PROSPECTUS
CHACO CANYON STUDIES

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INTRODUCTION

The purpose of Chaco Canyon National Monument is to preserve outstanding prehistoric remains of Basketmaker and Pueblo Indian ruins dating primarily from A.D. 700-1200, and to provide for the fullest degree of public educational and inspirational benefit from these remains as is consistent with their preservation.

Chaco Canyon contains a great number and a great variety of prehistoric remains including some of the largest and most imposing ruins in the United States. From these remains, which cover a period of approximately ten centuries, it has been possible to trace the growth and development of the Anasazi or Pueblo Culture from its simple primitive beginnings to its complex and highly urbanized peak development. As a result, the area offers excellent opportunities for not only preserving outstanding relics of the past, but also for studying and interpreting one of our country's most spectacular and interesting prehistoric cultures.

Because of its spectacular and nationally significant resources, Chaco Canyon is one of the outstanding archeological areas in the National Park System. In addition, the area is located in a section of the country which is rapidly becoming important as a recreational vacation land. With improved accessibility, Chaco Canyon can be expected to receive substantial increases in visitor use.

The high quality experience the visitor should receive at this area an investigative effort of major scope is necessary if the management and interpretive problems of the area are to be solved. The Chaco Canyon Archeological Center, a cooperative venture between the National Park Service and the University of New Mexico has been proposed as a means of offering solutions to these problems.

MULTIDISCIPLINARY RESEARCH ON CHACO CANYON IN RELATION TO SERVICE NEEDS

Concentrated, long-term inquiries on Chaco Canyon must serve National Park Service management and interpretive needs. The program will provide authoritative up-to-date, sophisticated scientific information on the history of man and his environment in the Chaco drainage. Such information, derived through a multidisciplinary approach, will provide answers to such immediate management problems as (1) floral cover to be encouraged in the area; (2) water and erosion-control within the national monument; (3) encouragement of wildlife species; (4) zoning for visitor use. It will provide authoriztive information for use in planning and executing imaginative interpretive and other information programs for visitor comsumption. Such programs, detailing in an interesting way the broad forces that shaped the course of man's history in the Chaco Canyon, should bring to the modern visitor increased appreciation of the fragile nature of his natural habitat; increased appreciation of the impact

human cultural events may have upon the habitat; and, in turn how an adverse effect upon the natural environment may react upon human cultural development.

The foregoing are the immediate Service needs at Chaco Canyon National Monument. They form the principal justification for long-term Service involvement in surveys and studies at this area. There are, however, broader, but from National Park Service management standpoint, secondary benefits to be derived from such a program. For example, while climatic and soil histories and data on floral and founal successions in the area may be of value to area management and interpretive programs, such material can have application far beyond the boundaries of Chaco Canyon National Monument. The information derived from these investigations may be applied at other Service-administered areas. It may also be applied to modern Navajo and Anglo land management programs over the entire region involved. These studies may be expected to develop information on which predictions of future trends may be based. Such predictions, if based on painstakingly assembled data, can offer an authoritative basis for planning future land-use.

As the major prehistoric Indian cultural developments of the Chaco are those of town-dwellers depending on agriculture as a major food source, there is an opportunity to study the history of a trend toward urban growth in response to agriculture. From such studies we

may derive information applicable to modern urban problems--that is, we may obtain insights into the problems of man living in closely associated social groups, the interplay and balance of social forces in such groups, the mechanism of cohesion and cooperation, the mechanisms of disorganization and community breakdown.

In order to accomplish the goals outlined above, the National Park Service must fulfill several objectives:

1. Encourage scientific explorations on a broad basis in order to support and strengthen Service interpretive and management programs.

2. Cooperate with other Federal, State, and local agencies to develop, on a regional basis, programs in ecological, historical, and anthropological resource conservation and recreation, and other appropriate disciplines.

3. Intensive investigations must be undertaken to determine new methods, techniques, and products for use in prehistoric and historic ruins stabilization and for preservation of objects.

4. Seek out meaningful and effective educational techniques for application to Area and Servicewide information and interpretive programs through studies in the behavioral audiovisual and communication disciplines.

4. Crucial to all park management programs is the need to stay abreast of current knowledge, and scientific attitudes and approaches. Such can best be accomplished through close Service contact and association with academic environments.

