Naval Station Roosevelt Roads Reuse Plan

Prepared for

Local Redevelopment Authority

&

Department of Economic Development and Commerce, Commonwealth of Puerto Rico

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Vision Statement

After more than sixty years of operation as a military facility, the closure of Naval Station Roosevelt is providing the Commonwealth of Puerto Rico with an opportunity to maximize the assets and attributes of this facility in the way that is most beneficial to its citizens, particularly the residents of Ceiba, Naguabo and the surrounding communities. To this end, three principles have guided the work of the Commonwealth Government in planning for the reuse of this facility: (1) encourage community participation, (2) promote activities that will create jobs and contribute to the economic vitality of Puerto Rico, and (3) protect and preserve the natural resources that add to the beauty of this region. With these three principles in mind, the Commonwealth Government envisions an unprecedented opportunity for the people of Puerto Rico to turn an area that is currently inaccessible to most of them into an engine of sustainable economic development.

Background and Setting

In late September 2003, the U.S. Congress directed the Secretary of the Navy to close Naval Station Roosevelt Roads ("Roosevelt Roads", "NSRR" or the "Base") within six months and to do so pursuant to the Defense Base Realignment and Closure Act of 1990 (commonly referred to as "BRAC"). That event triggered a series of actions organized around the need to prepare a Reuse Plan for the Base in an extraordinarily short period of time. By comparison, the average time for the closure of a base under BRAC has ranged from three to four years. On March 31, 2004, the NSRR ended operations.

This Reuse Plan is intended to guide the transformation of the Base from military to civilian uses. It describes land uses proposed for the 8,600-acre site and also addresses phasing, infrastructure, and costs associated with preparing the site for reuse.

Reuse Plan Overview

This section describes the major elements of the Reuse Plan including proposed land uses, phasing of development, infrastructure improvements and projected costs.

Proposed Land Uses: The Reuse Plan for Roosevelt Roads is the result of a comprehensive analysis of the site's regional context, its existing natural physical conditions and facilities, and the market demand for alternative uses, as well as consideration of significant community input regarding uses and services that should be accommodated at the Base. Preparation of this plan was driven by an overarching goal of lessening the immediate negative impact on the surrounding region while creating a dynamic reuse plan that will lead to the socio-economic development of the region and the Commonwealth of Puerto Rico.

The land uses that have been incorporated into the Roosevelt Roads Reuse Plan can be summarized within six broad categories including: Economic Development; Public, Educational and Institutional Use; Residential; Open Space and Recreation; Conservation; and Tourism. Each is described below.

- **Economic Development (Job Generating) Uses:** One of the key objectives for reuse of the Base is to emphasize economic development. Accordingly, the plan calls for creation of a science park with research and development facilities, a substantial amount of industrial and commercial development, and water-oriented commercial and recreational activity. At full build-out over 34-plus years, total jobs created would range from 18,200 to 19,700. Targeting jobs requiring investment of intellectual capital will be one of the most important goals of the reuse effort for Roosevelt Roads.
- **Public, Educational and Institutional Uses:** The Reuse Plan incorporates a number of public, educational and institutional uses that focus on reusing specific facilities at the Base. Many are suitable to be taken over and operated by various public agencies of the Commonwealth. Examples include the Puerto Rico Electric Power Authority (PREPA), the Puerto Rico Aqueduct and Sewer Authority (PRASA), the Puerto Rico Ports Authority (PRPA), the Department of Education, and universities and other academic institutions. Specifically, the following uses are included in the plan:
  - The existing airport as a passenger and cargo facility;
  - The waterfront adjacent to the harbor as a new passenger and light cargo terminal;
  - The Base hospital as an emergency room and hospital serving the local community;
  - The Base elementary school as a public middle/high school;
  - The Base middle/high school campus as a private bi-lingual private school; and
  - A cluster of existing academic, residential and support buildings/facilities as an integrated university campus
- **Residential Uses:** A broad range of sites appropriate for residential development has been identified. These occur in the southwest portion of the site in an area known as "Bundy", in the "Downtown" central section of the site, and on the southern peninsula where several hundred existing homes are located. The Base is large enough to offer a broad range of potential residential building types and densities, with a range of appropriate amenities.
- **Open Space and Recreation Uses:** Numerous recreational opportunities are incorporated in the Reuse Plan, supporting residential and tourism objectives. Among these are:

- Expansion of the existing marina and development of adjacent water-oriented and water view recreational uses that could include tennis, miniature golf, kayak rental, water-skiing and parasailing, small boat rentals, etc., with associated retail;
- Continued use of the existing 9-hole golf course and potential expansion to an 18-hole public course;
- Development of new marina opportunities at the outer harbor of Bahia de Puerca.

- **Conservation Area:** For the past six decades, under the Navy's stewardship, thousands of acres of coastal mangrove forests and wetlands have remained undeveloped. As the importance of the eastern region of Puerto Rico's biodiversity emerges, support for continued conservation of the site's natural areas has grown. The Reuse Plan calls for preserving almost 3,400 acres of mangrove forests and wetlands as a conservation area.
- **Tourism:** Several uses linked to tourism are incorporated in the Reuse Plan:
  - The Commonwealth recognizes the need for the development of moderate tourism in Puerto Rico and this use can be accommodated in a number of locations at the Base, capitalizing on beautiful views and accessibility to water-oriented and ecotourism-oriented activities.
  - There is tremendous growth in the hotel sector along the eastern coast as well as the expansion of tourism in Vieques and Culebra. In the short- to intermediate-term, these planned hotel projects will likely fulfill the demand for resort development at the higher end of the market. However, in the longer term, this use could become a viable use at Roosevelt Roads.
  - Roosevelt Roads is an ecologically significant site. Preservation of nearly 50% of its land area and an even greater percentage of its coastline will achieve a high degree of flora and fauna habitat sustainability. This opportunity will support ecotourism activity

Phasing: The redevelopment of the Base will, of course, occur in phases over many years. Accordingly, a 34-year phasing program has been prepared as part of the Reuse Plan. It is, by necessity, illustrative and will vary depending on actual market conditions, availability and commitment of funding, policy decisions by the Commonwealth of Puerto Rico and by the Navy, and the level of interest and commitment by private sector developers, investors, and users.

Infrastructure Improvements and Costs: Substantial infrastructure improvements will be needed to support the Reuse Plan. This includes significant road improvements as well as utility upgrades (water, sanitary sewer, storm drainage, electricity and telecommunications). As part of this Reuse Plan, existing capacities were identified and compared to proposed reuses and new development to determine the need for upgrading and/or expansion of the current road and utility systems. Costs to upgrade and expand roads and utility systems are preliminarily estimated at $102 million in 2004 dollars. This figure represents full build-out of the Base, but excludes system upgrades for federal transfers and for some of the potential public benefit and economic development conveyances and upgrades to systems to make them acceptable to, and code compliant with, utility authorities that may take over the systems from the Navy. As estimated by the Puerto Rico Aqueduct and Sewer Authority (PRASA) and the Puerto Rico Electric Power Authority (PREPA), the costs associated with upgrades to the water/wastewater and electrical systems are appoximately US $5.4 million and US $3.2 million, respectively.

Funding for these improvements could come from several sources. For example, the entities that acquire

portions of the Base from the Navy would be expected to incur some or all of these costs, depending upon the terms of disposition agreements between the Navy and future buyers. It is also likely that the Commonwealth would incur some of these infrastructure costs, again depending on the overall terms of disposition agreements it enters into with the Navy.

Organization of this Report

This report is designed to present the results of the Local Redevelopment Authority's ("LRA") assessment of reuse opportunities for Roosevelt Roads. Following the Executive Summary, the report is organized as follows:

- **Introduction:** an overview of the planning process, its goals and objectives, and a review of the public participation process;
- **Site, Context and Physical Conditions:** an assessment of the existing conditions characterizing the site, including location; physical conditions; natural features; environmental, transportation and infrastructure and the condition of existing buildings;
- **Market Analysis:** an evaluation of market conditions that will determine the economic feasibility of various reuse options;
- **Land Use:** a presentation of recommended land uses;
- **Urban Design Framework Plan and Design Principles:** a vision of what the Base can become if proper attention is paid to certain overarching design principles and guidelines. This section is intended to illustrate that through conscientious and thoughtful planning, the potential for the Base's redevelopment—and its value—will be dramatically enhanced;
- **Infrastructure: Circulation, Utilities and Public Services:** describes in a conceptual manner the major road, utility and other infrastructure improvements needed to support the plan; also included are order of magnitude estimates of major capital improvements needed to implement the Reuse Plan; and
- **Notice of Interest Responses for Public Benefit Conveyances:** a presentation of expressions of interest by various public entities, not-for-profit organizations and private companies for reusing portions of the Base.

II. Introduction

The Planning Process

There are important measures of success that are common to military base reuse projects. Among the most critical are strong local leadership and the involvement of local community groups and stakeholders in the consensus-building process. On October 24, 2003, shortly after the process to close NSRR began, Governor Sila María Calderón signed Executive Order #OE-2003-66 appointing the Puerto Rico Department of Economic Development and Commerce as the Local Redevelopment Authority ("LRA"), the entity responsible for planning the redevelopment and reuse of NSRR and the sole entity recognized by the federal government to work and negotiate with the United Stated Navy on the future of NSRR. The Governor also appointed a Redevelopment Committee ("RC") to act as an advisory group on all matters regarding the development process.

The LRA was recognized by the Office of Economic Adjustment ("OEA") of the Department of Defense on November 20, 2003. The RC consists of:

- Secretary of Economic Development and Commerce, *Chair*
- Resident Commissioner
- Secretary of Environmental and Natural Resources
- President of the Planning Board
- Executive Director of the Puerto Rico Tourism Company
- Executive Director of the Ports Authority
- Mayor of the Municipality of Ceiba
- Mayor of the Municipality of Naguabo
- Representative of the business community of Ceiba
- Representative of the community of Ceiba
- Representative of the community of Naguabo

The LRA retained a consulting team lead by CB Richard Ellis Consulting (the "Consulting Team") to assist in its efforts to identify opportunities for the Base and to formulate a Reuse Plan. The Consulting Team is composed of:

- CB Richard Ellis Consulting: Real Estate and Development Advisors
- Cooper, Robertson & Partners: Architecture and Urban Design
- Moffatt & Nichol: Engineering
- Puerto Rico Management & Economic Consultants, Inc.: Economics

Additional support to the LRA was provided by:

- Matrix Environmental Services: Environmental
- Garrity & Knisely: BRAC Counsel
- Winston & Strawn LLP: General Counsel to the LRA

Goals and Objectives

Preparation of this Reuse Plan for NSRR was driven by an overarching goal of lessening the immediate negative impact on the surrounding region while creating a dynamic reuse plan that will lead to the socio-economic development of the region and the Island. The specific objectives of the Reuse Plan are as follows:

- To promote activities that will create jobs and contribute to the economic vitality of Puerto Rico;
- To expand Puerto Rico's capability to produce high-value products, including those that can be exported by air freight to the U.S. mainland and to other countries;
- To attract increased investment from technology-based companies including the pharmaceutical industry, building upon the existing foundation of manufacturing activity and expanding into product development and research;
- To ensure that the Reuse Plan provides flexibility to accommodate changing economic conditions and public needs;
- To take advantage of the Base's unique size and location on Puerto Rico's eastern coast, as well as its spectacular views and physical characteristics;
- To use the uniqueness of the site as a feature to draw activities that are otherwise difficult for Puerto Rico to attract; and
- To capitalize on the site's waterfront setting for recreational uses and ecotourism opportunities as well as for residential and other appropriate commercial uses.

Public Participation and Planning Process

Pursuant to the Department of Defense Appropriations Act, 2004, enacted on September 30, 2003, Naval Station Roosevelt Roads, located in the Municipalities of Ceiba and Naguabo, closed on March 31, 2004.

This rapid pace of closure of a base, which was estimated by the U.S. Navy to generate approximately $300 million in economic activity, affecting the two municipalities located in a small, rural community on the east coast of Puerto Rico, as well as to the rest of the region. The closure of NSRR in this hastened manner is resulting in the loss of economic activity in the region, increased unemployment and, in a best case scenario, short-term losses in investment and development potential in the vicinity of NSRR.

The Government of the Commonwealth of Puerto Rico (the "Commonwealth") decided to view the closure as an opportunity to reclaim lands long held in military use and to reintegrate them to the adjacent communities. It

is the vision of the Commonwealth that the lands comprising the former NSRR play an important role in providing opportunity and wealth for the people of Puerto Rico through a sustainable economic development strategy. Moreover, the re-development of the property will play a critical role in increasing economic activity, expanding the tourism opportunities and enhancing the attractiveness of the region.

Due to the expected immediate impact on the region, issues of importance to the community ranged from environmental protection, access to potable water, loss of a major employment center, reasonable development controls on hotels and residences, and access to affordable housing. To this effect, and from its inception, the LRA acknowledged that the communities adjacent to the Base needed to be an integral part of the development of the lands of the former Naval Station Roosevelt Roads and that the LRA would need to allocate a significant amount of time and resources into a community outreach program. In essence, the mission and objectives of the LRA were to ensure community participation at a variety of different levels.

Since access to computers, and in some cases telephones, was scarce in the communities of Ceiba and Naguabo, and since the majority of the community speaks only Spanish, the LRA decided upon a community outreach strategy that would successfully incorporate the citizens of these municipalities into the planning and re-development process.

First, and in order to ensure community representation in the planning and redevelopment of the property, and pursuant to Executive Order #OE-2003-66, the Governor appointed two residents of Ceiba, and one in Naguabo to the Redevelopment Committee, the entity tasked with working with the LRA in developing a reuse plan. Mr. Rubén Tiburcio, as business representative, Mr. Ramón Carreras, as community representative of Ceiba, and Ms. Mildred Cuevas, community representative of Naguabo, actively participated in all evaluations and decisions presented for the consideration of the RC. In addition, the Mayors of Naguabo and Ceiba are also members of the RC.

In order to address community concerns and to ensure local participation, the RC created subcommittees that were to be principally composed of residents of Ceiba and Naguabo. The subcommittees created included:

- Planning and Property Uses
- Environment
- Housing and Homeless
- Human Resources
- Economic Development
- Infrastructure
- Health and Education

More than 55 citizens from the Eastern region of Puerto Rico actively participated in the sub-committees, providing insightful and enthusiastic policy recommendations and suggestions related to the future of the former base.

In order to understand the community's existing needs, from October until the end of June, 2004, the LRA also made numerous trips and visits to the area to meet with community leaders, community organizations, displaced workers, industry leaders, local stakeholders and other affected parties. These efforts also included holding community meetings, community educational workshops and two Public Hearings, held on April 22 and May 17, in an effort to obtain all possible input for the development of this Reuse Plan. From the end of October until the month of June, the LRA conducted over 64 meetings, workshops or events for the residents of Ceiba, Naguabo and the surrounding communities. Also, the LRA received input from the region's two community associations, CADEC and

APRODEC, to listen to their concerns and suggestions. It proved to be a significant way to gather information about the most pressing needs of the communities adjacent to the Base.

As mentioned before, the LRA actively coordinated activities and workshops to inform the communities of the government programs and funding, available for retraining, to start up companies and small business loans. The Administration for the Training of Future Workers ("AAFET") has offered two presentations in Ceiba and Naguabo explaining the programs the agency offers, including Technical and Vocational Schools and the Business Start Up Programs. The Commerce and Export Company offered an orientation to the communities regarding the various programs and aids available to the local business communities. These include Mitigation Plans, Commercial Impact Programs, Business School Courses, Puerto Rico Power and Electric Authority's Incentives for small businesses and the opening of a commercial office in Ceiba. For its part, the Puerto Rico Tourism Company ("PRTC") and the Economic Development Bank ("EDB") offered a workshop called "Financial Incentives for the Tourism Industry". These incentives include the Tourism Guarantee Fund, which was created between PRTC and the EDB, where PRTC transferred $1 million to the EDB to guarantee the financing of small and medium sized business in the tourism industry. The other incentive is Law 78, which grants tax credits for tourism investments and construction.

One of the more crucial aspects of the Base's closure was the immediate impact on the area's workers. One of the LRA's most important tasks was to evaluate the number of displaced workers and their skills, and to provide for their benefit placement assistance, retraining capacity, economic incentives and job replacement efforts. Beginning in March 2003, the Government of Puerto Rico through the Consejo de Desarrollo Ocupacional y Recursos Humanos and the Consorcio del Noreste/Rio Grande (collectively, el "Consejo") proactively established a Support Center on the Base to provide assistance to workers that were being relocated or displaced. On June 29, 2004, the LRA, in conjunction with other government agencies of the Commonwealth of Puerto Rico held an Employment Fair in the Municipality of Ceiba, for the displaced workers from the Base. With the attendance of over 269 workers, and over 567 employment offers, it was a complete success. A total of 142 workers were referred to employers and 10 of these were offered positions by companies present at the Fair. Ample media coverage was received describing the success of the event.

By the end of June, 931 workers had been displaced by the Base. However, 578, or 62%, had already been placed in alternate employment in positions such as engineers, secretaries, accountants, salesmen, and technicians.

Most importantly, the Commonwealth has approved legislation, signed into law by the Governor, to create a combined fund of $23 million to help the communities of Ceiba and Naguabo ($15 million in Commonwealth funds and $8 million in federal funds already available from the WIA program). These funds are intended to cover the costs of the programs being designed and implemented for the communities' benefit. They include:

1. Relief Fund to Municipalities of Ceiba and Naguabo for losses in patents and taxes: The Legislation creates a special fund that alleviates the reduction in collections during the 2004, 2005 and 2006 fiscal years. The cost of this program is estimated in $4.5 million until FY 2006.

2. Small Business Fund for the Roosevelt Roads Communities: The Legislation establishes an office of the Commerce and Export Company in Ceiba to help those displaced workers that wish to establish their own business. Technical business skills will be provided, as well as assistance in dealing with the Economic Development Bank so they are able to receive the Bank's benefits rapidly. Also proposed was a monthly subsidy of $1,000 during a 12-month period that would

be provided to up to 500 workers who develop and start implementing a business plan. With this aid, an income is guaranteed during the initial period of establishing the business. The cost of this program is estimated at $6 million.

3. Retention Stimulus and Job Creation: The Legislation directs the Commerce and Export Company to establish in Ceiba and Naguabo a subsidy for those businesses that retain current jobs and/or hire displaced workers from the Base. This subsidy will be up to 50% of the minimum wage, with a 5 employee maximum per establishment and a total of 300 employees. The cost of this program is estimated in $3.2 million over two years.

The LRA has also been successful in distributing the personal property declared surplus by the Navy. The Municipalities of Ceiba and Naguabo, among other municipalities and government agencies, have received property which was declared in excess by the U.S. Navy after the closure of the Base. The Municipality of Ceiba received cars, electric generators, monitors, a boat, furniture; and Naguabo received cars, electric generators, a school bus and construction materials. Also, the Municipalities of Fajardo, Maunabo, Humacao, Luquillo, Río Grande, Las Piedras, Loíza, Moca, Aguada, Arecibo, Barceloneta, Naranjito, Camuy, Lares and Cataño have received office furniture, vehicles and construction equipment, among other articles.

The LRA requested the medical equipment which belonged to the Hospital such as stretchers, hospital beds, treatment tables, examination and operation tables, ultrasonic equipment, X-ray units, lights for surgery rooms and respirators for future hospital use. The Electric and Power Authority received 4 generators which belonged to the Navy which will be used in their eastern region operations; while the Ports Authority was authorized to retain the air traffic control equipment, which was located at the airport control tower, as well as trucks, generators and platforms. The Department of Natural Resources received trucks, pickups, office equipment and generators and the Corrections Department received school buses and a tow truck. Other entities which have benefited from this process include the Police Department and various non-profit entities and schools.

As part of the communications effort with the community, the LRA created the Spanish and English website, planrooseveltroads.com to offer the latest information regarding the Base Closure and Realignment Law and the reuse process. The website also allowed members of the community to express their existing needs and submit proposals, ideas, recommendations and suggestions on the possible reuse of the property. A collection of documents regarding the base, including maps, environmental documents and infrastructure assessments, was also made available to the community through the public library of the Municipality of Ceiba.

This Reuse Plan, together with the Homeless Assistance Submission was presented in draft form to the public on October 12, 2004. Fifty-three persons attended a Public Hearing conducted on November 8, 2004. Of those in attendance, fourteen individuals presented comments to the Reuse Plan and/or the Homeless Assistance Submission. For a summary of their comments, see the Homeless Assistance Submission. The LRA took into account all comments received during this public hearing, and various changes were made to the Reuse Plan as a consequence of these comments.

III. Site, Context, and Physical Condition

This chapter presents a summary of the site's physical characteristics including:

- Location, Physical Conditions and Natural Features
- Environmental Issues
- Transportation and Infrastructure
- Existing Building Assessment

Most of the information in this chapter is summarized from an earlier report titled *Roosevelt Roads Reuse Plan: Site, Context and Market Conditions*, prepared in April 2004. That report appears in its entirety in the attached Appendix A.

Location, Physical Conditions and Natural Features

The Consulting Team conducted an overview of adjacent neighborhoods, the site's physical conditions and natural features in order to identify the physical development opportunities and constraints associated with the reuse of Roosevelt Roads. Our team collected and reviewed Base and facilities drawings, documents and previous studies and other secondary sources provided by the Navy, other agencies and conservation groups. Amplified by field notes and photographs taken during our field trips to the site, the team's work effort results in a series of analytical drawings illustrating these physical informational layers, and which provide an understanding of the site's unique characteristics, its development constraints and an introduction to the opportunities for future reuse.

Elements considered in the overview included regional and local context, site structure, dimensions, topography and hydrology, existing vegetation, wetlands and ecology, and archeological sites. Existing land uses and supporting infrastructure were identified and mapped, as were the site's varying gradients, which must be considered when

identifying areas for potential development. These conditions were then organized as a series of overlays, culminating in a summary of Constraints and Opportunities for future reuse of the Base. (A separate section on Existing Building Assessment is included in Appendix A).

Findings from this investigation are summarized below:

- The site is at the physical center of the Eastern Caribbean region. Excellent air and ship transportation is readily available. The Roosevelt Roads site has the advantage of proximity to existing and new tourist resorts and second home market developing along the eastern coast, as well as to Vieques and Culebra, both in sight of the Base.
- At the foothills of El Yunque and at the edge of the sea, Roosevelt Roads is intrinsically linked to its regional ecology of rainforests, marine habitat, migratory birds, and coastal flora. There is the opportunity to augment a widely recognized emerging regional ecotourism, forming a regional recreational linkage with such tourist sites both within Puerto Rico, Vieques and Culebra, and the islands of the Lesser Antilles Archipelago.
- Ceiba and Naguabo are small neighboring coastal towns, both formerly agricultural, and now primarily residential in character, with supporting small-scale retail and institutional facilities. These towns are visibly impacted by the closure of the Naval operations at Roosevelt Roads, with "For Sale" signs proliferating throughout the residential streets and neighborhoods and now along some of the prime retail sites at the center of town. There is little industry in either town; both were dependent on the Navy for local employment. With the closure of the Base, it appears that many local residents are relocating out of the immediate area. The town has enjoyed beach access on property belonging to the Navy and use of a fishing pier on property controlled by the Department of Natural Resources, both located to the east of the northern entrance.
- Access to the site is limited and circuitous at the northern end of the site and would require reconfiguration and wayfinding. Access to the southern entrance from the regional road network is direct and well marked. Of great advantage, there is the opportunity for direct access to the airport area. The airfield has helipads and multiple runways, the longest over 11,000 feet in length, and as such, can accommodate virtually any size aircraft. While the airfield today is visually screened from outlying areas by heavy vegetation, it could become visible to the main highway with selective tree thinning creating value for new commercial development activity.
- One of the largest coastal properties in Puerto Rico remaining in single ownership, the site encompasses a sweeping 8,300 acres on mainland Puerto Rico plus three smaller islands, Isla Piñeros, Isla Piñenta and Cabeza de Perro that together represent some 300 additional acres. The site geographically is the easternmost extension of the foothills of El Yunque, forming notable, twin "booted" peninsulas that together frame Ensenada Honda, the large and well-protected harbor at the center of the site with a distinctive ring of hills, nearly 300 feet at the highest point. A smaller bay, Bahia de Puerca, presents a second "outboard" opportunity for water-related activity and adjacent development.
- Limited largely by topography and mangrove forest preserves, opportunity for direct access to the water is restricted to a few locations at the site's small but charming beachfronts, and along the extensively bulkheaded frontage of the harbor along the northern peninsula. Along this formerly industrial waterfront, the infrastructure is sufficient to support a variety of

regionally appropriate uses, such as a passenger and cargo terminal to Vieques and Culebra.

- The encircling Delicias Hills influence the direction of the site's surface water drainage in addition to providing dramatic water and coastal views to the north and south. They also serve to contain noise generated by activity at the airfield, which is located in the site's major northeast/southwest valley. Dual views of El Yunque to the west and Island Pineros and Vieques to the east are equally compelling, and can be best seen from two spectacular vantage points, Punto Medio Mundo, jutting into the bay at the northernmost high point of the site, and at the site's dramatic northern eastern "heel" on the peninsula, among the most valuable on the site.

- The richness of natural diversity, of natural flora, extensive wetlands, mangrove forests and surrounding sea grass beds, underscores multiple ecologies and biodiversity present at the site. The site is an important coastal resource and potential habitat for a number of threatened and endangered species including the Yellow Shouldered Blackbird and the West Indian Manatee. Again, under single ownership, this presents a unique opportunity for a comprehensive approach to conservation as well as development. Additionally, there are a number of listed archeological sites potentially warranting future investigation.

- Existing development at the Base falls within several fragmented zones separated by topography, wetlands or land use: the airfield; Bundy to the southwest; "Downtown" at the center of the site; Capehart (residential neighborhoods on the southern peninsula); the waterfront along the northern bulkhead of Ensenada Honda; and Camp Moscrip at the edge of Bahia de Puerca. Each area is dominated by a single land use with supporting adjacent facilities; each is adaptable to reuse or appropriate for redevelopment. Support facilities at the Base are diverse and include a recently renovated hospital, a well-equipped ambulatory care medical and dental facility, two air-conditioned schools, libraries, a theater, a public works building, refrigerated storage areas, commercial buildings of varying sizes and recreational facilities that include tennis courts, a small-boat marina, a fitness center, a nine-hole golf course and a variety of ball fields. As with most military installations and with few exceptions, Base facilities were developed with little regard to aesthetic quality or siting to maximize views, designed to be purely functional and operationally necessary, with minimal support facilities. It is an environment of mostly well-maintained, "no-frills" structures and facilities.

- Infrastructure at the Base was developed in support of specific land uses and zones, and while adequate to support some degree of reuse, it is likely that with reuse of the Base, elements of existing infrastructure will require updating and modification. In particular, the roads, which were not designed to service significant traffic generated by private vehicles, and the piers, which were sized to service naval and tanker vessels rather than passenger ferries or private charter boats, will need to be addressed.

- While the overall site is large at 8,600 acres, including the three islands, new development and redevelopment opportunities are, in fact, limited to a much smaller area. This is due to the presence of significant wetland areas, the 100-year floodplain, and areas with relatively steep slopes (i.e. greater than 15% gradient). The resulting area available for reuse is approximately 3,868 acres.

Environmental Issues

- Areas of Concern (AOCs) related to the presence of potential contaminants, and solid waste management units (SWMUs) require further definition and clarification. The Navy's Environmental Assessment, currently underway, will provide additional information regarding these areas and the scope of the potential cleanup, discussed in more detail in the following section.

Matrix Environmental Services, LLC is working with the LRA and the Consulting Team to identify environmental issues and potential constraints upon the redevelopment of the NSRR property. Any environmental issues/constraints identified within this proposed Reuse Plan should be considered preliminary as many of the environmental programs and studies are ongoing and not all information is available at this time. However, a preliminary understanding of the potential environmental concerns at the former NSRR is an important component of the Reuse Plan. No specific environmental issue identified herein limits reuse or new development. However, where environmental issues are identified, it is important to understand the potential for these issues to affect reuse either from a natural resource context or from a regulatory program context. Natural resource issues will limit the types of use in specific areas to protect sensitive species and/or environments. Regulatory program issues may require some form of site remediation/restoration prior to reuse.

The environmental issues can be divided into two types of analyses: those related to industrial operations and the regulatory programs that these types of operations are managed under, and the second, a natural resource analysis, i.e. threatened and endangered species, historical and archeological sites, and other natural resource preservation issues. The Navy prepared an Integrated Natural Resource Plan (INRMP) in 1988. Although not current, the plan does identify some of the preliminary natural resources that have been identified on NSRR to date. Figure III.1 indicates the archeologically sensitive areas and Figure III.2 indicates the locations of the wetlands, including mangroves identified at NSRR in the 1988 INMRP. A site wide Environmental Assessment (EA) is currently being prepared by the Navy as required under the National Environmental Policy Act (NEPA) for NSRR due to the change in use of the facility from a naval support facility to proposed multi-use redevelopment. The EA will identify all of the natural resource issues identified at NSRR and assess the potential impacts to those resources as part of the change of use of NSRR. Because the EA analysis has not been completed as of the date of this Reuse Plan, additional environmental constraints may be identified as a result of the completed EA. According to the Navy, the EA is scheduled to be completed in March of 2005.

NSRR has been an active military facility from 1943 through 2004, primarily as a mobilization point for military training/maneuvers and as a support facility. In this role, the primary industrial uses of NSRR were as a marina, airport, munitions storage and armed forces training. As a result, the environmental issues related to the industrial uses of the site are fuel related (jet fuels, marine fuels, diesels, and solvents usage and storage), landfills (all onsite disposal since the 1940s) and munitions storage.

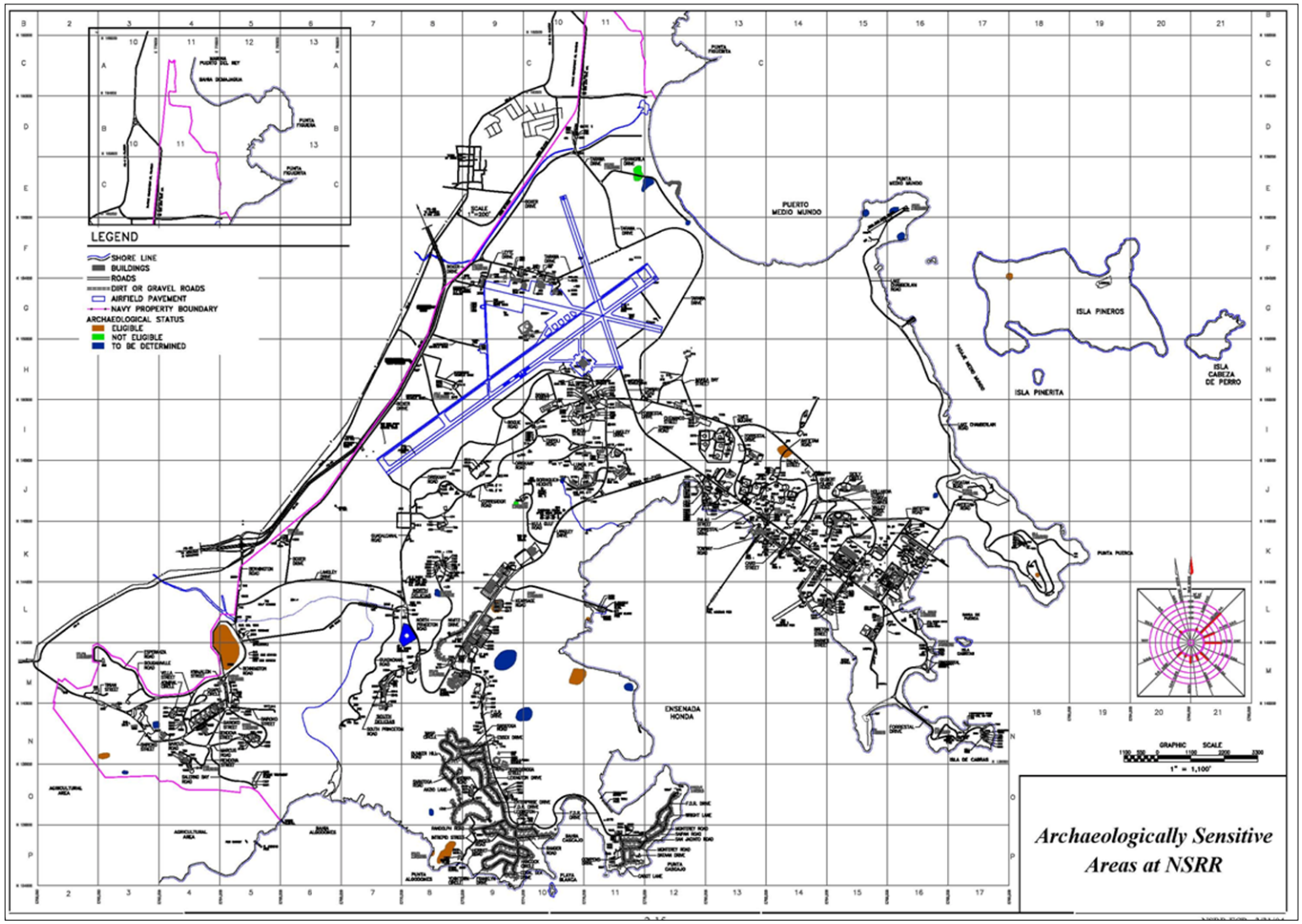
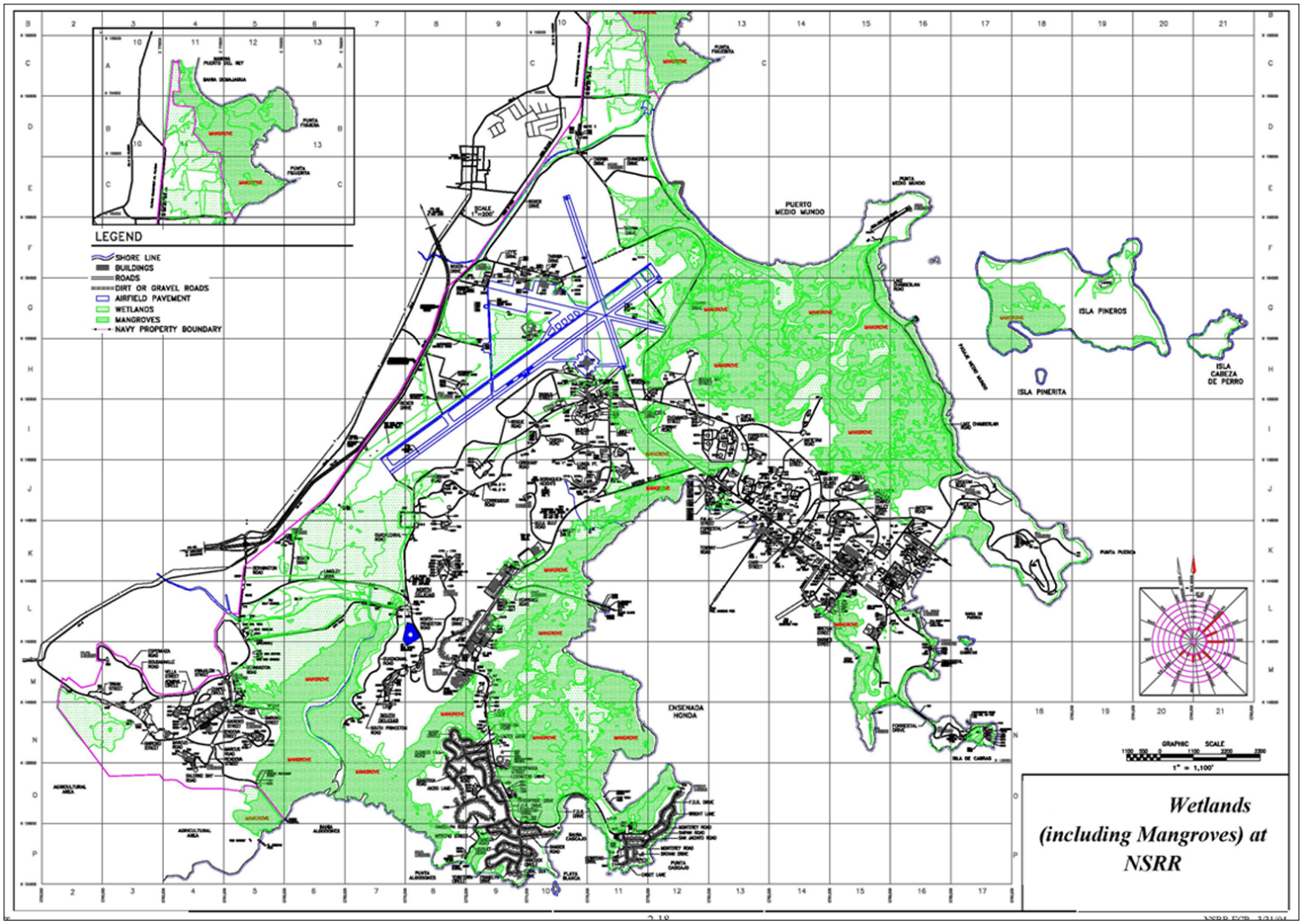


Figure III.1
Archaeologically Sensitive Areas at NSRR

Figure III.2
Wetlands (including mangroves) at NSRR



The industrial operations at NSRR are currently managed under various environmental programs, primarily the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). RCRA is a cradle to grave waste management program. The program identifies specific operations that are known to generate hazardous waste and those processes that generate, treat or store hazardous waste are identified as solid waste management units (SWMUs). Under RCRA, extensive monitoring and reporting are required for each SWMU from initial waste generation through treatment/management and finally disposal. RCRA is the same regulatory authority that regulates landfills, underground storage tanks (USTs), and above ground storage tanks (ASTs). CERCLA, also known as superfund, was established to identify those sites where environmental releases had already occurred or might occur and to take appropriate action to remedy those releases.

