high and low-flow periods. The combined annual activities of the operator and the hydraulic forces of the river are the forces that treat and reclaim the mined land and determine its suitability for use as year-round river habitat. Therefore, annual mining and reclamation activities must be regulated to protect the continuous low-flow and high-flow beneficial uses of the river channel. River channel beneficial uses include, but are not limited to: water conveyance, sediment transport, recreation, wildlife habitat, fish habitat, fish passage, water supply, and gravel mining. Erosion, scour, deposition, sediment transport, plant growth, aquatic food chain production, and a host of other physical and biological processes occur in the river channel environment and maintain or regulate the channel's beneficial uses. Those processes, and therefore a significant portion of the required reclamation, are dependent, in part, upon adequate gravel transport through the mined reach and replenishment at the mined site. If the channel does not have a reasonable ability to maintain itself and transport gravel then reclamation has not taken place and as per SMARA 2774.1(a) the surface mining operation(s) would not be in compliance.

6.5 Enforcement

Enforcement of the above is provided under SMARA 2774.1 and in 2774.1(f) the primary responsibility for enforcement is assigned to the lead agency. Under 2774.1(c), administrative penalties of not more than $5,000 per day be imposed by the lead agency or the State Geologist. Under special circumstances, the lead agency or the Attorney General may seek an injunction enjoining a mine that is not in compliance (Section 2774.1(d)).

6.6 Introduction To The Management Plan

This adaptive management plan will achieve reclamation by providing a degree of dynamic equilibrium between the significant biological and physical channel-forming processes operating in the lower Mad River. It will do so by using monitoring data to support professional scientific judgement in an annually iterative feedback loop which will produce incremental changes in monitoring, reclamation, and management prescriptions.

In order to assure and provide adequate annual reclamation, the plan provides for regulating the commercial extraction of riverrun sand and gravel under specified conditions from specific sites located along the lower Mad River between the Blue Lake hatchery weir and the U.S. Highway 101 bridges. It is a flexible, site and river reach specific adaptive management plan which will result in annual reclamation, environmental protection, the protection of public structures and comprehensive environmentally-sound mining and reclamation standards while providing the potential for limited continuing commercial extraction of riverrun materials from the lower Mad River.

The adaptive management plan, flexible mining strategies, and reclamation standards require monitoring of the project-area resources to estimate sand and gravel recruitment and replenishment, to monitor reclamation and all related river resource conditions and trends, to verify operator compliance, to determine the impact of past mining, and to evaluate annual mining strategies. The combined regulation, monitoring, and annual evaluations will result in appropriate, flexible, environmentally-sound mining strategies which may vary from year to

year and site to site. Under this plan the location, method, and level of extraction will be developed annually through a consultive process between the operators, and a Scientific Design and Review Committee (SDRC), acting as an agent for the lead agency (Humboldt County). A mechanism for review of the SDRC management prescriptions and activities by responsible state and federal trustee agencies and the public is included.

6.7 Scientific Design And Review Committee

The County, as lead agency, will retain the services of a three or four-member Scientific Design and Review Committee (SDRC). The composition of the SDRC, in order to provide the necessary technical expertise will, at least, include experts in the fields of fluvial hydrology, fluvial geomorphology, and fisheries. Other areas of expertise that may be needed on the SDRC include botany, engineering, forestry, watershed managment, and wildlife biology. When particular necessary areas of expertise are lacking from the SDRC, the SDRC may retain consultants to provide required input.

The SDRC, acting as an agent for the lead agency, in combination with the CDFG 1603 process, will monitor, review, guide, limit, design, and modify gravel extraction activities, reclamation activities, and mitigation activities in the lower Mad River area. According to the 1994 Mad River PEIR, these extraction activities will be limited to specific sites in the reach between the Mad River Hatchery weir and the U.S Highway 101 bridges.

Klein (1993) describes the morphology of the lower Mad River as degraded, destabilized, haphazard, and chaotic. The science of river management is not so well advanced to allow rigid formula-driven decision making to dominate the planning and monitoring process in such a destabilized river system. The members of the SDRC must have a unique blend of knowledge and experience that, collectively, will enable them to combine the science and art of river management and monitoring to develop environmentally sound flexible, site-specific, prescriptions for gravel extraction. They also must have the necessary skills to recognize when other expertise is needed and will be able to communicate with and call upon various other engineers, scientists, agency personnel, and the gravel operators for assistance and advice.

The SDRC will consult with the operators, the operators' engineers, the County Planning Department, specialists from the CDFG and other trust agencies, and other consultants in order to obtain the information and knowledge needed to carry out their assigned tasks.

Collectively, the members of the SDRC shall be, or will become, familiar with the Mad River corridor and its riverine resources, with particular emphasis on the reach between the mouth of the river and the old Sweasey Dam site. Some of the significant features of the Mad River corridor include:

1. The Mad River sand and gravel industry, including location and extent of operating sites, and the nature of operations at each site;
2. The physical aspects of channel morphology, sediment transport processes, sediment transport rates, sand and gravel recruitment, and gravel bar replenishment;
3. Biological aspects including such things as riparian vegetation extent and composition, wildlife habitat characteristics, aquatic habitat characteristics, wildlife habitat needs, fisheries habitat needs, wildlife and fisheries populations; and

4. Community infrastructure within the lower Mad River corridor, including such things as bridge crossings, utility and pipe crossings, water diversions, levees, revetments, weirs, boat ramps, and other structures that might impact or be impacted by changes in channel morphology.

Appointments to the SDRC

Appointments to the SDRC are the responsibility of the Humboldt County Board of Supervisors. The Board may form a Mad River Technical Advisory Committee (MRTAC) or other such group and delegate committee appointment and replacement responsibility as well as other responsibilities to that group.

The initial composition of the SDRC may be the four scientists who prescribed, guided and reviewed Mad River gravel extraction during 1992 and 1993 under the terms of the 1992 Mad River MOA and 1993 addendum extending the MOA for the 1993 extraction season. These individuals are:

Dr. Douglas Jager - Professor of Forestry and Watershed Management, Humboldt State University. watershed specialist, forester, and hydrologist

Mr. Randy Klein - Consulting Hydrologist and Certified Erosion and Sediment Control Specialist (CPESC)

Dr. Andre Lehre - Professor of Geology, Humboldt State University, hydrologist and sediment transport specialist

Dr. William Trush - Director of Institute for River Ecosystems, Humboldt State University, fisheries specialist and hydrologist.

Committee Member Consulting and Conflicts of Interest

The SDRC shall participate in the Mad River extraction designs and resource monitoring reviews as a team. It is understood that no member of the SDRC will consult privately regarding the extraction of instream sand and gravel from the lower Mad River extraction area. If the Mad River operators need Mad River gravel extraction related advice or other similar information they may consult with the SDRC but not with an individual member of the SDRC; or, they may go elsewhere for the advice they seek.

It is also understood that the provisions of this plan will not limit members of the SDRC from consulting on other matters near or within the lower Mad River extraction area or on gravel-related matters outside of the lower Mad River extraction area.

It is possible that individual members of the SDRC will provide gravel-related consulting services to Mad River gravel operators, various public agencies, environmental groups, or others outside of the Mad River watershed. The degree to which such consulting occurs should be monitored. Therefore, each member of the SDRC shall disclose all economic interests in and income from (including income of more than $250 from any single source) any business or other activity which is related in any way to gravel operations in Northern California. Disclosure shall be accomplished annually, during the month of January for the previous calendar year, by filing a statement of economic interest at the Office of the Humboldt County Clerk.

6.8 Concerned Contact List

The SDRC shall establish and maintain a Concerned Contact List (CCL) with specific individual contact names. Each year the SDRC shall request that the contact list representatives express

their site specific or general concerns regarding Mad River gravel extraction and Mad River resource protection.

Initially, the SDRC will request the following agencies and organizations to participate by joining the Concerned Contact List.

Individual Mad River Gravel Operators
Humboldt County Board of Supervisors
Humboldt County Planing Director
Humboldt County Department of Public Works
Humboldt Bay Municipal Water District
Humboldt County Surface Mining Advisory Committee
McKinleyville Community Services District
North Coast Railroad Authority
City of Blue Lake
Blue Lake Rancheria
Table Bluff Rancheria.
California Department of Transportation
California Department of Fish and Game
California Resources Agency
State Board of Mining and Geology
Department of Conservation
Department of Fish and Game
State Lands Commission.
Representatives of local environmental groups

These agencies and organizations shall have an opportunity to request that they not be included on the Concerned Contact List. Other agencies that may have been overlooked may request that they be added to the Concerned Contact List.

6.9 General Duties Of The SDRC

Under this plan, the duties of the SDRC include:

1. The SDRC shall select a chair person through which the operators, members of the Planning and Building Department, representatives of the Concerned Contact List, various trust agencies, and the public will contact the SDRC.

2. Each year the SDRC shall objectively through a site specific analysis, prescribe the total amount of instream sand and gravel that can be extracted during the upcoming extraction season. Because of current environmental concerns, revolving around bed degradation the SDRC shall establish a total average annual extraction rate that is less than the average annual net recruitment and will provide replenishment and aggradation at sites where excessive degradation has created adverese environmental impacts.

3. The actual amount to be extracted will be dependent upon reclamation, net recruitment, individual bar replenishment, individual bar morphology, as well as other river resource conditions and trends - all of which will be determined by a flexible monitoring program.

4. Using the above information, the SDRC will prescribe the amount, location, and method of sand and gravel extraction at each of the permitted operating sites in the lower Mad River extraction area.

5. *An attempt to develop a formula-driven method for allocating gravel to each operator during periods of low recruitment and replenishment was rejected by the operators. The operators have indicated that they will accept the extraction prescriptions of the SDRC .*

6. The SDRC shall provide a succinct statement of supporting facts and reasoning when requesting information, making recommendations, or writing extraction prescriptions.

7. The SDRC shall develop and maintain a monitoring program to obtain the information needed for making decisions regarding extraction locations, extraction levels, and extraction prescriptions. In response to the need or lack of need for specific information, the SDRC shall modify the monitoring program, with justification, to obtain the information which is needed to evaluate river physical and biological resource conditions and trends which may be influenced by gravel extraction and processing activities.

