1. Report on Career Education Project

Mr. Santee described progress on the specially funded Career Education Project as well as the new Career Development Facility. He cited as the greatest problems, lack of space and lack of time. After describing what is being done, Mr. Santee indicated as two programs for the immediate future, development of three slide-sound programs and doubling of the Career Education tape bank next year. A summary of activities of the Career Development Facility is attached.

2. Report on CCPES Visit

Mr. Elkins provided a general review of the January visit of the CCPES Team to help the College evaluate its occupational programs. He described plans for follow-up of the visit and indicated that his recommendations were currently being reviewed by faculty and staff. When that review is completed, a report will be prepared for the Board of Trustees.

3. Report on the Need for an Environmental Studies Program

Mr. Elkins reported on the study regarding environmental studies programs. A copy of his report is attached.

4. Report on Study of Requests for Home Economics Program

Mr. Elkins reported on the results of compiling a list of Home Economics offerings particularly in the Continuing Education Division. He will communicate that information to the Home Economics Association.
As of January 18, 1973, the CDF has achieved the following results:

**TOTAL CONTACTS** - 129 (those who have filled out the information sheet)

**TOTAL VETERANS** - 24

**MALES**
- 77

**FEMALES**
- 52

**AGES**
- 17-20: 62
- 21-25: 32
- 26, over: 18

**MAJORS**
- Academic: 97
- Vocational: 12

**BREAKDOWN OF SERVICES UTILIZED**

- **Printed Materials**
  - 79 have signed up to use the materials
  - 30 have utilized the material

- **Taped Interviews**
  - 45 have signed up to hear the tapes
  - 23 have heard them

- **Arranged Interviews** (scheduled for Spring Semester, 1973)
  - 23 have signed up

- **Resume Seminar** (scheduled for Spring Semester, 1973)
  - 17 have expressed interest

- **Career Games**
  - 43 have expressed interest
  - 15 have utilized the games

- **Outside Speakers** (scheduled for Spring Semester, 1973)
  - 33 have expressed interest

- **Career Counseling**
  - 246 by Mr. Santee, from October 1, 1972 through January 8, 1973

- **Testing (with number who have taken each test indicated)**
  - Otis Test of Mental Maturity - 69
  - Guilford-Zimmerman Temperament Survey - 42
  - Kuder Occupational Interest Survey - 84
  - Strong Vocational Interest Blank - 52
  - Allport-Vernon Study of Values - 70
  - Omnibus Personality Inventory - 71
  - Minnesota Paper Form Board - 10
  - Career Planning Profile - 50
Media used to publicize the facility during Fall Semester, 1972

Radio (KACL, KFTS)
Television (KEYT)
SBCC Community Newsletter
"The Channels" - SBCC campus newspaper
SBCC Student Handbook
SBCC "Counselor Comments"
SBCC "El Vaq"

Announcements over the public address system in the SBCC Campus Center
Community-wide distribution of the Career Development Facility brochure on January 10, 1973

SBCC Instructional Divisions contacted personally:

Business
English
Fine Arts
Health & Physical Education
Social Science
Trade & Technical
I. Introduction

There has been considerable dialogue over the past year at Santa Barbara City College relative to the need to establish an environmental studies or educational program which would prepare persons for employment as environmental technicians.

It is no wonder that many individuals and educators have shown an interest in setting up such programs, particularly when one attempts to speculate upon such quotations as the following:

"......the problem of environmental pollution is not new, though it is bigger now than ever before. What is new is the growing desire and demand to do something about it. In response to public pressure, the Congress and the state legislatures have passed much new legislation to deal with air, water, and land pollution, substandard housing and urban decay, radiation hazards, and solid waste disposal. This has resulted in the creation of many new programs on all levels of government and industry.