The RCRA program at NSRR developed as a consequence of the Navy's Installation Restoration Program (IRP). The Navy has developed their own environmental program that generally follows the CERCLA process to address environmental concerns at Navy installations. Under this program, the Navy managed the investigation and remediation of environmental issues identified at NSRR. The Navy used the IRP program to manage approximately 30 environmental sites at NSRR through 1993. In 1993 the Navy prepared and submitted a RCRA Part B permit to the Environmental Protection Agency (EPA) Region 2 for the entire NSRR facility to address their hazardous waste generation and storage issues. The permit identified fifty-four (54) solid waste management units (SWMUs) and four (4) Areas of Concern (AOCs) to be included as part of the operating permit. Figure III.3 identifies all of the SWMU and AOC locations in relation to the proposed redevelopment subzones.

The Navy submitted a revision to the original Part B permit, as a permit modification in March of 2004 to request No Further Action (NFA) on a number of SWMUs that were identified in the 1993 permit. At this time, EPA required that an additional SWMU be added: SWMU 55—the trichloroethylene release associated with the Tow Way Fuel Farm.

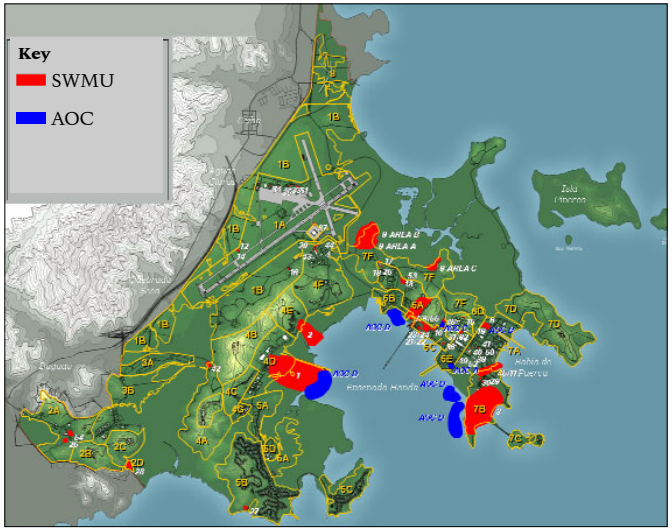


Figure III.3
Location of SWMUs and AOCs at NSRR

The following twenty-three (23) SWMUs have been recommended by the Navy for Land Use controls as part of the proposed NFA under the revised Part B permit. Table III.1 identifies the areas that have a land use restriction proposed under the revised Part B permit, the proposed reuse of an area if there is a potential conflict with the proposed land use restrictions and the proposed reuse.

Table III.1
Navy Proposed Land-Use Restrictions

SWMU NUMBER	DESCRIPTION	RCRA PERMIT RESTRICTION ON RE-USE	IDENTIFIED SUBZONE	PROPOSED REUSE	POTENTIAL CONFLICT w/PROPOSED REUSE?	COMMENTS
SWMU 1	Former Cremator Disposal Site	Yes	4D	Mixed Use	Yes, Resolve commercial Reuse with industrial Reuse	Investigation still ongoing, no land use controls recommended as of March 2004
SWMU 2	Langley Drive Disposal Area	Yes	4E	Residential	Yes, no residential would be allowed in the former landfill area	Investigation still ongoing, no land use controls recommended as of March 2004
SWMU 3	Base Landfill	Yes	7B	Science Park, Conference Center	Yes, resolve commercial, intuitional use with industrial Reuse in this former landfill area	Investigation still ongoing, no land use controls recommended as of March 2004
SWMU 7/8	Tow Way Fuel Farm/Sludge Burial Pits	Yes	6A/6B	Fuel Farm and Water Oriented Commercial	Yes, resolve commercial Re-Use with industrial	Corrective Measures Ongoing, no land use controls recommended as of March 2004
SWMU 10	Transformer Maintenance Area/Building 90	Yes	6C	Water oriented commercial	No, only residential proposed for restrictions	NFA pending. PCB contaminated soils. Navy has requested a NFA with a land use restriction against residential Reuse
SWMU 14	Fire Training Pit Area	Possible	1A	Airport Re-Use	No, industrial Reuse appropriate as part of site remediation	Investigation not yet initiated, land use controls would depend upon the results of the investigation

SWMU NUMBER	DESCRIPTION	RCRA PERMIT RESTRICTION ON RE-USE	IDENTIFIED SUBZONE	PROPOSED REUSE	POTENTIAL CONFLICT w/PROPOSED REUSE?	COMMENTS
SWMU 23	Oil Spill Separator Tanks	Yes	6C	Water oriented commercial	Yes, resolve commercial Reuse with proposed industrial Re-Use restrictions	NFA pending. Proposed for industrial Re-Use only due to elevated levels of petroleum hydrocarbons in the soils
SWMU 25	DRMO storage yard	Possible	6A	Industrial	No, industrial Reuse appropriate as part of site remediation	Investigation not yet initiated, land use controls would depend upon the results of the investigation
SWMU 27, 28, 29, 42	These are the on-site wastewater treatment plants (Capeheart, Bundy, Industrial Area, and Filter Backwash Lagoons)	Yes	5B, 2D, 7B, and 4A	Identified as treatment plants	No, will be maintained as WWTPs	May only be Reused as a waste water treatment plant
SWMU 30	Former Incinerator Area	Yes	7B	Science Park Conference Center	No, groundwater is not being proposed for use in the area	NFA pending. Navy has proposed restrictions on groundwater use
SWMU 31	Waste Oil Collection Building	Yes	6E	Cargo/ Passenger Ferry mixed commercial use	Potential conflict, remediation will need to address commercial use.	NFA Pending. Corrective Measures Implementation Plan is pending the approval of the Reuse Plan. Soils have dioxins, furans
SWMU 32	PWD Storage Yard/Battery collection Area	Yes	6E	Cargo/ Passenger Ferry mixed commercial use	Potential conflict, remediation will need to address commercial use	NFA Pending. Corrective Measures Implementation Plan is pending the approval of the Reuse Plan. Soils have dioxins, furans

SWMU NUMBER	DESCRIPTION	RCRA PERMIT RESTRICTION ON RE-USE	IDENTIFIED SUBZONE	PROPOSED REUSE	POTENTIAL CONFLICT w/PROPOSED REUSE?	COMMENTS
SWMU 37	Waste Oil Storage/Building 200	Yes	1B	Industrial	No, proposed for industrial Reuse	NFA pending. PCBs, SVOCs in soils. Navy has requested a NFA with a land use restriction against residential Reuse
SWMU 38	Sanitary Storm Sewers	Yes	Site Wide	Mixed use	No	To be maintained as a sanitary sewer system
SWMU 39	Former Battery Drain Area	Yes	7A	Science Park	No, as long as no residential, or other housing is proposed for the area	NFA pending. Navy has requested a NFA with a land use restriction against residential Reuse. Arsenic in soils
SWMU 45	PCB spill area/old power plant	Yes	7A/7B	Science Park Conference Center	Potential conflict, remediation will need to address Reuse	Corrective Measures study ongoing, land use controls would depend upon the results of the corrective measures study. PCBs in soils
SWMU 51	New AIMD Storage Pad/Building 379	Yes	1A	Airport	No	Navy has requested a NFA with a land use restriction against residential Reuse. SVOCs in soils
SWMU 54	Former NEX repair maintenance site	Yes	2A	Government learning and training center, residential, Veterans Admin clinic	Potential conflict, remediation will need to address residential Reuse.	Corrective Measures study ongoing, land use controls would depend upon the results of the corrective measures study. TCE in groundwater
SWMU 55	TCE Plume in Tow Way Fuel Farm	Yes	6A, 6B	Industrial and water based recreation	Potential conflict, remediation will need to address commercial Reuse.	Investigation ongoing. TCE in groundwater not yet delineated.

Where there is the potential for conflicts related to the reuse in a specific area, these will be addressed with the Navy and EPA prior to property transfer.

As part of the support operations, NSRR has an extensive UST/AST program. Currently, NSRR has thirty-seven (37) operational USTS, including nine (9) that are empty or out of service and seventy-seven (77) USTs that were removed prior to 1998. There are currently ninety (90) ASTs that are operational at NSRR and approximately thirteen (13) have been removed. However, the documentation of the ASTs is poor and others may be present. The bulk storage tanks located in the Tow Way fuel farm are also identified as USTs, but those tanks are regulated under the RCRA Part B permit as SWMU 7/8 rather than the UST program. The locations of the USTs are indicated in Figure III.4. The USTs closed to date have been under the authority of the Puerto Rico Environmental Quality Board (EQB) and no restrictions have been placed upon the reuse of property by EQB in any former tank location. However, there are still 37 operational tanks and there may be environmental issues associated with these UST locations. No information regarding releases was indicated for any of the existing tanks that remain active on NSRR.

There are currently twenty-nine (29) oil water separators (OWS) that are active at NSRR. OWS are not currently regulated under any program, although some have been included in the SWMU program (i.e.: SWMUs 12, 23, 24) due to a confirmed release. The ECP report indicates that all of the existing 29 OWS are sized to process waste water. However, all of the OWS are also tied into the stormwater system and eight (8) of the twenty-nine (29) are not sized appropriately to handle a 1-hour 5 year storm event (5 inches), four (4) have structural problems, three (3) have blocked drain lines, and three (3) are illegally discharging to the storm sewer rather than the sanitary sewer. None of the unregulated OWS have indications of a release. However, most are buried and an assessment of releases cannot be performed without a subsurface investigation.

The Navy performed an Environmental Condition of Property (ECP) survey once NSRR was identified for closure under BRAC. The ECP was performed to categorize the property into specific action categories depending upon the verification of a potential environmental release in any area. The ECP identified twenty-three (23) sites that may have had a release and that are not currently under the authority of a RCRA or a CERCLA program. The location of the ECP sites relative to the subzone locations is indicated on Figure III-5. The Navy prepared a workplan, the *Draft Phase II Environmental Condition of Property Workplan*, dated April 30, 2004, to investigate the twenty-three sites and the field work was performed in June and July of 2004. The Navy investigated twenty of the twenty three sites; two (2) sites: ECP site 1 and ECP site 22 were transferred to other federal agencies and those agencies may perform an investigation at a later date. Accordingly, these two sites are not part of the Reuse Plan. A final determination by the Navy on the remaining ECP site 23 will be made at a later time.

The results of the surface, subsurface, and groundwater investigation were provided in the *Draft Phase II Environmental Condition of Property Report Naval Activity Puerto Rico (Draft Phase II Report)* dated September 1, 2004. The results provided in the Draft Phase II report confirm releases at seventeen (17) of the twenty (20) ECP sites. As part of the Navy investigation, a qualitative risk assessment was performed using the analytical information obtained for each of the sites. The Navy used the analytical data obtained from the site investigation and compared this information to the EPA Region 3 risk based concentrations (RBCs), to assess the potential risk of each identified analyte to a human health or ecological risk standard. The EPA has two different risk standards depending upon the land reuse: industrial and residential. The industrial standard is a higher contaminant concentration as compared to the more conservative residential standard. The Navy applied the industrial risk concentration in all ECP investigation areas based upon the assumption

that a similar industrial reuse would occur in areas where confirmed releases occurred. Using the Navy's qualitative risk assessment, additional investigation is warranted at fourteen (14) sites. These sites are indicated in Figure III.5. Where the Navy applied the industrial risk screening criteria for a particular ECP site, the remedial action clean-up goal would be based upon the higher industrial RBC. The following table illustrates areas where the proposed reuse conflicts with the Navy's assumptions.

Table III.2
ECP Investigation Areas, Proposed Reuse and EPA Region III Industrial RBCs at NSRR

ECP NUMBER	DESCRIPTION	IDENTIFIED SUBZONE	NAVY IDENTIFIED IMPACTS	PROPOSED REUSE	NAVY RISK ASSESSMENT COMPARISON CRITERIA APPROPRIATE w/PROPOSED REUSE	COMMENTS
2	Hangar 200 Apron	1A	Yes	Airport	Yes	
3	Facility 278 POL Drum Storage Area	7F	Yes	Gateway to science park	No	Screening levels compared to industrial—not appropriate for commercial and recreational re-use
4	Rifle Range at Punta Puerca	7D	No	Conference Center	Yes	
5	Former Vehicle Maintenance and Refueling Area	6A	Yes	Industrial	Yes	
6	Former Landfill at Marina	6B	Yes	Expanded recreation boat marina and water oriented commercial	No	Screening levels compared to industrial—not appropriate for commercial and recreational re-use
7	Former Bundy Maintenance Facilities	2A	Yes	Government Learning Center, Residential	No	Screening levels compared to industrial—not appropriate for residential reuse
8	Former Bundy Disposal Area	2B	Yes	Moderate lodging, Residential	No	Screening levels compared to industrial—not appropriate for residential reuse
9	Former Pistol range at BEQ	4E	No	Residential	Yes	
10	Former Skeet Range at Ofsite Airfield	1A	No	Airport	Yes	

ECP NUMBER	DESCRIPTION	IDENTIFIED SUBZONE	NAVY IDENTIFIED IMPACTS	PROPOSED REUSE	NAVY RISK ASSESSMENT COMPARISON CRITERIA APPROPRIATE w/PROPOSED REUSE	COMMENTS
11	Former UST 208	1A	No, but should be further investigated	Airport	Yes	
12	Former UST 209	1B	No, but should be further investigated	Industrial	Yes	
13	Former Gas station	4F	Yes	University Campus	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use
14	Former Southern Fire Training Area	1B	Yes	Industrial	Yes	
15	Aircraft Parking Area	1A	Yes	Airport	Yes	
16	Disposal Area NW of landfill	7A/B	Yes	Science Park and Conference Center	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use
17	Quarry Disposal Site	4D	Yes	Mixed-Use	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use
18	Building 31 Public Works Department	6E	No, but should be further investigated	Cargo Passenger Ferry, mixed commercial use	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use
19	DRMO scrap yard	7A	Yes	Science Park	No	Screening levels compared to industrial—not appropriate for commercial re-use
20	Fuel Pipelines and hydrants pits	6B/C	Yes	Expanded recreational Boat marina and water oriented tourism	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use
21	Building 803	6E	yes	Cargo Passenger Ferry, mixed commercial use	No	Screening levels compared to industrial—not appropriate for commercial and residential re-use

Figure III.4
Locations of USTs and ASTs at NSRR

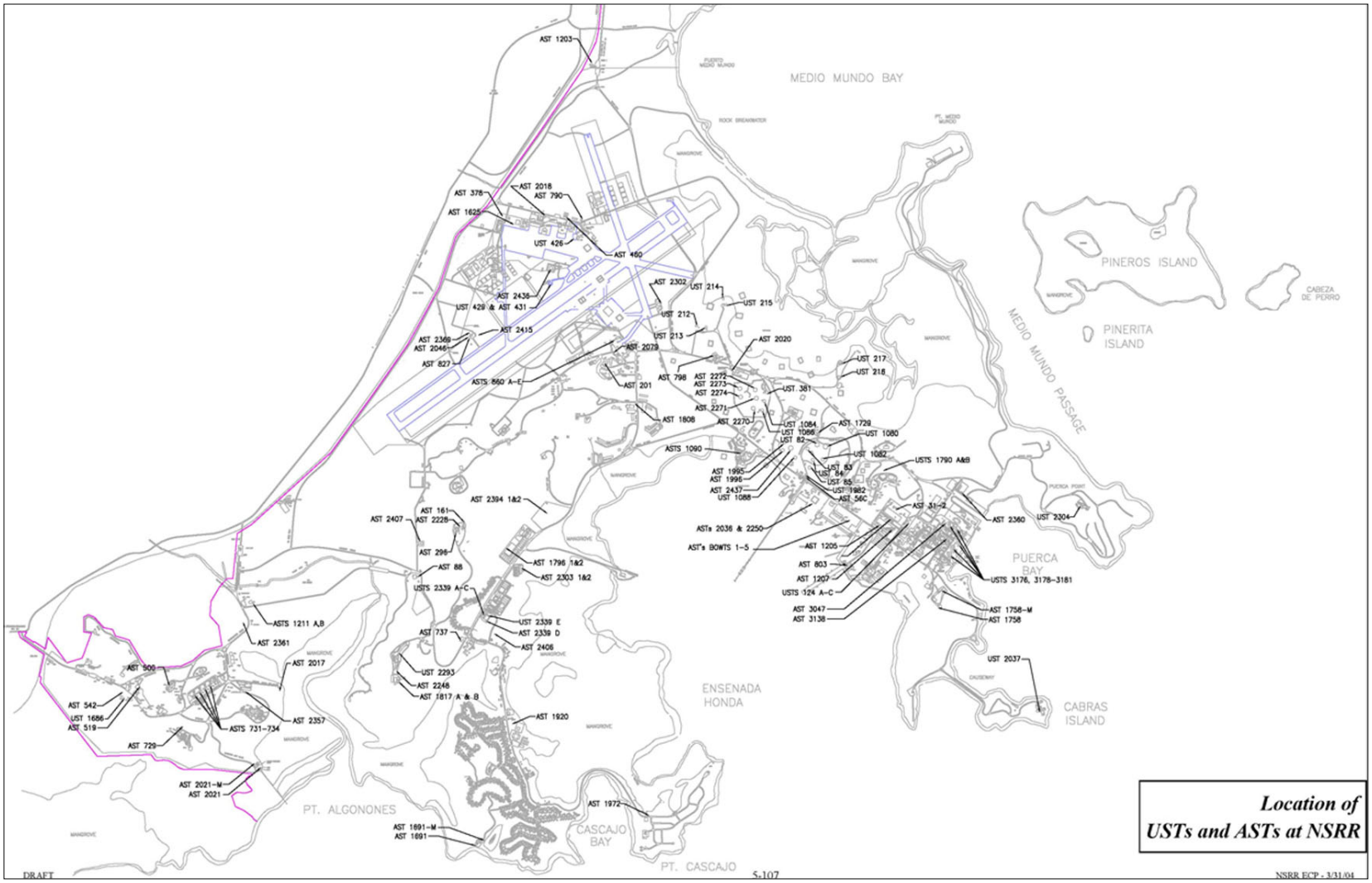
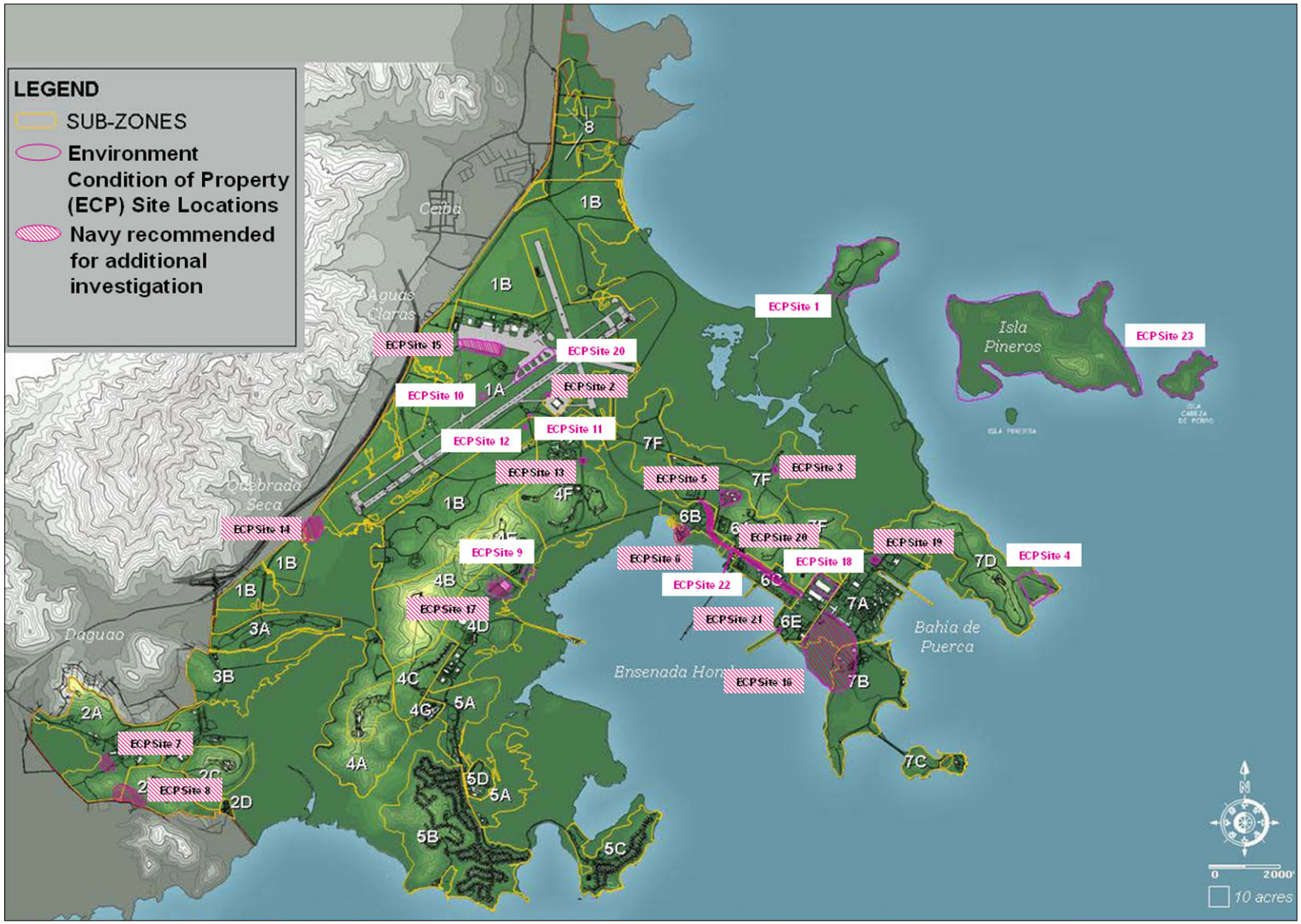


Figure III.5
Location of ECP Sites at NSRR



NSRR was the storage facility for the majority of munitions used in training at NSRR, Vieques and Culebra islands. Munitions and Explosives of Concern (MEC) were also investigated as part of the ECP report. Three small arms ranges were identified on site at NSRR and were investigated according to the Draft Phase II ECP Workplan. According to the ECP report, the Navy found no evidence of heavy (crew-served) weapon ranges on NSRR, any unexploded ordnance (UXO) impact areas, or evidence of open burning/open detonation activities. However, Isla Piñeros was known for EOD training exercises, although according to the ECP report, training exercises do not generally use live munitions, only smoke, flares, and small (5 pounds) of plastic explosives. Currently, access is restricted on Isla Piñeros as well as Cabeza de Perro due to concerns about potential MEC/UXO that may be present. The types of munitions stored in the munitions storage magazines included bombs, missiles, explosive projectiles (e.g. flares) small arms ammunition, and other types of MEC related items. The majority of the munitions storage areas are located south of Ofstie Airfield (subzone 1B). A magazine close-out inspection was conducted at NSRR by the Naval Ordinance Safety Security Activity (NOSSA) in February 2004. This inspection confirmed that all magazines were completely cleared of all ordnance-related items, and no explosive residuals or contaminants were present in the magazines.

Lastly, the Navy is currently assessing the facility for both lead based paint and asbestos containing materials in the existing buildings at NSRR. Eight hundred and seventy-nine (879) buildings were constructed prior to 1978; the year in which lead based paint (LBP) was banned from consumer use. These buildings and any other structures built before 1978 are presumed to contain LBP. A comprehensive survey has not been conducted at NSRR. However, a LBP inspection and risk assessment of family housing is being conducted by the Navy and those results are not yet available. In March and April of 1990 the Navy performed asbestos containing material (ACM) survey of ninety (90) buildings and seventy-eight (78) of those ninety (90) buildings have identified ACM. Another study done of the Capeheart and Turnkey housing areas identified ACM in all the houses that were sampled. The Navy is currently conducting a site-wide asbestos survey, but the results are not yet available. Because the LBP and ACM assessments have not been completed as of the date of this Reuse Plan, additional environmental constraints may be identified as a result of the completed lead-based paint and asbestos survey results.

For the purposes of this report, no natural resource area, SWMU, AOC, UST/AST/OWS, ECP asbestos or lead-based paint location has been eliminated from consideration for development as many are still under investigation, remediation, or some form of institutional controls may be implemented to address most reuse scenarios.

Infrastructure

The Consulting Team was tasked with reviewing existing data on infrastructure at NSRR, and supplementing with field notes and photos during field trips to the site. The team collected existing reports, base maps, coastal charts, construction plans, and utility information to ascertain that the general infrastructure of the base is currently adequate to support the existing development on the base, and has the capacity to support additional development. The specifics of the surplus capacity were studied during the alternatives analyses and are presented in Chapter VII of this report. An earlier report, *Roosevelt Roads Reuse Plan: Site, Context and Market Conditions*, details specifics of the Base infrastructure, in addition to documenting environmental considerations and regional transportation system (see Appendix A). The most important aspects of the analysis are summarized as follows.

- **Infrastructure:** NSRR is a fully functioning base, with adequate infrastructure systems to convey potable water, fire water and electric power to buildings and facilities. The systems have been developed and maintained in accordance with or above the standard of care.
- **Wastewater:** Base wastewater is treated and discharged and is fully permitted under a National Pollution Discharge Elimination System ("NPDES") permit. With the decommissioning of the Base, it will be difficult to maintain the sanitary system. If any one of the three wastewater systems ceases to be operational, the NPDES permit will become invalid. Keeping the permit valid is of key importance, since applying for and obtaining new permits for wastewater treatment and discharge is a long and arduous process. The NSRR Public Works Department plans to "mothball" and maintain equipment for the next two years.
- **Drinking Water:** The Base receives its water from a pipeline from Rio Blanco in the El Yunque Mountains. The raw water is treated and distributed throughout the Base. Monitoring data for trihalomethanes (THMs) at the discharge of the treatment plant and at remote points on the water distribution system show that the addition of chlorine for disinfection at the plant is causing the formation of this organic chemical contaminant at unacceptable concentrations. THMs may be controlled by various techniques, including enhanced treatment process control, removal of the precursor organic chemicals, elimination of chlorine as the disinfecting agent or removal of the fully formed THMs by physical or chemical treatment. This should be evaluated further with regard to regulations governing Roosevelt Roads.
- **Building Maintenance:** Base maintenance for other systems is also important. The buildings will quickly succumb to mildew and rot if they are not provided with a minimum level of air conditioning. The Navy is, so far, meeting its obligation to maintain Base facilities at an acceptable level to facilitate building reuse.
- **Contamination:** An Area of Concern is an area identified for possible contamination. If confirmation of contamination is obtained, the area becomes a Solid Waste Management Unit. A process is currently in place for identifying and designating SWMUs and AOCs on the Base. It is the subject of a concurrent study being completed by the LRA. For the purposes of this report, AOC and SWMU locations are not necessarily eliminated from consideration for development, since they can be remediated.
- **Port Area:** The marine infrastructure of the Base consists of 6 piers, bulkheading, one drydock, and a landing ship tank (LST) ramp. The pier adjacent to the drydock is dilapidated and does not lend itself to remediation. The visible features of the drydock, those above the waterline, are in a state of disrepair. The remaining piers, bulkhead and LST ramp are or were recently operational, and have been maintained. The federal channel to Ensenada Honda is maintained to a depth of 40 ft Mean Sea Level (MSL). This is not considered a deepwater commercial port, which would be on the order of 50 ft below MSL.
- **Marina:** There is a 72-slip marina on Base that was constructed in the mid-1990s. Each ship service box provides potable water and 110 V power. Conduit has been placed for cable television but cables were never installed. The average depth at the seawall is approximately 6-8 feet. The facility is generally in good condition as it is relatively new.
- **Airport:** The airfield at Roosevelt Roads has several runways, the longest of which is 11,000 feet. Future development around the runway must respect hazard zones and noise zones. These are documented in Appendix A.

Existing Building Assessment

The Consulting Team assessed the existing facilities on the Base using data supplied by the Navy and on-site inspections during February 2004. One outcome of these studies and investigations was the realization that approximately 10% of the 1,600 facilities on the Base have not yet been mapped and documented to the same degree as the remaining 90%. That said, a number of conclusions can still be drawn regarding the existing facilities at Roosevelt Roads.

The facilities were built over the course of the past 65 years from the beginnings of the Base in the mid-1940s right up until the present. Approximately 75% of the buildings were built before the end of the 1960s. Most of the facilities at Roosevelt Roads have been adequately maintained over the years and are in good condition.

The Consulting Team performed on-site visual assessment of NSRR facilities during an extensive four-day inspection on February 24–27, 2004. Sources for this study included the Consulting Team review of the following reports and construction documents provided by the Navy.

- Navy's NSRR Buildings and Structures 110503;
- NSRR Super Map;
- LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study, June 8 2001;
- Various construction documents and information provided by the Navy's on-site personnel.

Overview of Existing Facilities: There are over 1,600 listed facilities including buildings and other structures at Roosevelt Roads comprising more than 5,800,000 square feet (SF). Buildings range in size from the largest—the Public Works Building at 120,640 SF, to the smallest—a 64 SF utility building. The average building size is 3,600 SF.

Of the approximate 5,800,000 SF of listed facilities nearly 7%, or 399,069 SF, are deemed to be "Operationally Significant" and are essential to the on-going operation of NSRR's existing infrastructure, its port and its airport. These include such facilities as the fuel pier, the main hangar at the airport, jet fuel tanks, the sewage treatment plants, etc.

Another 600,237 SF of listed facilities are "Unconfirmed" at this time with respect to condition, use or location resulting from inconsistencies or omissions from the reference data provided by NSRR. This will require additional time and research to resolve and is outside of the scope of this effort.

Net Square Footage Allocations: The Net Square Footage of built facilities totals 4,856,296 SF. This Net Square Footage derives from the total of approximately 5,800,000 SF and excludes those facilities identified as "Operationally Significant" (399,069SF) or "Unconfirmed" (600,237 SF).

In broad terms the general use of the facilities breaks down as follows:

- There are more than 801 residential buildings including single and small scale multi-family dwellings, apartment houses and a hotel. These buildings comprise 2,417,010 SF, or 50% of the net square footage.
- There are also facilities in use as commercial, retail, offices and industrial facilities. These approximate 1,225,000 SF in area, or 25% of the net square footage.
- Educational, institutional and public amenity purpose buildings comprise 370,000 SF or 8% of the net square footage; and
- Storage structures (both in permanent structures or metal buildings) comprise 541,621 SF and represent slightly more than 11% of the net square footage.

- The remaining square footage serves municipal, utilitarian, military or open space recreational functions and comprises approximately 302,700 SF, or 6% of the total.

Table III.3
Tabular Summary of Facility Square Footages

Total Facilities	***5,855,602 SF***
Less: Operationally Significant	*-399,069 SF*
Subtotal	***5,456,533 SF***
Less: Unconfirmed	*-600,237 SF*
Facilities Net Square Footage	***4,856,296 SF***

Facility Type	Net Square Footages	Percent of Total
Residential	*2,417,010 SF*	*49.77%*
Business	*500,548 SF*	*10.31%*
Industrial	*459,293 SF*	*9.46%*
Storage	*434,998 SF*	*8.96%*
Retail	*189,543 SF*	*3.90%*
Recreation	*185,864 SF*	*3.83%*
Educational	*182,125 SF*	*3.75%*
Institutional	*142,717 SF*	*2.94%*
Assembly	*120,724 SF*	*2.49%*
High Hazard	*106,623 SF*	*2.20%*
Utility	*74,339 SF*	*1.53%*
Municipal	*21,395 SF*	*0.44%*
Military	*21,117 SF*	*0.43%*
Subtotal	*4,856,296 SF*	*100%*

Facilities Assessment: With a few exceptions, the prevailing condition of the existing facilities at NSRR is good. This may be attributable to the degree of maintenance provided over the years by a combination of Navy personnel and civilian employees.

There are a number of newly constructed facilities at NSRR that have just been completed but never occupied. These include a new office building and a new barracks for the Navy Seals. Another project just completed is the new BEQ (Bachelors and Enlisted Quarters) residential facility.

In addition, a number of facilities have been recently renovated. These include the Navy Exchange, the Hospital, the Commissary, and a number of single family residential buildings.

With consistency, most facilities at the Base were sited, designed and constructed for functionality and lack any sense of specific aesthetic quality or architectural style. Similarly, their access, siting and open space are absent any landscape design.

A number of buildings were scheduled for renovation or gutted in anticipation of an imminent renovation. They remain in that unusable condition.

Numerous buildings, particularly some of the older metal storage buildings, are obsolete or deteriorated and are candidates for removal.

Figure III.6
BEQ Apartments

Notes by Selected Facility Type

- **Residential:** Existing housing stock at NSRR includes 801 single and multi-family residential facilities comprising 2,417,010 SF.

  Of those, 676 are single family dwellings comprising 1,233,185 SF, or 51% of the total residential building area. The majority of single family houses are small, concrete block structures with punched windows and low-sloped built-up roofs and range in size from 1,600 to 2,000 SF. Larger single family structures, typically allocated as officer's housing, are similar in style and approach 3,000 SF. Of the 676 single family dwellings, 319 have been recently renovated.

  Another 98 buildings consist of small multi-family dwellings designed to accommodate 2 to 8 families. These comprise 474,000 SF, or 20% of the total residential area.

  The remaining 29% of the residential area is made up of 27 Large Scale Multi-family or Lodging buildings, comprising 710,000 SF.

- **Operationally Significant:** Facilities in this category include those necessary for basic infrastructure and utilities, airport operation and port usage. Excluding Pier 3, there are 113 Operationally Significant structures on the Base comprising 399,000 SF. This amounts to 7% of the total built area for the Base and about 7% of the total number of facilities.

- **High Value Facilities:** Buildings and structures in this category include those that are necessary to support utility or port infrastructure , offer a significant public amenity in their current location (e.g. hospital) or, in the case of residential buildings, have been recently renovated.

  This category includes many small structures. Excluding facilities under 3,000 SF in area, there are a total of 116 High Value structures totaling 1,700,000 SF in area. This is approximately 29% of the 5,800,000 SF total built area on the Base.

  In terms of size breakdown of the High Value facilities there are 933,000 SF in facilities over 25,000 SF, 335,000 SF in facilities between 10,000 SF and 25,000 SF in area and 401,000 SF in facilities between 3,000 SF and 10,000 SF in area.

Figure III.7
Single Family Dwelling

Figure III.8
Operationally Significant Seaport

The following charts illustrate the building type distribution at NSRR.

Figure III.9
Facility distribution by building type

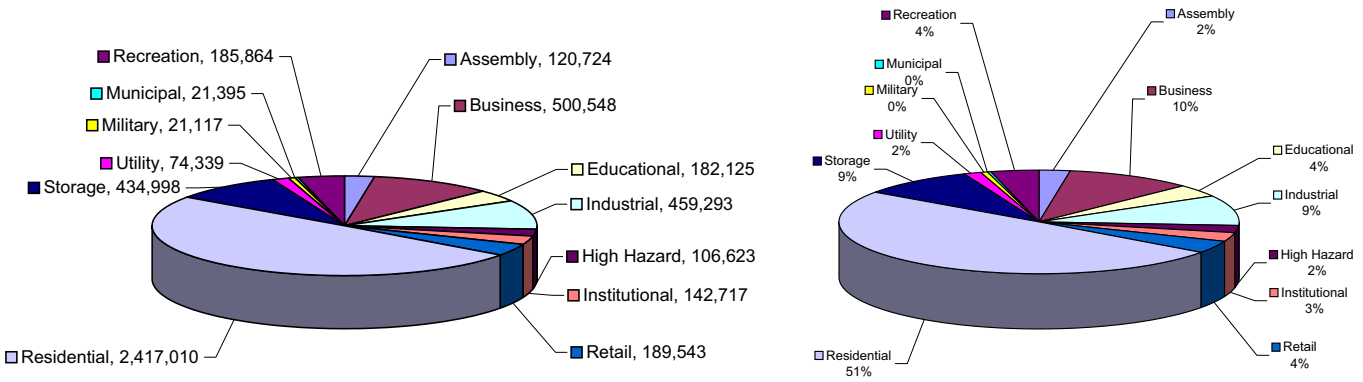
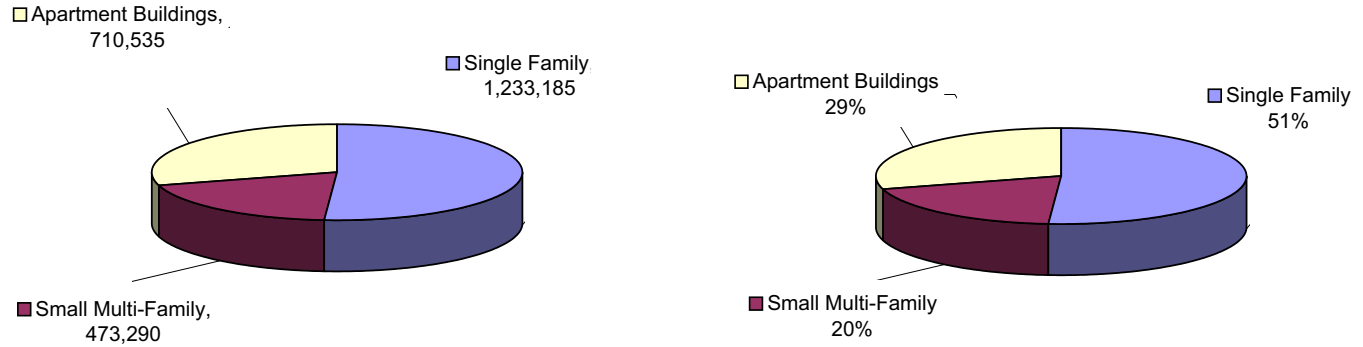


Figure III.10
Residential building type distribution



A small but significant number of facilities are considered essential for continued operation of the Base infrastructure, airport or seaport, such as the water filtration and sewage treatment plants. In addition, 29% of the remaining facilities are judged to be of potentially high economic value due to their unique characteristics. Taken together these figures total more than 500 facilities spread out over the entire Base. The cost of maintaining this large number of essential or economically valuable facilities will be significant.