8. The SDRC shall meet with the operators, the operators' engineers, and other agents of the operators, as needed to communicate the committee's needs for planning and monitoring information. The SDRC shall guide the operators and the operators' engineers so they can provide the required information in the most timely and cost-effective manner.

6.10 Annual Extraction Planning Process

The annual extraction planning process is a time-sensitive seasonal pre-extraction process that ends with the issuance of site-specific CDFG 1603 permits. The 1603 process is exempt from certain CEQA requirements.

1. The SDRC shall continuously collect, review, and evaluate Mad River resource monitoring data from various sources. This information will be used to evaluate the effects of past management decisions and extraction operations and to plan future extraction decisions.

2. Each year, during the month of January the SDRC shall request the members of the CCL to provide succinct statements of current site specific or general Mad River gravel extraction related concerns with site specific supporting facts and reasoning if possible. These statements should be received by the SDRC by May 1st so the SDRC can consider the appropriate concerns, while reviewing the project, and while planning or making recommendations or prescriptions. Members of the CCL or others may continue to provide relevant data as they become available at other times of the year and may meet with the SDRC as is necessary to review their concerns.

3. On or before May 1st of each year the SDRC shall request the Mad River gravel operators to preliminarily inform the SDRC regarding extraction sites that they would like to operate on during the upcoming extraction season.

4. During the month of May the SDRC will meet with the operators, the operators' engineers or other agents of the operators, as needed to communicate the committee's needs for planning information. The SDRC will guide the operators and the operators' engineers so they can provide the required information in the most timely and cost-effective manner.

   Such information may include but is not limited to vegetation surveys, wildlife surveys, aquatic habitat surveys, aerial photographs, planimetric maps, topographic maps, extraction volume estimates, physical cross sections, digitized cross-sections, and digitized terrain data. This information shall be collected as soon as possible following the recession of winter flows, but not so early as to present a significant likliehood of subsequent flood events which would render certain data obsolete.

The SDRC can proceed with its job in an effective manner only when the required planning and monitoring information is provided in a timely manner and in a format which readily lends itself to review and analysis.

During the same period the SDRC shall review significant river resources and infrastructure elements, and request monitoring data from responsible agencies. Examples would be the most recent spawning surveys or cross section information at each bridge site.

5. During the spring planning period, as soon as the water level allows access to the project area, the SDRC shall visit all of the operating sites, other significant bar features, and other significant river resource features in order to obtain preliminary qualitative estimates of gravel recruitment, gravel replenishment, and other changes that may have taken place over the winter, and to consider possible extraction prescriptions.

6. As soon as possible, after the water level allows access to the project area, the operators' engineers will collect and provide the SDRC with the information needed to make site specific, environmentally sound extraction prescriptions. Item four in this annual process gives examples of the kind information that may be needed. The entire extraction reach is being managed as a unit. Therefore, the ability of the SDRC to make site specific prescriptions will be limited until they have reviewed the appropriate planning data from all potential operating sites. In the absence of data from one or more individual sites the SDRC may not be able to proceed with any site specific prescriptions at other sites or only with the most conservative site specific prescriptions at other sites.

7. If the SDRC should consider any extraction method which would excavate below the depth of the thalweg within one mile upstream or downstream of a State highway structure, Caltrans will be notified and invited to participate in and review the prescription and prescription planning process.

8. As soon as possible, after receiving all of the required data in the desired format, the SDRC shall present their prescriptions to the operators or the operators' agents. Immediately after presenting the prescriptions to the operators the SDRC will schedule a public meeting to inform interested individuals and agencies about the proposed prescriptions. After presenting the prescriptions to the operators or their agents, and the interested agencies and members of the public, the entire package of prescriptions shall be immediately forwarded to the CDFG so they may prepare individual site-specific 1603 agreements at the request of the operators. At the same time the entire package of prescriptions will be forwarded to the Humboldt County Planning Department where it will remain available for public review.

Public Review and Appeal Process

Several individuals have suggested that there should be a pre-extraction public CEQA review of the SDRC extraction plans. A lengthy review at this time is not practicable. There are pressures to reduce potential adverse impacts by restricting the extraction season to the period between June 1st and September 30th. High water sometimes delays the beginning of the extraction season. The scientific committee planning approach and increased monitoring will surely lengthen the planning process. Concerns regarding potential early storms and fish migration have caused the CDFG to request that extraction operations cease early in the fall before operators have historically quit. Extraction operations that are compressed into an excessively shortened season can produce a variety of environmental problems. For example; traffic, noise, and dust might increase while public and employee safety might decrease. To enter in to a lengthy public review at this stage would further reduce the time available to extract gravel.

A CEQA review does not seem necessary because the discretionary powers of the SDRC are limited by this plan and the 1994 PEIR. The limitations allow the SDRC to certify compliance only for those operations that are in compliance with their reclamation plans and to develop extraction prescriptions that will not cause significant adverse effects or significantly increase existing adverse exatraction-related impacts. With these parameters controlling the decision-making process, it is difficult to imagine that the four scientists could agree on a prescription package that would cause irreparable damage to the river resources during any one extraction season.

The time for thoughtful public review is between extraction seasons and not during the shortened low-flow extraction season. During this post-extraction review period the SDRC and other interested parties can evaluate river condition and trends as well as river mining and reclamation activities.

In the absence of a special review process developed by the Board of Supervisors the following public review process will be available. All prescriptions, supporting information, and reports of the SDRC shall be on file at the Humboldt County Planning Office where they will be available for public review. Members of the public or others who wish to comment on or appeal the committee's actions can do so through normal Planning Department Channels.

Verbal comments should be followed by succinct written statements of site specific Mad River gravel extraction related concerns with site specific supporting facts and reasoning, if possible. The SDRC shall respond to these inquiries, comments, and appeals. If the responses of the SDRC do not resolve the issues being reviewed, the Planning Director may schedule a public hearing before the Planning Commission, or the Board of Supervisors.

This project will be implemented during the 1994 extraction season. After the fifth extraction season under this project (1998), the entire project will be thoroughly evaluated by the SDRC. The five-year findings of the SDRC shall be reviewed at a public hearing during which, recommendations for modifying the management plan, monitoring program and reclamation plan review process will be considered.

6.11 Extraction Standards

The terminology used to describe instream extraction techniques is not always applied consistently. Terms such as skimming, scalping, grading, bar excavation, ponds, pools, pits, wet land sites, and trenches are often used and the descriptions of these techniques sometimes overlap. Over time, the SDRC may attempt to establish some common terminology and standards regarding instream extraction techniques for the Mad River project.

Various extraction methods may be used throughout this project. Site-specific prescriptions and methods will vary from location to location and year to year. The primary objective to be considered when selecting site specific methods will be to ensure reclamation, extract gravel economically, minimize potential adverse environmental impacts, and maximize potential favorable impacts.

Present river conditions indicate that the extraction designs should attempt to confine the channel, encourage gravel transport downstream through select reaches and encourage gravel deposition in other select reaches. When skimming techniques are used, the following adjustments can be made:

1. altering the finished grade,

2. using steeper finished grades near the water's edge and less steep graded slopes further away from the water,
3. maintaining a vertical buffer between the edge of the water and the graded area,
4. maintaining a horizontal buffer between the edge of the water and the graded area,
5. restricting the area to be disturbed on individual gravel bars to maintain channel confinement,
6. avoiding significant vegetation
7. mitigating for distrubed vegetation

Generally, the minimum skimming standards would include

1. at least a 1-foot vertical buffer between the water's edge and the extraction area,
2. a minimum finished grade over the skimmed area of no less than one percent towards the channel.
3. where possible, concentrate skimming in lower 2/3rds of bar in order to encourage channel stability and confinement.

As river conditions and technology change, alternative methods or standards of extraction may be developed and recommended by other public agencies, the operators, or the public. The alternative methods may be reviewed and adopted by the operators and the SDRC.

Examples of recent Mad River prescriptions can be found by reviewing the MOA Scientific Committee reports for the 1992 and 1993 extraction seasons. The 1992 report is in Appendix L and the 1993 report is attached to the September 1993 Proposed Final PEIR on Gravel Removal from the Lower Mad River.

6.12 Total Allowable Annual Extraction Level

Current conditions dictate that project extraction should be less than recruitment inorder to achieve channel aggradation in certain degraded locations.

1. The overall extraction level for the project area may be based on any of the following:
   a. actual annual net recruitment or
   b. on the long-term average annual net recruitment or
   c. on a floating average annual net recruitment with either a short, medium, or long time base for the floating average. See the report by Doug Jager attached to the September, 1993 Proposed Final PEIR on Gravel Removal from the Lower Mad River (Attachment 2) for more information and an analysis of floating averages.
   d. Extraction level may be set after monitoring river resource conditions and trends more so than by monitoring recruitment. . If the river is aggrading at critical sites, the rate of extraction may be incrementally increased. If the river is degrading excessively at critial sites extraction will have to be reduced. With this approach, a red line or red zone would be a useful tool.

      While monitoring river condition and trend a river-bed "red line or red zone" may be established for the entire project area profile, or only at site specific trouble spots. An alternative may be to have no extraction if the river bed drops below the "red line". Or, limited extraction and increased monitoring may be appropriate when the river bed approaches or drops below the "red line".
2. Site specific extraction levels may be determined by monitoring site specific gravel bar replenishment with extraction set above, equal to, or below any year's replenishment.
3. Extraction locations and amounts will be controlled by permits, reclamation standards, and excavation standards .

Extraction locations, methods, and amounts will be controlled by judiciously applying some combination of alternatives one through three. It is time for the trust agencies, gravel operators, and environmental groups to let the scientists attempt to resolve and monitor the complex issues of river management that will be encountered in the Lower Mad River Corridor. In this situation flexibility and adaptation is needed. More definitive standards may be developed in the future, as river conditions improve and as the river approaches a state of dynamic equilibrium.

6.13 Reclamation Plans

Eight operating sites in the Mad River extraction area have approved reclamation plans. These plans were developed and approved prior to completing the 1994 Mad River PEIR and prior to developing this management plan.

