

BY THE U.S. GENERAL ACCOUNTING OFFICE

**Report To The Honorable Alan Cranston  
United States Senate**

RELEASED

**Assessment Of The Navy Comparative  
Study Of Florida Canyon And  
Helix Heights For The Proposed  
San Diego Naval Hospital**

Taking several recent significant events into account, GAO assessed the Navy's November 1980 study comparing Florida Canyon and Helix Heights as proposed sites for the new San Diego naval hospital and the Secretary of the Navy's December 1980 selection of Florida Canyon as the preferred site.



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GAO concluded that the Secretary's decision is still appropriate, if considerations raised during an ongoing Supplemental Environmental Impact Statement process and the results of pending litigation do not override factors already considered.

GAO is recommending that, if the medical center is to be located in Florida Canyon, the Secretary confirm the potential for peacetime uses of the Navy's current hospital facility that preserve its acute care structure. Further, the Secretary should take no action to design a proposed light care facility until the use potentials are confirmed.



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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

HUMAN RESOURCES  
DIVISION

B-183256

The Honorable Alan Cranston  
United States Senate

Dear Senator Cranston:

Your December 11, 1980, letter requested that we assess all aspects of the Navy's November 25, 1980, Comparative Study of Florida Canyon and Helix Heights, potential sites for the proposed new Naval Regional Medical Center, San Diego, California. As you know, the former Secretary of the Navy selected Florida Canyon as the preferred site. He detailed his reasons for the selection in a December 5, 1980, letter to the Chairmen of the Senate and House Committees on Armed Services and Appropriations.

After the Navy's Comparative Study and the former Secretary's selection, several significant events occurred, relating primarily to the design and location of the hospital on the Florida Canyon site. Included in these events was the Navy's decision to modify the high-rise medical facility concept discussed in the Comparative Study and return to a low-rise design that would be more in line with the original planning concepts developed before the earthquake fault in Florida Canyon was discovered.

Another major event involved the fault itself. During further testing of the fault, the Navy found that more land was available for building on the western--upper--segment of the Florida Canyon site than was originally anticipated. Since the upper site had better foundation conditions and a better relationship to existing facilities, this event caused the Navy to consider using the western half of the site more extensively than had previously been planned. The Navy has been working with its architect and engineer joint venture to design the new facility accommodating the presence of the fault.

A draft Supplemental Environmental Impact Statement, which considers the merits of various potential sites--including Florida Canyon and Helix Heights--was published for public comment on March 27, 1981. We understand that, when the public comments are incorporated into the statement and the document is finalized, the Secretary of the Navy will review it and either confirm the former Secretary's selection or select another site. This decision is expected in June 1981.

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Our conclusion is premised on several factors:

- The Navy's decision to move to the west side of Florida Canyon eliminates or diminishes several significant problems associated with the construction of a high-rise structure on the east side of the canyon as discussed in the Comparative Study.
- The land assembly process at Helix Heights--despite the City of San Diego's willingness to help the Navy--is still uncertain.
- The potential flexibility associated with peacetime uses of Building 26, coupled with the Navy's strong desire to retain the building for acute care use in the event of a contingency, makes the Florida Canyon site more attractive.
- The currently estimated cost premiums at Florida Canyon--although they are based on preliminary design work--could be at least partially offset by making maximum peacetime use of Building 26.

Our conclusion is based on the assumption that environmental considerations raised as a result of the ongoing Supplemental Environmental Impact Statement process and the results of pending environmental and land condemnation litigation will not override factors already considered in selecting the medical center site.

The question of how best to use Building 26 of the present hospital has yet to be decided. The Navy currently plans to mothball the building for contingency purposes. However, this may not be the best alternative.

Original cost estimates for modifying Building 26 were based on plans to remove one floor and completely demolish the interior of the building. The building would then have been seismically upgraded and renovated into barracks and a corps school facility at a cost of about \$25 million. Such a renovation might have basically altered the acute care structure and reduced its value for immediate contingency use as a hospital. This plan might also have inflated the Florida Canyon costs more than necessary through the extensive and expensive demolition and renovation.

We believe that the Navy's current mothballing approach is not the best possible use of Building 26. In our opinion, the Navy should consider mothballing the three basement levels and using the rest of the building during peacetime for such activities as light care and the corps school. This could eliminate or defer

Appendix I describes the results of our review of the Navy's Comparative Study and the impact of the events that have since occurred. We found, for example, that the Navy's estimate of \$15 million in additional costs at Florida Canyon over those that would be incurred at Helix Heights was based on the high-rise facility design, since modified by the Navy. Also, about \$7.4 million of the \$15 million was for a parking structure at Florida Canyon. No such structure was programed for Helix Heights, although one would be desirable and might ultimately become necessary if a decision were made to locate the medical center there. Navy engineers believe that the latest cost estimate of \$308 million for the low-rise Florida Canyon facility remains valid and that the Florida Canyon project could cost up to \$15 million more than one at Helix Heights.

The Navy's \$308 million cost estimate is based on preliminary designs and could change as design refinements continue. Also, since the project spans several years, ultimate costs could fluctuate depending on what future inflation rates are and whether specific components of the project are delayed further. The estimates for the high-rise facility discussed in the Navy's Comparative Study represented similar preliminary projections. Since current project estimates are not yet firm, we cannot estimate with any degree of precision what the final project costs would be or whether there would eventually be any actual cost differences between the two sites.

## CONCLUSIONS

Several events related to the siting of the medical center in San Diego have occurred since we issued our January 1980 report, in which we supported the Navy's selection of Florida Canyon as the preferred site for the proposed medical center based on the assumption that the Navy could acquire fee-simple ownership of the required property. <sup>1/</sup> Moreover, other significant events have occurred even since the Navy's November 1980 Comparative Study, which you asked us to analyze. We believe that the Navy's December 5, 1980, decision to locate its medical center in Florida Canyon is still appropriate.

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<sup>1/</sup>"Analysis of Potential Alternative Sites for the Proposed New San Diego Naval Hospital" (HRD-80-37, Jan. 2, 1980).

ASSESSMENT OF THE NAVY COMPARATIVE  
STUDY OF FLORIDA CANYON AND  
HELIX HEIGHTS FOR THE PROPOSED  
NEW SAN DIEGO NAVAL HOSPITAL

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the need for constructing new light care and corps school facilities. Construction of a new light care facility is expected to cost about \$4.3 million and is programed in fiscal year 1982. Construction of new corps school facilities is expected to cost \$11.3 million and is programed in fiscal year 1986. We believe that a modest upgrade of Building 26 for these functions--such as partitioning existing open bay wards for classrooms--could be comparatively inexpensive and would not basically alter the acute care structure. Wartime casualties could then be cared for at the facility shortly after the corps school was moved elsewhere.

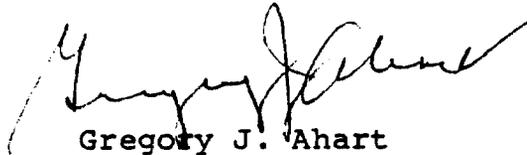
RECOMMENDATIONS

We recommend that, if it is decided to locate the medical center at Florida Canyon, the Secretary of the Navy confirm the potential for peacetime uses of Building 26 that preserve the facility's acute care structure. We further recommend that the Secretary take no action to design or construct a proposed light care facility until the use potentials have been confirmed.

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As requested by your office, we have not obtained written comments on this report but have discussed its contents with officials of the Navy and the Office of the Assistant Secretary of Defense for Health Affairs. Also, as agreed with your office, we will, in 2 days, send copies of this report to the Chairmen, Senate and House Committees on Appropriations and Armed Services, Senate Committee on Governmental Affairs, and House Committee on Government Operations. We will also send copies to the Secretaries of Defense and the Navy; the Director, Office of Management and Budget; and other interested parties.

Sincerely yours,



Gregory J. Ahart  
Director

INTRODUCTION

In a December 11, 1980, letter, Senator Alan Cranston requested that we assess all aspects of a November 1980 Navy study, "Naval Regional Medical Center, San Diego: Comparative Study of Florida Canyon and Helix Heights." The Navy had determined these to be the two most appropriate potential sites for the planned replacement of the Naval Regional Medical Center (NRMC), San Diego. The Senator requested that we focus on (1) the Navy's estimate that it would cost \$15 million more to construct the proposed medical center in Florida Canyon than at the Helix Heights site and (2) the potential costs of upgrading its principal existing hospital facility (Building 26) to comply with current building codes.

In addition to addressing the Senator's concerns, this report describes several significant events that have occurred since the Navy's Comparative Study was prepared in November 1980 and released with the former Secretary of the Navy's December 5, 1980, determination that Florida Canyon was the Navy's preferred site for the proposed medical center. Finally, it presents the results of our assessment of potential peacetime and contingency uses of Building 26 and their impact on the Navy's final decision regarding the medical center site.

