CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
710 E STREET • SUITE 200
EUREKA, CA 95501-1865
VOICE (707) 445-7833
FACSIMILE (707) 445-7877

W15a

DATE: Prepared March 29, 2012 for the April 11, 2012 hearing

TO: Coastal Commissioners and Interested Parties

FROM: Charles Lester, Executive Director
Robert Merrill, North Coast District Manager
Melissa Kraemer, Coastal Planner

SUBJECT: **Appeal No. A-1-HUM-12-005** by James Bisiar of the decision by Humboldt County to grant a coastal development permit with conditions to the Humboldt Trap & Skeet Club for the construction of a new skeet field approximately one half mile north of the intersection of Lycoming Avenue and Airport Road in the McKinleyville area of Humboldt County (APN 511-351-09).

Appeal filed: March 1, 2012
49th day: April 19, 2012

I. STAFF RECOMMENDATION

Staff recommends that the Commission determine that **NO substantial issue** exists with respect to the grounds on which Appeal No. A-1-HUM-12-005 was filed.

Staff recommends a **YES** vote on the following motion & resolution:

> **Motion & Resolution:** I move that the Commission determine and resolve that Appeal Number A-1-HUM-12-005 does not present a substantial issue with respect to the grounds on which the appeal has been filed under Coastal Act Section 30603 regarding consistency with the certified Local Coastal Program and/or the public access policies of the Coastal Act.

Passage of this motion and resolution will result in a finding of no substantial issue and adoption of the following findings. The local action will become final and effective. The motion passes only by an affirmative vote of the majority of the appointed Commissioners present.

II. APPEAL PROCEDURES

Pursuant to Coastal Act Section 30603, this approval is appealable to the Commission because the approved development is not designated as the principal permitted use under the certified coastal zoning regulations. The grounds for an appeal are limited to an allegation that the approved development does not conform to the standards set forth in the certified local coastal program (LCP) and, if the development is located between the first public road and the sea (in this case it is not), the public access policies set forth in the Coastal Act.

Coastal Act Section 30625(b) requires the Commission to hear an appeal unless it determines that no substantial issue exists with respect to the grounds on which the appeal has been filed.[1] Commission staff has analyzed the County's Final Local Action Notice for the development (Exhibit No. 4), the appellant's claims (Exhibit No. 5), and the relevant requirements of the LCP (Appendix A) and is recommending that the Commission find that the appeal raises no substantial issue with respect to the grounds on which the appeal has been filed.

In this case, because staff is recommending no substantial issue, the Commission will hear arguments and vote on the substantial issue question. Proponents and opponents will have three minutes per side to address whether the appeal raises a substantial issue. The only persons qualified to testify before the Commission on the substantial issue question are the applicant, the appellant and persons who made their views known before the local government (or their representatives), and the local government. Testimony from other persons regarding substantial issue must be submitted in writing. It takes a majority of Commissioners present to find that no substantial issue is raised.

If the Commission determines that the appeal does raise a substantial issue, the Commission would continue the *de novo* portion of the appeal hearing to a subsequent meeting.

III. FINDINGS

A. Project Background & Setting

The Humboldt County Planning Commission approved the subject coastal development permit (County CDP No. 07-37) on November 3, 2011 for the construction of a new skeet field at the existing trap and skeet facility located near the Arcata-Eureka Airport approximately one half mile north of the intersection of Lycoming Avenue and Airport

[1] The term "substantial issue" is not defined in the Coastal Act or its implementing regulations. In previous decisions on appeals, the Commission has generally been guided by the following factors in making substantial issue determinations: (1) the degree of factual and legal support for the local government's decision; (2) the extent and scope of the development as approved or denied by the local government; (3) the significance of the coastal resources affected by the decision; (4) the precedential value of the local government's decision for future interpretations of its LCP; and (5) whether the appeal raises only local issues or those of regional or statewide significance.

Road in the McKinleyville area of Humboldt County (APN 511-351-09) (Exhibit Nos. 1 and 2). According to the County, approval of the subject CDP is the first discretionary permit action ever granted for the nearly 60-year-old facility. On November 18, 2011, appellant James Bisiar appealed the Planning Commission's decision to the County Board of Supervisors. On February 7, 2012 the Humboldt County Board of Supervisors denied the local appeal, completing the County's action on the coastal development permit.

The project as approved by the County allows for the development of one new skeet field at an existing trap and skeet facility that currently has a total of five shooting fields. The development of the new skeet field involves construction of a 14-foot-tall "high house" and a 7-foot-tall "low house" (which hold the "traps" that launch the shooting targets) and an approximately 150-foot-long paved walkway. The facility is currently developed with a club house, two trap fields, two skeet fields, and one sporting clays field.

The subject site is located in an area that is planned and zoned for public facility uses under the County's certified LCP (Public Facility-Rural with Alquist-Priolo Fault Hazard, Coastal Wetlands, and Design Review Combining Zones [PF/G,W,D]). "Community Assembly," which is defined in Section 313-171.2 of the certified coastal zoning regulations in part as including "*activities typically performed by, or at, the following institutions or installations:…public parochial, and private non-profit clubs, lodges, meeting halls, and recreation centers…*", is listed as one of the principally permitted uses allowed in the PF zone.

The existing trap and skeet club facility has been in continuous operation at the subject site since the early 1950s. The facility is located on property owned by Humboldt County, approximately 13 acres of which are leased to the applicant for the trap and skeet facility. Over its decades of operation, the total number of shooting fields at the facility has fluctuated somewhat, but it has never exceeded six, which is equivalent to the number of fields currently in existence (5) plus the new skeet field approved by the County under the subject CDP.

The facility is typically open to the public on Sundays and Wednesdays from 9:00 a.m. to 3:00 p.m. Hours are extended until dusk on Wednesdays during the summer. During the balance of the week, during daytime hours, the facility is open to club members and invited guests only. Additionally, the facility is open one night per month during the summer months. In addition to use by the general public and club members, various law enforcement agency personnel and community groups use the facility on Saturdays for training, and hunter safety courses are held in the club house on a regular basis. There is no fee for the use of the facility, but all users (members and non-members) must purchase tokens, which in turn are exchanged for "birds" (clay shooting targets).

As mentioned above, the subject site is located on property owned by the County immediately adjacent to the regional airport. Land uses surrounding the County property primarily include rural residential development to the north, east, and south. To the west of the site is Highway 101, with the beach and open coastline to the road's immediate west.

The subject site itself is located on an uplifted marine terrace approximately 200 feet above mean sea level. The area is mostly open grassland habitat with scattered coniferous and shrub vegetation. The Department of Fish and Game (DFG) and the U.S. Fish and Wildlife Service documented rare plant habitat (coast checkerbloom, *Sidalcea oregana* ssp. *eximia*) throughout the greater airport property, including at the subject facility, as recently as 2010. Coast checkerbloom has a California rare plant rank of 1B.2 (i.e., it is considered "fairly endangered" in California and elsewhere according to the DFG and California Native Plant Society).

The County granted its approval of the CDP subject to various special conditions (see Exhibit No. 4), including, but not limited to, conditions requiring implementation of a sampling and analysis plan for stormwater and groundwater approved by the North Coast Regional Water Quality Control Board, which will determine the appropriate interval for harvesting of lead shot fallout at sufficient frequency to ensure water quality protection; protection of, and avoidance of impacts to, rare plant ESHA during future lead harvesting activities; and exterior lighting restrictions.

B. Filing of Appeal

One appeal was filed by James Bisiar (Exhibit No. 5). The appeal was filed with the Commission in a timely manner on March 1, 2012, within 10 working days of receipt by the Commission of the County's Notice of Final Action on February 15 (Exhibit No. 4).

C. Analysis of Appellant's Reasons for Appeal

As set forth in Section 30603 of the Coastal Act, after certification of its LCP, an appeal of a local government-issued CDP is limited to allegations made on the grounds that the approved development does not conform to the standards set forth in the certified LCP or the public access policies of the Coastal Act.

The appellant, James Bisiar, lists various reasons for this appeal, which can be grouped into three primary categories: (1) noise impacts and inconsistencies in information related to the applicability of specified noise standards that were provided by County staff to the public and presented at local hearings on the subject CDP; (2) various development and improvements to the facility have occurred without the benefit of a coastal development permit; and (3) conflicts of interest (on the part of the author of the noise impact analysis conducted for the subject development and on the part of certain County Supervisors who voted to deny the local appeal of the subject CDP) improperly affected the County's action on the CDP application. Each contention is analyzed in more detail below.

As discussed below, the Commission finds that only one contention raised by the appellant is valid grounds for appeal. Further, the contention raised by the appellant that is valid grounds for appeal raises no substantial issue with respect to the grounds on which the appeal was filed.

(1) Appellants Contentions That Are Valid Grounds for Appeal

(a) ALLEGATIONS RAISING NO SUBSTANTIAL ISSUE

(i) Noise Impacts

With respect to the noise issue, the appellant claims that (a) in its findings for approval of the CDP, the County relied on standards included in a non-certified draft updated noise ordinance rather than standards of the 1977 Noise Element, which is included as an appendix to the certified land use plan (referred to as the McKinleyville Area Plan or "MAP"); (b) no mitigation measures to minimize noise impacts were included as conditions of approval of the subject CDP; (c) the approved development will lead to increased noise levels that exceed thresholds allowed under the certified LCP; and (d) there were inconsistencies in the information presented at the hearing relating to the applicability of specified noise standards and how decibel levels were calculated.

The appellant cites Section 3.28(G)(1) of the McKinleyville Area Plan (MAP), which states in applicable part that "*The Airport Land Use Commission will define and formally establish an airport safety zone, adopt specific noise and safety standards, and apply such standards to all new development within these zones.*" [2] However, the policies contained in Section 3.28(G) relate to airport safety zones; specifically they address limiting residential density around airport runway approach and transitional areas for safety purposes and clustering new development and using the planned unit development technique in the airport approach and transitional zones to mitigate health and safety concerns. Section 3.28(G) does not contain policies or standards that specifically relate to coastal resources or to non-airport-related noises. The approved shooting range facility does not affect development density around airport runway approach and transitional areas. Therefore, the appellant's contentions related to Section 3.28(G)(1) do not raise a substantial issue of consistency of the approved project with the certified LCP.

The appellant also cites Appendix B of the MAP, which lists various documents of the Humboldt County General Plan that are applicable to the MAP, including the two-volume Noise Element adopted by the County Board of Supervisors on August 3, 1977.

