

Executive Summary

A Concept Study for Unused Lands and Existing Buildings at Governor Bacon Health Center

July 1991

The Department of Health and Social Services (DHSS) for the State of Delaware has undertaken a land use concept study for unused lands at the Governor Bacon Health Center. The objective of the Study, prepared by Sasaki Associates, Inc. and their subconsultants Coopers & Lybrand, was to investigate and develop alternative land use scenarios that might add value to the site and would be compatible with the existing/remaining uses at the Health Center.

The Concept Study report was organized in the following sections: site inventory and analysis, market analysis/site program, conceptual land use plans and conclusions. This Executive Summary addresses only the key aspects and issues of the concept study.

SITE INVENTORY AND ANALYSIS

Site Context

Governor Bacon Health Center is located approximately 7.5 miles south of Wilmington, Delaware in New Castle County. The site is immediately adjacent to Delaware City, Delaware, on the south side of the Delaware City Branch Channel. The eastern boundary of Governor Bacon Health Center is the Delaware River with Historic Fort Delaware State Park within view. The site is directly accessible from Delaware Route 9.

Governor Bacon Health Center is an approximately 275-acre site containing a variety of uses including an Intermediate Care Center for the elderly, staff housing, a drug and alcohol rehabilitation center, an adolescent housing facility, a horse stable and riding operation, office space for the Fort Delaware Society, facilities for the Delaware Marine Institute, a National Guard Armory, a civil defense bunker, a municipal sewage treatment plant, warehouse facilities and miscellaneous vacant buildings. A substantial portion of the site is open space, either wooded or wetland.

Opportunities and Constraints

The Governor Bacon Health Center site is rich in resources. Natural resources include wildlife, wetlands and woodlands vegetation along with visual and physical access to the Delaware River. Recreational resources include the potential for water access for boating and fishing, trails, picnicking, camping, open space for field sports, and linkage potential to other state parks and resource areas via the channel, river and over land. Historic resources contribute another dimension the site, providing an opportunity to illustrate the various military uses of the site over time, beginning with the civil war continuing through to the present day use by the National Guard. Historic features such as the parade

ground, civil war fortification, visual and potentially physical link via boat to Fort Delaware and Fort Mott, the P.O.W. Camp guard tower, and the historic resources maintained by the Fort Delaware Society all offer recreational/educational opportunities for the site.

Access to Governor Bacon Health Center, in a regional sense, is not optimal for uses which require a ready access to major transportation routes.

While the site offers many opportunities in the area of natural and cultural attributes, it also contains characteristics that represent constraints to development. Of the 275 acres, approximately 35 acres are in wetland and approximately 200 acres are within the 100-year floodplain. The 40 acres outside of the wetland/floodplain are wooded and somewhat remote from the developed portions of the site, a distance from existing utilities and potential utility connections.

The presence of hazardous waste sites could limit or delay any further development on the site. The extent and nature of the area contaminated and the cost, necessity and feasibility of a clean up should be assessed.

The existing site infrastructure is in poor condition. Utilities are generally old and barely adequate, and with a few exceptions, roads, walks and buildings are in need of repair.

Some of the present uses on the site are incompatible with each other or are located in such a manner as to have a negative impact on the site as a whole. The sewage treatment plant occupies a portion of the site which would negatively affect the desirability of a marina or residential uses and to a lesser degree recreational uses such as picnicking, fishing, boating, hiking, bird watching and historic interpretation. The Purchasing Department warehouse has a somewhat prominent location near the southern entrance to the site and is incompatible with the use of that entrance for residential and/or recreational uses without screening of some kind.

The Meadows Program, situated along the channel, occupies a portion of the site that offers water views and water access. The buildings housing the Meadows Program occupy most of the available land in that sector, requiring relocation of an existing program if uses such as a marina or residential units were to be considered for that area of the site.

In summary, the physical and cultural opportunities and constraints identified at the Governor Bacon Health Center site point strongly in favor of recreational uses in addition to expansion of existing uses as needed and identified more fully in the market analysis.

MARKET ANALYSIS

Summary of Market Analysis Process

The following development program was identified for the Governor Bacon Health Center site based on interviews with current and potential users of the site, as well as a review of the local real estate market in an effort to identify potential support for speculative development. Some of the potential program elements identified during

market research were eliminated from the development program at work sessions with DHSS staff.

Conceptual Development Program Summary

Marina

Wet slips - 150
Dry stack - 50
Restaurant - 3,000 SF
Retail - 1,500 SF
Marina Office - 300 SF
Showers/Lockers/Restroom Facilities - 1,400 SF
Bait Store - 700 SF
Warehouse - 4,000 SF
Repair Shop - 7,500 SF

Residential

95 Townhouse Units

State Park

Conference Center
Park Information
Park Headquarters - approximately 5,000 SF (rehabilitated)
Museum/Theater - approximately 5,000 SF (rehabilitated)
Recreation Center - approximately 9,000 SF (rehabilitated)
Pier
Boat Launch
Playing Fields
Services

- Restrooms
- Ticket Office - Ft. Delaware Shuttle
- Storage/Maintenance
- Concession
- Park Residence

Department of Health and Social Services

LKEC Treatment Center (size undetermined)
Physician/Dental Offices 1,500 - 3,000 SF
Marine Institute Classroom - Replacement Space 3,000 SF

The market analysis phase of work was intended only to provide a conceptual development program. It is important to note that further study into the amount, mix and character of the development program should be performed as the planning process moves forward.

CONCEPTUAL LAND USE PLANS

The development program identified by the market and site analyses for the Governor Bacon site is a modest program and did not identify three clearly different development programs as originally intended. The three alternatives developed accommodate similar programs, the distinction between the alternatives being the manner in which the different uses are arranged on the site, rather than the composition of the development program. The orderly development of the site is encouraged by identifying zones for each user in order to contain current operations and define areas available for future expansion.

The following is a summary of the three alternative conceptual land use plans.

Alternative A

The Delaware Health and Social Service Department uses remain in their current locations framing the parade grounds, the Meadows Program on the west, and the hospital and office functions on the east. The staff housing remains along Battery Road. The size of the zone for the state institutional users is approximately 74 acres.

The Meadows Program remains in the current location. Within the 17-acre site of the Meadows Program there are building sites for an additional 30,000 Square Foot (SF). The sites are located on the east side of Elm Street.

The 23-acre area west of Coyer Road and bisected by Battery Road accommodates the hospital and health-related service functions. Due to the area of usable land, there is opportunity for approximately 45,000 SF of office/residential health care expansion in addition to 24 units of staff housing. The office uses are clustered on the south end of the zone near the entrance to the site. The staff housing units follow and expand the existing residential pattern created by the existing staff housing. It should be noted that the market analysis indicated a very modest need for additional office and residential uses on the site.

The warehouse functions on the site will remain in their existing location. All expansion of the warehouse functions should occur nearby in an efficient and dense fashion. The 21-acre site will accommodate an additional 100,000 SF of warehouse and service buildings. The maintenance and service requirements for the DHSS and state park facilities is accommodated within this area also.

The National Guard remains in its current 20-acre location. It is suggested that the development and activities of the National Guard respect an open space buffer of approximately 100 feet in width. This visual buffer will help create and retain the character of the site as a state park.

The State Park is proposed to encompass the riverfront and the western edge of the site, occupying approximately 116 acres of the site. In addition to the program identified earlier, the state park supports several historic interpretive areas around the old fort, the guard tower and the barracks.

The Marina/Residential area and state park are tied closely together in Alternative A at the "Village Center" portion of the marina. With the rehabilitation of some existing historic structures and additional marina services and restaurant this alternative creates a Village Center mixed use zone. All of the buildings housing the state park offices, retail and housing are proposed in a cluster to create the Village Center.

The land area allocated for the marina is sized to accommodate 150 slips in an upland marina basin and 50 dry stacks for storage. The shuttle to Fort Delaware can board and leave the marina from the wharf at the Village Center. A dock is proposed at the mouth of the marina to accommodate a berth for all tall ship and transient docking. The edge along the marina is public, with access to the marina slips controlled at the main pier in the Village Center.

The residential uses are proposed for the edge of the marina and on both sides of the Village Center to take advantage of the marina as an amenity. The site can accommodate approximately 100 townhouse type units along with surface parking. The residential component could also be eliminated from this development scheme with the land area being devoted to State Park uses instead.

The historic parade grounds form the key element in the open space structure and organization of the site. The central open space is used to create an axis through the Village Center and the marina.

Open space buffers have been proposed around the warehouse, National Guard area and along the channel. This buffer is intended to be used to create a visual screen from the park users and provide a zone for pedestrian and bicycle trails.

The main entrance to the H&SS uses on the site would remain at Battery Lane. The main circulation in this area would be provided by the loop road around the parade ground. The intersection of the southern portion of the loop road and Battery Lane should be reconfigured to facilitate turning. Signage should be included to direct visitors.

The entrance to the marina and residential area will also be at Battery Road. To provide vehicular circulation to the marina a new road is proposed, constructed perpendicular to Battery Road, running through the proposed Village Center.

The State Park entrance is created at the southeast corner of the site. This location is heavily wooded with little development which would give it the appropriate character for a state park entrance.

A trail system is proposed for the site to link the historic interpretation areas, the marina, the residential and the Health and Social Services users of the site to the regional park and trail system. All the trails converge at the Village Center.

Alternative B

The concept of Alternative B is based upon the development of the marina by dredging the western edge of the site along the Delaware City Branch Channel. The land area

allocated for the Health and Social Services uses is reduced, with the land area currently containing the Meadows Program being utilized for the marina basin.

The Delaware Health and Social Services Department is consolidated on the east side of the parade grounds. This 10 acre land area will accommodate the additional staff housing, a small office building and the relocated Meadows Program. The site for the replacement facilities for the Meadows Program is much smaller and to accommodate the same amount of gross square footage, the facilities will need to be developed at a higher density than the existing facility.

The warehouse/service uses are located in the same area as shown in Alternative A.

The National Guard use does not change in this alternative.

The State Park site in this alternative is 148 acres and encompasses all of the riverfront and the historical sites. A new public boat launch, in addition to the Fort Delaware Shuttle launch, is developed at the site of the old pier.

The Marina/Residential is located on the western side of the site as stated earlier. The development of housing and a marina in this location will link the site more closely to Delaware City. It is also well protected from inclement weather making it an attractive site for the marina. A marina in this location would have less negative environmental impact because there do not appear to be wetlands on this portion of the site. However, the relocation of the Meadows Program facilities would be required, and adds to the development costs for this alternative. The facilities for the Meadows Program are in need of repair. This alternative becomes more attractive if the marina is a long-term goal and is implemented as the need to repair or replace the existing Meadow Program facility becomes necessary. The retail/restaurant component of the marina is located on the north edge of the triangle shaped basin in a location that could also service DHSS and State Park users.

The Residential Units are located between the marina and the parade grounds. The sites identified will accommodate approximately 95 townhouse units. The marina could be developed without developing the residential units.

Alternative C

The land use concept for Alternative C locates the marina in a marina basin created with breakwaters in the Delaware River.

The Delaware Health and Social Service Department uses remain in their current locations and are accommodated in the same fashion as in Alternative A.

The National Guard is accommodated on its exiting site. The State Park is accommodated in much the same way as in Alternative A. However, because the marina function is in the river there is more land area that can be dedicated to the state park use.

The Marina/Residential uses are located on the Delaware River. The basin for the marina is dredged from the river. A pier in the location of the old pier is developed and the marina is located to the northwest of this pier. The pier is intended to be used as a launch facility for the Fort Delaware shuttle and as a temporary berth for boats being put in the river at the public boat ramp. It will also provide an opportunity for fishing.

The restaurant/retail facilities are developed on the river bank near the access point of the marina. Dry boat storage facilities are developed adjacent to the restaurant with good access to the pier.

The proposed location for the residential units is adjacent to the marina. The land area allocated for the housing is larger than that in the other schemes. This is due to the amount of land area used for the central open space around which the housing is developed. The central open space would function as a front door for the units and allow all units to have waterfront views.

The open space structure in this alternative is built around the historic parade ground. The open space spine is extended through the state park structures (the renovated theater and recreation center) and the townhouses connecting to the rivers edge.

The wooded area on the east side of the site is intended to stay natural, and be used for passive recreation activities. The more active recreation activities could be developed next to the channel and north of the Meadows Program.

The entrances to the different uses on the site are identical to Alternative A.

The trail system in this alternative is envisioned to wrap the rivers edge and the canal edge, tying the historical interpretation sites together with the state park visitors center.

FINANCIAL ANALYSIS

In order to test the financial feasibility of each of the three marina development scenarios a prospective 10-year cash flow analysis was prepared. The basis for assumptions utilized in the model include market conditions, the performance of other marinas in the State as well as selected marinas in other states and overall industry standards.

Development Costs

The major variation between each alternative development scenario is the cost of constructing the facility. Other assumptions used in the analysis remain constant between the alternative scenarios and are discussed below.

Soft costs were developed based on current market conditions and industry standards. The estimate of construction interest assumes a six-month construction period for Phase I and a three-month construction period for Phase II.

Construction financing is calculated based on an 11 percent rate loan rate and includes a one percent financing fee.

These development costs presuppose that other on-site improvements, including, in the case of Alternative B, the relocation of the Meadows program, have been made. Conceptual costs were developed for the infrastructure improvements recommended based on the site analysis findings. The following investment will be necessary in all the alternatives and are required over time even if the site is not developed further in order to service existing uses.

On Site Road Improvements	\$1,056,000
Sanitary Sewer	332,000
Electrical/Telephone Service	480,000
Water Service	456,000
Storm Drainage	<u>250,000</u>
	<u>\$2,574,000</u>

These costs can be phased over a period of several years and a user fee could be assessed to the tenants of the Health Center to assist with implementation costs.

Revenues

All dollar figures were expressed in 1991 dollars and inflated to current dollars in the prospective cash flow analyses, based on consumer price indices computed by the WEFA Group. The annual growth factor used in 4.0 percent.

The rental rates assumed were set slightly higher than those at Barnard's Delaware City Marina and other Delaware River marinas. However, they are lower than rental rates at Summit North due to the facility's competitive position in the marketplace.

Revenue sources included wet slip and dry slip storage, winter storage, transient dockage, repair shop, bait and tackle concession, gas and diesel sales, yard revenue, retail sales, restaurant (rent) and warehouse rent.

Expenses

Expenses were calculated as a percentage of gross receipts from marina operations, only.

Financing

It was assumed that permanent financing for each phase of the project would be available for 80 percent of project costs; the remaining 20 percent would be covered by the developer/operator's equity contribution.

It was assumed that the developer/operator pays a percentage of gross receipts (including revenue from marina operations as well as that generated by the retail, restaurant and warehouse facilities) to the DHSS as a franchise fee, or lease payment, for the use of the ground.

The developer/operator's capital contribution includes both the Phase I and Phase II equity contributions.

It was assumed that the developer/operator refinances the permanent loan at the end of Year 10 in order to satisfy the balloon payment requirement and to unlock equity from the project.

It was assumed that the developer/operator covers cash flow deficits "out-of-pocket" rather than wrapping them into the permanent financing.

In the current market, a developer would typically require a minimum 10-year IRR of 15 percent. Given the higher risk nature of a marina operations, a 10-year IRR of 20 percent or more may be required to attract developer interest.

Franchise fee payments to DHSS, from both five and ten years of marina operations, are discounted at 9.0 percent.

Comparison of the Relative Feasibility of Each Marina Development Scenario

Gross receipts remain constant with DHSS receiving franchise fee payments with a net present value totalling over \$47,000 for the first five years of operations and over \$122,000 for ten years of operation. However, each of the three alternative development scenarios proved infeasible, given the assumptions described above. Ten-year IRRs for each alternate are as follows:

ALTERNATE	10-YEAR IRR
A	-35.71%
B	-4.67%
C	NA

In each lease scenario, the negative IRR indicates that the project is infeasible. In Alternate C, the project does not generate positive net cash flow to the developer in any year of the analysis, therefore, an IRR cannot be calculated. As a result, Alternate C is the least attractive scenario.

Alternate B, the scenario with the lowest development costs, was tested to determine what magnitude of either revenue increase, project cost decrease, or project subsidy would be required to produce a return likely to attract the interest of a private developer. Each of these factors were first considered independently. To achieve a 10-year IRR of at

least 15 percent, project revenues must be increased 19 percent, project costs must be decreased by at least 30 percent, or a public subsidy of at least \$1,325,000 must be provided. To achieve a 10-year IRR of at least 20 percent, project revenues must be increased by 26 percent, project costs must be decreased by 37 percent, or a subsidy of at least \$1,650,000 must be provided.

Since it would be difficult to achieve feasibility by addressing only one of these factors, several combinations of factors were tested to determine whether Alternate B would be feasible with only moderate modification of revenues, project costs and subsidy. Two potential scenarios are presented below:

Revenue Increase	10%	11%
Project Cost Decrease	10%	10%
Public Subsidy	\$250,000	\$500,000
10-Year IRR	16.18%	20.30%

Whether revenues can be increased 10 to 11 percent is highly dependent on the depth of the "luxury" boat (larger boats with owners willing to pay higher slip fees) market in northern Delaware.

Potential decreases in project costs are a function of both design modifications and the actual bids to construct the project. Construction financing terms also contribute to the level of overall project costs. Furthermore, the development of additional revenue-generating project components may reduce the amount of infrastructure costs allocated to the marina itself.

Public subsidy to help defray the cost of marina development may be available through the Industrial Development Grant Program of the U.S. Department of Agriculture's Farmers Home Administration (FmHA). Costs that may be paid from grant funds include the acquisition and development of land and the construction of buildings, equipment, access streets and roads, parking areas, utility and service extensions, and other costs related to start-up of the business enterprise. The grant maximum is \$500,000.