An important component of this management plan is the SMARA required annual review of reclamation plans. During 1994 the operators shall revise their existing reclamation plans and submit them to the SDRC for review and recommendations after which they will be forwarded to the Humboldt County Planning Department for a CEQA review and approval. Following approval by Humboldt County the ammended reclamation plans must be submitted to the Department of Conservation's Office of Mine Reclamation for final approval.

These revisions are necessary for only two reasons. The two reasons are:

1. To organize and collate various approved and amended portions of the existing plans into a usable coherent package that can be easily read, interpreted, and reviewed by the SDRC and others.
2. To bring the existing reclamation plans into conformance with the mitigation measures and reclamation standards provided herein.

Providing the revised plans conform to this PEIR and the adaptive management plan, the CEQA review of the initial reclamation plan revisions will most likely result in a negative declaration. Thereafter, the lead agency shall review the reclamation plans for compliance on an annual basis as required by SMARA.

6.14 Monitoring Requirements

Section 21081.6 of the Public Resources Code requires that all public agencies adopt a monitoring and reporting program which assures that all projects approved by a lead agency comply with the required mitigation measures. This project is ongoing and much more complex than many and additional monitoring is required on a continuous basis to provide the necessary data for annual planning, design, and feedback. Thus, we have mitigation compliance monitoring as well as the monitoring needed to support the iterative review and feedback planning process.

There are many kinds of monitoring programs and it is important to carefully consider what information you are seeking when designing a monitoring program. What is to be done with the information? How much will the monitoring cost? How much money is available for monitoring? Budgetary decisions, changing river conditions, new technology, and planning needs will all influence future monitoring.

Some examples of monitoring and what kind of information may be sought for different types of monitoring are shown below.

Implementation Monitoring. This is used to determine if activities are being conducted as planned. Did the SDRC contact the CCL members in January? Were the reclamation plans revised, reviewed and approved in 1994 as planned? Are the wildlife surveys being conducted on an annual basis as required? Are the mitigation measures being implemented? This sort of information will be included in the SDRC reports.

Baseline Monitoring. Baseline monitoring is used to establish a data base for future comparisons. Examples would include establishing the current thalweg profile or the present extent of riparian habitat. Some baseline information already exists. Karen Theiss and Associates has prepared a riparian habitat vegetation map for the Mad River corridor. Topgraphic detail has been obtained at many sites throughout the project area. However, more topographic information is needed and will be specified by the SDRC.

Trend Monitoring. Measurements are made at regular well-spaced time intervals to determine the long term trend in a particular parameter. An example would be to periodically measure the thalweg or mean bed elevation at bridge crossings and other critical sites to determine if the river is degrading or agrading at these sites.

Compliance Monitoring. Have the operators followed the prescriptions of the SDRC? Are the operators complying with the mitigation measures and the reclamation plans?

Effectiveness Monitoring. Is the project accomplishing the desired effects? Is the gravel industry surviving? Are river resources at risk? Are there fewer complaints regarding noise on the river? Has the risk of bridge failure been reduced? Are migrating fish still gaining access to the tributaries? Some of this information will be known after baseline information is resureveyed. Some resurvey information will be needed on an annual basis and other information will be obtained less frequently.

These are the kinds of questions that the monitoring program must answer. The SDRC shall carefully design and implement the monitoring program. The SDRC shall also annually review the established monitoring program and revise it as needed.

The vertical datum used for surveying, planning, and monitoring on the Mad River will be the North American Vertical Datum 1988 (NAVD 88).

A more detailed example of one proposed compliance monitoring process is described below. This monitoring will determine if the operators are following the SDRC extraction prescriptions.

The SDRC shall visit each extraction operating site and processing site at least twice during the low-flow extraction season and at least once shortly after the extraction season.

During the extraction season the SDRC shall meet with the operators, the operators' engineers or other agents of the operators, as needed, to communicate the committee's needs for post-extraction compliance monitoring information. The SDRC shall guide the operators and the operators' engineers so they can provide the required information in the most cost-effective manner.

Such information may include but not be limited to production reports, aerial photographs, planimetric maps, topographic maps, extraction volume calculations, physical cross sections, digitized cross-sections, and digitized terrain data.

It is understood that the committee can proceed with compliance monitoring in a most effective manner only when the required information is provided in a timely manner and in a format that readily lends itself to review and analysis.

Within three weeks after the end of extraction operations the operators or their agents shall submit the time-sensitive required compliance information to the SDRC. The SDRC shall review this information, inspect the sites, and file their post extraction compliance report with the operators and with the Humboldt County Planning Department within one month after receiving the required information from the operators or their agents. The post-extraction compliance reports will be available for public review at the HCPD.

Other forms of monitoring will include annual wildlife surveys to determine if sensitive species are located near extraction sites or elsewhere in the project area. The SDRC will periodically review the need for additional wildlife surveys with the CDFG and other wildlife consultants. This process is described somewhat in mitigation number seven.

Because rivers are dynamic ecosystems and river management is not a precisely predictive science, the preferred project is a flexible adaptive monitoring and management program that will be administered by a team of scientists. The project design is flexible so the project can respond to changing river conditions. Therefore, there are monitoring and design alternatives which may not be adopted initially but could be adopted during the project life. In fact, some future mining and monitoring alternatives may not be currently recognized.

6.15 Mitigation Monitoring

A periodic site inspection form will be developed. Members of the SDRC or other agents of Humboldt County will complete the inspection form and file it with the County and the SDRC after each inspection. Copies of the inspection forms will be available for public review at the Planning Department.

Mit-1 The SDRC periodic reports, and prescriptions will include succinct summaries of topographic surveys and other monitoring information that is used to evaluate reclamation and plan extraction.

Mit-2 The SDRC will request the agencies described in Mit-2 to provide periodic reports on the integrity of Mad River structures under their responsibility. Those agencies that have major concerns about threatened structures will be monitored more closely. Those agencies who have no concerns and do not wish to participate will be noted. The SDRC will provide an annual summary of data collected under this mitigation on a form that will indicate the agencies, the structures and a summary of information reported.

Action: The exact action will be determined after consultation between the SDRC and affected parties. If the risk to structures is great and gravel transport is needed to reduce the risk, the SDRC will be more conservative when developing extraction prescriptions. If conditions are improving, the SDRC will so note and may begin making incremental alterations in extraction prescriptions. If conditions are getting worse, the SDRC will so note and may respond with prescription alterations and additional monitoring.

Mit-3 The SDRC will note eroding river banks that might benefit from revegetation. These will be added to a pool of areas that may be planted as mitigation for past cumulative impacts or for current disturbances. When planting does occur, the SDRC will follow up with timely survival, growth, and analysis surveys.

Mit-4 Whenever summer bridges are used for extraction operations in the project area, the date of installation and date of removal will be recorded. Other information that will be recorded on a form to be developed will include operator, location, size of bridge, approximate volume of material in bridge approaches, approximate clearance between bridge and water surface, equipment used to install and remove bridge, water quality impacts of installation and removal, compliance with public safety plan and notices warning boaters of potential hazards. Changes observed during periodic inspections will be noted.

Mit-5 If oil and grease spills are observes during river bar inspections they will be noted on the inspection form during periodic site inspections by representatives of the SDRC or other agents of Humboldt County. If such spills are noted the operator will be informed and the area will be cleaned up. If clean-up does not take place within 48 hours, the SDRC shall notify CDFG and Water Quality Control.

Mit-6 Spawning survey information and meetings between the SDRC and the CDFG will be recorded on a form to be developed. A summary discussion of information learned and the influence that this information has on developing prescriptions will be maintained for the record.

Mit-7 Annual pre-extraction wildlife surveys will be conducted by a competent wildlife biologist acting as a consultant to the SDRC. Wildlife survey reports will be provided to the operators

and to the CDFG. They will also be maintained for the public record. When the wildlife surveys include mitigating extraction recommendations they will be so noted and the SDRC will incorporate these recommendations into the extraction planning process.

Mit-8 Haul roads and haul road conditions will be noted on the periodic site inspection form. Abandoned haul roads and trails that are revegetated will be noted. All regevetation projects will be monitored for survival.

Mit-9 Gravel pile stockpiles and disturbances caused by gravel piles will be noted on the periodic site inspection form. Abandoned stockpile sites that are revegetated will be noted. All regevetation projects will be monitored for survival.

Mit-10 Noise from equipment exhaust systems and faulty equipment will be noted on the periodic site inspection form.

Mit-11 See Mit-8.

Mit-12 Traffic activity and speed will be noted on the periodic site inspection form.

Mit-13 Idle equipment and other industrial evidence stored on gravel bars will be noted on the periodic site inspection form.

Mit-14 The City of Blue Lake is responsible for enforcing its own laws. The County will not monitor this mitigation.

Mit-17 The SDRC will periodically (at least once per year) examine these sites for evidence of excessive bank erosion or an increased risk of erosion and note the condition a form that will be developed. Bank conditioins will be recorded in the SDRC annual reports.

Mit-18 Operators are responsible for informing the workers regarding the need for protecting archaeological materials. If such material is discovered, operators will note the time of discovery and immediately notify the County Planning Department.

Mit-19 Trenching is not likely to occur in the near future. If trenches are proposed, a special trench-site inspection form will be developed to monitor this mitigation.

Mit-20 See Mit 19.

Mit 21 See Mit-19.

Mit-22 See Mit-4.

Mit-23 See Mit-4.

Mit-24 All revegetation efforts will be monitored annually for survival and growth. The revegetation inspection form will include, the location, species planted, method of planting, survival and growth.

6.16 Costs and Reimbursements

The SDRC must have an annual operating budget if it is to plan an effective resource protection monitoring program. The SDRC shall prepare a budget request and submit it for approval through the Planning Department.

The Chair of the SDRC shall periodically bill the Humboldt County Planning Department for the services of the individual SDRC members. Said services and billings shall be either of a general nature or shall be billed against specific operations.

The annual SDRC costs of operation and other incidental costs, such as necessary wildlife surveys or vegetation analyses, will be paid for by the operators through an annual assessment which will be prorated according to the amount of gravel that each operator extracts. Small, exempt operations should also share in the cost of river managment according to a fee structure which shall be established by the Board of Supervisors. Reclamation plans will be modified to specify that no mining operation will be permitted or allowed to continue unless the past year's prorated SDRC expenses have been paid or placed in an escrow account if they are being protested. Appeals and protests associated with this project will be resolved through normal Planning Department appeal procedures.

