November 20, 1974

Santa Barbara Community College District
721 Cliff Drive
Santa Barbara, California

Attention: Mr. Don Trent
Facilities Development Director

Gentlemen:

Proposal
Draft Environmental Impact Report
Master Plan for Santa Barbara City College
Santa Barbara, California
For Santa Barbara Community College District

1. INTRODUCTION

Pursuant to our discussions with Mr. Don Trent (Facilities Development Director, SBCC), we are pleased to present our proposal for the preparation of a Draft Environmental Impact Report (EIR) for the Santa Barbara City College Master Plan. It is our understanding that the Governing Board of the Santa Barbara Community College District requires an environmental assessment of probable environmental impacts associated with implementation of the four-phase Master Plan prepared in 1974 for Santa Barbara City College. The Board has determined that the Master Plan is a "project", as defined in Section 15037 of the Guidelines for Implementation of the California Environmental Quality Act of 1970, and that an EIR (addressing the physical effects of facilities expansion and increased enrollment on the environment) will have to be prepared.

On Wednesday, November 6, 1974, we participated in a preliminary conference with Mr. Trent to establish the basic requirements for an environmental assessment of the Master Plan. At that time, Mr. Trent provided us with a copy of the Master Plan for Santa Barbara City College prepared by the Master Plan Architects, John Robert Henderson of Santa Barbara and William Blurock & Partners
of Newport Beach. Subsequently, he also provided us with pertinent technical and planning reports prepared for individual projects within the overall Master Plan program. These documents included: (1) "Santa Barbara Community College: 1974-1983 Ten Year Construction Plan"; (2) "Report of Foundation Investigation - Proposed Theatre and Music Building"; (3) "Foundation Exploration - Marine Technology Site"; and, (4) "Foundation Exploration - Proposed Pedestrian Walk-Way and Footbridge."

On Friday, November 8, 1974 and Saturday, November 16, 1974, we conducted a brief field reconnaissance of the developed east campus and proposed west campus areas. The purpose of these preliminary reconnaissance investigations was to obtain information concerning the local environment, and existing levels of development. Additionally, we consulted with Mr. Paul Stansbury, District Planner for Los Angeles Community Colleges, whose office recently accepted a Draft EIR for a phased expansion program at Los Angeles Southwest College. We also contacted representatives of the Santa Barbara County Health Department (Gregg Clark, Noise Monitoring), Santa Barbara City Environmental Health Office (Paul Nefstead), Air Pollution Control District (John English), South Central Coastal Commission (Carl Hettrick), and the Master Plan architect (John Robert Henderson) for additional information.

As a result of our review of the Master Plan document, analysis of the technical reports provided to us, our field reconnaissance survey, and timely consultation with government and private individuals, we concur with the Governing Board's assessment that a full EIR will be required for this project. Background and justification for a full EIR of the scope and time frame described in this proposal are found in the latter part of the introduction.

Site Location

Santa Barbara City College, a fully accredited two-year community college, is located on the bluffs on the edge of "Pueblo Land" overlooking the Santa Barbara Yacht Harbor and the Pacific Ocean. The main entry to both the east and west campuses is from Cliff Drive on the north boundary. Loma Alta Drive bisects the college property, with Shoreline Drive running along the south. La Playa Stadium forms the southeastern boundary, with Pershing Park forming the eastern boundary. To the west is a residential area of homes and apartment complexes.
Preliminary Project Description

The expansion program for Santa Barbara City College, as proposed in the Master Plan, will proceed as a four-step development. Each step (or phase) will be initiated by projected enrollment increases at the college. The Master Plan describes the four phases, in order of occurrence, as: (1) "1975 - Capacity 3,772 Plan"; (2) "1980 - Capacity 4,080 Plan"; (3) "Interim - Capacity 5,040 Plan"; and, (4) "Maximum - Capacity 6,000 Plan."

The Master Plan section of the Santa Barbara City College Master Plan (pp MP1 - MP50) and the "Santa Barbara Community College: 1974-1983 Ten Year Construction Plan" indicate that construction of most facilities proposed during the four phase program will be completed during the "1975 - Capacity 3,772 Plan" and the "1980 - Capacity 4,080 Plan." Considerable expansion of existing facilities and new construction will occur on the established east campus, while initial site development and major construction will take place at the recently acquired west campus site. As a result, the bulk of the construction-related impacts are expected between 1975-1980.

Up to 6,000 day and 2,000 night (8,000 total) fulltime equivalent (F.T.E.) students are expected to attend Santa Barbara City College by 1990, under the "Maximum - Capacity 6,000 Plan." Average Daily Attendance (ADA) at full capacity will be 9,229 day and 3,076 night (12,305 total). These enrollment projections compare with a 1973 F.T.E. student enrollment of 3,560 day and 1,186 night (4,746 total), and A.D.A. of 5,500 day and 1,800 night (7,300 total).

Background and Justification for Full EIR

Our preliminary assessments, based on field reconnaissance, literature review, and professional contacts, indicate that potential air quality degradation, traffic and urban congestion, substantial new water consumption demands, expanded off campus housing requirements, increased noise, and possible erosion and siltation are considered to be among the potentially more significant impacts associated with maximum development of Santa Barbara City College to accommodate up to 8,000 F.T.E. (day and night students). The overall scope of the EIR for the Master Plan is dictated by Section 15069 of the Guidelines for Implementation of the California Environmental Quality Act:
Santa Barbara Community College District  
November 20, 1974  
Page Four

15069. Multiple and Phased Projects. Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, the lead agency must prepare a single EIR for the ultimate project. (Italics added for emphasis.)

2. STUDY PLAN

Purpose and General Focus. The purpose of the Santa Barbara City College Master Plan EIR is to provide a complete, adequate, and objective statement of the proposed project's environmental consequences. The statement is essentially an informational document for the applicant, the public, and State and local governmental agencies. It would be prepared under, and meet the legal requirements of, the California Environmental Quality Act (CEQA) of 1970 and the Guidelines for the Implementation of the California Environmental Quality Act, as adopted by the SBCC Board of Trustees on May 23, 1974.

The general focus of our work will be directed toward assessing those environmental impacts anticipated to be the most serious, although our considerations will not be limited to such impacts. Those impacts anticipated to be potentially significant were discussed in the previous section. With regard to this particular project, we believe that our ability to suggest mitigating measures will play an important part in minimizing unavoidable adverse effects.

Roles of Contractor and Applicant. Dames & Moore will independently produce and provide a preliminary Draft EIR to the Governing Board of the Santa Barbara Community College District for their review, modification, and acceptance. Time has been allocated for conferences with District staff during their internal review of the Draft EIR, for revision of our EIR within the scope and schedule of the investigation as outlined in this proposal, and attendance of a representative of our firm at the first public hearing on the project. The District's need for our services on this project beyond the first hearing cannot reasonably be predicted, and would require separate negotiation on an as needed basis.

We anticipate that the District staff will collaborate with the contractor and give all reasonable cooperation in the collection of information.
Information concerning the project description is properly the realm of the applicant. Our timely completion of the EIR will be contingent upon the submission, by the applicant, of all project description information necessary for the proper assessment of impact within the scope and time frame of this project.

Proposed Course of Action. Impacts associated with new construction, renovation of existing facilities, and operation of the proposed project up to, and including, a planned F.T.E. of 8,000 ("Maximum - Capacity 6,000 Plan") will be evaluated. To accomplish these evaluations, we will review the Master Plan and appropriate technical reports. Inventories of existing environmental conditions at the site, and in the nearby regional area, will be conducted to establish the baseline data required to adequately assess probable environmental impacts. In keeping with the District's intention to have the contractor produce the best possible EIR in a cost-effective manner, existing data contained in technical reports already prepared for the applicant by authoritative personnel and agencies will be incorporated whenever possible. For instance, detailed seismic (including geologic hazards) and soils studies are available for the site. In addition, the Master Plan contains a comprehensive traffic, parking, and circulation study, and an in-depth aesthetics and architectural analysis section.

General Work Plan

An outline of major tasks, by scientific discipline, is described below:

Meteorology/Air Quality. Baseline climatological data for the Santa Barbara area and air quality information for the South Coast Air Basin will be utilized to provide reasonable approximations of current site climatology and ambient air quality. Our assessment of air quality impacts will include separate analyses for each of the four incremental phases discussed in the Master Plan. Particular emphasis will be placed on determining the probable impacts associated with the "Maximum - Capacity 6,000 Plan" (assuming a 1990 completion date). Tables will be prepared showing total emissions from point sources on campus (e.g., parking lots and the physical plant). In addition, it is proposed to detail expected emission concentrations from each of the individual stationary and mobile point sources. The emission data will be used to analyze
the incremental impacts from each phase of development on regional air quality.

Geology/Hydrology. A good description of the geological and hydrological environments is necessary not only to assess the routine impacts associated with the project (e.g., terrain modification), but also to assess the potential geologic hazards and possible erosion and siltation problems affecting the project. For the most part, the baseline geology and seismology will be derived from existing data and secondary sources. Each of the following topics will be considered with the degree of detail necessary to adequately assess impact: geomorphology, topography, soils, geologic hazards, and hydrology (surface and groundwater).