Scope and methodology

In conducting our review, which we began in mid-January 1981, we met with officials and reviewed documents relating to the planned project at the headquarters of the Naval Facilities Engineering Command (NAVFAC) and the Navy's Bureau of Medicine in Washington, D.C.; NAVFAC, Western Division, in San Bruno, California; and the NRMC in San Diego, California. We performed this work to determine the basis for the statements the Navy made in the various sections of its Comparative Study. We also reviewed available documentation related to numerous decisions the Navy has made regarding the project since the issuance of the Study. We met with officials of firms that have done or are doing consulting work for the Navy, such as the preparation of project concepts and designs and traffic studies. We also spoke with City of San Diego officials about the city's position on several matters relating to the medical center's location.

In assessing the Navy's Comparative Study, we concentrated on portions that discussed matters having significant potential effects on the costs and time involved in designing and constructing the medical center complex. We also reviewed the numerous comments received by the Navy on its study from public officials, community groups, and private citizens in the San Diego area.

ABBREVIATIONS

GAO	General Accounting Office
NAVFAC	Naval Facilities Engineering Command
NRMC	Naval Regional Medical Center
SEIS	Supplemental Environmental Impact Statement

caused fragmentation and duplication of services, inefficiencies of operation, and hardships on patients. For example, the medical center operates six fully equipped and staffed X-ray departments in different parts of the complex. Patients from nine inpatient buildings who need X-rays must at times be taken outdoors to reach the appropriate facility.

Plans to rebuild the medical center have been underway for many years. Major renovation or replacement of the medical center is needed to alleviate

- fire, safety, and earthquake-related deficiencies of many existing structures;
- inefficiencies of operations caused by poor arrangement of buildings on the site; and
- noise and safety hazards created by commercial jets that fly over the hospital on approach to San Diego International Airport (Lindbergh Field).

The Navy began studying various alternatives to correct these problems in 1971.

For several years the question of where in the San Diego area to locate the new medical center complex has been a controversial issue involving several local referendums, San Diego city council resolutions, litigation over environmental issues, and considerable media coverage. The Navy has evaluated 20 site alternatives for the complex including:

- The 77-acre Navy-owned site of the current complex (Balboa Park).
- A site comprised of a 35.6-acre portion of the Navy-owned site combined with a 35.9-acre underdeveloped parcel in the Florida Canyon region of Balboa Park.
- An approximately 80-acre site known as Helix Heights located about 2.5 miles southeast of the existing medical center.

San Diego area residents are divided between those who believe the Navy should move out of Balboa Park and return the site of the current complex to the city for park use and those who believe that the location of the new medical center should remain in Balboa Park for accessibility and other reasons.

We devoted less review attention to other, primarily environmental, considerations covered in the Navy study which we anticipated would be fully discussed in a draft Supplemental Environmental Impact Statement (SEIS) for the project. The draft SEIS was published for public comment on March 27, 1981, and the final site selection must await the conclusion of the SEIS process.

#### BACKGROUND

NRMC, San Diego, is one of the world's largest military medical centers. It began as a field tent hospital in Balboa Park in 1914 and was used as such during World War I. The facility was commissioned as a naval hospital in 1919, and the first of three major construction phases was begun in the early 1920s. By 1922, a 300-bed permanent hospital structure was in place, and by 1929, the medical center contained 21 structures, including a 1,000-bed hospital and a Naval School of Health Sciences (corps school) for 200 students. Many of the structures built during this period are still used to house inpatient wards, outpatient clinics, and administrative functions.

During World War II, many more hospital and corps school facilities were needed, and 36 temporary structures were built, most of which were wood framed. Today these structures are used for barracks and corps school classrooms.

During the late 1950s and 1960s, 12 buildings of permanent-type construction--reinforced concrete--were added to the complex. One was Building 26, a nine-story 1,000-bed surgical hospital opened in 1957. The building houses the surgical suites, emergency rooms, main food services, and many of the inpatient wards and outpatient clinics.

The entire complex now consists of 70 buildings comprising some 1,380,000 gross square feet of space on the 77-acre Navy-owned site in Balboa Park. Currently, NRMC, San Diego, serves a beneficiary population of about 350,000 persons, consisting of active-duty members, dependents of active-duty members, retired military members, and dependents of retired and deceased military members. The hospital complex in Balboa Park had an authorized operating bed capacity of 614 as of September 30, 1980, and during fiscal year 1980 maintained an average census of 466 patients. During that year about 1.6 million visits were made to the hospital's clinics, an average of about 4,500 visits daily.

In addition to patient care, facilities in the medical center provide space for administration, barracks, corps school academic instruction, laundry, library, warehousing, maintenance shops, recreation, research, Navy exchange, and other activities. Since the 1920s, however, the complex has grown without a master plan, resulting in a dysfunctional arrangement of facilities, which has

Recent congressional direction  
regarding the proposed medical center

In passing the Military Construction Authorization Act of 1981 (Public Law 96-418, dated Oct. 10, 1980), the Congress authorized \$293 million for the construction of NRMC, San Diego. This figure included authorization of funds for land acquisition. The act also required the Secretary of the Navy to submit to the Senate and House Armed Services and Appropriations Committees a report on (1) the Navy's evaluation of the Balboa Park and Helix Heights areas as sites for the planned medical center and (2) the Secretary's determination of the most appropriate site for the medical center along with his justification for that determination.

The Senate Armed Services Committee, in its report on the bill, referred to the above requirement and stated that

"In the report required by section 205, the committee expects to see details on comparative land acquisition procedures and costs, safety and noise considerations, environmental considerations, construction cost and timing considerations, site access considerations, etc. The committee expects the Navy to produce a quality comparative report which includes input from local government and interest groups; the committee will approve nothing less."

The Navy was also required to refrain from obligating any construction funds for the project until 30 days after the Secretary had submitted the report.

The Congress, through its enactment of Public Law 96-436, appropriated military construction funds to the Department of Defense for fiscal year 1981, including \$25 million for starting construction of the new NRMC, San Diego. In its report (H.R. Rep. 96-1097) on the appropriations bill, the House Appropriations Committee abstained from specifying a particular location for the medical center but stated that the Department of Defense and the Navy should meet the following requirements:

"\* \* \* (1) The hospital complex is to be constructed on land owned in fee simple by the Federal Government, (2) the facility must be able to be constructed within the fiscal year 1981 estimate of \$293,000,000 and within the planned time frame, and (3) program scope will not be sacrificed because of the site selected."

RECENT DEVELOPMENTS REGARDING  
SITING OF THE MEDICAL CENTER

The Military Construction Authorization Act of 1980 (Public Law 96-125) gave the Secretary of the Navy authority to acquire, by condemnation or otherwise, all right, title, and interest of the City of San Diego to the Florida Canyon property for use as the site for any new Navy hospital or medical center. In exchange, the Secretary was authorized to convey to the city all or any part of the U.S. interest in the real property of the current medical center.

On December 7, 1979, the Secretary approved the decision to acquire--through condemnation--the Florida Canyon site. The Navy intended to begin negotiations with the city to obtain an agreement of friendly condemnation. The Navy also contemplated pursuing an option to negotiate a land exchange of fee-simple ownership of the Florida Canyon property for a portion of the property on the current medical center site. As of March 1980, the city's position concerning the possible exchange of ownership between it and the Navy of specified land parcels in Balboa Park had not been decided by the city council. However, a 1979 local referendum contained language under which the city could have granted the Navy leasehold interest in the Florida Canyon parcel in exchange for the Navy's return to the city of ownership of an equal amount of land currently used for naval hospital facilities. Although 61.2 percent of the voters favored the referendum, passage required a two-thirds majority.

Prior GAO report on analysis of  
alternative sites for NRMC, San Diego

In response to a request from the Chairman, House Appropriations Committee, we issued a report 1/ on January 2, 1980, which analyzed the potential cost and other impacts of the Florida Canyon and Helix Heights sites for the proposed replacement of the medical center. We supported the Navy's choice of Florida Canyon as the preferred site for the medical center based on the assumption that the Navy could acquire fee-simple ownership of the required property. In our opinion, the question of who owned the property on which the new hospital would be located was of utmost importance. We concluded that, if a leasing arrangement--such as had been proposed--became the only means of acquiring the Florida Canyon property, the Navy should consider replacing its facility using the currently Navy-owned Balboa Park location.

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1/"Analysis of Potential Alternative Sites for the Proposed New San Diego Naval Hospital" (HRD-80-37).