RESEARCH ISSUES IN THE CHACO DRAINAGE

To fulfill the general goals outlined in the foregoing sections, the National Park Service has entered into an agreement with the University of New Mexico for multidisciplinary activities to be performed in the Chaco area on a continuing basis. The program to be carried out, on a cooperative basis, is presented in the sections which follow, and can be broken down into two major groupings: (1) those which contribute to knowledge of the culture process (anthropological studies); and, (2) those which contribute to a knowledge of the environment. It is obvious that to fully comprehend man in relation to his environment in this area, analytic studies, presenting the interplay of these two factors, must also be prepared, drawing on the results of both social and natural science studies.

Culture Process

Objective: The unique potential of Chaco Canyon as a laboratory for testing propositions of a cross-cultural relevance, makes it an

exceptional area for investigating questions of cultural processes of change and stability. Studies stemming from such questions should contribute to the recognition of generalizations about the nature of culture without regard to time or space.

List of Projects:

1. The Development of Agriculture, Its Impact on a Cultural System

Chaco Canyon, with its great potential for detail concerning its cultural sequences, can serve as an important area for studying the impact on the total cultural system of the development of agriculture. Three questions relating to this impact might be asked of this sequence as well as to other relevant cross sequences:

a. the sequence of resultant changes in the cultural system, including demographic, organization, religion and the arts.

b. the developing relationship between this cultural system and others apart from it.

c. the impact of this introduction and its resultant changes on the ecosystem.

2. Town Life

Chaco Canyon developed a pattern of town life which appears to have bordered on urbanization. This pattern has developed elsewhere

in the world during the historic past and present, and has been the subject of many studies. What interferences can be made in regards to town life in Chaco Canyon from these previous studies and from what is known about Chaco Canyon prehistory? To what extent were population pressures, religion, water control systems, etc., important in influencing this development and leading to the downfall of Chaco Canyon culture?

3. Cultural Water Control Systems in a Marginal Environment

Recent investigations have suggested that Chaco Canyon had a well developed and complex water control system. Many other such systems have been described both archeologically and ethnographically from throughout the world. The significant cross-cultural study which might be stimulated by further investigation of the Chaco system in relation to the development of other such systems would hinge on the question; what was the development of and dynamic interplay between population size, complexity of the water control system and the nature of political authority.

4. The Cause of Differential Rates of Change in Cultural Systems

Chaco Canyon culture developed quite rapidly. What are the causes and mechanisms that allowed Chaco Canyon to move ahead so rapidly and how is this case related to other situations of differential culture change?

5. Implications of Interaction Between Continuous Distinctive Cultural Systems

Present evidence indicates there were three distinct cultural systems exploiting the Chaco Canyon environment. What are the implications of the presence of several community types toward an understanding of the pace of cultural change in Chaco Canyon?

6. Cultural and Ecological Implications of Population Growth

Chaco Canyon, between A.D. 800-900, was characterized by population growth. In this and similar situations, what impact did the population expansion have on the interrelated parts of the cultural and ecological systems?

Analytic Historic Investigations

Objective: To provide a framework within which to examine the problems of human and environmental relationships in the Chaco Canyon through time.

Approach: One of the basic problems to be resolved by explorations Chaco Canyon is the refinement and elaboration of the sequence and chronology of cultures in the Chaco. It is nonetheless necessary to proceed from the known, and generally accepted cultural sequence, as follows:

1. Preceramic
2. Anasazi

Analytic Historic Investigations

Objective: To provide a framework within which to examine the problems of human and environmental relationships in the Chaco Canyon through time.

Approach: One of the basic problems to be resolved by research in Chaco Canyon is the refinement and elaboration of the sequence and chronology of cultures in the Chaco. It is nonetheless necessary to proceed from the known, and generally accepted cultural sequence, as follows:

1. Preceramic
2. Puebloan
3. Refugee
4. Navajo
5. Recent Historic (European)

Methodology: A series of questions or problems will be proposed, the answers or solutions to which are to be sought through intensive investigations of sites and environments relating to each of the above culture-periods. Data for consideration of these problems will be derived from descriptive studies, considered elsewhere in this program, or from specific investigations herein proposed.

In general, these problems fall into two major categories: Man-Land Relationships, and Inter-Human Relationships.