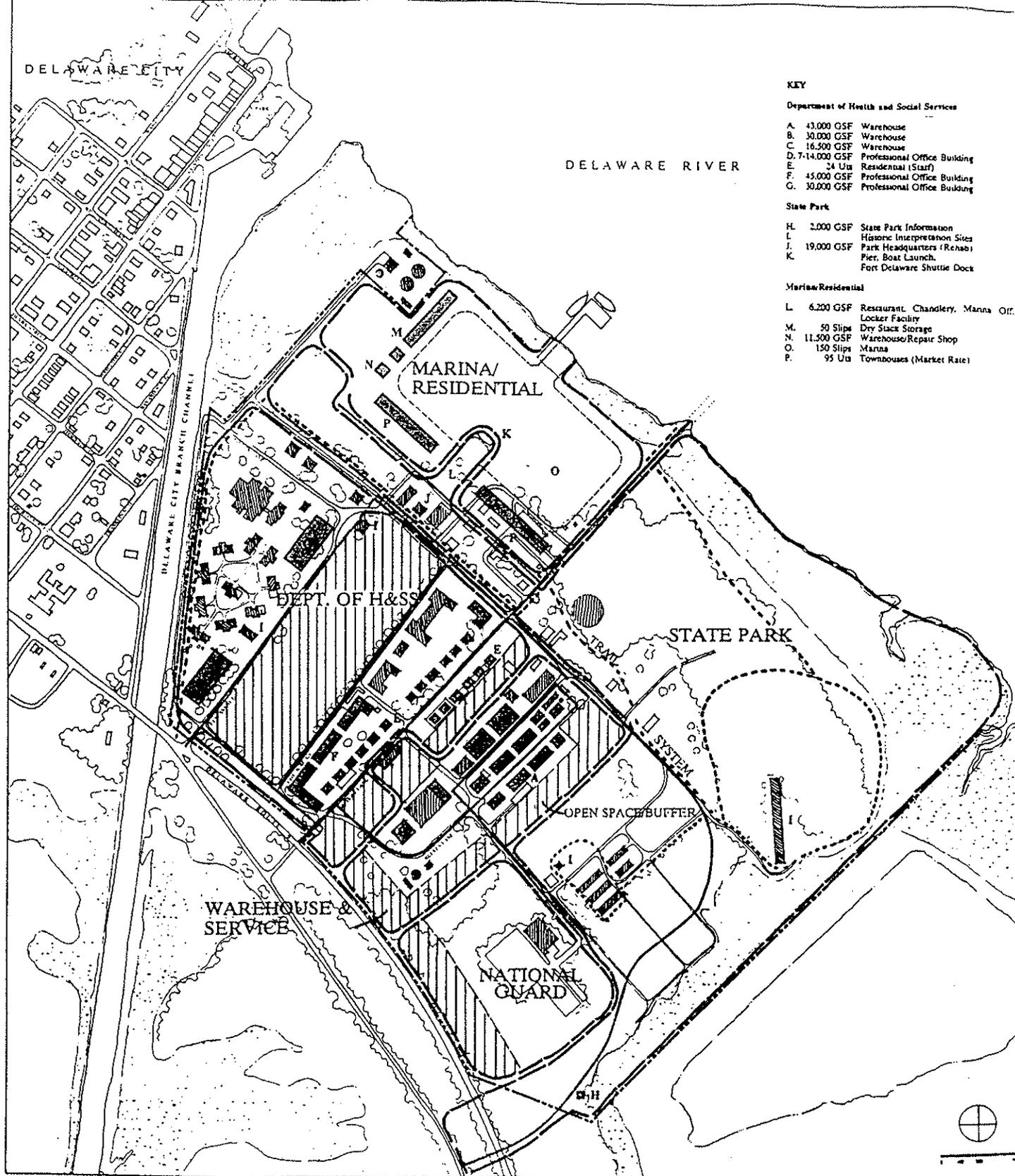
In addition, several federal programs are available to assist DHSS with general utility and infrastructure improvement and construction of community facilities at the Governor Bacon Health Center site. These include the U.S. Department of Housing and Urban Development Block Grant Program (CDBG), FmHA Water and Waste Disposal Loans and Grants, and FmHA Community Facility Loans.

If these revenue, project cost and subsidy targets are achievable, gross receipts would increase and the state would realize a greater stream of lease payments. In addition, increased revenues and decreased development costs may make a land sale scenario possible, although further analysis would be necessary to confirm that feasibility of that course of action.

CONCLUSION/NEXT STEPS

Given the physical characteristics of the Governor Bacon Health Center and the results of the market analysis performed for this study, the development of this site as an income generator for the State of Delaware is unlikely. However, the site has many positive attributes; expanding and grouping as many of the assets together, with additional uses introduced, could help organize and set a framework for future development of the site. Going forward, the planning process for the site should continue to include the following:

- . Further investigation of existing physical conditions, such as the hazardous waste sites. Sites should be located, identified and the required remediation efforts evaluated.
- . The County flood plain regulations are in the process of being modified. The final regulations should be reviewed and incorporated during the next planning phase.
- . A more focused market study and design for a marina to identify a size, type and design of marina that might be more financially viable at this location based upon the market.
- . The existing facilities can be improved by renovating the buildings that have been identified and making the suggested infrastructure improvements.
- . State investment in the site such as developing the state park, the historical sites interpretive centers and the recreational facilities would improve the visibility and use of the site and may help attract interest in the residential and/or marina component.



ALTERNATIVE A

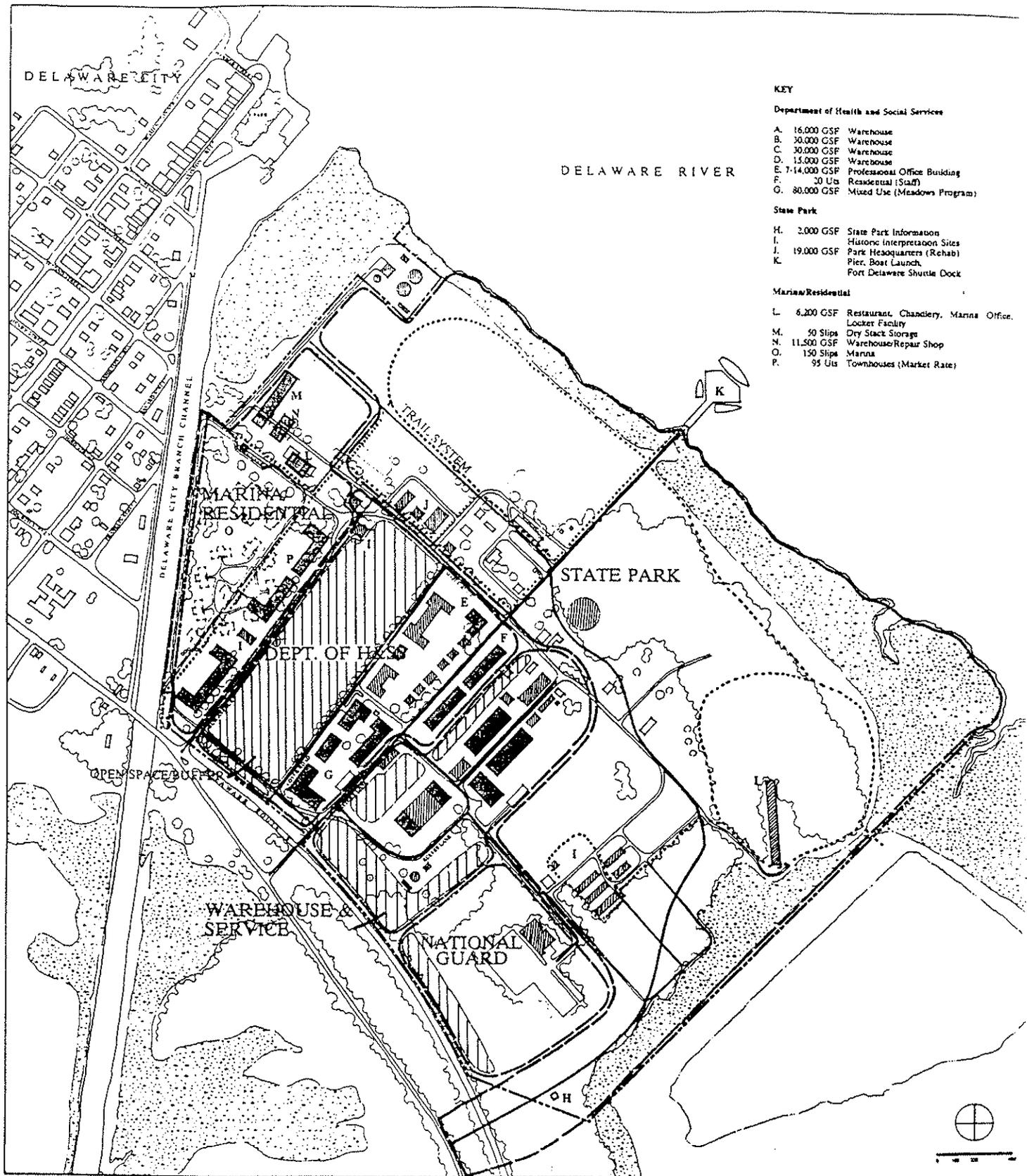
GOVERNOR BACON HEALTH CENTER

New Castle County, Delaware,

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.
MAY 23, 1991



KEY

Department of Health and Social Services

- A. 16,000 GSF Warehouse
- B. 30,000 GSF Warehouse
- C. 30,000 GSF Warehouse
- D. 15,000 GSF Warehouse
- E. 7-14,000 GSF Professional Office Building
- F. 30 Uts Residential (Staff)
- G. 80,000 GSF Mixed Use (Meadows Program)

State Park

- H. 2,000 GSF State Park Information
- I. Historic Interpretation Sites
- J. 19,000 GSF Park Headquarters (Rehab)
- K. Pier, Boat Launch, Port Delaware Shuttle Dock

Marina/Residential

- L. 6,200 GSF Restaurant, Chandlery, Marina Office, Locker Facility
- M. 50 Slips Dry Stack Storage
- N. 11,500 GSF Warehouse/Repair Shop
- O. 150 Slips Marina
- P. 95 Uts Townhouses (Market Rate)

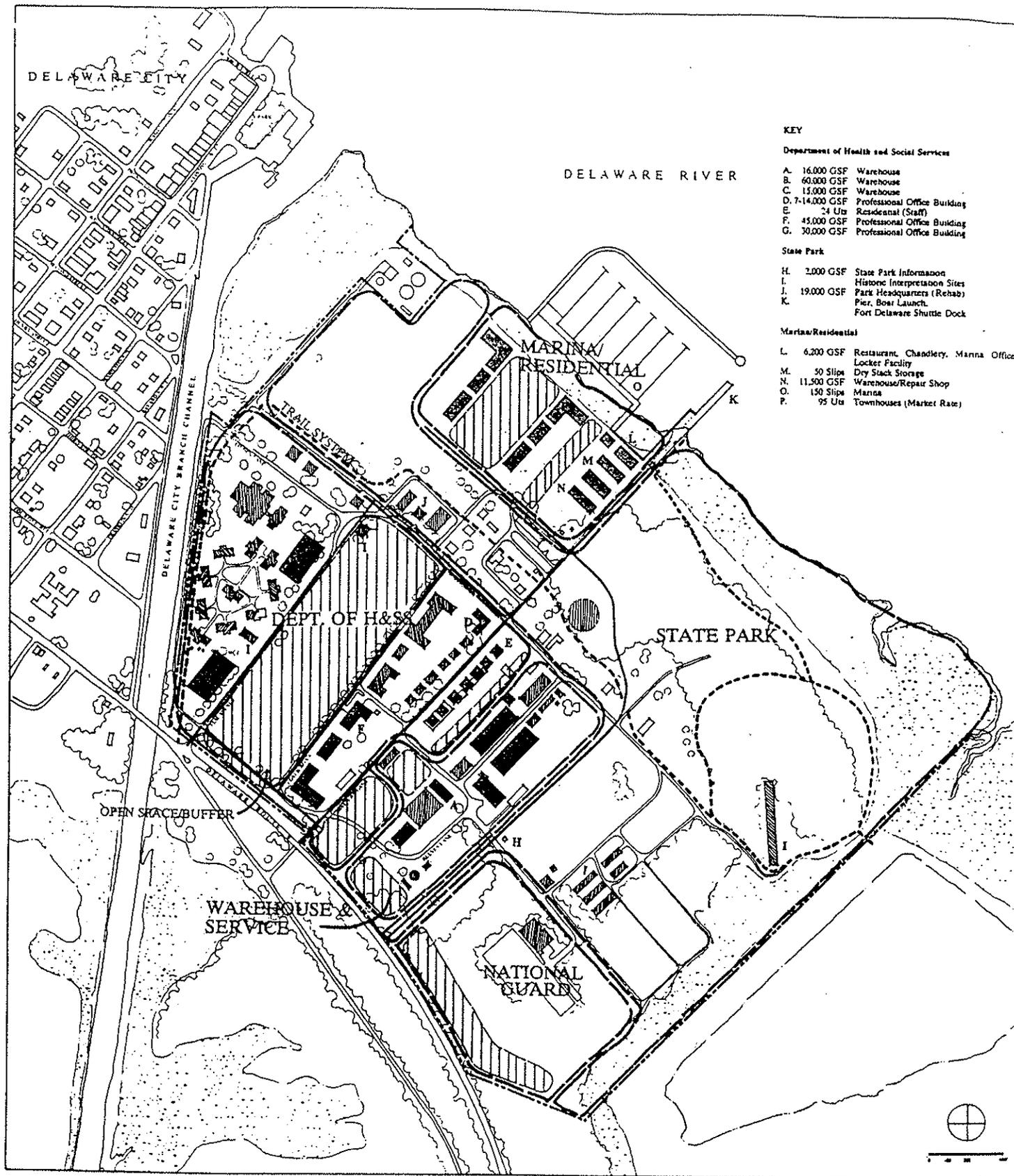
ALTERNATIVE B

GOVERNOR BACON HEALTH CENTER
New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.
MAY 23, 1991



ALTERNATIVE C

GOVERNOR BACON HEALTH CENTER

New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

**A CONCEPT STUDY FOR
UNUSED LANDS & EXISTING
BUILDINGS AT
GOVERNOR BACON HEALTH CENTER**

May 1991

Prepared by
Sasaki Associates, Inc.
Washington, D.C.

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INTRODUCTION

Purpose of Study

Sasaki Associates, Inc. and its sub-consultant, Coopers & Lybrand were contracted by the Delaware Department of Health and Social Services (DHSS) to prepare a land use concept study for unused lands at the Governor Bacon Health Center (GBHC). The objective of the study was to investigate and develop alternative land use scenarios that would be compatible with the existing/remaining uses at the Health Center. The scenarios could be used as a beginning point for the organization of the diverse existing users of the site and for any potential new users.

Process

The planning process for this study was divided into three phases: Phase A - Market Analysis, Phase B - Site Inventory and Analysis and Phase C - Alternative land use plans, financial analyses and land valuations.

Phase A (Market Study) and Phase B (Site inventory and analysis) were accomplished through a combination of site reconnaissance, telephone and personal interviews with key people and a review of available documents.

Phase C (Alternative Land use plans and financial analyses and land valuations) was accomplished through a series of work sessions with the Client and consultant team.

The process for any further site development at Governor Bacon Health Center should continue with a more detailed investigations of physical issues discovered during this study and a more detailed master plan of the specific use zones on the site, in addition to a more in-depth analysis of market conditions.

Site Context

Regional

Governor Bacon Health Center is located approximately 7.5 miles or about twenty minutes south of Wilmington, Delaware in New Castle County. Dover, Delaware is about 18 miles or about 35 minutes south of the site. The site is immediately adjacent to Delaware City, Delaware, on the south side of the Delaware City Branch Channel. Delaware City contains a small number of service oriented retail establishments, but is primarily residential in character. The boat docking facility and parking area providing access to Fort Delaware is located at the end of Clinton Street and at the mouth of the channel. The eastern boundary of Governor Bacon Health Center is the Delaware River with historic Fort Delaware State Park within view. The site is directly accessible from Delaware Route 9.

Local

Governor Bacon Health Center is an approximately 275 acre site containing a variety of uses including an Intermediate Care Center for the elderly, staff housing, a drug and alcohol rehabilitation center, an adolescent housing facility, a horse stable and riding operation, office space for the Fort Delaware Society, facilities for the Delaware Marine Institute, a National Guard Armory, a civil defense bunker, municipal sewage treatment plant, warehouse facilities

and miscellaneous vacant buildings. A substantial portion of the site is open space, either wooded or wetland. The site is bounded on the north by the channel and Delaware City, the south by the Canal State Wildlife Management Area and on the west by Delaware Route 9.

SITE INVENTORY AND ANALYSIS

Physical/Natural Features

The physical and natural features of the site were inventoried during the first phase of the work. The following is a summary of the key issues discovered during the inventory and analysis.

Topography

Relying on field investigation and information gathered from USGS Quad maps, site topography was evaluated. With little exception the site lies below elevation 9, generally sloping away from Route 9 toward the Delaware River. Portions of the site appear to experience flooding during periods of rain due to the lack of slope and built features which impede surface drainage.