The remaining facilities comprise more than 1,000 structures currently serving a myriad of uses by the Navy. Because their physical condition, quality of construction and location vary considerably, their future usefulness will depend largely on the specific re-use plans developed and implemented. Again, the sheer number of facilities falling into this category will make even minimal maintenance a costly endeavor. Serious consideration will have to be given to demolition of facilities that are not either used or minimally maintained in the near future to limit the cost of stabilizing and securing such a vast number of structures.

In terms of reuse of the existing facilities, excluding specialized military facilities, approximately 98% of the Net Square Footage (NSF) on the Base could be used for civilian purposes. Approximately 60% of this square footage consists of Residential, Institutional and Recreational facilities. The remainder is comprised largely of Commercial and Industrial facilities including offices, stores, warehouses, workshops, etc. Many of these could be readily adapted to serve any number of uses depending on the final Reuse Plan adopted. However, neither the extent of the adaptation required for reuse of these facilities, nor the related costs have been determined as part of the Reuse Plan

IV. Market Analysis

The Consulting Team conducted an economic and real estate market overview in order to assess the market opportunities and constraints likely to be associated with the reuse of Roosevelt Roads. Uses considered in the market analysis included residential, research and development (science park), industrial, industrial port, cruise ship terminal, marinas, office, retail, lodging, conference center, ecotourism, and nautical tourism. The outcome of this overview is the identification of the types of land uses that are likely to be supported from a market perspective. The information in this chapter is summarized from background reports prepared in April and May 2004. Principal findings are summarized below.

Other than relatively high-end residential, there are no compelling market driven needs not currently being met in the region. Industrial and commercial space are in surplus; there are a number of new hotels and resorts being built or planned in the Eastern Region and the overall local economy has become somewhat depressed from the loss of jobs and spending previously generated by the Navy and the loss of its multiplier effect in the local economy.

Nevertheless, there are reuse opportunities that could be supportable in the near-term while others will require a longer-term perspective to find market acceptance.

Market findings indicate that supportable but limited near-term uses include:

- Residential
- Science park (research and development in the form of university sponsored research, educational programs, and private sector sponsored R&D)
- Industrial including distribution, warehouse and manufacturing
- Marina
- Cargo and Passenger Ferry Operation
- Moderate Lodging
- Ecotourism activities
- Airport (based on preliminary findings from an airport master planning initiative currently underway)

In the longer-term, several additional uses could be supportable as demand grows and as the market acknowledges the success of early projects at Roosevelt Roads. These other uses could include

- Resort hotels
- Conference center (related to science park)
- Specialty retail/restaurants in a marina and tourist port setting
- Convenience retail (i.e. a grocery store-anchored neighborhood shopping center) to serve the needs of local residents living at Roosevelt Roads and in immediately surrounding neighborhoods
- Small cruise ships

Following this introduction, this chapter presents market findings and conclusions for each land use considered. It concludes with a discussion of school and medical facility needs that were also considered in formulating the Reuse Plan.

Residential

Current residential market conditions in the Ceiba/Naguabo Region[1] are depressed, with declining prices and increased vacancy, which are due primarily to the closure of Roosevelt Roads and the departure of associated military and civilian jobs. In the near term, Roosevelt Roads is not proximate to Puerto Rico's largest job centers, which will temper demand for housing. However, the Ceiba/Naguabo Region is projected to require 13,000 new housing units for the period 2000–2025 to keep up with population growth. Therefore, future demand for housing could be strong, especially as jobs are attracted to Roosevelt Roads over time.

The site attributes of Roosevelt Roads, including spectacular views and existing infrastructure including schools, hospital, etc., as well as the future improvements in access to San Juan via new highway construction, could make the site an attractive location for both the primary and second-home markets, especially at the higher price range.

Owner-occupied housing dominates the Puerto Rico market with owner-occupied units representing 78% of the Ceiba/Naguabo inventory and 73% of all Puerto Rico housing. It was assumed that the demand for new housing will roughly follow the historical mix. The current supply of for-sale housing currently being marketed in Fajardo and Ceiba and at Palmas del Mar serve as one indicator of potential absorption, especially for the up-market residential product. Single family detached and attached townhouses/ condominiums were also surveyed.

- In Fajardo and Ceiba, units ranging in size from 1,077 sf to 2,338 sf are selling at $137,000 to $265,000 ($91 to $172 per square foot).
- At Palmas del Mar, prices range from $250,000 to $2.5 million with most in the $250,000 to $900,000 range.

At the low-end of the range ($170,000), only approximately 10% of the households in Puerto Rico, 17% of the households in San Juan, and 7% of the households in the Ceiba/Naguabo region can afford a home of this price, assuming a five percent downpayment. At prices of $265,000, only about 4% of the households in Puerto Rico, 8% of the households in San Juan, and 3% of the households in the Ceiba/Naguabo region can afford a home of this price, also assuming a five percent downpayment. These findings point out that only a small segment of the population is able to afford the type of new units that are being constructed in the Ceiba and Fajardo area, but that the percentages overall are sufficient to sustain marginal additions to the higher priced home market.

1. Includes the following municipalities: Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.

Three approaches were considered to estimate future demand. Precise forecasts are difficult when looking at the long term (e.g., 20+ years). Market cycles can be very volatile.

- **Approach A:** As shown in Table IV.1, demand over the period 2005–2025 is projected by the Planning Board at 8,917 units (446/year) for the Ceiba/Naguabo region. Historically, the municipalities of Ceiba and Fajardo have captured 19% of the eight-municipality region. For the purpose of this analysis, future demand in Ceiba, Naguabo and Fajardo can be estimated at 20–25% of regional demand, or 89–112 units/year over 20 years. Most of the units (approximately 75%) will be for-sale.
- **Approach B:** Actual absorption at Palmas del Mar is currently at 140–150 new units/year, while new Ceiba and Fajardo developments are selling between 4 and 12 units/month=48–144 units/year. Note that Palmas del Mar has been under development for 30 years and its mix of primary and secondary housing is approximately 50/50.
- **Approach C:** This approach assumes that large-scale development at Roosevelt Roads could create a new, higher level of demand in this area that allows the Base to capture a higher proportion of the market than its market subarea has achieved historically. This might lead to absorption of more than 150 units/year.

REGION	2000–2005[1]	2005–2010	2010–2015	2015–2020	2020–2025	TOTAL: 2000–2025
Puerto Rico						
New Residents	*123,865*	*92,283*	*80,376*	*61,714*	*42,145*	*400,383*
Average Annual Growth	*0.6%*	*0.5%*	*0.4%*	*0.3%*	*0.2%*	*0.4%*
New Housing Units[2]	*41,565*	*30,967*	*26,972*	*20,709*	*14,143*	*134,357*
Ceiba/Naguabo Region[3]						
New Residents	*11,534*	*9,208*	*7,427*	*5,922*	*4,017*	*38,108*
Average Annual Growth	*0.8%*	*0.6%*	*0.5%*	*0.4%*	*0.3%*	*0.5%*
New Housing Units[2]	*3,870*	*3,090*	*2,492*	*1,987*	*1,348*	*12,788*
San Juan Region[4]						
New Residents	*18,189*	*7,540*	*11,368*	*6,758*	*6,004*	*49,859*
Average Annual Growth	*0.3%*	*0.1%*	*0.2%*	*0.1%*	*0.1%*	*0.2%*
New Housing Units[2]	*6,104*	*2,530*	*3,815*	*2,268*	*2,015*	*16,731*

Table IV.1
Population and Housing Projections for Select Municipalities
1. *These figures are based on the estimated population as of July 1, 2000, as provided by the Puerto Rico Planning Board.*
2. *Based on the island-wide average of 2.98 persons per household*
3. *Includes the following municipalities: Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande*
4. *Includes the following municipalities: San Juan, Bayamon, Carolina, Guaynabo, Catano, and Trujillo Alto.*

Sources: U.S.Census Bureau and Puerto Rico Planning Board

There is a good opportunity to make Roosevelt Roads a desirable residential location in Puerto Rico, building on the site's location, water frontage and excellent views. Proximity to jobs will be important, so developing professional employment opportunities (such as a science park) would strengthen the market attractiveness of high quality residential uses.

All things considered, a prudent estimate for residential demand would indicate that if an overall high quality appearance at Roosevelt Roads is established and maintained, it has the potential to support on the order of 150–250 units/year of combined primary and secondary residential units.

Science Park

Puerto Rico's economic development strategy includes a growing emphasis on a knowledge-based economy, echoing similar strategies successfully pursued in other relatively small island settings, including Ireland and Singapore.

Some of this emphasis has born fruit, with recent engineering and development initiatives from the private sector (e.g., Pratt & Whitney in aircraft engineering, HP in product development, and medical device manufacturers adding product improvement/development activities to their production functions). Puerto Rico has attracted a significant group of companies, each prominent in its own dynamic sector of the economy. Companies in pharmaceuticals and biotechnology, medical instruments, and electronics are located throughout the island, as shown in Table IV.2 below.

Table IV.2
Major Companies in Puerto Rico

Sources: Commonwealth of Puerto Rico, Department of Economic Development and Commerce

PHARMACEUTICAL AND BIOTECHNOLOGY	MEDICAL INSTRUMENTS	ELECTRONIC
Aventis	Abbott Laboratories	General Electric
Abbott Laboratories	Advanced Medical Optics	Hamilton Sundstrand
Amgen	Allegiance	Hewlett Packard
AstraZeneca	Baxter	Hubbell
Baxter	BD	Microsoft
BD	Biomet	MSL
Biovail Corporation	Braun	Northrop Grumman
Bristol Meyers Squibb Company	Edwards	Nypro
CardinalHealth	Essilor	Sensormatic
Galen Holdings PLC	Guidant	Siemens
GlaxoSmithKline	Integra NeuroSciences	Solectron
Ivax	Johnson & Johnson	Symmetricon
Johnson & Johnson	Medtronic	
Lilly	Millipore	
Merck	Novartis	
Mova	Pall	
Mylan Laboratories Inc.	St. Jude Medical	
Novartis	Surgical Specialties Corp	
Pfizer	Synovis	
Proctor & Gamble	Tyco	
Schering-Plough	Zimmer	
Watson		
Wyeth		

Recent investments in Puerto Rico since 2002 by selected major companies totaled $2.1 Billion as shown in Table IV.3

COMPANY	PRODUCT	INVESTMENT (IN MILLIONS)	JOBS COMMITTED	DATE
Amgen	*Biotechnology*	*$800.0*	*600*	*Mar. '02*
Eli Lilly	*Biotechnology*	*$450.0*	*450*	*June '02*
Abbot Laboratories	*Biotechnology*	*$350.0*	*200*	*Oct. '02*
Pharmacia (Pfizer)	*Pharmaceutical*	*$103.0*	*140*	*May '02*
Jansen Ortho (J&J)	*Pharmaceutical*	*$70.0*	*125*	*June '03*
Baxter Healthcare	*Medical Instruments*	*$68.0*	*453*	*Dec. '02*
Merck	*Pharmaceutical*	*$62.8*	*80*	*Sept. '02*
Medtronic	*Medical Instruments*	*$29.0*	*250*	*Jan. '04*
Impress Packaging	*Packaging*	*$28.8*	*140*	*May '03*
Alcan Inc. (Alcan Packaging)	*Packaging*	*$26.8*	*336*	*Feb. '04*
Ocular Sciences	*Contact Lenses*	*$26.0*	*180*	*Dec. '03*
IVAX Pharma (API Industries)	*Pharmaceutical*	*$23.5*	*113*	*Jan. '04*
Stryker	*Medical Instruments + R&D*	*$19.1*	*400*	*June '02*
Advanced Medical Optics	*Intraocular & Contact Lenses*	*$16.6*	*588*	*Oct. '02*
Essilor Industries	*Intraocular & Contact Lenses*	*$14.7*	*222*	*Feb. '03*
Becton Dickinson	*Medical Instruments*	*$8.6*	*105*	*Jan. '04*
Lutron Electronics	*Electronics*	*$7.9*	*309*	*Feb. '04*
Proctor & Gamble (Olay Co.)	*Personal Care Products*	*$2.3*	*345*	*Feb. '04*
Total		**$2,107.0**		

Table IV.3
Recent Investments in Puerto Rico by Selected Major Companies

Sources: Commonwealth of Puerto Rico, Department of Economic Development and Commerce

While a science park may be seen as more aspirational than tangible, the strong and growing investments by pharmaceutical and other companies point to at least the possibility that some additional product development activities can eventually be housed in Puerto Rico, especially if a special environment is created to attract them.

Earlier this year, the Commonwealth Government established the Puerto Rico Science, Technology & Research Trust. With funding of $100 million, the Trust will set public policy for science and technology research and development with an initial focus on life sciences and information technology. The Trust may invest in basic and applied research, education and training, technology commercialization and services, attraction of world-class scientists, and the construction of technology parks. The Trust will operate primarily through alliances between business, government and academia.

Roosevelt Roads has many of the attributes necessary for a science park and the possibility of developing a site with the special physical characteristics of Roosevelt Roads makes the potential for accelerated market demand worth considering.

A science park is defined as "an organization managed by specialized professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a Science Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies, and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services."[2] A science park may include private sector users and/or an affiliation with a university or other public sector users (e.g., governmental laboratories).

Roosevelt Roads begins to satisfy many of the criteria that a successful science park will need, but Puerto Rico will have to initiate an aggressive program to market itself and solicit interest among prospective users to bring this use to fruition. There are several key attributes that characterize successful science parks:

- *Affiliation/close proximity to a medical center, major research university, research clinics, laboratories, or major company bearing recognition as a leader in one or more scientific fields relevant to the park's planned orientation.* The Roosevelt Roads site currently lacks the desired affiliation but there have been several expressions of interest by universities and federal agencies, suggesting that the desired connection might be achievable. There has been interest expressed by both the University of Puerto Rico and the Polytechnic University of Puerto Rico in locating select research and development efforts on the site. If one of the universities were to serve as an anchor for this type of development, the ability to attract additional public and private sector tenants would be greatly enhanced. In addition, the National Oceanographic and Atmospheric Administration has expressed a tangible interest in establishing a Caribbean Marine Science, Biotechnology and Aquaculture Center.
- *Convenient transportation access to desirable residential communities or neighborhoods where researchers are likely to reside.* Access is acceptable but improved housing choices in close proximity are needed. Redevelopment of the residential portion of Roosevelt Roads would help fulfill this criterion.
- *Sufficiently large site to accommodate a range of uses, including academic research laboratories including wet lab space, space for start-up firms (incubator space), and established successful firms.* The site meets this criterion.
- A*n attractive "lifestyle" environment that provides landscaped open space and recreational facilities.* The site currently lacks this type of environment, but many of the improvements envisioned for the site are intended to overcome this void.
- *The presence of a high-quality human resources pool, generally provided by local industry and universities.* While the site will not be able to compete directly with science parks located near the major mainland universities with stellar reputations for faculty, programs and students, it can draw upon the best faculty and students in Puerto Rico and, potentially, from a broader Latin American regional population. For example, the University of Puerto Rico Mayaguez campus has an extensive engineering curriculum and awards as many engineering Bachelors Degrees as do the University of Wisconsin, Madison and the University of California at San Diego (see Table IV.4 on following page). While this criterion will present a challenge, it is being addressed by INDUNIV, the non-profit industry-university research consortium, which has already generated interest among prospective users. Successful centers globally (Silicon Valley, Boston, Research Triangle, Sophia Antipolis in France, etc.) are all characterized by having attracted talent from well beyond their regions and their countries. US immigration laws and visa restrictions may impede Puerto Rico's progress in this regard,

2. International Association of Science Parks

Table IV.4
Bachelors Degrees in Engineering, 2003

Source: Puerto Rico Industrial Development Company

SCHOOL	ENGINEERING DEGREES
Pennsylvania State University	*1,370*
Georgia Institute of Technology	*1,287*
North Carolina State University	*1,245*
Texas A&M University	*1,161*
Purdue University	*1,138*
University of Michigan	*1,129*
Univ. of Illinois, Urbana-Champaign	*1,112*
Virginia Tech	*1,082*
University of California, Berkeley	*855*
University of Texas, Austin	*850*
Iowa State University	*833*
The Ohio State University	*821*
University of Florida	*797*
Cornell University	*759*
Michigan State University	*720*
California Polytechnic State University	*715*
University of California, San Diego	*712*
University of Wisconsin, Madison	*711*
University of Puerto Rico, Mayaguez	**710**
Massachusetts Institute of Technology	*679*
University of Washington	*635*
University of California, Los Angeles	*625*
Rensselaer Polytechnic Institute	*606*
Arizona State University, Main	*603*
Michigan Technological University	*590*

depending on the national policies that are in place in the years ahead.

- *Presence of a strong business infrastructure, such as lawyers, accountants, venture capitalists, and suppliers with technology and intellectual capital-related expertise.* Such a presence does not exist to the extent found at some of the most successful science parks in locations like the San Francisco Bay Area, Boston, and Washington DC/Baltimore.
- *Provision of regional transportation access, including air access, both for transporting personnel and for transporting highly valued cargo; excellent highway access is important for connecting to nearby major cities.* The site satisfies this criterion. The presence of an airport should add to its attractiveness for some users.
- *Protection of Intellectual Property.* Puerto Rico satisfies this requirement.

Considering initial expressions of interest from a number of prospective users including universities, NOAA and the FDA, an initial increment of 50,000 to 100,000 square feet might be anticipated in the initial development phase, with annual absorption of a comparable amount in the years beyond.

Industrial

The industrial market in Puerto Rico is characterized primarily by owner-occupied manufacturing facilities (including, in particular, pharmaceuticals) and for-lease properties owned by Puerto Rico Industrial Development Company ("PRIDCO"). PRIDCO estimates that it owns approximately 88 percent of the total industrial space available for lease in Puerto Rico. As of April 1, 2004, PRIDCO owned approximately 24.8 million square feet of industrial buildings. Of this total, approximately 75 percent was leased. Of the 25 percent of inventory that was vacant, 23 percent was reserved for prospective tenants and 17 percent was under negotiation. Historical construction of PRIDCO-owned industrial facilities is detailed in the following table.

Table IV.5
Historical Construction of PRIDCO-Owned Industrial Facilities Completed for Fiscal Years Ended June 30

Sources: PRIDCO

YEAR	SQUARE FEET
1998	*276,696*
1999	*336,826*
2000	*144,698*
2001	*240,228*
2002	*133,693*
Total	***1,132,141***

As detailed in Table IV.5, PRIDCO constructed on average just over 225,000 square feet of new industrial space per year between 1998 and 2002. During this five-year period, the overall supply of industrial space owned by PRIDCO increased by the modest amount of approximately 4.7 percent. Anticipated construction of future industrial facilities by PRIDCO is detailed in the following table.

YEAR	SQUARE FEET
2003	*505,000*
2004	*563,000*
2003	*428,000*
2005	*447,000*
2007	*467,000*
Total	***2,410,000***

Table IV.6
Projected Construction of Industrial Facilities to be Completed during Fiscal Years ending June 30.

Sources: PRIDCO

As detailed in Table IV.6, as of March 31, 2003, PRIDCO projected that it would construct a total of just over 2.4 million square feet of industrial space between 2003 and 2007, or an average of 482,000 square feet per year. During this five-year period, it is projected that PRIDCO's overall inventory will increase by approximately 9.5 percent, double that which was experienced between 1998 and 2002.

Historically, PRIDCO constructed general-purpose buildings in advance of demand and special industrial buildings on demand. For several years prior to fiscal year 2003, PRIDCO did not construct general-purpose buildings in advance of demand but began to do so again in that fiscal year. As a result, four new projects and four remodeling projects were under development in 2003. These circumstances account for the difference between the average construction per year that occurred between 1998 and 2002 and the construction that is projected to occur between 2003 and 2007.

Potential demand for industrial development at Roosevelt Roads appears to be somewhat limited based on the current supply of general-purpose industrial buildings in the Ceiba/Naguabo Region and the corresponding vacancy rate in the Region. There is an overall

inventory of some 450,000 square feet of PRIDCO industrial buildings there and an 18% vacancy rate (see Figure IV.1). However, it should be noted that much of the PRIDCO space was built decades ago and does not meet the needs and expectations of today's industrial user. Accordingly, newly designed product might gain further acceptance, even if it competes somewhat for the existing space users who are occupying less desirable space.

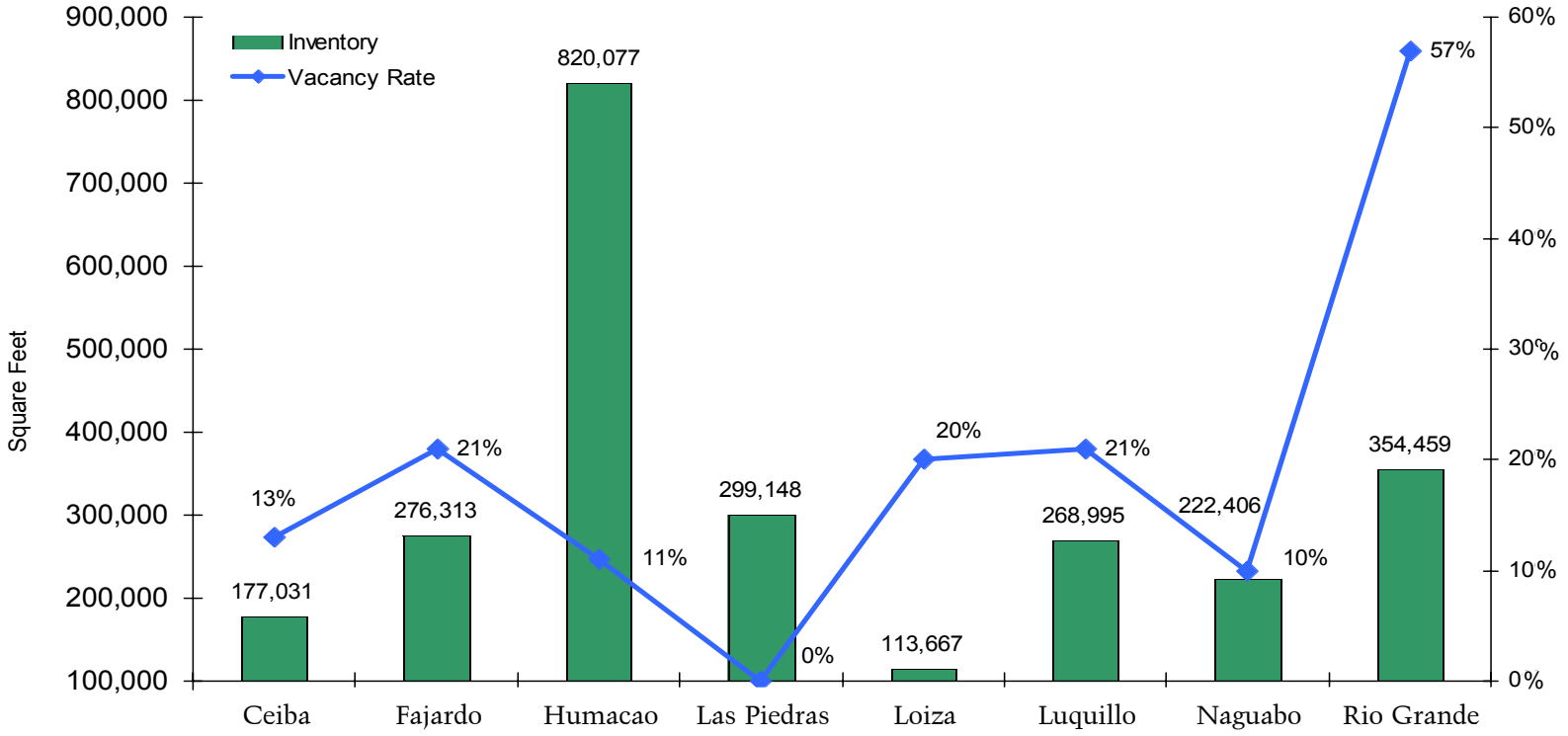


Figure IV.1
PRIDCO-Owned Facilities, Ceiba / Naguabo Region, April 2004

Looking ahead, Roosevelt Roads could have an advantage if the Base airport can attract air freight carriers, as much of Puerto Rico's exports are high value and shipped by air (e.g., pharmaceuticals, medical devices). Accordingly, industrial and distribution space at the site could enjoy a special advantage of proximity and, with that, the capability to meet just-in-time air freight schedules. Roosevelt Roads may also have the potential to attract industrial owner-occupiers, such as pharmaceutical and high technology manufacturers, who already have successful operations in Puerto Rico.

The industrial and logistics (warehouse and distribution) opportunities are an extension of PRIDCO's target industries, potentially augmented over time by the proposed development of the Port of the Americas. Analysis of the success and continuing re-investment of the pharma industry indicates several factors that may be applied to target other companies as well. These include:

- Favorable tax treatment (essentially exempting income from national taxation as long as profits are not repatriated) generating cash flow for corporate development in markets other than the US;
- Security of assets and protection of intellectual property through US legal structure and political stability;
- Relatively high productivity from capital intensive plant/equipment investment (documented by CBRE Consulting-PRIDCO surveys of capital intensive manufacturers); and
- Appropriateness of airfreight due to high value per ton of products shipped (e.g., pharma, ink jets, medical devices).

Accordingly, the industrial targets for Roosevelt Roads would include those that PRIDCO and Port of the Americas will target, with a premium on those that might especially value airfreight proximity. These targets include:

- Pharma
- Medical
- Scientific instruments
- High value food & beverage
- Cosmetics
- Value added logistics & repackaging

Previous surveys of air cargo requirements in Puerto Rico have pointed to the potential to meet this demand through improved service at the Western end of the island, i.e. clients in Barceloneta and other cities to the west, including several pharmas and HP. Given the potential need to free up capacity in San Juan and the eventual opening of the Port of the Americas in Ponce, a conceptual case can be made for material inflow through Ponce and air freight out through the East as well as the West, thereby spreading the manufacturing activity and related employment more broadly on the island. Data for this concept will no doubt be more rigorously explored as part of the Airport Master Planning study currently underway.

In addition, Puerto Rico has recently been named as a helicopter maintenance center for a major aerospace company. Since Roosevelt Roads can also offer an 11,000-foot runway, serviceable buildings and available land as well as a workforce that is wage competitive, at least compared to other places that are FAA certifiable, there may also be potential for additional aircraft related services and production. This represents a significant opportunity if companies come to believe that the supply of skilled labor can be sustained. The track record for carefulness in the workplace for the pharma/medical industries points to a cultural strength that may also be marketable. Since documenting as well as doing the job right is a critical component of FAA regulated air craft maintenance, companies should be impressed by Puerto Rico's track record in the similarly highly regulated pharma industry (FDA documentation as well as careful productivity) and Puerto Rico's relative cost advantage compared to other certifiable locales. The capability to barge in aircraft, etc. is also attractive.

Based on the above, we estimate that Roosevelt Roads could capture some 1,000,000 square feet of industrial space during the first ten years of development.

Waterfront Uses

Several waterfront uses were considered including marina, ferry terminal, and large cruise ship terminal. Each is discussed below.

Marina For Recreational Boats and Small Cruise Ships: There appears to be good potential for a marina at Roosevelt Roads given its location within the Ceiba/Naguabo Region, where many of Puerto Rico's marinas are concentrated, as well as its proximity to Vieques and Culebra. However, the marina slip inventory in the eastern region could be increasing significantly in the coming years if proposed expansion plans at various marinas are executed, which could temper demand at Roosevelt Roads.

There are currently 3,600 wet slips and dry stacks in the region and current plans call for an increase of nearly 1,000 slips (27%). The Roosevelt Roads Marina includes 72 slips and 25 moorings and is generally in good condition. There is ample room for expansion and, based on the other planned expansions, there appears to be a market for this use.

Consideration was also given to the feasibility of accommodating small cruise ships in the harbor at Roosevelt Roads. Small cruise ships generally carry 100 to 200 passengers on vessels of from 200 to 400 feet in length. Three cruise ship companies—Windstar, Seabourn, and Sea Dream—currently serve Puerto Rico, calling on San Juan and Culebra. Ports-of-call are selected based on their appeal to the high-end customers who generate the majority of the demand for these lines. They are looking for beautiful natural settings, unique shopping and dining opportunities, and a choice among many attractions for daytime excursions.

Because Roosevelt Roads currently lacks the features desired by the cruise operators, small cruise ships would not likely be supportable in the near-term. However, once significant redevelopment of the Base occurs, including development of such amenities as hotel/conference center, golf course, specialty retail shops and restaurants, and an expanded and upgraded marina, small cruise ships could be attracted to the site.

Marina For Nautical Tourism: Small cruise ships, charter boats and private yachts characterize nautical tourism in the Caribbean. A recent study by Dornbusch Associates[3], prepared for the Puerto Rico Tourism Company, assessed opportunities for nautical tourism development in Puerto Rico and focused on charter boats and mega yachts (i.e. larger than 80 feet). It found that little nautical tourism activity exists in Puerto Rico and that there are no charter fleets and very few mega yachts based on the island. The essence of Dornbusch's conclusions is summarized below:

- Nautical tourism does not develop without tax incentives and is severely restricted by excise taxes in Puerto Rico.
- Puerto Rico's competitive advantages to potential charter companies and mega yacht owners include access to Culebra and Vieques, the relatively inexpensive cost of fuel, and a well-developed infrastructure of services and facilities that is attractive to yachters, such as an international airport, luxury hotels, and upscale restaurants and shops.
- There are several large obstacles to developing nautical tourism in Puerto Rico, including the excise tax, lack of development incentives, and excellent attractions and facilities elsewhere in the Caribbean that have a head start in serving this market.
- None of the existing marinas in Puerto Rico would be able to attract the critical mass of mega yachts necessary to successfully compete in the regional market. San Juan is recommended as a preferred location for such a marina.

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(3) Dornbusch Associates, "Incentive Program to Promote & Regulate Nautical Tourism in Puerto Rico," October 6, 2003.

Based on the findings from the Dornbusch study, a marina for nautical tourism could be supportable at Roosevelt Roads if existing taxes are reduced and/or eliminated, other incentives are put in place, and other amenities and attractions are developed.

Ferry Terminal: Passenger and cargo ferry service between Puerto Rico and the islands of Vieques and Culebra is currently provided via a terminal located in nearby Fajardo. Approximately 854,000 passengers and 224,500 short tons of cargo moved through the Fajardo Ferry in fiscal year 2002–2003, the last year for which data is available.

The Puerto Rico Ports Authority has expressed its interest in relocating the Fajardo ferry operation to the harbor at Roosevelt Roads. Doing so would reduce travel time from Puerto Rico to Vieques by 50 minutes (Fajardo to Vieques, 80 minutes versus NSRR to Vieques, 30 minutes), reduce operating costs, and provide a solution to the currently congested conditions surrounding the existing terminal in Fajardo. A well-designed ferry terminal, with sufficient parking, convenient access, and a high standard of operation and maintenance, would be a very appropriate use at Roosevelt Roads.

Large Cruise Ship Terminal: Due to Puerto Rico's location within the Eastern Caribbean, most cruise ships that make port of call stops in San Juan do so for only a partial day, often in the afternoon and evening. As a result, San Juan is an attractive destination because passengers can enjoy city activities during their brief time on the island. Interviews with planning executives at two major cruise lines indicate that there is not sufficient demand at this time for a cruise ship terminal at Roosevelt Roads because of the site's disadvantageous location from an itinerary planning perspective.

Lodging

The lodging market in Puerto Rico has been growing throughout the past ten years, as evidenced by the steady growth in the inventory of hotel rooms on the island. There were a total of 12,768 rooms in Puerto Rico as of June 30, 2002 (see Table IV.7).

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Metropolitan Area										
Tourist Hotels	4,697	4,680	5,205	5,102	5,008	5,869	4,713	5,375	5,436	5,414
Commercial Hotels	282	282	282	312	326	326	326	326	330	330
Guest Houses	254	262	272	257	238	238	243	243	218	256
Condo Hotels	319	319	319	273	273	273	325	325	325	325
Apartment Villas							7	7	7	7
Total	5,552	5,543	6,078	5,944	5,845	6,706	5,614	6,276	6,316	6,332
Non-Metropolitan Area										
Tourist Hotels	2,065	2,973	3,139	3,144	3,738	3,842	3,798	3,898	4,040	4,222
Commercial Hotels	197	197	197	217	217	217	173	188	167	191
Guest Houses	86	95	104	114	140	129	152	164	232	249
Condo Hotels						15	194	224	240	352
Apartment Villas	25	27	27	27	69	33	33	41	135	101
Time Sharing							180	180	260	260
Paradores	656	684	706	816	860	906	958	957	963	1,061
Total	3,029	3,976	4,173	4,318	5,024	5,142	5,488	5,652	6,037	6,436
Grand Total	8,581	9,519	10,251	10,262	10,869	11,848	11,102	11,928	12,353	12,768
Increase(Decrease) In Total Inventory from Previous Year		938	732	11	607	979	(746)	826	425	415

Table IV.7
Hotel Room Inventory, Puerto Rico, 1993–2002

Notes:
1) As of June 30 each year
2) Includes establishments endorsed by the Puerto Rico Tourism Company only.

The inventory of hotel rooms was split about evenly between metropolitan area hotels and non-metropolitan area hotels[4]. The island-wide inventory of hotel rooms has been growing steadily during the past ten years, experiencing a compound annual growth rate of 4.1 percent during the 1993–2002 period, which equates to an average addition of 465 rooms to the total inventory per year.

Consistent with Puerto Rico's dependence on visitors from the United States, the boom years of the United States economy provoked increased levels of occupancy. Specifically, during the 1993 to 2002 period, the average annual occupancy rate ranged from 63 percent to 72 percent. These levels are 5 to 10% over the occupancy levels achieved by the tourism industry on the mainland. The events of September 11,2001 had a devastating effect on the worldwide tourism industry, and Puerto Rico was not spared. Nonetheless, by the beginning of 2003 Puerto Rico had been able to recover its occupancy rates to year 2000 levels.

Despite the United States' lagging economy, the last two years have been particularly strong in Puerto Rico. Specifically, in a world-wide study conducted by Deloitte for 2003, Puerto Rico ranked number 4 in occupancy in comparison to over 300 other world destinations. This is a marked improvement to prior rankings which had Puerto Rico ranked 52nd and 51st in the years 2001 and 2002, respectively.

The year 2004 has been a banner year for the Puerto Rico tourism industry. Occupancy levels have reached an average of 69% island-wide, an increase of 4 percentage points over year 2003 and 7 percentage points over 2002, and total visitors and visitors' expenditures increased 1% and 7.6%, respectively, reaching over 4.4 million visitors and over $2.6 billion in expenditures, both record numbers. These results are encouraging when you consider that total available rooms for Puerto Rico have increased over 3% from 2003. Project development pipeline has over 65 hotel projects in various stages of planning, development, and construction. During 2004, Puerto Rico will increase the hotel room inventory by about 10% or about 1,400 new hotel rooms, historically the highest gross increase in new room inventory for Puerto Rico.

The Ceiba/Naguabo Region is known for its access to activities and amenities such as El Yunque, the sister islands of Vieques and Culebra, and water sport activities and golf, and is anticipated to experience increasing demand in the lodging market. Such demand could be captured by a potential lodging development at Roosevelt Roads, which could capitalize on the beauty of the site, its proximity to Vieques, and Culebra, and complementary land uses (such as a marina and a golf course) that could be accommodated nearby.

Several high-end hotels are located nearby: Wyndham El Conquistador and its Las Casitas Village; Westin Rio Mar; and Paradisus Sol Melia. Under construction or planned properties include: Intercontinental Cayo Largo Resort; another phase of Las Casitas; Fairmont Resort; Mandarin Oriental; Four Seasons and J.W. Marriott. Because the market will need time to absorb this new capacity and reach stabilized occupancy, it is expected that resort hotels will be a longer-term opportunity at Roosevelt Roads. But given its amenities (and if further attractions are created, e.g., golf, expanded marina), Roosevelt Roads could be a very strong competitor in the high-end market.

Local community residents have also pointed to the potential for more moderately priced lodging, perhaps reusing former military housing facilities, and/or the existing Navy Lodge. Given Puerto Rico's overall substantial population and frequent visits by friends and family from the continental U.S., there may be ample

4. Metropolitan area comprises San Juan's urban areas as classified by the Puerto Rico Planning Board, including the municipalities of San Juan, Bayamon, Guaynabo, Catano, Trujillo Alto, and Carolina. Non-metropolitan area includes urban and rural areas other than the San Juan Metropolitan Area.

opportunity to support moderate priced lodging in the nearer term. The Puerto Rico Tourism Company reports that during the 10-year period ending 2002, total room inventory in paradores nearly doubled, climbing from 656 rooms in 1993 to 1,061 rooms in 2002. These moderately priced lodging facilities accounted for about 16 percent of total rooms in non-metropolitan Puerto Rico as of 2002, and experienced an average occupancy rate of 46 percent.