The 1977 Noise Element (excerpt attached as Appendix B) contains various policy and implementation recommendations "…to ensure that [County] residents are free from excessive noise and abusive sounds…" The Noise Element does not, however, contain policies or standards that specifically relate to the protection of coastal resources, and the appellant's contentions do not relate to any coastal resource issue or allege any coastal resource impacts. Rather, the appellant's contentions relate to the residents' loss of the quiet enjoyment of their property.

---

[2] In 1980 a document entitled "Draft Technical Report, Humboldt County Airport Master Plan" by Hodges & Shutt, Aviation Planning Services, was adopted for use by the County. The document contains background information on airport planning issues, off-airport planning issues, and discussions of airport/land use compatibility policies (noise, airspace, and safety). The document recommended certain airport/land use compatibility policies. When the County adopted the MAP in 1982, it incorporated the 1980 Airport Master Plan into Section 3.28(G), the Arcata-Eureka Special Study Area. A more recent Airport Land Use Compatibility Plan was completed in 1993. Although the 1993 Plan is based on updated safety and noise information for the airport, that updated version was never amended into the LCP and thus is not the standard of review for the review of coastal development permits in certified areas.

Regarding the more specific noise contentions raised by the appellant and identified above, the County did not rely on standards included in a non-certified draft updated noise ordinance rather than in the 1977 Noise Element included as an appendix to the MAP. The County findings (Exhibit No. 4) state:

> *"The Ldn is the only measurement identified in the general plan regarding noise. Ldn is the average day night measurement of noise. The noise compatibility matrix [Table 8 of the Noise Element excerpt in Appendix B] was generated based on noise level contours for highways, elected county roads and county airports. While this measurement is useful for continuous noise sources, it will not be an adequate measurement of impulse noise such as gun fire. Because the Ldn is an average and the Trap and Skeet Club operates for limited hours throughout the day, the Ldn will not exceed the General Plan standard"* (i.e., "clearly acceptable" to "normally acceptable" noise exposure levels for residential areas).

In addition, even though not certified, a commonly accepted standard, currently under consideration for the General Plan Update, proposes a sound reading based on the Lmax, which is a reading of the maximum noise level of short term or instantaneous noise sources. The acceptable level of short term or instantaneous noise in residential areas is 65 dBA between 6:00 a.m. and 10:00 p.m. In this matter, all readings fell below 65 dBA.

Further, in its findings for approval of the subject CDP, the County analyzed the project's consistency with the Noise Element of the existing County general plan (Table 8 of the Noise Element excerpt in Appendix B), and the County found that the increased noise associated with the new skeet field would not exceed the plan's specified standard (see Exhibit No. 4). Therefore, the County did not require any additional mitigation measures related to noise as conditions of approval of the CDP.

None of the appellant's specific contentions allege coastal resource impacts. Thus, the significance of the decision on coastal resources is very low, and the appeal raises only local issues rather than issues of regional or statewide significance. Therefore, for all of the above reasons, the Commission finds that this appeal claim does not raise a substantial issue of conformance of the project as approved with the certified LCP.

(2) Appellant's Contentions That Are Not Valid Grounds for Appeal

(a) <u>Alleged Unpermitted Development</u>

The appellant alleges that various improvements to the trap and skeet facility have been developed without the benefit of a CDP, including some improvements that allegedly have resulted in increased noise levels that have contributed to the appellant's loss of the quiet enjoyment of his property (which is located in Westhaven approximately 3.5 miles north of the subject site). The alleged unpermitted development includes construction of a new sporting clay field, a new bunker with new stands, a fence, and vegetation removal independent of the development approved by the County. None of this allegedly unpermitted development was addressed in or approved after-the-fact under the CDP application now subject to appeal (or in any other CDP application).

In its review of the appeal, the Commission must consider the project as approved. The alleged unpermitted development is not part of the project as approved and therefore is not

directly before the Commission on appeal. Further, as discussed above, even if the approval had included the unpermitted development, as previously discussed, the Commission finds that the noise issues raised in the appeal do not raise coastal resource issues, and there is no allegation that the noise impacts associated with the approved development impact sensitive species or other coastal resources. Therefore, the Commission finds that this appeal contention is not a valid ground for appeal and does not raise a substantial issue of conformance of the project as approved with the certified LCP.

(b) Conflicts of Interest

The appellant's contention that conflicts of interest on the part of the author of the noise impact analysis conducted for the subject development and on the part of certain County Supervisors who acted on the appellant's local appeal of the approved development does not present valid grounds for appeal. The appellant contends that the noise impact analysis conducted for the subject development was written by a user/member of the trap and skeet club facility, it was not peer-reviewed, and it employed flawed methodology. The appellant also contends that certain County Supervisors who voted to deny the local appeal of the subject CDP possibly have conflicts of interest that should have resulted in their recusal from voting on the matter. The appellant claims that some Supervisors personally use the trap and skeet facility and have family members and/or relatives that may have associations with the applicant.

The Commission finds that these contentions regarding the procedural processing of the application do not present valid grounds for appeal, as the contentions do not allege an inconsistency of the project that was approved with any policy of the certified LCP.

Conclusion

For the reasons stated above, the Commission finds that there is adequate factual and legal evidence in the record to support the County's approval of a CDP for this project when it found that the project is consistent with the relevant LCP policies. Approval of this CDP will not create an adverse precedent for future interpretations of the LCP, and the project will not adversely impact coastal resources. The Commission therefore finds that the appeal raises no substantial issue with respect to the grounds on which it was filed.

APPENDICES

Appendix A: Excerpts of LCP policies and standards
Appendix B: Excerpt from the 1977 Noise Element of the County General Plan

EXHIBITS

1. Regional Location Map
2. Vicinity Map
3. Aerial Photos
4. Notice of Final Local Action & County Findings for Approval
5. Appeal
6. Sound Study Report

Exhibit 4
Part 2

APPENDIX A

HUMBOLDT COUNTY LCP POLICIES & STANDARDS

Applicable policies and standards of the certified land use plan (McKinleyville Area Plan) related to the issue of noise:

3.28 HAZARDS

… … …

G. Arcata-Eureka Airport Special Study Area

1. New development within the Arcata-Eureka Airport approach and transitional zones shall be consistent with the approved off-site development guidelines contained in the adopted County Airport Master Plan. The Airport Land Use Commission will define and formally establish an airport safety zone, adopt specific noise and safety standards, and apply such standards to all new development within these zones.

2. Generally, within the airport approach and transitional zones the plan recommends an overall residential density of 1 unit permit 2-1/2 acres. Based on this recommendation, the land use designation Residential Low Density within the transitional and approach zone is amended to include the plan density of 0-8 units per acre. As amended, the planned land uses and densities will not frustrate or prejudice the Airport Land Use Commission's task of implementing the Airport Master Plan.

3. The clustering of new development or planned unit development technique shall be encouraged for new development proposed in these zones to mitigate health and safety concerns.

Reference to the 1977 Noise Element in Appendix B of the MAP reads as follows (emphasis added):

HUMBOLDT COUNTY GENERAL PLAN DOCUMENTS APPLICABLE TO THE McKINLEYVILLE AREA PLAN

PLAN/DOCUMENTS	*BOARD OF SUPERVISORS AND STATUS*	*STATUS IN RELATIONSHIP TO THE McKAP*[3]
Northern Humboldt County General Plan Circulation System.	*Adopted 5/14/68 Res. No. 68-49*	*The MCKAP supersedes the Land Use Element and reflects the*

[3]Pursuant to Section 30007.5 the Coastal Act requires that during policy conflicts, on balance protect coastal resources.

1985

McKinleyville coastal portions Community General Community Plan	*Adopted 6/30/77 Res. No. 77-152*	*The MCKAP supersedes the of the adopted McKinleyville Plan.*
Housing Element	*Adopted 1/3/78 Res. No. 78-6*	*By reference included.*
Noise Element (Two Volumes)	*Adopted 8/3/77*	*Where applicable*
Open Space/ opportunity for a Conservation has satisfied Element	*Adopted 12/27/73 Res. No. 73-164*	*To date there has been no policy comparison. The MCKAP habitat protection conservation requirements of the California Coastal Act. Other types of policies contained in the OS-C Element are supplementary to the MCKAP and are at local discretion. Some OS-C policies have been superseded by subsequent documents - i.e. Noise, Seismic/Safety. (All County planning documents are currently in the process of being consolidated into a single General Plan framework document.)*
Recreation Element Humboldt County	*Adopted 7/12/76 Res. No. 76-92*	*Where applicable.*
Seismic Safety and Public Safety Elements (two volumes)	*Adopted 7/31/79 Res. No. 79-76*	*By reference included*

APPENDIX B

1977 NOISE ELEMENT OF THE HUMBOLDT COUNTY GENERAL PLAN (Excerpt)

(Excerpt)

NOISE ELEMENT

COUNTY OF HUMBOLDT

GENERAL PLAN

Prepared by
Humboldt County Planning Department
April 1977

TABLE OF CONTENTS

NOISE POLLUTION

A. GENERAL

A fundamental understanding of the few basic concepts described within this report is essential to ensure that appropriate and responsive noise abatement techniques are applied judiciously.

The following discussion provides a brief overview of the basic terminology and notations used to describe noise exposure in general. A glossary in the Technical Report explains in greater detail most of the basic terms used in this report.

Common noises experienced by each of us daily may range from a whisper to a locomotive train passing by. The range of sound energy represented by these two events is so large that it cannot be represented mathematically without using numbers in the millions and billions. To avoid this inconvenience, sound levels have been compressed in a standard logarithmic scale called the decibel (dB) scale. The reference level for the scale, 0 dB, is not the absence of sound, but the weakest sound a person with very good hearing can detect in an extremely quite place. The most important feature of the decibel scale is its logarithmic nature. Using a logarithmic scale, an increase from 0 to 10 dB represents a tenfold increase in sound energy, but an increase from 10 to 20 dB represents a hundred fold increase, and from 20 to 30 represents a thousand fold increase over 0 dB.

The average range of sounds that we are commonly exposed to generally fall in the 30 to 100 dB range. However, not all sound waves affect us equally. The human ear is more sensitive to high pitch sounds, such as a whistle, than it is to low pitch sounds, such as a drumbeat.

To account for this effect in noise measurements, it is necessary to use an electronic filter in sound level meters which acts as the equivalent of the human ear in filtering out some of the lower frequencies of sound. This filter is called the A-scale weighting network, and is abbreviated by the A in the notation dBA.