Flood Plain/Wetland

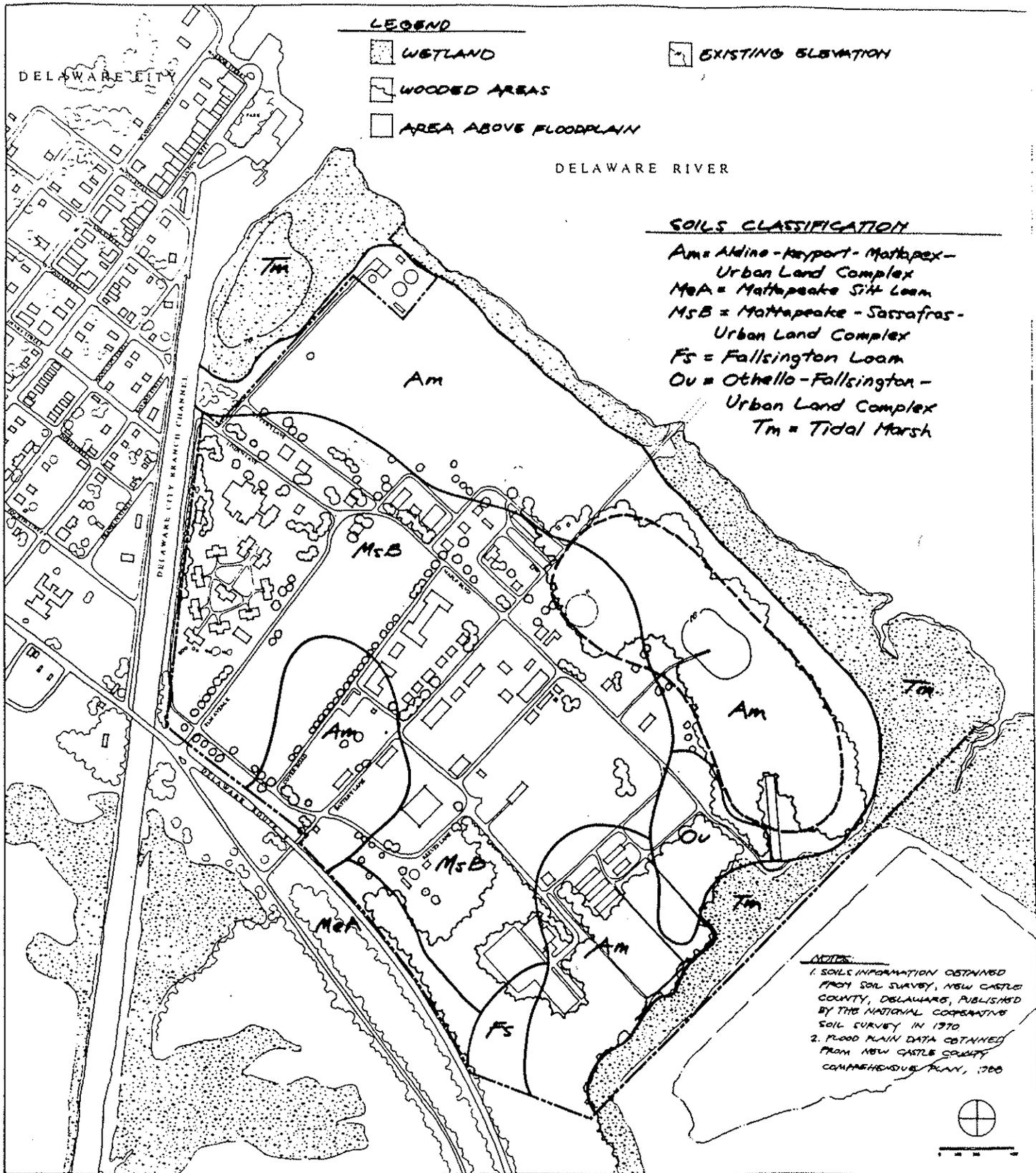
Utilizing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for New Castle County, Delaware and the Hydrology Map from the Comprehensive Development Plan it appears that nearly the entire Governor Bacon site falls within the 100 year flood plain. There is an area just to the west of the wetland near the center of the site in its north-south direction that appears to be outside the flood plain limits. The 100 year flood plain level is defined as elevation 9 and below. Regulations regarding construction within the flood plain are under the jurisdiction of the New Castle County Planning Department. The County is in the process of modifying these regulations. The new regulations may become more restrictive in terms of allowing development in the flood plain.

A band of approximately 250 feet wide along the shoreline of the Delaware River is designated as wetland in the Comprehensive Development Plan and as shown on the State of Delaware Wetlands Map for New Castle County, dated 1973. It appears that the narrow strip of land leading to the remnants of the old pier in the river remains outside the limits of wetland.

Soils/Geology

A preliminary literature review of existing soils information for the Governor Bacon Health Center has been undertaken as part of the analysis phase. Information including soil maps, soil descriptions and soil characteristics was obtained from the Soil Conservation Service (SCS) publication entitled Soil Survey, New Castle County, Delaware, published by the National Cooperative Soil Survey in 1970. The general soil maps used in this publication are typically used in determining areas of a site which are particularly sensitive to development. A detailed discussion of the soil present on the site has been included in the appendix.

Generally, the soils are better suited for development as you move westward away from the Delaware River. The most desirable soil type, from a development perspective, is the Mattapeake silt loam which borders Route 9 and extends to the eastern edge of the site. There does not appear to be a soil condition on site that would severely restrict development.



PHYSICAL / NATURAL FEATURES
GOVERNOR BACON HEALTH CENTER
 New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.

Hazardous Waste Sites

During the site inventory and analysis phase the team discovered that there are several locations on the Governor Bacon site that contain hazardous wastes. The team did not investigate the actual locations or extent of the potential contamination. A memorandum from C. Salkin to W. Hopkins, discussing the locations and potential hazardous waste materials has been attached in the appendix.

The actual locations of the contaminated areas should be investigated further before any other plans are undertaken for the site. The presence of contaminated materials and soils can severely restrict the ability to develop the site from both a financial and health/safety standpoint.

Vegetation/Wildlife

Information regarding vegetation and wildlife was gathered through site reconnaissance, and discussions with representatives of the Delaware Natural Heritage Inventory and the Division of Fish and Wildlife for the Department of Natural Resources and Environmental Control. Much of the Governor Bacon site is open and unwooded. Mature street trees line the perimeter of the parade ground and the streets in the core of the site. The site is generally wooded along the eastern and southern edges, adjacent to the wetlands. The vegetation in the wooded area consists of deciduous hardwoods such as red maple, ash and sweet gum. Two rare plant species have been identified on the site: *Bidens Bidentoides* and *Isoetes Riparia*. *Bidens Bidentoides* is an annual and a member of the aster family. It is a candidate for endangered species status. It is currently found growing on the old pier piling. *Isoetes Riparia* is a fern-like perennial also found in the vicinity of the old pier. It has been given a ranking of 1 by the Delaware Natural Heritage Inventory, which identifies it as occurring in less than six locations statewide.

The site is adjacent to the Canal State Wildlife Management Area. Access to the wildlife area is provided for hunters, who use the area for deer, rabbit, quail and dove hunting. Eagles and osprey have been sighted near Governor Bacon. It is located in the Delaware Bay migration area with Pea Patch Island containing one of the largest Heron rookeries on the east coast. The area is also popular for fishing and there is evidence that the stripped bass is returning to this portion of the Delaware River.

Cultural Features

Historic Structures/Spaces

Fort duPont: The site possesses a rich and varied history dating back to the Civil War era. Chosen for its strategic location, the site was first used in 1863 as an auxiliary gun battery to support Fort Delaware. Twelve years later, in 1875, a permanent fortification was erected. Along with Fort Mott, on the New Jersey side of the River, and Fort Delaware, on Pea Patch Island, this new fort assisted in creating an impenetrable barrier on the Delaware River. At the outset of the Spanish American War, in 1899, additional lands were acquired by the Federal Government and the site was dedicated as Fort duPont, named after Rear Admiral Samuel Francis duPont, a Civil War hero and Delaware resident.

Several new batteries were constructed prior to the First World War and in 1922, Fort duPont was established as an Engineer's Post for the U.S. Army. Due to its proximity to the canals and the river, the site was used as a pontoon equipment testing facility.

Development of the site increased during the second World War. In 1940, a series of barracks, a mess hall and a recreation building were constructed at Fort duPont by the Works Progress Administration (WPA) to house several coastal artillery battalions which were transferred to the Fort. A large stockade was constructed in the southern portion of the site to house German prisoners of war.

The site maintained its function as a military facility until 1948, at which time it was acquired by the State of Delaware for use as a health facility. On October 28, 1948 it was dedicated as the Governor Bacon Health Center. In keeping with the historic precedents, the Governor Bacon site currently contains an active National Guard facility and a civil defense bunker.

The Governor Bacon Health Center was established to provide a broad range of health care services to the people of Delaware. One of the foremost institutions of its kind in this country at the time of its inception, the Center was established to provide the following services: care and treatment to mentally ill children, care to handicapped and crippled children, detention for children awaiting trial, placement services for foster children, care for people suffering from alcoholism, care for epileptics, nursing care for the elderly and facilities for an emergency hospital.

Records show that some of the buildings on the site served health functions prior to the acquisition by the State of Delaware, in 1948. The Tilton Building was constructed in 1930 as a health care facility for the Army and was renovated in 1948 for its current use.

Significant Buildings and Spaces: There are several historic features which remain today on the Governor Bacon site. The old Fort, a remnant from the Civil War era is located in the wooded southern portion of the site. Several buildings remain from the building program undertaken in the 1940's including the Intermediate Care Facility and two adjacent buildings, the theater, the gymnasium, chapel, the civil defense bunker, the prisoner of war guard tower, and the barracks. The parade grounds constitute a very prominent historic open space around which many of the significant buildings are organized.

Existing Building Inventory

A visual survey of most of the existing buildings on the complex was conducted to determine their general physical condition. If any of the existing buildings are proposed for reuse a thorough investigation should be undertaken to review the structural soundness and building code compliance. The survey performed to date was of a preliminary nature to review general building conditions and aesthetics. A general summary of the findings follow:

Masonry Work: The brick facing on all the buildings observed, with a few exceptions, notably Burton Hall, and some of the warehouse structures, were found to be in good condition with no evidence of loose mortar joints, spalling or major cracks. However, several of the buildings did show considerable mildew formation on the bricks, indicating moisture penetration and retention. This could be indicative of non-functioning wall flashing and/or clogged weep joints.

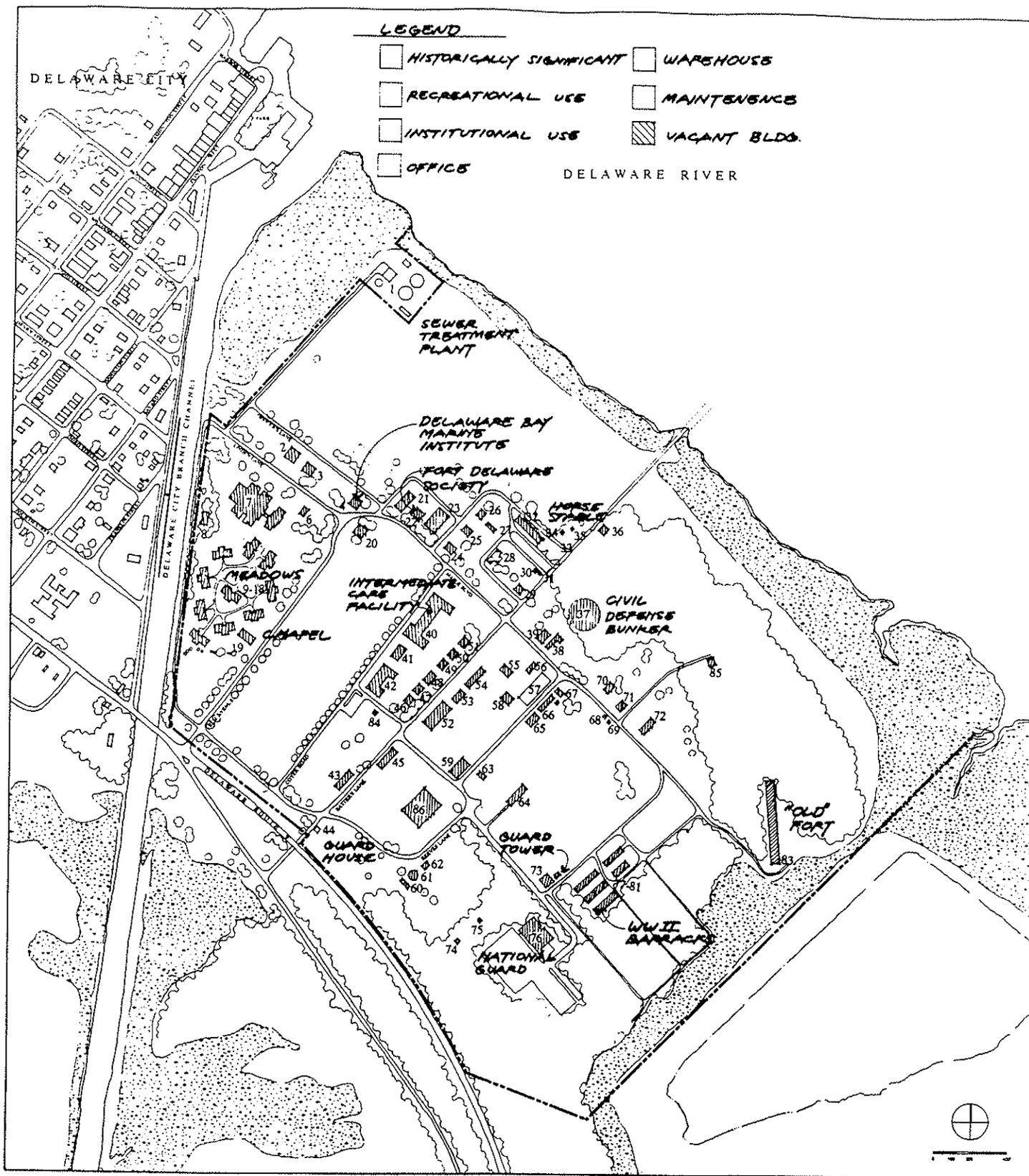
Trim Work: The wood trim, (i.e. fascia boards, eaves, window surrounds, sills and related trim), and gutters and downspouts are all in poor to deteriorating condition. While a few areas will only require refurbishing/repainting; there are areas that appear to be rotted-throughout and will require total replacement (especially at the gutters).

Windows: A total energy efficient/conserving window replacement program would be recommended for all buildings. Most of the buildings surveyed showed an aluminum storm window installed over the existing wood window. The aluminum storm units often were in disrepair, were missing glazing, or were cracked, and were ill-fitted and improperly sealed to the substrate, thus defeating their primary purpose of conserving energy.

Woodwork: Wood framed buildings with exterior wood siding were found to be in poor to deteriorating condition (peeling paint, rotting wood). Several of these buildings have been refaced with aluminum siding and trim. A few are currently in the process of being re-sided as witnessed during this survey. (It appears that the new siding is being placed over the existing rotted siding in some areas).

Roofs: Generally with a few exceptions, most of the sloped roof areas surveyed appear to be in good to fair condition. Materials on sloped roofs vary from slate and asphalt shingled to metal with battens or standing seams.

The illustration which follows identifies building locations. The building inventory, identifying the use and operator, is also included for reference.



EXISTING BUILDING INVENTORY
GOVERNOR BACON HEALTH CENTER
 New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.

BUILDING INVENTORY

#	<u>Name</u>	<u>Use</u>	Operator
1.	Treatment Plant	Sewer Treatment	NCC
2.	Clinical Services	Staff Housing	DHSS
3.	Dormitory	Staff Housing	DHSS
4.	Del. Bay Marine Institute	Office Space	DHSS
6.	Unknown	Unknown	
7.	James R. Hughes	School & Cafeteria	DHSS
8.	Bathhouse & Pool	Bathhouse & Pool	DHSS
9.	Cottage	Adolescent Housing	DHSS
10.	Cottage	Adolescent Housing	DHSS
11.	Cottage	Adolescent Housing	DHSS
12.	Cottage	Adolescent Housing	DHSS
13.	Cottage	Adolescent Housing	DHSS
14.	Cottage	Adolescent Housing	DHSS
15.	Cottage	Adolescent Housing	DHSS
16.	Cottage	Adolescent Housing	DHSS
17.	Cottage	Adolescent Housing	DHSS
18.	Cottage	Adolescent Housing	DHSS
19.	Chapel	Chapel	DHSS
20.	Administration Building	Office Space	DHSS
21.	Movie Theater	Movie Theater	DHSS
22.	Fort Delaware Society	Office Space	DHSS
23.	Burton Hall	Recreation/Gym Building	DHSS
24.	Residence 90A & B	Staff Housing	DHSS
25.	Residence 91A & B	Staff Housing	DHSS
26.	Residence 92A & B	Staff Housing	DHSS
27.	Garage	Vehicle Storage	DHSS
28.	Old Home Ec. Building	Vacated	DHSS
29.	Storage Building	Storage	DHSS
30.	Pumping Station	Sewer Pumping	DHSS
31.	Storage Building	Vacated	DHSS
32.	Stable	Storage	DHSS
33.	Residence 93A & B	Staff Housing	DHSS
34.	Garage	Storage	DHSS
35.	Barn	House Barn	DHSS
36.	Storage Building	Storage	DED
37.	Barthened Bunker	Civil Defense Shelter	DED
38.	Storage Building	Paint Storage	DHSS
39.	"Old" Guardhouse	Storage	DHSS
40.	Tilton Building	Intermediate Care	DHSS
41.	Medical Center	Ancillary Services	DHSS
42.	Paynter Building	Office Space	Adm. S
43.	Hadfi Hall	Adolescent Recreation	DHSS
44.	Gate House	Security Guard Office	DHSS
45.	Office	Office Space	DHSS
46.	Residence	Staff Housing	DHSS
47.	Residence	Staff Housing	DHSS

48.	Residence	Staff Housing	DHSS
49.	Residence	Staff Housing	DHSS
50.	Residence	Staff Housing	DHSS
51.	Residence	Staff Housing	DHSS
52.	Warehouse	Storage	Adm. S
53.	Freezer and Storage	Freezer and Storage	Adm. S
54.	Main Warehouse	Storage	DHSS
55.	Fuel Services Building	Fuel Pumping	DHSS
56.	Paint Shop	Paint Shop	DHSS
57.	Maintenance Building	Shop	DHSS
58.	Garage	Vehicle Storage	DHSS
59.	Warehouse	Storage	Adm. S
60.	Water Storage Tank	Water Storage	DHSS
61.	Water Storage Tank	Water Storage	DHSS
62.	Pump House	Fresh Water Pumping	DHSS
63.	Freezer Building	Freezer	Adm. S
64.	Storage Building	Storage	Adm. S
65.	Garage	Vehicle Storage	DHSS
66.	Storage Building	Carpentry/Plumbing Storage	DHSS
67.	Carpentry Shop	Carpentry Shop	DHSS
68.	Garage	Unknown	DHSS
69.	Garage	Unknown	DHSS
70.	Residence	Unknown	DHSS
71.	Residence	Unknown	DHSS
72.	Warehouse	Storage	DHSS
73.	Garage	Vehicle Storage	DHSS
74.	Well Building	Well Building	DHSS
75.	Well Building	Well Building	DHSS
76.	Armory	Armory	NG
77.	Warehouse	Storage	Adm. S
78.	Warehouse	Storage	Adm. S
79.	Warehouse	Storage	Adm. S
80.	Warehouse	Storage	Adm. S
81.	Warehouse	Storage	Adm. S
82.	Warehouse	Storage	Adm. S
83.	Old Fort		
84.	Pump House	Storm Sewer Pumping	DHSS
85.	Unknown	Unknown	
86.	Warehouse	Storage	

INVENTORY LEGEND

NCC = New Castle County
DHSS = Department of Health & Social Services
Adm. S = Department of Administrative Services
NG = National Guard

Views

A visual assessment of the Governor Bacon site identified a number of key views within the site and from the site to off site features. From the Elm Avenue site entrance there are attractive views across the parade grounds to the brick buildings of the Independent Care Facility, and the vacant buildings adjacent. The parade grounds with the chapel on the far side is also prominently viewed from the Battery Lane entrance after turning north on Reeves Lane. Traveling east to the shoreline of the river Fort Delaware, Delaware City and the New Jersey shoreline are in view. There is also a view of the channel and Delaware City from the street running parallel with it, filtered through existing vegetation.