Some work of the SDRC will be of a general nature and the costs shall be spread among the operators. Some work of the SDRC will be site specific for particular operators and that cost shall be borne by the individual operator. Thus, it will be to the operator's advantage to provide the SDRC with the necessary planning information in a format that will reduce the operator's overall combined engineering and SDRC fees.

7.0 ANALYSIS OF ALTERNATIVES

Pursuant to CEQA Guidelines Section 15126 (d) this section describes and evaluates a range of reasonable alternatives to the preferred alternative project which could feasibly attain the basic objectives of the project.

The focus of this section is on alternatives that are capable of eliminating significant adverse environmental effects or reducing them to a level of insignificance. The same environmental categories as presented in Section 5.0, Impacts and Mitigation Measures, have been used to identify and compare the significant environmental impacts of the alternatives with those of the project.

Alternative 1 - The Preferred Project with a Fast Rate of Recovery.
In the preferred project the Board of Supervisors establishes a SDRC and instructs the committee to establish and use coordinated extraction prescriptions and reclamation standards that will allow a moderate rate of recovery (aggradation) at critical sites while protecting or enhancing other river resource values. The SDRC is further instructed to reasonably establish the critical sites and interprete the term "moderate recovery".

In alternative one the Board of Supervisors provides the same instructions except they plead for a fast rate of recovery and a reasoanble intrepretation of same. It is expected that the SDRC would then reduce extraction levels (from the preferered alternative level) in order to more rapidly encourage channel aggradation at selected critical sites. Reducing the extaction level accordingly would reduce but not eliminate the extraction-related adverse impacts and have little impact on the processing impacts. Choosing a fast rate of recovery could significantly reduce the viability of some components of the Mad River gravel industry. Because more aggregate would have to be imported, traffic impacts would increase.

Alternative 2 - The Preferred Project with a Low Rate of Recovery.
In the preferred project the Board of Supervisors establishes a SDRC and instructs the committee to establish and use coordinated extraction prescriptions and reclamation standards that will allow a moderate rate of recovery (aggradation) at critical sites while protecting or enhancing other river resource values. The SDRC is further instructed to reasonably select the critical sites and to interprete the term "moderate recovery".

In alternative two the Board of Supervisors provides the same instructions except they will accept a slow rate of recovery and a reasoanble intrepretation of same. It is expected that the SDRC would then increase extraction levels (from the preferered alternative level) in order to encourage a gradual rate of channel aggradation rather than a moderate rate of channel aggradation at selected critical sites.

This alternative would result in a greater risk to structures (as compared to the prefered alternative or to Alternative 1). It would also increase the extraction-related adverse impacts and have little impact on the processing impacts. Because less aggregate would have to be imported, the traffic impacts would decrease.

The wisdom of choosing between alternatives one, and two and the preferred alternative is speculative and somewhat dependent upon the whims of nature as to when the Mad River will receive the next major series of storms that will likely produce a significant influx of bedload sediment into the river system and help to shorten the recovery period.

Alternative 3 - No Project and No Further Action by the Lead Agency

Pursuant to the CEQA Guidelines, Section 15126(d)(2) the specific alternative of 'no project' must be evaluated. The intent of the 'no project' alternative is to determine the potential significant effects, should the project or an alternative to the project not be implemented or developed.

Eight of the 10 sites being considered in this PEIR and in the preferred alternative are permitted with either vested rights or conditional use permits. All eight have approved reclamation plans. Without the project or some other action by the lead agency there is little opportunity for effectively controlling gravel extraction at these eight sites and for mitigating the potential adverse impacts of gravel extraction. In the recent past, when gravel was being extracted from the lower Mad River in the absence of effective regulatory control, the gravel industry was jeopardized by lawsuits and the threat of lawsuits as the operators argued amongst themselves and as environmental groups and trust agencies argued with the operators regarding how much gravel should be extracted at various sites and by what means. Part of this problem stemmed from the fact that neither the operators, the regulatory agencies, nor the concerned environmental groups had access to the necessary expertise to develop environmentally sound extraction management limits and mitigation measures.

The no project alternative would essentially return the industry, the regulatory agencies, and the concerned environmental groups back to the chaotic conditions that existed prior to developing the 1992 MOA which began the processes of developing this PEIR and looking for a solution to the problems that kept the entire Mad River gravel industry in turmoil and threatened a variety of Mad River resources with significant potential adverse impacts. Clearly, this alternative is both undesirable and unacceptable.

Alternative 4 - Moratorium (No Extraction allowed on the Mad River)
This alternative would require the Board of Supervisors to draft and approve an ordinance that creates a moratorium prohibiting gravel extraction anywhere along the Mad River. Moratoriums are by definition temporary. Therefore, the Board of Supervisors would presumably have to specify under what conditions the moratorium would be lifted

This alternative would reduce or eliminate many of the adverse and potential adverse impacts identified in this PEIR. This alternative would increase the use of fossil fuels as the need to import aggregate into the Mad River market area would increase.

Implementation of this alternative may eliminate or reduce the ability of the industry to extract gravel during periods when channel aggradation might be a potential problem.

Some Mad River operators are known to have sources of aggregate on the Eel River and some Eel River aggregate is now being imported into the Mad River market area. However, these Eel River sites have entitlement restrictions that could logically limit their potential to competitively fulfill all of the Mad River market needs. If this alternative is chosen, at least some of the Mad River operators would have to go out of business or find competitively-priced alternate aggregate sources. These are business decisions that would have to be made on an individual basis.

Although there is debate on this issue, in order to implement this alternative the Board of Supervisors may be required to 'take' some or all of existing authorized surface mining operations along the Mad River for public use (eminent domain). If so, the County would have to pay just compensation for each site 'taken'. The actual market value is not known, however, on the bases of tax assessor information, the assessed value of the land and improvements

for the authorized sites, is approximately $1,750,000.00. The market value would likely be much higher.

Alternative 5 - Permanent Injunction (No Extraction allowed on the Mad River)
This alternative would require the Board of Supervisors to draft and approve an ordinance that would permanently prohibit gravel extraction anywhere along the Mad River.

The impacts of this alternative would be essentially the same as alternative four. The biggest difference is the Board of Supervisors would not have to draft a set of conditions under which they could lift a moratorium.

Alternative 6 - No Extraction in the Project Area
If the Board of Supervisors believed that there were better extraction sites elsewhere on the Mad River they could draft and approve an ordinance prohibiting gravel extraction in the lower Mad River extraction area defined in this PEIR as being the reach between the hatchery weir and Highway 101. Some of the project adverse impacts, particularly visual, noise, and recreational might be reduced by this alternative. The exact effects of this alternative are speculative without knowing the specifics about alternate sites and the location of processing sites.

This alternative would not prohibit extraction elsewhere on the Mad River and might be a logical alternative if there were other suitable extraction sites. At present there is no significant instream aggregate resource downstream from Highway 101. Presumably the existing operators and others could seek permits to extract gravel at sites upstream from the hatchery weir, at sites on the North Fork of the Mad River, or at sites on other river systems. However, there are precious few suitable sites for gravel extraction on other relatively near river systems that are not already under the control of other operators.

Furthermore, when a river system is degraded or degrading and this degradation is creating adverse impacts, the logical place to extract gravel is as far downstream as possible. This maximizes the "ability" of the river to "utilize" the gravel for in-river needs prior to extraction. From that perspective and under the current circumstances it would be illogical to encourage or force the Mad River operators or others to look upstream for alternate sources of aggregate.

An additional consideration would be that the quality of the aggregate resources are known to vary within the system. Upstream sites would likely produce bigger and softer rock and less sand than downstream sites. Sites that are too far downstream may have lots of sand and very little rock. Both situations would create adverse processing impacts. Additional transportation impacts would likely occur.

This alternative would reduce or eliminate some but certainly not all of the adverse and potential adverse impacts identified in this PEIR.

Alternative 7 - Alternative Offsite Sources of Riverrun Aggregate
This alternative could be thought of as a variation of any other alternative that limits Mad River gravel extraction to levels that are below the Mad River market area demand. The Mad River operators are sent in search of alternative sources of riverrun aggregate that are outside the Mad River instream gravel extraction area. These alternatives would increase the use of fossil fuels as the need to import aggregate into the Mad River market area would increase.

Riverrun aggregate can be obtained from instream sources or by mining alluvial terraces. Thus, these alternative offsite sources include instream sources in other river systems, terrace mining in alluvial terraces along the Mad River corridor, and terrace mining in other valley systems.

Terrace mining in the Mad River corridor or elsewhere in Humboldt County would eliminate or reduce instream extraction impacts. Undeveloped river terraces are often occupied by valuable agricultural land or valuable riparian vegetation. Terrace mining would produce significant changes in land use and create a whole new set of impacts that would seem to justify site specific environmental analyses. Any further analysis at this point in time, without site specific proposals would be purely speculative.

Alternative 8 - No further channel degradation
The Board of Supervisors could allow uncoordinated extraction to continue as long as no further degradation occurs in some specified reach of the river. This would be difficult to achieve as one can rarely dictate river behavior. Given the current chaotic morphology, the river profile and alignment can be expected to fluctuate significnatly as the river attempts to move towards dynamic equilibrium. Furhtermore, uncoordinated extraction could continue to upset the equilibrium. Thus, there would be little that could be done to control the aggradation and degradation processes. Degradation would likely occur in some areas; other areas might stabilize, while aggradation might be occurring elsewhere. Most of the existing adverse environemental effects would not improve and some would likely get worse with this alternative.

Clearly, a more formal approach with monitoring and incremental changes in response to river conditions is needed.

Alternative 9 - Allow extraction only when the river is not degrading
This alternative was included in the September 1993 Proposed Final PEIR. It was the essence of the proposed Aggregate Resources Managment Plan. This is not a workable alternative and the fact that it was proposed caused the industry to lose faith in the 1993 proposed final. PEIR. A large flood could produce a significnat increase in instream gravel storage i.e., aggradation, after which the stream would likely begin to degrade. This alternative allows no extraction while the river is degrading. Alternative 9 does not recognize nor provide for normal temporal variation in watershed sediment production and cyclical patterns of aggradation and degradation. Under alternative 9, if the river went into a cycle of degradation no extraction would be allowed, even though there may be large volumes of gravel stored in the channel.