--A later decision to modify the high-rise medical facility concept and return to a low-rise design for location below the fault in the canyon.

--A February 1981 decision--following more extensive testing of the fault which showed more than anticipated suitable building land at the top of the canyon--to locate the principal medical facilities in low-rise structures above the fault on the west side of the property.

By December 5, 1980, letter, the Secretary of the Navy submitted the required comparative evaluation of the Florida Canyon and Helix Heights sites to the congressional committees. In his letter, the Secretary stated that the Navy had determined that the Florida Canyon site was the preferred location for the medical center. The Secretary stated that the Navy's selection was heavily influenced by factors relating to (1) the assembly of land for the center and (2) the need for Building 26 and adjoining barracks for use in a contingency situation. In this regard, the Secretary stated that

"If any single item has weighed decisively in our decision, it is the one of land assembly. All of the land required at Florida Canyon is at hand, it includes as part of a single complex the indispensable Building 26 at Balboa Park, as well as the adjoining barracks, all of which would be operated as a coordinated unit in the event of war. \* \* \*"

The Secretary also stated that constructing a high-rise structure in the bottom of Florida Canyon was estimated to cost \$308 million--\$15 million more than (1) the estimated cost of the project at Helix Heights and (2) the congressionally authorized \$293 million. Both the Navy's Comparative Study and the Secretary's letter preceded the results of further, more extensive testing of soil conditions around the fault, which indicated that more land suitable for building the principal medical facilities was available in the western (upper) portion of Florida Canyon than was originally anticipated. This situation necessitated a reevaluation of where, in Florida Canyon, to locate the principal medical facilities.

#### CURRENT PROJECT STATUS

Since the results of the further testing of the area surrounding the earthquake fault became known, the Navy has begun implementing plans to locate the principal medical facilities on the west--upper--portion of the Florida Canyon property. These facilities will include space for 760 beds--560 acute care beds and 200 light care beds. Basic facilities will include space for acute care; light care; intensive and ancillary functions, such

Recent Navy actions to evaluate  
alternative sites and design  
the planned medical center

The Navy first selected Florida Canyon in 1976 as its preferred site for the medical center and awarded contracts in 1977 and 1979 to an architectural and engineering joint venture for concepts and design of the new NRMC. In May 1980, design of the medical center in Florida Canyon was considered to be about 35-percent complete. The design envisioned the construction of multilevel medical facilities built into a hillside. Construction estimates for the designed facilities amounted to \$293 million, and total design costs were expected to be about \$10.5 million.

The Navy also took action to acquire the Florida Canyon property. On January 8, 1980, the Navy filed a Declaration of Taking for the Florida Canyon property and deposited \$3.7 million in escrow with the U.S. District Court, Southern District of California, for the required land. <sup>1/</sup> The money placed in escrow was based on a land appraisal report prepared by a consultant to the Navy in October 1979. On February 7, 1980, the court held that the Navy was entitled to possession of the land and, on March 20, 1980, it rejected the city's objections to the condemnation. On February 24, 1981, the San Diego City Council adopted Resolution Number R-253688, advising our Office that the city disputes that \$3.7 million is the fair market value of the Florida Canyon property. A determination regarding just compensation for the Florida Canyon land has not yet been made, and this issue remains a part of the still-pending condemnation proceeding now before the court.

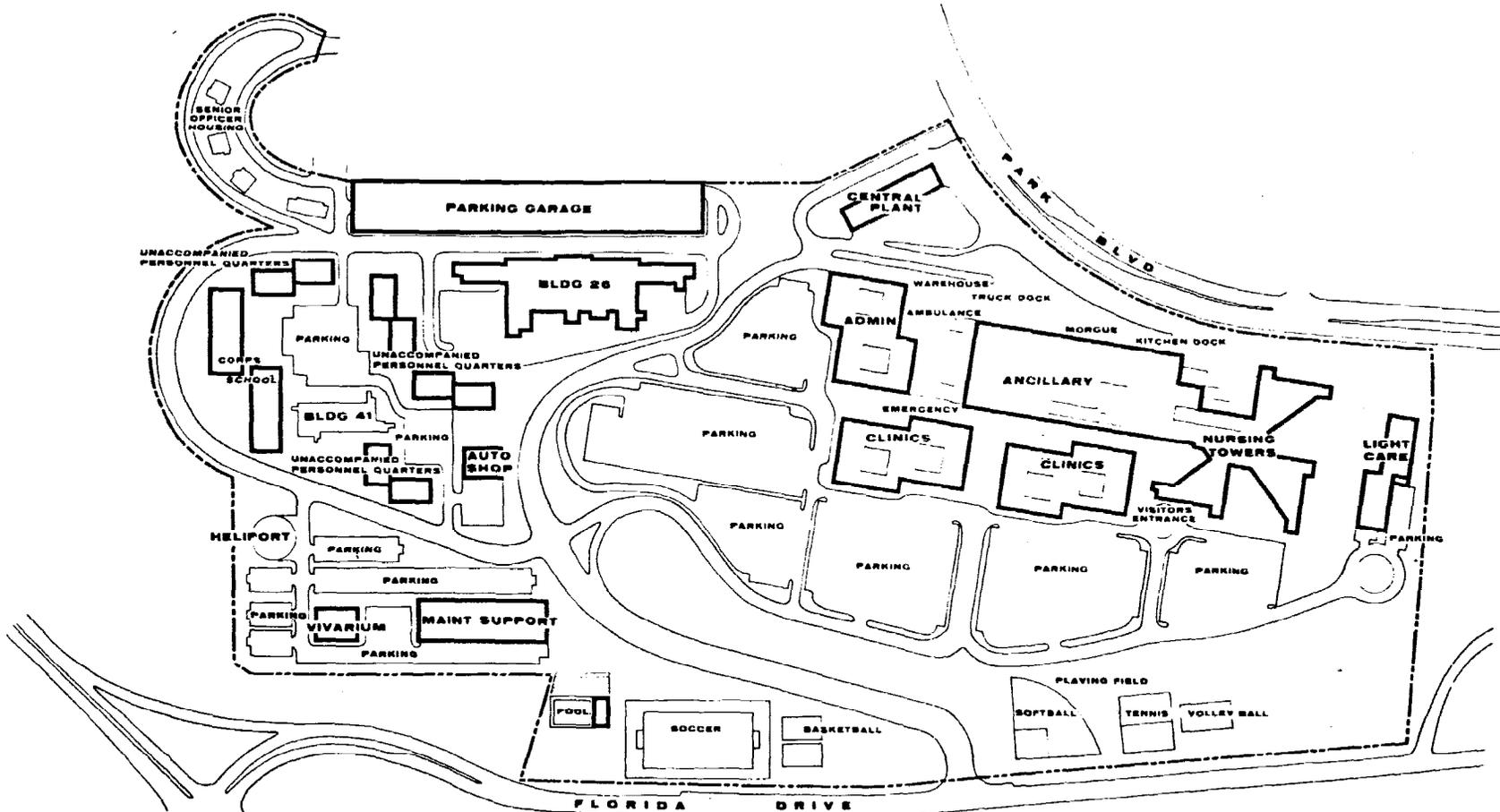
Since the Navy took possession of the Florida Canyon land, several significant events have occurred that have had a direct bearing on the design and location of the hospital at Florida Canyon. The events included:

- The discovery in mid-1980 of an earthquake fault which essentially bisects the Florida Canyon property.
- A decision to locate the center's principal medical facilities in a high-rise structure well below the recently discovered fault and near the bottom of the canyon.

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<sup>1/</sup>Public Law 96-418, dated October 10, 1980, authorized the Secretary of the Navy to amend the Declaration of Taking to include a reversionary clause under which the Florida Canyon property would be returned to the City of San Diego in the event the Navy ceases to use it for hospital, medical, or related purposes.

NAVAL REGIONAL MEDICAL CENTER, SAN DIEGO, CALIFORNIA  
 PROPOSED SITE DEVELOPMENT PLAN, FLORIDA CANYON B



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SOURCE: DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

as surgery and radiology; and administrative activities. Structures will also be provided for a replacement corps school, barracks, warehouse, maintenance, and other functions associated with a military base.

According to NAVFAC officials, the facilities will be separate, relatively uncomplicated, low-rise buildings somewhat similar to those planned in the original Florida Canyon concept. The buildings--which will range from three to five stories in height--will, for the most part, be constructed below the principal street in Balboa Park, Park Boulevard. Extensive landscaping is planned to soften the exposure of the buildings from public view. Public access to the planned facilities will be through the east portion of the site from Florida Drive. Only ambulances and emergency vehicles will be permitted access to the facilities from Park Boulevard. A concept drawing for the facilities as located on the west side of the Florida Canyon property is shown on the following page.