Comprehensive Development Plan

The November 29, 1988 Comprehensive Development Plan for New Castle County was studied to determine the policy and goals of the Governor Bacon site and the adjacent land.

The plan classified the land uses of the site as "institutional". The land to the west of the site is designated as complete resource protection and the land to the south as "pubic open space".

The designation of the majority of the site is "complete resource protection." The community service uses present on the site are designated as institutional.

Delaware City and the undeveloped adjacent lands to the north and southwest are designated as growth areas. Within these areas "the County and State will commit themselves to concentrating infrastructure and services necessary to the support of development". Priority will be given to service and infrastructure improvements within these areas.

Zoning

Currently the zoning of the site is R-2 (Agricultural and General Purpose) included in the appendix is a summary of the requirements within this zone. Depending on the final development program for the site, a rezoning or special exception from the County may be required. The marina and residential component of the program may lend itself to a Planned Unit Development (PUD).

Environmental Permitting and Approval Process

The Local Permits and Approval process was described by the County as follows:

If the project is of a commercial use and it is over 3500 sq. ft. in size, the proponent will have to go through a "Major Land Development Plan" approval process. This process is broken down into three distinct steps:

1. The first step will require the submittal of an "exploratory sketch plan" at a conceptual level of information. This plan will be reviewed by the planning board mainly for zoning code requirements.

2. The second step will involve the submittal of a "preliminary plan". The full development program with the usual technical base information (delineated wetlands, topographic information, property boundary and ownership, utilities and infrastructure, etc.) is illustrated on the "preliminary plan".

Copies of this plan will be sent to the "Subdivision Advisory Committee (SAC)". This committee is composed of seventeen groups and agencies which review and comment on the "preliminary plan."

A public meeting (the SAC meeting) is held. This meeting normally takes place on Tuesday mornings at 10:00 AM. Within 2 weeks the committee produces and sends the proponent written comments and findings. Approval at this step is required to proceed to the third step.

If the proposed development involves filling or altering wetlands, the proponent is required to prepare and file a wetlands evaluation report.

3. Step three requires the filing of a "Record Plan". Approval on this plan requires securing four letters of approval from:
 - a. The Planning Department
 - b. Department of Public Works
 - c. Highway Department
 - d. Fire Marshal

If the plan requires filling or alterations of wetlands "the wetland evaluation report" developed during step two will evolve to a final Wetland Assessment Report to be submitted for review and acceptance.

The County has its own wetlands regulations, however they are very similar to the U.S. Corps of Engineers regulations under the "Nationwide Permit Process".

Following step three, there is a final step which involves sending the plan to the "County Council". A public meeting is held to review the plan and follow-up with the approval.

Upon the completion of this "Major Land Development" approval process, building permits can be secured from the Department of Public Works (DPW). In addition, a sewer connection permit will be required from the DPW.

The State permits and approval process is administered by the Department of Natural Resources and Environmental Control (DNREC). There are five divisions within DNREC:

1. Division of Water Resources
 - a. Wetlands
 - b. Pollution Control
2. Division of Air and Waste Management
 - a. Hazardous and Solid Waste
 - b. Air Resources

3. Division of Soils and Water
 - a. Coastal Zone Management
 - b. Dredging
4. Division of Fish and Wildlife
5. Division of Parks and Recreation

Normally, a "Joint Permit Application Form" is required when there is a marina use identified as part of the plan. This application covers all of the issues because the review is comprehensive and involves input from all DNREC divisions.

DNREC has adopted new regulations for the "Storm Water Management Program". They are shifting the administration of this program to the local level. The new regulations have been adopted and they become effective on July 1, 1991.

If the review process is successful, a "Marina Construction Permit" is issued by DNREC. If the project is on public land, the approval will be "Lease for Subaqueous Land". If the project is on private land, they will issue "Permits for Subaqueous Land".

The entire filing and review process will take between 6 to 9 months as a minimum. Depending on the scale of the project and the complexity of the issues involved.

Federal Permits/Approvals process involves obtaining a U.S. Army Corps of Engineers permit. This permit is required for the placement of any fill material within wetlands, and the placement of any structures or the initiation of any dredging within the navigable waters of the United States. This permit is issued by the Corps of Engineers pursuant to either Section 404 of the Federal Water Pollution Control Act (Wetland Filling) or Section 10 of the Rivers and Harbors Act of 1899 (Structures and Dredging within Navigable Waters).

Under current policy, Corps permits generally are denied for projects which will result in the construction of non-water-dependent uses in wetlands. To obtain a permit for such uses, the proponent must demonstrate that no alternative upland sites for the use exist in the area.

No statutory time frames exist governing the review of a permit application. However, typically two to three months are required, once all application materials have been submitted. The Army Corps of Engineers may not act on the application until the State has issued its finding and has awarded the construction permit.

Traffic

The existing traffic conditions associated with the Governor Bacon Health Center were evaluated as follows: the roadway and intersection inventory information was obtained by a site visit, and review of plans and photographs of the area; information regarding traffic volumes, accident statistics, and proposed land use projects or roadway improvement projects in the vicinity of the Governor Bacon site were obtained through telephone conversations with a representative of the Delaware Department of Transportation (DELDOT).

Roadway and Intersection Inventory

The Governor Bacon Health Center site frontage (approximately 2,000 feet) is located along Delaware State Route 9 (Fifth Street) just south of the Delaware City Branch Channel. Access to the site is via the Route 9/New Castle Road intersection, located immediately south of the channel, and via Wilmington Road from Old Route 9.

Route 9: South of the channel, Route 9 is a two-lane roadway for approximately 800 feet and then becomes an elevated causeway. The at-grade section is 48 feet wide and consists of one 12 foot wide cement concrete travel lane in each direction with 12 foot wide bituminous concrete shoulders, cast-in-place concrete curbing and guard rail on both sides. The posted speed limit is 25 mph. The elevated section of Route 9 is 24 feet wide and consists of one 12 foot wide cement concrete travel lane in each direction with a 2 foot wide raised walkway on both sides. The speed limit on the elevated section is posted at 50 mph, with a 40 mph minimum. North of the channel, Route 9 consists of one 12-foot wide cement concrete travel lane in each direction with 8-foot wide dirt shoulders and 3-foot wide cement concrete sidewalks on both sides. Route 9 passes through a school zone immediately north of the channel with a reduced speed limit. Route 9 spans the Delaware City Branch Channel with an arched metal grid drawbridge with concrete sidewalks located on each side. DELDOT indicated that the drawbridge was recently made inoperable.

Old Route 9 (actual street name is unknown) is located to the west of Route 9 and parallels the elevated section of Route 9. The roadway dead-ends at the Chesapeake and Delaware Canal. Old Route 9 is a local street that provides access to the Governor Bacon site, via Wilmington Road, as well as access to a few homes located near the channel and a farm located near the canal. The roadway is approximately 20 feet wide with dirt and grassed shoulders on both sides.

Wilmington Road is a northeast-southwest street that provides access directly into the site (to Battery Lane) from Old Route 9. The roadway traverses underneath the elevated section of Route 9. The roadway is approximately 22 to 24 feet wide and consists of one lane in each direction with dirt and grassed shoulders on both sides.

Route 9/New Castle Road/Old Route 9 Intersection: This four-way intersection is located immediately south of the Delaware City Branch Channel. The New Castle Road westbound approach and the Old Route 9 eastbound approach are both STOP-sign controlled. The Route 9 southbound left-turn onto New Castle Road is prohibited. Vehicles destined for the Governor Bacon site are directed to turn right onto Old Route 9 and then left onto Wilmington Road. A few vehicles, however, were observed making the illegal left-turn from Route 9 to New Castle Road. The Old Route 9 eastbound approach contains a grassed channelizing island. Sight distances along Route 9 to the north are poor due to the crown of the drawbridge located approximately 250 feet from the intersection. Sight distances along Route 9 to the south are adequate for the posted speed limit, but limited to approximately 600 feet. Street lighting is not present at the intersection.

Old Route 9/Wilmington Road Intersection: This three-way intersection is located to the west of the elevated section of Route 9. The Wilmington Road eastbound approach is STOP-sign controlled. Sight distances at this intersection are excellent in all directions. Street lighting is not present.

Traffic Volumes: Peak hour turning movement counts at the Route 9/New Castle Road intersection are not available.

The 1990 Average Annual Daily Traffic (AADT) volume on Route 9 was 3,286 vehicles per day, in both directions. Design hour volume was 14% of AADT, or 460 vehicles, in both directions. Directional volumes are not available. A copy of the AADT counts were requested in order to determine AM and PM peak travel periods. The information revealed a morning peak hour of 7:00 to 8:00 AM and an afternoon peak hour of 4:00 to 5:00 PM.

Traffic Accidents: Only two accidents were reported on Route 9 in the vicinity of the site during the last three years (1988, 1989, 1990). Both occurred at, or near the Route 9/New Castle Road intersection.

Proposed Land Use Projects: DELDOT is not aware of any proposed projects within the vicinity of the site.

Proposed Roadway Improvement Projects: DELDOT states that there are no proposed roadway improvement projects scheduled for this section of Route 9.

Utilities

Information regarding utilities was obtained by telephone calls to respective agencies, a site visit and review of aerial photographs and plans of the area. A list of officials that were contacted regarding the utilities is included in the appendix.

In general, utility infrastructure will require substantial improvements if the site is to be improved with the mix of uses currently being suggested, to include marina, office and residential.

Water: The Governor Bacon Health Center maintains its own private supply of water. Two, 190-foot deep wells (100 gpm max), a 117,000 gallon storage tank and two pumps (installed in 1965 and 1968) provide the facility with approximately 35-38,000 gallons per day. In addition there is a fire pump rated at 1500 gallons per minute at 100 psi. Much of the distribution system that is presently being used was constructed in the early 1940's.

Delaware City provides its own private supply of water from two, 700-foot deep wells located within the city. Supply is adequate for the 1700+ residents within Delaware City but cross connections with the GBHC water system have been necessary due to pump failures in the City and/or at GBHC. Connection is made by connecting a fire hose to the two systems, across the drawbridge over the Delaware City Channel. The City has a demand of 180,000 gpd which is supplied by a system which includes the following; two pumps supplying 220 gpm, 250,000 gallon elevated storage tank (elevation is 110), and a pressure of 45 psi within the system. There are not future plans for expansion of the system. The last upgrade was in 1978 with the addition of the second well and the storage tank.

Well water supply in the area is under the authority of the Delaware River Basin Commission (DRBC). DRBC has both the responsibilities and legal authority to control the Delaware River Basin resources. Information on the Delaware River basin can be found in the publication entitled Managing the Coastal Plain Aquifers of the Delaware River Basin, Civil Engineering Practice, Spring, 1986. The approval for improved or additional water systems must begin with local approval (DNREC) and the final approval with DRBC.

Sewer: Wastewater from GBHC is collected by a gravity pipe network which flows to a pump station located near the center of the site. The pump station has two 10" diameter impeller pumps, pumping 255 gpm each. From the pump station, the wastewater is pumped to the wastewater treatment plant located in the northern corner of the site. Average daily flow from GBHC is approximately 0.12 mgd with peak flows during rainy weather of approximately 0.3 mgd. This infiltration into the existing sewer lines located within the site is reported as a strain on the existing operations of the treatment plant.

The treatment plant is owned and operated by New Castle County Department of Public Works. The plant treats wastewater from GBHC, Delaware City and North St. Georges. Flow is collected from the two municipalities and pumped via a force main under the channel to a point where it joins with the flow from GBHC and enters the treatment plant.

Treatment consists of screening, primary and secondary clarifiers, sand filters and chlorine contact before discharge to the Delaware River. The plant was last upgraded in 1978, permitting the plant to treat 0.55 mgd from the surrounding sewer service area. The plant was designed so that only minor improvements would be necessary if flows were to exceed the 0.55 mgd up to a limit of 0.7 mgd. The plant may accommodate peak flows of 1 mgd for a short period of time before hydraulic overloading of the plant occurs. Currently there are no plans for further upgrades of the treatment plant.

There are not encumbrances beyond the physical limitations of the treatment plant to an increase of wastewater flows from the area.

Drainage: Stormwater runoff is collected by a piping network to include catch basins, drainage pipes and manholes. The stormwater is gathered at a drainage pumping station where it is pumped to the Delaware River.

Power: Electricity is supplied to the Delaware City and GBHC area by Delmarva Power Company. Currently, a 12 kv line runs along Route 9. This line services the GBHC site in two locations. At this time there is adequate supply in the power system to supply the anticipated project requirements.

Gas is available to the Delaware City area by Delmarva Power Company; however, GBHC is currently not served with gas. Gas may be available to the site, however, the premium costs of installing the line from Delaware City to the site may not justify the provision of gas service to the site. When service is needed the gas company usually requests the applicant sign a contract stating the proposed quantity of gas required. This is to assure the gas company (who pays for the installation of the pipes) will be guaranteed a return from the cost of installation.

Communications: Diamond State Telephone Company (DSTC) currently provides GBHC with standard telephone service. Introduction of fiber optics to the area is in the planning stages and may be available by the end of 1991. DSTC is required to provide telephone service to all who request it. High-speed fiber optics can be supplied at additional costs to an applicant if desired. DSTC maintains a central switching office less than three miles from the site.

Opportunities and Constraints Summary

Opportunities

The Governor Bacon Health Center site is rich in resources. Natural resources include wildlife, wetlands and woodlands vegetation along with visual and physical access to the Delaware River. Recreational resources include the potential for water access for boating and fishing, trails, picnicking, camping, open space for field sports, linkage potential to other state parks and resource areas via the channel, river and over land. There is also a potential for the expansion and improvement of existing equestrian activities. Historic resources contribute another dimension to the site, providing an opportunity to illustrate the various military uses of the site over time, beginning with the civil war continuing through to the present day use by the National Guard. Historic features such as the parade ground, civil war fortification, visual and potentially physical link via boat to Fort Delaware and Fort Mott, the P.O.W. Camp guard tower, and the historic resources maintained by the Fort Delaware Society all offer recreational/educational opportunities for the site.

Constraints

While the site offers many opportunities in the area of natural and cultural attributes, it also contains characteristics that represent constraints to development. Of the 275 acres, approximately 35 acres are in wetland and approximately 200 acres are within the 100 year floodplain. The 40 acres outside of the wetland/floodplain are wooded and somewhat remote from the developed portions of the site, a distance from existing utilities and potential utility connections.

Access to Governor Bacon Health Center, in a regional sense, is not optimal for uses which require ready access to major transportation routes.

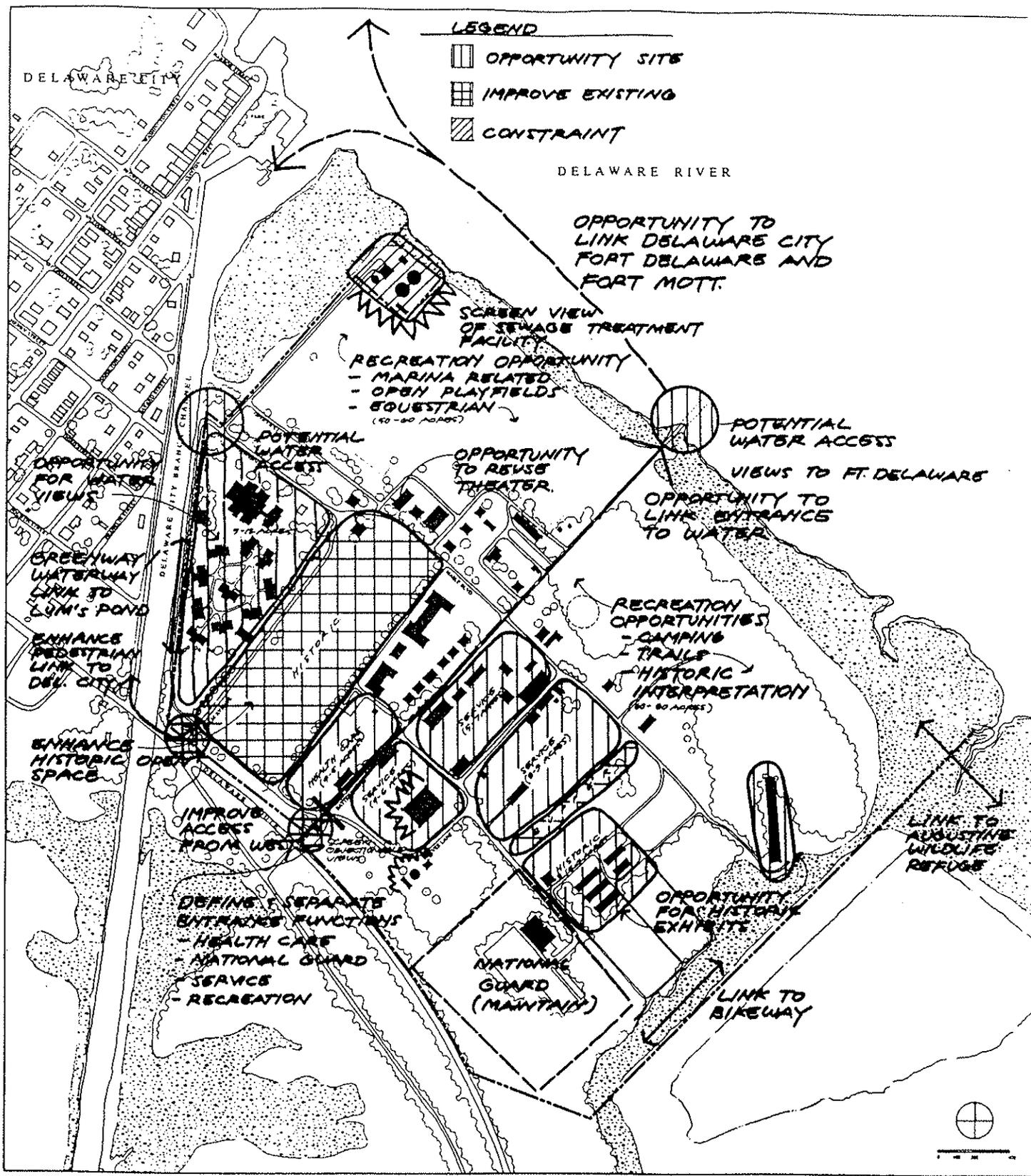
The presence of hazardous waste sites could limit or delay any further development on the site. The extent and nature of the area contaminated and the cost, necessity and feasibility of a clean up should be assessed.