Alternative 10 - Offsite Sources of Non-Riverrun Aggregate
Quarry rock can sometimes be used as a satisfactory substitute for riverrun aggregate, particularly as fill material, or base material. Hard quarry rock can also be used as an additive to normal riverrun aggregate concrete if the density of the concrete must be raised. Angular quarry rock by itself makes a poor substitute for riverrun concrete aggregate; the problems being mostly related to cost, difficulty in pouring and pumping, and ease of finish. There are a host of social and environmental problems that must be addressed when considering quarries as alternative sources. Regardless, there are many developed quarries in Humboldt County and quarry rock is already being used in the market place. This use of this alternative resource reduces the demand for instream riverrun aggregate. As the cost of riverrun aggregate continues to escalate we will see more operators experimenting with quarry products in the market place.

Known quarries or pits within Humboldt County are listed below. They are divided into three categories: Commercial Quarries, these are quarries that have County authorization to operate; Quarries operated by the County Public Works Department, these quarries generally supply material for County road base or RSP structures and are not currently used for commercial purposes; and Historic Quarries, these quarries are know to have operated in the past; however, at this time no authorization is on file with the County for current use.

Commercial Quarries

Halverson Quarry

The Halverson Quarry is operated by Robert Halverson, covers approximately 5 acres and the commodity is stone. The quarry is located in the Freshwater area in Section 16, T5N, R1E HB&M, on assessor parcel number 501-211-01.

A-21 Quarry

The A-21 Quarry is operated by Mercer Fraser, Co., covers approximately 15 acres and the commodity is stone. The quarry is located in the Crannell area in Section 20, T8N, R1E, HB&M, on assessor parcel number 513-101-14.

Trinidad Quarry

The Trinidad Quarry is operated by Mercer Fraser, Co., covers approximately 10 acres and the commodity is stone. The quarry is located in the Trinidad area in Section 24, T8N, R1W HB&M, on assessor parcel number 515-171-10.

Jacoby Creek Quarry

The Jacoby Creek Quarry is operated by Barnum Timber Co., covers approximately 15 acres and the commodity is rip rap -stone. The quarry is located in the Bayside area in Section 24, T5N, R1E HB&M, on assessor parcel numbers 404-081-01 & 404-081-02.

Monschke Quarry

The Monschke Quarry is operated by Wallan & Johnson, covers approximately 3 acres and the commodity is stone for rock slope protection. The quarry is located in the Garberville area in Section 18, T4S, R4E HB&M, on assessor parcel number 213-146-09.

Tosten Quarry

The Tosten Quarry is operated by Gordon Tosten, covers approximately 5 acres and the commodity is road rock and rip rap. The quarry is located in the Miranda area in Section 16, T3S, R3E HB&M, on assessor parcel number 212-043-01.

R. Brown and Sons Quarry

The R. Brown and Sons Quarry is operated by Roger Brown, covers approximately 1.2 acres and the commodity is rip rap. The quarry is located in the Willow Creek area in Section 1, T6N, R4E HB&M, on assessor parcel number 316-061-04.

Walsh Quarry

The Walsh Quarry is operated by Jack Walsh, covers approximately 3 acres and is located in the Fortuna area in Section 18, T3N, R1E HB&M, on assessor parcel number 311-081-05.

Ammon Quarry

The Ammon Quarry is operated by McIntosh Construction Co., covers approximately 3 acres and the commodity is stone. The quarry is located in the Willow Creek area in Section 20, T6N, R5E HB&M, on assessor parcel number 524-075-23.

Mason Quarry

The Mason Quarry is operated by Wayne Mason, covers approximately 5 acres and the commodity is rock fill material. The quarry is located in the Bald Mountain area in Section 23, T6N, R3E HB&M, on assessor parcel numbers 316-163-02 & 316-163-09.

A-370/M-200 Quarry

The A-370/M-200 Quarry is operated by Mercer Fraser, Co., covers approximately 5 acres and is located in the Crannell area in Section 27, T8N, R1E HB&M, on assessor parcel number 513-081-01.

Hindley Pit

The Hindley Pit Quarry is operated by Raymond Etter, covers approximately 4 acres and the commodity is shale. The quarry is located in the Honeydew area in Section 31, T2S, R1E & Section 36, T2S, R1W, HB&M, on assessor parcel number 107-282-04.

Grooms Rock Quarry

The Quarry is operated by Herman Grooms, covers approximately 5 acres and the commodity is shale. The quarry is located in the Big Lagoon area in Section 32, T10N, R1E HB&M, on assessor parcel number 518-052-04.

Quarries operated by the County Public Works Department

Drewry Pit

The Drewry Pit is owned by Barbara Drewry, covers approximately 2 acres and the commodity is stone. The quarry is located on assessor parcel number 216-021-07.

Monument Pit

The Monument Pit is owned by Pacific Lumber Co., covers approximately 1 acre and the commodity is stone.

Brannon Mountain Pit

The Brannon Mountain Pit is owned by Peggy Rohrback and Mike Brady, covers approximately 1 acre and the commodity is stone. The quarry is located on assessor parcel number 522-053-00.

Dyerville Pit

The Dyerville Pit is owned by James Stewart, covers approximately 1 acre and the commodity is stone. The quarry is located on assessor parcel number 216-184-01.

Hansen Pit

The Hansen Pit is owned by Hansen Degnan Properties, covers approximately 1 acre and the commodity is stone. The quarry is located on assessor parcel number 207-036-01.

Fort Seward Pit

The Fort Seward Pit is owned by Norman G. Satterlee, covers approximately 1 acre and the commodity is stone. The quarry is located on assessor parcel number 216-184-01.

Historic Quarries

Hagen Pit

This pit is located one mile east of the town of Phillipsville on Anderson Creek in Section 18, T3S, R4E, HBM.

Hooker Creek Road Pit

This pit is located in Southern Humboldt County about four miles east of Phillipsville in the eastern half of Section 36, T 3S, R3E, HBM.

Jacoby Creek Road Rock Quarry

There are a few quarry sites within the Jacoby Creek basin (see also previous Commercial Quarries, Jacoby Creek Quarry).

Pit near Willow Creek

This pit has been used by CalTrans and is located about two miles west of Willow Creek, 1/4 mile southeast on a dirt road. Probably in Section 36, T7N, R4E, HBM.

Le Perrone Pit

There is a rock pit on the east side of Le Perrone peak on U.S. Forest Service land, about 17 miles from Orleans.

Cookson Rock Quarry

This rock quarry is located east of Stover Road in Redwood Valley.

Stover Creek Rock Quarry

This quarry is located 1/4 mile beyond the Cookson Pit on the same road.

Liscom Hill Quarry

This quarry is located in Section 9, T6N, R2E, HBM.

Alternative 11 - Alternate Technology

Alternate technology could potentially reduce the need for riverrun aggregate in some products. In a sense this is similar to the previous alternative using quarry rock. This alternative does not propose that gravel extraction on the Mad River be abandoned. Under this alternative, it is expected that the demand for gravel be supplemented with cullet (glass), thereby reducing the volume of aggregate extracted.

Humboldt County has recently been named a "recycling market development zone" by the California Integrated Waste Management Board. There are 16 such zones in the state. Local businesses can qualify for low-interest loans from the California Integrated Waste Management Board to convert waste products, such as cullet, into marketable goods. In addition, enterprises that use recycled materials may qualify for tax credits worth 40 percent of the value of the recycling equipment they buy.

The following discussion is premised on the use of cullet (glass), some of the information is based on a study by Gainer and Associates.

Glasphalt

Asphalt is a brownish-black solid or semisolid mixture of bitumen's (hydrocarbons from coal or petroleum) and sand or crushed stone gravel. In 1990, 94 percent of the nation's streets were asphalt. When glass cullet is used as a partial substitute for the aggregate in the mix, it is called *glasphalt.*

One of the few advantages of using cullet in asphalt is that the mixture cools more slowly than conventional mixtures, allowing longer rolling times, while the heat facilitates paving in colder climates.

In 1970, CalTrans conducted studies using glass as a substitute for aggregate. Results were disappointing. The glasphalt surface raveled and stripped, meaning pieces of cullet began to separate from the road surface. CalTrans staff determined that needed additional studies would require a great deal of experimentation and possibly add too much expense to the cost of glasphalt.

Over the years, the use of cullet in asphalt has been unusual and sporadic. As recently as 1990, CalTrans said that speed limitation, raveling, and the cost of substituting glass prevented their department from making use of glasphalt.

Gainer and Associates state that the direct use of cullet for glasphalt may not be economical in rural plant locations where cullet may sell at $40 to $80 per ton whereas aggregate could sell at $10 ton. Only if higher priced container manufacturing markets are not available and glass would otherwise be landfilled would glasphalt be a reasonable alternative cullet use in a small-scale, rural plant. Because the cost of transporting waste glass to other markets is high, it may be economically feasible to use cullet for some local purposes.

Brick

Research conducted prior to 1973 by the U.S. Bureau of Mines, Ceramic Research Lab revealed that bricks made with 10 percent or more cullet are stronger, resist absorption of water, and fire in half the time than regular bricks made with aggregate.

Bricks made with cullet meet the specifications for similar construction materials. The Gainer and Associates study suggests that the use of cullet for such products as ceramic bricks is only practical in small scale rural plant locations and if cullet costs are considerably less than $40 per ton.

Building Blocks - Cement

Cement blocks made with an undisclosed portion of cullet were tested in 1981 and found economically feasible. Performance met specifications for similar construction materials.

Cement

Ground glass can act as a synthetic pozzuolana - a siliceous and aluminous substance that reacts chemically with calcium hydroxide at ordinary temperatures in the presence of moisture to form a cement-like material. Cullet could potentially replace cement in concrete and improve its properties (see Building Blocks - Cement).

Concrete

When cullet is added to the matrix, it is called *glascrete*. The American Society of Testing and Materials showed in 1977 that direct use of glass cullet in concrete results in the same standard of performance as conventional concrete. However, Dr. Eugene Tseng, a noted cullet products expert, cautions about glass silica expansion.