"These new programs have, in turn, created thousands of new jobs for environmental health technicians and sanitary inspectors with local and state health departments, for water and wastewater treatment plant operators with municipalities and industry, for food and milk products inspectors with agriculture departments and the milk and food industry, for air and water pollution control technicians with consulting engineering firms, and for technicians with public health laboratories."\(^1\)

Or:

"By 1980 the rapid population growth will have created environmental problems requiring 214,000 trained technicians. At the present rate of training - less than 1,000 new graduates per year - there will not be enough trained people to meet the demand. Educational facilities and teachers must be updated and added to insignificant numbers for the necessary production of trained technicians needed over the next five to ten years."\(^2\)

And finally:

"The long-range prospects for technicians are favorable. By 1975 - less than three years off - more than one million new interesting technical jobs promising good salaries will open in this country, predicts the U.S. Office of Education."\(^3\)

The figures mentioned above suggest a 100-200% increase in opportunities for employment as an environmental technician over the next few years. However, specific areas in which opportunities exist (namely, local, county or state) are not so easily identifiable.

II. Intent of this Survey

To establish what demand exists in the public and private sector for trained environmental technicians, and to identify those skills and knowledge necessary for employment.

III. Research and Findings.

State and federal agencies, other educational institutions, public officials, and (Continued)
members of the academic community were used in determining a need for an environmental technician training program at S.B.C.C. It was assumed (because of employee mobility) that the state of California must be considered geographically as a potential area of employment for technicians.

A. Local.

Santa Barbara is presently operating with a sewage plant that is in critical need of replacement. Sewage undergoes primary treatment only before it is dumped into the sea. When and if the new plant (now in the design stage) becomes a reality, a certain amount of money in the project is set aside for a feasibility study for water reclamation. According to Mr. Hogle, Santa Barbara City Public Works Director, the biggest employment opportunity in the future for technicians will be for sewage plant operators. He further explained that plants in Santa Barbara, Carpinteria, Montecito, and Goleta would require about twenty (20) personnel to operate.

Periodically, Santa Barbara City contracts with a firm in Los Angeles to validate the compliance of sewage quality outfall with the State water quality control board.

It is estimated that 55 additional jobs will exist by 1975 in the South Coast area for individuals with technical skills, i.e. engineering, life science, physical science, and mathematics. Also, it is forecast that some 39 individuals will be employed by the local government as technicians. However, the study fails to indicate whether these jobs are for wastewater technicians, environmental control technicians or whatever.

There appears to be a large reservoir of technical and professional personnel in the Santa Barbara area who have highly sophisticated skills in technology, the life and physical sciences. (See attachment - Experience Unlimited).

B. State.

On Friday, December 8, 1972, an Environmental Studies Workshop, sponsored by CJCA, was held at De Anza College in northern California. The entire session was devoted primarily to a show and tell session involving an approximate one acre environmental study area - a botanical garden. The facilities are used mainly for biology majors and for teaching of general education life science classes. The tone of the session was the importance of teaching ecological aspects from an "awareness" level and not from a "technician" standpoint. The program was directed only toward environmental studies. There appeared to be very little interest among the biologists (representing 18 campuses throughout northern California) to get involved in biology as applicable to the Environmental Technician program.

Orange Coast College has a full two year program in Environmental Technology. Students graduating from this program cannot find employment. According to John S. Owens, Vice Chancellor, Vocational Education, Orange Coast Community College District, "until the federal government is willing to support local governments in hiring environmental technicians, there will not be any job opportunities." Further, he adds that they have had limited success in placing returning veterans who have undergone a specialized MDTA program for a 12 week 480 hour session.

(Continued)
As previously mentioned, one should consider California when reviewing manpower needs in specific technologies. Consequently, a San Francisco study has been used to exemplify job opportunities. This study encompasses a large metropolitan employment area and is a current study just recently completed by West Valley Joint Community College District on the need for environmental technicians in the San Francisco Bay area. The WVCDD study revealed that needs, as projected by State and County agencies, were not encouraging. Some representative agencies contacted and excerpts from their correspondence are as follows:

Contra Costa County

City and County of San Francisco
Department of Public Health, San Francisco
Francis J. Curry, M.D.
Director of Public Health

"... no Assistant Sanitarian positions allocated at this time."
"All other positions in the Environmental Health Division are filled."

"Currently, the requirement for eligibility to take the registered Sanitarian's examination is graduation from a college or university with a minimum of 30 units of basic science. It is difficult to provide you with a projection of future employment positions. It can only be predicted that there will be a gradual increase over the years, in available positions of this type. This will occur as the general public becomes more aware of the environmental health problems that demand adequate controls."