A-scale decibel measurements can be taken at any time in the community to record the sound levels of various noise sources. However, to develop an indicator of varying sound levels occuring over the 24-hour day, it is necessary to average the sound occuring at each moment throughout the day. The Day-Night Noise Level (L_{dn}) is the result of this procedure, and gives a general, single-number index of noise exposure over an average 24-hour day. In computing the L_{dn} levels, it is also necessary to apply a weighting to noise that occurs at night to account for the

greater sensitivity that people have to noise at night. L_{dn} noise levels can be developed for road traffic, as well as for rail and air traffic for which the measure has been used traditionally. As examples of typical L_{dn} noise level ranges, Table 2 gives ranges of L_{dn} decibel exposures ranging from quiet rural areas to an area under the flight path of a major airport.

Both current and forecasted noise levels are presented in graphic and tabular form in the Technical Report. These noise levels are expressed in A-weighted decibels in terms of Day-Night Noise Levels (abbreviated as L_{dn}) and Community Noise Equivalent Levels (abbreviated CNEL).

B. PRESENT NOISE ENVIRONMENT

The existing noise environments in Humboldt County are composed of sounds from many sources. The noise sources evaluated were road, rail, and air traffic. Schools, and hospitals were also evaluated as noise sensitive land uses to determine if potentially incompatible noise levels impinged on them. The following are summary conclusions regarding the existing noise environment in the County.

**With several exceptions noted below, Humboldt County provides a relatively quiet environment for most of its 105,000 permanent residents.

**The dominate source of outdoor noise is road traffic. Certain segments of the state and local highway system contribute significantly more to localized noise problems than all other noise sources combined. Of all roads evaluated for noise exposure within the unincorporated areas, the following highways were found to create the highest noise levels: U.S. 101 from Scotia to Trinidad, State 299 from Arcata to Blue Lake, Central Avenue in McKinleyville and Myrtle Avenue - Old Arcata Road connecting Eureka and Arcata.

**Three of the nine County Airports have flight activity levels large enough to generate noise levels of some concern. However, only at the Eureka-Arcata Airport in McKinleyville, do noise levels of 60 dBA CNEL and higher extend to private urban lands beyond the airport property.

**Rail traffic on the Northwestern Pacific Railroad line is infrequent, but does create some of the highest single-event noise levels reached in the County. Principal impacted communities include Arcata, Loleta and Eureka.

**The Technical Report contains a summary of the most prominent sources of noise within each of the communities of Humboldt County. For information on the noise environment within and adjacent to the incorporated communities see the Noise Elements prepared by each of the seven cities within the County.

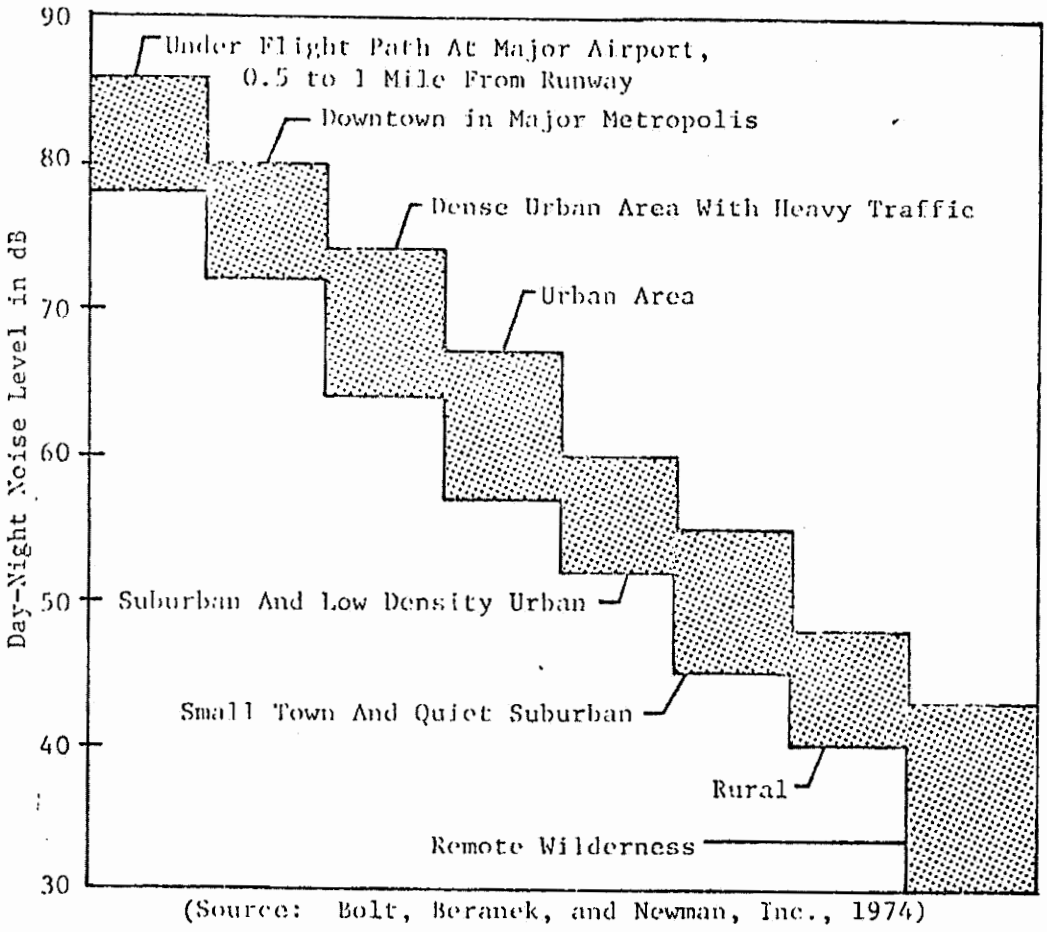
C. FUTURE NOISE ENVIRONMENT

Planning for noise control at the local government level is predicated on images of what the future noise environment may be like. In general, two principle factors will control environmental noise levels over the next several decades. These are (1) the level of use transportation facilities receive, based on estimates of demand, and (2) advances in noise reduction technology, better application of existing technology and the extent of compliance with existing and anticipated source controls. It may be safe to assume that noise emissions will be reduced at the source to some unquantified extend. It may be more prudent to assume that any reduction achieved by improved source controls could easily be counterbalanced by increased traffic volumes.

Since forecasting future noise levels in absolute rather than general terms is dependent on modeling techniques which are in turn based on tenous assumptions and future traffic projections, any serious effort to quantify the future noise environment could be more readily undertaken as an adjunct to the preparation of a comprehensive Regional Circulation and Transporation Plan.

TABLE 2

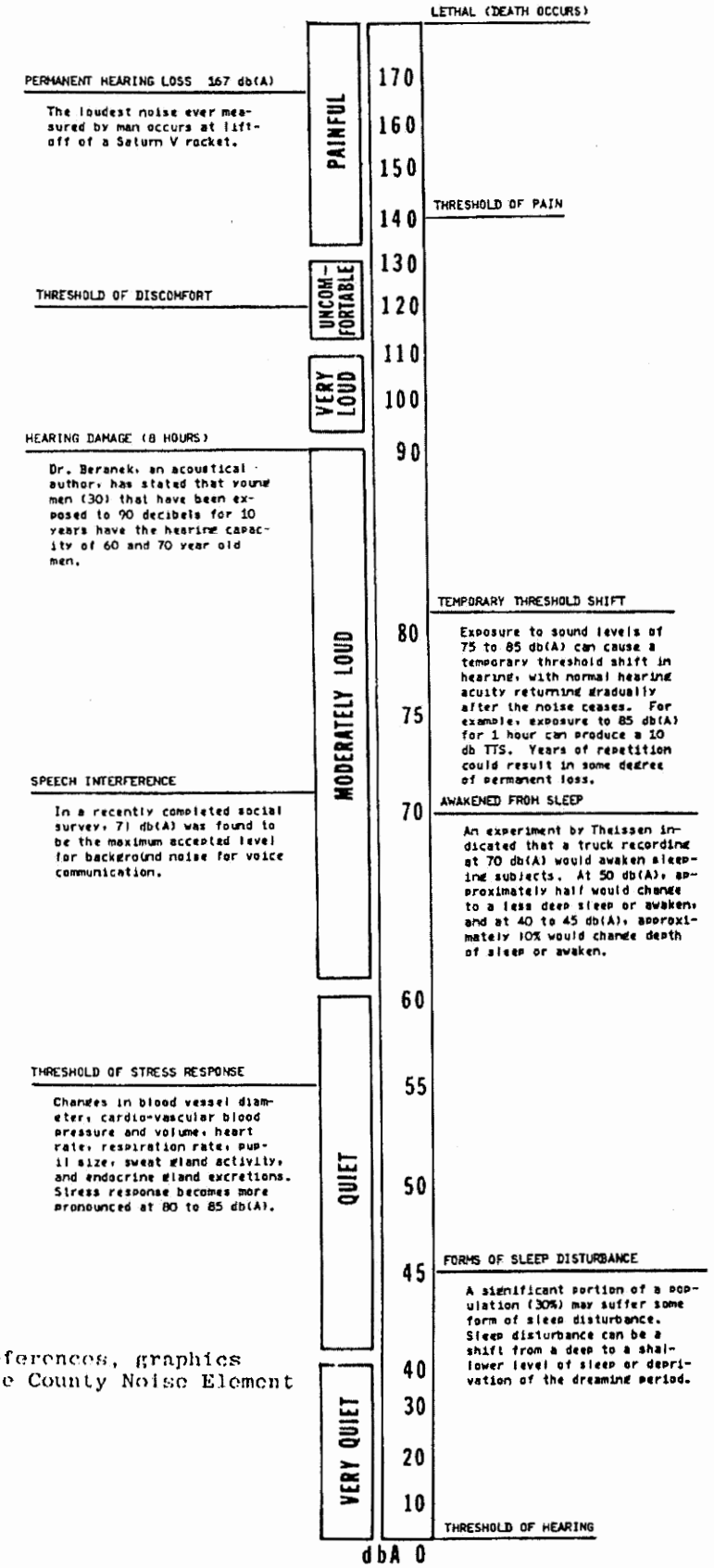
TYPICAL L_{DN} NOISE LEVEL RANGES



(Source: Bolt, Beranek, and Newman, Inc., 1974)

TABLE 3

IMPACT OF NOISE ON PEOPLE



Source: Various references, graphics from Tulare County Noise Element

AIRCRAFT NOISE

FEDERAL

Aircraft noise is being reduced by the combined efforts of the Environmental Protection Agency (EPA), the Federal Aviation Administration (FAA), Federal Department of Transportation (DOT), jet engine manufacturers, the airlines and airport authorities. Solutions being considered include:

--Reduction of engine noise on new and old aircraft.

--Instituting flight paths that affect the least number of people.

--Instituting a takeoff and landing procedure that includes steep ascent and descent, to keep the aircraft at high altitudes over populated areas.

--Require throttle cutbacks over highly noise-sensitive areas.

--Restrict the number of flights; especially at night.