Biology. The species composition, distribution, and function of vegetation and wildlife will be described to the extent necessary to assess impacts associated with removal of vegetation and wildlife habitat, and increased noise. The extensive grading that was completed on most of the west campus site in 1972, and the existing high intensity development on the east campus, have combined to minimize potential biological impacts and reduce the scope of this portion of the investigation.

Socio-Economic/Cultural. The socio-economic baseline section of the EIR will describe site and local land use, existing traffic and circulation, water consumption (and other service demands), current funding and proposed revenue sources, college enrollment/employment, archaeology, and ambient noise. The impacts section will address the potential significant effects on the socio-economic and cultural environments, due to implementation of the Master Plan. Where incremental impacts are expected to increase with expanded enrollment, the magnitude and significance of the impacts will be addressed for each of the four phases. This will be particularly important in the sections dealing with increased water demand (the City of Santa Barbara projects a water shortage in the near future), traffic, and off campus student housing requirements. The extensive traffic and circulation data prepared by Crommelin-Pringle and Associates, Inc. for inclusion in the Master Plan will be incorporated into the EIR. The Master Plan traffic data will probably appear as an appendix. The more important data will be summarized in the text and used as the basis for impact analysis.
An archaeological survey (field work and records search) of the west campus and east campus sites is recommended, to satisfy CEQA requirements. If possible, this should be prepared by members of the SBCC academic staff to reduce costs. Baseline measurements to determine ambient and expected noise levels on both campuses will also be necessary. If workload permits, the Santa Barbara County Environmental Health Department will conduct the actual noise measurement survey. Dames & Moore will interpret the data and assess impacts. If County Health is unable to provide this service, a private consultant will be contacted.

General. Our investigation will deal in detail with the 73.8-acre site considered in the Master Plan, and with the surrounding area in sufficient depth to assess off-site impacts.

Inventories of existing conditions on the site, and assessments of probable environmental impacts, will be performed. Analysis of impacts will be made with regard to adverse, beneficial, growth-inducing (direct and secondary), and short- and long-term effects of the proposed project on both the site (local) and regional area. The magnitude and relative significance of impacts will be evaluated. The cumulative impacts likely to arise from implementation of the complete Master Plan program, through the "Maximum - Capacity 6,000 Plan," and other known or proposed major projects in the Santa Barbara area, will be briefly discussed. Also, the compatibility of the SBCC Master Plan with other area studies in preparation (e.g., the City of Santa Barbara Harbor Master Plan and Coastal Commission Long Range Planning) will be addressed.

Itemized Description of End Products. If specified, five copies of a preliminary Draft EIR will be submitted to the District five to seven weeks after a contract is signed. The Final Draft EIR report in 35 copies will be submitted within 15 work days after approval of the preliminary Draft EIR by the District.

An aggregate total of 24 man-hours has been allocated for:
(1) conferences with District staff during their review period;
(2) an initial public hearing; and
(3) preparation of the Final EIR. This estimate is based on the time required for similar activities on projects that were relatively similar from an environmental standpoint. The District's needs beyond this point are relatively unpredictable. Thus, a commitment of time beyond the 24 hours specified above cannot reasonably be made at this time. In the event additional time is required to attend subsequent hearings, our services would be available on a time and expense basis.
3. PROJECT MANAGEMENT

Impact evaluations require an interdisciplinary approach and the Principal-In-Charge (PIC) will appoint a Project Manager, and select a team of investigators. Each major scientific discipline will have a technical staff leader responsible for the direction of their support staff. Together with the PIC and the Project Manager, the staff leaders will determine the level and extent of work for each investigator, and the schedule for work completion at various stages of the investigation. Throughout the development of the EIR, and especially during the latter stages (mitigations, unavoidable adverse impacts, alternatives, and the executive summary), considerable exchange between individual discipline leaders and the Project Manager will take place. This will insure proper depth of investigation within each respective discipline, and a scientifically integrated product.

The Project Manager, the Principal-in-Charge, and, when appropriate, the discipline leaders will communicate and work with District staff and appropriate governmental agencies (e.g., Air Resources Board, Santa Barbara Water District, Regional Water Quality Control Board, Flood Control District) to the extent necessary to address and answer their concerns. This should maximize the comprehensiveness of the report, and minimize alterations subsequent to District and agency review of the preliminary Draft.

The PIC is ultimately responsible for the content of the Dames & Moore report, and strongly relies on interaction with the Project Manager to establish quality control and assurance. The Project Manager provides weekly progress reports to the PIC. Our firm also maintains a quality control program within which work accomplished in one office is subject to review by senior staff in other offices.

To assure that the project schedule is maintained, the PIC must coordinate personnel selection with the Administrative Manager of the office, who is responsible for manpower planning.

4. SCHEDULE OF COSTS

The sequence of work and timing are discussed in Section 2. Itemized costs are indicated in Figures 1 and 2. The time and cost estimates reflect the work involved in the baseline
FIGURE 1

TENTATIVE SCHEDULE OF COSTS - SANTA BARBARA
CITY COLLEGE MASTER PLAN
(NO SBCC ACADEMIC OR COUNTY ASSISTANCE)

<table>
<thead>
<tr>
<th>Professional</th>
<th>Cost</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>$1,500</td>
<td>50</td>
</tr>
<tr>
<td>Meteorology/Air Quality</td>
<td>2,250</td>
<td>64</td>
</tr>
<tr>
<td>Geology/Hydrology</td>
<td>1,800</td>
<td>64</td>
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<tr>
<td>Biology</td>
<td>700</td>
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<tr>
<td>*Socio-Economics/Cultural</td>
<td>2,785</td>
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<td>Secretarial</td>
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<th>Other</th>
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<tr>
<td>Communication</td>
<td>$50</td>
<td></td>
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<tr>
<td>Travel and Subsistence</td>
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<td></td>
</tr>
<tr>
<td>Report Preparation and Duplicating</td>
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<td></td>
</tr>
<tr>
<td>Computer Control of Job Costs</td>
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<tr>
<td>Miscellaneous</td>
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TOTAL  $12,715

*Includes noise measurement (40 hours) and archaeology (20 hours).
FIGURE 2

TENTATIVE SCHEDULE OF COSTS - SANTA BARBARA
CITY COLLEGE MASTER PLAN
(SBCC AND COUNTY ASSISTANCE)

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<td>*Biology</td>
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<td>Coordination w/District, Meeting</td>
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<td>Computer Control of Job Costs</td>
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<td>(@$25/$1,000)</td>
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<tr>
<td>Miscellaneous</td>
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**TOTAL**                                          | **$11,380** |

*Based on SBCC academic staff performing baseline data collection and inventory.

**Based on SBCC academic staff completing baseline archaeological survey and Santa Barbara County Health Department providing SBCC with noise measurements
documentation and impact analysis, as well as the anticipated costs (both professional and staff) associated with the revision of the preliminary Draft (subsequent to District’s review), an initial public hearing, and assistance to the District in the preparation of the Final EIR. Included as an attachment is our Schedule of Charges and General Conditions.

5. TECHNICAL APPROACH

Our technical approach has been discussed under Section 3, PROJECT MANAGEMENT. Dames & Moore's Santa Barbara staff consists of broadly-trained specialists who interact under the direction of a Principal-in-Charge and a Project Manager to produce a scientifically integrated, multidisciplinary EIR with proper depth of investigation within each discipline. Occasionally, specialists from other Dames & Moore offices, or consultants with special expertise, are assigned to local projects.

6. PERSONNEL, EQUIPMENT AND FACILITIES

Résumés for the PIC, Project Manager, and other key personnel expected to participate in the project are attached. Literature documenting the world-wide and local equipment and facilities capabilities of Dames & Moore is also attached.

7. SUBCONTRACTORS COMTEMPLATED

Noise measurements will be made by Michael Early, acoustical consultant, or another qualified individual, in the event that Santa Barbara County Health cannot provide this service.

8. STATEMENT OF OFFER AND SIGNATURES

This proposal constitutes a firm offer for a 60-day period. All work will be performed at a "not-to-exceed" contract price, which will be established upon completion of final contract negotiations with the District. It is our understanding that these
negotiations may result in a change in the proposed Scope of Work or in the anticipated costs to complete the work. In any event, we would not exceed the maximized amount without prior authorization.

Mr. W. Ray Seiple is the Principal-in-Charge in the Santa Barbara Office of Dames & Moore. He has the authority to negotiate with clients and sign contracts and reports in the name of Dames & Moore using the title "Associate." If you have any questions concerning this proposal, please contact Mr. Seiple, at the address given below, or the Project Manager, Mr. Steven P. Kraus.

Respectfully submitted,

DAMES & MOORE

W. Ray Seiple
W. Ray Seiple
Associate

Steven P. Kraus
Project Manager

Dames & Moore
125 E. Victoria St., Suite F
Santa Barbara, California 93101
805-965-3055

WRS:SPK:gg

Attachments: Résumés
Schedule of Charges and General Conditions
Brochure
W. RAY SEIPLE
Engineering Geology
Environmental Studies

During his association with Dames & Moore, W. RAY SEIPLE, senior engineering geologist, has been involved with site evaluation studies for several dams, nuclear and fossil fuel power plants, subdivisions, refineries, and LNG and industrial sites. These studies included geologic mapping, supervision of exploratory borings, soil and rock sample collections, laboratory testing, engineering analysis and report preparation.