A 1977 Utah University article stated that foamed glass can be used to make lightweight concrete aggregate. The resultant product has high compressive strength (about 1000 psi) and low density which make it an ideal construction element.

Research conducted by Teledyne National Corporation in 1978 confirmed that foamed glass can be used as a substitute for sand and gravel in concrete blocks. Use of cullet improved insulation qualities and provided a strong, lightweight product.

Although the technological feasibility of using glass or foamed glass in concrete has been shown by at least three research groups and one manufacturer, the cost of cullet ($40-$80/ton) as a substitute for sand or gravel ($10/ton) may present an economic barrier to its current use.

8.0 OTHER STATUTORY CONSIDERATIONS

8.1 Growth Inducing Impacts of the Project

According to CEQA Guidelines Section 15126(g), growth-inducing impacts are the ways in which a proposed project may "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Also included are projects that may "remove obstacles to population growth."

Aggregate mining operations may effect economic or population growth, or the construction of additional housing because the cost and availability of the aggregate, and aggregate products (asphalt, concrete, raw material used for base material, leach fields, railroad-grade ballast and decorative rock) affects the cost of new construction. Aggregate mining can indirectly foster economic or population growth. A lack of aggregate would have direct significant adverse effects on the construction of additional housing.

The Humboldt County Housing Element, adopted by the Board of Supervisors on December 15, 1992, identifies housing needs and sets policies and standards to achieve numerous programs that address those housing needs. It also identifies housing and population trends, as well as factors that lead to increased housing costs:

> "Although growth in the housing stock kept pace with increases in the population, there has been a substantial erosion in the affordability of housing in the ten years between 1980 and 1990. The housing stock in unincorporated areas increased by just under 3,000 units during this time period (78% of the population increase), while the average value of housing increased by $31,000 to $88,000 in 1990."
>
> "A continuation of recent trends is projected for Humboldt's population and housing...To meet the future housing needs in unincorporated areas, it is projected that close to 2,500 units will have to be constructed between January 1, 1991 and July 1, 1997."
>
> "Current national, state and local market trends will largely determine the type, quality and quantity of housing that will exist in Humboldt County. Major costs and constraints contributing to the sale price or rental cost of housing in Humboldt County include direct and indirect market costs."

Typically the single highest direct, or indirect, cost of housing development is construction which accounts for a full 60 percent of the cost of new housing:

> "Local government regulations can also significantly increase housing costs by limiting the number of available building sites and increasing development costs." Section 2815 states "The miscellaneous State fees, development standards, and permit requirements which have the most significant impact upon the costs of building materials and housing development in Humboldt County include...Mines & Geology surface mining regulation."
>
> "While litigation has not posed a serious historic threat to affordable housing in Humboldt County, recent developments in this area are frightening. Litigation can seriously delay or prohibit housing projects...As a result of litigation with the historic operation of surface mines in the county (Site No.s 2, 3, 5, 8) basic construction materials may not be available to support the construction of needed housing.

> While the County Board of Supervisors has certified that the environmental documents are adequate for these historic operations, and the County has entered into an agreement with the State Departments of Fish and Game and Mines and Geology to allow limited surface mining on these historic sites, the litigation could adversely impact these important operations."

The Housing Element breaks population growth into census divisions. Material mined from the Mad River supplies aggregate to the North Coastal (McKinleyville north) and Arcata divisions, shares the Eureka division with material mined from the Eel river, and shares the Trinity-Klamath division with material mined from the Trinity River. On the basis of the 1970-1990 population growth figures for these areas, it appears that the Mad River supplied material to 58% of the total population growth in Humboldt County.

On the basis of a projected 58% population growth and resulting need for 2,500 additional housing units by 1997, approximately 1450 housing units will require aggregate and aggregate products in the area currently served by the Mad River aggregate producers.

Because the cost of construction is typically the number one factor in determining new housing cost, and because construction relies heavily on aggregate as a building material, the cost of aggregate has a significant bearing on the cost of new housing. It appears that rate of housing construction is not affected by either an increase or decrease in aggregate cost. Rather, the data indicates that the availability of aggregate and aggregate products only affects housing prices; any cost increase resulting from an increased price for aggregate is passed on to the home buyer. Similarly, a decrease in aggregate cost is passed on to the home buyer.

The housing element also describes polices for low income housing. There are specific benefits to a developer to construct low income housing. However, in order for a developer or contractor to be induced to construct low income housing, the contractor must make a profit from the construction and sale of the housing. If the cost of aggregate rises, the cost of construction also rises, and the incentive to provide low income housing diminishes.

Property taxes and insurance are tied to the appraised value of the development. Another indirect affect that the availability and affordability of aggregate has on development is that if the cost of aggregate (construction) rises, so does the value of the development and thus the property taxes and insurance is higher.

In order for Humboldt County to maintain affordable housing, the cost of the construction materials must remain affordable. If the Mad River aggregate producers are required to haul material from other sources, the resale value of the aggregate is expected to rise, thus the cost of housing construction will also rise. The availability of affordable aggregate can be said to "remove obstacles to population growth."

Other potential environmental impacts incurred from transporting gravel from outside sources include increased use of fossil fuels; and increased traffic, wear and tear on roads and highways; deterioration of air quality and impacts occurring at the site of gravel removal.

See Appendix M, John Henry Grobey, Consultants Report, and Appendix O for additional information on economic impacts.

8.2 Short-Term vs. Long-Term

Pursuant to the CEQA Guidelines, Section 15126(e), this section discusses the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. Unregulated or poorly regulated gravel extraction can lead to a series of cumulative and long-term effects which could adversely affect the state of the environment. These effects are mostly associated with bed degradation and can be summarized as follows:

- Extraction of bed material in excess of average replenishment causes the bed to degrade upstream and downstream of the site of removal.
- Bed degradation can undermine bridge supports, pipe lines, or other structures.
- Excessive degradation may adversely alter the aquatic habitat.
- Excessive degradation can deplete the entire depth of gravelly bed material, exposing other substrates that may underlie the gravel, which could in turn affect the quality of aquatic habitat.
- If a flood plain aquifer drains to the stream, groundwater levels can be lowered as a result of bed degradation.
- Lowering of the water table can alter riparian wildlife habitat.
- Excessive degradation can impact fish migration and spawning habitat.
- Rapid bed degradation may induce bank collapse and erosion.
- The reduction in size or height of bars can cause adjacent banks to erode more rapidly or to stabilize, depending on how much gravel is removed, the distribution of removal, and on the geometry of the particular bend.

Other impacts that may be only indirectly influenced by bed degradation or may have no connection with bed degradation include the following.

- Cumulative impacts on riparian vegetation caused in part by annual scraping of gravel bars, roads, and processing sites. These are long term cumulative impacts that impacts will be partly mitigated by this project.
- Cumulative impacts on terrace development and indirectly upon developing riparian vegetation. These are long term impacts.
- The project contributes to cumulative long term visual impacts in many areas of the Mad River corridor .
- There are significant, long-term, unavoidable noise impacts along the river during the extraction season and year-round at some processing sites.

The project is the development of a flexible management strategy which will respond to monitoring information, the development of amended reclamation plans which will conform with the PEIR and management plan, and the development of mitigating measures for extracting sand and gravel from up to 10 sites along the lower Mad River. Eight of the ten sites already have County authorization to mine sand and gravel from the Mad River (see Table 1.2-1). If this project or a suitable alternative is not adopted, the Mad River gravel industry will remain poorly regulated and without review or mitigation. If extraction is allowed to continue under those conditions, the above impacts are likely to occur. The severity of many of the impacts, and how soon they will occur, depends upon the rate of bed degradation. The impacts would be significant and may be irreversible.

The CEQA Guidelines, Section 15126(e), requires that the PEIR provide justification for implementing the project now, rather than reserving an option for further alternatives. The justification for implementing the project is to protect the Mad River environment from unregulated gravel extraction and to meet the market demand for aggregate. Reserving the project for the future is not practical in light of the preexisting authorizations for eight of the ten sites to continue mining operations.

8.3 Irreversible Environmental Changes

Pursuant to the CEQA Guidelines, Section 15126(f), this section discusses significant irreversible environmental changes which would be involved if the project is implemented.

The project is designed to protect the Mad River and its environs from the potential additional irreversible environmental impacts of an unregulated gravel extraction industry. If the project is implemented and monitored as planned it is possible that the Mad River gravel industry will survive, that certain existing impacts will be reduced, and that many future impacts will be less than significant. Some existing impacts resulting from the project will not be significantly reduced. Details on these impacts are presented in Section 5.

9.0 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Section 15126(b). of the CEQA Guidelines requires a discussion of any significant environmental effects which cannot be avoided, e.g. which cannot be mitigated to levels of insignificance if the project is implemented.

If the project in not implemented, the existing significant adverse impacts of the permitted operations will remain unavoidable and significant. For the purposes of this discussion, it is assumed that the preferred alternative described in Section 6.0 can be implemented.

The project as mitigated, would involve the following unavoidable significant environmental impacts:

1. Aggradation and degradation are controlled, in part by the availability of stream power and a sediment supply. The unstable hillslopes of the Mad River basin seem capable of providing an adequate supply of sediment when the necessary stream power is available to provide transportation. Because stream power is not totally predictable, we are uncertain to the degree which aggradation can occur over time. Therefore, even with the requirement to limit extraction, degradation may produce unavoidable impacts at bridge sites.
2. The existing impacts on recreation and viewsheds resulting from the permitted gravel extraction operations are unavoidable. For some impacts the significance is debatable, and is based on the perception of the person(s) experiencing the impact. The project has the potential to reduce some of the viewshed and recreation impacts.
3. Noise resulting from the permitted extraction and processing operations is unavoidable. In some cases, the impact is unquestionably significant, in others the significance may be debatable. The project has the potential to reduce some of the noise impacts.
4. There has been a significant cumulative loss of riparian wildlife habitat in the Mad River corridor. Gravel extraction and processing has contributed to this impact and continues to do so. However, the preferred alternative includes some revegetation mitigation which will improve habitat but not reduce the cumulative impacts to a level of insignificance.
5. The cumulative impacts of truck traffic through the city of Blue Lake are potentially significant and unavoidable.
6. Extraction and related activities can create hazards for recreational users of the river. See Rec-1 and Rec-3.

