

11. Affirm and support the public services provided by County Government which are necessary in maintaining a viable agricultural products industry.

2524 STANDARDS

1. (See Land Use Designations Section 2722 and 2723).

2530 MINERAL AND ENERGY RESOURCES

2531 Background

1. Metallic Minerals

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

Presently very little metallic mining is occurring. High production and manufacturing costs limit the prospects for commercial utilization of these minerals. There is only qualitative data available on Humboldt County's metallic minerals. However, an inventory is being done statewide by the State Division of Mines and Geology that will supply more information on the State's metallic resources. For Humboldt County the inventory is estimated to be completed by 1992.

2. Construction Materials

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

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

As a part of the data base the mineral resources map locates sand, gravel and quarry operations as well as access routes to major arterial roads. This map will be reviewed when processing permits to avoid land use incompatibilities.

3. SMARA

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

Standards prevent new mining operations from becoming nuisances to nearby communities and prevent problems of traffic, noise, water quality or visual degradation.

4. Oil and Gas

Oil and gas seeps have been known in the County since the mid-1800's. Most of these seeps are associated with the pre-tertiary beds in the Petrolia area. One of the earliest wells in California was drilled in 1862 near Petrolia, and probably 50 wells have been since drilled in that area. The oil is apparently associated with shear zones, and only about 350 barrels of oil were ever recovered. Consequently there is at present no oil production or accompanying facilities.

Onshore exploratory drilling for oil and gas has the potential to increase substantially over the next five years. The County presently has one producing dry gas field, Tompkins Hill, which is outside the coastal zone north of Fortuna. Two abandoned gas fields, Table Bluff and Grizzly Bluff, occur in the coastal zone in the Eel River Planning Area.

A variety of impacts are associated with onshore oil and gas wells: road construction and maintenance; solid and water waste disposal, including harmful, hazardous, or toxic materials; visual, noise, and safety concerns, air quality, habitat disruption, and, site restoration.

5. Hydropower

Section 3300 of the General Plan describes the surface waters in the County. Enormous quantities of water flow in creeks and streams which could be developed into hydroelectric generating sites. The estimated potential of the sites for which there have been preliminary applications filed as of May 1982 is about 250 million k.w.h. per year or about 1/3 of the electricity presently used in Humboldt County. However, this interest in hydro-development in the County is a recent occurrence and presently hydro facilities are not yet operating in the County. Matthew's Dam at Ruth Lake was completed by Humboldt Bay Municipal Water District in early 1983 and will be supplying slightly over one megawatt of electricity or about 1% of the area's electricity needs.

A recent study, An Analysis of Small Hydroelectric Planning Strategies, lists many potential negative environmental impacts of hydroelectric development, including: soil damage and erosion and siltation caused during construction, loss of fish and wildlife habitat, and incompatibility with recreational uses. However, these impacts are usually more severe with larger projects.

Access to roads and transmission lines are the major barriers to full development of environmentally sound hydroelectric projects.

6. Wind Energy

There are several areas in Humboldt County with topographical features indicating excellent wind potential which could possibly support a few, very small scale wind systems as well. There has been little actual monitoring of wind; however, monitoring of Arcata and Eureka shows very low potential at both sites.

A recent report, Wind Energy Assessment for Northwestern California: Three Interim Reports, indicates developable wind potential at three of the six sites tested in Humboldt County--specifically Barry Ridge, Cape Mendocino and the Mattole River.

Actual development of the wind resources in the County has been quite limited. Only three wind machines are operating and selling at least some of the output to PG&E. These are located in Arcata and Eureka which are not good wind sites. Numerous family sized units, not feeding electricity back into the utility grid, are also operating throughout the County, especially in remote locations without electric services.

Since most of the meteorologically identified wind resource areas are in remote areas of the County, major limitations to development will also be access to adequate transmission lines and access to the sites.

7. Biomass Energy

Perhaps the most abundant alternative energy resource in the County is biomass or energy production from burning decay, or fermentation of wood, crops and/or biological wastes.

Producing electricity from lumber yard wood waste has been well developed by most of the area's lumber mills. Several are able to meet all of their internal electricity needs and sell surplus power to PG&E. Others utilize the waste heat produced to supply heat for mill processes and operations; even further reducing their requirements for non-renewable energy sources.

Because of the high utilization of lumber mill wood waste any added biomass-to-energy facilities will have to secure wood fuel supplies, the most likely being the very large amount of slash and logging residues which are presently burned or landfilled. Economical collection methods are being developed. More information is needed on how much potential is available from this source.

Biomass conversion to liquid fuels such as alcohol might be marginally economical to develop and has the added problem of a low and unstable price for the finished product.

Biomass conversion to electricity has environmental side effects of air and water pollution, large water use, and truck traffic. Most of these problems can, however, be adequately controlled and would probably not pose a barrier to development in Humboldt County.

8. Solar Energy

One of Humboldt County's most abundant renewable resources is solar energy. This area has lagged behind the rest of the state in development of this resource, probably because of the misconception that solar use would not work because of the foggy conditions along the coast.

Low temperature uses, such as greenhouses, and hot water systems are cost effective in many residential applications. Multi-family buildings and electric hot water heating displacement are the two most cost effective applications for solar hot water heating.

New construction could be designed to substantially increase the use of solar energy to heat houses. See Section 2400, Housing, for policies relating to solar energy use in planning and designing new construction. Photovoltaic cells convert solar energy to electricity. Most other areas of the state have had less development in this technology than in Humboldt County because costs for the technology are still high. However, in remote locations without present electric services photovoltaics are a viable alternative. Very little is known about how many remote homes have photovoltaic systems, however, manufacturers and dealers report the highest level of sales in this county than anywhere else in the state.