Man-Land Relationships:

Within this category it is proposed that investigations be concentrated upon the cultural adaptation as it affects or is affected by the natural environment. Particular attention should be directed, in descriptive studies relating to each stage in the culture-sequence, to questions of the following character:

1. What mineral resources were available (during each of the culture periods) to man in the Chaco; which of these were utilized or exploited by him, and in what manner?

2. What floral and faunal resources were present, and how were these utilized?

3. What were the hydrological resources; how were they utilized; how did they determine or direct the course of culture-development?

4. In what way did climatological factors such as insolation, seasonal precipitation variation, air-current prevalence and direction, etc., affect the cultural adaptation?

5. How did the character and distribution of arable soils affect settlement pattern in the Chaco, and the character of the cultural adaptation in each period?

6. What portions or sectors of the natural environment were utilized by man in each period in the Chaco, and how do these appear to reflect his view of the natural world?

7. How has utilization or exploitation of the natural environment affected the character of that environment at each time period with regard to resource availability, landscape, patterns of predation, etc.

8. How did resources, or the lack of them, affect the character of the cultural adaptation?

Inter-Human Relationships: Man's Relationship to Man

Within this category, consideration is given to contacts and movements within and between peoples living within and outside the Chaco area. The following questions are proposed for consideration during investigations of each culture period:

1. What external cultural contacts may be discerned as influencing cultural evolution in the Chaco?

2. What demographic movements within the Chaco, into the Chaco, and out of the Chaco can be discerned in the record of cultural evolution?

3. What insights into the development of, and changes in, social organization can be ascertained from

environment, especially to the east in the Chacra Mesa area. Resulting typological studies would enable relating these materials to other areas.

2. Anasazi

The Anasazi embraces all archeological manifestations from Basketmaker III through Pueblo IV. Whereas literature on the preceramic is virtually nil, the extensive literature on the Anasazi period demands a critical examination in order to discern the gaps in knowledge in Chaco archeology. This aim can be accomplished by the compilation of an annotated bibliography. Such a compilation should be standardized and computerized.

A comprehensive survey of the Chaco area is necessary to supplement present site information, and should be a high-priority project. This survey cannot be limited to the national monument boundary, but must extend in all directions beyond the canyon environment.

It is proposed that an excavation design be established. Some projects for such a program are submitted below and should serve as a guideline only. Present limited archeological knowledge and new information gained through surveys will undoubtedly suggest other projects and modify those proposed here.

a. Determination and collection of mineral resources.

This aim can be accomplished by the compilation of an annotated bibliography. Such a compilation should be standardized and computerized.

A definitive ongoing survey is necessary to supplement present site information. This survey cannot be limited to the National Monument boundary but must extend beyond the canyon environment. It is suggested that surveys be especially intensive in areas to the east and south of Chaco Canyon.

It is proposed that an excavational research design be established. Some projects for such a program are submitted below and should serve as a guideline only. Present limited archeological knowledge and new information gained through surveys will undoubtedly suggest other projects and modify those proposed here.

(a) Determination and collection of mineral resources.

(b) Soil survey of the canyon and environs. An example of the applicability of this information is the relating of soil distribution and settlement pattern.

(c) Ethnobotanical and ethnozoological inventories for background information on subsistence. In view of limited study material particular

cultigens, and ceremonial items and concepts indicate the extent of inter-cultural relationships. This involves Anasazi, Mogollon-Western Pueblo, Hohokam and Mexican relationships. Perhaps of particular interest would be studies to discern the introduction of Athabaskan traits in late Pueblo IV times.

In view of the culture contact situation present in Chaco, it is suggested that the ceramic sequence established for the Chaco be re-evaluated in detail to determine internal and external influences on ceramics. The same could be said for architectural styles. It is proposed that studies of prehistoric engineering and architectural planning be implemented.

g. Population studies for each stage within the Anasazi period should be carried out as data are available. As much of this information will be based on survey data, it should be re-emphasized that the site survey program must be detailed and thorough.

Such demographic information must be the basis on which we can define movements within the Chaco (such as the shift of Basketmaker sites from the southern environs of the Chaco to the canyon proper), into the Chaco (such as the early Basketmaker intrusion into the canyon and the later McElmo penetration), and out of the Chaco (such as

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In view of the culture contact situation present in Chaco it is suggested that the ceramic sequence established for the Chaco be re-evaluated in detail to determine internal and external influences on ceramics. The same could be said for architectural styles. It is proposed that studies of prehistoric engineering and architectural planning be implemented.