Conference Center

Especially when considered in conjunction with the science park, Roosevelt Roads should be able to meet the criteria for success for an executive conference center:

- Within an hour of a major airport (i.e., San Juan)
- Near a major metropolitan area
- Good year-round weather
- Nearby attractions

The experience of the major hotels in the area indicate a large proportion of their bookings (as much as 50%) are for business groups, indicating that a conference center that focused on this market exclusively would be well positioned for those meetings which are not intended to include social or spouse/family involvement.

Retail

The majority of shopping centers in Puerto Rico are on major thoroughfares or expressways with good visibility and direct access. Developers and retailers insist on these characteristics for community or larger shopping centers, like those found in the San Juan region and at Plaza Fajardo in Fajardo. For the most part, NSRR does not satisfy the criteria for this use because of its location off the highway. Similarly, big box retailers are not likely to be attracted to existing buildings at Roosevelt Roads, since they too demand highway visibility and good access.

Notwithstanding these conditions, there is one parcel in the airport area, at the southern end of the runway and bordering the highway that might someday prove appropriate for retail development. However, judgment regarding the compatibility of this use must be deferred pending the outcome of the airport master planning effort.

The site does have characteristics that could support other types of retail development. There will be potential for a grocery-anchored neighborhood shopping center supported by local residents currently living in the area and future residents at Roosevelt Roads, once there are a significant number of occupied homes on the site. Additionally, specialty retail, adjacent to the water, could also be supportable if it is developed with the appropriate mix of adjacent uses (e.g., residential, marina, lodging, and tourist-oriented facilities).

Ecotourism

Roosevelt Roads has several attributes that support the potential for ecotourism on the site, including existing mangroves that may be explored by hiking and/or kayaking excursions, canoeing and other forms of boating that may be launched from the existing marina on the site, and ecotourism-oriented visits that could be organized to the islands off the northeast coast of Puerto Rico, such as Vieques and Culebra. Given its location, proximity to other ecotourism experiences at El Yunque and its coastal setting, Roosevelt Roads could be well positioned to cater to this growing tourism sector. Consider:

- A 1990s survey by Bruskin Goldring found that 48% of vacationers planned to participate in nature-based activities during their trip.

- A recent survey by Recreation Roundtable found that nearly 60% of Americans participate in outdoor recreation at least monthly.

Note that the designation, preservation and utilization of the environmentally sensitive areas on the Base would reinforce the market appeal for both the residential and science park reuses.

Transshipment Port

A container terminal was considered during the initial review of potential uses for Naval Station Roosevelt Roads. The presence of Ensenada Honda, a large naturally protected harbor with a 40-foot deep navigation channel, suggested that such a use should be evaluated. The LRA's approach was to first assess the Base's suitability for a container terminal before attempting to conduct any detailed demand analysis. Factors considered included: the site's physical conditions and the ability of the harbor front area to physically accommodate a container terminal; environmental issues; road access; cost; and compatibility with other uses under consideration for NSRR.

The LRA determined that a transshipment port is not feasible at NSRR. Support for that conclusion is summarized below. A more detailed evaluation of the concept from an engineering and cost perspective appears in Appendix B.

- There is not sufficient land area to support a facility that could accommodate Post-Panamax vessels. A backland area of approximately 172 acres would be needed for container storage. However, the existing land area north of the existing bulkhead is only 26 acres. Creating a backland area of sufficient size would require either extensive excavation of the existing hillside, or a major fill operation to reclaim a portion of the harbor. Reclamation would have a significant environmental impact, as it would cover existing bay bottom.
- The existing channel (40 feet deep and 1,000 feet wide) would have to be dredged to a depth of 50 feet, both within the harbor and over a length of approximately 12 miles outside the harbor in that location where water is shallower than 50 feet.
- Developing a transshipment port by excavating the hillside would require dredging of approximately 20.4 million cubic meters of material (this does not include side slopes and pay overdepth which could add up to 20% additional material), excavation of approximately 5.8 million cubic meters of material from land and fill of approximately 243,000 cubic meters of material. Assuming site material is reusable as fill, this would result in total off site disposal of approximately 26 million cubic meters of material.
- Alternatively, developing a transshipment port by filling a portion of the harbor would require dredging of approximately 17.4 million cubic meters of material (this does not include side slopes and pay overdepth which could add up to 20% additional material), excavation of approximately 580,000 cubic meters of material from land and fill at wharf face of approximately 10 million cubic meters of material. Assuming site material is reusable as fill, this would result in total off site disposal of approximately 8.2 million cubic meters of material.
- The cost associated with these alternatives for land development, dredging, paving, utilities and terminal equipment is estimated at $850 million to $1.1 billion. These costs do not include soil stabilization, building demolition and other considerable factors that could increase the total substantially.
- Dredging of the channel would disturb coral beds in the harbor and along the 12-mile channel, raising further environmental impact concerns.
- There are existing roads on the Base providing access

to the harbor. An analysis of potential port generated truck traffic would need to be undertaken to determine impacts on adjacent properties. At a minimum, it is likely that a dedicated road would be required within the port area to separate port traffic from non-port traffic traveling to and from adjacent zones on the Base (i.e. Zones 6 and 7). The impact of port-related truck traffic on the community of Ceiba would also be an issue.

- Finally, a transshipment port would be incompatible with many of the other uses considered by the LRA and found to be desirable. Such uses include residential neighborhoods, a science park oriented toward research and development activity, a marina with related recreational and commercial uses, and a conference center. Close proximity to a major transshipment port would be detrimental to the viability of all of these uses. A port would also be incompatible with the uses proposed by the citizens of Ceiba and Naguabo.

For all of these reasons, the LRA concluded that a transshipment port is unsupportable as a reuse at NSRR.

Office

Office space in Puerto Rico is concentrated almost exclusively in the San Juan Region. Office development in non-San Juan metropolitan area municipalities is limited to small office serving local communities and there is very little office development in the eastern region. Unlike on the U.S. mainland, there is no precedent in Puerto Rico for back-office functions located in outlying suburban areas like Fajardo, Ceiba and other east coast municipalities.

In evaluating development potential at Roosevelt Roads, the Consulting Team looked at the criteria used by companies considering back-office locations to assess how Roosevelt Roads compares. Key criteria include:

- Good quality, appropriately educated labor force within a reasonable commute (approx. 45 minutes)
- Competitive wages vs. headquarters locations
- Lower occupancy costs vs. headquarters locations
- Good transportation access
- Desirable site amenities (e.g. free parking, attractive office park campuses, nearby restaurants and services)

While currently not supportable, consideration should be given to marketing the site to back-office functions of large Puerto Rico companies including banks and financial services companies. Government offices would also be a potentially attractive submarket to target.

In addition to assessing opportunities for uses described above, the LRA determined it was important to understand the community's needs for educational and hospital facilities. The Base has two schools—one elementary and one middle/high school—and one hospital. The schools are described as shown below:

	ELEMENTARY	MIDDLE/HIGH
CLASSROOMS	**58**	**46**
Permanent	*41*	*38*
Temporary	*17*	*8*
SIZE	**85,280 SF**	**52,255 SF**
CAPACITY	**900 Students**	**600 Students**

The community's needs as expressed by the Department of Education and the Puerto Rico Health Department are summarized on the following page.

Schools

The Department of Education is interested in obtaining the use of the school facilities on the Base. It provided the following information in support of its request:

- The Ceiba school district has 1,179 elementary students in three schools, 573 junior high students in one school, 484 high school students in a single school, and 62 special education students for a total of 2,298 students. It reports that there is insufficient space at the junior high level and that the high school does not currently offer vocational courses, which it would like to do.
- The Naguabo school district has 2,464 elementary students in 10 schools, 1,044 junior high students in four schools, and 717 high school students on one campus. Like Ceiba, Naguabo reports that it needs more facilities at the junior high level and its high school does not offer vocational courses and wishes to do so.

Medical Facilities

The Puerto Rico Health Department reports that the Eastern Region of the island is lacking in certain types of hospital and medical facilities. In particular, Ceiba has no medical facilities such as emergency rooms, hospitals, rest homes, home care providers, diagnostic and treatment centers, rehabilitation centers, ambulatory surgery centers, laboratories or blood banks. There is also no hospital in Naguabo and only one diagnostic/treatment center. The existing Base hospital is a 3-story, 130,000 square foot facility with a capacity of 36 beds.

V. Land Use

This section of the Roosevelt Roads Reuse Plan presents the recommended lands uses for the Base, and the guiding policies for those uses. This chapter of the report presents a series of diagrams and images that summarize the site, its nine distinctive zones relative to the existing development at NSRR, potential areas for new development and those areas of the site that are to remain undeveloped for reasons that relate to conservation, or other physical or environmental considerations. Each zone is discussed as an illustrated comparative between what exists today as documented in the Zone Summaries, and proposed land uses for each zone. The comparative Land Use Summaries are intended to facilitate an understanding of the range of uses that the LRA intends to encourage and to which the eventual underlying zoning of the Base will refer.

This chapter also contains an illustration of the development phasing for the project with a series of illustrative tables and diagrams depicting development over a thirty-plus year period

Guiding Policies

The Reuse Plan for Roosevelt Roads was developed in concert with the Local Redevelopment Authority after the Consulting Team's investigation of the site's regional context, existing natural physical conditions and facilities, and market analysis, documented in an earlier report titled Roosevelt Roads Reuse Plan: *Site, Context and Market Conditions*, dated April 2004, and in subsequent reports to the LRA (see Appendix A). At the conclusion of the broad assessment, a series of opportunities and constraints were identified. Together with an understanding of the site's carrying capacity, and market absorption insights, the team was tasked with investigating a broad range of land uses responsive to key guiding policies. These policies emerged from community values expressed at public hearings with the LRA, within the LRA and its broad-based constituency, within the Consulting Team, and from entities that submitted Notices of Interest for Public Benefit Conveyances, which are discussed in Chapter VIII of this report.

Although the development of a Reuse Plan for Roosevelt Roads has been undertaken at an accelerated pace when compared to other base closures, the project shares many of the same concerns as other municipalities or states where military base closures have occurred. And in establishing a method for coming to terms with how the Base will be reused post-closure, a range of precedents, their successes and failures, have been investigated. Perhaps of most value is to understand that a community undergoing a military base closure has an opportunity to "vision" a new and compelling future that reflects the aspirations of that community, market forces and the site's natural

"fit" with desired land uses. The momentum to plan for the future of the Base, with an emphasis on triggering growth in the local economy, is driven by the swift recognition that the region requires significant resuscitation to counteract the effects of the Base closure. That recognition guided land use planning for the reuse of the Base.

Three overarching principles have emerged in the determination of future land uses at Roosevelt Roads:

1. **Reuse of Naval Station Roosevelt Roads must support the economic well-being of Puerto Rico:** Job creation and economic expansion is essential to the coastal region in an area existing in the shadow of the Base for the last 60 years. The military base was a significant and essential component with respect to growth and development of the local community, often the key economic driver and employer and therefore integral to the well-being and economic life of the community.

   Jobs requiring investment of intellectual capital, not just manufacturing, will be one of the most important goals of the reuse effort for Roosevelt Roads. Attracting this type of investment at the Base is contingent upon adopting the incentives, underlying zoning and recognition that this must be symbiotic with key assets of the Base: large waterfront and water view site with direct access to major transportation facilities: port, airport and regional road network; reusable infrastructure and a number of potentially reusable facilities; and a significant amount of developable land.

2. **Existing needs of the communities adjacent to the Base will be considered in the Reuse Plan:** The communities of Ceiba and Naguabo will share new access to the waterfront and water-oriented recreational opportunities, economic activity and cultural development that will energize the region. Many within the community have strong views of how the Base should be reused. The Commonwealth has included leaders of these communities in the visioning effort, and accommodation of the aspirations articulated from within the community is a key goal for the Reuse Plan.

   The Land Use Plan for the reuse of the Base will underscore the site's regional and island context, will incorporate the substantial information and insights gained through the investigation of opportunities and constraints, and what these tell us in with respect to the types and placement of uses within the context of the site's natural features and ecological sensitivity. Creating long-term benefit for the Commonwealth will be dependent not only on what gets built at the Base, but of equal importance, on the quality of what is implemented at Roosevelt Roads and how well it is timed to be absorbed by, and expand, the market.

   In parallel with beneficial long term investment, the site's ecology, its spectacular views towards the mountains, and towards the islands of Vieques and Culebra make it an ideal location for the kind of ecological tourism that requires that the preserve areas be protected and managed by those who will work to restore, protect and enhance it within the context of the regional effort. Its thousands of acres of mangrove forests and sea grass beds, virtually undisturbed during the Navy's tenure, make this an exciting opportunity for regional conservation and the maintenance of a continuum of habitats.

3 **Reuse of the Base will emphasize water-oriented uses:** Puerto Rico is the easternmost island of the Greater Antilles, centrally located among the eastern Caribbean archipelago.

   The site's location at the mid-point of the eastern coast of Puerto Rico underscores its potential as a marine-oriented transportation linkage to the islands of Vieques and Culebra as well as to the US Virgin Islands. Of equal importance is the site's unique land

configuration. Twin peninsulas frame a well-protected Ensenada Honda. An extensive yet limited-access coastline and the extent of harborfront bulkheading create a most unique opportunity to orient a broad range of water-oriented uses as a priority reuse for the Base that will co-exit with the desire to ecologically link this site to other protected environments on the east coast of Puerto Rico and its islands. The waterfront at Roosevelt Roads will create an important regional development opportunity as one of the largest waterfront development sites under single ownership in Puerto Rico.

Land Uses Included in the Reuse Plan

In concert with the Guiding Policies, the findings of the Site Assessment, and the Market Analysis, land uses that have been incorporated into the Roosevelt Roads Reuse Plan can be summarized within six broad categories that include:

- Economic Development;
- Public and Institutional Use;
- Residential;
- Open Space and Recreation;
- Conservation; and
- Tourism

These and the aggressive schedule for development of the Roosevelt Roads Reuse Plan transcend the mere "wish list" that is a typical element of precedent base closure projects and serve to focus on what can be expected given community needs and resources, the scale of the site, the fragile economic environment, projected market absorption, and significant infrastructure costs. Thus, the uses in this Reuse Plan are prioritized accordingly.

Later in this section, illustrations highlight where these uses will occur together with an initial phasing projection.

Economic Development (Employment Generating) Uses: One of the LRA's key objectives for reuse of the Base is to emphasize economic development and consistent with this, prioritization of facilities at the Base that are deemed to have the potential to accelerate job creation. These uses will tend toward expansion of industrial and commercial development, creation of a science park with research and development facilities, and water-oriented commercial and recreational activity. At full build-out over 30-plus years, the projection of new jobs created would range from 18,200 to 19,700. Jobs requiring investment of intellectual capital, not just manufacturing, will be one of the most important goals of the reuse effort for Roosevelt Roads. Attracting this type of investment at the Base is contingent upon adopting the incentives, underlying zoning and recognition that this must be symbiotic with key assets of the Base: large waterfront and water view site with direct access to major regional transportation.

Public, Educational and Institutional Uses: Reuse of the Base incorporates a number of public uses that focus on reusing specific facilities at the Base identified in the April report as suitable for use by Commonwealth public agencies. Examples include the Commonwealth's Public Utilities, Ports Authority, and the Department of Education as well as health care providers, universities and other academic institutions and the local communities, with projected advantageously limited capital improvement costs.

- *Reuse of the existing airport and operations buildings as a passenger and cargo facility:* The runway at Roosevelt Roads exceeds the length of runway required for modern aviation and its location at the foothills of El Yunque and in proximity to the islands of Vieques and Culebra make this an attractive loca-

tion for passenger operations. Further, reuse of the airport will be compatible with development of adjacent land for industrial development in this portion of Puerto Rico.

- *Reuse of the newly re-bulkheaded waterfront at the northeastern portion of Ensenada Honda as a new passenger and light cargo ferry terminal to Vieques, Culebra and the US Virgin Islands:* At present, the islands of Vieques and Culebra are served by poor and infrequent ferry service to and from Fajardo. Somewhat unreliable, the ferry operates slow and outmoded equipment that crosses the 12 mile ride between Fajardo and Vieques in one and a quarter hours and in each direction, far longer than the trip requires. The ferry terminal at Fajardo is unappealing, in deteriorating condition, and poorly maintained. The Fajardo pier is in disrepair and has inadequate traffic handling capability. Travelers upon arrival are confronted by chaotic conditions. The ferry is the primary mode of transportation for the local island populations to and from mainland Puerto Rico. Currently, tourists are advised to fly to the islands from the San Juan airport. Establishing ferry service at the Roosevelt Roads site would cut the distance to Vieques in half to 6 miles. With modern passenger and cargo ferry equipment, and the ample parking availability at Roosevelt Roads, the site could offer a vastly improved base of operations for this essential service.

  With thousands of square feet of reusable refrigerated storage space immediately accessible to the waterfront, the potential to develop a modern passenger ferry terminal and cargo terminal adjacent to newly bulkheaded waterfront will be of tremendous importance to the islands. Compatible with this, water-oriented commercial development along the waterfront, marinas, marine brokers, yacht charter, boat repair, refueling, sail makers, boat builders etc. can be accommodated at the Base.

- *Reuse of the Base hospital as a local hospital*: The approximately 131,000 square foot hospital at the Base has recently undergone significant renovation. It has the kind of facilities that are not duplicated in the local communities and will be of great value in bringing better medial care to this part of Puerto Rico.

- *Reuse of the elementary school as a public middle/high school:* The school district and the community have documented the need for additional classroom facilities at the middle and high school levels. A school at the Base would be suitable for reuse for this purpose. The elementary school at NSRR will require modifications to accommodate a middle and high school curriculum as well as the addition of playing fields.

- *Reuse of the middle/high school campus:* There is a keen desire to have an academically outstanding new bi-lingual private school at the Base. This is consistent with the expectation that the eastern region of Puerto Rico will continue to expand economically and experience substantial growth over the full build out of NSRR. The LRA anticipates the need for a bilingual school to accommodate the demand created by the science park, and the university.

- *University Campus:* A number of universities have expressed their desire to expand water-oriented research and technical programs, for which Roosevelt Roads would be very well-suited. The Commonwealth of Puerto Rico sees the alliance between university, science park research and technology development as critical to the expansion of Puerto Rico's economy. A university at the site would serve many purposes, particularly those that contribute to the development of a highly skilled and educated labor force for high technology, pharmaceutical and research enterprises. At Roosevelt Roads, there are existing academic, residential, and support buildings and facilities quite suitable for this use. A

range of marine-oriented programs would capitalize on the availability of waterfront resources to support this educational effort.

Residential Uses: A broad range of sites appropriate for residential development have been identified at Roosevelt Roads. These occur in the southwest portion of the site, called "Bundy", in the "Downtown" central section of the site, and on the southern peninsula, "Cabo del Sur". The site is large enough to offer a broad range of potential residential opportunities, with a range of appropriate amenities.

- The opportunity to link compatible residential development to the development of the science park and the University is critical to the establishment of sustainable neighborhoods at Roosevelt Roads.
- The University Campus: The site can support residential students related to the reuse of the existing residential campus facilities near the airport. These are closely allied with and interconnected to the science/R&D program at the science park and to the water-orientation of the site; as well as, perhaps, the development of a water-view "faculty row".
- A mix of densities ranging from 1 unit per acre to 8 to 10 units per acre would be appropriate and could be supported by the exiting infrastructure at the Base.

Open Space and Recreation: Numerous recreational opportunities are going to be incorporated into the future reuse of the Base, supporting residential and tourism objectives. Among these are:

- Expansion of the existing marina and development of adjacent water-oriented and water view recreational uses that could include tennis, miniature golf, kayak rental, water-skiing and parasailing, small boat rentals, etc., with associated retail.
- Expansion of the existing 9-hole golf course to an 18-hole public course.
- Development of a regionally interconnected ecotourism venue focused on the extensive mangrove, coral reef, and sea grass beds at the site, and the threatened and endangered species that inhabit them.
- Develop new and expanded marina opportunities in an ecologically appropriate manner.

Conservation: For the past six decades, under the Navy's stewardship, thousands of acres of coastal mangrove forests and wetlands remain undeveloped. As the importance of the eastern region of Puerto Rico's biodiversity emerges, support for continued conservation of the site's natural areas has grown. It is hoped that at Roosevelt Roads, these conservation areas will become allied to and linked with other opportunities for conservation stewardship and educational initiatives within the region, resulting in a strong regionally interconnected venue focused on precious sustainable natural resources.

Tourism:

- The Commonwealth recognizes the need for the development of moderate tourism in Puerto Rico and this use can be very well accommodated in a number of locations at the Base, capitalizing on beautiful views at the higher elevations, and accessibility to water-oriented and ecotourism activities.
- There is tremendous growth in planned tourism expansion all along the eastern coast as well as the expansion of tourism in Vieques and Culebra. In the short to intermediate term, these planned projects will likely fulfill the demand for resort development at the higher end of the market, but longer term, this use could become a potential opportunity at Roosevelt Roads as well.
- Ecotourism: Roosevelt Roads is an ecologically significant site. Preservation of nearly 50% of its land area and an even greater percentage of its coastline will achieve a high degree of flora and fauna habitat sus-

tainability. This opportunity, together with other important efforts being supported regionally by public and private resources—the Conservation Trust of Puerto Rico's Las Cabezas de San Juan and its restored lighthouse, "El Faro", which can be seen along the coastline to the north of Roosevelt Roads, as well as the conservation efforts on Vieques and Culebra—should be harnessed at the Base. From seasonal habitat for migratory birds to primal habitat for a diminishing manatee population, proximity to well-established ecotourism venues will help to preserve the natural beauty of the site and its unique coastline.

Land Uses and Development Program

Proposed land uses are presented in the remaining sections of this chapter. For planning purposes, the Base has been divided into nine sub-areas, or zones (see Figure V.1). Table V.1 sets forth on a zone-by-zone basis, the land uses, acreage, and development program (e.g. number of residential dwelling units, hotel rooms, building square footage, etc.) for the site. It also provides preliminary estimates of total jobs (18,200-19,700) and total residents (6,257) upon full 30-plus year build out.

Table V.2 presents a Zone Matrix which depicts in detail how the acreage available for reuse was calculated. Following Table V.2, a series of drawings and photographic images illustrate each zone. Note that there are two drawings for each zone. The first sets forth existing conditions and a breakdown of acreage by categories including existing developed land, slopes in excess of 15% (and, therefore, not readily or cost-effectively developable), vacant land available for development, operationally significant buildings, and areas designated for transfer by the Navy to other Federal agencies. The second drawing shows the proposed land uses and where they would be located within the zone.

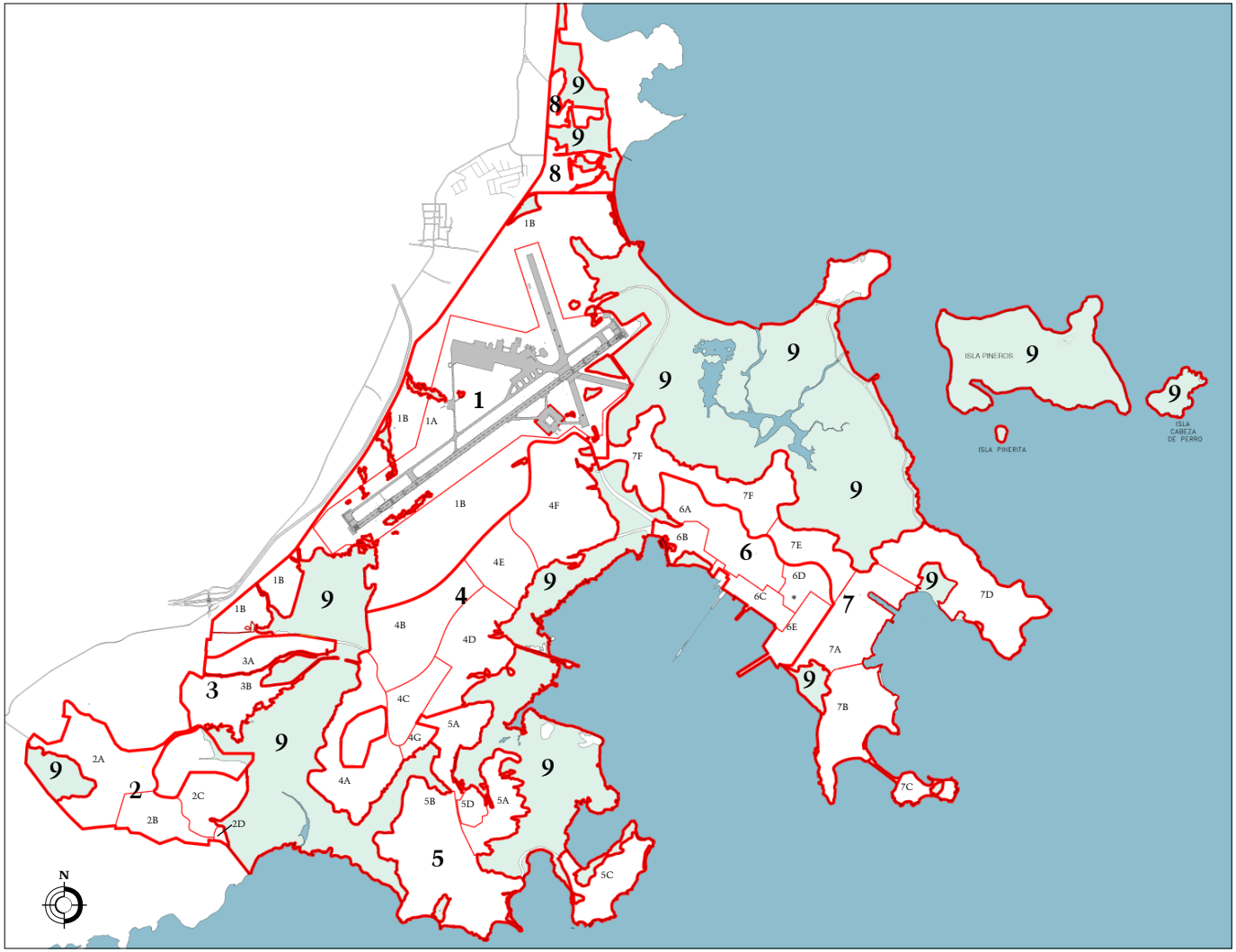


Figure V. 1
Location of Zones 1–9

Table V.1 Land Uses and Development Program by Zone

A	B	C	D	E	F	G	H	I	J
			Acreage			Program			
Zone	Sub-Zone	Land Use	Vacant Developable Land (1)	Existing Development Available for Redevelopment (2)	Total Available For Reuse (3)	Program Description	Gross Acres	Projected Jobs at Full Buildout	Projected Residents at Full Buildout
1 Airport	1A	Airport	117.6	655.7	773.3	Commercial & general aviation; cargo	773.3	TBD	0
	1B	Industrial	768.3	93.0	861.3	6.9 million SF industrial and manufacturing (4)	528.0	6,900	NA
	Subtotal		**885.9**	**748.7**	**1,634.6**				
2 Bundy	2A	Government/Institutional; Residential	48.8	56.8	105.6	50,000-120,000 SF learning center; 147-294 dwelling units	105.6	380	663
	2B	Moderate lodging; residential	11.4	12.6	24.0	200 guest rooms; 26-52 dwelling units	24.0	100	117
	2C	Moderate lodging; residential	18.6	14.6	33.2	200 guest rooms; 33-66 dwelling units	33.0	100	150
	2D	Sewage treatment plant	0.8	NA	0.8	no change in use	0.8	TBD	0
	Subtotal		**79.6**	**84.0**	**163.6**				
3 Golf Course	3A	9-Hole Golf Course	6.3	65.4	71.7	3A and 3B: 18-Hole Municipal Golf Course	166.8	15	NA
	3B	Additional 9-Holes	81.6	13.5	95.1				
	Subtotal		**87.9**	**78.9**	**166.8**				
4 Downtown	4A	Residential	42.7	0.7	43.4	100 dwelling units	43.4	TBD	300
	4B	Mixed-Use	25.1	6.7	31.8	150,000 SF commercial	15.0	600	NA
	4C	Residential	21.4	24.6	46.0	184 dwelling units	46.0	TBD	552
	4D	Mixed-Use	56.3	62.8	119.1	650,000 SF back office, call center, professional office, retail	119.1	2,600	NA
	4E	Residential	22.4	14.4	36.8	Possible reuse of recently-built apartments (150 units); new construction of 80 DU's	36.8	TBD	575
	4F	University Campus	88.2	77.4	165.6	900,000 SF classrooms, research labs, dormitories and other university support facilities	165.6	TBD	900
	4G	Public School	2.7	14.1	16.8	Reuse of existing elementary school as middle/high school	16.8	TBD	NA
	Subtotal		**258.8**	**200.7**	**459.5**				
5 Residential	5A	Master Planned Residential	120.0	36.0	156.0	5A, 5B, 5C: 1,200 dwelling units	156.0	TBD	3,000
	5B	Master Planned Residential	36.8	177.0	213.8	included in 5A	213.8	TBD	included in 5A
	5C	Master Planned Residential	23.0	70.0	93.0	included in 5A	93.0	TBD	included in 5A
	5D	Private School	0.1	21.9	22.0	Reuse of existing middle/high school as private bi-lingual school	22.0	50	NA
	Subtotal		**179.9**	**304.9**	**484.8**				

Table V.1 Land Uses and Development Program by Zone *(continued from previous page)*

A	B	C	D	E	F	G	H	I	J
			Acreage			Program			
Zone	Sub-Zone	Land Use	Vacant Developable Land (1)	Existing Development Available for Redevelopment (2)	Total Available For Reuse (3)	Program Description	Gross Acres	Projected Jobs at Full Buildout	Projected Residents at Full Buildout
6 Port	6A	Industrial	33.2	40.7	73.9	Fuel tank farm	73.9	TBD	NA
	6B	Expanded recreational boat marina and water-oriented commercial (retail, restaurant, tourism)	3.9	36.3	40.2	250 slip marina; 10,000 SF water-oriented commercial	40.2	40	NA
	6C	Water-oriented commercial (retail, restaurant, tourism)	3.8	39.9	43.7	50,000 SF water-oriented commercial (phased)	43.7	100	NA
	6D	Hospital	4.7	22.5	27.2	Reuse of existing hospital	27.2	TBD	NA
	6E	Passenger/cargo ferry terminal and related uses	0.0	60.3	60.3	± 300,000 SF commercial and warehouse space; ferry terminal	60.3	400	NA
	Subtotal		**45.6**	**199.7**	**245.3**				
7 Science Park	7A	Science Park	53.5	105.0	158.5	75 acres R&D = 800K- 1.1M SF	75.0	2,500-4,000	NA
	7B	Science Park, Conference Center	76.1	66.2	142.3	up to 250 room conference center with open space, passive park or golf course	142.3	250	NA
	7C	Science Park, Conference Center	13.3	7.0	20.3	portion of conference center (sleeping and meeting rooms)	20.3	included in 7B	NA
	7D	Science Park, Conference Center	66.3	4.5	70.8	portion of conference center (sleeping and meeting rooms)	70.8	included in 7B	NA
	7E	Science Park, Conference Center	40.0	8.5	48.5	portion of conference center (sleeping and meeting rooms)	48.5	included in 7B	NA
	7F	Gateway to Science Park	158.1	14.6	172.7	1,250,000 SF R&D	115.0	4,200	NA
	Subtotal		**407.3**	**205.8**	**613.1**				
8 North Gate		Open space reserve	100.4	0.0	100.4	Gateway to base; open space	100.4	0	0
	Subtotal		**100.4**	**0.0**	**100.4**		**100.4**	**0**	**0**
SUBTOTAL WITHOUT CONSERVATION AREAS			**2,045.4**	**1,822.7**	**3,868.1**				
9 Conservation		Conservation Areas	0.0	0.0	0.0	Conservation	3,386.9	TBD	TBD
TOTAL ALL ZONES			**2,045.4**	**1,822.7**	**3,868.1**		**Low: High:**	**18,235 19,735**	**6,257**

Notes:
(1) Vacant Developable Land = total acreage less: wetlands, mangroves, existing development, and undeveloped land with gradient greater than 15%
(2) Existing Development Available for Redevelopment = Existing Developed Acres less Operationally Significant Sites
(3) Total Available For Reuse = Column D + Column E
(4) 861.3 acres less 125.3 acres at the west end of the Runway 7-25 and less 208.3 acres east of Runway 18 = approx. 528 acres
NA: Not Applicable
TBD: To Be Determined

Sources: Cooper, Robertson & Partners; Moffatt & Nichol; CB Richard Ellis Consulting
Revised 08Aug04

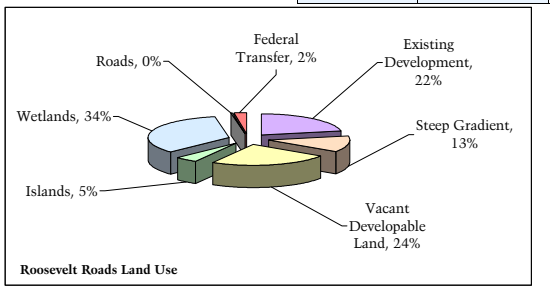
Table V.2 Zone Matrix

	Total Acreage		Existing Development			Undeveloped Land	Constraint Deduction	Resulting Development Areas			
	A	B	C	D	E	F	G	H	I	J	
Formula / Source		*CAD Area*	*CAD Area*	*CAD Area*	*E=C-D*	*F=B-E*	*CAD Area*	*H=F-G*	*I=H+E*	CAD Area	
	Sub-Zone	Zone Acreage exclusive of Wetlands (zones 1-8)	Existing Development	Operationally Significant sites	Existing Development available for re-development	Undeveloped Land (acres)	Gradient Constraint on Undeveloped Land (acres)	Total Undeveloped Land (acres) net Gradient Constraints	Total Undeveloped Land net Gadient Constraint plus Existing Development available for Reuse	Total Acreage Transfer to other Federal Agencies (adjacent this zone)	Federal Agency Areas
		Zones exclusive of Wetlands (as indicated on Zone Drawings in red outline)	*All existing developed areas including buildings, sports fields, paved areas, airfield, storage tanks, roads (as indicated on Zone drawings in purple)*	*Included in "Existing Development" - (as indicated on Zone drawings in green outline)*	*All developed areas exclusive of "Operationally Significant" sites ie. Land available for re-development*	*All undeveloped land (Zone Area - Existing Development)*	*All undeveloped land with gradient greater than 15% (as indicated on Zone Drawings)*	*All Developable land (subject to further limitations by floodplain & other "soft" constraints)*	*All Developable AND Re-developable land (subject to floodplain & other "soft" constraints)*	*As requested during the BRAC process*	
ZONE 1	1A	789.7	665.7	10.0	655.7	123.9	6.3	117.6	773.3		
	1B	928.3	93.0	0.0	93.0	835.3	67.0	768.3	861.4		
	Subtotals	1,718.0	758.8	10.0	748.8	959.2	73.3	885.9	1,634.7	10.8	* *US Customs Building 202 & apron*
ZONE 2	2A	181.7	56.8	0.0	56.8	124.9	76.1	48.8	105.5		
	2B	76.0	12.6	0.0	12.6	63.5	52.0	11.4	24.0		
	2C	78.1	14.6	0.0	14.6	63.6	45.0	18.6	33.2		
	2D	4.6	3.5	4.6	0.0	0.0	0.3	0.8	0.8		
	Subtotals	340.4	87.5	4.6	84.0	251.9	173.4	79.6	163.5	90.0	* *US Army Reserve*
ZONE 3	3A	71.9	65.4	0.0	65.4	6.5	0.1	6.3	71.8		
	3B	115.0	13.5	0.0	13.5	101.5	19.8	81.6	95.1		
	Subtotals	186.9	78.9	0.0	78.9	107.9	19.9	88.0	166.9		
ZONE 4	4A	173.3	17.2	16.5	0.7	156.1	113.4	42.7	43.4		
	4B	174.5	6.7	0.0	6.7	167.8	142.7	25.1	31.8		
	4C	66.0	24.6	0.0	24.6	41.4	19.9	21.4	46.0		
	4D	157.0	62.8	0.0	62.8	94.2	37.9	56.3	119.1		
	4E	96.0	15.3	0.8	14.4	80.7	58.4	22.4	36.8		
	4F	232.2	78.5	1.0	77.4	153.7	65.5	88.2	165.7		
	4G	17.6	14.1	0.0	14.1	3.5	0.8	2.7	16.8		
	Subtotals	916.5	219.1	18.4	200.7	697.3	438.6	258.7	459.5	45.0	* *Homeland Security*
ZONE 5	5A	162.3	36.2	0.3	36.0	126.1	6.1	120.0	155.9		
	5B	302.2	180.1	3.1	177.0	122.1	85.3	36.8	213.8		
	5C	96.0	70.0	0.0	70.0	26.0	3.0	23.0	93.0		
	5D	22.1	21.9	0.0	21.9	0.2	0.1	0.1	22.0		
	Subtotals	582.6	308.2	3.4	304.8	274.4	94.5	179.9	484.7		