#### ASSESSMENT OF NAVY'S COMPARATIVE STUDY AND SUBSEQUENT EVENTS

The Navy prepared its November 25, 1980, comparative study to help the Secretary assess the relative merits of Florida Canyon and Helix Heights as sites for the new medical center. Following is a discussion of our evaluation of the principal segments of the study and subsequent events that, in many cases, have changed the conditions discussed in the study.

#### Construction cost/time

Working drawings for the original Florida Canyon design, which involved building facilities into the Florida Canyon hillside, were about 35-percent complete when the earthquake fault was discovered. The discovery of the fault and the requirement to take another look at Helix Heights allowed the Navy to, in effect, redesign some of the most costly elements of the original Florida Canyon concept.

In July 1980, the Navy's architect and engineer joint venture began developing designs for each of the two sites--Helix Heights and the eastern (lower) portion of Florida Canyon. NAVFAC officials felt that Helix Heights offered an opportunity for a simpler design which retained many features of the original. The nursing towers, for example, could all be constructed on level ground instead of being built into the hillside. Beginning in July, the joint venture developed a set of drawings for internal space arrangements of the ancillary facility, nursing towers, and clinic facilities for Helix Heights. These arrangements did not change much from the original Florida Canyon design, and some of the original drawings were used in the Helix Heights design.

According to NAVFAC officials, the time required for constructing facilities at the Florida Canyon-west site will now be about the same as at Helix Heights. Under the Florida Canyon-west concept, construction will not have to proceed sequentially as was envisioned for the high rise. Separate contracting packages can be awarded for the clinics, nursing towers, and ancillary block as could be done at Helix Heights.

A Florida Canyon-west site preparation contract can still be awarded in the summer of 1981 as planned. The first construction award for the principal buildings can take place in the spring of 1982. This would be the same at either site. Even though earth-moving work would take longer at Florida Canyon than at Helix Heights, major building construction would have to wait for the completion of design work at either site. NAVFAC officials concluded that, after completion of design work, construction would take about the same amount of time at either site.

Total costs for project concepts and studies and design of the principal medical buildings were originally estimated to be about \$10 million, but have increased to about \$18.4 million as the joint venture has studied various project locations and concepts. The following table shows the joint venture contract costs for the Florida Canyon-west project.

Concurrently, the Navy asked the joint venture to develop a conceptual layout for construction on the eastern portion of Florida Canyon. The concept for this site contemplated a long, comparatively narrow high-rise building located away from the fault line. Part of the structure was expected to be about nine stories high. The high-rise project had not been designed before and required new concept design work that could make relatively little use of the existing working drawings. Consequently, the Navy's Comparative Study was based on a design for Helix Heights that in November 1980 was much further along than the Florida Canyon-east, high-rise concept.

NAVFAC officials told us that, had Helix Heights been chosen as the Navy's preferred site, the original concepts and part of the working drawings could have been used. Since Florida Canyon was selected, however, more concept design work was necessary and less of the existing working drawings were reusable. After the Secretary's December 1980 decision, the Navy decided to redesign the nine-story high-rise structure, attempting to use more of the original low-rise design. Work was started on a new design for the Florida Canyon-east site using some portions of the original design, as had been done for Helix Heights.

In February 1981, the Navy further modified its Florida Canyon plan, after receiving the results of the more extensive testing around the earthquake fault. The Navy has decided to locate the facility on the western--upper--portion of the Florida Canyon property and to continue with the low-rise design.

The Navy's Comparative Study stated that the design time penalty for the high-rise structure, as compared to a Helix Heights project, would be from 3 to 6 months. Construction time was also expected to be extended for 6 to 12 months beyond the time needed for the Helix Heights project.

The latest design--low-rise Florida Canyon-west--will not require any additional design time over a Helix Heights project, according to NAVFAC officials. The months that have elapsed since November 1980 have effectively eliminated any design time advantage that Helix Heights enjoyed. In November, Helix Heights designs were further along than those for the Florida Canyon high rise. This is no longer true. No design work has been done for Helix Heights since November, and as of March 1981, about the same amount of time would be needed for designing facilities at Florida Canyon-west and Helix Heights. As design work continues for Florida Canyon facilities, the Florida Canyon site will, after March 1981, gain an advantage over the Helix Heights location.

Additional costs for the  
Florida Canyon high rise

The Comparative Study noted that there would be cost premiums for construction at the Florida Canyon site which would not be expected for construction at Helix Heights. The total cost premiums were expected to exceed the authorized \$293 million project cost by about \$15 million. Cost premiums for the high-rise building involved a heavier structural system, a larger investment in elevators, and significant internal square footage devoted to mechanical systems. Also, partially because of soil conditions at the lower Florida Canyon site, more costly foundations would have been needed for the high-rise structure than for the Helix Heights structures. It was estimated that costs at Helix Heights could be kept within the authorization.

NAVFAC documents showed that not all of the cost premiums estimated for the Florida Canyon-east site pertained to the construction of the high-rise building. In fact, over \$7 million of the \$15 million differential was for a parking structure. No such structure was programmed for Helix Heights, although NAVFAC officials said one would be desirable and could ultimately become necessary if all of the facilities constructed did not leave room for sufficient surface parking.

The following table shows the cost differential between Florida Canyon high-rise facilities and the Helix Heights low-rise facilities as it related to the Comparative Study. The figures are programming and planning estimates, not firm engineering costs. They are based partially on historical building costs for similar facilities and partially on general estimates for components for which no historical information existed.

NRMC, San Diego  
Architect/Engineer Contract Costs  
as of January 27, 1981

<u>Description</u>	<u>Cost</u>
	(000 omitted)
Concept design (on original Florida Canyon)	\$1,760
Working drawings effort (on original concept)	5,483
Additional studies (on original concept)	119
Helix Heights and Florida Canyon (high-rise) studies	<u>a/1,000</u>
Geotechnical studies since 12-1-80	<u>a/262</u>
New concept design (Florida Canyon-west)	<u>a/875</u>
New 35-percent working drawings (including 20-percent salvage) (note b)	<u>a/3,525</u>
New 75-percent working drawings (note b)	<u>a/4,075</u>
New 100-percent working drawings (note b)	<u>a/1,155</u>
New final working drawings (note b)	<u>a/ 200</u>
 Total architect and engineer contract cost (actual plus estimated through end of contract)	 <u>\$18,454</u>

a/Estimated by NAVFAC officials.

b/Includes estimated 10-percent escalation over original contract due to inflation.

The Navy had paid about \$8.4 million to the joint venture as of March 1, 1981.

The Navy expects to incur additional costs for the design of medical center facilities other than the principal medical buildings. These would include buildings for the corps school, light care, and other activities.

As shown, the parking structure at Florida Canyon--\$7.4 million--and a \$1.7 million powerplant for Building 26 accounted for much of the cost differential. Only about \$7.2 million--offset to some extent by higher cost items at Helix Heights--actually pertained to cost premiums for the high-rise structure.

Acute care structure	\$2,168,000
Box culvert	1,173,000
Earthwork	909,000
Landscaping/irrigation	1,000,000
Foundations	<u>2,000,000</u>
	<u>\$7,250,000</u>

Cost premiums for the  
Florida Canyon-west project

Even though the Florida Canyon high-rise project has been replaced by a low-rise design, some additional cost premiums over those expected at Helix Heights are expected to be incurred. However, the costs will be somewhat different from those described in the Comparative Study. For example, the heavier structural system of the high-rise building will no longer be needed. The current Florida Canyon plan envisions several low-rise buildings similar to those that would comprise the Helix Heights facility. Also, a larger investment in elevators will not be required, since the elevator requirements at Florida Canyon and Helix Heights will be about the same. It is expected that the mechanical systems can now be placed on the roofs of the low-rise buildings as could be done at Helix Heights. This would eliminate the requirement for significant internal square footage to be built for the mechanical systems as was proposed for the high-rise structure.

A cost premium for foundations will no longer be incurred in Florida Canyon. The deep caisson foundations necessary for the high-rise building will be replaced by spread footing foundations for the low-rise structures on the Florida Canyon-west site.