(g) Population studies for each stage within the Puebloan period should be carried out as data are available. As much of this information will be based on survey data it should be re-emphasized that the site survey program must be detailed and thorough.

Such demographic information must be the basis on which we can define movements within the Chaco (such as the shift of Basketmaker sites from mesa tops to the canyon bottom and shifts from the southern environs of the Chaco to the canyon proper), into the Chaco (such as

the early Basketmaker intrusion into the canyon and the later McElmo penetration), and out of the Chaco (such as the Mesa Verde Black/White producing peoples movement from the canyon east to the Chacra Mesa). It is recognized that abandonment is a special problem within itself.

Questions of process, motivation and destination are unanswered and may have their origin in social and political problems. We can only suggest that we be sensitive to these problems as the research project unfolds.

3. Refugee

(a) It is suggested that no specific survey be directed toward archeological sites of the Refugee period but that sites located in the ongoing survey be added to the existing records.

(b) There is specific need for thorough and intensive investigation of archival materials relating to the period of Spanish-Navajo-Pueblo contacts.

(c) It is suggested that some excavation be undertaken in selected sites in order to better

establish changes in Navajo culture, especially in the areas of architecture and ceramics.

4. Navajo

(a) For purposes of establishing Navajo history in the area, it is recommended that a survey be conducted of all Navajo remains from approximately 1800 to the present.

(b) It is further recommended that data derived from the survey be supplemented by additional archival research and from ethnological studies conducted among Navajo still resident in the vicinity.

5. Recent Historic (European)

(a) An intensive search for historic documentary and photographic records of this period should be implemented.

(b) It is also recommended that an immediate program for the recording of oral history be undertaken to take advantage of the information possessed by people still living.

(c) Historic sites in the Chaco, which are encountered during the course of the ongoing survey, should be placed on record and considered for excavation.

Ethnological and Ethnohistorical Projects

Objectives: We see three broad objectives for this project:

1. Historical study of the ethnological peoples most closely related to the prehistoric Chaco Canyon cultures and the Mesa Verde materials in the Canyon.

2. Ethnographic studies designed to assist the archeologist in the reconstruction of social organization and other non-observable aspects of the prehistoric societies of Chaco Canyon.

3. Ethnohistorical studies of the use of Chaco Canyon by Navajo peoples.

Specific projects designed to help achieve the objectives of this project are:

1. Ethnographic Survey. Work with older and recent ethnographics of both the Western and Eastern Pueblos in an attempt to identify the functions of items of material culture and the social context of use and manufacture of such items. Such a survey might also help identify styles of rooms, kivas, etc. associated with various types of social units. These data should be most useful as a background to help the archeologist interpret his material.

2. Cultural Historical Study. Migration legends of the various Puebloan peoples should be surveyed as a basis for archeological testing as an aid in understanding the historical place of Chaco Canyon in the development of modern Pueblo groups. Specifically, data from Acoma and Laguna and Hopi should be checked with regard to the late Upper Chaco occupation as well as that of the Chuska Valley. Both published and unpublished material of such workers as Dittert, Ruppe and Ellis should be most useful in this study.

3. We urge the hiring of Pueblo Indian consultants drawn from various Pueblos to examine material items and sites providing suggestions of meanings, interpretations and so on. This should be done on a regular basis, perhaps once a month.

4. Ethnology of Pottery Making. An ethnographic study of pottery making with emphasis upon the correlation of styles and micro styles with social units of various types and sizes should be undertaken. Such a project should be carried out in both a bilateral Eastern Pueblo society as well as among one of the relatively unilateral groups. Since ceramic studies are not tabooed among the Eastern Pueblos, such a project would be feasible. The data from such work would be invaluable to the archeologist attempting to use the distribution of styles of pottery in prehistoric sites as an aid in the drawing of inferences about social organization.

5. Ethnohistorical Study of Navajo. An ethnohistorical study of the Navajo use of Chaco Canyon with an emphasis on ecological analyses should be undertaken. This would determine if the Navajo groups made similar or different use of the Canyon compared to the prehistoric pueblos even though the Chaco Canyon environment has changed somewhat. This would provide valuable and important comparative data for the larger ecological project in the Canyon.