--Pass sensible zoning restrictions for land use near airports.

--Relocate airports away from urban areas.

In response to the problems of aircraft noise, the Noise Control Act requires the Environmental Protection Agency to conduct studies of:

--The adequacy of FAA flight and operation noise controls.

--The adequacy of present aircraft noise emission standards (including recommendations on retrofit).

--The implications of achieving levels of cumulative noise exposure around airports.

--Additional measures available to airport operators and local governments to control noise.

The NCA also requires the EPA to submit to FAA recommendations for regulations which EPA feels are necessary to protect the public health and welfare. However, FAA retains the power to prescribe and amend aircraft noise measurement and noise emission regulations. This is to insure that the regulations proposed by EPA will not interfere with aircraft safety.

Under the FAA Act of 1958 the Civil Aeronautics Board (CAB) is directed to regulate the economic aspects of the airline industry. In addition, with the passage of the National Environmental Policy Act of 1970, CAB was given the authority to deny a certificate authorizing air transportation if it finds that the adverse impact on the environment outweights whatever factors point to the grant of the certificate. (Although NCA gives EPA the authority to regulate noise from aircraft engaged in commerce in conjunction with FAA, the NCA specifically asserts that the primary responsibility for control of noise rests with State and local governments.

STATE

In California, the Public Utilities Code (Section 21669 et. seq.) provides noise standards to protect the public from aircraft noise and to resolve the incompatibilities between airports and their neighbors. The regulations are applicable to all operations of civilian aircraft and aircraft engines which produce noise, to the degree that such operations are not already limited by federal law. The regulations serve as additions to remedies provided for by other laws and are not intended to prevent local govenments from setting more stringent standards.

LOCAL

The State requires each County to determine which of the airports within its boundaries are required to initiate aircraft noise monitoring in accordance with the State regulations. The County is responsible for validating the airport's noise monitoring, enforcing regulations and submitting quarterly reports to the State Department of Aeronautics including: a map of the noise impact boundary, daily CNEL measurements and the total number of recorded violations of the noise limits.

State law finds that the noise levels within the noise impact boundary are compatible with the following uses:

--Agricultural, airport industrial and commercial property.

--Property subject to aviation easement for noise.

--Zoned open space.

--High rise apartments with adequate insulation and central air conditioning.

--Acoustically treated single-family homes.

Section 21670 et. seq. of the Public Utilities Code requires each county to form an Airport Land Use Commission responsbile for formulating a comprehensive land use plan for all Airport Influence Areas (Areas adjacent to airports which are impacted by noise levels exceeding State and Local standards.).

MOTOR VEHICLE NOISE

FEDERAL

On the National level, the Federal Aid Highways Act was amended in 1970 by P.L. 91-605 directing the Secretary of Transportation to promulgate standards for highway noise levels compatible with different land uses and not to approve any location unless adequate noise control measures have been implemented.

The NCA requires that EPA, in consultation with the Department of Transportation, be responsible for making regulations to govern noise emission from the operation of surface carriers and motor vehicles engaged in interstate commerce. State and local governments are prohibited from establishing noise emission limits different from the applicable federal standards unless the EPA Administrator determines that local conditions necessitate different regulations.

STATE

California's vehicle noise control program has consisted of the enforcement of maximum, new-vehicle noise emission standards and the regulation of vehicle operation. The state has the responsibility for setting noise emission standards for all motor vehicles subject to registration (Appendix F). The California Highway Patrol has the prime responsibility for enforcing these regulations. However, local police can also enforce them.

Section 216 of the California Streets and Highways Code requires the State to reduce the noise levels from freeways in certain kinds of schools. The State measures the noise level produced by the traffic on a state freeway in the classrooms, libraries and multi-purpose rooms of schools adjacent to the freeway. If the noise level generated by normal traffic exceeds the standards of this section, the State is responsible for noise abatement in the affected rooms.

Any motorboat in inland waters shall conform to the noise levels set within Section 2:654.05 of the California Harbor and Navigation Code, with the exception of those motorboats in a race or regatta when authorized by a permit issued by the local authority having jurisdiction over the area.

POLICY AND IMPLEMENTATION RECOMMENDATIONS

IT IS THE GOAL OF THE COUNTY OF HUMBOLDT TO ENSURE THAT ITS RESIDENTS ARE FREE FROM EXCESSIVE NOISE AND ABUSIVE SOUNDS. PRIMARY EMPHASIS SHOULD BE PLACED ON PROTECTING THE GENERAL PUBLIC FROM NOISE LEVELS WHICH MAY BE HAZARDOUS TO HEARING. SECONDARY EMPHASIS SHOULD BE THE MINIMIZATION OF NOISE-INDUCED STRESS, ANNOYANCE, AND ACTIVITY INTERFERENCE.

POLICY RECOMMENDATIONS

A. Land use noise compatibility standards should be established for general planning and zoning purposes.

B. Provision should be made for the identification and evaluation of potential noise problem areas on a continuing bases.

C. Existing and potential incompatibile noise levels in problem areas should be reduced through land use planning, building and subdivision code enforcement, and other administrative means.

D. Existing and potential incompatible noise levels in problem areas should be reduced through operational or source controls where the County has responsibility for such controls.

E. A local interagency program should be developed, for the general public in the nature, extent, and solutions to noise problems in Humboldt County.

F. Coordinate noise control activities with those of other responsible jurisdictions.

G. Provide for periodic review and revision of the Noise Element.

IMPLEMENTATION RECOMMENDATIONS

A. Land use noise compatibility standards should be established for general planning and zoning purposes.

   1. The Land Use/Noise Compatibility Standards provided in Table 8 should be adopted and used in identifying potential noise problem areas, and in reviewing environmental documents.

TABLE 8

LAND USE/NOISE COMPATIBILITY STANDARDS

LAND USE CATEGORY	Maximum Interior Exposure, Ldn*	LAND USE INTERPRETATION FOR Ldn VALUE 55 65 75 85
Residential - Single Family, Duplex, Mobile Homes	45	
Residential - Multiple Family, Dormitories, etc.	45	
Transient Lodging	45	
School Classrooms, Libraries, Churches	45	
Hospitals, Nursing Homes	45	
Auditoriums, Concert Halls, Music Shells	35	
Sports Arenas, Outdoor Spectator Sports		
Playgrounds, Neighborhood Parks		
Golf Courses, Riding Stables, Water Rec., Cemeteries		
Office Buildings, Personal, Business and Professional	50	
Commercial - Retail, Movie Theaters, Restaurants	50	
Commercial - Wholesale, Some Retail, Ind., Mfg., Util.		
Manufacturing, Communications (Noise Sensitive)		
Livestock Farming, Animal Breeding		
Agriculture (except Livestock), Mining, Fishing		
Public Right-of-Way		
Extensive Natural Recreation Areas		

*Due to exterior sources
(Source: Bolt, Beranek, and Newman, Inc., 1974)

CLEARLY ACCEPTABLE:

The noise exposure is such that the activities associated with the land use may be carried out with essentially no interference. (Residential areas: both indoor and outdoor noise environments are pleasant

NORMALLY ACCEPTABLE:

The noise exposure is great enough to be of some concern, but common constructions will make the indoor environment acceptable, even for sleeping quarters. (Residential areas: the outdoor environment will be reasonably pleasant for recreation and play at the quiet end and will be tolerable at the noisy end.)

NORMALLY UNACCEPTABLE:

The noise exposure is significantly more severe so that unusual and costly building constructions are necessary to ensure adequate performance of activities. (Residential areas: barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.)

CLEARLY UNACCEPTABLE:

The noise exposure at the site is so severe that construction costs to make the indoor environment acceptable for performance of activities would be prohibitive. (Residential areas: the outdoor environment would be intolerable for normal residential use.)

2. The unincorporated communities of Humboldt County should be given an opportunity to modify the Land Use/Noise Compatibility Standards set forth in Table 8 to achieve a community environment consistent with local desires. Such local modifications should be limited to the normally acceptable to normally unacceptable range only.

3. Noise performance standards should be incorporated into zoning and other appropriate ordinances.

B. Provision should be made for the identification and evaluation of potential noise problem areas on a continuing bases.

1. County-wide Noise Contours Maps and Noise Level Tabulations should be developed based on major transportation and stationary noise sources. As a priority, a noise impact mapping program should be initiated with emphasis on drafting noise contour maps at useable scales (1"=200' to 1"=600') for critical segments of U.S. 101 between Van Duzen River and Little River.

2. Existing land uses should be reviewed to identify potential noise problems.

3. An on-going noise monitoring program should be established to identify and evaluate noise levels in the County. County and cities should pool their resources to reduce the cost of personnel and equipment required of this program.

4. Noise conflict mapping should be conducted for land use categories not included in this analysis, particularly residential land uses.

C. Existing and potential incompatible noise levels in problem areas should be reduced through land use planning, building and subdivision code enforcement, and other administrative means.

1. Proposed developments in the County should be located on a Noise Contour Map to determine if there is a potential impact on the development or, conversely, if the development will increase noise levels in a relatively quiet area. The development review and environmental review processes should include a further analysis in areas of potential impact.

2. Discourage development of noise sensitive uses in incompatible noise-impacted areas.

3. Strictly enforce all existing noise control regulations, including building and subdivision laws.

4. In existing or future development in noise impacted areas, encourage or require through ordinance that adequate site planning and insulation measures are taken to reduce noise to the established levels.

5. The County Airport Land Use Commission (ALUC) should formulate comprehensive land use plans that will provide for the orderly growth of each of the three major public aiports (Eureka-Arcata, Murray and Rohnerville) and the area surrounding the airports and will safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. The commission plan should include a long-range master plan that reflects the anticipated growth of the airports during at least the next 20 years. In formulating the Airport Land Use Plan, the commission should develop height restrictions on buildings, specify use of land, recommend specific zoning, and determine building standards, including soundproofing adjacent to airports, within the planning area.

D. Existing and potential incompatible noise levels in problem areas should be reduced through operational or source controls where the County has responsibility for such controls. Some examples of specific techniques which could be used include:

1. Locate routes for use by heavy trucks away from noise sensitive land uses.

2. Seek to restrict the type of aircraft allowed to operate at the County Airports if certain aircraft are found to emit excessive noise levels.

3. Limit the number of daily operations at the Airports and/or the time of operations if excessive noise results from the operations.

4. Implement operational controls (e.g. flight path modification) for specific aircraft if those aircraft emit excessive noise.

5. Consider noise abatement of stationary sources in cases of excessive noise emissions.

E. A local interjurisdictional program should be developed for the education of the general public in the nature, extent and solutions to noise problems in Humboldt County.