Mr. Seiple’s strong background in the biological sciences has proved particularly useful in the management and coordination of multidisciplinary efforts for site selection studies and preparation of Safety Analysis Reports, Environmental Reports and Environmental Impact Statements for nuclear and fossil fuel power plants and LNG projects.

He was responsible for the field exploration team for one of the world’s largest refinery complexes in Puerto Rico. Serving as a resident engineering geologist for the Walnut Canyon Dam, Orange County, California (a 200-foot-high earth fill dam) he performed geologic mapping during construction; supervised placement of all compacted fill: tested filter and drain material; and recommended and coordinated design changes with the State Division of Dam Safety and Boyle Engineering for the City of Anaheim.

Mr. Seiple also was associated with construction supervision and geologic evaluation of features at the El Toro Dam, Orange County and served as project engineering geologist for the Buena Vista Aquatic Recreation Area Dam, Bakersfield; the Pole Canyon Dam, Fillmore; and the Whitewater Flood Control Dam, Palm Springs, all located in California.

Not only has he had dam site evaluation and construction supervision experience, he also has been involved with post-dam construction problems performing evaluations relative to seepage and potential slide development on the Olive Hills Dam and Tri-Cities Dam, Orange County. In addition he assisted in performing an evaluation of Lake Wohlford Dam, San Diego County, under the Federal Power Commission Order No. 315. He was involved with the investigation of possible failure causes for the Baldwin Hills Dam and supervised the field investigation for determining the feasibility of dam modifications to increase water storage capability of Puddingstone Dam, San Dimas, California.

Mr. Seiple’s experience encompasses numerous projects including a comprehensive soils and geologic investigation of pipeline routes and compressor and dehydration facilities for underground gas storage at the Aliso Canyon oil field, California. This project was of prime interest because of the complexity of large-scale faulting and landsliding found within the oil field.
As project engineer with Firestone Tire & Rubber Company, he was responsible for design and development of fuel containers for the aerospace and defense product industry. He also was involved with development and construction of inflatable rubber dams, reservoir linings and dike-contained rubber storage tanks.

Mr. Seiple graduated with a Bachelor of Science degree in geology and received his Master of Science degree in engineering geology from the University of Southern California.

He is a registered geologist and a certified engineering geologist in the state of California. He is a member of Sigma Gamma Epsilon, the Association of Engineering Geologists, the Society of Mining Engineers, the Geological Society of America, and the American Society of Civil Engineers.
STEVEN P. KRAUS
Human and Cultural Environments,
Land Use Analysis, and Geography

As an assistant geographer for Dames & Moore, STEVEN P. KRAUS has participated in the preparation and editing of environmental impact reports and site evaluation studies for oil and gas industry clients, private developers, and local government agencies in California. His fields of expertise include socio-economics, which encompasses demography and employment, land use analysis, air transportation, and remote sensing pertaining to air photo interpretation.

Prior to joining Dames & Moore, Mr. Kraus was associated with the University of California, Santa Barbara as a postgraduate research geographer and assistant researcher. In this capacity he co-directed the administrative functions of the Geography Remote Sensing Unit, a research group associated with the National Aeronautics and Space Administration space sciences program; and he also participated in several research programs. The primary program involved the application of remote sensing technology to the investigation of land use, agriculture, and regional change detection along the California coastal zone and the west side of the San Joaquin Valley. During this period he also served as a consultant to Dames & Moore and Regional Sciences Consultants as a socio-economic/land use specialist.

He received a Bachelor of Arts degree in geography and history from the University of California, Santa Barbara, graduating summa cum laude. He is a member of Phi Beta Kappa and the Association of American Geographers.

Mr. Kraus has contributed to numerous technical reports related to land use analysis using remote sensing techniques. In addition, he has authored and co-authored several published papers concerning air transportation and population estimation techniques. His most recent paper, “Estimating Population from Photographically Determined Residential Land Use Types,” has been accepted for publication in Remote Sensing of Environment.
BRUCE A. WALES
Applied Life Sciences — Meteorology

BRUCE A. WALES, project ecologist with Dames & Moore, has gained extensive experience in agriculture, meteorology, and environmental biology. He has served as biological consultant to a large petroleum company and has managed environmental studies relating to their activity. He also has contributed biological assessments for several other multidisciplinary projects.

While at Rutgers University, Dr. Wales was involved with basic and applied research dealing with native vegetation and management of field crops and forest trees for the Department of Botany Meteorology and the Department of Agronomy.

As a faculty member in the Department of Biological Sciences at the University of California, Santa Barbara, he taught courses in plant ecology, botany, bio-climatology, and environmental measurement. He directed research dealing with chaparral revegetation after fire, and pattern and establishment of plants on coastal sand dunes, and the ecological effects of the advection of sea salt aerosol far inland. He served on the Chancellor's Environmental Quality Committee and the U.C. Natural Land and Water Reserves Committee.

Dr. Wales has practiced synoptic meteorology as a Reserve Weather Officer in the United States Air Force for more than 14 years. His experience includes weather analysis and forecasting in the mid-Atlantic states, the Pacific Southwestern states, and Hawaii. He is presently a certified U.S.A.F. reserve weather forecaster and holds the rank of major. He has consulted with U.S.A.F. personnel concerning air pollution damage to vegetation, and the management of biotic communities and planned development of their facilities.

Dr. Wales received a Bachelor of Science degree in agriculture from Rutgers University. He is a graduate of the United States Air Force Institute of Technology meteorology program at Texas A & M University. After three years' active military service as an aviation meteorologist, he returned to Rutgers University and earned his Master of Science degree in agricultural meteorology and his Ph. D. degree in plant ecology. His research involved interrelationships between climate, microclimate, and the pattern of vegetation within forests and especially at the edges of the stands.

He has authored articles in professional journals, such as Ecological Monographs, and in various governmental publications. He was elected to Sigma Xi and is affiliated with the Ecological Society of America, the American Meteorological Society, the Soil Conservation Society of America, and the American Association for the Advancement of Science.

* * *
L. SERGÉ MATLOVSKY
Environmental Biology

As an assistant biologist with Dames & Moore, L. SERGÉ MATLOVSKY has participated in site selection studies and environmental impact reports for land development and power industry clients. His work has included onsite studies, vegetation mapping from aerial imagery, secondary sources research, and technical writing. His specialty is in plant ecology.

Prior to joining Dames & Moore Mr. Matlovsky held a position as teaching assistant at the University of California, Santa Barbara. He was laboratory coordinator for general botany and physical plant ecology courses. During this time he was coauthor of An Inventory and Description of Potential Natural National Landmarks in Santa Barbara, Ventura, and Kern Counties on a grant from the National Park Service. He also worked as a field research assistant for Yale University, Department of Biology.

Mr. Matlovsky received his Bachelor of Arts degree in botany and environmental biology and his Master of Arts degree in plant ecology from the University of California, Santa Barbara. His research work concerned plant distributions in coastal dunes.

He is a member of the Ecological Society of America.
ARTHUR C. DARROW
Geologic Sciences
Environmental Studies

ARTHUR C. DARROW is a project geologist with Dames & Moore. He has conducted seismic safety investigations, fault studies, and groundwater and surface water investigations. In addition Mr. Darrow has managed sewage disposal studies and general site feasibility studies, and has functioned as geotechnical task leader on large Environmental Impact Reports.

Prior to joining Dames & Moore, Mr. Darrow served as an officer in the U.S. Army Corps of Engineers. In this capacity he planned and managed several troop construction projects in West Germany. These projects range in size and scope from the construction of troop billets and mess halls to the construction of large ordinance storage facilities for the U.S. Air Force.

As a lecturer in the Department of Geology at the University of California, Santa Barbara, he taught courses in physical geology, environmental geology, and introductory and advanced field geology. In addition he planned and supervised the introductory geology laboratory program.

Mr. Darrow received his Bachelor of Science and Master of Science degrees in geology at the University of California, Santa Barbara. His research interests have been in geochemistry and in field solutions to problems in structural geology. He has authored a paper dealing with the geochemistry of the Big Pine, California volcanic field. He is currently studying the tectonic history of the Big Pine Fault in Southern California.

* * *

9.74
MICHAEL F. HOOVER
Engineering and Environmental Geology,
Groundwater Hydrology

As an assistant geologist with Dames & Moore, MICHAEL F. HOOVER has participated in site feasibility and selection studies, and environmental impact reports for land development and power industry clients. In addition he has managed seismic investigations and water well design and completion reports. His work has included onsite hydrologic and geotechnical investigations, geologic mapping, aerial photographic interpretation, water well drilling supervision, aquifer test supervision, and groundwater resource evaluation.

Prior to joining Dames & Moore, Mr. Hoover worked with a local consulting firm as a staff geologist on various slope and sea cliff stability problems, in addition to environmental assessments of ranch and housing developments. He also has experience as a construction superintendent.

He received his Bachelor of Arts and Master of Arts degrees in geology, with emphasis in engineering geology, from the University of California, Santa Barbara. His research was concerned with the engineering properties of expansive clay soils. As an undergraduate he was a member of a federally-funded (Sea Grant) geologic field mapping team which investigated recent fault movements in Santa Barbara County.

* * *
THOMAS K. WHEELER
Geology, Hydrology

Prior to joining Dames & Moore as a hydrologist, THOMAS K. WHEELER was employed by Desert Research Institute, Water Resources Division, in Reno. Mr. Wheeler was involved with initial field studies of hydrologic basin delineation, spring and phreatophyte mapping for the institute at a Nevada Test Site project, and performed field chemical analyses and statistical analyses of data for a large regional flow system. He set up water quality and stream flow data collection networks for a project on Truckee River.