The existing site infrastructure is in poor condition. Utilities are generally old and barely adequate; and with a few exceptions, roads, walks and buildings are in need of repair.

Some of the present uses on the site are incompatible with each other or are located in such a manner as to have a negative impact on the site as a whole. The sewage treatment plant occupies a portion of the site which would negatively affect the desirability of a marina or residential uses and to a lesser degree recreational uses such as picnicking, fishing, boating, hiking, bird watching and historic interpretation. The Purchasing Department warehouse has a somewhat prominent location near the southern entrance to the site and is incompatible with the use of that entrance for residential and/or recreational uses without screening of some kind.

The Meadows Program, situated along the channel, occupies a portion of the site that offers water views and water access. The buildings housing the Meadows Program occupy most of the available land in that sector, requiring relocation of an existing program if uses such as a marina or residential units were to be considered for that area of the site.

In summary, the physical and cultural opportunities and constraints identified at the Governor Bacon Health Center site point strongly in favor of recreational uses in addition to expansion of existing uses as needed and identified more fully in the market analysis which follows.



OPPORTUNITIES & CONSTRAINTS
GOVERNOR BACON HEALTH CENTER
 New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.

MARKET ANALYSIS / SITE PROGRAM

Summary of Market Analysis Process

The following development program was identified for the Governor Bacon Health Center site based on interviews with current and potential users of the site as well as a review of the local real estate market. The goal of the market analysis was to identify potential support for speculative development. Some of the potential program elements identified during market research were eliminated from the development program at work sessions with DHSS staff. For further information the market analysis report has been included as an appendix to this report.

Conceptual Development Program Summary

- A. Marina
 - Wet slips - 150
 - Dry stack - 50
 - Restaurant - 3,000 square feet (SF)
 - Retail - 1,500 SF
 - Marina Office - 300 SF
 - Showers/Lockers/Restroom Facilities - 1,400 SF
 - Bait Store - 700 SF
 - Warehouse - 4,000 SF
 - Repair Shop - 7,500 SF
- B. Residential
 - 95 Townhouse Units
- C. State Park
 - Conference Center
 - Park Information
 - Park Headquarters - approximately 5,000 SF (rehabilitation)
 - Museum/Theater - approximately 5,000 SF (rehabilitation)
 - Recreation Center - approximately 9,000 SF (rehabilitation)
 - Pier
 - Boat Launch
 - Playing Fields
 - Services
 - Restrooms
 - Ticket Office - Ft. Delaware Shuttle
 - Storage/Maintenance
 - Concession
 - Park Residence
- D. Department of Health and Social Services
 - LKEC Treatment Center (size undetermined)
 - Warehouse - 10,000 SF
 - Physician/Dental Offices 1,500 - 3,000 SF
 - Marine Institute Classroom - Replacement Space 3,000 SF

The market analysis phase of work was intended only to provide a conceptual development program. Further study into the amount, mix, and character of the development program should be performed as the planning process moves forward.

CONCEPTUAL LAND USE PLANS

The development program identified by the market and site analyses for the Governor Bacon site is a modest program and did not identify three clearly different development programs as originally intended. The three alternatives developed accommodate similar development programs; the distinction between the alternatives being the manner in which the different uses are arranged on the site, rather than the composition of the development program. The orderly development of the site is encouraged by developing zones for each user to contain current operations and define areas available for future expansion. The following section of the report will describe each alternative in terms of land use/program accommodation, open space structure, circulation and the relative costs for each alternative.

Conceptual costs were developed for infrastructure improvements recommended earlier in the report. The following investment will be necessary in all the alternatives and are required even if the site is not developed further in order to service existing uses.

On Site Road Improvements	\$1,056,000
Sanitary Sewer	332,000
Electrical/Telephone Service	480,000
Water Service	456,000
Storm Drainage	<u>250,000</u>
	\$2,574,000

These costs can be phased over a period of several years and a user fee could be assessed to the tenants of the Health Center to assist with implementation costs.

Alternative A

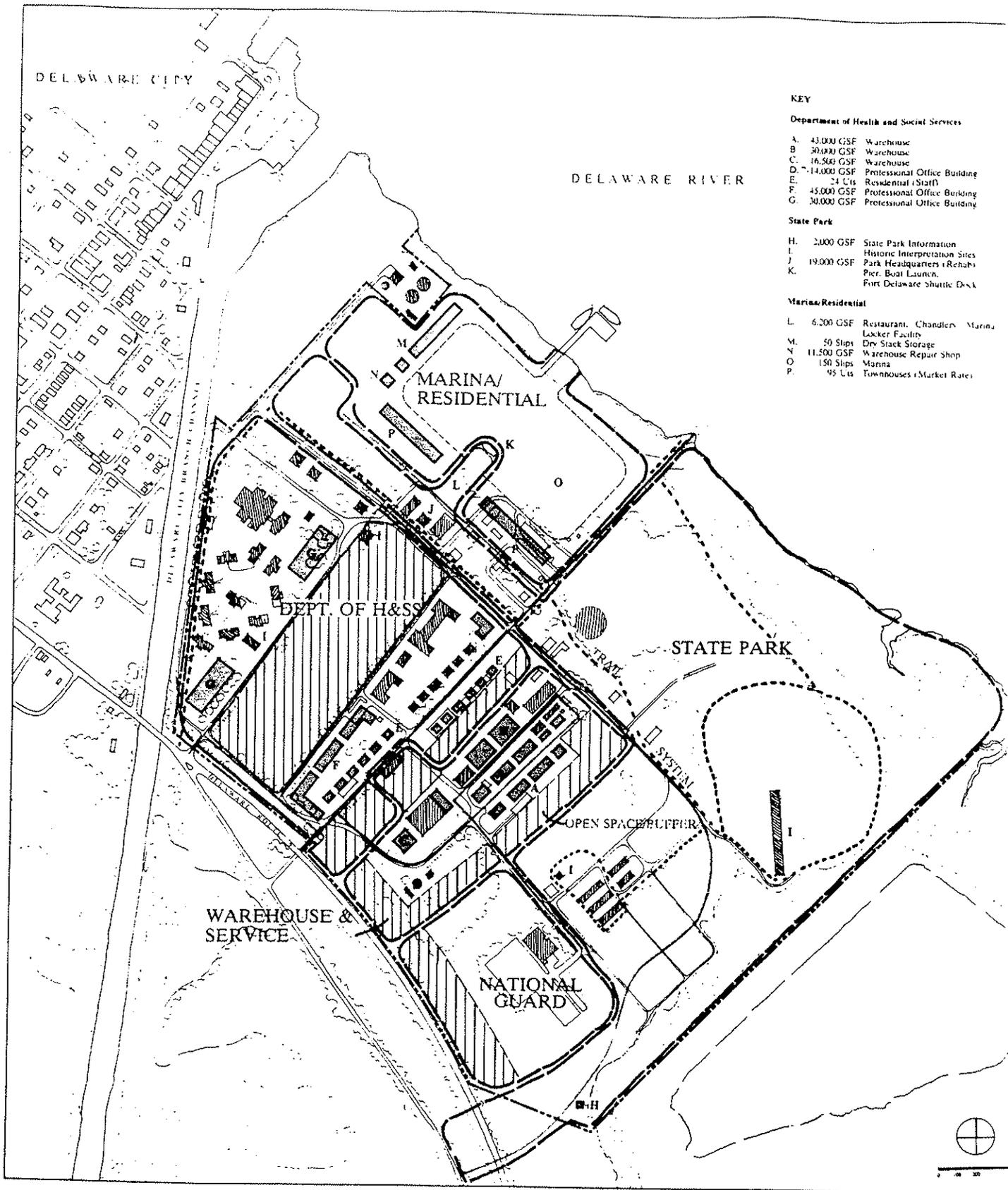
The concept illustrated in Alternative A is based on the development of a basin marina with access directly to the Delaware River.

Land Use/Program Accommodation

The Delaware Health and Social Service Department uses remain in their current locations framing the parade grounds, the Meadows Program on the west, and the hospital and office functions on the east. The staff housing remains along Battery Road. The size of the zone for the state institutional users is approximately 74 acres.

The Meadows Program remains in the current location. Within the 17 acre site of the meadows program there are building sites for an additional 30,000 gross square fee (GSF). The sites are located on the east side of Elm Street.

The 23 acre area west of Coyer Road and bisected by Battery Road accommodates the hospital and health related service functions. Due to the area of usable land, there is opportunity for approximately 45,000 GSF of office/residential health care expansion in addition to 24 units of staff housing. The office uses are clustered on the south end of the zone near the entrance to the site. The staff housing units follow and expand the existing residential pattern created by the existing staff housing. It should be noted that the market analysis indicated a very modest need for additional office and residential uses on the site.



ALTERNATIVE A

GOVERNOR BACON HEALTH CENTER

New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC
 MAY 25, 1991

The warehouse functions on the site will remain in their existing location. All expansion of the warehouse functions should occur nearby in an efficient and dense fashion. The 21 acre site will accommodate an additional 100,000 GSF of warehouse and service buildings. The maintenance and service requirements for the DHSS and state park facilities is accommodated within this area also.

The National Guard remains in its current 20 acre location. It is suggested that the development and activities of the National Guard respect an open space buffer of approximately 100 feet in width. This visual buffer will help create and retain the character of the site as a state park.

The State Park is proposed to encompass the riverfront and the western edge of the site. As shown in Alternative A the state park occupies approximately 116 acres of the site. In addition to the program identified earlier, the state park supports several historic interpretive areas around the old fort, the guard tower and the barracks.

The Marina/Residential area and state park are tied closely together in Alternative A at the "Village Center" portion of the marina. With the rehabilitation of some existing historic structures and additional marina services and restaurant this alternative creates a Village Center mixed use zone. All of the buildings housing the state park offices, retail and housing are proposed in a cluster to create the Village Center.

The land area allocated for the marina is sized to accommodate 150 slips in an upland marina basin and 50 dry stacks for storage. The shuttle to Fort Delaware can board and leave the marina from the wharf at the Village Center. A dock is proposed at the mouth of the marina to accommodate a berth for a tall ship and transient docking. The edge along the marina is public, with access to the marina slips controlled at the main pier in the Village Center.

The residential uses are proposed for the edge of the marina and on both sides of the Village Center to take advantage of the marina as an amenity. The site can accommodate approximately 100 townhouse type units along with surface parking. The residential component could also be eliminated from this development scheme with the land area being devoted to State Park uses instead.

Open Space Structure

The Historic Parade Grounds form the key element in the open space structure and organization of the site. The central open space is used to create an axis through the Village Center and the marina.

Open Space Buffers have been proposed around the warehouse, National Guard area and along the channel. This buffer is intended to be used to create a visual screen from the park users and provide a zone for pedestrian and bicycle trails.

Circulation

The main entrance to the DHSS uses on the site would remain at Battery Lane. The main circulation in this area would be provided by the loop road around the parade ground. The intersection of the southern portion of the loop road and Battery Lane should be reconfigured to facilitate turning. Signage should be included to direct visitors.

The entrance to the marina and residential components will also be at Battery Road. To provide vehicular circulation to the marina a new road should be constructed perpendicular to Battery Road running through the Village Center.

The State Park entrance is created at the southeast corner of the site. This location is heavily wooded with little development which would give it the appropriate character for a state park entrance.

A trail system is proposed for the site to link the historic interpretation areas, the marina, the residential and the Health and Social Service users of the site to the regional park and trail system. All the trails converge at the Village Center.

Alternative B

Land Use/Program Accommodation

The concept of Alternative B is based upon the development of the marina by dredging the west edge of the site along the Delaware City Branch Channel. The land area allocated for the Health and Social Services uses is reduced, with the land area currently containing the Meadows Program being utilized for the marina basin.

The Delaware Health and Social Services Department is consolidated on the east side of the parade grounds. This 10 acre land area will accommodate the additional staff housing, a small office building and the relocated Meadows Program. The site for the replacement facilities for the Meadows Program is much smaller and to accommodate the same amount of gross square footage, the facilities will need to be developed at a higher density than the existing facility.

The warehouse uses are located in the same area as shown in Alternative A.

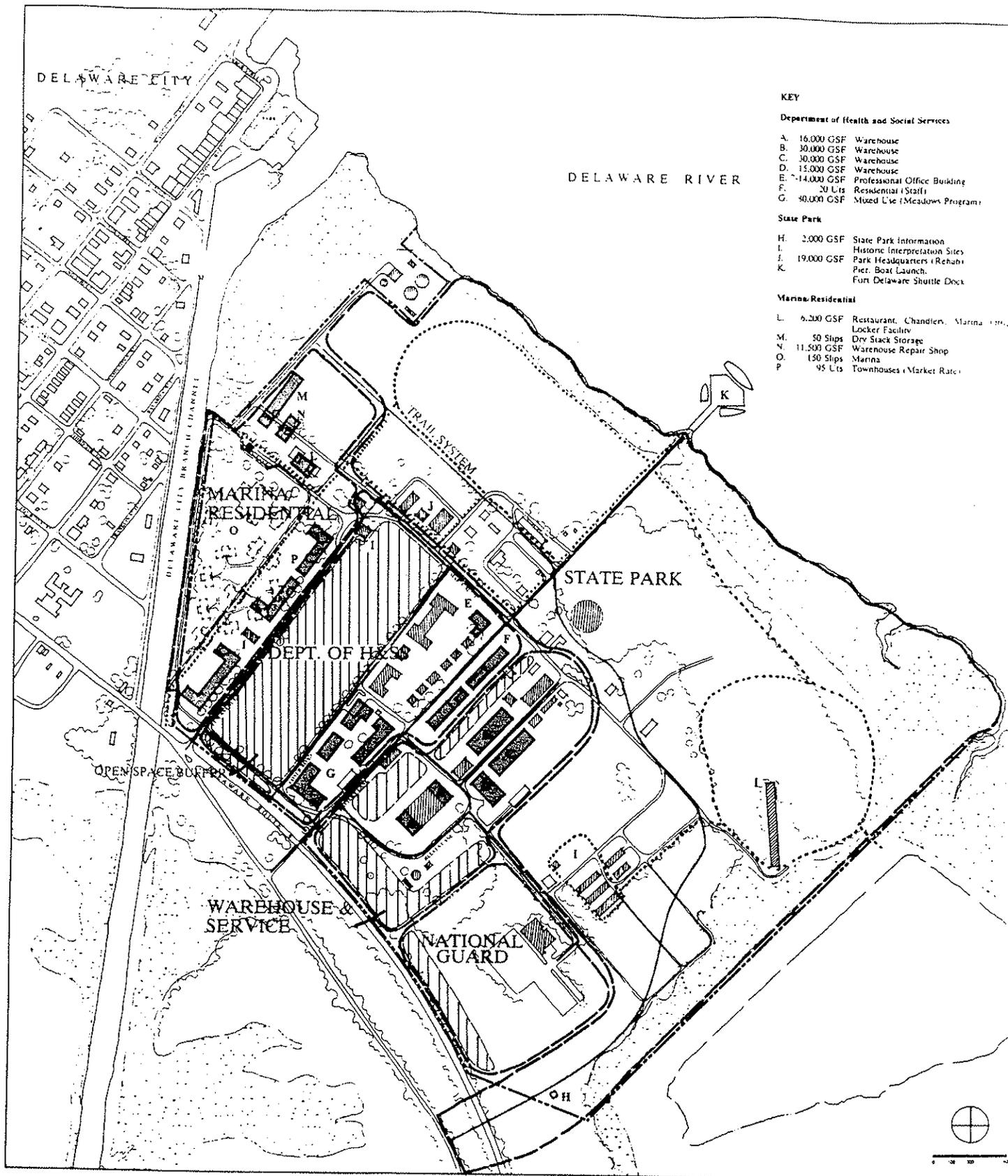
The National Guard use does not change in this alternative.

The State Park site in this alternative is 148 acres and encompasses all of the riverfront and the historical sites. A new public boat launch, in addition to the Fort Delaware Shuttle launch is developed at the site of the old pier.

The Marina/Residential area is located on the western side of the site as stated earlier. The development of housing and a marina in this location will link the site more closely to Delaware City. It is also well protected from inclement weather making it an attractive site for the marina. A marina in this location would have less negative environmental impact because there do not appear to be wetlands on this portion of the site. However, the relocation of the Meadows Program facilities would be required, and adds to the development costs for this alternative. The facilities for the Meadows Program are in need of repair. This alternative becomes more attractive if the marina is a long term goal and is implemented as the need to repair or replace

the existing Meadows Programs facility becomes necessary. The retail/restaurant component of the marina is located on the north edge of the triangle shaped basin in a location that could also service Health and Social Services and State Park users.

The residential units are located between the marina and the parade grounds. The sites identified will accommodate approximately 95 townhouse units. The marina could be developed without developing the residential units.