1. An information release program should be developed by the County and Cities in concert with the Humboldt County Association of Governments (HCAOG) to familiarize residents of Humboldt County with the Noise Elements and noise problems in general.

2. Developers, builders, and home owners should be provided with specific design information to reduce noise levels in new and existing developments. Early consultations with developers regarding potential noise problems should be held prior to and during the permit application process.

3. A noise information library should be maintained for both the general public and those with technical backgrounds involved in noise control.

F. Coordinate noise control activities with those of other responsible jurisdictions.

1. Encourage the State Department of Transportation (CALTRANS) to incorporate noise reduction methods in new and existing road construction.

2. Coordinate noise monitoring and project evaluation activities with those of the Cities within the County, and CALTRANS.

3. Encourage the development and use of a uniform noise evaluation scheme at all levels of government.

G. Provide for periodic review and revision of the Noise Element.

1. The Noise Element shall be reviewed within six (6) months of adoption by the Review Committee (G-2) and at least every two years thereafter and should be comprehensively revised every five years or sooner if major changes in the noise environment occur.

2. Immediately after the adoption of the Noise Element, an adhoc Review Committee shall be established to: (1) review the administrative implications of the Noise Element, (2) to clarify the roles and responsibilities of various County Departments which are involved either directly or indirectly with noise problems and solutions and, (3) to report their findings directly to the Board of Supervisors together with a recommended prioritized program to implement the Noise Element.

This Review Committee shall consist of a representative from the Planning Department, Public Works Department, Health Department and the Building Inspection Department together with others as may be designated by the Board of Supervisors. The Review Committee Report shall be submitted to the Board of Supervisors within six (6) months of adoption of the Noise Element.

3. The Noise Element should be reviewed when revisions or preparation of the following plans or elements occur: Airport Land Use Plan, Land Use Element, Circulation Element, Housing Element, Community General Plans and the Regional Transporation Plan.

TABLE OF CONTENTS

HUMBOLDT COUNTY GENERAL PLAN
NOISE ELEMENT PART II

*Note: Technical Supplements will be filed and available at the following County Departments: Building Inspection, Health, Planning and Public Works

INTRODUCTION TO NOISE

A. THE DYNAMICS OF SOUND

A persons's acoustical environment consists of the sounds heard at any particular instance in time. The sound may be pleasant and welcome or annoying and undesired. It is this latter unwanted sound that is commonly called "noise".

This section of the report introduces the basic characteristics of the phenomena of sound and discusses the qualitative and quantative components of the noise measuring schemes used to describe the major sources of noise in Humboldt County.

Sound is defined as a mechanical form of radiant energy which is transmitted by longitudnal pressure waves in air or another medium. To illustrate, consider the vibration of a tuning fork. As a tong of the fork moves in one direction, it compresses the air particles in its path producing an area of condensation. As the tong reverses direction, the air particles left in its wake spread out resulting in an area of rarefaction. This movement or propogation of air particles is a form of wave motion in which the displacements are along the direction of the wave motion and is termed longitudinal wave motion. These alternate compressions and rarefactions cause small fluctuations in atmospheric pressure which are repeated in subsequent layers of air extending outward from the plate. When the pressure variations strike the ear drum, it vibrates in response to the changes in pressure. The disturbance is carried through the inner ear to the brain where it is interpreted as sound.

Sound waves have two principal characteristics: frequency (or pitch) and amplitude (or intensity).

Frequency is measured by the number of sound waves passing a point in one second. This measure is termed "cycles per second" or "Hertz" (Hz). In general, the average person can hear sounds with frequencies from about 16 to 20,000 Hz. Sound waves below 16 Hz fall in the realm of infrasonics, and cannot be heard. Ultrasonics refers to sound waves above 20,000 Hz which generally cannot be heard either.

Amplitude is a measure of the height or depth of sound waves above and below a median line on a diagram of a sound wave. It is the intensity or magnitude of the sound, and is measured in decibels (dB). The decibel system is a relative logarithmic scale of sound pressure which is based on human hearing. The scale has a number of important features. Its basic reference point is the weakest sound which a person with very good hearing can detect in a quiet place. This quantity of sound is assigned

the value 0dB. Since the range of sound pressure which the ear can detect is so great, it is necessary to mathematically compress that range on a logarithmic scale of 0 to about 180. The most important aspect of this scale is that it does not progress arithmetically or linearly. That is, while a 10dB sound is ten times as intense as a 0dB sound, 20dB is 100 times as intense as 0dB (rather than 20 times), and 30dB is 1000 times as intense as 0dB (rather than 30 times).

Another important feature of the decibel scale is that sound levels are not directly added when they are combined. For example, if one truck emits 65dB while idling, parking another truck producing 65dB next to it does not generate a total noise level of 130dB. Rather, the total noise level would be about 68dB. The basis of this is the logarithmic nature of the decibel scale, and it is an important feature to remember when considering an area exposed to more than one source of noise.

B. "A" WEIGHTED SOUND LEVELS

One of the most important reasons for measuring the frequency of noise is that the ear does not perceive all frequencies of sound equally. People not only distinquish the high-frequency from the low-frequency components in noise, but they are normally more sensitive to sounds in the upper frequencies than in the lower frequencies. Thus it takes a greater magnitude low frequency sound to be perceived as equal in loudness to a high frequency sound. This fact is taken into consideration in noise measurement equipment by the use of an electronic filter in sound level meters that approximate the response of the human ear. Such measures are made by using the A scale of a meter, and are denoted by the letter A in the abbreviation dBA. Other measurement scales are the B and C scales which discriminate less against the lower frequencies, and therefore show somewhat higher decibel readings than the A scale.

C. MEASURING NOISE

1. Ldn

In recent years, various agencies of Federal and State governments have either required or used a number of different noise rating schemes, which has often resulted in confusion and misinterpretation by both government administrators and the public. A survey of Noise Elements prepared by the Cities of Humboldt County reveals that the proliferation of noise rating schemes is also evident at the local level, thus detracting from the ability of local governments to effectively communicate and coordinate their efforts towards a comprehensive solution to regional noise problems.

At present, there is no common denominator or uniformly-accepted single-number index of noise exposure. However, the most promising noise exposure index to be developed in recent years is the Day-Night Noise Level (L_{dn}).

The L_{dn} is based on two premises regarding human response to sound. The first is that humans will respond to a steady noise over a given period of time in the same way that they will respond to a time-varying noise with an equivalent amount of sound energy as the steady noise. The second premise is that humans are generally more sensitive to noise during the night than during the day.

The dominant characteristic of transportation noise is that it is not steady. There are constant fluctuations which may be widely separated in time. At any given moment near any major highway, it may be relatively quiet, but when traffic volumes or speeds increase that quiet quickly changes. Therefore, it is not appropriate to measure noise at any given moment and call that the noise level of the source. A better approach is required to account for the time-varying nature of the sound. Such an approach, however, would yield a large number of statistics to show the day, night, weekday, weekend, fair and foul weather differences in noise levels. Such a large number of factors make noise level mapping and noise control programs extremely difficult, if not impossible to accomplish.

The problem of time-fluctuating noise levels is further complicated by the fact that people are exposed to different sources of noise as they move from place to place in the community. For example, a typical factory worker spends time in a relatively quiet residential setting during the night, drives to work in high noise traffic, works around loud machinery all day, except for a quieter period at lunch, and then returns home. This pattern of exposure to different noise levels increases the number of descriptive parameters needed to evaluate the total noise "dosage" of people as they move through the day, and complicates the task of setting standards to protect health and welfare.

To avoid a large number of noise indices, it became necessary for acousticians to develop single-number indicators. As the basis of such indicators, it has been shown that humans respond to steady noises in generally the same way as to fluctuating noises with equal energy content. The level of a constant sound which has the same sound energy as does a time-varying sound is termed the Equivalent Sound Level (L_{eq}).

The Day-Night Noise Level (L_{dn}) is based on the L_{eq} and the premise that noise at night is more annoying than daytime noise. This is primarily a reflection that most people sleep during the night. The L_{dn} uses the A-scale weighted L_{eq} as the basic expression of noise levels, over a 24-hour period, but applies a 10dB penalty to the noise which occurs during the night hours (defined as 10:00 p.m. to 7:00 a.m.). This means that the method makes noise levels measured at night 10dB higher than they actually are. A summary definition of the L_{dn} is: The A-weighted average sound level in decibels during a 24-hour period with a 10dB weighting applied to nighttime sound levels.

The considerations discussed above form the basis of the rationale for selecting the L_{dn} as the primary noise evaluation scheme for the Noise Element. In summary, the L_{dn} has the following desirable characteristics:

1. The L_{dn} utilizes A-scale measurements of noise corrected for time-variance and nighttime exposure, and, therefore, is a reliable single-number index of human response to noise.

2. The measure can be applied to any source of environmental noise, thereby providing a common scale to compare (and add) noise exposure from different sources.

3. The measure can be easily calculated from sound level meter recordings.

4. The measure can be used in predictive methodologies to estimate future noise levels.

2. CNEL

The Community Noise Equivalent Level (CNEL) is virtually identical to the L_{dn}, but for one factor. Rather than dividing the 24-hour day into two parts, the CNEL scheme adds a third period, the evening, which is defined as 7:00 p.m. to 10:00 p.m. Noise events during this evening period are assigned an additional 3dB weighting.

CNEL and L_{dn} noise levels usually agree within plus or minus 1dB for the same noise. The evening noise weighting has not been shown to yield a better indicator of human response to sound, and is considered an unnecessary complexity in the scheme.

The CNEL scheme was used in this report for noise exposures of aircraft in flight in compliance with the requirements of California Administrative Code, Title 4, Sub-chapter 6, for the public airports in the County. This Code section presently mandates the use of the CNEL scheme in evaluating noise around airports.

NOISE SOURCES

A. GENERAL

Within the past generation, the general level of noise within the United States has steadily climbed at an average rate of about one (1) decibel per year since 1949. Increased motor vehicle and human populations coupled with the introduction of many labor and time saving devises associated with contemporary human activities, have cumulatively contributed to the inevitable increase in the level of noise. Of all the varied sources of noise within the County, noise generated by the major components of the regional transportation system is deemed to be of paramount concern, since it is almost always the loudest, most continous, and impacts more people than any other source. Thus the emphasis of this Element is to focus almost exclusive attention on transportation noise consisting of road, rail and air traffic.

B. ROAD TRAFFIC NOISE

Within Humboldt County and the local cities, road traffic is the most significant source of noise in terms of the size of the impacted-area. This results simply from the fact that there are greater volumes of road traffic than air and rail traffic combined, and from the fact that major roads exist in many urban areas where there is no airport, rail line or major stationary noise source.