Studies Relating to Man and Environment in Chaco Canyon

Major Objectives:

1. Determination of present and past environments for the purpose of relating these data to historic and prehistoric human occupations of the Chaco region with ecological emphasis on influence of man on his environment and problems of the changed environment on man.

(a) Climatological-meteorological assessments, including precipitation, temperature, wind studies, etc.

(b) Soil analyses, including chemical, deposition studies, etc.

(c) Establishment of geologic base map.

(d) Floristic and faunistic surveys, including inventories of species, relative abundances, distributions, etc.

2. Development of an integrated program of working relationships among the several disciplines participating.

(a) Standardization of base maps, and aerial photos, and including, for example, quarter section grids.

(b) Standardization of data collecting including types of data collected, techniques of collection, reporting techniques, etc. Recording forms, for example, should be equally adaptable to data processing. Further, for example, it should be agreed as to what kinds of non-archeological data is to be recovered from archeological sites, and it should be assured that such data will be collected according to standardized, agreed upon procedures.

Examples of priority projects:

1. Bisect from canyon wall to arroyo-textural and mineral analysis of the soil; pollen analysis of various strata; examination of buried soil profiles; and correlation of above to archeological sites.

A great deal of soil and moisture control work has already taken place. Some of this work has been quite effective, and some has been unsuccessful. Effective methods of soil stabilization and erosion control should be established. High concentrations of alkali salts and the tendency of the soil to "pipe" or dissolve, creates construction and soil management problems.

1. A complete biotic survey is needed to determine the existing and optimum floral and faunal levels and their relationships at Chaco Canyon National Monument.

2. The soils of the monument should be analyzed and their relationships to the biotic community established.

3. Methods of correcting existing soil deficiencies should be established.

4. Cooperation should be established and maintained between the Archeological Center and the Soil Conservation Service to provide methods for soil and moisture conservation in the watershed.

5. Climatic, rainfall, and temperature conditions should be analyzed for their effect on the biotic community and their effect on the erosion of soil and silt disposition. Cyclic degradation and aggradation of the valley floor should be studied.

Preservation of Structures

Objective: Provide for the efficient and effective preservation of the diverse aboriginal structures of Chaco Canyon.

Chaco Canyon provides one of the largest and most diverse collections of aboriginal architecture in the country. The preservation and maintenance of these structures is a continuing responsibility of the National Park Service. New methods, techniques, equipment and materials from the fields of engineering and architecture are being developed which may or may not apply to the preservation and maintenance of Chaco Canyon and similar structures throughout the country and the world. Studies and investigations, including the testing of new methods, techniques, equipment and materials, will add to the discovery of efficient, economic and effective ways to preserve and maintain the Chaco Canyon ruins and can be carried out in cooperation with National Park Service ruins stabilization personnel.

Projects and Recommendations

1. Develop, test and apply equipment for the grouting of masonry walls and foundations such as pressure grout and sub-soil grout machines.

2. Develop, test and apply new mortar materials such as mortar additives, exposy adhesives, and fiberglass.

3. Investigate and test ways to stop or arrest the use of capillary water in and through walls.

5. Develop annotated bibliographies including non-anthropological materials.

6. Develop standardized system of recording research data adaptable to Automatic Data Processing and cataloging and filing systems.

7. Investigate ADP programs.

Publications

Objective:

Early preparation, publication and dissimination of investigative results to the professional community and to the National Park Service interpretive and Resource Management programs.

Projects:

1. Establish suitable professional editorial, layout and design staff to ensure expeditious publication of research results.

2. As rapidly as possible prepare publishable manuscripts on unreported park work for the benefit of future researchers.

3. Acquire a wavier from the Joint Committee on Printing and Binding so that presses other than GPO can be used as outlets to supplement the NPS Archeological Research Series.

4. Establish a program of publication in various professional

journals for these articles and papers that would not qualify as monographs.

5. Establish lines of communication and liaison with the National Park Service interpretive organizations to assure constant feed-back of research data.

6. Establish a numerical series for all published data.

STAFFING AND FACILITIES FOR AN ARCHEOLOGICAL CENTER

The potential value of extensive relationships between universities and scientific laboratories of the Federal Government has been highlighted by the report, "Education and the Federal Laboratories," recently issued by the Federal Council for Science and Technology.