KEY

Department of Health and Social Services

A. 16,000 GSF Warehouse
 B. 30,000 GSF Warehouse
 C. 30,000 GSF Warehouse
 D. 15,000 GSF Warehouse
 E. 14,000 GSF Professional Office Building
 F. 20 Lts Residential (Staff)
 G. 80,000 GSF Mixed Use (Meadows Program)

State Park

H. 2,000 GSF State Park Information
 I. Historic Interpretation Sites
 J. 19,000 GSF Park Headquarters (Rehab)
 K. Pier, Boat Launch, Furt Delaware Shuttle Dock

Marina Residential

L. 6,200 GSF Restaurant, Chandler, Marina, Locker Facility
 M. 50 Slips Dry Stack Storage
 N. 11,500 GSF Warehouse Repair Shop
 O. 150 Slips Marina
 P. 95 Lts Townhouses (Market Rate)

ALTERNATIVE B
GOVERNOR BACON HEALTH CENTER
 New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

Alternative C

The land use concept for Alternative C locates the marina in a marina basin created with breakwaters in the Delaware River.

Land Use/Program Accommodation

The Delaware Health and Social Service Department uses remain in their current locations and are accommodated in the same fashion as in Alternative A.

The National Guard is accommodated on its existing site.

The State Park is accommodated in much the same way as in Alternative A. However, because the marina function is in the river there is more land area that can be dedicated to the state park use.

The Marina/Residential uses are located on the Delaware River. The basin for the marina is dredged from the river. A pier in the location of the old pier is developed and the marina is located to the northwest of this pier. The pier is intended to be used as a launch facility for the Fort Delaware shuttle and as a temporary berth for boats being put in the river at the public boat ramp. It will also provide an opportunity for fishing.

The restaurant/retail facilities are developed on the river bank near the access point of the marina. Dry boat storage facilities are developed adjacent to the restaurant with good access to the pier.

The proposed location for the residential units is adjacent to the marina. The land area allocated for the housing is larger than that in the other schemes. This is due to the amount of land area used for the central open space around which the housing is developed. The central open space would function as a front door for the units and allow all units to have waterfront views.

Open Space Structure

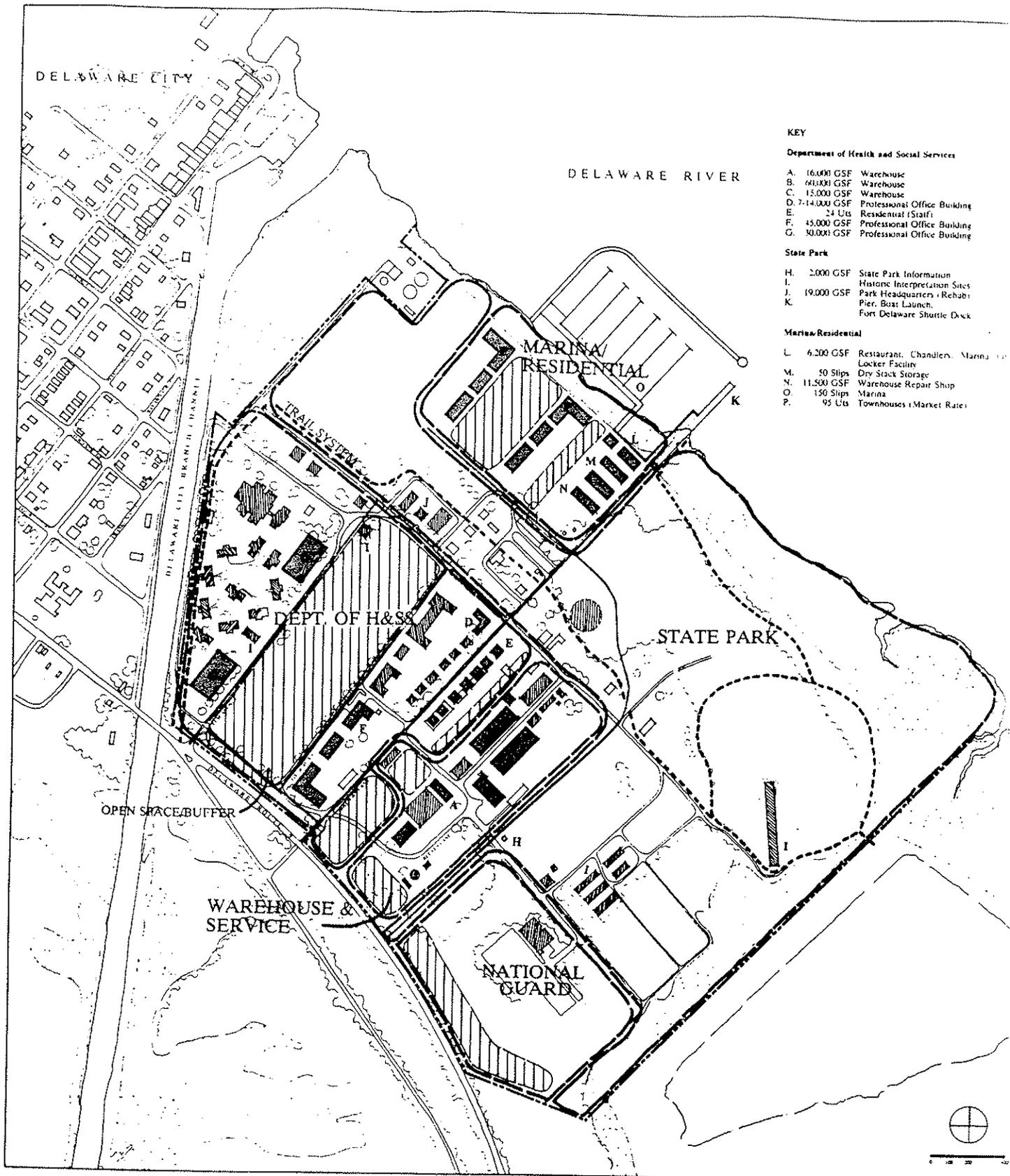
The open space structure in this alternative is built around the historic parade ground. The open space spine is extended through the state park structures (the renovated theater and recreation center) and the townhouses connecting to the rivers edge.

The wooded area on the east side of the site is intended to stay natural, and be used for passive recreation activities. The more active recreation activities could be developed next to the channel and north of the Meadows Program.

Circulation

The entrances to the different uses on the site are identical to Alternative A.

The trail system in this alternative is envisioned to wrap the rivers edge and the canal edge, tying the historical interpretation sites together with the state park visitors center.



ALTERNATIVE C
GOVERNOR BACON HEALTH CENTER
 New Castle County, Delaware

BUILDING AND LAND USE CONCEPT STUDY

Delaware Health and Social Services
 Department of Natural Resources and Environmental Control

SASAKI ASSOCIATES, INC.
 MAY 28, 1991

CONCLUSION/NEXT STEPS

Given the physical characteristics of the Governor Bacon Health Center and the results of the market analysis performed for this study, the development of this site as an income generator for the State of Delaware is unlikely. However, the site has many positive attributes; expanding and grouping as many of the assets together, with additional uses introduced, could help organize and set a framework for future development of the site. Going forward, the planning process for the site should continue to include the following:

- Further investigation of existing physical conditions, such as the hazardous waste sites. Sites should be located, identified and the required remediation efforts evaluated.
- The county flood plain regulations are in the process of being modified. The final regulations should be reviewed and incorporated during the next planning phase.
- A more focused market study and design for a marina to identify a size, type and design of marina that might be more financially viable at this location based upon the market.
- The existing facilities can be improved by renovating the buildings that have been identified and making the suggested infrastructure improvements.
- State investment in the site such as developing the state park, the historical sites interpretive centers and the recreational facilities would improve the visibility and use of the site and may help attract interest in the residential and/or marina component.

APPENDICES

- A. SOIL SURVEY
- B. EXISTING ZONING REQUIREMENTS
- C. CONTACTS
- D. GOVERNOR BACON - "AREAS OF CONCERN" MEMORANDUM
- E. PROSPECTIVE FINANCIAL ANALYSES OF THE ALTERNATE MARINA DEVELOPMENT SCENARIOS

APPENDIX A: SOIL SURVEY

Marsh Association, and the Mattapeake-Sassafras Association.

It should be recognized that because of the limited mapping scale, soils in one mapping unit can differ from place to place in slope, depth, drainage class, and other characteristics.

Areas of Mattapeake silt loam are well suited for development in that the subsoil and substratum are low in fines (35-60%), groundwater is deep (5 feet) and the slope is minimal (0-2%). The sandy loam substratum and deep groundwater are desirable soil characteristics for the placement of infiltrating drainage structures. Further on-site investigations should be used in conjunction with these findings as the planning effort moves beyond master planning to project specific design.

A discussion of the two aforementioned soil associations, along with a brief description of each mapping unit found in the association follows. For reference, a diagram of the Governor Bacon property with soils information obtained from the Soil Conservation Service has been attached.

Tidal Marsh Association

This association consists of marsh areas bordering the Delaware River and tributary tidal streams. Almost all of this association is at sea level. The water table is at, or above the surface during normal high tides.

Tidal Marsh

Tidal marsh consists of areas that are regularly flooded by tidal waters. The soil material ranges from sand size to clay size. Besides being salty, some areas contain fairly large amounts of sulfur compounds. Daily flooding of tidal marsh and regulatory restrictions allow for little or no use of the area for development purposes. Use of this land may be limited to passive recreation or wildlife habitat or, if regulatory provisions allow, a marina or other water dependent recreational use.

Mattapeake-Sassafras-Urban Land Association

This association consists of level to gently sloping, medium textured soils and moderately coarse textured ranging from relatively undisturbed to severely disturbed. Generally, limitations to use of the soils for development purposes are slight to moderate.

Aldino-Keyport-Mattapex-Urban Land Complex (Am)

This soil unit is comprised of highly disturbed areas of the three moderately well drained soils. This unit consists of level to gently sloping Aldino, Keyport, and Mattapex soils that have been used for residential, and in this case, institutional purposes. The three types of soils originally occurred in approximately equal proportions; however, approximately 50 percent of the soil complex has been covered with as much as 18 inches of fill material or has as much as two-thirds of the original soil profile removed by grading activities. About 20 percent of the soil complex has more than 18 inches of fill or greater than 2/3 of the profile removed; and 30-35 percent of the complex has been left undisturbed. The fill material used to cover the soil varies in texture, but is most commonly silty. Except where fill is deep, seasonal wetting and a high water table limit suitability of this mapping unit for building sites.

Texture is the determining factor between the three soils; origin, climate, topography and drainage class are identical. The Aldino, like the Keyport, is predominantly a silt loam textured soil. They differ in that the Aldino has a fragipan or a thin compact platy layer within the soil profile. However, the Keyport is underlain by clay or clay loam and this layer serves as a restrictive layer in this soil retarding the vertical infiltration of rain water. The Mattapex is similar to the other soils but it is underlain by much coarser, sandier material.

Mattapeake Silt Loam (MeA)

Similar to Sassafras soils, this soil is deep (>60 inches), well-drained and occurs on uplands of the coastal plain. Mattapeake are the most extensive soils in New Castle County. The upper 12 inches of this soil is silt loam in texture and below that the texture becomes coarse sandy loam. This soil has virtually no limitations for development and is recognized as one of the best soils for farming in the County.

Mattapeake-Sassafras-Urban Land Complex 0-5% Slopes (MsB)

This unit consists of Mattapeake and Sassafras soils have been used for residential and other community purposes. Although the soil may be identified separately, it was impractical to do so at the scale of the soil map: More than 75% of the complex originally was Mattapeake soils; the rest was Sassafras. About 75% of this unit has been covered with as much as 18 inches of fill or has had as much as 75% of the original soil profile removed by grading. About 15% of the unit has more than 18 inches of fill or most of the soil profile has been removed. The balance of the unit has been left undisturbed. The fill used to cover the soil is generally sandy loam or silt loam in texture. This unit has few limitations for development, drainage is good, ground water is relatively deep, and slopes are gentle. The Mattapeake soil is described above. The Sassafras soil is a deep (>60 inches), well-drained soil found on uplands of the coastal plain. It has developed in beds of sandy sediments that contain moderate amounts of silt and clay. The texture is sandy loam in the upper level and subsoil and sand or sandy loam in the substratum.

Fallsington Loam (Fs)

Fallsington loam is a wetland soil. Ground water is often found at the surface. The principle vegetation found on these soils are hydrophytic (water tolerant) oaks, maples and birches. The soil is poorly drained and occurs on flat areas of the coastal plain upland. The initial 12" of the profile is loamy, containing as much as 55% silt size particles; the subsoil is sandy loam containing as much as 35% silt. Slope is rarely more than 2% in this unit. The soil is limited by poor drainage, high water table and erosion hazards where the slope is greater than 2%.

Othello - Fallsington - Urban Land Complex (Ou)

This complex consists of nearly level, poorly drained Othello and Fallsington soils that have been used for development. About 75% of the original soil was Othello and about 1/3 was Fallsington. About 25% of this complex has been left undisturbed. Most of the remaining 75% has been covered with as much as 18 inches of fill material. Although the mapping unit has been artificially drained, seasonal high water table and associated wetness limit use for building sites. Fallsington soils have been described above. Othello soils are poorly drained; they developed in highly silty material underlain by sand. The vegetation found in these areas are wetland hardwoods consisting primarily of oaks, sweet gum and red maple. Wetness and associated regulatory constraints are its main limitations.

APPENDIX B: EXISTING ZONING REQUIREMENTS

Permitted Uses

- one family dwelling, boarding house, church, public and private schools and colleges, police and fire station, library/museum, country club/golf course, agriculture purposes, professional offices, home offices, parks, water tower, sewage treatment plants, substations, day care centers, nursing homes, riding stable, game preserve, petroleum storage, swimming club.
- Mobile dwelling units (subject to conditional permit)

Permitted Uses (by special exception)

- commercial greenhouse, mink farm, hospitals, aviation field, cemetery, amusement park, camp, riding club, social club, veterinary hospital, tourist home, railway/bus station, gas storage, radio/TV broadcast.

Minimal lot widths: 75 feet

Minimal lot area: 1/2 acre

Height of buildings: 3-story, 40 feet

Setbacks:

Front: 40 feet

Rear: 40 feet

Side: 10 feet with minimum aggregate of 25 feet

Parking and loading quantities and physical layout as outlined in the zoning code by use category and parking lot configuration.

APPENDIX C: CONTACTS

Any proposed connection to the water system in Delaware City must begin with a written request to:

Carol L. Boyer
Acting City Manager
P.O. Box 4159
Delaware City, DE 19706

Information regarding the Delaware City water supply was supplied by:

Mr. Lillard Brown
Superintendent
Delaware City, Delaware
(302) 834-7184

Ms. Rudy Biederman
Assistant City Secretary
(302) 834-4573

Further information regarding the GBHC water supply can be obtained from:

Mr. William Yowell
Physical Plant Maintenance Supervisor
(302) 834-9201

Further information regarding the gas supply can be obtained from:

Mr. George Hunt
Delmarva Power
I-95 & Route 273
P.O. Box 9239
Newark, Delaware 19714
(302) 454-4305

Communications Contacts:

Mr. Vance Pennington
Manager, Outside Facilities Engineer
Diamond State Telephone Company
6 Larch Avenue
Newport, Delaware 19804
(302) 995-7250

Further information regarding the power supply can be obtained from:

Mr. George Hunt
Delmarva Power
I-95 & Route 273
P.O. Box 9239
Newark, Delaware 19714
(302) 454-4305

Contacts include:

Dr. Jit Asthana
Chief of Environmental Engineering
New Castle County, Department of Public Works
(302) 323-2642

Mr. Robert Collins
Superintendent of Wastewater Treatment Plants
New Castle County, Department of Public Works
(302) 834-0752

Mr. William Yowell
Physical Plant Maintenance Supervisor
GBHC
(302) 834-9201

Contacts water:

Mr. Peder Hansen
Engineer
New Castle County
Water Resources Authority
(302) 366-7827

Mr. Gerald Featherstone
Director
Delaware River Basin Commission

APPENDIX D
GOVERNOR BACON "AREAS OF CONCERN MEMORANDUM"

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF PARKS AND RECREATION

M E M O R A N D U M

TO: William J. Hopkins
FROM: ~~CB~~ Charles A. Salkin
SUBJECT: Governor Bacon - "Areas of Concern"
DATE: December 27, 1988

On December 14, 1988, I met at the DNREC New Castle Office with June MacArtor and Deborah Dewsbury of the Division of Air and Waste Management. We discussed our preliminary proposals for taking over portions of the Governor Bacon Health Center. Specifically, we talked about five areas within our proposed take line which have been identified as hazardous waste sites with varying levels of toxicity (see attached drawing). These are some of the concerns and issues raised by our discussion:

1. All of these sites require further testing to determine the type and extent of contamination. This will be extremely expensive and funds are not now available to any state agency for that purpose.
2. Much of the contaminated soil would have to be removed, incinerated and replaced. This will be extremely costly. In some areas, a cover of clean top soil may be adequate.
3. The boundaries marked on the map do not necessarily include all contaminated areas.
4. Run-off from the drum fire area has contaminated an area between building TF2 and Fort duPont. This has not been surveyed or tested.
5. In some areas (such as P-3) contaminants are present at the surface and present hazards to anyone who comes in direct contact with the soil (PCB's here).
6. The contents of Landfills #1 and #2 are mostly unknown.
7. There may be toxics in other areas not yet identified.

Memo
December 27, 1988
Page 2

I explained to June and Deborah that we would be willing to take over management of this land only if it were made clear that we have no legal or financial responsibility for cleaning up the sites.

June suggested that a meeting of all involved cabinet secretaries and their key staff be held to review our plans and to determine which agency or agencies will be responsible for cleanup. She said that she will initiate such a meeting by late January.

I have passed this information on to Ron McGinness and advised him that our plans will remain on hold until after the meeting.