His experience in instrumentation of study areas includes flume, weir, recorder siting and installation in addition to well testing and sample collection.

Mr. Wheeler has participated in snowmelt and precipitation estimation; analysis of weather records; evaluation of evapotranspiration processes and all segments related to water budget studies of river basins, hydrograph analysis, determination of basin yields and flood and drought studies.

His application of statistical methods to hydrology include frequency distributions for planning, correlogram analysis, nonparametric procedures and selected time series techniques. He also is experienced in the use of digital computers for hydrologic studies.

In addition to this background in surface water hydrology, Mr. Wheeler is experienced in relating surface water characteristics to groundwater flow systems and geochemical processes.

He received a Bachelor of Science degree in geology from the University of Wisconsin in Madison and a Master of Science degree in geological engineering with a minor in hydrology from the University of Nevada in Reno.

Mr. Wheeler is a member of the American Geophysical Union and the Sierra Club.
KEY PERSONNEL

DAMES & MOORE

LESLIE W. SENGERT
Geography

LESLIE W. SENGERT is a staff geographer with Dames & Moore and is responsible for management of projects performed in preparation of environmental impact reports.

Prior to joining Dames & Moore, Dr. Senger held a position as research geographer at the University of California, Santa Barbara. He was primarily responsible for organizing and directing a research group associated with the National Aeronautics and Space Administration’s space program. This program was directed toward earth sciences investigations, including land use, agriculture, regional change detection, and California coastal zone data base construction. As part of this work, he has lectured to personnel from state and county agencies on applications of space technology to resource management. He also has been a participant in a contract with the U.S. Coast Guard to evaluate the efficiency of a containment device for oil spill cleanup on the high seas.

He received his Bachelor of Arts, Master of Arts, and Ph. D degrees in geography from the University of California at Los Angeles. His dissertation concerned the impact of the California State Water Project on agricultural development in the San Joaquin Valley, California.

He is the author of numerous journal articles and technical reports related to remote sensing technology, land use, and environmental problems; and is also co-editor of the book, Remote Sensing: Techniques for Environmental Analysis. He is a member of the American Society of Photogrammetry, the American Association for the Advancement of Science, and the Association of American Geographers. He is listed in the national reference directory, “Outstanding Professionals in Human Services,” published by the American Academy of Human Services.

* * *
SCHEDULE OF CHARGES AND GENERAL CONDITIONS

DAMES & MOORE

UNITED STATES & CANADA

The compensation to Dames & Moore for our professional services is based upon and measured by the following elements, which are computed as set forth below.

PERSONNEL CHARGES

Charges for employees are computed by multiplying the total direct salary cost of our personnel by two and one-half. The total direct salary cost shall be a sum equal to the direct payroll cost (computed on a typical annual basis and expressed as an average hourly rate) plus 30 percent of same to cover payroll taxes, insurance incident to employment, holidays, sick leave vacations, etc. The time of a partner or retained consultant devoted to the project is charged at an assigned billing rate.

The 30 percent employee benefit factor is used for work performed by personnel assigned to offices in the United States and Canada. For work performed by personnel in our offices in other countries, it will vary depending on the employee benefits paid in the particular location.

When outside the United States, employees' and partners' total direct salary cost will be increased by the premium customarily paid by other organizations for work at that location.

Time spent in either local or inter-city travel, when travel is in the interest of the work, will be charged for in accordance with the foregoing schedule; when traveling by public carrier, a maximum charge of eight hours per day will be made.

EQUIPMENT CHARGES

Computer control of project costs will be billed at a rate of $1.25 per each $50 of job charges. Other Dames & Moore equipment, if used, will be billed at the rates noted in the Appendix.

OTHER SERVICES AND SUPPLIES

Charges for services, equipment and facilities not furnished directly by Dames & Moore, and any unusual items of expense not customarily incurred in our normal operations, are computed on the basis of cost plus ten percent. Such items include:

- Rental and operation of drilling equipment
- Erecting facilities for the performance of field tests
- Surveying services
- Shipping charges for equipment or samples
- Subsistence
- Fares of public carriers
- Rental vehicles
- Printing and photographic reproductions
- Long-distance communications
- Special fees, insurance, permits and licenses
- Services of testing laboratories
- Services of explosives technicians

BILLING

Statements will be issued every four weeks, payable upon receipt, unless otherwise agreed.

Interest of 1½% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

In the event that the Client requests termination of the work prior to completion of a report, we reserve the right to complete such analyses and records as are necessary to place our files in order and, where considered by us necessary to protect our professional reputation, to complete a report on the work performed to date. A termination charge to cover the cost thereof in an amount not to exceed 20 percent of all charges incurred up to the date of the stoppage of the work may, at the discretion of Dames & Moore, be made.

Rates are subject to change upon notification.

WARRANTY AND LIABILITY

Dames & Moore warrants that our services are performed, within the limits prescribed by our Clients, with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended in our proposals, contracts or reports.

Our liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon us, other than for professional errors and omissions, will be limited to our general liability insurance coverage, which we maintain in limits in excess of $3,000,000. For any damage on account of any error, omission or other professional negligence, our liability will be limited to a sum not to exceed $50,000 or our fee, whichever is greater. In the event that the Client does not wish to limit our professional liability to this sum, we will waive this limitation upon the Client's written request provided that the Client agrees to pay for this waiver an additional consideration of 4% of our total fee or $200, whichever is greater.

In the event the Client makes a claim against Dames & Moore, at law or otherwise, for any alleged error, omission or other act arising out of the performance of our professional services, and the Client fails to prove such claim, then the Client shall pay all costs incurred by Dames & Moore in defending itself against the claim.
2 December 1974

Mr. Don Trent, Director
Facilities Department
Santa Barbara City College
721 Cliff Drive
Santa Barbara, California 93109

Dear Mr. Trent:

Henningson, Durham & Richardson is pleased to submit this proposal to prepare an environmental report for the Santa Barbara City College.

Our firm's personnel are qualified to perform the work and reflect a deep interest in this community and its well being.

Attached, you will find a separate cost summary for the proposed study plus three copies of the technical proposal.

We hope that you will find the submittal satisfactory. We look forward to working with you on this project.

Sincerely,

HENNINGSON, DURHAM & RICHARDSON

[Signature]

Norman A. Harris, Manager
Ecological & Safety Sciences

NAH:jlh

Attachment
PROPOSED LEVEL OF EFFORT AND PRICE

This proposal is priced on the basis of the following level of effort by HDR scientists and consultants. Actual application of a specific individual is based on availability at the time of award, and the right is reserved to substitute another person of equivalent training and experience if necessary.

<table>
<thead>
<tr>
<th>HDR EMPLOYEES</th>
<th>Man-Days</th>
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<tr>
<td>Principal Environmental Scientist</td>
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<td>Botanist</td>
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<td>Archaeology</td>
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</tbody>
</table>

The cost for the project at the level of effort proposed is $17,586, including all required technical studies, miscellaneous expenses, and production and delivery of five copies of a Draft Environmental Impact Report. This offer may be considered firm through 1 February 1975. If the award is made after that date, HDR reserves the right to reprice the effort.
PROPOSAL FOR PROFESSIONAL SERVICES 
TO PREPARE 
AN ENVIRONMENTAL IMPACT REPORT 
FOR THE PROPOSED 
SANTA BARBARA CITY COLLEGE 
MASTER PLAN 

submitted to: 
Santa Barbara City College 

Henningson, Durham & Richardson 
Ecological & Safety Sciences 
1150 Coast Village Road Suite H 
Santa Barbara, California 93108
TECHNICAL APPROACH

The Ecological & Safety Sciences Department of Henningson, Durham & Richardson is pleased to respond to your request for proposal to prepare an environmental impact report on the proposed Master Plan for Santa Barbara City College (SBCC). HDR is particularly qualified to conduct these studies as a result of its experience in the Santa Barbara, Ventura, and San Luis Obispo Counties. The staff available for projects in these areas is well recognized both locally and nationally for professional excellence and objectivity.

The firm of Henningson, Durham & Richardson has performed architectural, engineering, and planning studies for over 57 years. Its thirteen offices across the nation provide a support staff of nearly 500 HDR specialists. Over 4,000 projects in total have been completed since the firm was organized in 1917. The value of projects designed and constructed totals over $800 million dollars.

HDR's specialists in the fields of land-use planning and environmental impact analysis work through the Ecological & Safety Sciences Department in Santa Barbara and in Washington, D.C. HDR has performed environmental impact statements for clients throughout the nation. HDR has permanent offices located in Charlotte, Dallas, Denver, Helena, Los Angeles, Minneapolis, Norfolk, Omaha, Pensacola, Phoenix, Santa Barbara, and Washington, D.C.

Locally, and within the Tri-County Area, the E&S Department in Santa Barbara has a reputation of professional excellence developed and maintained with some 20 clients since its inception. Illustrative projects completed include the proposed Cuyama Phosphate Mine prepared for the County of Santa Barbara; the proposed Padre-Juan Class I
Sanitary Landfill Project prepared for the Ventura Regional County Sanitation District, Ventura County; the El Mirasol Condominium Project prepared for the City of Santa Barbara/ValCoast Properties Inc. and the proposed Knowlwood Tennis Club Expansion prepared for the County of Santa Barbara.