This report was prepared by the Committee on Federal Laboratories of the FCST, under the chairmanship of Allen V. Astin, director of the National Bureau of Standards.

The report makes recommendations for extending collaborative relationships between government laboratories and universities, including stronger incentives and greater flexibility on the part of Federal laboratories in making their staffs and facilities available for teaching by faculty and students.

One of the important objectives set forth in the report of the Committee on Federal Laboratories is to involve academic scientists from

universities in their programs, and make special scientific studies. This is one of the objectives in establishing the Chaco Archeological Center.

The normal pattern for this program will be three-month summer appointments, for two or more successive summers. The active participation by faculty members in study programs at the Chaco Center will present the NPS researcher with an exceptionally practical method of becoming familiar with new approaches, techniques, and opportunities in his own disciplinary field. In turn, knowledge gained in the Federal laboratory frequently proves the inspiration for new programs by the faculty scientist when he returns to his university.

Benefits of Program

1. Open opportunities for graduate and postgraduate studies.

2. Helps produce the environment desired by working scientists by helping each to develop his interests through interchange of personnel.

3. Increases effectiveness of the education of scientists.

4. Increase the rate of transfer of knowledge from explorations to education and vice versa.

5. Encourages initiation and completion of reconnaisance problems in new areas which would not ordinarily be easily entered within a traditional organization.

Staffing:

Personnel for University of New Mexico-National Park Service Chaco Canyon Archeological Center.

Objective:

To adequately staff the archeological center with professional and supportive staff sufficient to carry out the major objectives.

Recommendations:

It is recommended that some of the personnel be full-time National Park Service employees, others be joint appointments with the University of New Mexico, and some temporary employees from university students (principally graduates) who could be appointed as collaborators.

Projects:

Listing of personnel below to perform the various research projects.

Full-time

Administrative

*Chief

Administrative Assistant

Secretary

Clerk-Stenographer

Support Personnel

Editor

Clerk-Stenographer

Illustrator

Museum Technicians (2)

Custodial (2)

Temporary Help for the following:

Archeologist		graduate	6 man months per year
Librarian		clerk-steno	6 man months
Vertebrate Zoologist	2	graduate R.A.	3 mos. full, 9 mos. 1/2 ea.
Palynologist	2	graduate R.A.	3 mos. full, 9 mos. 1/2 ea.
Soil Scientist		technician	6 man months
Meteorologist		technician	6 man months
Ethnologist	1	graduate R.A.	3 mos. full, 9 mos. 1/2 ea.
Archeologist, Field		laborers	2 1/2 man years per year
Archeologist, Lab	2	graduate R.A. laborers	3 mos. full, 9 mos. 1/2 ea. 1 1/2 man years per year
Illustrator		draftsman	6 months per year

Facilities:

Recommendations: (University of New Mexico)

It is recommended that at the University of New Mexico a facility be constructed with the realization that following the first phase of the project this structure could be enlarged to accommodate expanded project objectives and staff. As the project develops large scale archeological excavations will ensue necessitating increased laboratory, storage and office space. Initially much of the space needs could be integrated into existing Department of Anthropology/Maxwell Museum facilities.

First Phase Needs

Offices

Director

Administrative Assistant

Secretary and Clerk-Steno

Archeologists (2)

Archivist

Statistician

Archeological Laboratory

Editor

Clerk-Steno

Illustrator

5 Specialists offices

5 study rooms and visitor's offices

Dark room

Storage - archeology

Storage - archives

Parking area

First Phase Needs

Offices

Director	Clerk-Steno
Administrative Assistant	Illustrator
Secretary and Clerk-Steno	5 Specialists offices
Archeologists (2)	5 study rooms and visitor's offices
Archivist	Dark Room
Statistician	Storage--archeology
Archeological Laboratory	Storage--archives
Editor	Parking area

Recommendations: (Chaco Canyon)

It is recommended that facilities be developed at Chaco Canyon to support the field administrative, laboratory and housing needs of the Center staff. These facilities will be fully integrated with the Chaco Canyon Developed area Plan, prepared by professional Park Service Planners. Three types of facilities are:

1. Permanent: mainly for the administrative, long range archeological laboratory and housing needs of the staff. These facilities will be integrated into the developed area plan for the monument. Use of standard floor-plan houses and seasonal apartments would have lasting value to the eventual development of Chaco.