NAVFAC officials identified certain items that could make the Florida Canyon-west project more expensive than a comparable Helix Heights project. The items, totaling an estimated \$16.8 million, are as follows:

NRMC, San Diego Cost Differential--  
Florida Canyon High Rise and Helix Heights  
as of November 1980

<u>Component description</u>	<u>Florida Canyon high rise</u>	<u>Helix Heights</u>	<u>Differential-- Florida Canyon Over Helix Heights</u>
----- (000 omitted) -----			
Acute care (560 beds)	\$153,410	\$151,242	\$ 2,168
Print shop	125	97	28
Bag room	126	52	74
Parking structure (800 vehicles)	7,400	-	7,400
Warehouse	5,288	4,453	835
Corps school (Building 26)	11,596	b/11,345	251
Medical rehabilitation (Building 26)	2,388	b/3,704	-1,316
Bachelor-enlisted quarters (BEQ) (678 people, Building 26)	11,278		
BEQ (270 people, Building 41)	1,611	b/19,310	-1,907
BEQ (290 people, new construction)	4,514		
Powerplant (Building 26)	1,722	-	1,722
Supporting facilities:			
Water	-	182	-182
Gas	45	318	-273
Box culvert	1,273	100	1,173
Land acquisition	-	2,200	-2,200
Surface parking	a/823	a/1,139	-316
Earthwork	1,818	909	909
Landscaping/irrigation	3,000	2,000	1,000
Foundations	<u>10,000</u>	<u>8,000</u>	<u>2,000</u>
Subtotal	\$216,417	\$205,051	\$11,366
Cost for components with no differential	<u>\$ 59,898</u>	<u>\$ 59,898</u>	<u>\$ 0</u>
Subtotal, engineering costs	\$276,315	\$264,949	\$11,366
Contingency	<u>c/16,578</u>	<u>c/13,247</u>	<u>3,331</u>
Subtotal	\$292,893	\$278,196	\$14,697
Supervision, inspection, and overhead (5.5%)	<u>15,197</u>	<u>15,300</u>	<u>-103</u>
Total	<u>\$308,090</u>	<u>\$293,496</u>	<u>\$14,594</u>
Authorization requirement (rounded)	\$308,000	\$293,000	\$15,000

a/2,100 vehicles at Florida Canyon; 2,900 vehicles at Helix Heights. The difference is the parking structure at Florida Canyon.

b/New.

c/6 percent contingency at Florida Canyon; 5 percent at Helix Heights.

### Geotechnical

The Comparative Study described the earthquake potentials of both Florida Canyon and Helix Heights. It noted that a previously undetected and unrecorded fault was discovered in Florida Canyon. However, it also noted that the fault would not be the controlling factor in the earthquake resistance design of the hospital. Since the seismic setting in San Diego is governed by larger faults in the region, the ground motions postulated for the two sites are essentially equal.

We have no reason to question these scientific findings. They are supported by the work of geotechnical consultants who have extensive experience in the region. The consultants have stated that building the hospital 70 or more feet from the fault would be as safe as building anywhere in the San Diego area.

Extensive geotechnical testing on the west site shows it to contain good soil on which to construct facilities. NAVFAC officials stated that a 100-foot minimum building setback from the fault will be maintained for the medical facilities, placing them well outside the limit suggested by the consultants.

### Land assembly

The land assembly situations at Florida Canyon and Helix Heights remain much the same as described in the Comparative Study. The Navy has title to all the land necessary to build the medical center in Florida Canyon, adjacent to the present complex. On the other hand, the time required to assemble the necessary land in Helix Heights remains uncertain.

As discussed in the Comparative Study, the land necessary for the Helix Heights project is under multiple ownership. Although the city owns the largest parcel, about 17 acres are privately owned. Acquiring the property may be a time-consuming process, perhaps involving condemnation proceedings and relocation of residents. As indicated in the study, the San Diego City Council, by a November 1980 resolution, offered to help the Navy assemble the Helix Heights land. However, the Comparative Study said the Navy and the city had not held detailed discussions about a possible exchange of Navy-owned Balboa Park land and city-owned land in Helix Heights.

In January 1981, city officials told us it could take up to 18 months to assess the parcels in private ownership, make offers, negotiate with and relocate the owners, and demolish the existing structures. This estimate assumes that all would go well, necessary condemnations would be finalized, and relocations would be successfully completed. The city has offered to assist the Navy in these actions, but city officials said the Navy would have to

<u>Description</u>	<u>Cost</u>
Underground warehouse	\$ 400,000
Retaining walls	500,000
Parking structure (note a)	10,800,000
Earthmoving	3,600,000
Box culvert	<u>1,500,000</u>
	<u>\$16,800,000</u>

a/This parking structure would be larger than the one previously planned because some parking spaces would be reallocated from surface parking based on the resiting to Florida Canyon-west. NAVFAC officials told us that a parking structure could ultimately be needed at the Helix Heights site if the Navy were to decide to locate the medical center there.

NAVFAC officials said these are preliminary estimates that will probably change as more detailed cost estimates are developed. It is anticipated that further design development will tend to reduce these figures. Other items, such as differences in land acquisition costs, could cause the difference in total costs between a Florida Canyon-west project and a Helix Heights project to fluctuate.

NAVFAC officials expected to be able to construct the Florida Canyon-west project for the \$308 million amount referred to by the Secretary in his December 5, 1980, letter. They also expected that any additional cost premiums and inflation would have to be absorbed into the overall project cost through design and engineering modifications (i.e., value engineering). The officials estimated that the previously planned Helix Heights project could still be done for the original \$293 million authorization although some value engineering would be necessary due to inflation.

#### Observations

All of the cost estimates discussed in this report are based on preliminary design work and could change as design refinements continue. Cost escalation due to delays in this project amounts to more than \$2 million a month at current rates. Also, since the project spans several years, ultimate costs could fluctuate dramatically depending on what future inflation rates are and whether specific elements of the project are delayed further.

Since current project estimates are not firm, it is not possible to estimate with any degree of precision what the final project costs will be or whether there would eventually be any actual cost differences between the two sites. As discussed on pages 22 to 31, one factor that could at least partially offset any cost premiums at Florida Canyon would be the Navy's greater peacetime use of a slightly modified Building 26 in lieu of construction of certain planned facilities.

Navy officials expect the SEIS process, including the incorporation of public comments, to be completed in June 1981.

### Traffic

We spoke with Navy and city officials about traffic considerations at the proposed sites. They agreed that the \$2 million investment discussed in the Comparative Study would be sufficient for local street improvements at either site.

Possible future freeway traffic problems, however, are not so easily resolved. The Comparative Study stated that Florida Canyon area freeways are operating well within their design capacities and would not be affected by the medical center. Helix Heights freeways, on the other hand, were presented as having long-term traffic problems that would be aggravated by locating the medical center in the area.

The city's position on freeway traffic differs only slightly from the Navy's. San Diego's deputy city manager stated that the freeway systems adjacent to both sites are somewhat congested and will, over time, require some further modification and improvements, not only to serve the hospital but also to accommodate increased traffic in the general area. In the case of Helix Heights, the city has long desired to upgrade Route 15, which lies along the west side of the site, and it hopes that this can ultimately be done whether or not this site is chosen for the medical center. The deputy city manager concluded that the difference between the two sites regarding access or costs of improving the access do not appear significant.

In a traffic study report on the Helix Heights area completed in December 1980 and transmitted to the joint venture in January 1981, a transportation, parking, traffic, and civil engineering consultant stated that it considered access to the Helix Heights site to be deceptive. While it appears to be well served by three freeways--Route 15 on the west, Route 94 on the north, and Interstate 805 to the east--problems exist with both the Route 15/Route 94 freeway-to-freeway interchange and the Market Street interchange on Route 15. The problems at these interchanges result from (1) substandard design coupled with existing traffic volumes that strain the physical design and (2) the proximity of the two interchanges.

The consultant concluded in his report that the two key freeways--Routes 15 and 94--are heavily traveled, have poor geometrics at the interchanges adjacent to the proposed Helix Heights site, and need remedial action. The upgrading is necessary whether or not the medical center is located at Helix Heights. The traffic added by the medical center would only aggravate the present situation; it would not be the root cause of the problem.

pay the costs involved. The city's property director told us that he estimated that the costs involved in acquiring Helix Heights land not held by the city would range from \$2.5 to \$3 million, but could be higher.

According to the deputy city manager, the owners of one privately owned parcel consisted of several members of a family--spanning several generations--who would strenuously object to being relocated. The official believed that relocating the whole family to comparable property elsewhere could be a real problem.

The Comparative Study and various city and Navy officials have suggested starting construction before all of the privately owned Helix Heights property has been acquired. While the medical center might be built in such a manner, major problems might also arise. According to NAVFAC engineering officials, most of the primary medical center buildings could be built on city-owned land at Helix Heights. The remaining privately owned parcels would allow completion of the remaining portion of the projects and provide room for expansion. The Navy considers these parcels to be necessary for the project's viability.

According to the NAVFAC Counsel, it would be imprudent to start building without having title to the entire site. Many problems could arise when acquiring the land in stages: the courts might not approve the condemnations, particularly where unwilling families are involved; construction could be delayed; needed parcels might not be acquired; and the whole project could be jeopardized.