Table V.2 Zone Matrix *(continued from previous page)*

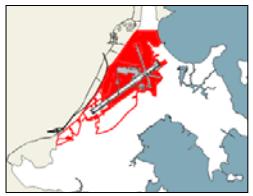
		Total Acreage		Existing Development			Undeveloped Land	Constraint Deduction	Resulting Development Areas			
	A	B	C	D	E	F	G	H	I	J		
Formula / Source		CAD Area	CAD Area	CAD Area	E=C-D	F=B-E	CAD Area	H=F-G	I=H+E	CAD Area		
	Sub-Zone	Zone Acreage exclusive of Wetlands (zones 1-8)	Existing Development	Operationally Significant sites	Existing Development available for re-development	Undeveloped Land (acres)	Gradient Constraint on Undeveloped Land (acres)	Total Undeveloped Land (acres) net Gradient Constraints	Total Undeveloped Land net Gradient Constraint plus Existing Development available for Reuse	Total Acreage Transfer to other Federal Agencies (adjacent this zone)	Federal Agency Areas	
		Zones exclusive of Wetlands (as indicated on Zone Drawings in red outline)	*All existing developed areas including buildings, sports fields, paved areas, airfield, storage tanks, roads (as indicated on Zone drawings in purple)*	*Included in "Existing Development" - (as indicated on Zone drawings in green outline)*	*All developed areas exclusive of "Operationally Significant" sites ie. Land available for re-development*	*All undeveloped land (Zone Area - Existing Development)*	*All undeveloped land with gradient greater than 15% (as indicated on Zone Drawings)*	*All Developable land (subject to further limitations by floodplain e) other "soft" constraints)*	*All Developable AND Re-developable land (subject to floodplain e) other "soft" constraints)*	*As requested during the BRAC process*		
ZONE 6	6A	145.5	78.5	37.8	40.7	67.0	33.8	33.2	73.9			
	6B	40.1	36.3	0.0	36.3	3.9	0.0	3.9	40.1			
	6C	48.2	39.9	0.0	39.9	8.4	4.6	3.8	43.7			
	6D	44.6	22.5	0.0	22.5	22.1	17.4	4.7	27.1			
	6E	60.4	60.3	0.0	60.3	0.1	0.1	0.0	60.3			
	Subtotals	338.9	237.4	37.8	199.7	101.4	55.9	45.5	245.2	4.2	* US Customs e) USAR	
ZONE 7	7A	160.0	105.0	0.0	105.0	55.0	1.5	53.5	158.5			
	7B	156.8	73.9	7.7	66.2	82.9	6.8	76.1	142.3			
	7C	29.8	7.0	0.0	7.0	22.8	9.5	13.3	20.3			
	7D	222.8	4.5	0.0	4.5	218.3	151.9	66.3	70.9			
	7E	78.0	8.5	0.0	8.5	69.5	29.4	40.0	48.6			
	7F	205.2	14.6	0.0	14.6	190.5	32.5	158.1	172.7			
	Subtotals	852.6	213.7	7.7	205.9	638.9	231.6	407.3	613.2			
ZONE 8	8	100.4	0.0	0.0	0.0	100.4	0.0	100.4	100.4			
	Subtotals	100.4	0.0	0.0	0.0	100.4	0.0	100.4	100.4			
ZONE 9	9	2,985.2	0.0	0.0	0.0	2,985.2	0.0	0.0	0.0			
	Subtotals	2,985.2	0.0	0.0	0.0	2,985.2	0.0	0.0	0.0			
										62.0	* US Customs at Punta Medio Mundo	
	TOTAL	8,021.4	1,903.6	81.8	1,822.9	3,131.5	1,087.2	2,045.4	3,868.3	212.0		
			EXISTING DEVELOPMENT					DEVELOPABLE LAND	DEVELOPABLE AND RE-DEVELOPABLE LAND			

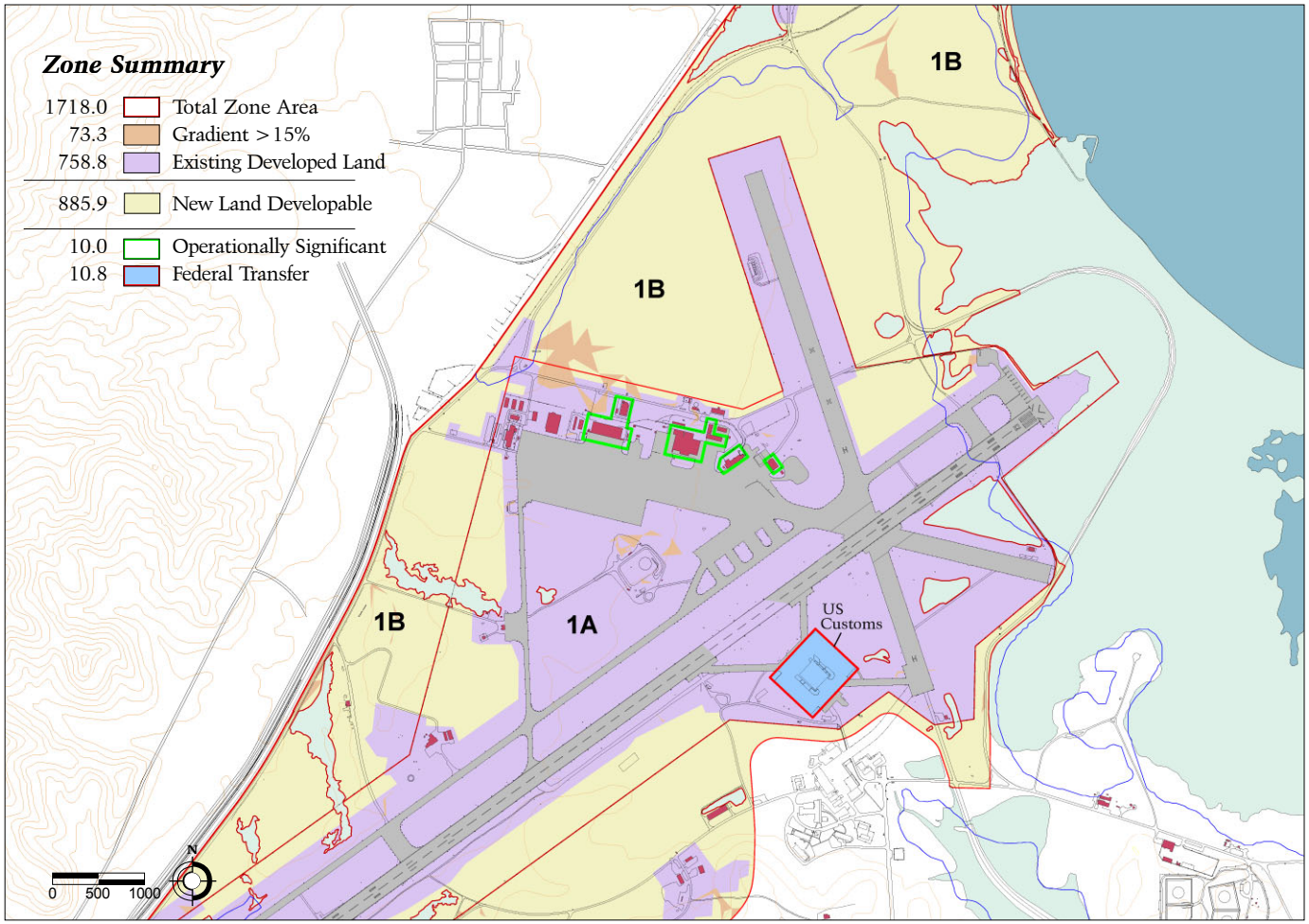
	Source		
ISLA PINEROS	CAD Area	359.6	* Entire Island Area
ISLA PINERITA	CAD Area	3.5	* Entire Island Area
CABEZA DE PERO	CAD Area	38.6	* Entire Island Area
ROADS	CAD Area	19.0	* Roads between zones, ie. Not included in Zone Areas
FEDERAL TRANSFER	=J	212.0	* As requested during the BRAC process
TOTAL		8,654.1	* Total Roosevelt Roads Land Aera



Roosevelt Roads Land Use

Figure V.2
Zone 1 (N)
Existing Land Use

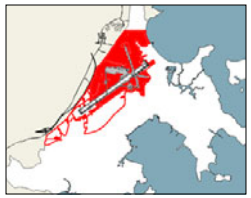


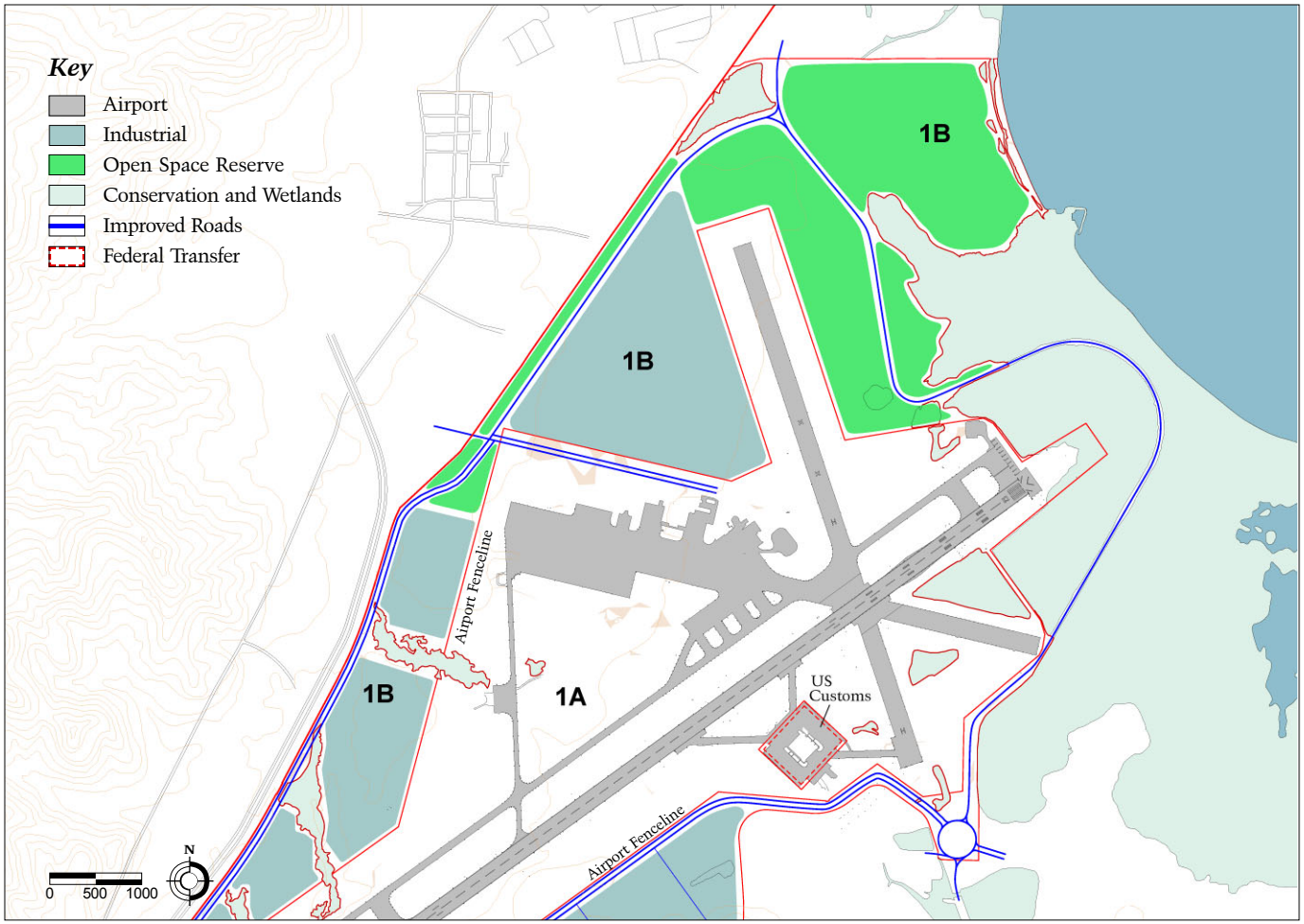


The northern portion of Zone 1 includes the airport and the potential development areas outside of the airport fence line. Nestled into a valley surrounded by the foothills of the coastal mountains to the north and the Delicias Hills to the south, this zone is characterized by consistent topography, and dense perimeter vegetation which effectively conceals its visibility from the surrounding community. The airport's most significant feature is its 11,000 foot long runway. In addition, there is a shorter, secondary runway, a helipad, and buildings adaptable for reuse as small passenger terminal, maintenance, cargo hangars and storage facilities

Existing Site Photos
L to R: Mural in Main Terminal; Redtail Building; Main Terminal and tarmac

Figure V.3
Zone 1 (N)
Proposed Land Use





Proposed land uses include an operating airport serving both passenger and cargo needs, with new access directly from the regional road network to augment security of the airport, a priority in the post-9/11 world. Industrial use adjacent to the airport will dominate the new developable acreage in this zone, capitalizing on a potentially sizable and topographically gentle terrain suitable for this use typology with its specific operational requirements. Selective clearing along the northern boundary of the industrial parcels will yield good visibility for new corporate tenants.

Finally, a large open space reserve to the north of the airport will establish a landscaped setting, an aesthetically controlled "front door" that will serve to create value to the new industrial development as well as to the entire site.

Proposed Precedents
L to R: International Trade Zone (Mt. Olive, NJ); Tree-Lined Road (Daniel Island, NC)

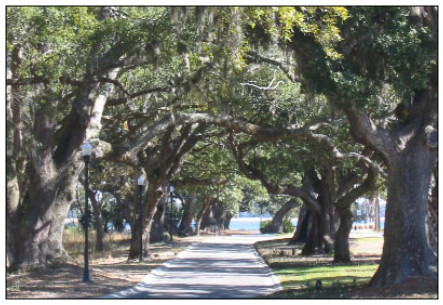
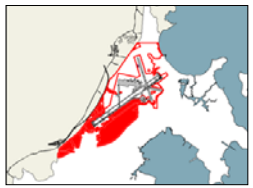
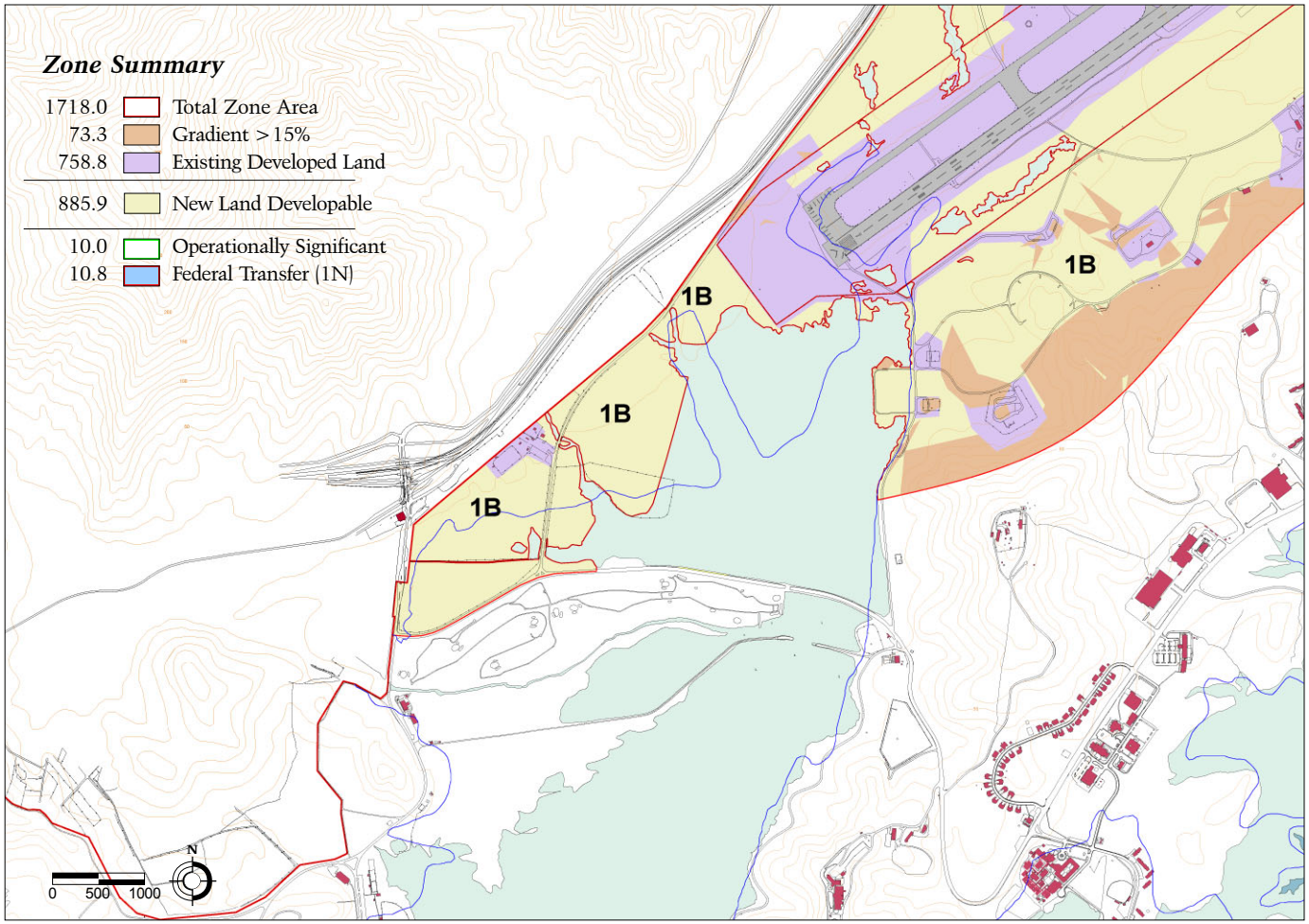


Figure V.4
Zone 1 (S)
Existing Land Use

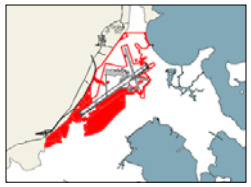


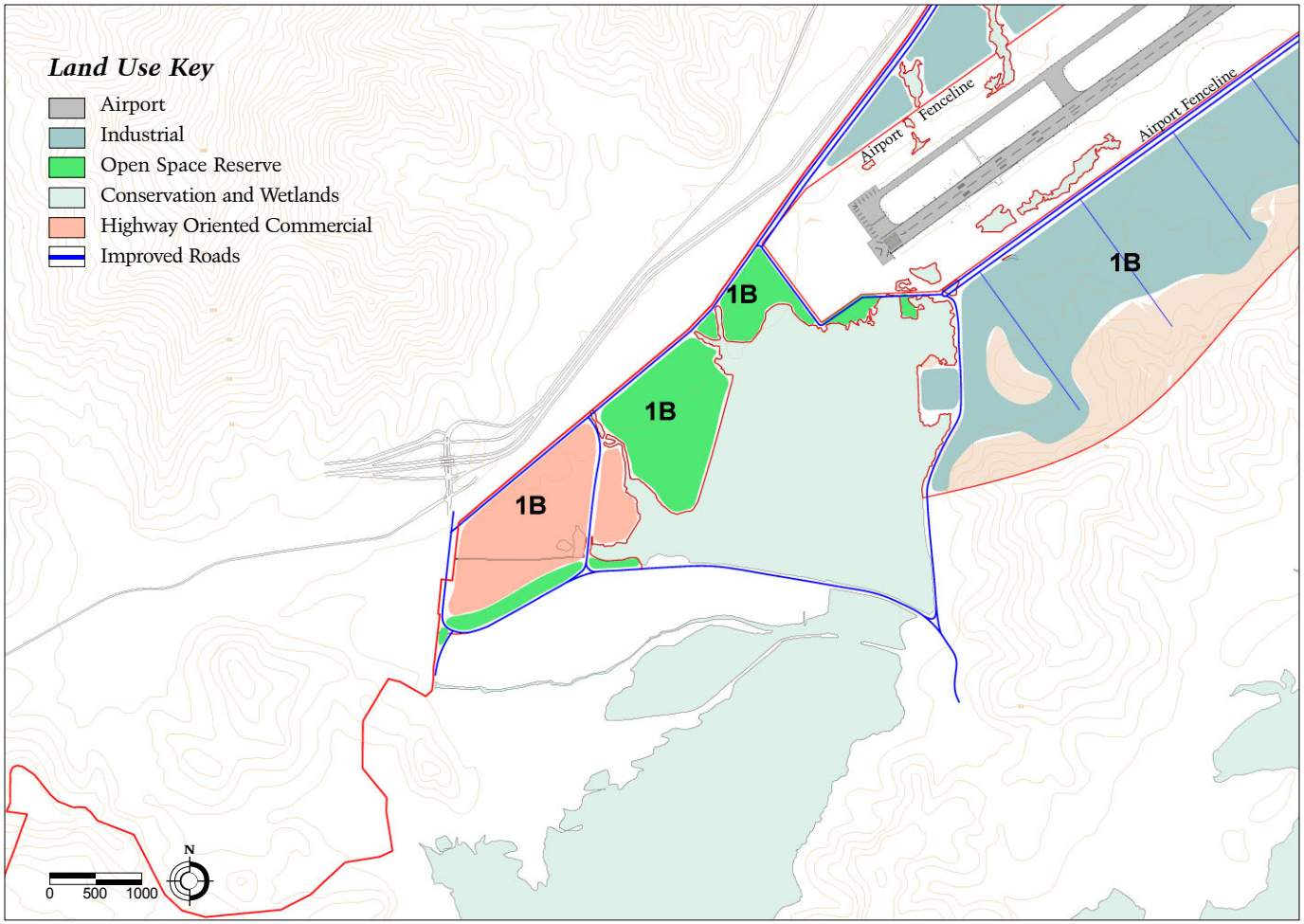


The southern portion of Zone 1 will contain a portion of the airport and its surrounding low-lying wetlands. There is significant new development area identified between the airfield and the north face of the Delicias Hills.

Existing Site Photos
L to R: Las Delicias Hills from Airport,; Runway; Existing Airstrip Facilities

Figure V.5
Zone 1 (S)
Proposed Land Use

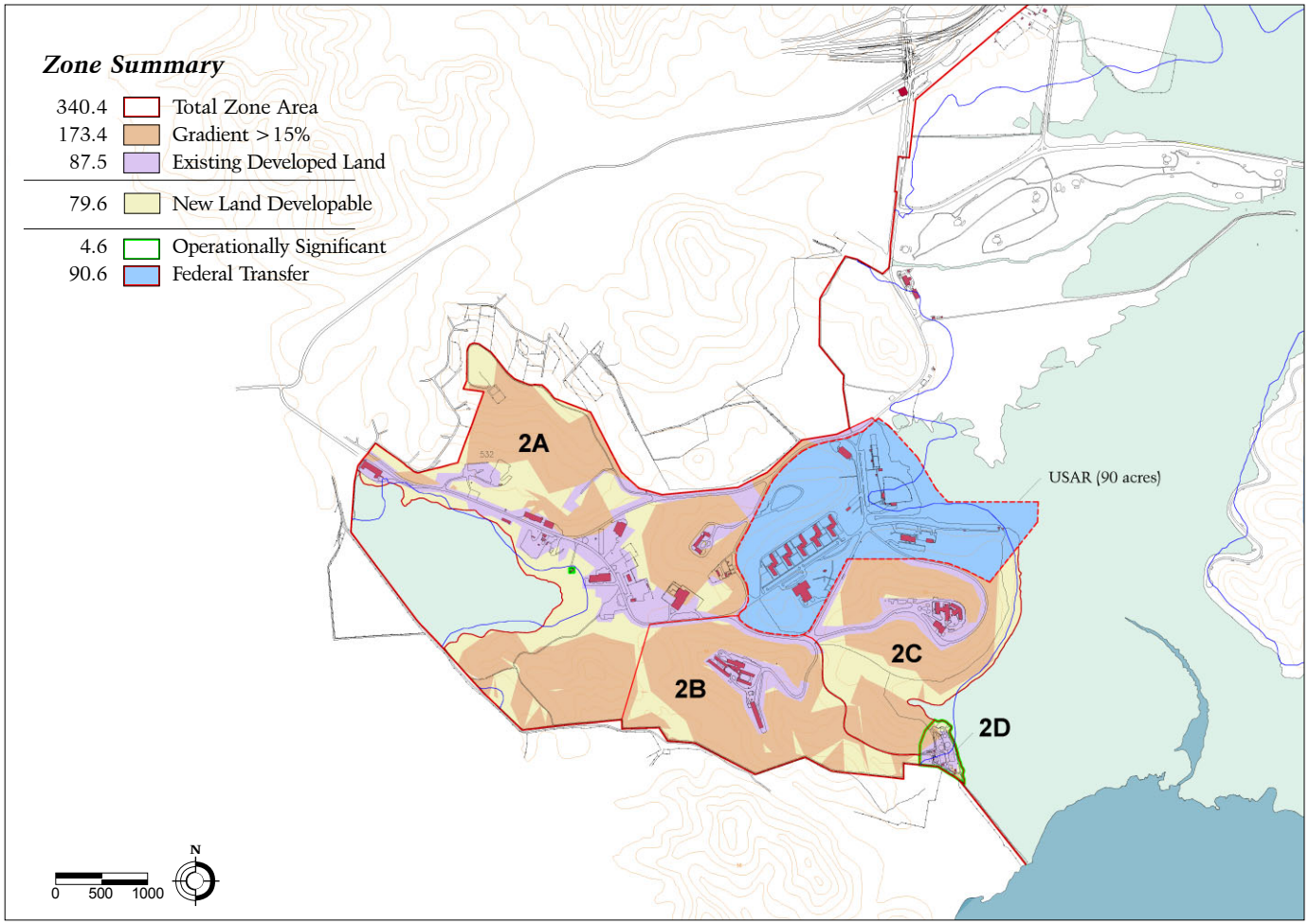




This zone will continue to incorporate the southwestern end of the airport runway with parcels immediately beyond the runway held as open space reserve responding to safety and noise concerns. Highway-oriented commercial development is anticipated as an appropriate use adjacent to the Southern Gate and will feature excellent visibility from the regional road network; new industrial development will be accessed from improved roads at the site.

Proposed Precedents
L to R: International Trade Zone (Mt. Olive, NJ); Ibid.; Cityplace (West Palm Beach, FL)

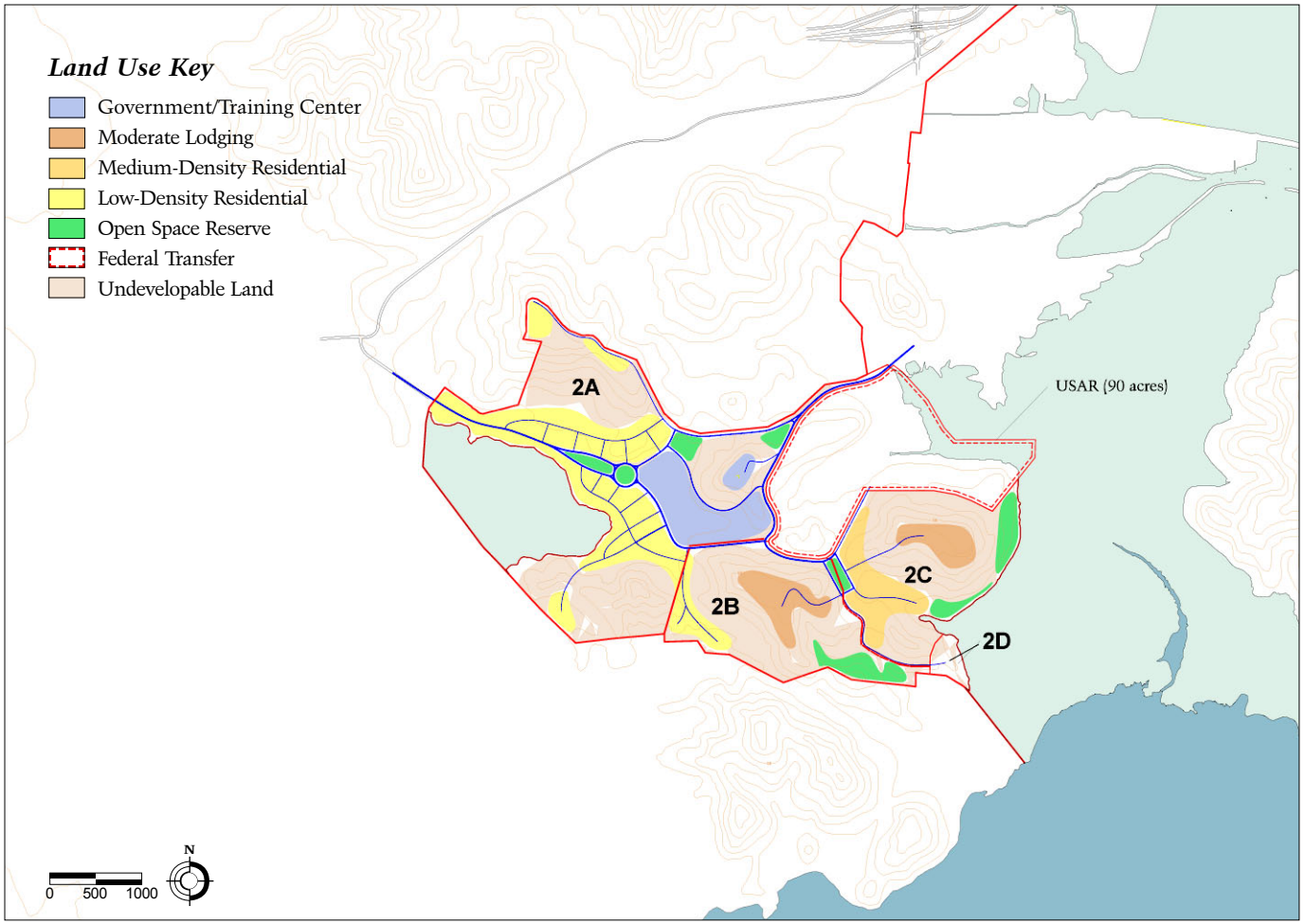
Figure V.6
Zone 2
Existing Land Use



Topographical interest and high elevations in the "Bundy" area offer some of the most dramatic distant water views at the site. "Bundy" supports direct vehicular access to the neighboring community of Naguabo. Existing facilities are decentralized, with lodging facilities sited to capitalize on spectacular views to the south and west, a tightly configured residential campus at the center of the site, and small storage and office structures loosely sited along the roadway (2B). A well-appointed and commodious fitness center with outdoor pool is fully operational (2A). A sewage treatment plant (2D) is not visible from the development areas.

Existing Site Photos
L to R: North Mountain Views from Bundy; Fitness Center Pool; Elevated Water Views

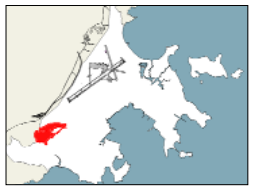
Figure V.7
Zone 2
Proposed Land Use

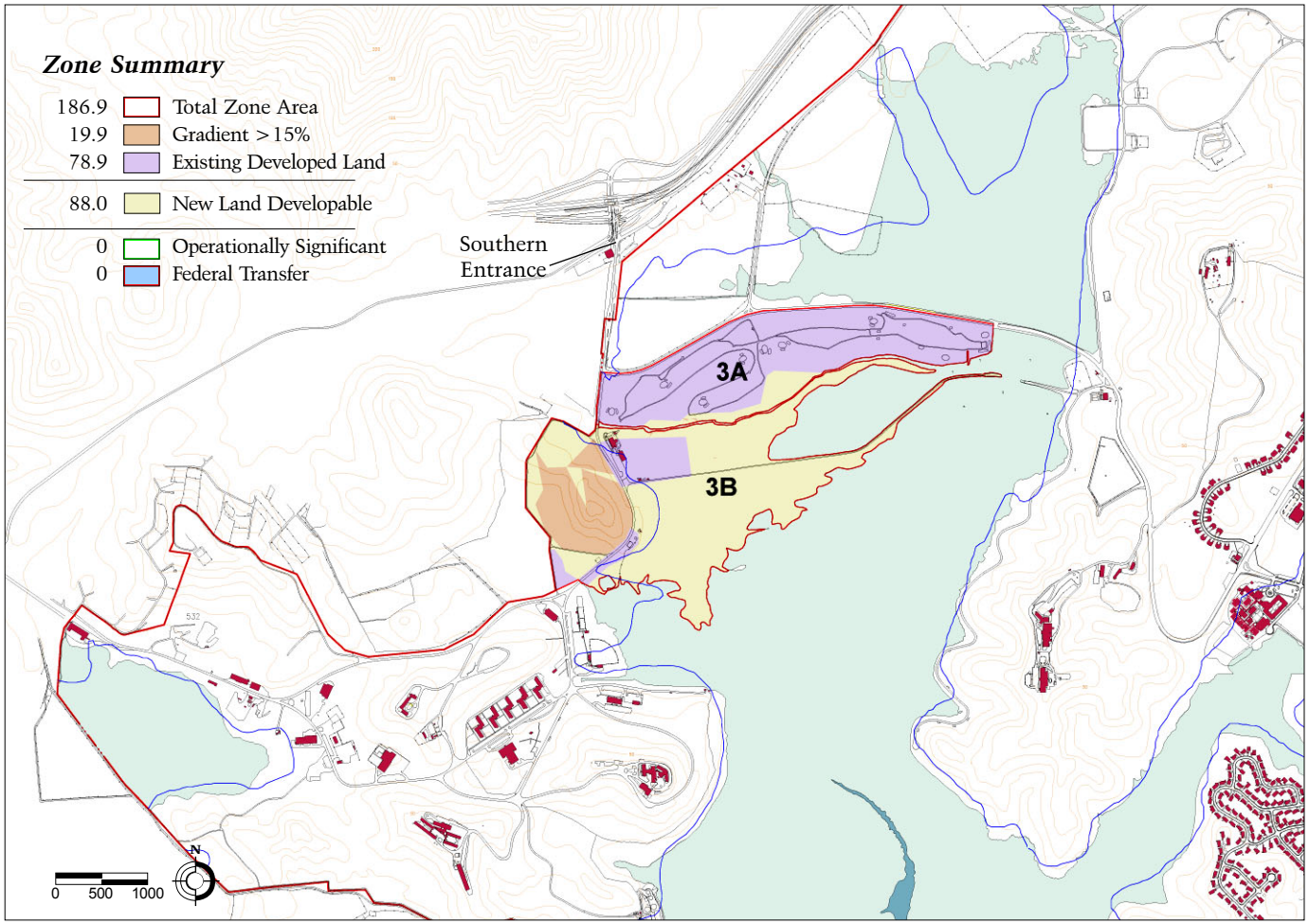


Land uses in this zone will include learning/government training facilities (2A): the fitness center with its large outdoor pool and air-conditioned gymnasium and courts. There are excellent sites for moderate lodging facilities with commanding views of Ensenada Honda and the islands (as well as to the southwest (2B, 2C). Low and moderate density residential development occur on sites adjacent to the existing community (2A) as well at the higher elevations (2B and 2C). The existing sewage treatment plant (2D) is in full operation and is not visible from proposed development areas.

Proposed Precedents
L to R: Single-Family Home with Shaded Outdoor Room (Seaside, FL); Spanish Colonial Style Building (Palm Beach, FL); Home (Key West, FL)

Figure V.8
Zone 3
Existing Land Use





An existing modestly configured 78.9-acre 9 hole golf course is the single existing land use in Zone 3. The golf course is adjacent to central low-lying floodplain areas and is seasonally impacted by this proximity.