E&SS Santa Barbara takes particular pleasure in noting our experienced in-house capabilities. All our specialists are residents of the County, and operate directly out of the Santa Barbara branch office. Many of the specialists are long-term County residents. Our interdisciplinary team includes specialists in biology, terrestrial ecology, geology, limnology, engineering, environmental hazards, sociology, cultural anthropology, public safety, land use, transportation, urban planning, air quality, noise analyses, computer analysis, statistics, and social infrastructure.

A. APPROACH

HDR proposes to prepare a Draft Environmental Impact Report for the Santa Barbara City College in accordance with Article 9, Sections 15140 through and including 15147, Guidelines for Implementation of the California Environmental Quality Act of 1970, as Amended and in accordance with the City of Santa Barbara guidelines and the SBCC Board of Trustees procedures for evaluating its own projects. Inventories of existing conditions on the site, and assessments of probable environmental impacts will be performed. Analysis of impacts will be made with regard to adverse, beneficial, direct, secondary, short- and long-term effects of the proposed project for both the local and regional area. The magnitude and relative significance of impacts will be explored and discussed in detail. Those unavoidable adverse impacts which can be reduced but not completely eliminated will be identified.
Upon review of the Draft EIR, appropriate officials can incorporate its findings into the decision-making process as they desire.

We foresee close interaction between HDR staff members and the officials and employees of Santa Barbara City College to assure:

- rapid and complete data collections
- recognition of community attitudes and provisions for input to the EIR
- consensus of EIR format, organization, and procedures
- concurrence on methodology and criteria used to assess environmental impacts
- notification of HDR Study Director of public or other meetings for which HDR attendance may be desired

HDR will perform field surveys, prepare technical studies and synthesize a succinct evaluation of impacts and alternatives. The Draft EIR will be presented, with our recommendations, to SBCC for review and acceptance. A concise executive summary of findings, including impacts, mitigation measures and alternatives will be included in the Draft EIR.

B. SCOPE OF WORK

HDR proposes to perform the study in seven tasks. These tasks provide for planning and execution of the Environmental Impact Study, beginning with development of a work schedule and concluding with preparation of the final version of the Draft EIR. Continuing interaction between HDR staff, SBBC officials, and the OEQ, and County agencies if necessary, is important throughout the EIR preparation process; therefore, an ongoing management task is provided. This is proposed at no cost to SBCC in this proposal only.

1. Task 1: Continuity - Project Management

HDR's E&SS Department will employ a management approach which has been proven successful on numerous other projects with local government
agencies. A Study Director will be assigned and the responsibilities of the Study Director include continuing liaison with all appropriate officials with the authority for or interest in the proposed project. Liaison with City officials and affected City and County Planning Agencies will be maintained throughout the study to ensure compatibility of goals and objectives within SBCC's Master Plan and to reduce duplication of research effort.

Internal responsibilities of the Study Director for specific problem areas of the Impact Technical Study include planning the work effort, selecting team members, organizing the staff, directing and coordinating production throughout the project and providing continuity in the work effort and report publication.

a. SUBTASK 1: MOBILIZATION, ADMINISTRATION, AND PREPARATION OF DETAILED STUDY DESIGN

The preparation of a detailed study design is the first and most critical item of work. A basic premise of our study design policy is that all facets of the work program are oriented toward creation of the final product - in this case, the preparation of an environmental impact report which will satisfy all applicable Federal, State, and local permit requirements. It is intended that the study program remain flexible and responsive to developments and impacts identified during the course of the study.

b. SUBTASK 2: DETERMINATION OF PROJECT GOALS, OBJECTIVES, AND EVALUATION CRITERIA

At the outset, it is essential to define the problem, i.e., the goals and objectives of the project and the criteria by which project alternatives are to be evaluated. The evaluation criteria will reflect at minimum the goals and objectives set forth in the SBCC Master Plan and Santa Barbara City Master Plan.
2. Task 2: Data Assembly and Review

Collection of pertinent information for analysis of impacts will be actively carried out through the first half of the study program. In the final phases of the study, new data will be assimilated as appropriate within the scope of work. Geology and soils reports, grading maps, site plans, topographic maps, aerial photographs, architectural renderings and evaluations, and a market survey or economic pro forma are traditionally acquired by HDR from the client at the outset of the study program. Upon verification of inputs received from the client, data regarding such information as projected water use and availability, traffic counts, school district capacity, etc. are collected by the HDR research team from the client and local Santa Barbara County agencies, special districts, and other pertinent sources. Data are reviewed to assure that unnecessary new data are not generated.

Following receipt of the necessary data and site surveys where necessary, HDR specialists independently prepare their technical studies. For this project we feel evaluation is required in the following fields:

1. Traffic/Transportation
2. Air Quality
3. Geology/Environmental Hazards Analysis
4. Flora
5. Fauna
6. Noise
7. Visual Quality
8. Land Use
9. Economics
10. Social/Infrastructure
11. Service Systems
Particular attention will be focused on existing zoning conditions, traffic (transportation), air quality, visual quality, social infrastructure, land use compatibility, and economics of the forecasted development plan.

The data assembly task must provide sufficient information to allow characterization of existing conditions of the study area. This description will be included under Environmental Setting of the EIR.

3. Task 3: Community Involvement Program

A community participation program will be established with the concurrence of SBCC to create a forum for information exchange. HDR's experience has revealed that public participation during early stages of project design and impact evaluation facilitates sound environmental planning. The amended version of CEQA of 1970 (7 December 1973) specifies in Section 15083(b) and 15160(c) that provision should be made to allow greater public involvement. Although these sections specifically address the need for adequate review time of EIR's, it is our belief that, in addition, an early community involvement plan is highly desirable, and complies with the intent of CEQA.

The objective of the program is to allow for representation of all points of view, from interested citizens, residents proximate to the site, representatives of planning groups, governmental representatives, and any others who wish to have input regarding the proposed project. Those wishing to express their views would be invited to attend one evening meeting. The purpose of such a meeting is to allow an accurate project description to be presented to the public, to establish an identifiable focal point (HDR) for communication regarding the project, and to describe the function and purpose of an EIR.
4. Task 4: Impacts to be Evaluated

Impacts, including direct, indirect, beneficial, adverse, short- and long-term, primary, secondary and ancillary effects of the projected completion of the Master Plan will be identified. This task seeks to specify which impacts are probable, and thus require discussion; and to eliminate study of those impacts which are peripheral or irrelevant.

a. Subtask 1: Geographic Boundaries

The geographic limits of the study area will be defined by boundaries of impact identified by various specialists comprising the environmental study team. For each discipline, the study area will coincide with the limits of measurable impact due to implementation of the SBCC Master Plan. It may be appropriate to define direct and indirect or primary and secondary impact areas, depending upon the discipline involved. As examples E&SS will assess potential impacts of the following parameters:

(1) Socioeconomic

A socioeconomic assessment will evaluate the consequence of population change and the subsequent economic well-being of Santa Barbara as these parameters relate to the SBCC Master Plan.

Cohort survival tables suggest a long-term decline in college and university populations. By careful analysis of changing community patterns by age or interest structure, the viability of the community college system as a process of expanding existing educational levels can be assessed. Included in the report will be current, up-to-date figures, statistics, and trends for the Santa Barbara area. One recent source that will be utilized in this analysis is Santa Barbara: The Impacts of Growth - Citywide Effects, prepared for the City of Santa Barbara by Santa Barbara Planning Task Force (Vol. 1, 1974).
The assessment approach for socioeconomic analysis will evaluate the following factors as determinants of the future demand for increased college services:

- Time series analysis of Santa Barbara population and employment by level and type.
- Comparison of Santa Barbara student education achievement with state and national standards.
- City and regional employment patterns as they adjust the education needs of employers and employees.
- Shifts in community age structure with particular emphasis upon continuing education.
- Evaluation of Santa Barbara minority populations and college attendance interactions.
- Shifting housing patterns as related to enrollment.

(2) Noise

The noise analysis will consider both primary or direct impacts resulting from construction and operation noise, noise resulting from accelerated demographic growth, and concomitant increased noise from transportation vehicles and activities. Also, both short- and long-term effects of the project will be assessed with recommended measures to minimize or alleviate adverse impacts.

(3) Air Quality

The air quality assessment will primarily consider impacts resulting from pollution emanating from the increased traffic activity within the project's comprehensive boundary, and the concomitant impact on the immediate, local, and regional air basins, and secondary impacts resulting from accelerated growth and development. For purposes of compilation and projection of an air pollution emissions inventory, the primary air contaminant sources are divided into mobile and stationary categories.
Analysis will incorporate the following:

- Estimates of changes in air pollutant emissions due to growth
- Identification of significant corridors which may be adversely affected by increased vehicular emissions or facility construction
- Predictions of worst-case pollutant concentrations to assess maximum possible adverse impacts from the proposed project
- Levels and duration of pollutant exposure or concentration
- Severity of duration and effect
- Synergistic effects and sensitive environmental conditions
- Discussion of regional climatic factors affecting dispersion and mixing of toxicants

(4) Traffic Analysis

Safe, efficient transportation is central to the objectives of SBCC's Master Plan. Interdisciplinary analyses which interrelate environmental impacts with transportation planning and engineering are crucial. Collection of basic data on the existing traffic situation including division of the study area into general origin and estimation zones suitable for traffic allocation is required. Careful analysis of potential changes in traffic flow patterns in the areas surrounding the project will be investigated.