Waiting until all the Helix Heights land is assembled could also cause problems and delays. As discussed above, the city's estimates indicate that up to 18 months might be required to acquire all the land.

Florida Canyon, on the other hand, poses no land acquisition problems. The Navy holds fee-simple title to all the land needed. Consequently, construction could begin as soon as the National Environmental Protection Act requirements are met, site plans are completed, and construction contracts are let.

The Florida Canyon project can proceed, however, only if an environmental lawsuit does not interrupt the Navy's plans. The suit seeks to enjoin the Navy from constructing the medical center at Florida Canyon. Although the court denied a preliminary injunction, the suit is still pending. The NAVFAC Counsel stated that the suit is based on an allegation that the Navy prepared an inadequate Final Environmental Impact Statement. The suit is still pending because of the hospital redesign necessitated by the discovery of the fault, and the subsequent need for an SEIS. The draft SEIS was published for public comment on March 27, 1981.

Helix Heights would also have ample evolutionary expansion potential on site. The more open style of development at Helix Heights would allow for more room between buildings for evolutionary growth, NAVFAC officials stated.

#### Contingency

The Comparative Study stated that (1) Florida Canyon would be well suited to rapid wartime expansion because Building 26 of the present hospital would be nearby and (2) Helix Heights would not be as desirable because Building 26 would be about 2.5 miles away. Thus, activation and operation of Building 26--which the Navy plans to keep regardless of which site is selected--would be complicated during wartime.

Both of these positions remain valid considerations. In fact, Building 26 takes on added importance since its contingency use was one of the major considerations cited by the former Secretary of the Navy in choosing Florida Canyon as the preferred site.

The Navy's current plan is to mothball Building 26 in fiscal year 1986 for future contingency use, and the Navy has programed \$1 million for this effort. Navy officials stated that possible peacetime uses of Building 26 are also being investigated and that, since mothballing is not planned for several years, there is plenty of time to complete a study showing the best peacetime uses of the facility. Moreover, Navy officials stated that the principal construction planned to begin in fiscal year 1982 for the Florida Canyon-west medical center would not be altered by any decision regarding peacetime uses being considered for Building 26.

Having examined the reuse potential of Building 26, we believe that opportunities exist to locate several activities in the facility during peacetime without altering the basic acute care structure necessary for contingency use. The results of our work are discussed on pages 22 to 31.

#### Architectural/medical planning

Essentially, the statements presented in the Navy Comparative Study concerning Florida Canyon no longer apply. These statements, as noted before, pertained to the nine-story high-rise structure which is no longer being considered. According to NAVFAC engineering officials, the new design (see p. 7) will preserve many desirable departmental configurations and locations from the original Florida Canyon design, much the same as was stated in the study for Helix Heights.

An official of the consulting firm that prepared the study, as well as other traffic studies in the Balboa Park and Helix Heights areas, considers the freeways in the Florida Canyon area to be adequate now and potentially adequate in the future. However, he believes that freeways near Helix Heights are currently congested and need improvement.

The freeways serving the Florida Canyon site--Interstate 5 and Route 163--would not be affected much by the new medical center, according to the consulting firm official. The total traffic will not increase significantly, since the medical center is a replacement facility in the same area, and not an entirely new medical center. The official expected overall traffic to increase about 11 percent, or 1,900 vehicle trips per day. This increase, coming mainly from outpatients visiting the expanded new facilities, would not significantly affect the freeway system in the Florida Canyon area.

On the other hand, virtually all of the expected 19,000 daily vehicle trips to Helix Heights would be added to the traffic on the existing freeway system. According to the consulting firm official, a new medical center at Helix Heights would be adding traffic to an already inadequate freeway segment which would become more inadequate with the added hospital traffic.

#### Expansion potential

As stated in the Navy's Comparative Study, expansion capability must be analyzed from two perspectives--evolutionary and contingency. Evolutionary expansion is the capability to expand in an orderly manner to meet gradually increasing health care needs of the beneficiary population. Contingency expansion is the capability to perhaps double or triple capacity to care for an influx of returning casualties during a wartime surge period.

#### Evolutionary

The Comparative Study stated that Florida Canyon had limited expansion capability because the layout of facilities at the eastern--lower--portion of the canyon was restricted by the earthquake fault. This is no longer true under the Florida Canyon-west concept, which locates the new primary medical facilities on the upper portion of the property closer to the present facility. According to NAVFAC engineering officials, the Florida Canyon-west plan would provide for ample expansion potential next to the clinic and administrative buildings where parking lots will be placed.

Building 26 in this way could have meant altering the basic acute care structure of the facility.

Since the Navy abandoned the high-rise concept in favor of the Florida Canyon-west low-rise concept, it has decided to mothball and maintain Building 26 for contingency purposes and construct new facilities to house the above functions. Based on our review, we believe that an alternative would be to keep the building open and in use so it would not deteriorate and would be ready to receive casualties in a contingency.

In response to our questions, various Navy officials suggested possible peacetime uses for Building 26 if it were not completely mothballed. One that appears to have significant merit is to mothball the three basement levels--surgical suites, dining facilities, and special X-ray units--and use the six upper floors--now used for acute care--for light care, medical rehabilitation activities, and the corps school. The barracks that were originally planned for Building 26 could be a combination of new construction and renovated existing structures.

As the original estimated costs for modifying Building 26 space showed, barracks and corps school configurations were based on demolishing and renovating most of the interior, a costly action. It is possible that light care, medical rehabilitation, and corps school space could be provided in Building 26 for far less cost, and without altering the building's basic acute care structure.

Providing for light care would require no more effort than moving patients into acute care space. Four wards on the sixth floor and two wards on the fifth floor have semiprivate rooms with 184 beds. No modifications would be necessary on these wards to house light care patients. Another 16 beds could easily be added to the 184 existing beds to provide the 200 planned light care beds. Under this arrangement, all of the \$4.3 million the Navy plans to spend--beginning in fiscal year 1982--on constructing a new 200-bed light care facility could be saved.

In addition, the corps school could also be housed in Building 26 with minimal alterations. The corps school facilities include 20 classrooms, 4 specialty rooms, and various administrative offices occupying about 77,000 square feet. Typical classrooms contain 968 square feet and have a raised portable dais, 62 individual student desks, a movie screen, and a television set for closed-circuit programs. Other classrooms have standard office desks and chairs. The specialty rooms are (1) a mockup X-ray room, (2) a pharmacy laboratory, (3) a mockup operating room, and (4) a model ward with 35 beds. Office space for the corps school staff and administration is located throughout the six buildings--not counting barracks--that the school occupies.

Also, NAVFAC engineering officials said that the principal access to the currently planned primary medical facilities on the Florida Canyon-west site is to be directed from the Florida Drive side of the site. Access from Park Boulevard will be limited to ambulances and other emergency vehicles. Consequently, the medical center-related traffic on Park Boulevard should be considerably reduced.

The study's statements pertaining to Helix Heights are still valid. NAVFAC officials stated that the Helix Heights architectural and medical planning considerations have not changed from those presented in the study.

#### Local input

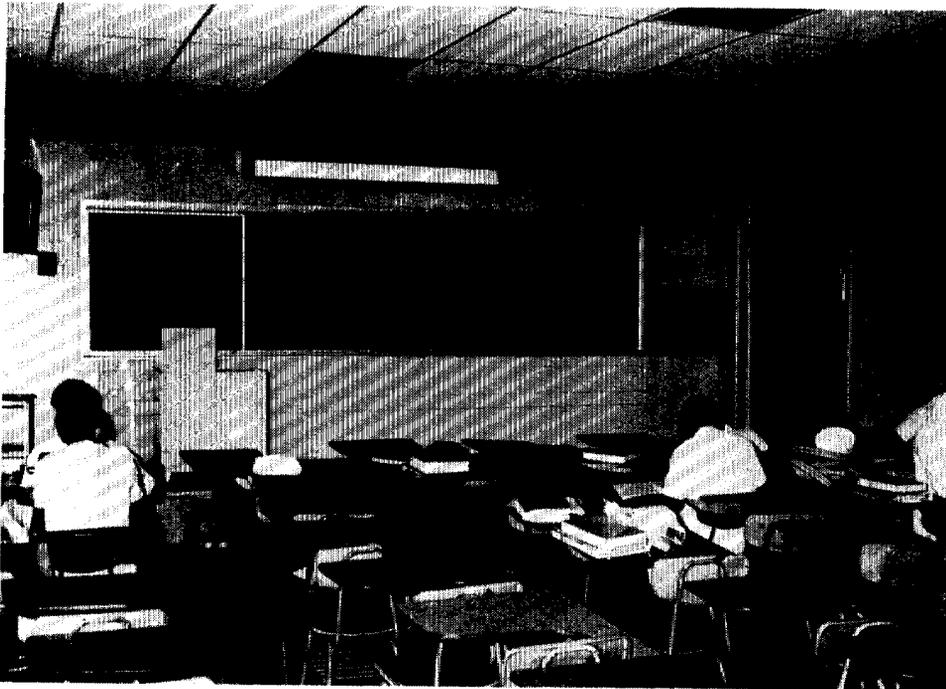
All the local input received in response to the draft Comparative Study was accurately presented in the Navy's assessment of local input in the finalized Comparative Study. That is, there were strong forces supporting and opposing each site and no clear consensus of public opinion. We agree with the Navy's statement in the Comparative Study that: "The absence of public or political consensus indicates that the Navy will continue to encounter both support and criticism regardless of which site is selected."