Road traffic noise is typically dominated by emissions from automobiles and heavy diesel trucks. There are five other categories of vehicular noise sources: motorcycles, sports cars, light trucks, large gasoline-engine trucks, and buses. Generally, motorcycles and sport cars are noisier than automobiles because of higher engine speeds and less adequate muffling. Light trucks emit noise levels that are similar to automobiles, while the larger gasoline-fueled trucks are noisier than cars but quieter than diesel-fueld trucks of equal size. As a group, these five types of vehicles normally comprise only a small percentage of the total daily traffic flow. Since their noise emissions are within the range defined by auto and truck emissions, their noise is generally assumed to be contained within the mix generated by cars and trucks.

The principal components of both automobile and truck noise are three: the engine, exhaust and tires. Fans operating as part of the cooling system are a major contribution to engine noise; hot gases escaping out of the exhaust pipe creates noise in that area of the vehicle; and the escape of air from between tire treads

and the road surface is the source of tire noise. Four major factors control the noise level of vehicles: speed, acceleration, road grade and road surface. Generally, vehicular noise levels increase directly with increases in speed, acceleration, road grade and with rougher road surfaces.

Caltrans is currently preparing noise contour tabulations expressed as Day-Night Average Sound Levels (L_{dn}) for all State Highways in Humboldt County and for several of the most heavily traveled county roads. (Table 1) When complete, the noise level data will be incorporated into the Noise Element. It is intended that as new, more detailed or more reliable noise exposure data becomes available it will automatically be appended as a Technical Supplement to the Noise Element.

Detailed noise impact studies for Myrtle Avenue-Old Arcata Road and Central Avenue in McKinleyville have recently been completed as part of the county road improvement program. The noise impact standards and the means of expressing noise levels (L_{10}) in these studies follow specifically the noise evaluation and reporting requirements set by the Federal Highway Administration which differ from State Planning Law which gives the local jurisdictions the option of expressing noise as L_{dn} or CNEL. Since the use of a simple conversion factor is not applicable in this case, Caltrans has agreed to use the raw data to generate L_{dn} readings for both roads.

C. RAIL TRAFFIC NOISE

After a long and productive history of serving the region there remains only one major active railroad in Humboldt County--the Northwestern Pacific Railroad line (subsidiary of Southern Pacific) which runs generally parallel to U.S. 101 from the Eel River north of Weott to the city of Arcata. The line passes by a number of small riverside communities on the Eel River, serves the lumber town of Scotia, skirts around the city of Rio Dell, passes through the fringe of the city of Fortuna, bisects the community of Loleta, enters the industrial water front within the city of Eureka--the major rail yard for the California Northwest Coastal Region, continues north to bisect the city of Arcata to finally join with the Arcata and Mad River Railroad--a short-line connection to Korbel.

Noise produced by rail traffic in the County is characterized by a small number of distinct noise events which are widely separated in time, but which are intense for the duration of the train pass-by. Such single-event noise levels often exceed 100dB at 100 feet from the track for a period of 60 to 90 seconds. However, the highest documented rail operation noise level in the

County reaches 80 CNEL at the railroad yard, adjacent to the Eureka fishing boat basin and 75 CNEL at the crossing of the Eureka slough. For the balance of the route through the greater Eureka area rail traffic noise levels at distances of 200-300 feet from the track seldom exceed 70 CNEL.

A preliminary land use study was undertaken as part of the railroad noise analysis to identify the location of noise-sensitive land uses (schools and hospitals) within a narrow (500') noise corridor in the unincorporated urban areas. No such noise impacted facilities were noted.

Future proposals to locate schools, hospitals, rest homes and other noise sensitive facilities, as well as residential subdivisions within 500 feet of the Northwestern Pacific Railroad track should be critically examined at the specific project level with principal emphasis given to the evaluation and resolution of noise and vibration impacts.

D. AIR TRAFFIC NOISE

Aircraft noise exposure for each of the nine (9) public airports in Humboldt County (Table 2) were calculated in 1974 by the California Division of Aeronautics based on input data provided by the Humboldt County Department of Aviation. A complete set of airport noise contour maps is included in the Technical Supplement.

The noise contours were prepared using a reliable mathematical model designed to approximate real noise levels for small and medium sized airports to an acceptable tolerance of five (5) dBA (plus or minus). For general planning purposes this level of accuracy is sufficient and consistent with the 3dBA level of tolerance associated with State and local highway noise modeling programs. In general the accuracy of the noise contours generated by mathematical modeling techniques is highly dependent on the reliability of the input data. The following list described the typical input data used in calculating airport noise levels.

**Aircraft type (jet, propellor, horse power rating).

**The average number of operations (takeoffs and landings) broken into day, evening and nighttime operations.

**Flight patterns.

**Orientation of runway(s) and percentage of use.

TABLE 2

AIRPORT ANALYSIS

AIRPORT	NOISE CONTOUR MAP	ANNUAL FLIGHT OPERATIONS 1975	1990	PROP	JET	RUNWAY LENGTH	GENERAL PLAN DESIGNATION IN VICINITY OF AIRPORT SITE	EXISTING LAND USE IN VICINITY OF AIRPORT SITE
Arcata County		15,000	20,000	X	X	6,000'	Site: Airport N: Low density residential, commercial E: Low density residential, industrial S: Low density residential W: Low density residential, park and recreation	N: Commercial, Clam Beach Park, low density residential E: Medium and low density residential, grazing, commercial S: Medium density residential, motel W: Sparse residential agriculture, school, Clam Beach Park
Dinsmore		2,000	3,000	X		2,700'	Site: Water Development Project Site (W-D) N & W: W-D, Conservation-Watershed E & S: W-D, Public-Multiple Use (SRNF)	N & E: Timber, sparse residential S: Commercial, Van Duzen River W: Timber, Tourist commercial
Garberville		4,000	5,000	X		2,850'	Site, N, E, S, W: Conservation-Watershed	N & W: Timber, sparse residential S & E: Low density residential, Eel River
Hoopa		3,000	4,000	X		2,250'	Site: Airport N: Natural Resources, Water Area E: Hospital, golf course, timber and thick underbrush, resort area S: Natural resources, water area, residential estates W: Water Area, grazing crops and open uses, timber and thick underbrush	N: Sparse residential, timber E: Low density residential, hospital S: Low density residential, Trinity River, public services
Kneeland		4,500	5,500	X		2,400'	Site: Airport N & E: Timber & thick underbrush S & W: Dispersed houses	N & W: Timber S & E: Sparse residential, timber
Murray Field		25,000	30,000	X		3,000'	Site: Community Facility N: Freeway, general industrial, agriculture S & E: Agriculture W: Limited industrial, agriculture	N: Highway 101, lumber mill, Humboldt Bay S: Agriculture W: Commercial, industrial E: Agriculture, auto dealer
Orleans		2,000	3,000	X		2,000'	Site: Grazing, crops and open uses N: Residential estates E: Commercial, school S: Highway 96, commercial W: Low density residential, commercial	N: Undeveloped E: School, church, trailer park, commercial S: Highway 96, trailer park W: Trailer park, lumber mill, multi-family residential
Rohnerville		11,000	12,000	X		4,000'	Site: Public Facility N, E, S, W: Exclusive agriculture	N & W: Sparse residential, agriculture E: Low density residential, agriculture S: Agriculture
Shelter Cove		2,000	3,000	X		3,300'	Site: Public Facility N: Residential low density, central commercial, conservation-recreation E: Residential low & high density, conservation-recreation S: Residential high & low density, central commercial W: Residential low density, central commercial	N, W, S: Undeveloped residential and common lots E: Undeveloped residential lots

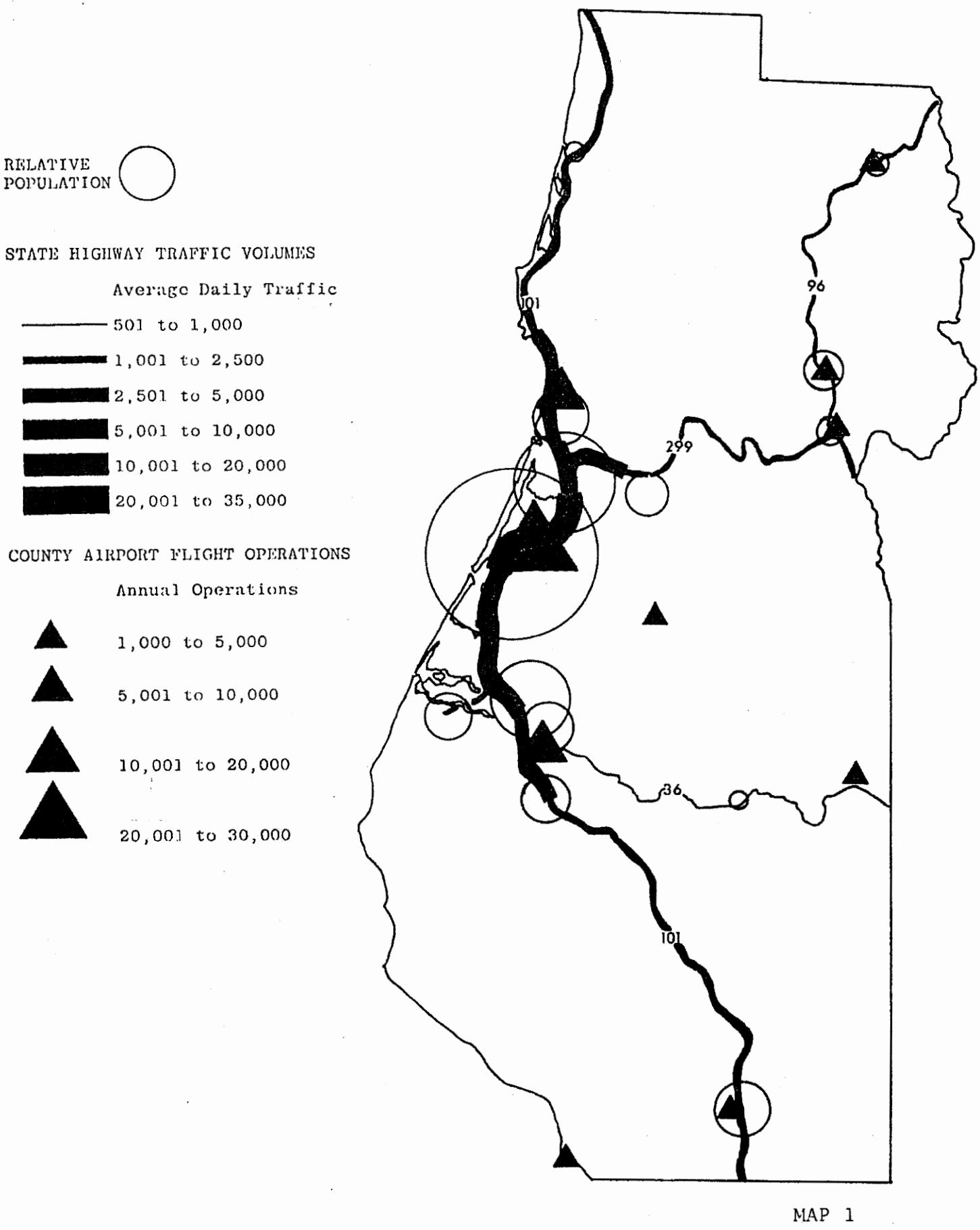
TABLE 2 AIRPORT ANALYSIS

MAPPING POTENTIAL NOISE CONFLICT AREAS

The semi-abstract map on the following page shows the geographic relationship between urban population center and transportation activity levels. It: 1) illustrates the premise that noise in Humboldt County is typically an urban problem; 2) underscores the significance of the regional transportation system as the principal source of outdoor noise; 3) identifies, at a regional planning level, potential noise conflict areas; 4) should serve as a general guide to focus subsequent community noise studies and implementation programs into those areas of principal concern.