2. Mobile: to support the short range projects.

3. Temporary: tent living and facilities for temporary crews, particularly those working at some distance from the headquarters.

Permanent Facilities (Exact character of facilities to be determined by Park planners and integrated into the Park developed area plan.)

Offices - 5

Secretary

Archeologists (2)

Visiting specialist

Visiting specialist

Living Quarters for personnel with families - 4

Visiting specialist

Survey archeologist

Testing archeologist

Maintenance man/Custodial

Dorm space with kitchen and messhall

Bed space perhaps divided into two sections for males and females to sleep perhaps ten

Messhall may double as seminar room and lounge.

Individual sleeping rooms, 2 R.R. 8 x 10

Mobile facilities:

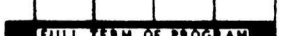
Three to four medium-sized trailers to be totated among visiting workers as needed.

Tent Camps:

Living tents and mess outfits available for extra investigative crews.

STAFFING REQUIREMENTS

Permanent Positions	Historical Analytical	Descriptive	Archives	Una Vida	Man & Environment	Process	Ethnology	Publication	Suggested Grade Level	Amount $
Director									14 15	21,589
Admin Asst									11 12	13,389
Secretary									6 7	7,639
Clerk - Steno									5 6	6882
Custodial - 2									3	9834
Archivist									12	13,389
Statistician									9	9320
Museum Techs - 2									9	18640
Editor									13	15812
Illustrator									9	9320
Clerk - Steno									5	6176
WAE Positions										
Archeologist									12	13389
Archeologist (Lab)									9	9320
Archeologist									11	11233
Ethnologist									11 12	13389
Zoologist									12	13389
Botanist									12	13389
Soil Scientist									12	13389
Meteorologist									12	13389
Palynologist									11	11233
Lab Technicians - 2									9	18640
Anthropologist									13	15812
Ecologist									13	15812
Architect - Engineer									13	15812
Cartographer									11	11233
Librarian									9	9322
Project Duration How Accomplished	3 Years Contract	3 Years Contract	Duration Staff	3 Years Contract	6 Years Contract	5 Years Contract	4 Years Contract	Duration Staff		

Project Priority	Major Objective	10 Year Program — 2 Year Increments — 1971 73 75 77 79 1980	At Chaco: Personnel	At Chaco: Facility	At Chaco: Funding	At Chaco: Other	On Campus: Personnel	On Campus: Facility	On Campus: Funding	On Campus: Other
1	Historical & Analytical			Existing Lab*	$5000/yr	Contract	1-Director 1-Adm Asst 1-Secretary 1-Clerk-Steno 1-Custodial	Office Space ↓ 400 sq ft	$60,000	1 Vehicle
2	Descriptive (Resource Inventory)		1/2 Time 1-Archeologist 1-Archeologist(L) 1-Zoologist 1-Soil Scientist 1-Meteorologist 1-Botanist 1-Custodial	Seasonal Housing Trailers or S't'd Apts	$100,000 yr	Contract. or → 4 Vehicles	1/2 Time if form U N M	Existing		
3	Archives & Comparative Collections						1-Archivist 1-Statistician 1-(T)Librarian 2-Mus Tech's	Library, Office Space ↓ 1500 sq ft.	$60,000	

• Add Electrical Outlets, Water to Existing Storeroom

Project Priority	Major Objective	10 Year Program (2 Year Increments) 1971 73 75 77 79 1980	At Chaco: Personnel	Facility	Funding	Other	On Campus: Personnel	Facility	Funding	Other
4	Excavation of Una Vida		3-Archeologists 2-Lab Tech's 1-Palynologist	Field Lab** Trailers or S't'd Apt's	$250.000/yr	2 Vehicles				
5	Man & Environment		1/2 Time 1-Palynologist 1-Ecologist		$50.000/yr Contract		1/2 Time 1-Palynologist 1-Ecologist			
6	Process				$25.000/yr Contract					
7	Ethnography & Ethnohistory		1/2 Time 1-Ethnologist		$25.000/yr	1 Vehicle		1/2 Time 1-Ethnologist	Office & Storage 800 sq ft	
8	Publications						1-Editor 1-Illustrator 1-Clerk-Steno	500 sq. ft	$60,000	

**Major Addition to Existing Storeroom - Lab - 4-5,000 sq ft