#### REUSE POTENTIAL OF BUILDING 26

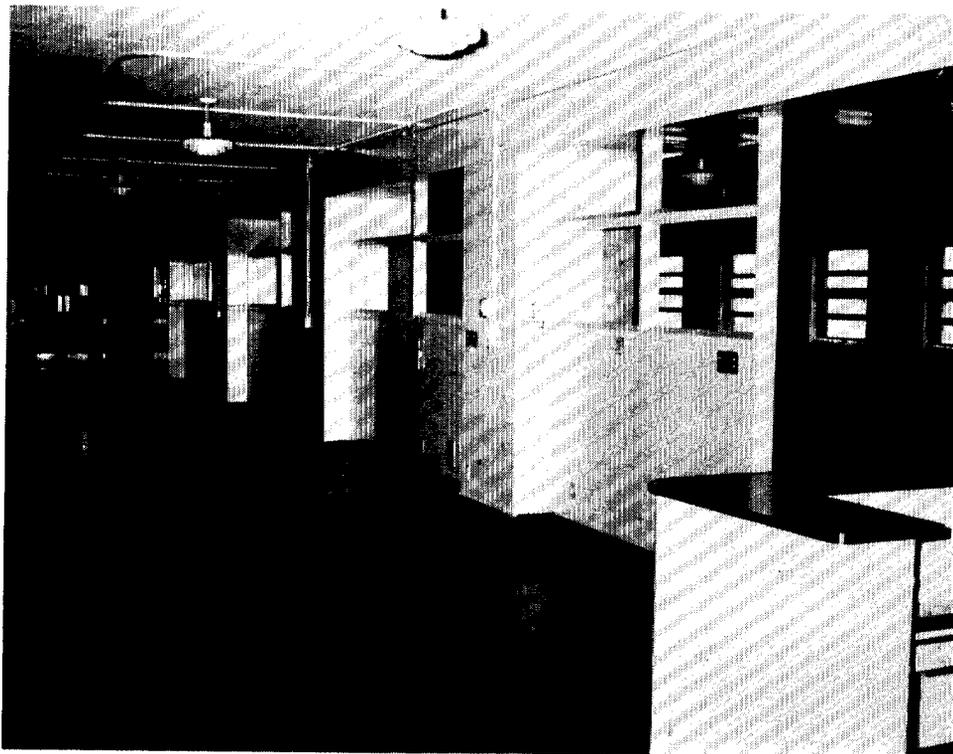
Under the Florida Canyon high-rise design discussed in the Comparative Study, Building 26 was scheduled to house the corps school, medical rehabilitation activities, and a 678-person barracks. The estimated cost of modifications was \$25.2 million, as shown below. Navy estimates for new construction of the same facilities at Helix Heights are also shown.

<u>Description</u>	<u>Building 26</u>	<u>Helix Heights</u>
Corps school	\$11,596,000	\$11,345,000
Medical rehabilitation space	2,388,000	3,704,000
Barracks (678 people)	<u>11,278,000</u>	<u>11,256,000</u>
Total	<u>\$25,262,000</u>	<u>\$26,305,000</u>

Our analysis of the Navy's renovation plans for Building 26 on which the above estimates were based indicated that the scope of the project would have been far more extensive than necessary considering that the Navy also intended to use the building for an acute care facility in a contingency. The plan envisioned removal of the sixth floor, demolition of the interior of the other five above-ground floors, restoration and finishing of floors one through five, and seismic rehabilitation. Modifying



TYPICAL CORPS SCHOOL CLASSROOM



TYPICAL BUILDING 26 WARD (EASILY CONVERTIBLE TO CLASSROOM)

SOURCE: NRMCSAN DIEGO

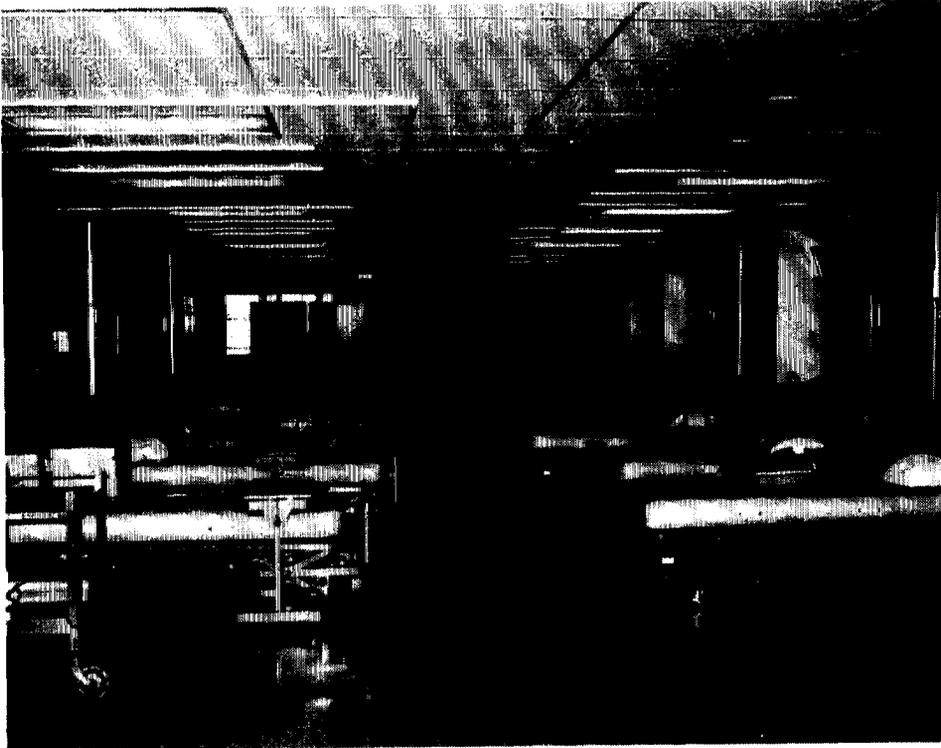
We did not observe, nor were we advised of, any requirements that would dictate special space needs for the corps school. The classrooms and administrative offices are all standard rooms with easily movable desks and other furnishings. The specialty/mockup rooms could be set up elsewhere in comparable open rooms. Nothing we observed leads us to believe that the corps school needs any special space either in new construction or in an existing building.

Building 26 contains large open bay wards in addition to the semiprivate wards on floors five and six. There are 18 open bay wards; 2 on floor five and 4 each on floors one through four. A 510-square-foot solarium is located at the end of each ward. In between wards are offices, treatment rooms, and restrooms. The open bay wards are partially divided in the middle, with electrical hookups for each bed along the walls and middle divider.

Each of these wards could be converted into at least two classrooms/specialty rooms for the corps school without modifying the ward's basic acute care structure. The large open bays could be partitioned, the classroom/laboratory fixtures installed, and the acute care structure left undisturbed. Administrative space could be provided in the present doctors' offices, semiprivate rooms, and examining rooms located between wards. If more administrative space was needed, partitioned offices could be set up in the open bay wards.

In fact, two wards have been somewhat modified for classroom/conference room space without altering the acute care structure (see the photographs on pp. 25 to 28). One ward has a partitioned, carpeted, and paneled conference room with a separate entrance set up in part of the ward. The other ward is completely divided with two entrances off the hallway. We did not observe any structural alterations other than the partitions on these two wards. Partitions were added and doors were provided, but the acute care structure of the wards remained. These two wards provide evidence that with cosmetic upgrading--partitioning and better lighting, for example--the open bay wards would make suitable classroom space for the corps school.