Areas of noise conflict can be identified and should be mapped by overlaying noise contours and tabulations contained in the Noise Element on a map of existing and planned land uses developed as part of the community planning program. Following adoption of the Land Use/Noise Compatibility Standards, an overlay of select noise level contours on large scale land use maps (1" = 200' to 1" = 600') will readily provide a direct measure of the extent and magnitude of the noise conflicts at the parcel level.

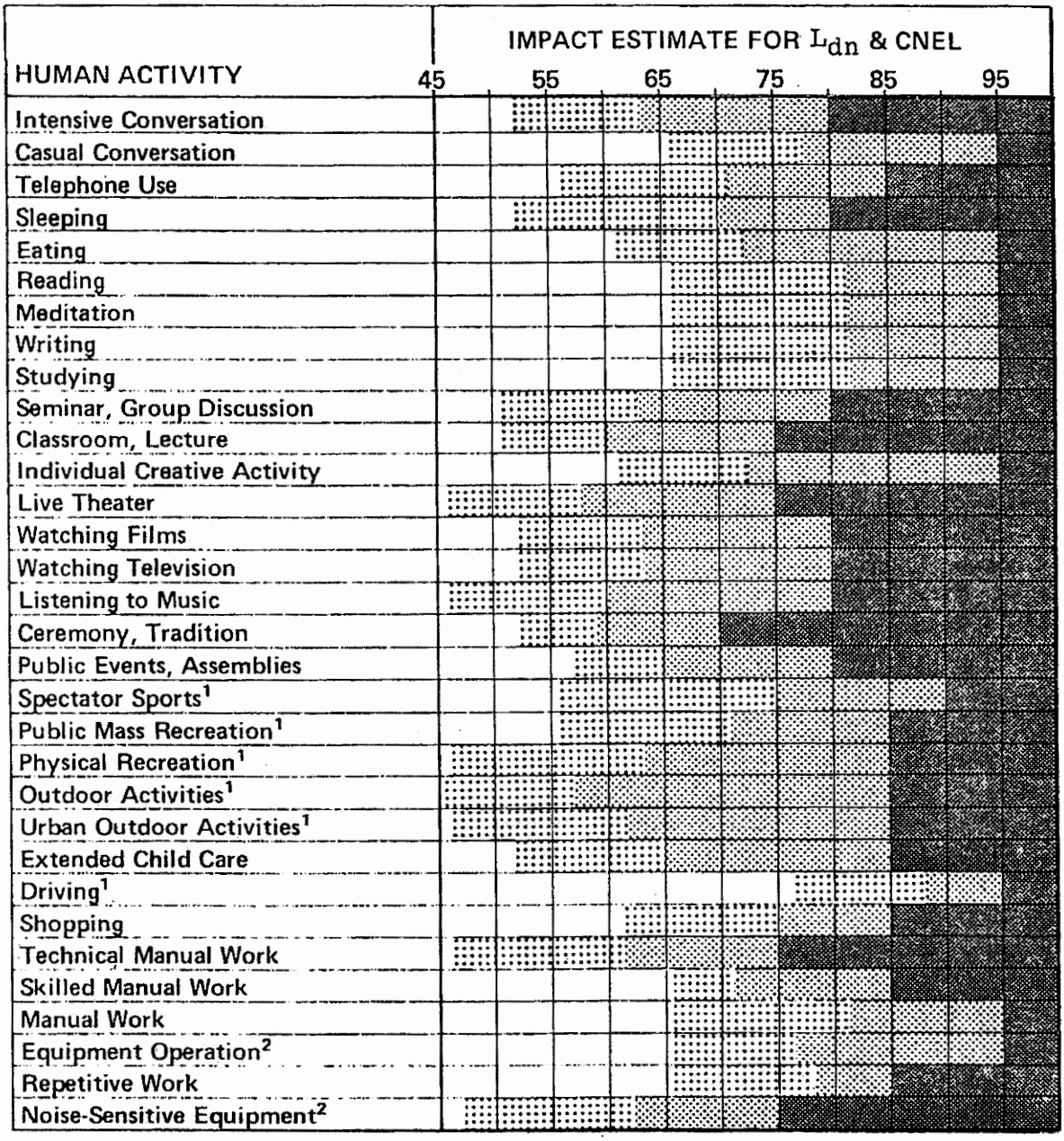
An initial effort using similar but not detailed noise-conflict mapping techniques was incorporated in the preparation of the McKinleyville Community Plan at a scale suitable for planning purposes. Further refinements to the noise mapping program should include the identification and plotting of all noise sensitive land uses (residential areas, schools, churches, hospitals, etc.) in relationship to major noise corridors at map scales suitable for rapid project review purposes for each community. Table 3 identifies the most prominate noise sources within the communities of Humboldt County.


RELATIVE POPULATION
STATE HIGHWAY TRAFFIC VOLUMES
Average Daily Traffic
501 to 1,000
1,001 to 2,500
2,501 to 5,000
5,001 to 10,000
10,001 to 20,000
20,001 to 35,000
COUNTY AIRPORT FLIGHT OPERATIONS
Annual Operations
1,000 to 5,000
5,001 to 10,000
10,001 to 20,000
20,001 to 30,000
101
96
299
36
101

MAP 1

APPENDIX G

NOISE IMPACT ON HUMAN ACTIVITIES



LOW IMPACT: Activity can be performed with little or no interruption from noise, though noise may be noticeable above background levels.

MODERATE IMPACT: Activity can be performed but with some interference from noise due to level or frequency of interruptions.

SERIOUS IMPACT: Activity can be performed but only with difficulty within this noise environment due to level or frequency of interruptions.

CRITICAL IMPACT: Activity cannot be performed acceptably in the noise environment.

SOURCE: U. S. Department of Housing and Urban Development, Aircraft Noise Impact; Planning Guidelines for Local Agencies, by Wilsey & Ham and Bolt, Beranek and Newman, 1972.

1. No allowance for structural insulation.

APPENDIX H

SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

(Source: U.S. Environmental Protection Agency, 1974)

EFFECT	LEVEL	AREA
Hearing Loss	$L_{eq}(24) \leq 70$ dB	All areas
Outdoor activity interference and annoyance	$L_{dn} \leq 55$dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$dB	Other indoor areas with human activities such as schools, etc.

Explanation

$L_{eq}(24)$ - Equivalent A-weighted Sound Level over a 24-hour period.

L_{dn} - Day-Night Average Sound Level - the 24-hour A-weighted Equivalent Sound Level, with a 10 decibel penalty applied to nighttime levels.