Primary transportation modes including "pedestrian," "private vehicle," and "bus" will be assessed.

Suggested factors for preliminary safety analysis:

- ADT
- Peak hour volumes
- Directional and nondirectional counts - existing and predicted
- Existing and projected parking needs
- Level of service
- Exploration of alternate access routes to relieve traffic snarls and to facilitate circulation
5. **Task 5: Report Synthesis**

The person assigned as Study Director is responsible for final report preparation, synthesizing elements into a cohesive, objective, readable document. This results in the Draft EIR, which is supported by Technical Reports, under separate cover. As you know, we maintain in the E&S files copies of all original professional staff reports; these are available for review if necessary. Throughout, we take care to retain the integrity of each specialist's conclusions, as their contributions are incorporated into the final synthesized report.

6. **Task 6: Report Production**

The Study Director is responsible for on-cost/on-time Draft EIR production. This task includes review, revision of the synthesized report by specialists where necessary, and editing, typing, printing, binding, and delivery of the Draft EIR. All graphic and reproduction work is the responsibility of Ecological & Safety Science.

7. **Task 7: Public Hearings**

A separate task is provided for public hearings. If it is determined that public hearings will be required for the project, Ecological & Safety Sciences will provide representation at hearings by separate agreement with the applicant on a cost-plus-fee basis. We feel this will provide maximum flexibility in arranging for public hearing representation as later determined necessary. If this arrangement is not satisfactory, we will provide an alternative. Please note, however, that at least a single public meeting is proposed as a portion of the Community Involvement Program, to solicit input from interested persons.
ORGANIZATION AND PERSONNEL

The Ecological & Safety Sciences Department of Henningson, Durham & Richardson is organized for efficient management of both small and large environmental studies. The Department, managed by Norman Harris, has offices nationwide, with the main office located in Santa Barbara, California. Mr. Harris has eighteen years of experience in environmental and safety studies.

The project director and project personnel will be chosen from the two technical departments which comprise the technical staff. The project director reports directly to the manager of the division. An organization chart of the Department and resumes for the individuals planned for use on the project are attached.
ORGANIZATION CHART FOR THE ECOLOGICAL & SAFETY SCIENCES DEPARTMENT

DIVISION MANAGER
N. Harris

ADMINISTRATIVE DIRECTOR
T. Fahy

TECHNICAL DIRECTOR
T. Nybakken

DIRECTOR OF PUBLICATIONS
J. Higley

DIRECTOR OF ENVIRONMENTAL SCIENCES
Dr. L. Waian

DIRECTOR OF ANALYTICAL SERVICES
Dr. R. Lee
NORMAN A. HARRIS

MANAGER

NUCLEAR PHYSICIST AND AIR QUALITY SPECIALIST

EDUCATION:

Bachelor of Arts in Physics and Mathematics, Occidental College, 1955.
Graduate of Oak Ridge School of Radiological Physics.

HONORS AND AWARDS:

Sigma Pi Sigma (Physics)
Kappa Mu Epsilon (Mathematics)
Listed in Who's Who in Atoms.

GENERAL:

Mr. Harris is a specialist in simulation modeling, probabilistic and statistical analysis, and model validation techniques as applied to ecosystem transport, deep-ocean diffusion, schooling and sea transport, turbulent flow modeling, reactor-power-plant impact assessment, atmospheric transport, air quality, reactor kinetics, radiation safety, system management, and program direction and marketing. As a project manager, he has been responsible for analytical and experimental programs relative to the assessment of environmental impact for power plants and other major construction programs. He is nationally known for development of Curie-dose thunderhead and other computer programs related to atmospheric dispersion, oceanographic dispersion, and marine biological dynamics. Other accomplishments include analytical and experimental research and development services related to specialized diffusion models for use in analyzing diffusion of gases, and development of environmental quality factors related to regional planning.

EXPERIENCE

1974 to Present

Ecological and Safety Sciences, Assistant Manager. Responsible for fiscal planning and technical direction in data management, archival design computer simulation, atmospheric transport, aquatic dispersion, marine transport, ecosystem simulation, radiological analysis, and other analytical and technical work relative to environmental analysis.

Projects:

Omaha Public Power District Fossil Fuel Plant Environmental Impact Report.
Omaha Public Power District Fort Calhoun Nuclear Unit #2 Environmental Report.

1969 to 1974


1968 to 1969

McDonnell-Douglas Astronautics, Western Division, Principal Scientist.

1963 to 1968

Planning Research Corporation, Senior Associate.

1960 to 1962

Atomics International, Project Manager for System Safety.

1956 to 1960

Marquadt Corporation, Research Engineer.
LEE B. WAIAN
DIRECTOR OF ENVIRONMENTAL SCIENCES
TERRESTRIAL BIOLOGIST

EDUCATION:
Ph.D. in Biology and Behavioral Ecology,
University of California at Santa Barbara,
Graduate work in Zoology, Social Science, and
Education at University of California, Berkeley,
1963.
Bachelor of Arts in Field Biology, University
of California at Santa Barbara, 1962.

MEMBERSHIPS:
American Association of the Advancement of
Science
Sigma Xi (elected member)

HONORS AND AWARDS
AOU Student Award
Fullerton Youth Science Center

GENERAL:
As Director of Environmental Sciences, Dr. Waian assigns and supervises the technical staff
in biological sciences, develops specific systems and procedures consistent with client
requirements, directs data acquisition, compilation, and clarification, and prepares significant
sections for environmental impact assessments and reports. Prior to his association
with Ecological and Safety Sciences, he was the first Director of the Tucker Wildlife
Sanctuary with sole responsibility for all aspects including fiscal management as well as
professional staff and personnel. Dr. Waian’s research on the white tailed kite (Elanus
leucurus) has attracted worldwide interest, and he is considered to be one of the two world
authorities on the behavior and ecology of this species. International ornithological
attention has also been drawn to motion-picture photography done by Dr. Waian in support
of his doctoral dissertation.

EXPERIENCE:

1973 to Present
Ecological and Safety Sciences, Director of
Environmental Sciences.

Projects:
Omaha Public Power District Nuclear-Powered
Generating Station Unit #2 Environmental Report.

Omaha Public Power District Fossil Fuel Plant
Environmental Impact Report.

Navajo County, Arizona and Pinetop-Lakeside
Sanitation District Regional Central Interceptor
Sewer System and Wastewater Treatment Facility
Environmental Impact Statement.

Application for Withdrawal and Impoundment
of Waters of Blackwater and Nottoway Rivers,
Environmental Impact Statement.

1970 to 1973
Santa Barbara Community College, Instructor
Coordinator in Biology and Ecology,
Tyrolean Village, Inc., Environmental Cons. Independent Film producer and private
instructor in Environmental Education.

1968 to 1970
California State University at Fullerton
Assistant Professor and Director, Tucker
Wildlife Sanctuary.
PUBLICATIONS:

"The Behavioral Ecology of the North American White-Tailed Kite (Elanus leucurus majusculas) of the Santa Barbara Coastal Plain."
"The White-Tailed Kite in California with Observations of the Santa Barbara Population,"
"Observations of Food-Caching by an Adult Female Sparrow Hawk."
ROBERT E. VAN TASSELL, M.A.
ENVIRONMENTAL SCIENTIST II

EDUCATION:

Doctoral Studies, University of California at Santa Barbara, Economics. Emphasis on Urban, Regional and Environmental Economics, Industrial Organization (on leave of absence).

Master of Arts in Economics, with emphasis on Urban and Regional Economics, University of California at Santa Barbara, 1971.

Bachelor of Arts in Economics, University of California at Santa Barbara, 1969.

HONORS AND AWARDS:

UCSB: Honors-at-entrance; Dean's List Scholar, Graduation with high honors.

Alan Hancock College: Alpha Gamma Sigma Honor Society, Kathleen D. Loly Honor Award; Bank of America Award in Business Administration.

GENERAL:

Mr. Van Tassel acts as Study Director for all HDR programs in the South Central Region (principally water treatment and water pollution control plants in Texas and Arkansas), and is one of the Study Director level personnel available for programs in Southern California. Prior to his employment in 1974, Mr. Van Tassel was also used by HDR as a consultant in Economics and Land Use Planning.

EXPERIENCE

1974 to Present
Environmental Scientist II, Henningson, Durham & Richardson, Study Director for construction projects, land-use planning studies.

1973 to 1974
Consultant, Environmental Economist, Peterson Development Corporation, Solvang, California. Preparation of Environmental Impact Reports, project design, liaison with public agencies, construction management of $2.5 million commercial complex.

Economic Consultant, John Muir Institute, Berkeley, California.

1973
Lecturer, University of California at Santa Barbara, Department of Environmental Studies. Taught courses in Environmental Planning; Economic, Political, and Physical Realities of Regional Land Use (emphasis on Santa Barbara County); and on the Social Environment (history, economics, and politics of American environmental concern).

1969 to 1972
Head Teaching Assistant, UCSB, Department of Environmental Studies. Participated in an innovative, interdisciplinary program that required the preparation and evaluation of educational methods, coordination of teaching responsibilities and the teaching of environmentally oriented material in biology, economics, history, and political science.