CAS:jb

Attachment

cc: Ray Armstrong
Earl Fenton
Sam Mace
Joan Brown

GOVERNOR BACON HEALTH CENTER

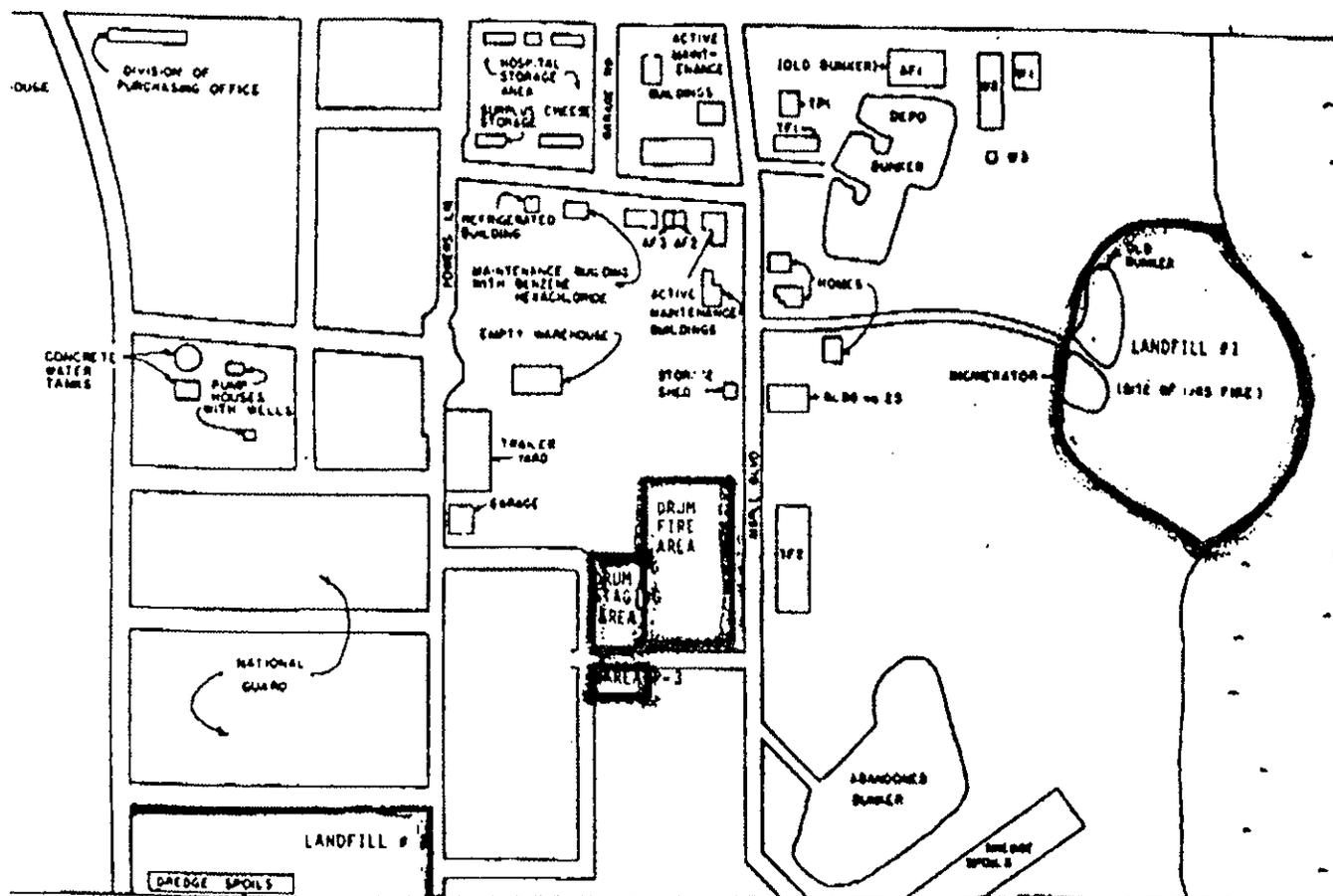
Summary of Areas of Concern

Landfill #1 & 2 - Landfill areas utilized by the Department of the Army during its occupation of Fort Dupont. These areas are currently being considered for investigation by the Department of the Defense under their Installation Restoration Program.

Drum Fire Area - Site of the 1985 fire involving numerous drums and containers of unknown substances. These drums were removed under the Phase 1 & 2 Governor Bacon Removal contracts. Sampling has been conducted in 1987 on and adjacent to the site which indicated levels of contamination from pesticides and base-neutral compounds. Additional sampling is needed to define the extent and magnitude of the contamination.

Drum Staging Area - Staging area for the drums involved in the 1985 fire. This area has now been cleared of all drums under the Phase 2 Governor Bacon Removal contract. Sampling is needed on this area to determine if any contamination exists as result of the staging activities.

Area P-3 - Site of a fire incident in 1985 involving five and fifty-five gallons containers. Sampling was conducted in 1987 which indicated high levels of PCBs. Additional sampling is needed to define the extent and magnitude of the contamination.





STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL

89 KINGS HIGHWAY
P.O. BOX 1401
DOVER, DELAWARE 19903

OFFICE OF THE
SECRETARY

TELEPHONE: (302) 736-4400

GOVERNOR BACON HEALTH CENTER

Background

Governor Bacon Health Center (GBHC) is a 320 acre site owned by the State of Delaware. It is currently occupied by numerous state and private agencies for such uses as residential treatment center for drug and alcohol abuse, a state hospital, surplus warehousing, office space, ect..

In the 1985-1986 time period, several incidents occurred on the grounds of GBHC which triggered much concern over the environmental threat posed by the site. The most serious incident to occur was a 1986 fire which destroyed an outdoor storage area involving five and fifty-five gallon containers of known and unknown hazardous substances. As a result of this incident, the State became acutely aware of the site's potential environmental liability and the necessity to address it. The plan that was developed to address the site involved canvassing the property, accumulating unwanted and obsolete goods, and preparing a contract to dispose of these goods as hazardous waste.

The responsibility at that time for the areas involved was with the Department of Administrative Services (DAS). A verbal agreement was made between Secretary Hale (DAS) and Secretary Wilson (DNREC), where Secretary Wilson agreed to address the immediate threat posed by the site.

DNREC initiated a two-phase approach for the disposal of the wastes. The first phase consisted of staging and characterizing the waste and was completed in 1987. The second phase consisted of disposal of the waste and was completed in 1988. To date, all visible waste has been disposed, but the site has not been released for use. The reason for this is that a 1987 field investigation by DNREC personnel revealed high levels of PCBs, and moderate levels of pesticides and base-neutral extractibles in the surface soil. DNREC feels further investigation is needed to characterize the extent and magnitude of the residual contamination.

Current Status

To date, the immediate threat posed by the site has been eliminated. Preliminary investigations by DNREC have revealed the presence of contamination in the soils at GBHC, which could pose a long term threat to human health and the environment. DNREC has arranged for a meeting on May 17th with all the involved Cabinet Secretaries to inform them of the potential environmental problems found by the DNREC staff. We would also like to discuss any plans they may have for future development at the site. This will enable us to develop a long term approach to the site and solicit the necessary participation from the interested parties.

DDT Building
Div. of Health & Social Services



GOVERNOR BACON
HEALTH CENTER

LANDFILL # 1
Dept. of Defense

RUNOFF
AREA

BENZENE
HEXACHLORIDE
Building



DRUM
PIKE
AREA

DRUM
STAGING
AREA

AREA P-3

National Guards

LANDFILL # 2
Dept. of Defense



APPENDIX E
PROSPECTIVE FINANCIAL ANALYSES
OF THE ALTERNATE MARINA DEVELOPMENT SCENARIOS

PROSPECTIVE FINANCIAL ANALYSES OF THE ALTERNATE MARINA DEVELOPMENT SCENARIOS

In order to test the financial feasibility of each of the three alternate marina development scenarios, prospective 10-year cash flow analyses have been prepared identifying both the internal rate of return to the developers and the net present value of cash payments flowing to the state, under a ground lease structure. These analyses are presented in Exhibits A, B and C.

To complete these prospective analyses, we completed the following tasks:

- . Reviewed market information collected in Phase I of this study to establish size, absorption and slip and building rental rate assumptions;
- . Visited and interviewed representatives of competing marinas in New Castle County to discuss market conditions and the performance of their facilities; and,
- . Investigated industry standards for revenue and expense ratios through interviews with other facility operators and review of marina operations case studies prepared by the National Marine Manufacturers Association.

Thus, the bases for assumptions utilized in the model include market conditions, the performance of other marinas in Delaware, where data was available, as well as selected marinas in other states; and, overall industry standards.

MARINA DEVELOPMENT PROGRAM

Sasaki Associates, Inc. has prepared three alternate design scenarios for the proposed Governor Bacon Marina, based upon the market overview prepared by Coopers & Lybrand, needs identified by the Department of Health and Social Services (DHSS) and others, and the land area available. These scenarios include:

- | | |
|--------------------|--|
| Alternate A | An upland marina basin with access from the Delaware River. |
| Alternate B | An excavated marina basin with access from the Delaware City Channel. |
| Alternate C | A marina with docks extending out into the Delaware River, protected by a breakwater system. |

Each of the alternate scenarios includes the following major elements as part of the marina complex:

- 150 wet slips
- 50 dry stack storage slots
- 120 winter storage spaces (yard storage, on trailers)
- 1,500 square foot ship's store
- 3,000 square foot restaurant
- 4,000 square foot warehouse
- 700 square foot bait and tackle building
- 300 square feet marina administrative space
- 1,400 square foot bathroom and shower facility
- fork lift and hydraulic towing system
- fuel dock and pump-out station
- 3,500 square foot boat repair shop
- 150 parking spaces

The proposed development program calls for construction of 75 wet slips and all other aspects of the program during the last six months of Year 0, with facilities ready for operation in Year 1. An additional 75 wet slips are assumed built and ready for operation in Year 3. It is assumed that absorption of the wet slips requires two years per phase and that stabilized occupancy of the full 150 slips occurs in Year 4, as shown in the following table:

YEAR	1	2	3	4 TO 10
SLIPS CONSTRUCTED	75	75	150	150
OCCUPANCY (Percentage based on 150 slip total)	25%	50%	75%	95%

It is assumed that the utilization of winter storage facilities tracks the occupancy rate experienced in the wet slip operation.

It is assumed that absorption of the dry stack storage slots requires three years, stabilizing in Year 3.

For both wet slips and dry stack, a five percent vacancy rate is assumed in the stabilized years. This leaves seven wet slips available for transient occupancy.

It is assumed that the average boat length for wet slips (including transients) is 35 feet. The

average boat length for dry stack storage is assumed to be 28 feet.

DEVELOPMENT COSTS

The major variation between each alternate development scenario is the cost of constructing the facility. Development costs are presented in Schedule 1 of each prospective financial analysis scenario. Other assumptions used in the analysis remain constant between the alternate scenarios and are discussed below.

Development costs for each design alternate were developed by the marine architecture staff at Sasaki Associates, Inc.. These development costs presuppose that other on-site improvements, including, in the case of Alternate B, the relocation of the Meadows program, have been made. Soft costs were developed based on current market conditions and industry standards. The estimate of construction interest assumes a six-month construction period for Phase I and a three-month construction period for Phase II.

Construction financing is calculated based on an 11 percent rate loan rate and includes a one percent financing fee.

REVENUES FROM MARINA OPERATIONS

All dollar figures are expressed in 1991 dollars and are inflated to current dollars in the prospective cash flow analyses, based on consumer price indices computed by the WEFA Group. The annual growth factor used is 4.0 percent.

The rental rates assumed below are set slightly higher than those at Barnard's Delaware City Marina and other Delaware River marinas. However, they are lower than rental rates at Summit North due to the facility's competitive position in the marketplace.

Summer Dockage--Wet Slips

Based on market conditions, rental rates for the wet slips are assumed to be \$40.00 per linear foot for the six-month summer season. Summer dockage is calculated by applying this rental rate to the average wet slip boat length and adjusting for the estimated occupancy rate for each year.

Winter Storage

Winter storage rates are assumed to be \$30.00 per linear foot for the six-month winter season. Winter storage revenues are calculated by applying this rental rate to the average wet slip boat length and adjusting for the estimated occupancy rate for each year.

Transient Dockage

Transient dockage rates are assumed to be \$1.00 per linear foot per day. Transient dockage is calculated by applying these rates to the average wet slip boat length for the estimate seven available transient slips. Occupancy is estimated to be 50 percent during the summer season.

Dry Stack Storage

Dry rack storage rates are estimated to be \$5.50 per linear foot per month, or \$66.00 per linear foot annually. Dry stack revenues are calculated by applying these rates to the average dry stack boat length and adjusting for the estimated occupancy rate for each year.

Repair Shop

Based on the experience of repair operations at other marinas without boat sale operations, repair shop revenues are estimated to average \$400 per occupied wet slip/dry stack slot, annually.

Bait and Tackle Concession

It is assumed that the developer/operator constructs a bait and tackle concession building and then contracts the business out to a concessionaire for an annual fee of \$15,000.

Gas and Diesel Sales

Gas and diesel sales are estimated to be \$500 per occupied wet slip/dry stack slot, annually.

Yard Revenue and Miscellaneous

Revenue from "yard" activities such as trailer delivery, lift fees, bottom painting and washing, and spring clean-up/waxing and miscellaneous sources, such as vending machines and pay phones, is estimated to be \$250 per occupied wet slip/dry stack slot, annually.

OTHER REVENUES

Retail Sales

Ship's store sales are estimated to be \$300 per occupied wet slip/dry stack slot, annually.

Restaurant - Rent

It is assumed that the restaurant is run by an outside concessionaire paying rent to the

developer/operator. Based on market conditions, rental rates are estimated to be \$10.00 per square foot, triple net (tenant pays all expenses including, utilities, taxes, insurance and maintenance). The lease term is assumed to be five years with an option to renew at a rental rate adjusted for inflation.

Warehouse - Rent

It is assumed that the developer/operator receives rental payments from the Delaware River and Bay Cooperative or other warehouse tenant. Rental rates are assumed to be \$3.50, triple net. The lease term is assumed to be five years with an option to renew at a rental rate adjusted for inflation.

EXPENSES

Expenses are calculated as a percentage of gross receipts from marina operations, only. Based on a review of existing marina operations, the following percentages are assumed:

EXPENSE	PERCENTAGE OF GROSS RECEIPTS
Insurance	5.0%
Property Taxes	0.0
Utilities	3.0
Salaries/Benefits	20.0
Maintenance	5.0
Administration	5.0
Miscellaneous	2.5

Cost of Sales

Cost of sales figures, based on the experience of other marina operations, are estimated to be the following:

- Gas/Diesel 80 percent of gross gas/diesel sales
- Retail Sales 75 percent of gross retail sales
- Repair Parts 35 percent of gross repair revenues

FINANCING

Debt Service

Based on discussions with finance professionals, it is assumed that permanent financing for each phase of the project is available for 80 percent of project costs; the remaining 20 percent is covered by the developer/operator's equity contribution. The permanent loan is assumed to be offered at a 10.5 percent interest rate, with 20 year amortization and a balloon payment due at the end of Year 10. Financing fees total 3.5 percent of the loan principal.

Franchise Fee

It is assumed that the developer/operator pays a percentage of gross receipts (including revenue from marina operations as well as that generated by the retail, restaurant and warehouse facilities) to the Department of Health and Social Services (DHSS) as a franchise fee, or lease payment, for the use of the ground. This fee, based on the schedule developed for the Summit North marina operation, increases in later years of operation, as shown below:

YEAR	1	2	3	4	5	6	7	8	9	10
FEE (%)	1.5	1.5	1.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0

It is assumed that because this fee is based on gross receipts, it is due and payable each year despite any cash flow deficits the developer/operator may experience in early years of operations.

Developer's Capital Contribution

The developer/operator's capital contribution includes both the Phase I and Phase II equity contributions.

Net Proceeds from Refinancing

It is assumed that the developer/operator refinances the permanent loan at the end of Year 10 in order to satisfy the balloon payment requirement and to unlock equity from the project. The net proceeds from refinancing are calculated by adjusting the estimated Year 11 net operating income by both a Year 11 franchise fee percentage of four percent and a debt coverage ratio of 1.2. This adjusted figure represents cash available for debt service; the loan amount is then calculated assuming terms identical to those of the initial permanent loan. This amount is then adjusted by the outstanding balance of Phase I and Phase II permanent loans to yield net proceeds from refinancing.

Net Cash Flow to Developer

It is assumed that the developer/operator covers cash flow deficits "out-of-pocket" rather than wrapping them into the permanent financing.

Internal Rate of Return

The developer's internal rate of return ("IRR") is shown for both five years and ten years of marina operations. If net cash flow to the developer is negative for all years in the analysis period, the IRR appears as "NA" or "ERR". In the current market a developer would typically require a minimum 10-year IRR of 15 percent. Given the higher risk nature of a marina operations, a 10-year IRR of 20 percent or more may be required to attract developer interest.

Net Present Value of Payments to State

Franchise fee payments to DHSS, from both five and ten years of marina operations, are discounted at 9.0 percent.

COMPARISON OF THE RELATIVE FEASIBILITY OF EACH MARINA DEVELOPMENT SCENARIO

Gross receipts remain constant in each scenario with DHSS receiving franchise fee payments with a net present value totalling over \$47,000 for the first five years of operations and over \$122,000 for ten years of operation. However, each of the three alternate development scenarios proved infeasible, given the assumptions described above. Ten-year IRRs for each alternate are as follows:

ALTERNATE	10-YEAR IRR
A	-35.71%
B	-4.67%
C	NA

In each lease scenario, the negative IRR indicates that the project is infeasible. In Alternate C, the project does not generate positive net cash flow to the developer in any year of the analysis, therefore, an IRR cannot be calculated. As a result, Alternate C is the least attractive scenario.

Sale scenarios, where land acquisition and related costs (title, property taxes) would further drain the project, were not modelled.

Alternate B: Testing Feasibility

Alternate B, the scenario with the lowest development costs, was tested to determine what magnitude of either revenue increase, project cost decrease, or project subsidy would be required to produce a return likely to attract the interest of a private developer. Each of these factors were first considered independently. To achieve a 10-year IRR of at least 15 percent, project revenues must be increased 19 percent, project costs must be decreased by at least 30 percent, or a public subsidy of at least \$1,325,000 must be provided. To achieve a 10-year IRR of at least 20 percent, project revenues must be increased by 26 percent, project costs must decrease by 37 percent, or a subsidy of at least \$1,650,000 must be provided.