Solar energy uses have few, if any, associated environmental problems and could be considered the cleanest source of energy yet developed. Because of the potential for solar energy in the county, it is important to protect solar access in planning development.

9. Conservation

Conservation makes our energy use more efficient and is often overlooked as a resource. It is a resource because it frees up energy to be used efficiently somewhere else. As a resource it is diffuse, being located in every energy using building or process or vehicle. The sections of this plan dealing with housing and circulation further elaborate on the benefit of conservation and what would be done to encourage it.

2532 GOAL

1. To assure the long-term availability of adequate supplies of mineral resources, to protect mineral resource areas from incompatible land uses and to minimize adverse environmental impacts.
2. To move toward self-sufficiency in energy use, with maximum reliance on local renewable resources for local energy needs.

2533 POLICIES

1. Maintain and update maps of the County's identified mineral deposits.
2. Plan future development such that it will not interfere with the utilization of identified mineral deposits.
3. Ensure adverse environmental effects are prevented or mitigated to the fullest extent feasible and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses under the General Plan.
4. Encourage the production and conservation of minerals, while preserving to the maximum extent feasible the values relating to recreation, watershed, wildlife, range and forage, science, and aesthetic enjoyment.
5. Ensure elimination of residual hazards to the public health and safety.
6. Prevent the disruption of community character in siting and planning mineral resource extraction operations.
7. Require mineral haul routes to avoid incompatible areas such as landslides, highly erodible soils, residential areas, and schools, if feasible.
8. Permit conditions for mineral extraction operations should address allowable dust and noise levels, hours of operation, fencing, traffic, access, setbacks and other means to reduce conflicts with adjacent development.
9. Extraction of instream sand gravel is not to exceed the average annual replenishment level (annual bedload), except when the bedload left from a previous flood is greater than the average annual replenishment or if the projects emphasize fishery enhancement, flood control or bank protection.
10. Bank protection shall be permitted to: (1) Maintain necessary public or private roads, (2) Protect principal structures in danger from erosion, (3) Protect lands designated Agriculture-Exclusive from

erosion.

11. Evaluate significant water diversion projects which would reduce the replenishment rate of gravel in streams as to the impact they would have on local mineral supply in Humboldt County.
12. The operation of borrow pits on Resource Production Lands (timber, agriculture) for non-commercial purposes is considered a principle use necessary to maintain the primary use of the land.
13. The subdivision to create parcels which are for the primary purpose of providing road and construction materials shall be consistent with this plan.
14. Oil and gas development shall be permitted consistent with the following:
 - A. The development is performed safely and consistent with the geologic conditions of the well site.
 - B. New or expanded facilities related to such development are consolidated, to the maximum extent feasible and legally permissible, unless consolidation will have adverse environmental consequences and will not significantly reduce the number of producing wells, support facilities, or sites required to produce the reservoir economically and with minimal environmental impacts.
 - C. Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.

2534 STANDARDS

1. Surface mining - See Surface Mining and Reclamation Act Ordinance, Title III, Div. 9, County Ordinance #1373.
2. Oil and gas.
 - A. Development associated with onshore oil and gas wells shall be permitted by conditional use permit in agricultural, timber, rural lands, industrial general and resource related industrial land use classifications.
 - B. A permit will be required for each drill site and a separate permit will be required for production facilities. Additional wells proposed for an approved drill site may be administratively approved provided that they can be accomplished within the limitations and conditions fo the original use permit for the drill site.
3. In submitting information for the initial study, the applicant shall include information sufficient to determine that the project will be so sited and designed to mitigate to the maximum extent feasible adverse environmental effects. Specifically the following shall be provided for:
 - A. A Plot Plan for the entire area under lease or ownership, showing the relationship of the proposed facilities to ultimate potential development, and a map showing the relationship of contours, buildings, structures, and/or natural features;
 - B. the relationship of proposed facilities to existing facilities;

- C. procedures for the transport and disposal of all solid and liquid wastes to meet discharge requirements of the Regional Water Quality Control Board;
 - D. grading plans and procedures for minimizing erosion;
 - E. where public views area affected by production facilities landscaping plans and measures for minimizing visual impacts;
 - F. fire prevention procedures;
 - G. air emission control measures, and
 - H. oil spill contingency procedures;
 - I. for production facilities, a phasing plan for the staging of development with indicates the approximate anticipated timetable and production levels for the project;
 - J. procedures for the abandonment and restoration of the site which provide for removal of all equipment, disposal wastes, and recontouring, reseeding and planting to conform with surrounding topography and vegetation.
 - K. In general, drill sites should generally not be established at a density greater than one per eighty (80) acres.
 - L. All solid and liquid wastes shall meet the discharge requirements of the Regional Water Quality Control Board.
 - M. Project shall meet all applicable air quality regulations.
 - N. All earthen sumps or other depressions shall be regraded to restore the area to its original condition.
4. Timberland Conversion - Must meet the requirements of the Forest Practices Act.

2540 PUBLIC LANDS

2541 Background

Lands in public ownership constitute a significant portion of the total land area of Humboldt County. Federal and State agencies are responsible for managing over 630,000, or nearly 28 percent of the total area of the County. This percentage falls far below the statewide average though, where the Federal Government alone owns almost 50 percent of the land in California. Public lands are managed under numerous different principles, ranging from resource protection and production to recreation. At the State level, and to some extent, at the Federal level, there is a significant amount of legislation passed each year that affects public lands. The legislation can also affect Humboldt County's planning and enforcement programs. While the County has no direct regulatory control over projects proposed on State and Federal lands, it does have the opportunity to comment on environmental documents and specific actions.