*PART III. TECHNICAL SUPPLEMENT

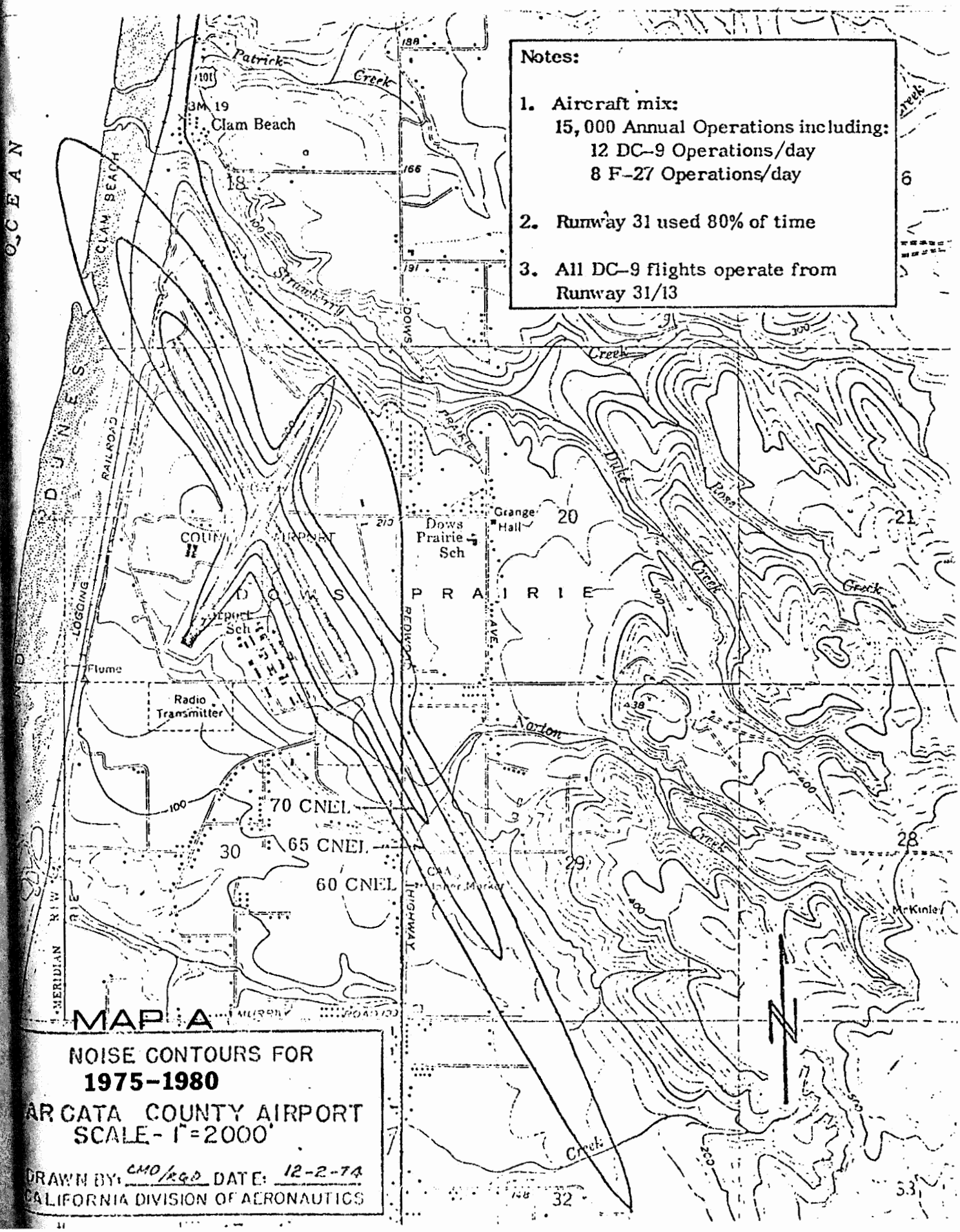
NOISE LEVEL DATA

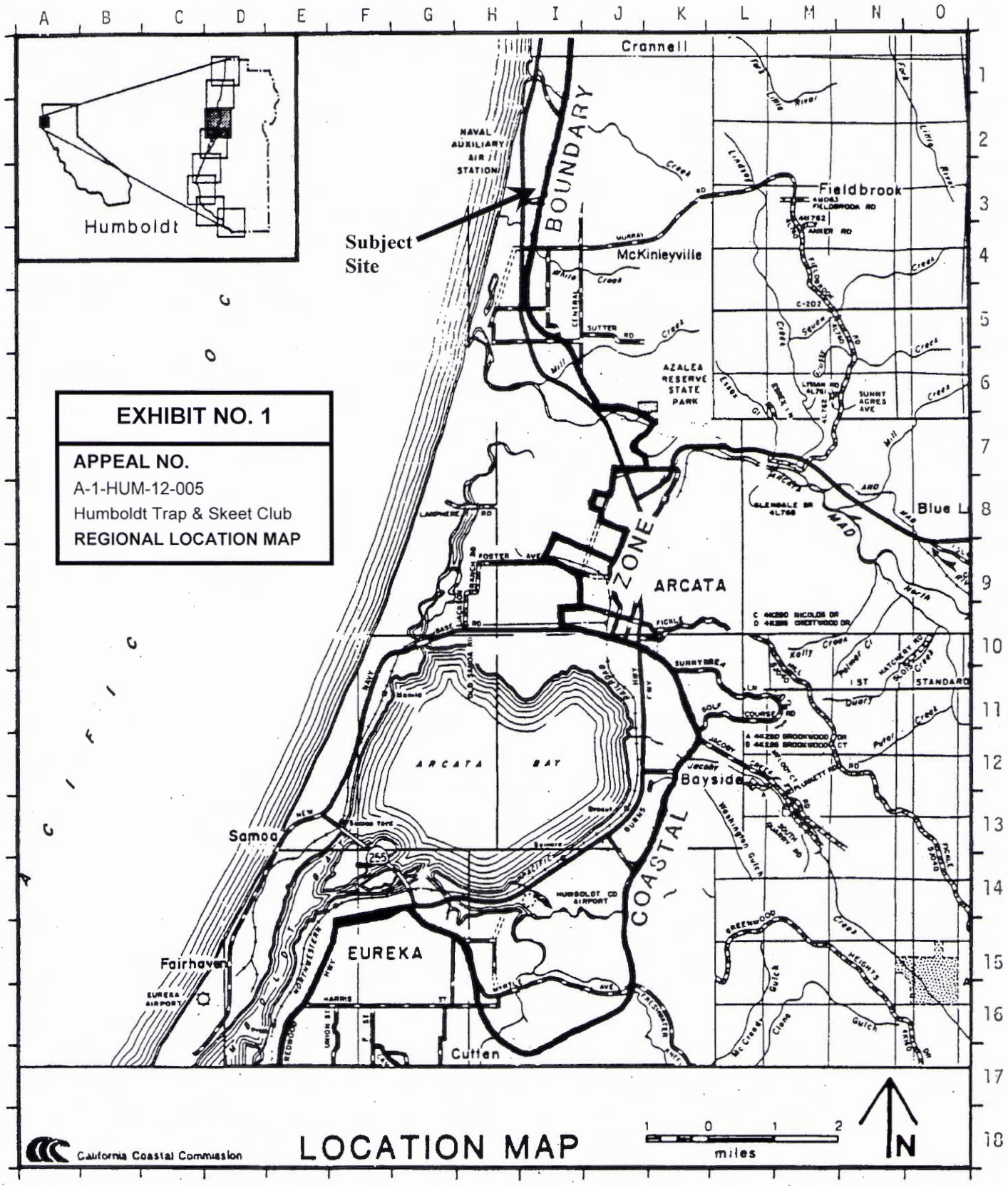
A. State Highways - L_{dn} Tabulations
B. County Roads - L_{dn} Tabulations
C. County Airports - CNEL Contour Maps

*Note: Technical Supplements when completed will be filed and available at the following County Departments: Building Inspection, Division of Environmental Health, Planning and Public Works Departments.

NOISE CONTOUR DATA NOW AVAILABLE AT COUNTY PLANNING DEPARTMENT:

1975-1980	Noise Contour data (CNEL) for all airports
1975-1995	Noise contour data (L_{10}) for all State Highways
1975-Varies	Noise contour data (L_{10}) for select county roads


Notes:
1. Aircraft mix:
15,000 Annual Operations including:
12 DC-9 Operations/day
8 F-27 Operations/day
2. Runway 31 used 80% of time
3. All DC-9 flights operate from Runway 31/13
OCEAN
DUNES
CLAM BEACH
Clam Beach
Patrick Creek
Strawberry
DOWS PRAIRIE
Dows Prairie Sch
Grange Hall
Airport Sch
Flume
Radio Transmitter
LOGGING RAILROAD
REDWOOD AVE.
HIGHWAY
Norton
Drake
Ross
Creek
70 CNEL
65 CNEL
60 CNEL
MAP A
NOISE CONTOURS FOR
1975-1980
ARCATA COUNTY AIRPORT
SCALE- 1"=2000'
DRAWN BY: CMO/RGD DATE: 12-2-74
CALIFORNIA DIVISION OF AERONAUTICS



County of Humboldt

EXHIBIT NO. **2**

APPEAL NO.

A-1-HUM-12-005

HUMBOLDT TRAP & SKEET CLUB

VICINITY MAP

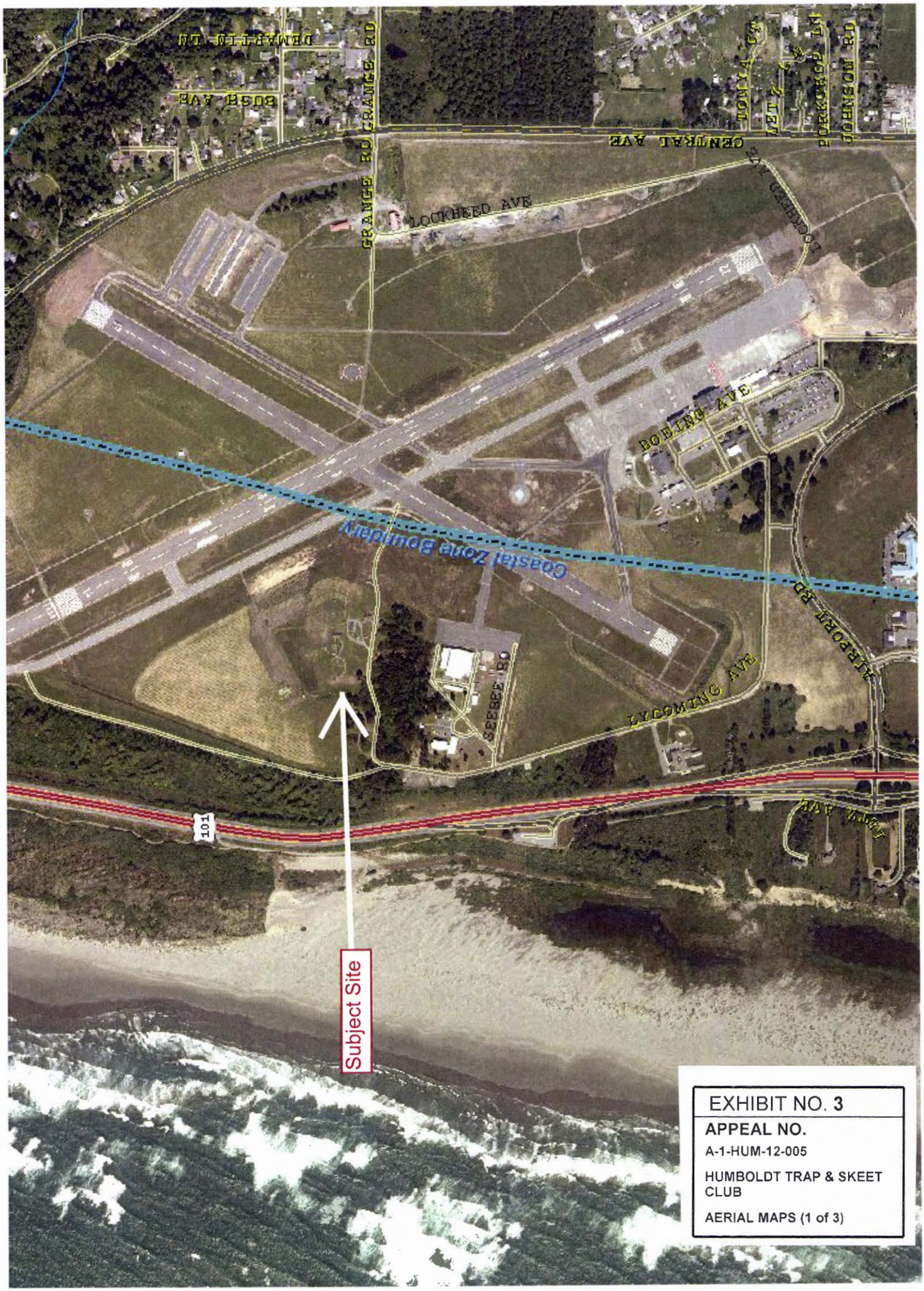


EXHIBIT NO. 3

APPEAL NO.

A-1-HUM-12-005

HUMBOLDT TRAP & SKEET CLUB

AERIAL MAPS (1 of 3)

2005 aerial photo of site
LYCOMING AVE
LYCOMING AVE
LYCOMING AVE


WYOMING AVE
LYCOMING AVE
2010 aerial photo of site