The latest estimate for new construction of the corps school is \$11.3 million, which could be reduced considerably by moving the school into Building 26. In response to our request, NRMC, San Diego, medical construction liaison officials provided an estimate of about \$38,000 to modify each of the building's 18 open bay wards into at least two large classrooms for the corps school. This estimated cost was based on (1) work on an already altered ward in Building 26 and (2) the Navy's 1980 Cost Estimating Guide. The work included installing partitioning, fluorescent lighting, new tile, a suspended ceiling, electrical outlets, and insulation and painting.

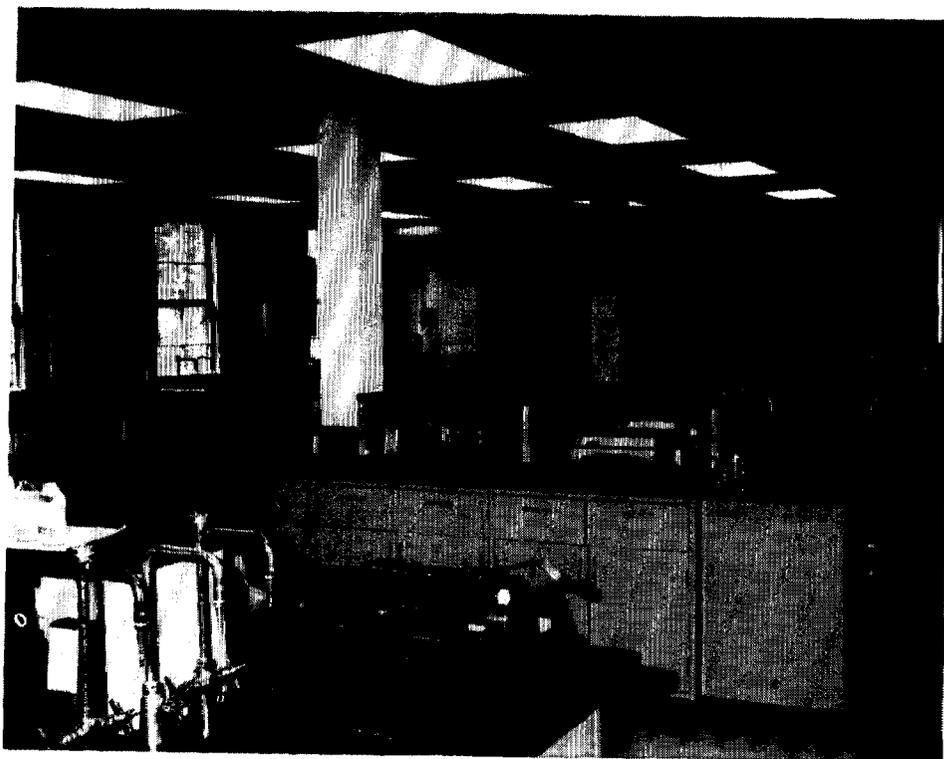


CONVERTED WARD IN BUILDING 26 DIVIDED INTO TWO SEPARATE AREAS,NOTE IMPROVED LIGHTING



ANOTHER VIEW OF THE BUILDING 26 CONVERTED WARD SHOWING SEPARATE DOOR ENTRANCES

SOURCE: NRMCSAN DIEGO



CORPS SCHOOL LABORATORY TRAINING AREA



CORPS SCHOOL FACULTY OFFICE

SOURCE: NRMCSAN DIEGO

Floors one through four in Building 26, where the corps school could be housed, contain over 156,000 square feet. The school's requirement for new construction of 130,000 square feet could be accommodated. Each of the open bay wards contains over 4,000 square feet with offices and treatment rooms between the wards. The wards are larger than any single corps school space requirement and much larger than the 1,140 square feet being requested for most of the classrooms. Assuming that the corps school would need to modify 14 1/ open bay wards, the cost would be \$532,000 at \$38,000 a ward.

The medical rehabilitation activities could also be accommodated in Building 26. These activities--consisting of a physical evaluation board, radiological safety, occupational medicine, industrial hygiene, preventive medicine, and administrative office activities--require an estimated 25,000 square feet. The other four open bay wards in Building 26 could be modified to meet this need. The costs, using the \$38,000 per ward estimate, would be \$152,000. Current estimated costs for new construction of this space is \$1.4 million.

The costs to alter--in the manner discussed above--the open bay wards in Building 26 for corps school and medical rehabilitation activities would be about \$684,000--\$532,000 for the corps school and \$152,000 for medical rehabilitation. In addition, other costs to upgrade Building 26 would need to be determined. NAVFAC officials told us that, except for 1979 estimates for demolishing and renovating Building 26 (see p. 22), no other recent analysis of the potential uses or costs of upgrading Building 26 has been made. Any alternatives, including those discussed on page 23 would have to be looked at carefully for conformance to building and life safety codes, according to Navy engineers.

The cost to upgrade Building 26 to meet current seismic criteria would need to be evaluated. Estimates can give some indication, but a thorough evaluation would be needed. The 1979 cost estimates for demolition and renovation of Building 26 indicated seismic upgrade costs to be \$2.80 a square foot. NAVFAC and joint venture officials told us that current seismic upgrade costs could range from \$3 to \$10 a square foot for non-acute-care hospital use. They said the best estimate would be about \$5 a square foot. Using the \$5 figure, the seismic upgrade cost would be about \$1.9 million, based on 375,000 gross square feet in the building.

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1/Twenty classrooms and four specialty rooms = 12 wards; add  
2 more wards for other needs = 14 wards.



VIEW OF BUILDING 26 WARD CORRIDOR SHOWING ROW OF PHYSICIAN OFFICE SPACE



TYPICAL SEMI-PRIVATE PATIENT AREAS ON 5TH AND 6TH FLOORS IN BUILDING 26 SUITABLE FOR LIGHT CARE USE

SOURCE: NRMCSAN DIEGO

The executive officer of the corps school expressed some doubts about using Building 26 space because, in the event of war, the school would grow rapidly and have substantial space requirements. If the acute care space was needed, the school would have to move. One option the Navy is considering is housing part of the school in relocatable buildings during construction on the Florida Canyon-west site. We see no reason why a similar temporary arrangement could not be used in the event of war.

Navy officials said the final decision on what to do with Building 26 did not have to be made now. The current Navy plan is to mothball Building 26, but that decision could change as the project proceeds. The officials concluded that the Navy's major thrust is to press on with the design and construction of the acute care hospital. Decisions on support facilities, such as Building 26 and the corps school, are not as pressing and can be made later.

We agree with most of the Navy's position, but believe that the light care building design and construction should be postponed. The light care facility, which is scheduled for construction during fiscal year 1982, is a completely separate structure from the primary medical facilities. No effort should be expended on the light care facility until a study of the use potential of Building 26 is completed.

The corps school buildings are not scheduled for construction until fiscal year 1986, so there is time to complete a study of this possible use of Building 26. Use of Building 26 to house medical rehabilitation activities or other activities could be studied at the same time.

In addition, Navy officials stated that a new powerplant and various life safety systems, such as sprinklers and smoke detectors, would probably be needed. Powerplant costs have been estimated at \$1.7 million. Navy officials did not make any estimate of the sprinkler and smoke detector system or any other life safety items that could be needed. They said these costs would have to be determined after an assessment of need and engineering evaluation.

The costs associated with Building 26 alterations and upgrading for use as space for light care, corps school, and medical rehabilitation activities are not precisely known. However, we believe that the total Florida Canyon-west project costs could be considerably reduced if these activities were housed in Building 26 rather than in newly constructed facilities. Moreover, using the building in these ways would involve no basic structural alterations and retain its wartime contingency capability as an acute care hospital.

New construction for the light care, corps school, and medical rehabilitation activities is estimated to cost over \$17 million. The Navy has programed an additional \$1 million for work related to mothballing Building 26. Available estimates for renovating the building amount to about \$4.3 million--\$684,000 for renovating the 18 open bay wards, \$1.9 million for seismic upgrade, and \$1.7 million for an upgraded powerplant.

Comparing these estimates with the Navy's estimates for new construction of light care, corps school, and medical rehabilitation facilities shows that about \$13.7 million would be available for improving the life safety and building code aspects of the building. Even if these costs, which have not been estimated by the Navy, turn out to be very high, the potential savings to be realized from using Building 26 for the activities discussed above would be substantial.

The Navy Surgeon General said he would concur in an interim use of Building 26 as long as the basic acute care structure was not altered. He believed that any future uses must allow the present configuration to be maintained, which would in turn allow for rapid wartime expansion.

The Surgeon General also believed that problems could arise with the corps school moving to Building 26. He felt that the school might apply pressure for substantial reconfiguration of the basic structure, which would be unacceptable. Also, where to locate the school in the event of war is an unanswered question. Despite these problems, the Surgeon General intends to look closely at Building 26 alternatives, including (1) light care, (2) the corps school, and (3) administrative space.









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