1969 to 1971
Examination Reader, UCSB, Department of Economics.

1968
Accountant: Johns-Manville Corporation, Lompoc, California.
PUBLICATIONS:


ROBERT PATTerson, Ph.D.(c)

ENVIRONMENTAL SCIENTIST  I
BOTANIST

EDUCATION:

Ph.D. candidate (October 1974) in Biology,
University of California, Santa Barbara.
Master of Arts in Botany, University
of California, Santa Barbara, 1972.
Bachelor of Arts in Botany, University
of California, Santa Barbara, 1969.

MEMBERSHIPS:

Botanical Society of America, American
Society of Plant Taxonomists,
Society for Economic Botany,
Society of the Sigma XI

GENERAL:

Mr. Patterson is a plant systematist specializing in the vascular plants of the
Western United States. His current responsibilities include the botanical investiga-
tion of the future site of a power plant in the midwest. While studying at the
University of California at Santa Barbara he served as an assistant instructor in
plant taxonomy, plant anatomy, introductory botany and biology, and in a field
course dealing with the plants of California. He also served as a tutor to Economic
Opportunity Program students in botany.

EXPERIENCE

1974 to Present

Ecological and Safety Sciences, Botanist

Projects:

Omaha Public Power District Fossil Fuel
Plant Environmental Impact Report.

Omaha Public Power District Fort Calhoun
Nuclear Unit #2 Environmental Report.

1972 to 1974

Assistant Greenhouse Technician, University
of California, Santa Barbara,
Greenhouse Facility.

1969 to 1972

Laboratory Instructor, Department of
Biological Sciences, UCSB.

1968 to 1969

Assistant Herbarium Botanist, UCSB.

PUBLICATIONS:

The Biosystematics of Linanthus section
Siphonella (Polemoniaceae) Ph.D. thesis
in preparation.

An Investigation of Polyploidy in the
Linanthus nuttalli complex iner. J.
Bot. 61, No. 5, Supplement:48.
IVANA ROLAND, M.A.
ENVIRONMENTAL SCIENTIST II
BOTANIST AND ZOOLOGIST

EDUCATION:
Master of Arts in Zoology, University of California, Santa Barbara, 1969.
Bachelor of Arts in Zoology, University of California at Santa Barbara, 1964.

MEMBERSHIPS:
Santa Barbara Botanic Garden
California Native Plant Society
Cooper Ornithological Union

HONORS AND AWARDS:
Campbell Fellowship, UCSB
Student Membership Award, American Ornithologists' Union, 1964.
EPIC Scholar, 1963-66

GENERAL:
Ms. Roland is experienced in both plant and animal sciences and is responsible for evaluating the impact of proposed projects on flora and fauna for that phase of environmental impact statements. She has served as coordinator for lab sections in Comparative Vertebrate Anatomy and Embryology and Vertebrate Physiological Cycles, a lab and field course in experimental research methods, with responsibility for the labs and the materials, the design and set-up of teaching experiments, and for the integrated functioning of the staff associated with the courses. As a University instructor, she taught labs, field sections and discussion sections in General Biology, Vertebrate Natural History, Vertebrate Physiological Cycles, Comparative Anatomy and Embryology.

EXPERIENCE

1974 to Present
Ecological and Safety Sciences, Botanist and Zoologist for environmental and ecological projects.

Projects:
Ventura County Regional Sanitary District, Padre- Juan Canyon Sanitary Landfill Environmental Impact Report.
Omaha Public Power District Fossil Fuel Plant Environmental Impact Report.
Omaha Public Power District Fort Calhoun Nuclear Unit #2 Environmental Report.

1973 to Present
Santa Barbara City College, Life Sciences Division, Instructor, General Biology Labs. Santa Ynez Research Farm, Technician in Agricultural Research Lab.

1972
Goldenwest College, Huntington Beach, Calif. Instructional Associate. Auto-tutorial program in Human Anatomy and Physiology.

1969 to 1971
University of California, Santa Barbara, Department of Biological Sciences, Teaching Associate. Lab Assistant in Vertebrate zoology, responsible for maintenance of research literature used as course content in Vertebrate Physiological Cycles.

1969
University of California, Santa Barbara, Herbarium, Lab Assistant, Collection, mounting, and cataloguing of plants.

1965
University of California, Santa Barbara, Research Assistant (Plant Ecology).

1964
University of Costa Rica, Field studies in a graduate program in tropical biology and ecology, (awarded full grant).
DIANA S. WALDIE
ENVIRONMENTAL RESEARCH ASSOCIATE

EDUCATION:
Bachelor of Arts in Environmental Studies
University of California, Santa Barbara,
1973 (with special emphasis on analysis of
environmental impact reports).

HONORS AND AWARDS:
Cum Laude - UCSB
California State Scholastic Scholar
University of California, Santa Barbara
Dean's List Scholar

GENERAL:
Ms. Waldie specializes in preparation and analysis of environmental impact reports and
assessments with experience in data coordination, historical/recreational/services research,
field surveys and water quality measurements, sampling and analysis, area planning studies and
overall project synthesis. She is primarily concerned with coordination and collection of
necessary background and specialized data to streamline consultants efforts. She assists the
project start-up, implementation, coordination, final report synthesis and subsequent public
hearings.

EXPERIENCE:
Ecological and Safety Sciences, Environmental
Research Associate and Deputy Project Manager
for a wide range of projects. Responsibilities
include data collection and coordination, re-
creational/historical report components,
writing and overall report synthesis.

PROJECTS:
Omaha Public Power District Fossil Fuel
Plant Environmental Impact Report.

Omaha Public Power District Fort Calhoun
Nuclear Unit #2 Environmental Report.

Navajo County Arizona Central Interceptor
Sewer and Wastewater Treatment Facility.

Highland Village, Texas Sanitary Sewer
Environmental Impact Report.

Commerce, Texas Sanitary Sewerage and
Wastewater Treatment Plan.

Texarkana, Texas Sewerage and Wastewater
Treatment Facilities.

Ventura Marina & Recreational Complex
Environmental Impact Report for planned
resort/recreational hotel coastline develop-
ment for the City of Santa Barbara.

Environmental Impact Report for 80 luxury
condominium units, City of Santa Barbara.

Knollwood Tennis Club Environmental Impact
Report.

Environmental Impact Report for proposed
phosphate mining activity in Santa Ynez
Mountains.

Ventura County Sanitary Landfill Environ-
mental Impact Report, Water Quality Analysis
1972 to 1973

Isla Vista Planning Commission, Goleta,
California. Planning Aid and Assistant
to the Planning Coordinator. Assisted
in preparation of local government and
planning studies.

PUBLICATIONS:
"Environmental Impact Report for UCSB
Married Student Housing Project," 1973;
Environmental Impact of Deepwater Oil
Drilling by Exxon in the Santa Barbara
Channel; Thesis, University of California,
Santa Barbara, 1973; "Energy Production in
the Southwestern United States," Co-author
UCSB Environmental Studies Research Project,
1972.
FRANK C. BARNES, M.S.
TRANSPORTATION PLANNING CONSULTANT

EDUCATION:
Master of Science in Engineering, University of California at Los Angeles.
Bachelor of Science in Engineering, California State University at Los Angeles.

REGISTRATION:
Professional Engineer - California and Colorado

GENERAL:
Mr. Barnes has extensive experience as a transportation planner. His current responsibilities include planning for a 1600-bus public transportation agency; management of a technical study of alternative transit corridors and systems in the greater Los Angeles area; management of a six-county area transit development program; and project management for the Transit District's portion of the National Transportation Planning Study. As a transportation systems engineer, he directed transit development plan studies; the transportation portion of an award winning urban renewal project; roadway and traffic control systems for major land developments, special traffic and parking studies, simplified accident data retrieval and analyses systems, and computer simulation of transportation systems. Mr. Barnes has also made significant contributions in traffic control, including development of traffic signal timing techniques and studies of vehicle-driver behaviour in relation to traffic signals. He has designed aerial traffic survey techniques and performed economic analysis of traffic-control alternatives.

EXPERIENCE:

1973 to Present

Projects:
Omaha Public Power District Nuclear-Powered Generating Station Unit #2 Environmental Report.
Omaha Public Power District Fossil Fuel Plant Environmental Impact Report.
Ventura County Regional Sanitary District, Padre Juan Canyon Sanitary Landfill Environmental Impact Report.
Ventura Marina and Recreational Complex, Environmental Impact Report.
Kentucky Fried Chicken Technical Studies.
Cuyama Phosphate Mine Environmental Impact Report.
El Mirasol Condominium Environmental Impact Report.
Los Positas Inn Environmental Impact Report.

1970 to Present
Southern California Rapid Transit District, Transportation Planner.

1966 to 1970
Planning Research Corporation, Transportation Systems Engineer.

1965 to 1966
City of Los Angeles, Assistant Production Control Engineer, Traffic Department.
1962 to 1965
City of Los Angeles, Assistant District Engineer, Western Traffic Department.

1959 to 1962
California State College, Engineering Laboratory Assistant, Department of Engineering.
ROBERT LUCAS CROUCH, Ph.D.
CONSULTANT ECONOMIST

EDUCATION:
Ph.D. in Economics, University of Essex.
Master of Arts in Economics, University of California at Los Angeles.
Bachelor of Science in Economics, London School of Economics.