Photos
L to R: Golf Course;Bougainvillea

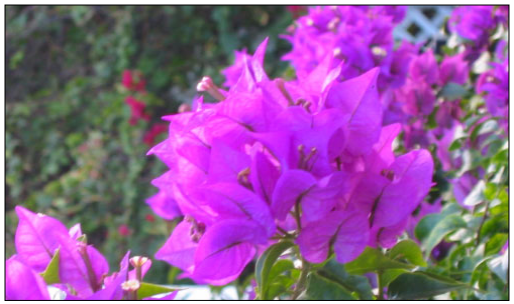
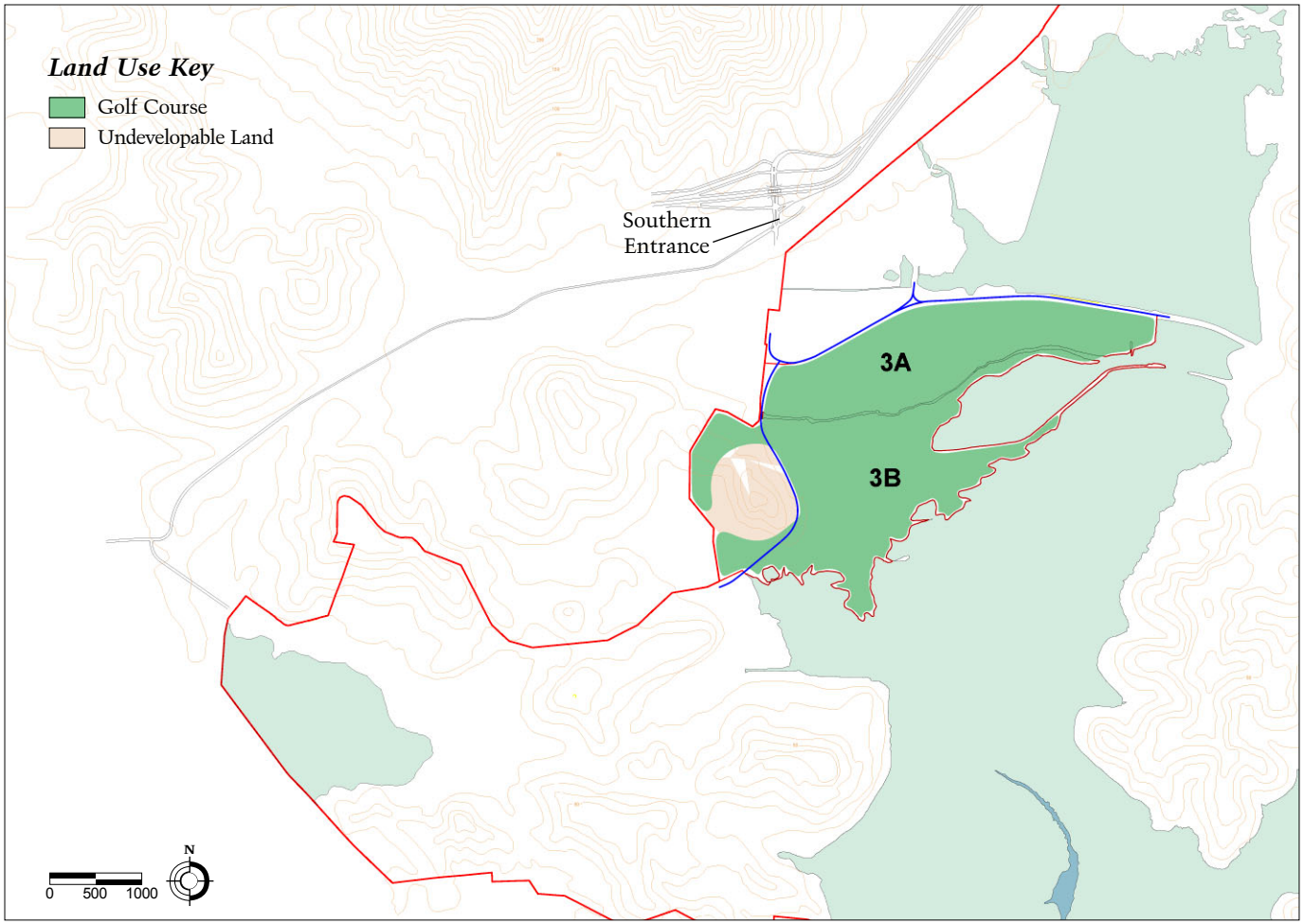


Figure V.9
Zone 3
Proposed Land Use



Proposed land use for this zone includes a 166.9 acre public golf course, expanded and reconfigured for full-playing 18 holes with adjacent driving range. In its reconfiguration, issues related to site retention would alleviate seasonal flooding.

Proposed Precedents
Golf Courses in Puerto Rico

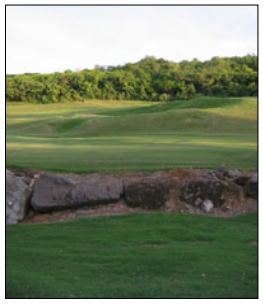
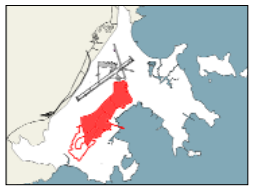
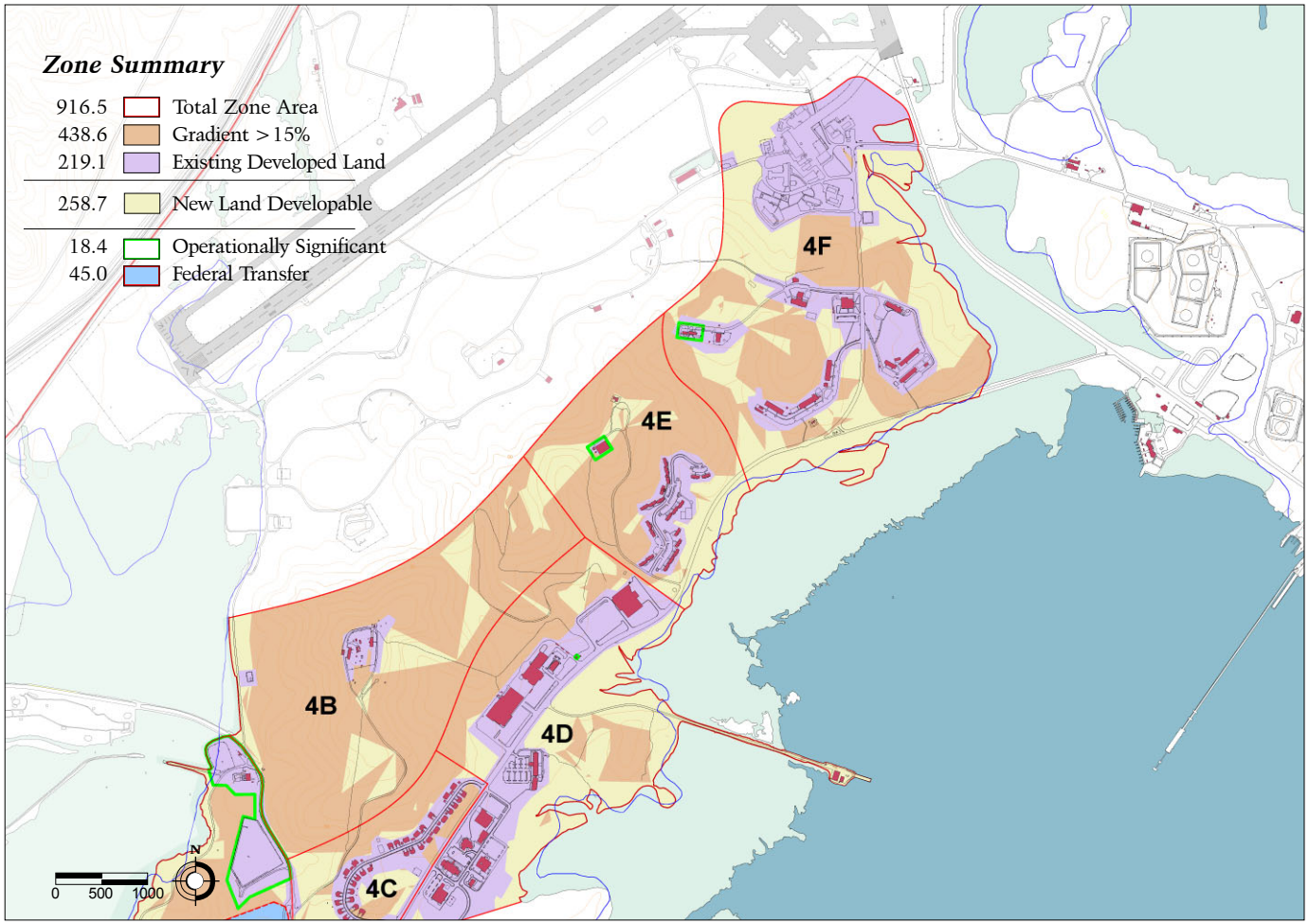


Figure V.10
Zone 4 (N)
Existing Land Use

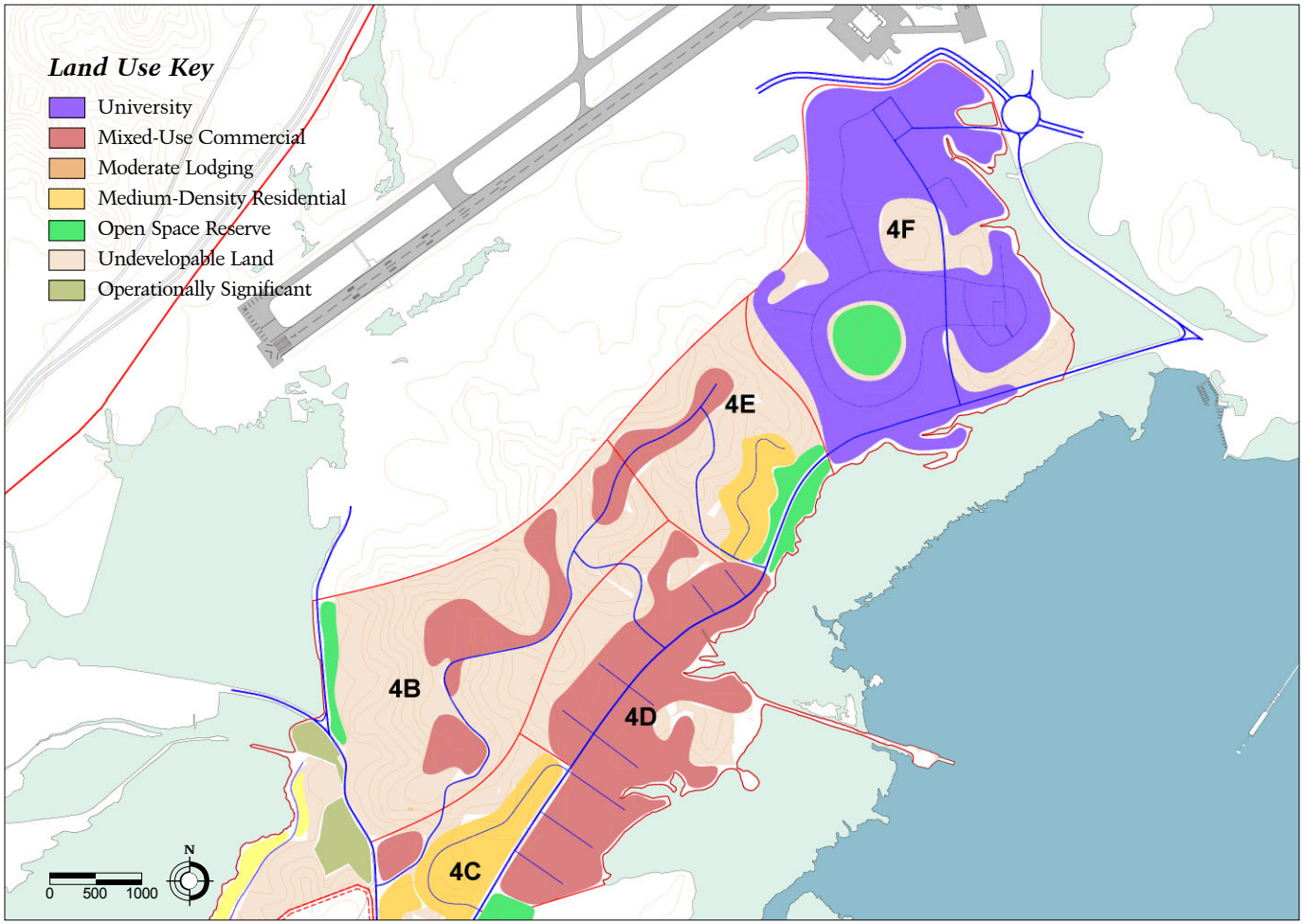




This zone encompasses the northern and southern portion of the Delicias Hills, an undulating elevated ridge that buffers airport activity from the central portion of the site. These are among the highest elevations at Roosevelt Roads. At the top of these hills, fragmented small sites (4B) are suitable for development, capitalizing on unobstructed waterfront views over Ensenada Honda and the Sound, the twin peninsulas, and to El Yunque to the northwest. Sited along the base of these vegetated hills, the "Downtown" at Roosevelt Roads consists of topographically level development areas suitable for reuse(4D). This central location allows access from both existing entrances to the property.

Existing Site Photos
L to R: BEQ; Commissary; Interior of Navy Exchange

Figure V.11
Zone 4 (N)
Proposed Land Use



At full build out, this 165.6-acre loosely-organized campus (4F) appropriate for reuse as a university will include nearly 900,000 sf of classroom, office, residential, support and recreational facilities clustered at the northern portion of zone 4(N), just below the airport. New apartment quarters for enlisted personnel were recently completed by the Navy and are envisioned, with modification, for residential use (4E). Mixed-use commercial, moderate lodging, service retail and civic development is envisioned for this zone, much of it concentrated along the main street that links north and south peninsulas (4D); a small residential neighborhood is adjacent to this area (4C). The high slopes in 4B and 4E may deter development in this area.

Proposed Precedents
L to R: Mixed-Use Building (Palo Alto, CA); Streetscape (West Palm Beach, FL); Cityplace (Dallas, TX); Old Convent Courtyard (San Juan, Puerto Rico)

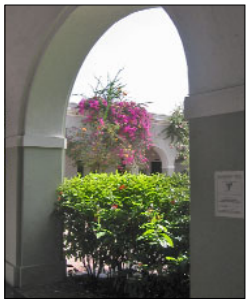
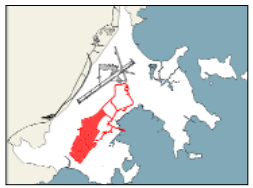
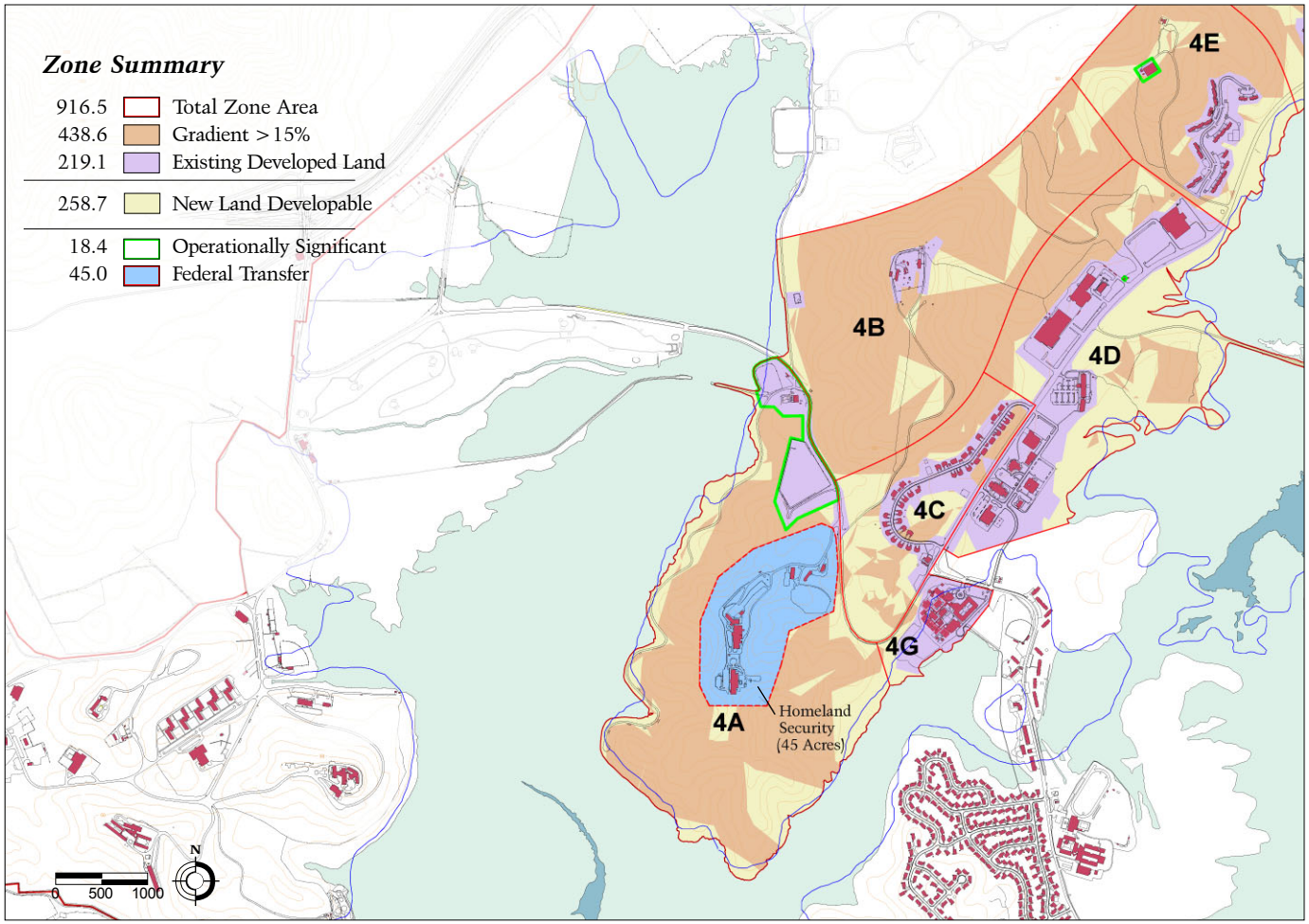


Figure V.12
Zone 4 (S)
Existing Land Use

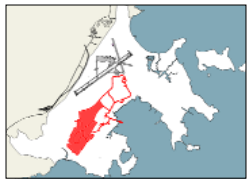


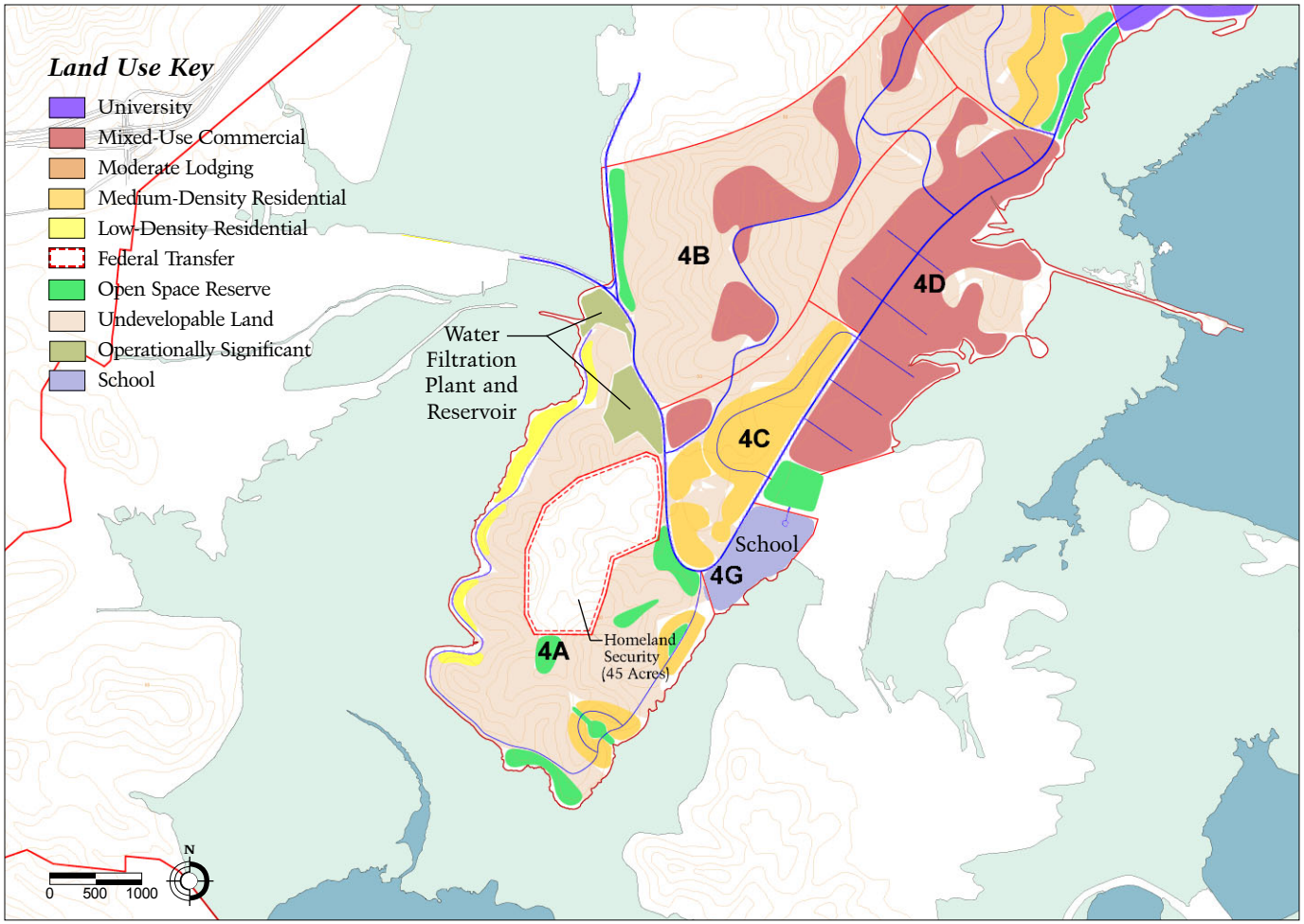


Just 75 acres (4A and 4B) have been identified as available for reuse in the southwestern portion of Zone 4 primarily due to the predominance of steep topography. However, much of that acreage would provide excellent water views and have the advantage of proximity to the "Downtown" area. There is an existing public school and playing fields on a 16.8 acre site (4G) at the southern portion of the "Downtown" area.

Existing Site Photos
L to R: Navy Exchange; Elementary School; Medical and Professional Office Building

Figure V.13
Zone 4 (S)
Proposed Land Use

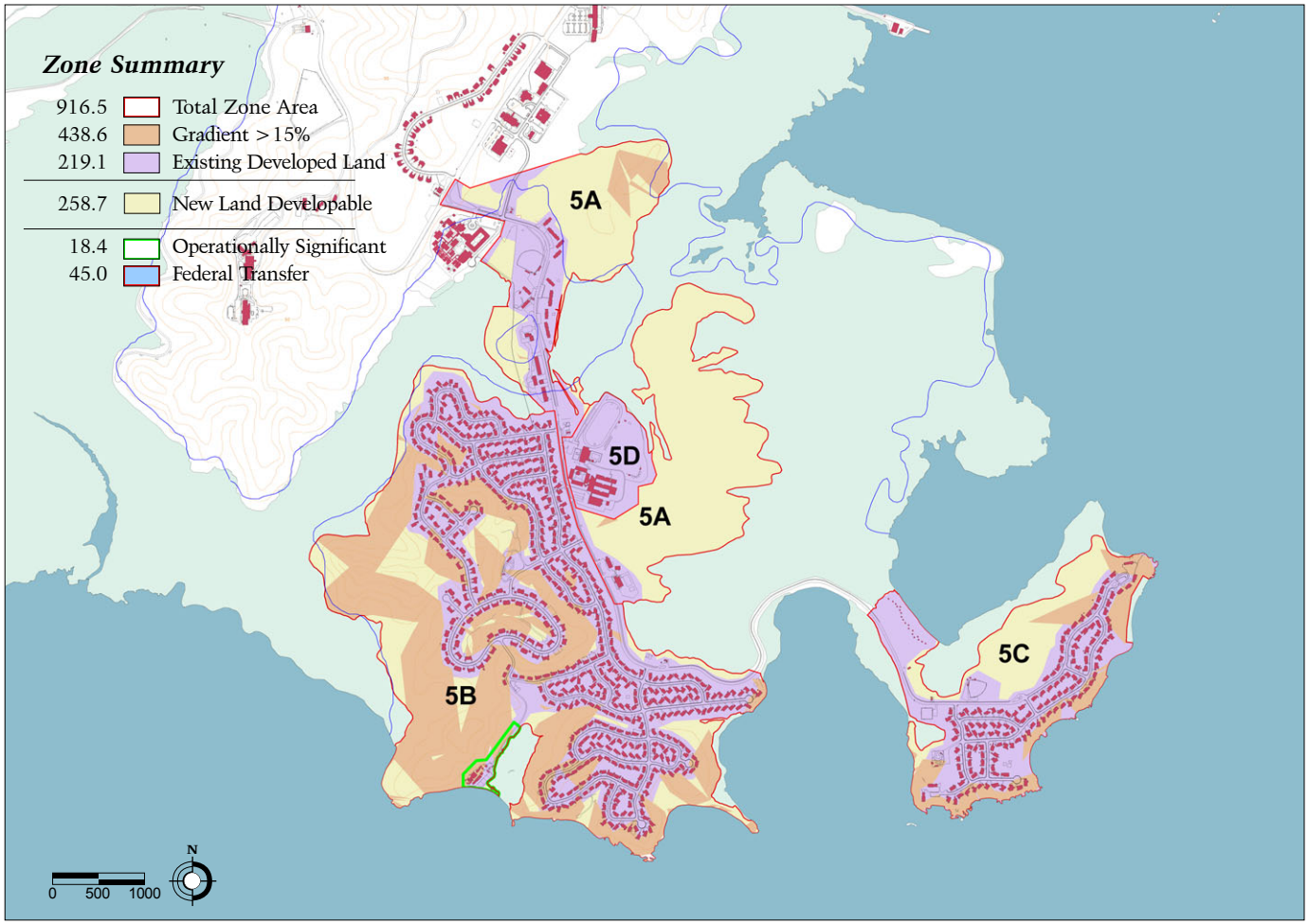




At the top of the Delicias ridge, fragmented sites with asymmetrical configurations are suitable for a range of small-scale mixed-use commercial uses, capitalizing on dramatic views but having limited parking capacity (4B). A narrow band of land at the northwestern edge of foothills in 4A provides an opportunity for a limited number of single-family residences. New multifamily residential sites at the southwestern fringe of the hills can carry approximately 90 residential units (4A). The Base water filtration facility is operable and has a large storage reservoir, both located at the northern tip of Zone 4A. An existing public school would remain as a public school facility housing middle school and high school grades (4G).

Proposed Precedents
L to R:
Medium-Density Housing (Old Fort Bay, Nassau); Multifamily Residential (Puerto Rico); Downtown-Style Street (West Palm Beach, FL)

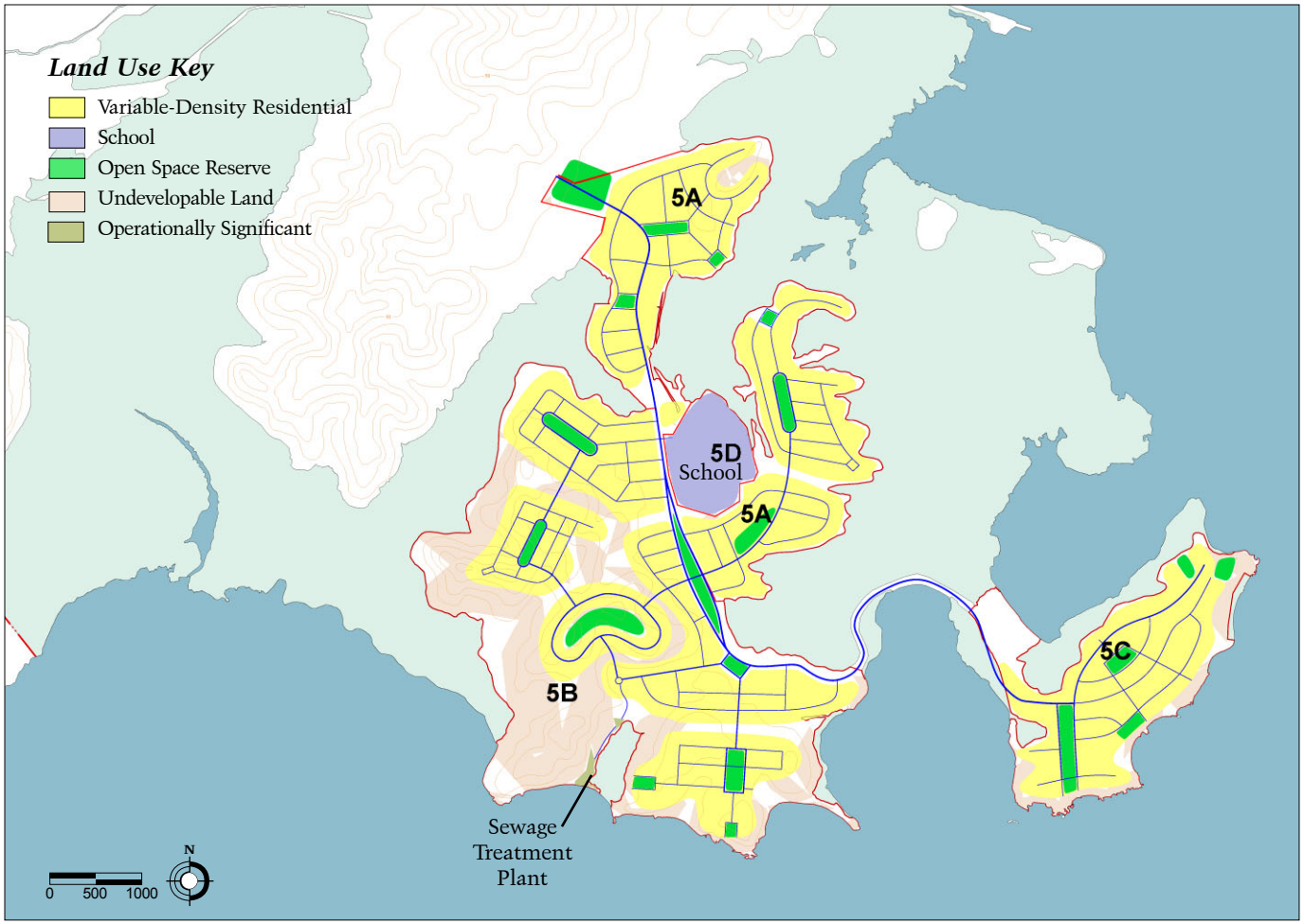
Figure V.14
Zone 5
Existing Land Use



The southern peninsula is elevated, partially developed, heavily vegetated, and, most importantly, appears to be relatively free of environmental contaminant concerns. This needs to be confirmed within the scope of the Navy's current environmental assessment. Existing modest multi-family units and single family 'Capehart' housing, storage and maintenance facilities are loosely sited along the main access road and hilly cul-de sacs (5A, 5B). Views toward the islands from the south and southwestern coastline (5B), and from the "boot" of the peninsula (5C) are among the most dramatic water views at the Base. An existing high school with large indoor gymnasium and outdoor playing fields is suitable for reuse (5D).

Existing Site Photos
L to R: Waterfront Homesites; High School

Figure V.15
Zone 5
Proposed Land Use

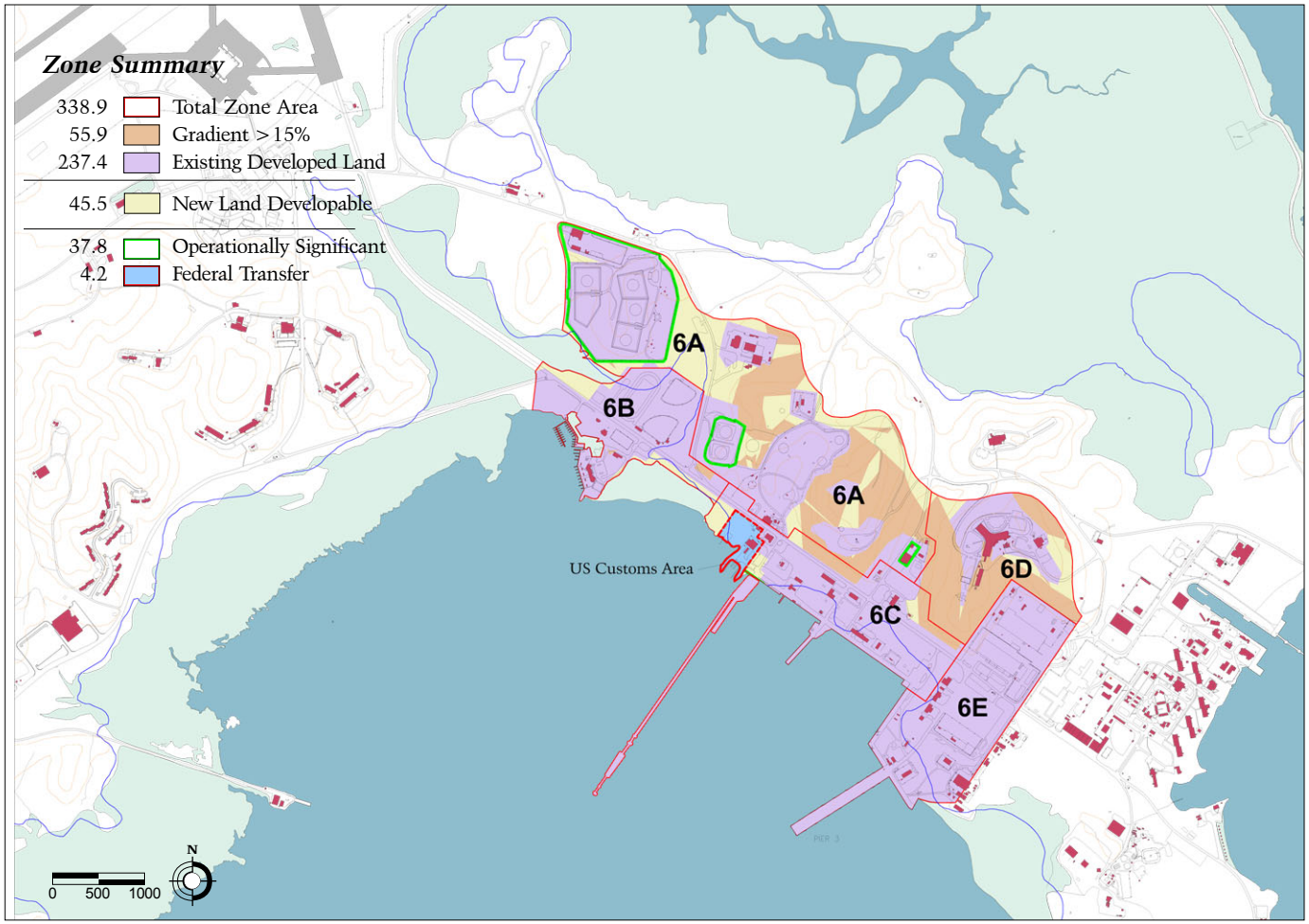


"Cabo del Sur" can provide a broad range of residential development opportunities, with nearly 462 areas of gross developable land (5A, 5B, 5C). Variable densities will range from single family dwellings at 2 units per acre up to 8 units per acre for multi-family homes, depending on market demand. At full build out, existing infrastructure can support up to 3,000 residents.

Reuse of the existing high school as a private bi-lingual school would be consistent with adjacent uses.

Proposed Precedents
L to R: Caribbean Detailing (Vieques, Puerto Rico); Spanish Colonial-Style House (Vieques, Puerto Rico); Neighborhood View (Old Fort Bay, Nassau)

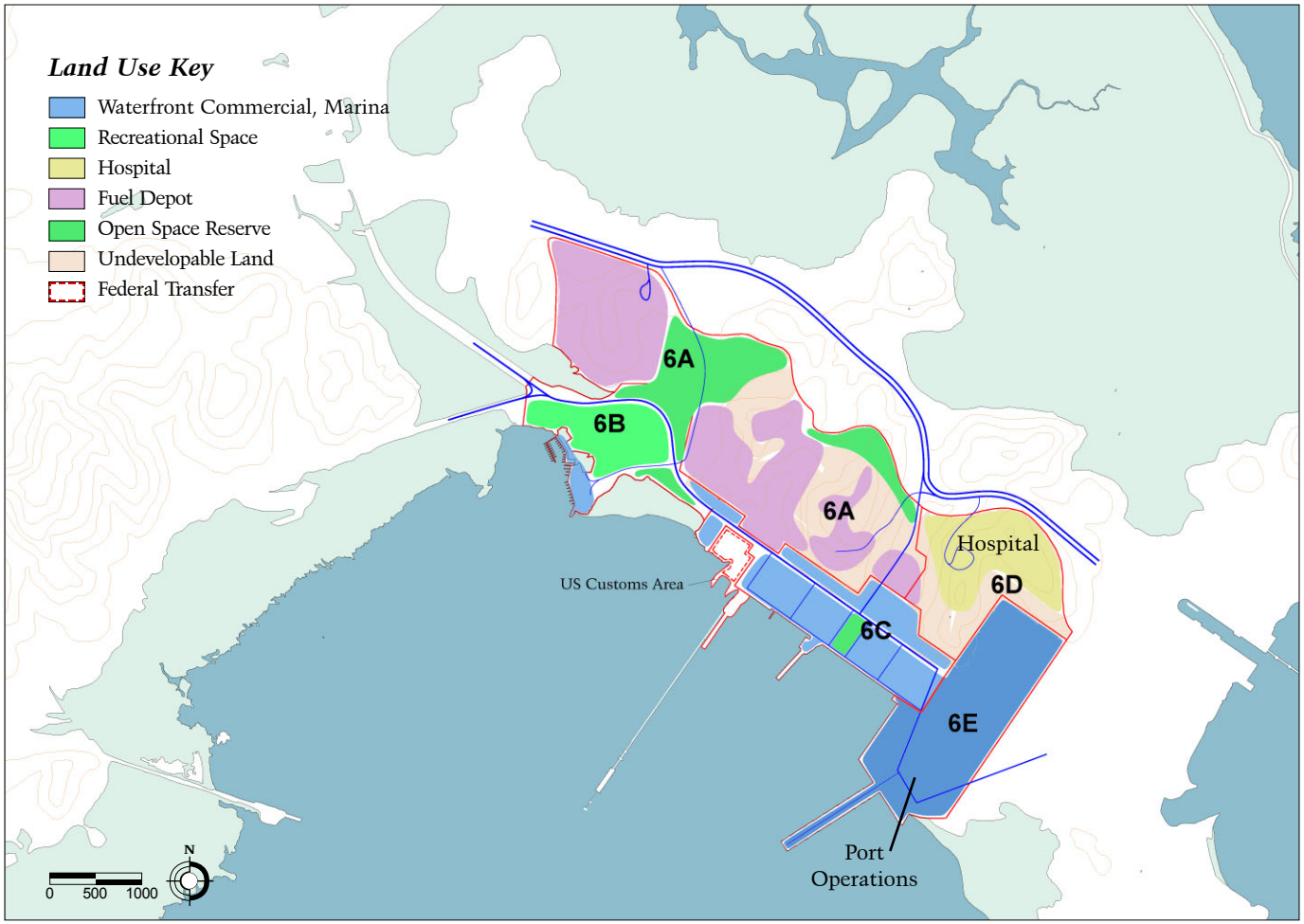
Figure V.16
Zone 6
Existing Land Use



Existing Site Photos
L to R: Looking Southwest down the Length of the Fuel Pier; Existing Marina; Looking Southeast along the Harbor

Of 245.3 usable acres, only 45.6 acres are undeveloped in Zone 6. Encompassing a significant portion of the most accessible coastline at NSRR, this zone is naturally organized as a series of sites parallel to the northeastern edge of Ensenada Harbor. A central ridge runs the length of the northern peninsula at NSRR, forming a natural division between hills and harbor. The northern portions of this zone are dominated by eight large-scale, above-ground fuel storage tanks, augmented by additional areas devoted to fuel-related uses (6A). Waterfront sites along the length of extensive bulk-heading include a 72-slip small-boat marina and nearby tennis and baseball facilities (6B). An adjacent harbor terminal; a 2600 foot long fixed fuel pier (6 C), adjacent pier and a loose collection of structures parallel to the bulkhead characterize the water's edge as a "working" waterfront currently devoid of public amenities such as landscaping, lighting, seating and wayfinding. NSRR's hilltop hospital (6D) was recently upgraded. Base headquarters, a large high-bay public works building and refrigerated storage structures are located near the recently upgraded Pier 3 (6E).