Since it would be difficult to achieve feasibility by addressing only one of these factors, several combinations of factors were tested to determine whether Alternate B would be feasible with only moderate modification of revenues, project costs and subsidy. Two potential scenarios are presented below:

Revenue Increase	10%	11%
Project Cost Decrease	10%	10%
Public Subsidy	\$250,000	\$500,000
10-Year IRR	16.18%	20.30%

Increasing Revenues

Whether revenues can be increased 10 to 11 percent is highly dependent on the depth of the "luxury" boat (larger boats with owners willing to pay higher slip fees) market in northern Delaware. Because of the specialized nature of this market segment, more in-depth market research would be necessary to determine if such a revenue increase is potentially achievable.

Decreasing Project Costs

Potential decreases in project costs are a function of both design modifications and the actual bids to construct the project. Construction financing terms also contribute to the level of overall project costs. Furthermore, the development of additional revenue-generating project components may reduce the amount of infrastructure costs allocated to the marina itself.

Potential Public Subsidies

Public subsidy to help defray the cost of marina development may be available through the **Industrial Development Grant Program** of the U.S. Department of Agriculture's Farmers Home Administration (FmHA). FmHA makes grants to public entities and non-profit corporations to finance and develop small and emerging private business enterprises. Costs that may be paid from grant funds include the acquisition and development of land and the construction of buildings, equipment, access streets and roads, parking areas, utility and service extensions, and other costs related to start-up of the business enterprise. The grant maximum is \$500,000.

In addition, several federal programs are available to assist DHSS with general utility and infrastructure improvement and construction of community facilities at the Governor Bacon Health Center site. These include:

U.S. Department of Housing and Urban Development Community Block Grant Program (CDBG): Administered through the New Castle County Department of Community Development and Housing, this program can make grants or low-interest loans for provision of public facilities and infrastructure improvement projects. Projects must principally benefit low- and moderate-income households.

FmHA Water and Waste Disposal Loans and Grants: Public entities may receive loans and grants to construct, repair, improve, expand or otherwise modify rural water supply and waste collection and disposal systems. Interest rates vary between five and seven percent for loans with terms of up to 40 years.

FmHA Community Facility Loans: Public entities may receive loans and grants to construct, enlarge or improve community facilities for health care, public safety and public services including community buildings, roads and utilities. Loan rates vary between five and seven percent. Loan terms of up to 30 years (for buildings) and up to 40 years (for infrastructure) are available.

Impact to DHSS

If these revenue, project cost and subsidy targets are achievable, gross receipts would increase and the state would realize a greater stream of lease payments than that shown in Exhibit B. In addition, increased revenues and decreased development costs may make a

land sale scenario possible, although further analysis would be necessary to confirm the feasibility of that course of action.

TERMS AND CONDITIONS

(The following terms and conditions apply to the foregoing chapter of this report and the prospective financial analyses contained therein.)

This report and the prospective financial analyses herein do not ascertain the legal and regulatory requirements applicable to the proposed project, including zoning, state and local government regulations, permits and licenses. No effort has been made to determine the possible effect on the proposed project of present or future federal, state or local legislation or any environmental or ecological matters.

This report and the prospective financial analyses herein are based on estimates, assumptions and other information developed from research of the market, our knowledge of the industry and other factors, including certain information that you have provided. Some assumptions inevitably will not materialize, and unanticipated events and circumstances may occur; therefore, actual results will vary from those described in this report, and the variations may be material.

Further, we have neither evaluated management's effectiveness nor are we responsible for future marketing efforts and other management actions upon which actual results will depend.

We have no responsibility to update this report and the prospective financial analyses for events and circumstances occurring after the date of this report.

This memorandum was prepared for presentation to the State of Delaware, Department of Health and Social Services for its internal use only, in evaluating the development potential of the Governor Bacon Health Center property. The distribution of this report is restricted to internal use and should not be relied on for any other purpose. Neither this memorandum, nor its contents, nor any reference to our Firm, may be included or quoted in any offering circular or registration statement, prospectus, sales brochure, loan, appraisal or other agreement or document without prior written permission.

SCHEDULE A-1
 ALTERNATE A (LEASE SCENARIO)
 GOVERNOR BACON MARINA
 PROSPECTIVE ANALYSIS OF SOURCES AND USES OF FUNDS

SOURCES OF FUNDS:

	Phase I	Phase II
Equity	\$1,029,886	\$101,739
Conventional Financing	4,119,543	406,957
Other	0	0
	<hr/>	<hr/>
Total Sources	\$5,149,429	\$508,696
	=====	=====

USES OF FUNDS:

	Phase I	Phase II
Land	\$0	
Construction Costs:		
Mobilization	20,000	
Site preparation	35,000	
Excavation	1,200,000	
Edge (sloping)	585,000	
Floating Docks	216,000	216,000
Anchoring piles	45,000	45,000
Utilities	90,000	90,000
Utility posts	41,250	41,250
Access gangways	24,000	12,000
Buildings	906,000	
Drystack	45,000	
Fork lift	120,000	
Hydraulic trailer	45,000	
Launching pad	15,000	
Access channel	120,000	
Bulkhead groins	90,000	
Fuel (pumps, tanks, dock)	150,000	
Parking	225,000	
	<hr/>	<hr/>
Subtotal	3,972,250	404,250
Soft Costs:		
Architect and Engineering Fees	278,058	28,298
Permits and Fees	79,445	8,085
Legal and Accounting	40,000	
Title	0	
Insurance and Taxes	30,000	
Transfer Tax	0	
Advertising and Marketing	10,000	
	<hr/>	<hr/>
Subtotal	437,503	36,383
Other:		
Project Contingency @ 10%	440,975	44,063
Finan. Fees @ 3.5%	144,200	14,300
Construction Loan Fee	41,200	4,100
Construction Period Interest	113,300	5,600
	<hr/>	<hr/>
Subtotal	739,675	68,063
	<hr/>	<hr/>
Total Project Costs	\$5,149,428	\$508,696
	=====	=====

NOTE: The comments and assumptions contained in this report are an integral component of these prospective analyses.

EXHIBIT B
ALTERNATE B (LEASE SCENARIO)
GOVERNOR BACON MARINA
PROSPECTIVE ANALYSIS OF CASH FLOW

YEAR OF OPERATION	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
(6 months)	0	1	2	3	4	5	6	7	8	9	10
REVENUES											
SUMMER DOCKAGE	\$56,784	\$118,111	\$184,253	\$242,722	\$252,431	\$262,528	\$273,030	\$283,951	\$295,309	\$307,121	
WINTER STORAGE	34,070	70,866	110,552	142,633	151,459	157,517	163,818	170,370	177,185	184,273	
TRANSIENT DOCKAGE	24,181	25,148	28,154	27,200	28,288	29,419	30,596	31,820	33,093	34,416	
DRY RACK STORAGE	52,280	69,638	102,690	106,798	111,070	115,512	120,133	124,928	129,936	135,133	
REPAIR SHOP	23,363	48,819	74,871	92,466	96,164	100,011	104,011	108,172	112,499	116,992	
BAIT AND TACKLE CONCESSION	16,224	16,873	17,548	18,250	18,980	19,739	20,529	21,356	22,207	23,082	
GAS & DIESEL	29,203	61,024	93,589	115,582	120,205	125,014	130,014	135,215	140,623	146,248	
YARD REVENUE AND MISCELLANEOUS	14,602	30,512	46,794	57,791	60,103	62,507	65,007	67,607	70,312	73,124	
TOTAL REVENUE - MARINA OPERATIONS	231,407	440,991	656,451	806,442	838,700	872,247	907,138	943,423	981,161	1,020,406	
RETAIL											
RESTAURANT - RENT	17,522	36,614	56,153	69,349	72,123	75,008	78,008	81,129	84,374	87,749	
WAREHOUSE - RENT	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	
	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	
TOTAL REVENUES	296,519	525,195	760,194	923,381	958,413	1,005,156	1,043,047	1,082,453	1,123,436	1,166,056	
EXPENSES											
INSURANCE	11,570	22,050	32,823	40,322	41,935	43,612	45,357	47,171	49,058	51,020	
PROPERTY TAXES	6,942	13,230	19,694	24,193	25,161	26,167	27,214	28,303	29,435	30,612	
UTILITIES	46,281	88,198	131,290	161,288	167,740	174,449	181,428	188,685	196,232	204,081	
SALARIES/BENEFITS	11,570	22,050	32,823	40,322	41,935	43,612	45,357	47,171	49,058	51,020	
MAINTENANCE	5,785	11,025	16,411	20,161	20,968	21,806	22,678	23,586	24,529	25,510	
MISCELLANEOUS	23,362	48,819	74,871	92,466	96,164	100,011	104,011	108,172	112,499	116,992	
GAS/DIESEL-COST OF SALES	13,142	27,261	42,115	52,012	54,092	56,256	58,506	60,847	63,281	65,812	
RETAIL-COST OF SALES	8,177	17,087	26,205	32,363	33,657	35,004	36,404	37,860	39,375	40,950	
REPAIRS-COST OF PARTS SALES											
TOTAL EXPENSES	138,399	271,970	409,055	503,449	523,587	544,529	566,312	588,966	612,524	637,023	
NET OPERATING INCOME	158,120	253,225	351,139	419,932	434,826	460,627	476,735	493,487	510,912	529,033	
DEBT SERVICE	392,019	392,019	440,770	440,770	440,770	440,770	440,770	440,770	440,770	440,770	
CASH FLOW AFTER DEBT SERVICE	(233,899)	(138,794)	(89,631)	(20,838)	(5,944)	19,857	35,965	52,717	70,142	88,263	
FRANCHISE FEE	4,448	101,729	11,403	23,085	23,960	30,155	31,291	32,474	33,703	34,982	
DEVELOPER'S CAPITAL CONTRIBUTION											
PROCEEDS FROM REFINANCING											
NET CASH FLOW TO DEVELOPER	(\$818,032)	(\$238,547)	(\$248,401)	(\$101,034)	(\$43,923)	(\$29,904)	(\$10,298)	\$4,674	\$20,243	\$36,439	\$911,770
5-YEAR IRR											
10-YEAR IRR											

NPV TO STATE--5 YEARS \$47,195
 NPV TO STATE--10 YEARS \$122,140
 MA -4.67%

NOTE: The comments and assumptions contained in this report are an integral component of these prospective analyses.

SCHEDULE B-1
 ALTERNATE B (LEASE SCENARIO)
 GOVERNOR BACON MARINA
 PROSPECTIVE ANALYSIS OF SOURCES AND USES OF FUNDS

SOURCES OF FUNDS:

	Phase I	Phase II
Equity	\$818,032	\$101,729
Conventional Financing	3,272,129	406,917
Other	0	0
	<hr/>	<hr/>
Total Sources	\$4,090,161	\$508,646
	=====	=====

USES OF FUNDS:

	Phase I	Phase II
Land	\$0	
Construction Costs:		
Mobilization	20,000	
Site preparation	30,000	
Excavation	810,000	
Edge (sloping)	307,500	
Floating Docks	216,000	216,000
Anchoring piles	45,000	45,000
Utilities	90,000	90,000
Utility posts	41,250	41,250
Access gangways	24,000	12,000
Buildings	906,000	
Drystack	45,000	
Fork lift	120,000	
Hydraulic trailer	45,000	
Launching pad	15,000	
Access channel	0	
Wetlands mitigation	50,000	
Fuel (pumps, tanks, dock)	150,000	
Parking	225,000	
Subtotal	<hr/> 3,139,750	<hr/> 404,250
Soft Costs:		
Architect and Engineering Fees	219,783	28,298
Permits and Fees	62,795	8,085
Legal and Accounting	40,000	
Title	0	
Insurance and Taxes	30,000	
Transfer Tax	0	
Advertising and Marketing	10,000	
Subtotal	<hr/> 362,578	<hr/> 36,383
Other:		
Project Contingency @ 10%	350,233	44,063
Finan. Fees @ 3.5%	114,600	14,250
Construction Loan Fee	33,000	4,100
Construction Period Interest	90,000	5,600
Subtotal	<hr/> 587,833	<hr/> 68,013
	<hr/>	<hr/>
Total Project Costs	\$4,090,161	\$508,646
	=====	=====

NOTE: The comments and assumptions contained in this report are an integral component of these prospective analyses.

EXHIBIT C
ALTERNATE C (LEASE SCENARIO)
GOVERNOR BACON MARINA
PROSPECTIVE ANALYSIS OF CASH FLOW

YEAR OF OPERATION	1992 (6 months)	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
REVENUES											
SUMMER DOCKAGE	\$56,784	\$118,111	\$184,253	\$242,722	\$252,431	\$262,528	\$273,030	\$283,951	\$295,309	\$307,121	
WINTER STORAGE	34,070	70,866	110,552	145,633	151,459	157,517	163,818	170,370	177,185	184,273	
TRANSIENT DOCKAGE	24,181	25,148	26,154	27,200	28,288	29,419	30,596	31,820	33,093	34,416	
DRY RACK STORAGE	32,980	69,638	102,690	106,798	111,070	115,512	120,133	124,938	129,936	135,133	
REPAIR SHOP	23,363	48,819	74,871	92,466	96,164	100,011	104,011	108,172	112,499	116,999	
BAIT AND TACKLE CONCESSION	16,224	16,873	17,548	18,250	18,980	19,739	20,529	21,350	22,204	23,092	
GAS & DIESEL	29,203	61,024	93,589	115,582	120,205	125,014	130,014	135,215	140,623	146,246	
YARD REVENUE AND MISCELLANEOUS	14,602	30,512	46,794	57,791	60,103	62,507	65,007	67,607	70,312	73,124	
TOTAL REVENUE--MARINA OPERATIONS	231,407	440,991	656,451	806,442	838,700	872,247	907,138	943,423	981,161	1,020,406	
RETAIL	17,522	36,614	56,153	69,349	72,123	75,008	78,008	81,129	84,374	87,749	
RESTAURANT - RENT	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	32,448	
WAREHOUSE - RENT	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	15,142	
TOTAL REVENUES	296,519	525,195	760,194	923,381	958,413	1,005,156	1,043,047	1,082,453	1,123,436	1,166,056	
EXPENSES											
INSURANCE	11,570	22,050	32,823	40,322	41,935	43,612	45,357	47,171	49,058	51,020	
PROPERTY TAXES	6,942	13,230	19,694	24,193	25,161	26,167	27,214	28,303	29,435	30,612	
UTILITIES	46,281	88,198	131,290	161,288	167,740	174,449	181,428	188,685	196,232	204,081	
SALARIES/BENEFITS	11,570	22,050	32,823	40,322	41,935	43,612	45,357	47,171	49,058	51,020	
MAINTENANCE	5,785	11,025	16,411	20,161	20,028	21,806	22,676	23,586	24,529	25,510	
MISCELLANEOUS	23,162	48,919	74,871	92,466	96,164	100,011	104,011	108,172	112,499	116,999	
GAS/DIESEL	13,142	27,461	42,115	52,012	54,092	56,256	58,506	60,847	63,281	65,812	
RETAIL-COST OF SALES	8,177	17,087	26,205	32,363	33,657	35,004	36,404	37,860	39,375	40,950	
REPAIRS-COST OF PARTS SALES	138,399	271,970	409,055	503,449	523,587	544,529	566,312	588,966	612,524	637,023	
TOTAL EXPENSES	158,120	253,225	351,139	419,932	434,826	460,627	476,735	493,487	510,912	529,033	
NET OPERATING INCOME	779,990	779,990	828,741	828,741	828,741	828,741	828,741	828,741	828,741	828,741	
DEBT SERVICE	(621,870)	(526,765)	(477,602)	(408,809)	(393,915)	(368,114)	(352,006)	(335,254)	(317,829)	(299,708)	
CASH FLOW AFTER DEBT SERVICE	158,120	253,225	351,139	419,932	434,826	460,627	476,735	493,487	510,912	529,033	
FRANCHISE FEE	4,448	101,729	11,403	23,085	23,960	30,155	31,291	32,474	33,703	34,982	
DEVELOPER'S CAPITAL CONTRIBUTION											
PROCEEDS FROM REFINANCING											
NET CASH FLOW TO DEVELOPER	(\$1,627,616)	(\$626,318)	(\$489,005)	(\$431,894)	(\$417,875)	(\$398,269)	(\$383,297)	(\$367,728)	(\$351,532)	(\$1,872,235)	

5-YEAR IRR NA ERR
10-YEAR IRR \$47,195 \$122,140

NOTE: The comments and assumptions contained in this report are an integral component of these prospective analyses.

SCHEDULE C-1
 ALTERNATE C (LEASE SCENARIO)
 GOVERNOR BACON MARINA
 PROSPECTIVE ANALYSIS OF SOURCES AND USES OF FUNDS

SOURCES OF FUNDS:	Phase I	Phase II
Equity	\$1,627,616	\$101,729
Conventional Financing	6,510,464	406,917
Other	0	0
	<hr/>	<hr/>
Total Sources	\$8,138,080	\$508,646
	=====	=====
USES OF FUNDS:	Phase I	Phase II
Land	\$0	
Construction Costs:		
Mobilization	30,000	
Site preparation	15,000	
Wave screen	1,530,000	
Dredging	600,000	
Floating Docks	216,000	216,000
Anchoring piles	45,000	45,000
Utilities	90,000	90,000
Utility posts	41,250	41,250
Access gangways	12,000	12,000
Buildings	906,000	
Drystack	45,000	
Fork lift	120,000	
Hydraulic trailer	45,000	
Launching pad	0	
Wharf	2,200,000	
Wetlands mitigation	50,000	
Fuel (pumps, tanks, dock)	150,000	
Parking	225,000	
	<hr/>	<hr/>
Subtotal	6,320,250	404,250
Soft Costs:		
Architect and Engineering Fees	442,418	28,298
Permits and Fees	126,405	8,085
Legal and Accounting	40,000	
Title	0	
Insurance and Taxes	30,000	
Transfer Tax	0	
Advertising and Marketing	10,000	
	<hr/>	<hr/>
Subtotal	648,823	36,383
Other:		
Project Contingency @ 10%	696,907	44,063
Finan. Fees @ 3.5%	228,000	14,250
Construction Loan Fee	65,100	4,100
Construction Period Interest	179,000	5,600
	<hr/>	<hr/>
Subtotal	1,169,007	68,013
Total Project Costs	\$8,138,080	\$508,646
	=====	=====

NOTE: The comments and assumptions contained in this report are an integral component of these prospective analyses.