MEMBERSHIPS:
American Economic Association Econometric Society

HONORS AND AWARDS:
Fulbright Scholar
Editorial Board, Journal of Economic Studies
Senior Research Fellow, Population Institute
East-West Center

GENERAL:
Dr. Crouch is experienced in regional macro- and microeconomic theory and growth; money; theory of finance and investments; international economics. He is also experienced in the economic assessment of commercial, residential and industrial development; housing, and an expert in real estate. He is also conversant with computer applications.

EXPERIENCE:

1973 to Present
Ecological and Safety Sciences, Consultant Economist on environmental assessment and impact studies.

Projects:
Omaha Public Power District Fossil Fuel Plant Environmental Impact Report.
Omaha Public Power District Fort Calhoun Nuclear Powered Generating Station Unit #2 Environmental Report.
Navajo County, Arizona and Pinetop-Lakeside Sanitation District Regional Central Interceptor Sewer System and wastewater treatment facility environmental impact statement.
Ventura Marina and Recreational Complex, Environmental Impact Report.
Application for Withdrawal and Impoundment of Waters of Blackwater and Nottoway Rivers Environmental Impact Assessment.

1967 to Present
University of California at Santa Barbara, Associate Professor of Economics.

1966 to 1967
Northwestern University, Associate Professor of Economics.

1964 to 1966
University of Essex, Lecturer.

1962 to 1964
Northwestern University, Assistant Professor.

PUBLICATIONS:
List upon request.
MICHAEL ALLAN EARLE
CONSULTANT

EDUCATION:

Candidate for Doctor of Philosophy,
Linguistics, University of Southern
California (Dissertation in progress).
Master of Arts in Linguistics, University
of Southern California, 1968.

MEMBERSHIPS:

Acoustical Society of America,
Associate Member.
American Society of Planning Officials
Institute of Noise Control Engineers
Carpinteria City Planning Commission,
Chairman.
Dale Carnegie Course Alumni Association,
President.

HONORS AND AWARDS:

NDEA Title IV Fellowship, 1967-1970
NDEA Title VI Fellowship, 1964

GENERAL:

Mr. Earle is experienced in the gathering and interpretation of field data on noise levels and spectra. He is currently writing a noise pollution ordinance for the City of Carpinteria. His special interests include electronic data processing of speech data for speaker identification and verification, and acoustic phonetic studies of speech. He is also a recognized authority in linguistics, including American dialects.

EXPERIENCE

1974 to Present

Ecological and Safety Sciences, Consultant,
Community noise studies.

Projects:

Omaha Public Power District Fossil Fuel
Plant Environmental Impact Report.
Omaha Public Power District Fort Calboun
Nuclear Unit #2 Environmental Report.
Las Positas Inn Environmental Impact Report.
Ventura Marina and Recreational Complex,
Environmental Impact Report.
El Mirasol Condominium Development Environ-
mental Impact Report.
Cuyama Phosphate Mining Environmental
Impact Report
Knowlwood Tennis Club Environmental Impact
Report

1970 to Present

Speech Communications Research Laboratory,
Assistant Research Linguist
1967 to 1970

University of Southern California, Instructor,
English communication program for foreign
students.
1965 to 1967

University of Southern California, Acoustic
Phonetics Research Laboratory, Research Asst.
1963 to 1965

University of California at Los Angeles,
Student (Anthropology: oriental languages).
1960 to 1963

United States Army Security Agency,
Voice Intercepter: Translator.
ROBERTA S. GREENWOOD, B.A.
CONSULTANT

EDUCATION:
Wellesley College, B.A. 1947, with honors.
Boston University, graduate study.
UCLA, graduate study in anthropology and architecture.

MEMBERSHIPS:
Society for California Archaeology, Treasurer
Southern California Academy of Sciences, Editor, Index
Task Force for Archaeological Element in Los Angeles Plan, Chairman
Cultural Heritage Board, Los Angeles City, Liaison Consultant in Archaeology
American Anthropological Association, Fellow
American Association for the Advancement of Science, Fellow
Friends of Archaeology (UCLA), Board of Directors
Pacific Palisades Historical Society, Landmark Chairman
Los Peñas Canyon Arboretum (Los Angeles County), Trustee
Natural History Museum of Los Angeles County, Research Associate in Archaeology
California Department of Parks and Recreation, Archaeological Project Leader

PUBLICATIONS:
Numerous archaeological journal articles.
Sixteen environmental impact reports, archaeological survey and study inputs.

EXPERIENCE
Experience in Archaeology (partial listing):
Excavations with UCLA Archaeological Survey:
Point Dume, Simomo, Del Mar, Whale Rock Reservoir, Parker Mesa, etc. 1959 et seq.
Browne Site. Director, 1961-65.
Rancho Canada Larga. Director, research study for UCLA, 1962-63.
Shisholop. Director, Division Beaches and Parks, 1965.
Santa Gertrudis Chapel. Director, Division of Highways, 1966.
Education:

Bachelor of Arts, Master of Arts, Doctor of Philosophy, University of California at Berkeley.

Experience

1973 to Present

Henningson, Durham & Richardson, Consultant.

1965 to Present

University of California at Santa Barbara, Associate Professor of Political Science.

1963 to 1965

The Ford Foundation, Program Specialist in Public Administration, Escuela de Administration Publica, Caracas, Venezuela.

1960 to 1963

The Brookings Institute, Research Associate and Senior Staff.

1962

Howard University, Department of Government, Lecturer.

Other Academic and Public Experience:

Congressional Fellow, American Political Science Association (1957-58); Served in offices of Rep. Prince Preston of Georgia and Senator Estes Kefauver of Tennessee; Consultant, Governor's Committee and Arid Lands, Arizona (1959); Consultant, Outdoor Recreation Resources Review Commission (1959); Assistant Program Director, California, Public Affairs Institute, exchange program for German citizens (1953); Member and Secretary, Committee on Arid Lands, American Association for the Advancement of Science (1966-69); Consultant, General Research Corporation, Santa Barbara, California (1965-69; 1972); Lecturer, U.S. Civil Service Commission Executive Seminar, Berkeley, California (1967, 68, 69, 72); Member, task group on Human Dimensions of the Atmosphere, sponsored by National Center for Atmospheric Research, Boulder, Colorado (1967-68); Member, Board of Editors, Western Political Quarterly (March 1968-70); Member, Board of Editors, Land Economics (1969-); Vice Chairman, Department of Political Science, University of California, Santa Barbara (1969); Acting Chairman, Department of Political Science, University of California, Santa Barbara (1969); President, Santa Barbara Chapter, American Association of University Professors (1969-70); Member, Executive Committee, California Legislative Internship Program (1969-70); Chief, Social and Behavioral Sciences Division, National Water Commission (1970-71); Chairman, Department of Political Science, University of California, Santa Barbara (1971-); Member, Advisory Panel, Office of Water Resources Research, Department of the Interior (1972-73); Member, Board of Editors, Policy Studies Journal of the Policy Studies Organization associated with the American Political Science Association, responsible for environmental policy (1972-).
Works in Progress:

A book of the case studies on decision-making in Venezuela, entitled Politics and Economic Policy in Venezuela, under consideration by a university press; Monograph on Governor's branch office program in Pennsylvania; Study of political issues and consequences of construction of Lake Powell on the Colorado River (part of major interdisciplinary study supported by the National Science Foundation); Preparation of manuscript (with Roger Davidson) of a simulation of the U.S. Congress entitled Simcong; Contract with John Wiley Publishing Company to write a textbook in public administration with John E. Moore.

Awards and Honors:

Phi Beta Kappa, University of California, 1951; Leonard D. White Award, American Political Science Association, for best dissertation in public administration, 1959; Western Political Science Association award for best dissertation on western politics, 1959; Elected Fellow, American Association for the Advancement of Science, 1965.

Memberships:

American Political Science Association; American Association for the Advancement of Science; Western Political Science Association; Phi Beta Kappa.

Publications:

NORTH AMERICAN WEATHER CONSULTANTS
Santa Barbara Municipal Airport
Goleta, California 93017
Telephone 805-967-1246
TWX 910-334-1181

Capabilities in CLIMATIC SURVEYS

Experience and Applications
NAWC has conducted numerous studies relating weather patterns to consumer demand and to operations so that weather forecasts and long-range outlooks can be applied meaningfully.

Sophisticated studies of climatic expectations in areas new to the client form a basis for bidding on, and management of, weather sensitive projects such as outdoor construction; aerial mapping; etc.; or agricultural activity.

Special instrumentation is often installed to collect detailed local weather information for use in planning industrial sites, designing cooling towers, or subdividing real estate; such data are also used for farm and orchard development, and municipal zoning. Even a short record at a proposed site can be correlated with long-term climatic records from some distance away to obtain good estimates of long-term frequencies of specific weather events.

NAWC also provides the legal profession with meteorological services in the form of climatic surveys and local collection of weather data, combined with expert evaluation and testimony.

A partial list of past and present clients is:
Bechtel Corporation
Sudden Ranch Corporation
Southern California Edison Company
Utah Power and Light Company
Santa Barbara County
The Fund Insurance Company
Allied Chemical Corporation
International Agricultural Service
Sandia Corporation
A-F Helicopters, Inc.
Los Angeles County, Department of County Engineer