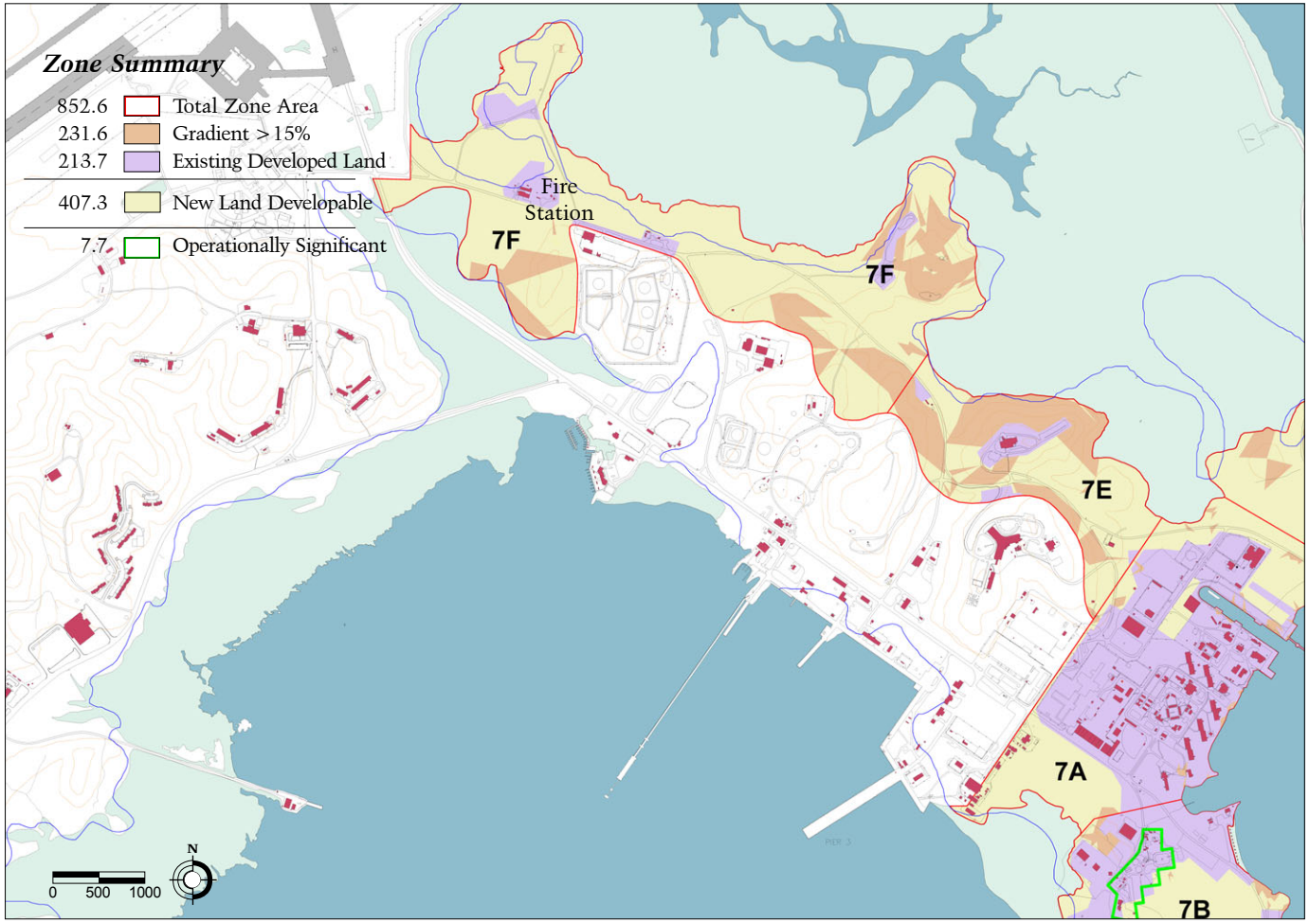
Figure V.17
Zone 6
Proposed Land Use



The fuel storage areas are likely to remain and may be of advantage to the future of the airport and also to on site maritime activities (6A). The proposed land uses for this zone anticipate a transition to water-oriented commercial uses. These will be triggered by infrastructure improvements to expand the existing marina with additional boat slips and small-scale supporting retail and to create an adjacent highly accessible recreational open space (6B). Charter and yacht brokerages, small cruise ships, boat repair and marine-oriented retail are encouraged along the water-front (6C). New passenger and cargo ferry service between NSRR and the islands of Vieques and Culebra supported by cargo storage facilities, public parking and intermodal transportation will be located along Pier 3 and the adjacent upland acreage (6E). The hospital would be reused, serving regional and community needs (6D).

Proposed Precedents
L to R: Ferry and Charter Marina (Cape Town, South Africa); Waterfront Esplanade (San Diego, CA); Mixed-Use Working Waterfront (Cape Town, South Africa)

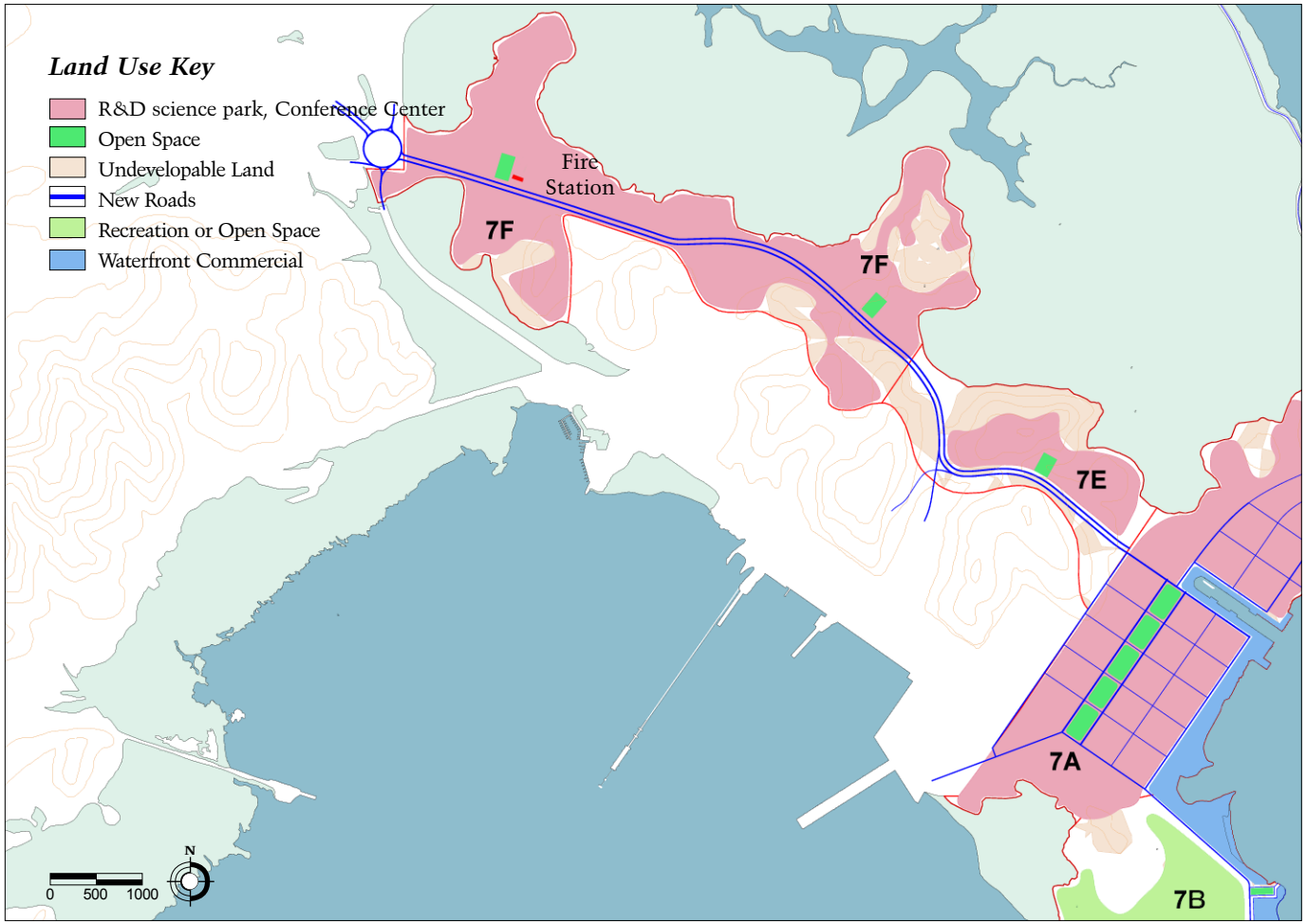
Figure V.18
Zone 7 (N)
Existing Land Use



At present, the majority of land in Zone 7(N) is undeveloped. Existing development includes the Base's Fire Station (7F) and, sited at a scenic hilltop location, a former military club that is operated as a modest restaurant (7E). Together, this existing development includes 23.1 acres of the 283.2 total acres in this zone. An existing two-lane road winds along the upland northern edge of the peninsula's central ridge. Exclusive of acreage above 15% gradient, much of this remaining acreage is suitable for redevelopment, on approximately 221.3 naturally vegetated, gently sloping acres.

Existing Site Photos
L to R:
Camp Moscrip (7A);
View towards Islands

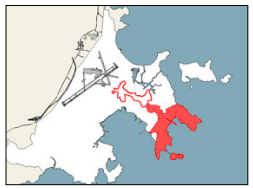
Figure V.19
Zone 7 (N)
Proposed Land Use

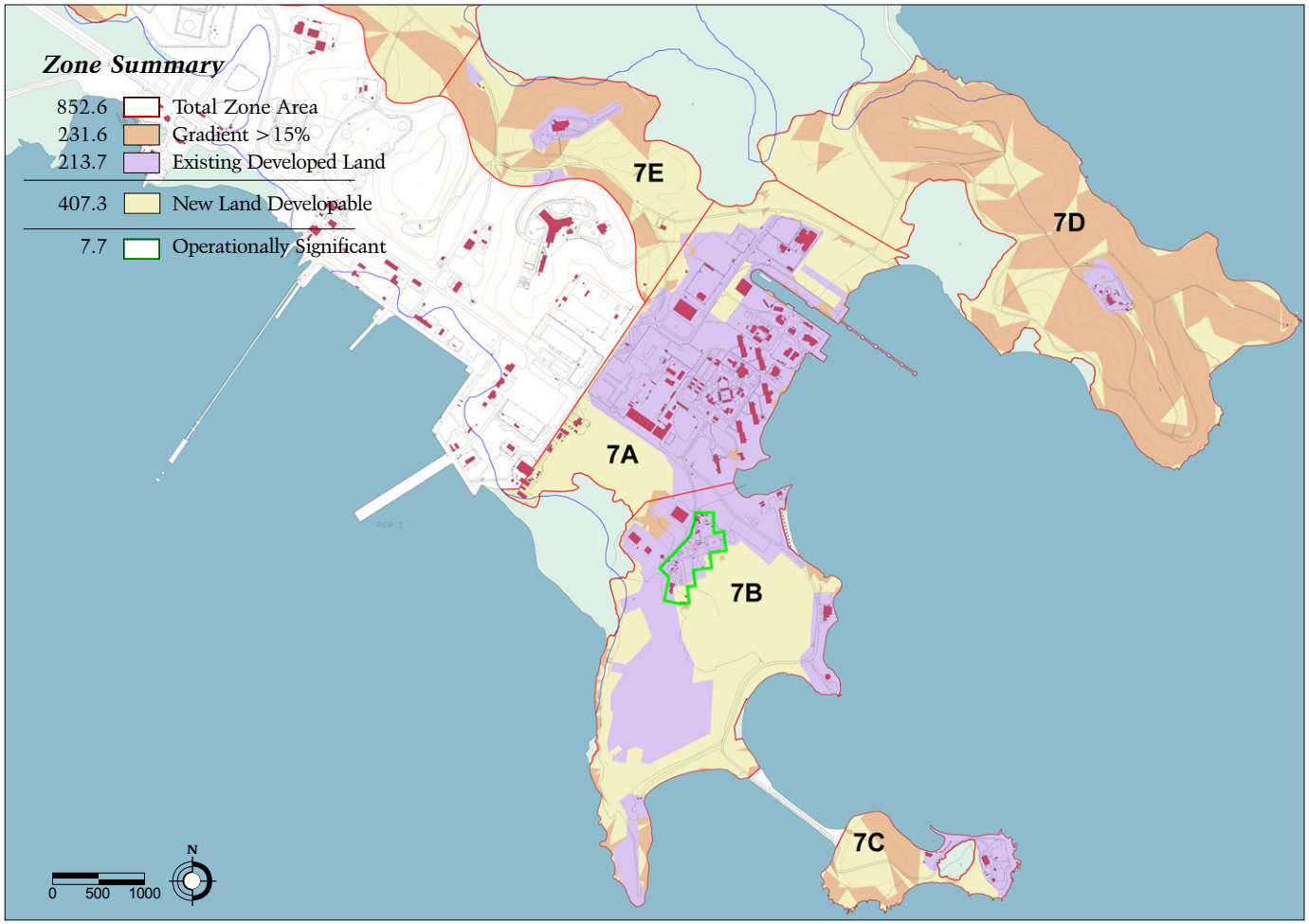


Zone 7(N) is intended as the new gateway to the proposed science park and conference center development and provides a critical linkage between the proposed university and the waterfront at the science park. An appealing naturally landscaped access road is intended to provide address for these low-density development sites that will introduce up to 1,250,000 SF of new development in multiple parcels at the inboard edge of the conservation area. A portion of the conference center, to be sited on the hilltop site (7E) will have commanding views of the mountains, islands, eastern coastline and the Base in all directions.

Proposed Precedents
L to R: Appealing Urban Landscaping (West Palm Beach, FL); Corporate Campus Image (San Mateo, CA)

Figure V.20
Zone 7 (S)
Existing Land Use

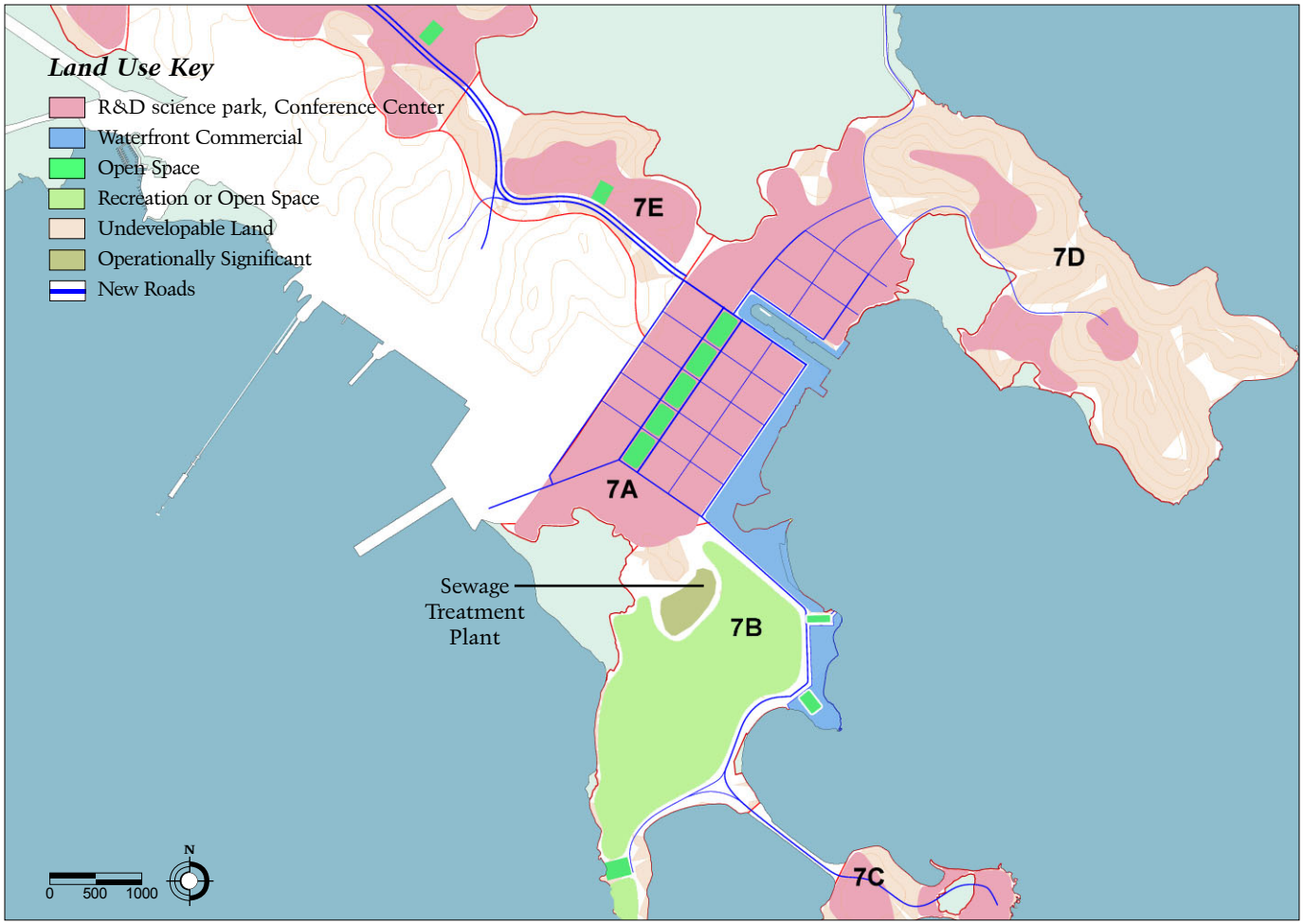




Existing Site Photos
L to R: View of Flooded Dry Dock, Causeway from the "Boot" to the Base

Zone 7(S) is configured in the shape of a natural horseshoe, encircling Bahia de Puerca (7A, 7B, 7C, 7D), the scenic outboard bay framed by the peninsula's central ridge and its extension through to the northern tip of the site. The 70-acre north parcel consists of upland forest and a few existing cleared development sites accessed by winding roads (7D). Steep topography and dramatic vistas over the harbor and out to the islands characterize this portion of the site. The central portion, Camp Moscrip, consists of 158.5 acres available for redevelopment with unobstructed water views (7A), level ground on bulkheaded landfill, (the result of earlier hillside excavation by the Navy) and the drama of the Navy's dry dock, now flooded. Existing development includes the USAR HQ (to be relocated), the new but never-occupied Navy Seals office building and smaller structures. A residential campus and metal storage structures dating back to WWII are loosely sited along the main roads. The southwestern acreage (7B) contains an SWMU, a former incinerator structure, and an area that the Navy used as an on-site dump. Below, a perimeter road accesses former Navy clubs and a picturesque causeway to the "boot", a hilly island with small beach along a protected cove.

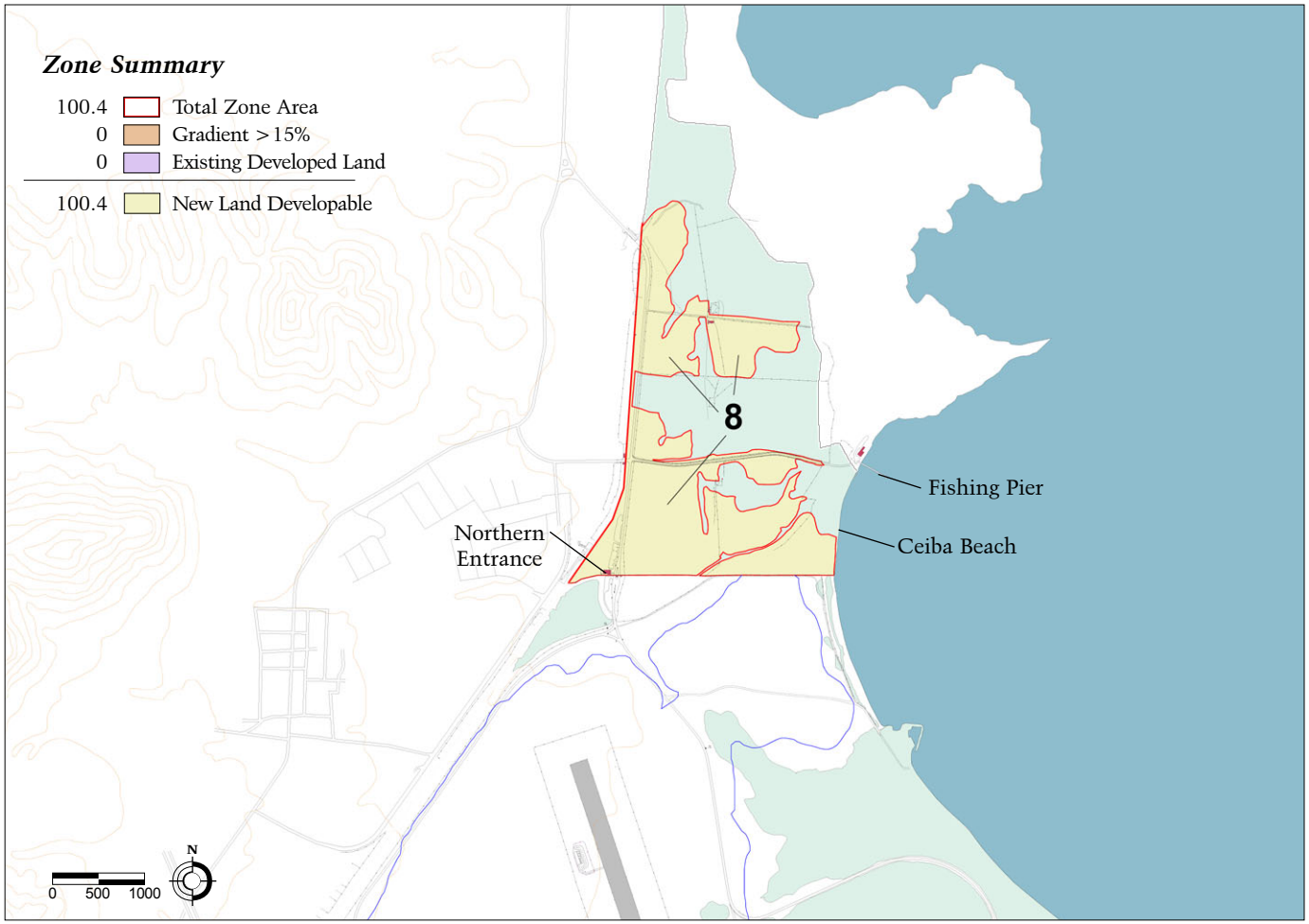
Figure V.21
Zone 7 (S)
Proposed Land Use



"Cabo del Norte" at Roosevelt Roads presents a unique opportunity to amenitize the economic development of the proposed science park with an "in town" pleasing and active harbor front. Infrastructure is designed to enhance a walking precinct at the waterfront, with tree-lined and lighted streets and boulevards; and landscaped paseos and plazas. A few structures in this zone could be reused to stimulate development and create early critical mass. Nearly 392 acres are available for this highly amenitized commercial, research and conference component of the proposed redevelopment of the Base. Additional supporting amenities for the science park and conference center could include active open space, passive open space, park or golf course (7B), its linkage to the proposed ferry terminal, and a small beach at the "boot" (7C). Three hill-top sites (7E, 7D and 7C) are envisioned as the location for the core lodging and meeting facilities of the proposed conference center.

Proposed Precedents
L to R: Walking Precinct (Palm Beach, FL); Signature Road (Fajardo, Puerto Rico); Mixed-Use District (Rosemary Beach, FL)

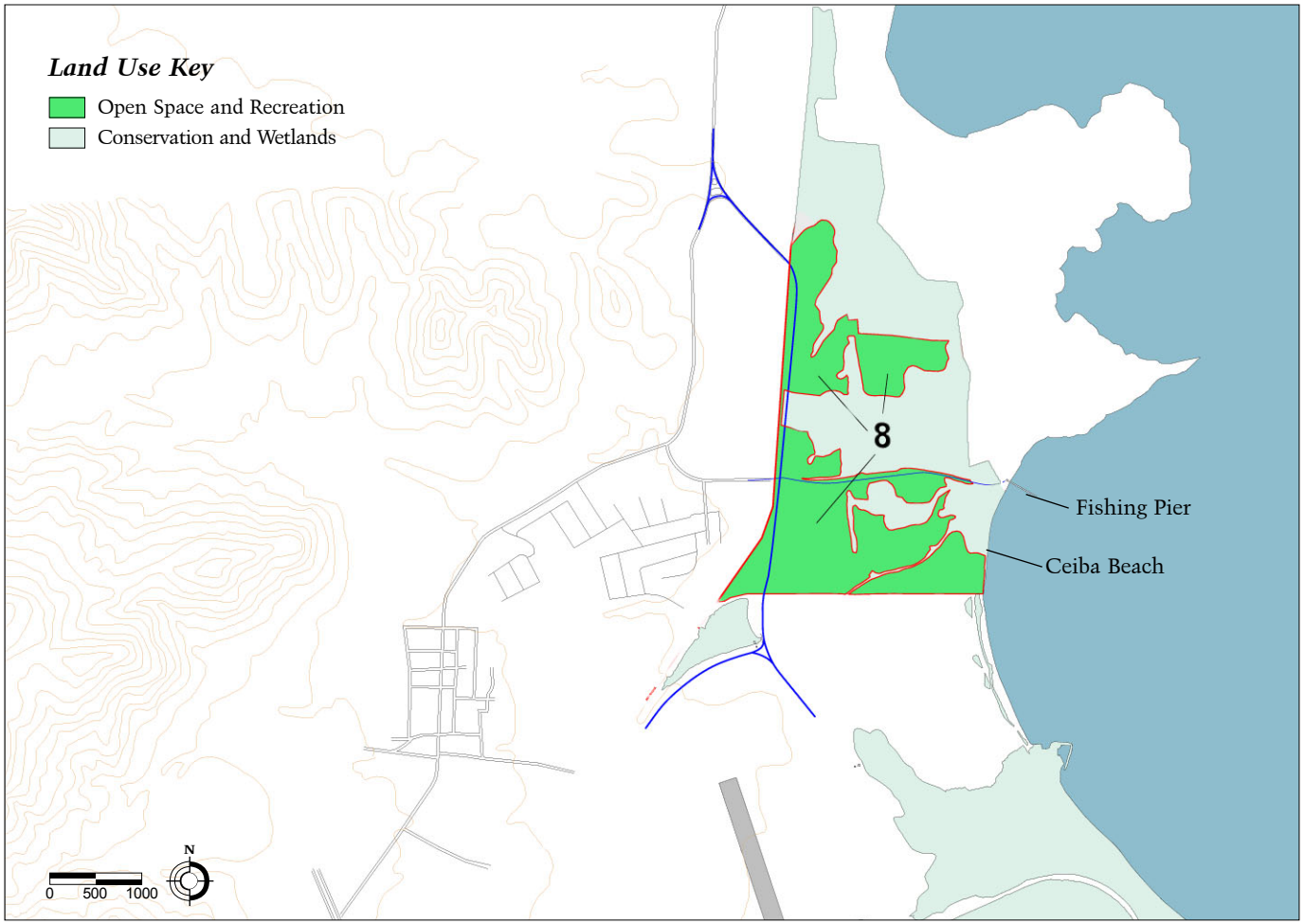
Figure V.22
Zone 8
Existing Land Use



Approximately 100 acres of land beyond the north gate of Roosevelt Roads, east of its access road, consists of low-lying pastures and wetland areas. The land is adjacent to a large conservation area previously transferred to the Commonwealth's Department of Natural Resources. Publicly accessed, Ceiba Beach, the municipality's sole access to the waterfront at present, and an existing fishing pier, fish market and small boat anchorage are all located at the water's edge, at the end of an access road that bisects this zone.

Existing Site Photos
L to R: View towards El Yunque: Ceiba Beach and Small Boat Anchorage

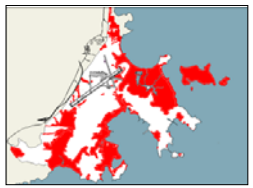
Figure V.23
Zone 8
Proposed Land Use

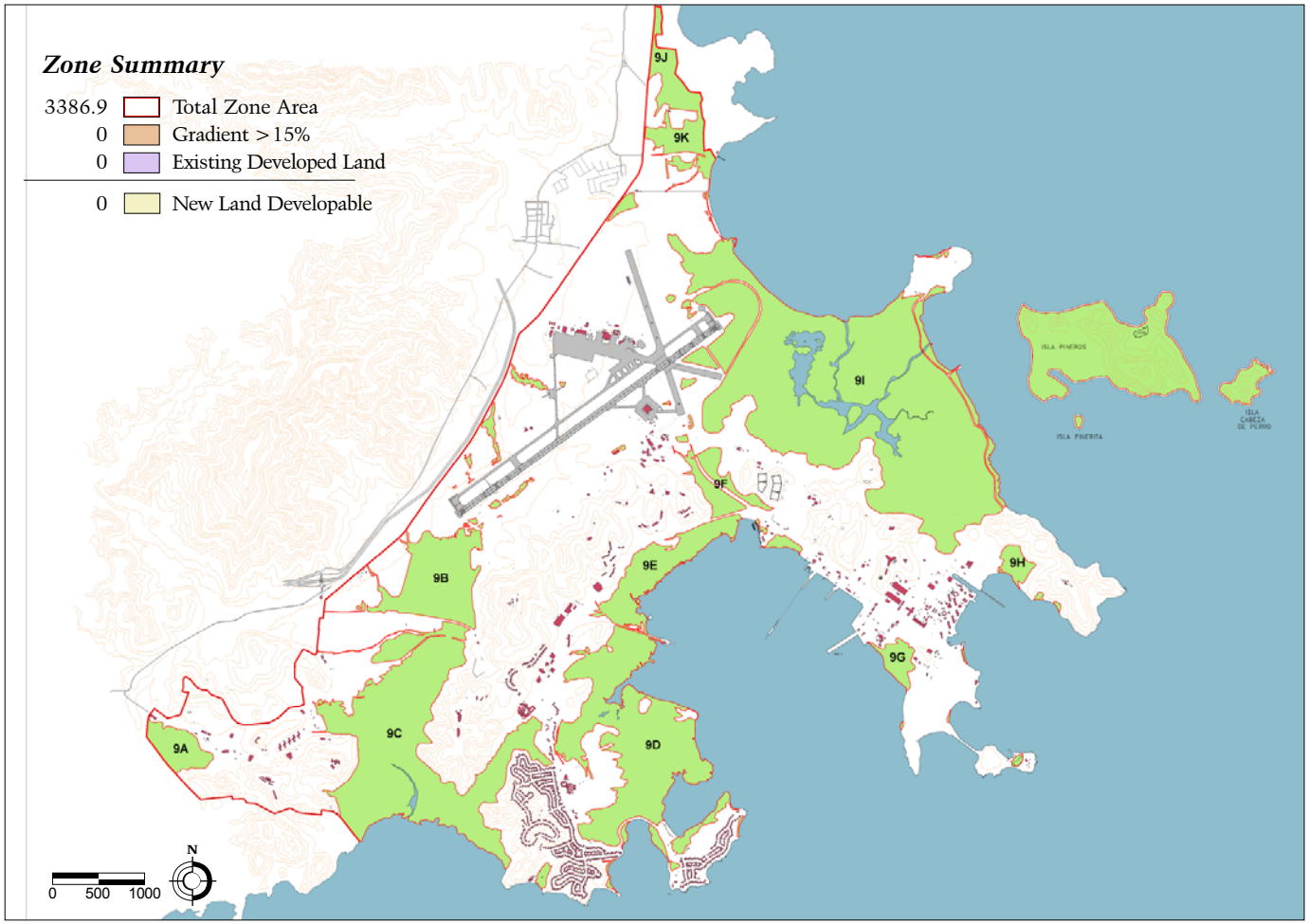


With an improved access road to Roosevelt Roads, this zone will serve as the gateway for the new development from the regional road network and those traveling south from Fajardo. Given the site's extensive wetland area and proximity to conservation areas, the recommended land use is as an open space reserve with low-impact facilities that can enhance the experience of visiting the public beach, ensuring perpetual waterfront access and recreation for the community.

Existing Site Photos

Figure V.24
Zone 9
Existing Land Use

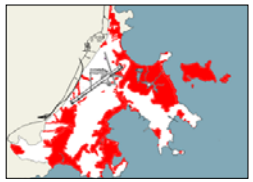


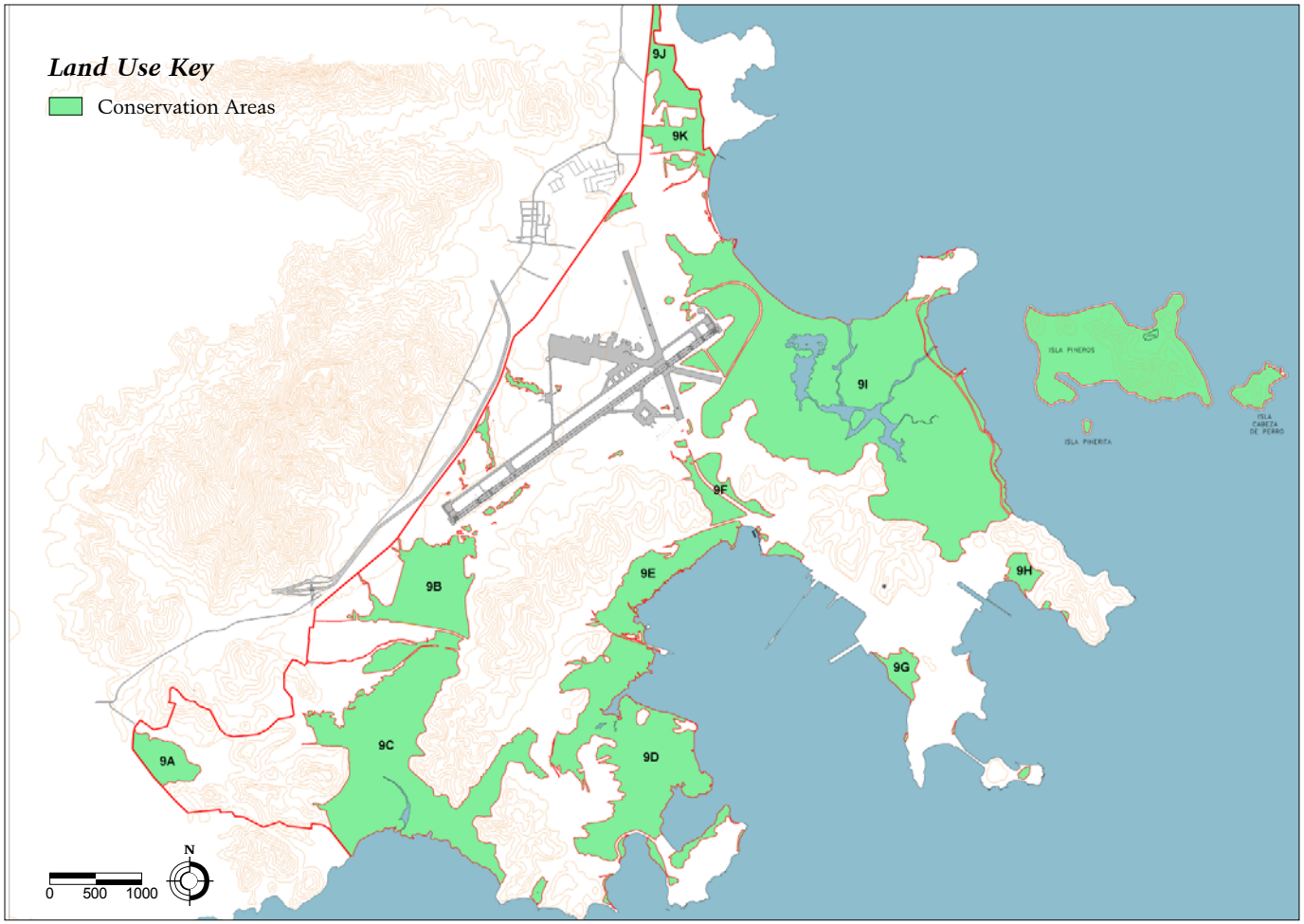


This area consists of a total of 2985.2 acres of nearly continuous undeveloped mangrove forests and wetlands on the mainland NSRR site. In addition, there are three small islands off the east coast of Punta Media Mundo including Isla Pineros with 359.6 acres; Isla Pinerita with 3.5 acres, and Cabeza de Perro with 38.6 acres. Together the mainland and islands incorporate 3386.9 available undeveloped acres.