10.0 AUTHORS/CONTRIBUTORS/ PERSONS CONSULTED

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10.2 EIR Contributors

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10.3 Persons/Organizations Consulted

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Redwood Empire Aggregates
State Lands Commission
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Don Tuttle, County Public Works
U.S. Army Corps of Engineers
Aldaron Laird, Trinity Restoration
Albert James, Table Bluff Rancheria
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Silvia Daniel, Blue Lake Rancheria

11.0 BIBLIOGRAPHY

Borgeld, J.C., M.J. Scalici, M. Lorang, P.D. Komar, and F.G.A. Burrows. 1993. Final Project Evaluation report: Mad River Mouth Migration. Department of Transportation. Eureka, California.

California, State of, Dept of Conservation, Division of Mines and Geology. 1984. "A Glossary of Surface Mined-Land Reclamation Terms."

California, State of, Dept of Conservation, Division of Mines and Geology. 1990. "Fluvial Geomorphology and River Gravel Mining: A Guide for Planners, Case Studies Included."

California, State of, Dept of Conservation, Division of Mines and Geology. 1989. "Surface and Groundwater Management in Surface Mined-Land Reclamation."

California, State of, Governor's Office, Office of Planning and Research. November 1984. "California Permit Handbook."

California State-Federal Interagency Group. April, 1968. "Eel and Mad River Basins Master Plan, Plan of Study"

Collins B. and T. Dunne. 1990. Fluvial Geomorphology and River-Gravel Mining: A guide for planners, case studues included. California Department of Conservation, Division of Mines & Geology. Special Publication 98.

County of Humboldt. May, 1985. Framework General Plan, Volumes I and II. .

County of Humboldt. May, 1965. Title III - Land Use and Development, Division I, Planning. "Zoning Code of the County of Humboldt."

County of Humboldt. May, 1965. "Appendix to Title III, Division I of the Humboldt County Code. Coastal Zoning Regulations."

Curtin, Daniel J., Jr. 1992. California Land-Use and Planning Law, 1992 (Twelfth Edition).

Department of Water Resources; California, State of; The Resources Agency, Northern District. June, 1982. "Mad River Watershed Erosion Investigation."

EIP Associates, et al. July, 1992. "Draft Sonoma County Aggregate Resources Management Plan and Environmental Impact Report."

Emmett, R. L., S. L. Stone, S. A. Hinton, and M. E. Monaco. 1991. "Distribution and Abundance of Fishes and Invertebrates in West Coast Estuaries, Volume II: Species Life History Summaries. ELMR Rep. No. 8. NOAA/NOS Strategic Environmental Assessments Division, Rockville, MD, 329 p." National Oceanic and Atmospheric Administration, U. S. Department of Commerce.

Gainer and Associates, Recycling Entrepreneurship. 1990. "Creating Local Markets for Recycled Materials." Arcata Recycling Center

Hollingworth T. 1993. An Aerial Photo Interpretation of the Sediment Transport and Channel Change in the Mad River Drainage at the Sweasey Damsite. Unpublished Watershed Management Term Paper. Humboldt State University. Arcata, CA. November, 1993.

Humboldt County Board of Supervisors. 1974. "Humboldt County, California Atlas"

Humboldt County Planning and Building Department, Planning Division. November, 1992. "Draft Housing Element, Humboldt County."

Humboldt County Public Works, Natural Resources Division. July, 1992. "Final Program EIR on Gravel Removal from the Lower Eel River."

Jager, Douglas, PhD. Lecture Notes. Humboldt State University, College of Natural Resources & Sciences.

Keeler-Wolf, T. 1993. Plant Programs. Bulletin of the California Native Plant Society 23(2):6.

McLaughlin, J. and Harradine, F. November, 1965. "Soils of Western Humboldt County California." Department of Soils and Plant Nutrition, University of California, Davis, and County of Humboldt, California.

Proctor, C. M., Garcia, J. C., Galvin, D. V., Lewis, G. C., Loehr, L. C. and Massa, A. M., EDAW. July, 1980. "An Ecological Characterization of the Pacific Northwest Coastal Region, Volume Two, Characterization Atlas -Regional Synopsis. FWS/OBS-79/12," Biological Services Program, Office of Research and Development, U. S. Environmental Protection Agency, and Fish and Wildlife Service, U. S. Department of the Interior.

QRC Research Corporation, et al., Consultants. February, 1978. "An Economic Development Action Plan and Strategy for Humboldt County, California." Prepared for Board of Supervisors, County of Humboldt, California.

Rapp, J.S., Silva, M. A., Higgins, C. T., Martin, R. C., and Burnett, J. L. 1990. "Mines and Mineral Producers Active in California (1988-89), Special Publication 103." California Department of Conservation, Division of Mines and Geology.

Remy, Michael H., Thomas, Tina A., and Moose, James G. 1992. Guide to the California Environmental Quality Act (CEQA). 1992 (Sixth) Edition.

Teledyne National Corporation. 1978, Second Quarter Report. "Urban Waste: Turning a Problem into a Valuable Resource."

Trinity Restoration Associates, Inc. and SHN Engineering. March, 1993. Preliminary "Draft Supplemental Environmental Impact Report to the Program Environmental Impact Report on Gravel Removal for the Lower Eel River, Proposed Project by Canevari Timber Company."

Utah University. 1977. "Foam Glass Insulation from Waste Glass."

U. S. D. A. River Basin Planning Staff, Economic Research Service, Forest Service, and Soil Conservation Service, in cooperation with the California Department of Water Resources. September, 1972. "Water, Land and Related Resources. North Coastal Area of California and Portions of Southern Oregon. Main Report, Sediment Yield and Land Treatment, September, 1972."

Winzler and Kelly. August, 1973. "General Plan, Water Supply and Wastewater Disposal."

Winzler and Kelly, Consulting Engineers and Kennedy Engineers. 1967. "Engineering Report on Supplemental Mad River Development, Permanent River Diversion Facilities for Humboldt Bay Municipal Water District."

12.0 COMMENTS AND RESPONSES TO RECIRCULATED DRAFT PEIR

Pursuant to CEQA Guidelines Section 15132, the following is a lkist of persons, organizations and public agencies that commented on the recirculated Draft PEIR, SCH 92083049.

Person, Organization or Public Agency	Letter Number
Dun & Martinek William Davis	1
County of Humboldt Planning & Building Department Thomas D. Conlon	2
State of California State Lands Commission Mary Griggs	3
State of California Department of Conservation Deborah L. Herrmann	4
State of California Department of Transportation Cheryl S. Willis	5
State of California Department of Fish & Game Richard Elliott	6
Humboldt Bay Municipal Water District Royal McCarthy	7
Sierra Club Redwood Chapter North Group Susie Van Kirk	8
Redwood Region Audubon Society Lewis Klein	9
David S. Kruger	10
California Trout, Inc Fred Neighbor	11
Michael Scalici	12
Humboldt County Department of Public Works Donald Tuttle	13
Rising Sun Enterprises Robert Brown	14
Trinity Associates Aldaron Laird	15

Note: Part 2 of 2 of the Proposed Final Program Environmental Impact Report, April, 1994 (gray cover) contains copies of comments received on the Draft EIR and responses to those comments. This document is available as a separate document from County Planning and is hereby incorporated by reference.

APPENDIX O

TESTIMONIALS REGARDING GRAVEL INDUSTRY

MERCER, FRASER COMPANY
General Contractors and Engineers
SINCE 1870
P.O. BOX 1006 • (707) 443-6371
EUREKA, CALIFORNIA 95502-1006

APRIL 22, 1992

THE GRAVEL FROM THE RIVERS IN HUMBOLDT, TRINITY, DEL NORTE, AND MENDOCINO COUNTIES IS THE MOST ECONOMICAL AND PRACTICAL MATERIAL FOR USE IN ALL CONSTRUCTION FOR HOMES, ROADS, SUBDIVISIONS, AND ANY OTHER CONSTRUCTION REQUIRING CONCRETE, ASPHALT MIX, OR PLAIN RIVER GRAVEL FILL.

IF CURRENT GRAVEL OPERATIONS ARE PROHIBITED FROM OBTAINING RIVER GRAVEL IN ORDER TO CONTINUE OPERATING, AND ARE FORCED TO USE OTHER SOURCES NAMELY ROCK QUARRIES OR IMPORTED MATERIALS FROM OTHER STATES THE PRICE OF THE PRODUCT WOULD BE PROHIBITIVE, ESPECIALLY TO NEW HOME BUILDERS AND TO BUILDING CONTRACTORS WHO USE CONCRETE AND ROCK PRODUCTS.

THIS ALONE WOULD DAMAGE OUR LOCAL ECONOMY, PROBABLY BRINGING ALL CONSTRUCTION TO A STAND STILL. THIS WOULD INCLUDE HIGHWAY AND BRIDGE CONSTRUCTION. THE MINING OF RIVER GRAVEL MUST CONTINUE FOR THE SAKE OF THE ECONOMY IN OUR AREA, WITHOUT THIS RESOURCE OUR ECONOMY IS CONDEMNED TO COMPLETE FAILURE.

SINCERELY,

Frederick O Bott

FREDERICK O. BOTT,
PRESIDENT

EUREKA READY MIX CONCRETE CO., INC.

EUREKA SAND & GRAVEL

P.O. Box 3568
Eureka, CA 95502-356

Mr.William O.Davis
Dun and Martinek
Attorneys at Law
730 Seventh St.,Suite B
Eureka, CA. 95501

April 23, 1992

Dear Mr. Davis,

I am sending you this letter to answer your question on alternate gravel sources in our area . At the present time there are no other sources for gravel in our local area other than the Mad,Eel,and Van Dusen rivers. I see no reason to believe this will change in the future. There are a few rock quarries locally but they deal in large,1 foot in diameter and larger, granite rock that would not be a usable material to make the products we need.

If these rivers were to be closed to gravel extraction it would have a devastating effect on our local economy. Unable to supply area contractors with concrete,sand and gravel they need to build homes and commercial buildings, we would be forced to close down. These possible river closures would also affect asphalt plants which supply materials to paving contractors.