"... we do not anticipate filling any technician positions in California."

U.S. Dept. of Agriculture
Soil Conservation Service, Berkeley, CA
C. R. Hillebrandt, Personnel Officer

State of California - Resources Agency
Dept. of Water Resources, Sacramento, CA
Rupert R. Finnegan, Personnel Analyst

"... at this time we are in the process of making reductions in staffing throughout the Department due to completion of phases of the State Water Project. These reductions will continue for the next two and one-half to three years. Thus, there is very little likelihood that we will be making any hires during that period among the engineers and technicians working on the Bay Area Programs."

"The Air Resources Board has almost no employment opportunities in the Bay Area."

State of California - Resources Agency
Air Resources Board
Sacramento, CA
John E. Hvizdak, Administrative Officer

Alameda County, Health Care Services Agency
W. W. Sampson, Ph.D.
Health Biologist
Bureau of Environmental Planning, San Leandro, CA

"At the moment, all positions are filled. We do not have an intermediate position, that is, one that requires two years of education."

Northern California Committee for Environmental Information, Berkeley, CA
Mary Whittemore, Executive Secretary

No salaried positions at this time and "do not expect to be otherwise in the near future."
State of California Dept. of Education
Sacramento, California
Rudolph J. H. Schafer
Consultant in Conservation Education

University of California, Riverside
Statewide Air Pollution Research Center
O. Clifton Taylor
Associate Director

"Mr. Smith (State Director of Vocational Education) feels that the employment field for environmental technicians is rather restricted at present, but that it may open up later as interest in environmental improvement increases."

"In recent months there has been a great deal of effort put out by several institutions to retrain unemployed space scientists for work in the field of ecology. Many of those have completed their training in the last few months and as they search for positions I am sure the estimation of available positions will change rapidly."

IV. Summary

Environmental programs have mushroomed in number. Contra Costa College in San Pablo, California, had the only program in 1969, in Water Technology. In 1970-71 there were some 40 environmental programs in California, their titles ranging from Environmental Studies to Environmental Engineering with, of course, a distinct difference in goals and objectives for each of the programs.

It appears that core subject matter in most programs (designated for technicians) includes Life & Physical Science, Mathematics, Electronic Instrumentation, and Chemistry. Also the majority of existing programs throughout the state emphasize water and wastewater as specialties within their respective curricula.

Environmental Technology is still a relatively new discipline. Specific job responsibilities evolving out of this program are still vague.

Santa Barbara County, at the present time, seemingly has an abundance of technical personnel available to satisfy most short range (three year) needs for environmentalists. (See HRD bulletin, "Experience Unlimited", attached)

Because of the change in local government personnel, which influences local environmental decisions; because of the uncertainty of the local sewage plant construction completion dates; because of unknowns due to local decisions involving the use of water and sewage hookups; it would be my recommendation for Santa Barbara City College to continue to offer courses in Environmental Studies, i.e., Man's Impact on Nature, and other awareness courses; however, we should hold on using our limited resources for program expansion until such time as we can identify with a more specific community and state need for environmental technologists.

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4. Forecasting Occupational Opportunities - General Research Corp.

(Continued)
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Criteria for Establishing and Maintenance of two year post high school Wastewater Technology Training Programs. Training Grants Branch, Division of Manpower and Training, WQO/EPA, Washington, D.C. 20242.

San Francisco Bay Area Environmental Education Needs Study. Research document, published by West Valley Joint Community College District in cooperation with California State Department of Education - Division of Vocational Education.


Resource - Personnel

William Anderson - Specialist, Occupational Education, California Community Colleges.

John Owens - Vice-Chancellor, Vocational Education, Coast Community College District, Costa Mesa, California.

R. D. Hogle, Santa Barbara City Public Works Director, Santa Barbara, California.

Ajax International Corp., Santa Barbara, California

William Jorgensen, Asst. Professor, Life Science, Santa Barbara City College

Dr. Nyle G. Utterback, Ecometrics, Inc., Santa Barbara, California.