Sincerely,

Larry McLaughlin

Larry McLaughlin
Eureka Readymix Co.

Eureka Office (707) 443-2791 • FAX (707) 443-1368
Blue Lake Plant (707) 822-2937 • Shop (707) 822-5736 • Shop FAX (707) 822-9218
Fortuna Plant (707) 725-4417 • Crescent City Plant (707) 464-3126

R.A.O. CONSTRUCTION CO., INC.

5503 WALNUT DRIVE ■ EUREKA, CA 95501 ■ 707-443-2118

APRIL 22, 1992

TO WHOM IT MAY CONCERN:

R.A.O. CONSTRUCTION COMPANY IS CONCERNED ABOUT RECENT RUMORS THAT PERMITS WILL NOT BE ISSUED FOR ANY EXTRACTION OF GRAVEL ON THE MAD RIVER AND ONLY A FEW PERMITS ISSUED ON THE EEL RIVER.

IF THIS WERE TO INDEED HAPPEN IT WOULD BE AN ECONOMICAL DISASTER TO R.A.O. CONSTRUCTION AND MANY OTHER BUSINESSES IN THIS AREA. IF A LOCAL BUSINESS COULD NOT SUPPLY US WITH SAND, GRAVEL, CONCRETE AND ASPHALT WE WOULD BE FORCED OUT OF BUSINESS. WE EMPLOY AN AVERAGE OF TEN PEOPLE FULL TIME AND ANOTHER SIX TO EIGHT PART TIME.THESE PEOPLE WOULD ALSO BE OUT OF WORK.

WE URGE YOU TO CONSIDER THE EFFECT NOT ISSUING PERMITS WOULD HAVE ON THIS COMMUNITY.

YOURS TRULY,

Rich Olson

RICH OLSON
PRESIDENT
R.A.O. CONSTRUCTION CO., INC.

DANCO
BUILDERS

April 22, 1992

To Whom It May Concern:

We are writing this letter in response to what affect the possibility of not having any local gravel will do to our business.

We are a general contractor, building residential and commercial projects. We use gravel, and concrete in our daily business.

In the event we have to import gravel, or go to a different method of construction, it could become quite costly and the new home builder may think twice about building his home in our local area. Or the commercial builder will think twice about building a new building or remodeling an old one in our area because the cost is much too high. Why build here, when you could build in Redding, Crescent City, etc. much lower.

Gravel and Concrete are the foundations of all building projects, and without it we can have no projects, and no forward growth for our County.

Sincerely,

Dan J. Johnson

3952 Jacobs Avenue, Eureka, CA 95501 • Tel: (707) 442-5911 • Facsimile: (707) 443-1946
CONTRACTOR'S LICENSE CA #500851

KRAMER PROPERTIES, INC.
1653 MYRTLE AVENUE • EUREKA, CA 95501 • (707) 444-2919

April 23, 1992

To whom it may concern:

This letter is in regard to the availability of readimix products (concrete, sand, gravel and asphalt).

We are a development/construction company and we use concrete, sand, gravel and asphalt regularly. We employee seven (7) individuals on a full-time basis. If the above mentioned readimix products were unavailable our business would be unoperational and our employees would be unemployed.

We hope this situation can be resolved and the permits issued soon.

Sincerely,

Kurt G. Kramer
President

ARCATA READIMIX

P.O. Box 4657 Arcata, California 95521

Phone (707) 822-1795

April 23, 1992

TO WHOM IT MAY CONCERN:

Immediate action is needed on our local rivers concerning the extraction of sand and gravel materials. These natural resources must be processed for use in construction of concrete and asphalt. In an already depressed and unemployed county, we need to find a balance between man and nature. If current gravel operations are not permitted, we will have to import these materials. The cost would be prohibitive. The damage to our local economy would bring construction to a halt. We cannot afford the impact this would have on our local owned businesses and their employees. The domino effect of this would be devastating to the economy and the quality of life of residents of the North coast.

Sincerely,

Bill O'Neill

Bill O'Neill
President

RESCO
construction

April 23, 1992

To Whom it May Concern:

It has recently come to my attention that permits have not yet been issued to extract gravel from the lower Mad River bar.

If this is not corrected soon, the agencies responsible for delaying this process will be making a major policy error.

Without a stable gravel supply, our local area's ability to produce gravel for asphalt and concrete will be seriously impacted. Both of these items are already in short supply, and are both necessary for maintaining our county's infrastructure.

The lower Mad River has long been a source of gravel for these purposes, and it is necessary that this continue. I understand and believe that environmental implications must be considered and we must strive for balance and fairness in our decision making and policy decisions.

This would include the impact of not harvesting the gravel - to the businesses that harvest the gravel, the employees and families that depend upon this to put food on the table and pay rent, and the end users of the gravel.

This gravel is eventually used to supply much needed housing, concrete for medical facilities, roads, employment, and a variety of other uses that benefit our society.

All of these factors should be entered into the equation.

It is my hope that action is taken soon so that these people can get back to business, and their employees can get out of the unemployment line.

Sincerely,

Jeffrey Smith
President

GENERAL CONTRACTORS

DENIS E. COSBY CONSTRUCTION
General Building and Concrete Construction
5000 West End Road, Suite #4 • Arcata, CA 95521 • (707) 822-2112
Lic. No. 437978

May 8,1992

Department of Fish and Game
Attention: Banky Curtis

Re: Gravel Extraction on local river bars

Gentlemen:

I wish to voice my concerns on the detrimental effects that closure of local rivers to gravel extraction will have.

I first want to mention that I do have concern for ecology and the environment. If I saw neglect or destructive actions purposefully taken that would harm the rivers, I would be taking these same steps in support of closure. Instead I have witnessed well planned, enacted and supervised gravel harvesting. Steps were taken to ensure water depth maintenance, flow stability and done at a time of the year for the least amount of impact on the river habitat. How much more can a business do in good faith to stay in business. Gravel is used in all phases of construction from road and foundation fill to concrete, asphalt and landscaping needs. The pressure on builders to supply affordable housing is greater than ever, yet nothing is happening to make that realistic; lumber prices through the roof, developers impact fees and escalating land prices. Gravel prices have doubled in the last two years and the outlook for gravel prices soaring is near with acceptance of a river bar closure. It comes down to jobs again: if you can't afford to build affordable housing, you can't stay in business, no work, no jobs.

The recent turn of events regarding development and the difficulty with project approval leads me to conclude that the agenda for the Audubon Society is singular: shut down development in Humboldt County completely. A narrow view which has no consideration for the welfare of the citizen and economy of Humboldt County.

Thank you for your time,

Denis E. Cosby

Denis E. Cosby
Denis E. Cosby Construction

DEC/tm

WES GREEN LANDSCAPING AND MATERIALS
5611 HEINDON RD
ARCATA, CA 95521

(707) 822-8035

May 8, 1992

Department of Fish & Game
Banky E. Curtis
Regional Manager
601 Locust St
Redding, CA 96001

Dear Mr. Curtis:

My name is Wes Green. I am an Excavating Contractor in Arcata. I am writing this letter in regards to the permits that are pending of the extraction of the gravel on the Mad River.

My company alone uses on the average of 15 to 20 thousand yards of gravel per year. With the economy and recent disaster of the earthquake, that we have had in our area, we will be using at least that much or more this year.

I would like to ask you to please issue permits to extract the gravel form the Mad River.

Thank You,

Wes Green

DUTRA TRUCKING CO., INC.
P.O. BOX 277
ARCATA, CA 95521
(707) 822-8133

May 8, 1992

Department of Fish & Game
Banky E. Curtis
Regional Manager
601 Locust Street
Redding, CA 96001

Dear Mr. Curtis:

We are a local trucking firm in the Arcata area. This letter is being written in regards to the permits that are pending of the extraction of the gravel on the Mad River.

With the current down swing in the economy and the recent damage caused by the earthquake in our area, our area could use the jobs and revenue generated by the release of the permits.

I would like to ask you to please issue permits to extract the gravel from the Mad River.

Sincerely,

DUTRA TRUCKING CO., INC.

Jim Cyphers

JDC:tls

McKenny & Sons, Inc.
General Building Contractors

2341 Fern St. • Eureka, California 95501 • (707) 443-2244

April 22, 1992

To Whom it May Concern:

We, as building constructors, are concerned with the onslaught of new found restrictions and regulations impacting the aggregate industry. The wide spread ramifications to the construction industry go without saying. Aggregate uses range from concrete (a primary structural component), sand (used in brick and tile works), to asphalt (paved roads).

The California Environmental Quality Act (CEQA) is being skewed towards a halting of aggregate removal. This is not the intended use of CEQA. Rather the CEQA process should be used to strike a **BALANCE** with all environmental concerns. The CEQA process does not specifically have to look at the economic impacts to the aggregate industry. It does, however, need to look at the environmental impacts associated with a limited supply of materials to our infrastructure. Further, secondary economic impacts such as affordable housing, the maintenance of existing road systems for traffic flow, and the construction of new infrastructures for the health and welfare of the population (the Freshwater Water Project, etc.) have to be considered.

The process for permits should be well defined. The process provides for a balance through mitigation or a statement of overriding consideration. The proper decision makers should make those tough decisions in a timely manner. We in the construction industry need the governmental agencies to work together in harmony with the aggregate industry to obtain a timely environmentally balanced resolution to the extraction process.

Thank You,

Brendan McKenny, President
McKenny & Sons, Inc.

BILL SHEPPARD
General Contractor
Cont. Lic. # 290057
P.O. Box 56
Blue Lake, CA 95525
668-5754

April 23, 1992

As a Contractor engaged in the construction of subdivisions and in the performance of Public Works improvement projects I am very concerned with any regulations or proposed regulations that may restrict the excavation and removal of river gravels in Humboldt County.

If regulations are enacted that drastically curtail and/or prohibit gravel extraction from local rivers the cost of construction will become prohibitive and will stifle our already sluggish and tenuous economy. Our local gravel companies must be allowed to continue to extract gravels from our local rivers.We don't have any other economic choice.

YOURS TRULY

Bill Sheppard

Bill Sheppard
Owner