Existing Site Photos

Figure V.25
Zone 9
Proposed Land Use





As development in the eastern region of Puerto Rico intensifies, opportunities for conservation of significantly-sized coastal properties diminish. At NSRR, one of the largest coastal properties under single ownership in Puerto Rico, large-scale redevelopment opportunities can exist without encroachment on land suitable for conservation. Thus, the proposed land use in Zone 9 is solely conservation, thereby contributing this acreage to the on-going regional conservation initiative.

Thousands of acres of mangrove forests and adjacent wetlands at NSRR provide natural habitat to a number of threatened and endangered species. These are discussed in detail in Appendix A.

Conservation of this property will contribute immeasurably to ecological education and advance regional ecotourism and environmental protection agendas. This will enhance the value of the entire property.

Proposed Precedents:
Las Cabezas de San Juan, Conservation Trust of Puerto Rico (Fajardo, Puerto Rico)

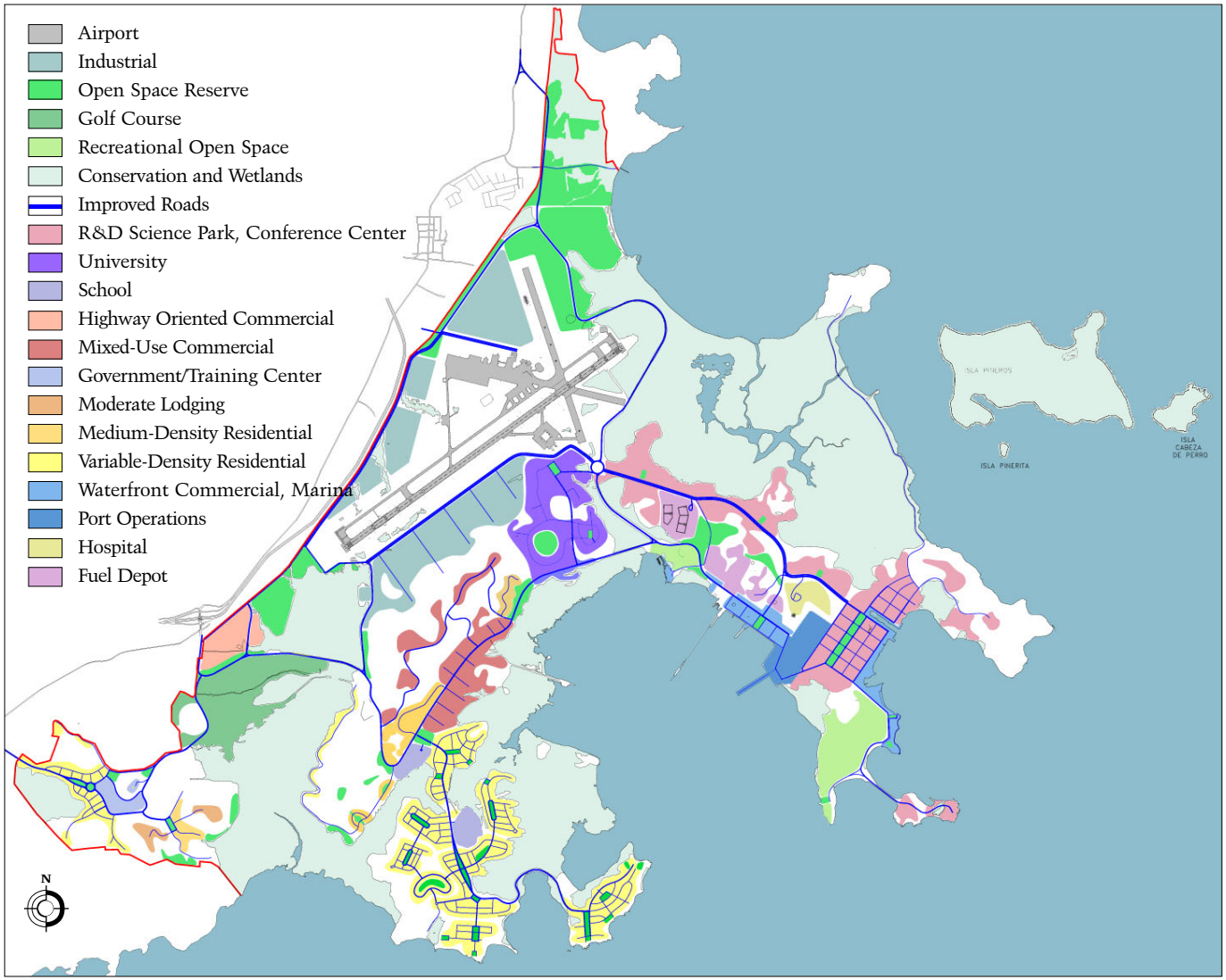


Figure V.26 Summary of Composite Land Use. *Gradient Not Shown at this scale. Individual Zones are shown in greater detail on following pages.*

Phasing

The redevelopment of the Base will, of course, occur in phases over many years. Accordingly, a phasing program has been prepared and is shown in Table V.3. It is, by necessity, illustrative and will vary depending on actual market conditions, availability and commitment of funding, policy decisions by the Commonwealth of Puerto Rico and by the Navy, and the level of interest and commitment by private sector developers, investors, and users.

Table V.3 Illustrative Phasing Program

Sources: LRA; Cooper, Robertson & Partners; Moffatt & Nichol; CB Richard Ellis Consulting

PHASE 1 (YEARS 1–2; e.g. 2004–2005)				
Property transfer via PBCs and EDCs completed and public sale process initiated.				
PHASE 2 (YEARS 3–10; e.g. 2006–2013)				
ZONE	**LAND USE**	**ACRES**	**SQ. FEET**	**COMMENTS**
1. Airport	*Airport*	*773*	*n/a*	*Commercial and general aviation; and cargo*
	Industrial/Manufacturing/Distribution	*75*	*1,000,000*	*Includes space for lease and owner occupied*
2. Bundy	*Moderate Lodging*	*22*		*±400 Rooms*
	Residential	*109*		*±300 Dwelling Units*
	Government/Training Center	*32*	*70,000 to 120,000*	
3. Golf Course	*Public Golf Course*	*167*		*Expand to 18 holes*
4. Downtown	*Mixed Use*	*46*	*100,000*	*During early years of Phase 2, assume some reuse of existing buildings while the developer formulates a master plan for this area; includes reuse of 150 new dwelling units in sub-zone 4E*
	University Campus	*37*	*200,000*	*Assume initial occupancy of classrooms, laboratories and dormitories during phase 2.*
	Public School	*17*		*Reuse of existing elementary school.*
5. Residential	*Residential*	*130*		*±500 dwelling units averaging 62DU/yr (assuming 50/yr for 4 yrs followed by 75/yr)*
	Private School	*22*		*Reuse of existing middle/high school*
6. Port	*Marina*	*40*		*±250 Slips*
	Ferry Terminal, Light Cargo and related uses	*60*		*Assume operation of ferry terminal by Port Authority*
	Hospital	*27*		*Possible PBC*
	Fuel Tank Farm	*74*		*Assume continued operation*
7. Science Park	*Research & Development (Science Park)*	*9*	*100,000*	*100,000 SF initial phase to accommodate potential users who have already expressed interest*
		17	*250,000*	*Additional 50,000 SF/year for Years 6–10*
8. North Entrance	*Open space, beach and recreation*	*100*		*Possible PBC on beach portion and adjoining area*
9. Conservation	*Conservation Areas*	*3387*		*Assume Conservation Conveyance*

PHASE 3 (YEARS 11–20; e.g. 2014–2023)				
ZONE	**LAND USE**	**ACRES**	**SQ. FEET**	**COMMENTS**
1. Airport	*Industrial/Manufacturing/Distribution*	*188*	*2,500,000*	*163,000 SF/yr plus 3 large users @300,000 SF each*
	Highway Commercial Retail	*18*	*200,000*	*If allowed by FAA*
4. Downtown	*Mixed Use*	*89*		*±365 Dwelling Units*
	Mixed Use	*53*	*300,000*	*Back office, call center, professional office, retail*
	University Campus	*74*	*400,000*	*Additional occupancy of classrooms, laboratories and dormitories*
5. Residential	*Residential*	*183*		*±700 dwelling units*
	Golf Course	*150*		*18 hole private course (optional)*
6. Port	*Waterfront Commercial*	*22*	*180,000*	
7. Science Park	*Research and Development (Science Park)*	*52*	*750,000*	*Additional 75,000 SF/year for years 11–20*
	Conference Center	*362*	*250,000*	*±250 rooms + meeting facilities, open space, passive park, or golf course*

PHASE 4 (YEARS 21–34; e.g. 2024–2037)				
ZONE	**LAND USE**	**ACRES**	**SQ. FEET**	**COMMENTS**
1. Airport	*Industrial/Manufacturing/Distribution*	*265*	*3,500,000*	*14 yrs @ 250,000 SF/year*
	Highway Commercial Retail	*28*	*300,000*	*If allowed by FAA*
4. Downtown	*Mixed Use*	*89*	*500,000*	*back office, call center, professional office, retail*
	University Campus	*55*	*300,000*	*Additional occupancy of classrooms, laboratories and dormitories*
6. Port	*Waterfront Commercial/Small Cruise Ships*	*22*	*180,000*	
7. Science Park	*Research and Development (Science Park)*	*173*	*1,250,000*	*approx 100,000 SF/year for 13 years*

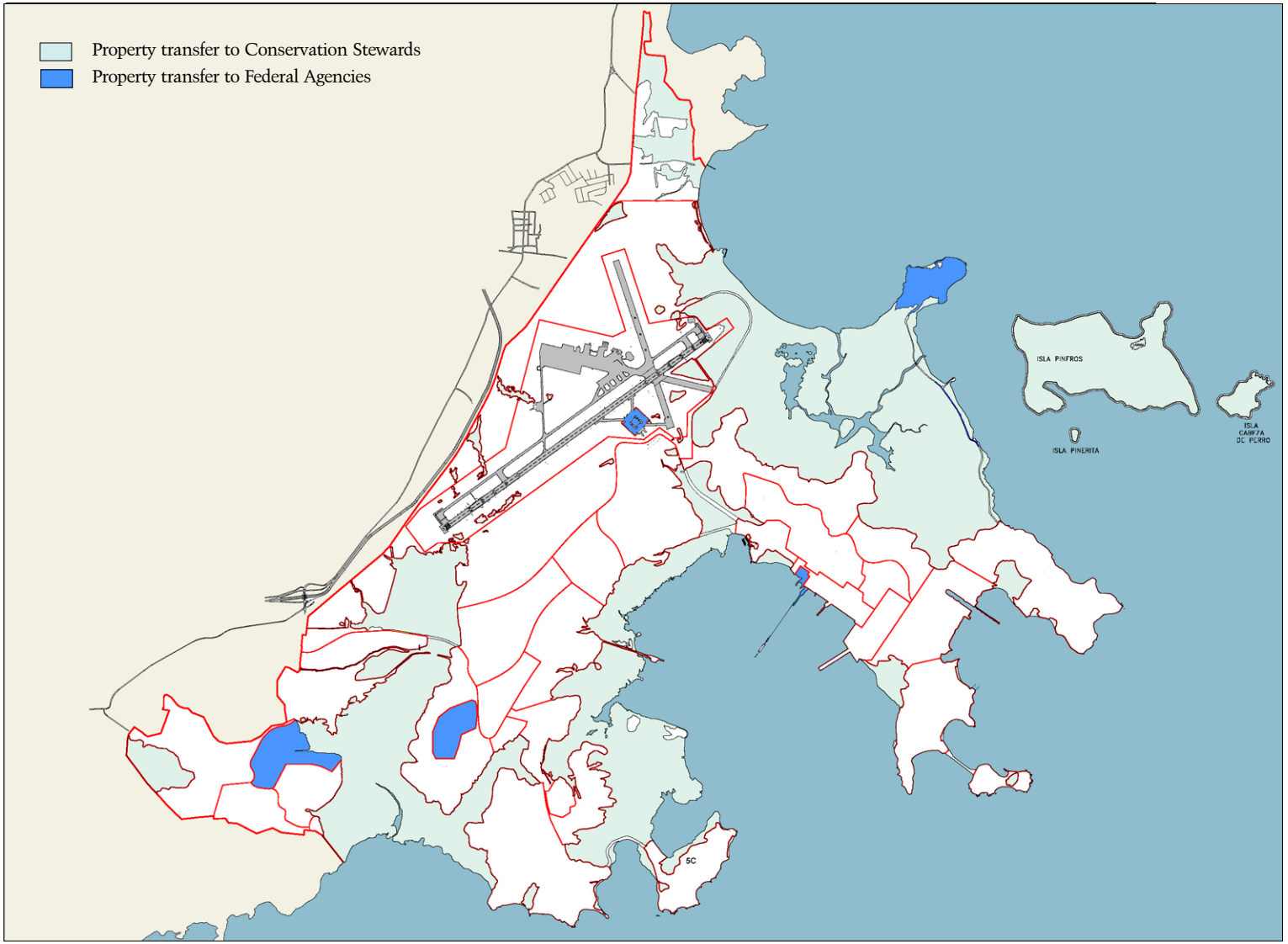


Figure V.27
Phasing: PHASE 1
2004–2005
Property transfer to Federal agencies and designated Conservation Stewards

Figure V.28
Phasing: PHASE 2
2006–2013

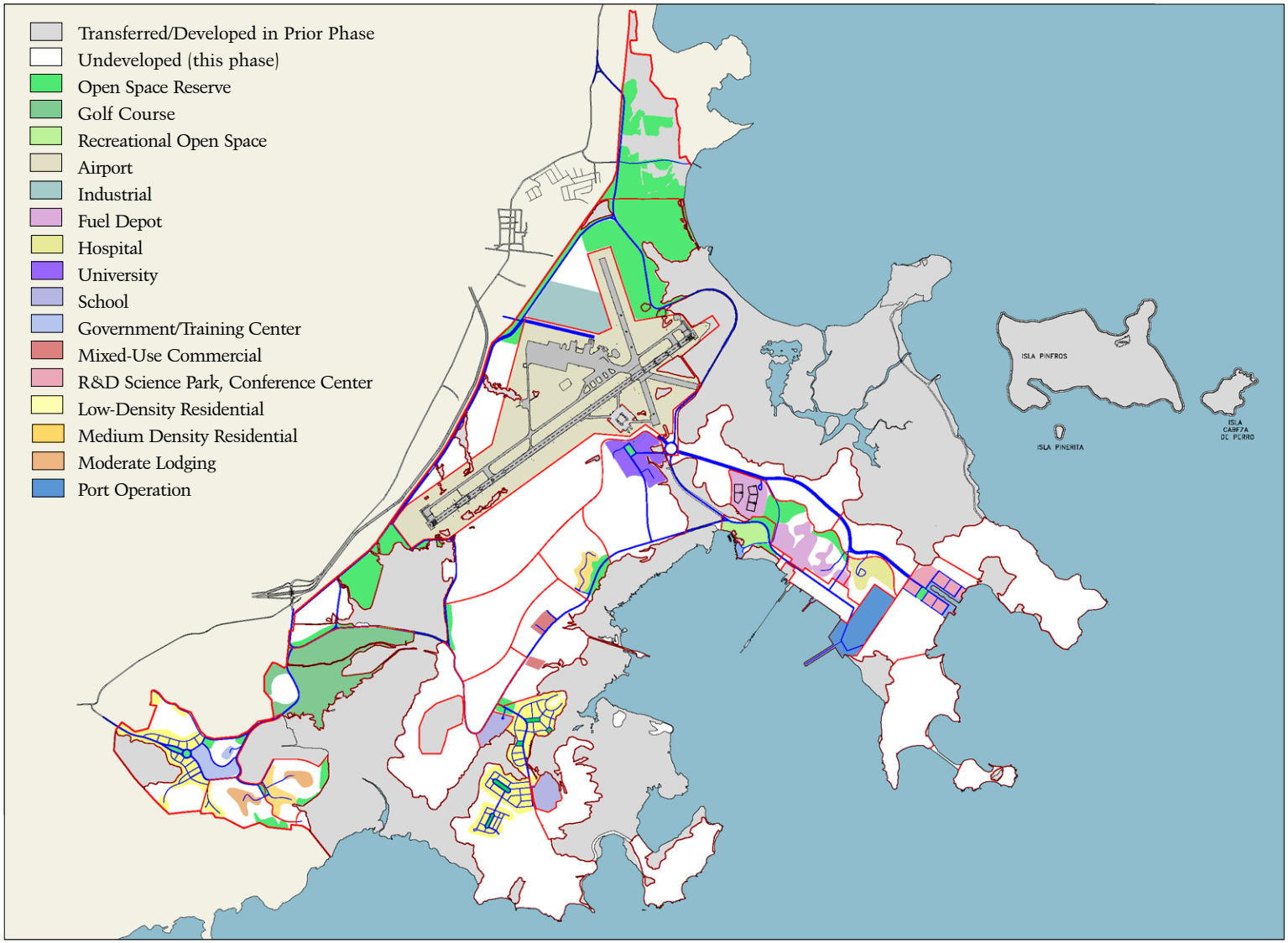


Figure V.29
Phasing: PHASE 3
2014–2023

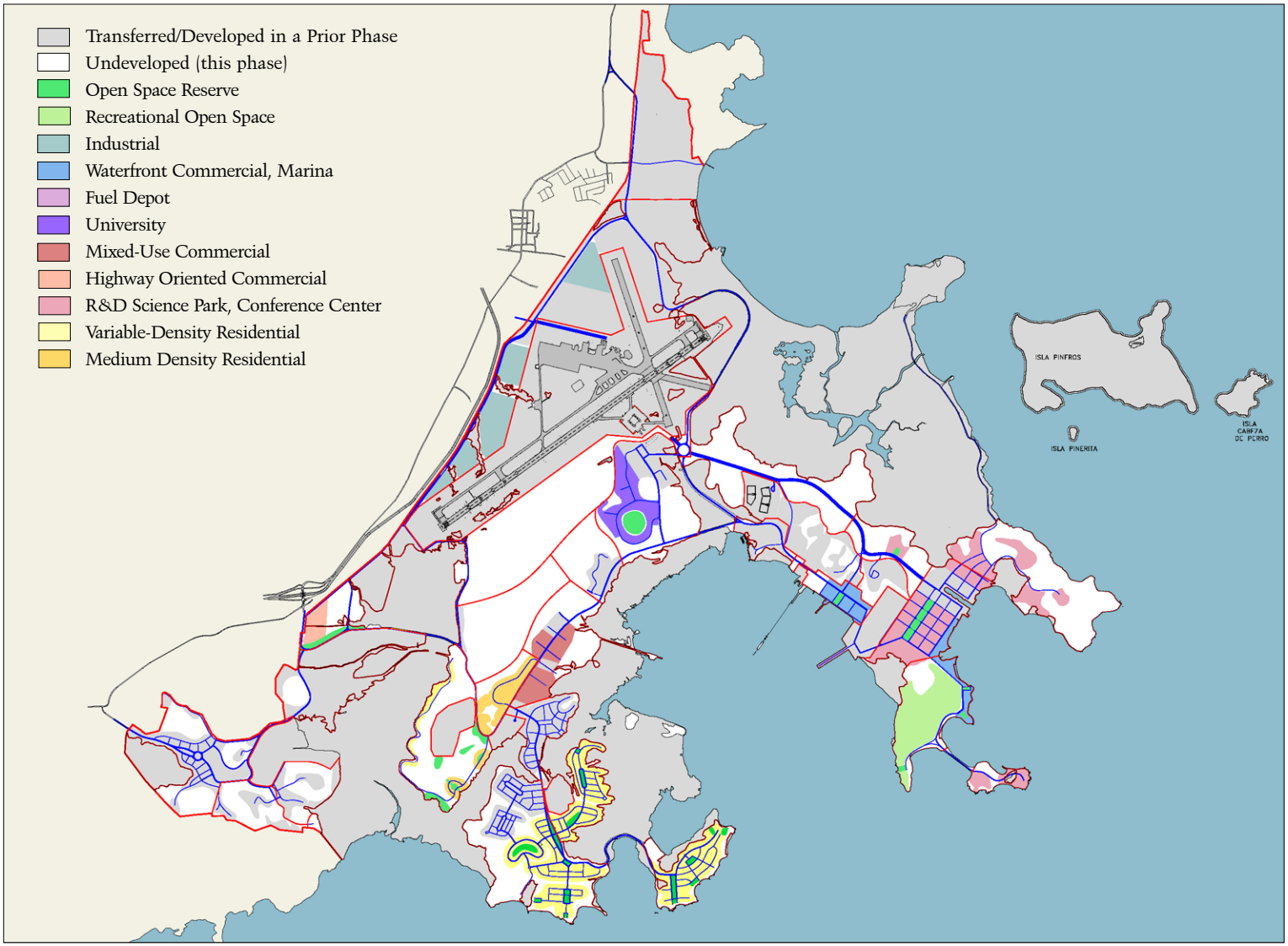
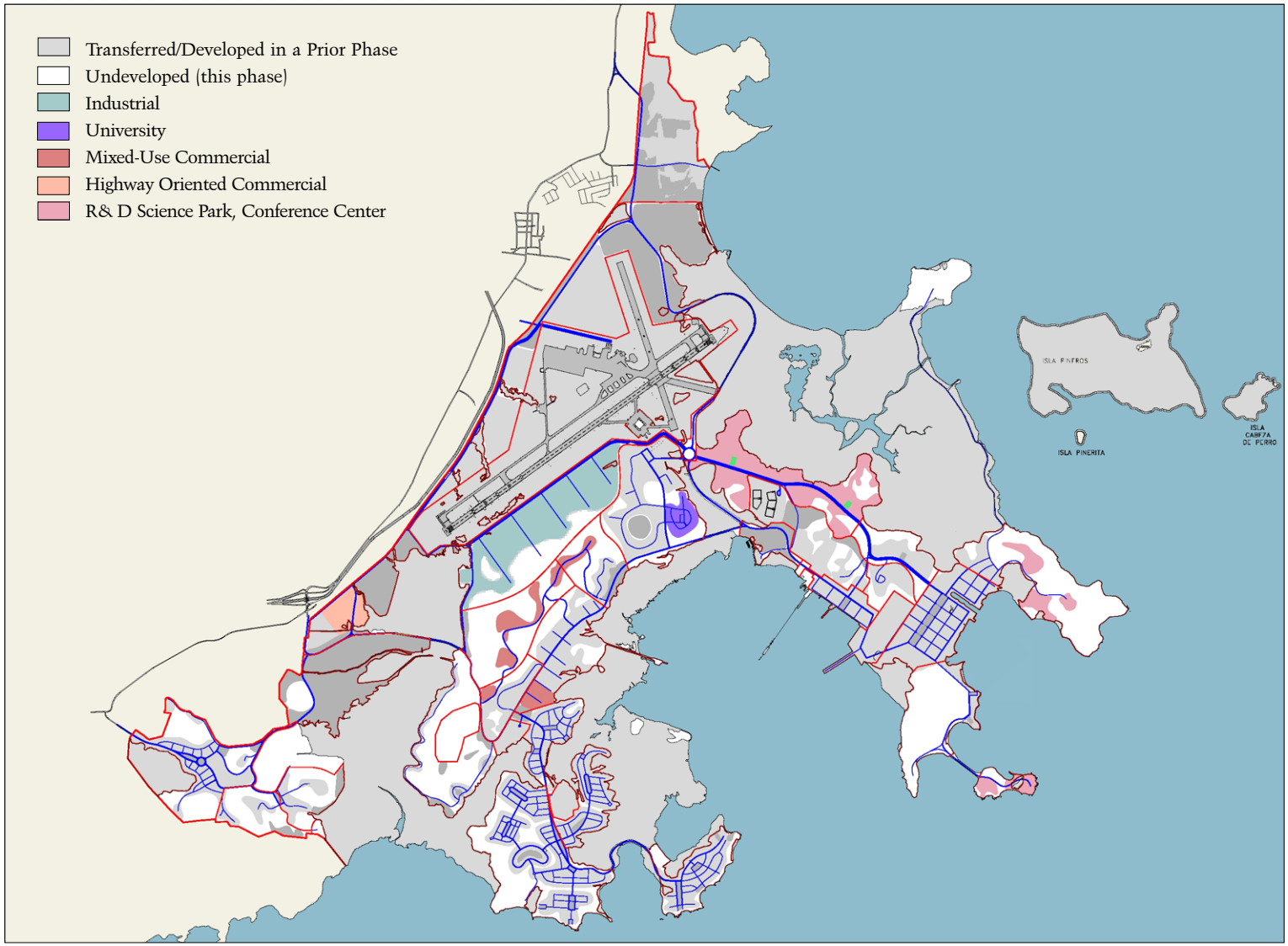


Figure V.30
Phasing: PHASE 4
2024–2037



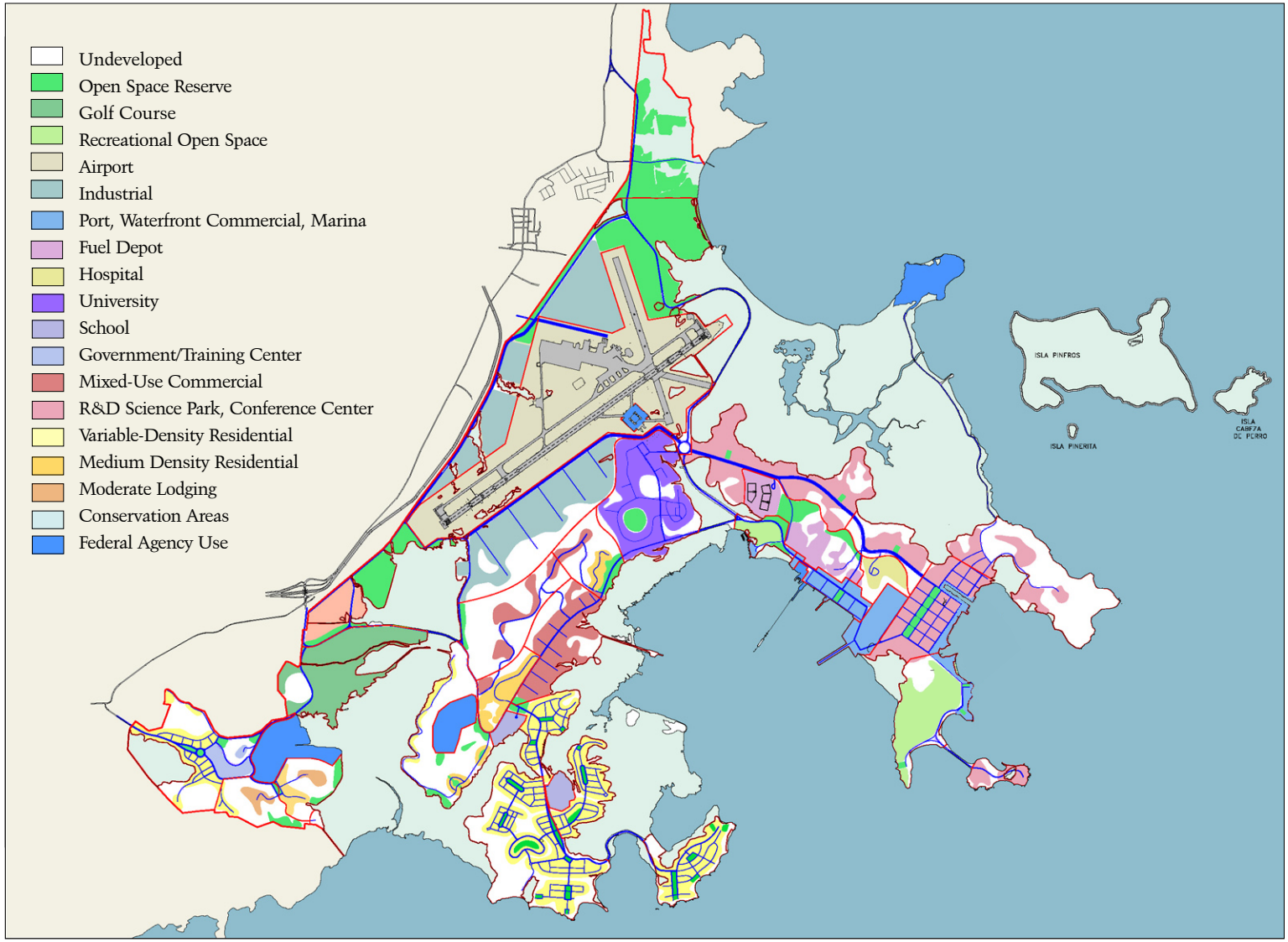


Figure V.31
Phasing: BUILDOUT

VI. Urban Design Framework Plan and Design Principles

This chapter presents the Consulting Team's Urban Design Framework Plan and the Design Guidelines for the NSRR Reuse Plan. This plan is the culmination of the Consulting Team's site, building, infrastructure and environmental assessments, informed and tempered by the market analysis. The LRA's aspirational goals for the Reuse Plan reflect the interests of the community and the Commonwealth. Blended together with the cumulative insights gained during the assessment phases, this is the basis for the Reuse Plan.

The Framework Plan equally embraces the opportunities and constraints that the site presents, assessed strengths and absorption rates of the market, and the range of uses that will best foster economic development within the immediate community and even accelerate growth in the region. It recognizes the availability of reusable assets, and the value of those assets in promoting economic activity at the site, particularly in the early development phase. Finally, the Framework Plan extensively uses imagery from the most relevant local and regional precedents to illustrate the range of available excellent, culturally rich, highly aesthetic development models for the Reuse Plan.

The accompanying set of illustrative plans, drawings and precedent images in this chapter describe the aspirational economic goals and design intent for each of the nine zones within the Plan. In essence, the Framework Plan demonstrates that through conscientious and thoughtful planning, the Base's redevelopment potential-and its value-will be dramatically enhanced.

Guiding the preparation are a series of Design Principles developed to articulate the defining values embraced by the NSRR Reuse Plan. Each of these is fundamental to the Framework Plan. In addition, preliminary concepts for building heights, setback and density have been identified to inform the underlying zoning process undertaken by the Planning Board.

Design Principles

A series of Design Principles were developed to articulate the defining values that have guided the preparation of the NSRR Reuse Plan. Each of these is fundamental to the Framework Plan; the order of these is neutral to emphasize the equal importance of each.

1. Generate high-level employment through development of a world-class science and research park consistent with the objective of fostering corporate investment of intellectual capital in the region.

2. Maintain, secure and enhance the value of airport and port operations for passenger and cargo transportation, as well as commerce, recreational and tourism use at the site.

3. Maximize the community and the public's access and enjoyment of the site's waterfront for commerce, recreational, educational and residential use..

4. Encourage lively and vibrant placemaking through multiple and mixed land uses and compatible streetscape and open space.

5. Enhance site access and visibility, through the creation of multiple signature entrances to the redevelopment and through well-designed, phased, compatible infrastructure improvements.

6. Encourage integration of sustainable development principles wherever possible. Encourage climate-responsive structures, capitalizing on solar, wind and view orientation while simultaneously reducing energy-dependent construction.

7. Reuse significant existing facilities without limiting the quality and possibilities for future development.

8. Conserve and enhance the site's undeveloped coastal ecosystem through informed stewardship that will provide limited access, sustainable opportunity for educational benefit to the people of Puerto Rico, and contribution to the broader regional eco-initiatives.

9. Create new sustainable residential neighborhoods supported by appropriate recreational, educational and neighborhood-scale retail amenities.

10. Enhance the redevelopment of the Base with design standards that will guide development toward regionally time-tested and climate-appropriate character defining details that are materially practical, sustainable and aesthetically complementary, such as roof overhangs, shaded verandas, balconies, louvers and jalousie windows, cooling planted courtyards and atria.

The Framework Plan for the reuse of Naval Station Roosevelt Roads proposes and illustrates a sensitive, restrained and balanced approach to development. Reuse and development is intended to preserve vital natural habitat while simultaneously supporting significant economic growth across many sectors, including commercial, research and development, industrial, residential, tourism, institutional, educational, recreational and retail. The plan proposes ecologically-sensitive areas to be protected, yet accessible and instructive. Developed waterfronts that are not part of Conservation Areas will be made publicly accessible, supporting recreational, tourist and port activities. The redevelopment proposes to balance natural terrain (e.g., Conservation Areas), cultivated terrain (e.g., landscaped open space reserves) and developed terrain (e.g., commercial, mixed-use and residential neighborhoods).

Vast proposed conservation areas will link and define a series of distinctive neighborhoods. Landscaped public spaces (such as parks, boulevards and squares) create identifiable neighborhood addresses, each with a distinct character drawn from topography, views and projected uses. The distinctive character and setting of each neighborhood is supported by the wide range of institutional uses distributed among the neighborhoods. These include a medical center, university campus, airport, training facility and schools.

The neighborhoods are also distinguished through differing scales of construction. For example, a low- and medium-density residential neighborhood with gardens and yards will differ from the livelier Downtown zone. A variety of uses that contribute to a vibrant community —one that has an activated streetscape on weekdays, evenings and weekends—is encouraged in certain neighborhoods such as Downtown, or the Harbor District and the science park—amenitized by water views. All neighborhoods are based on pedestrian-friendly streets with sidewalks, interconnected by roads with separate bicycle and jogging paths.

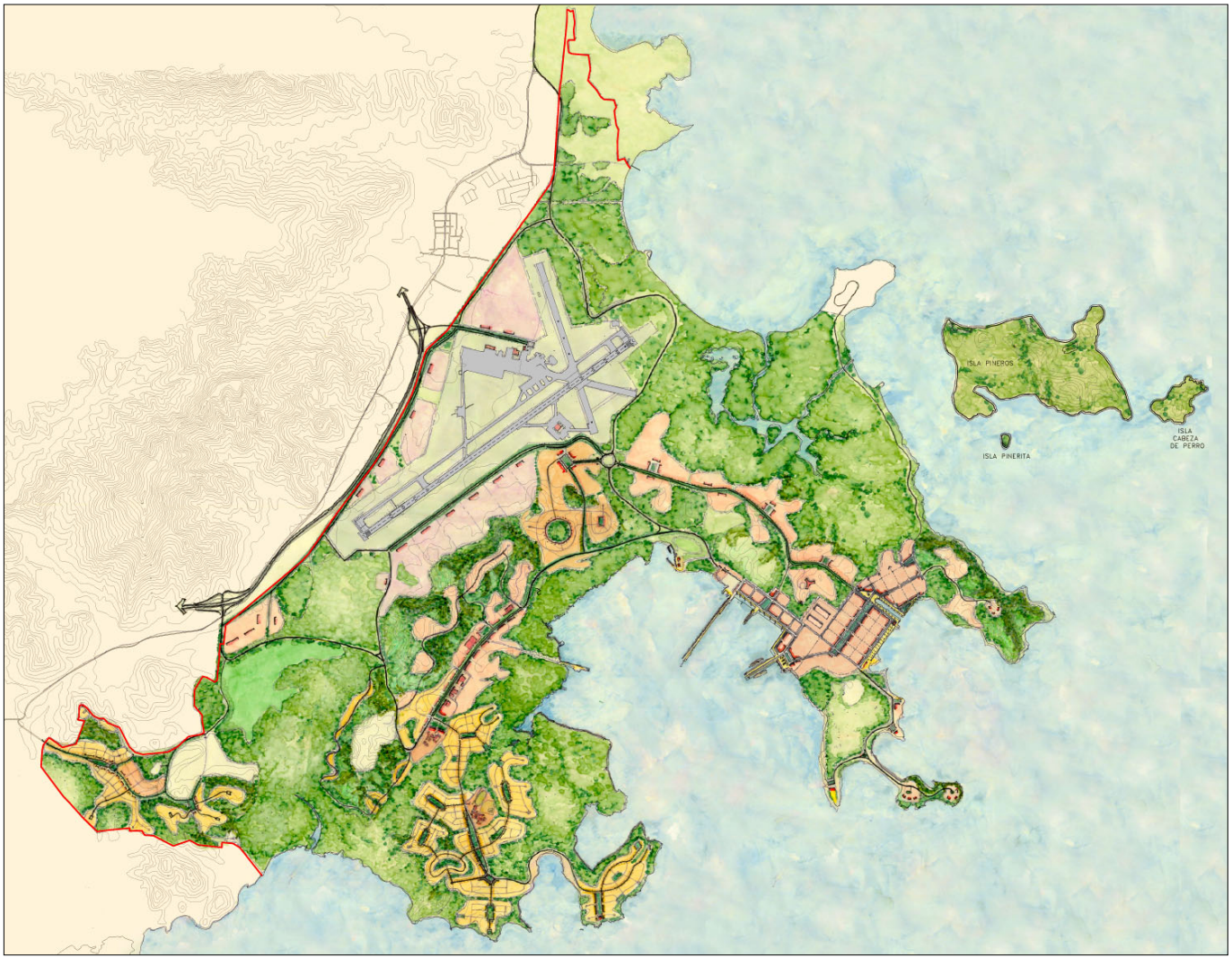
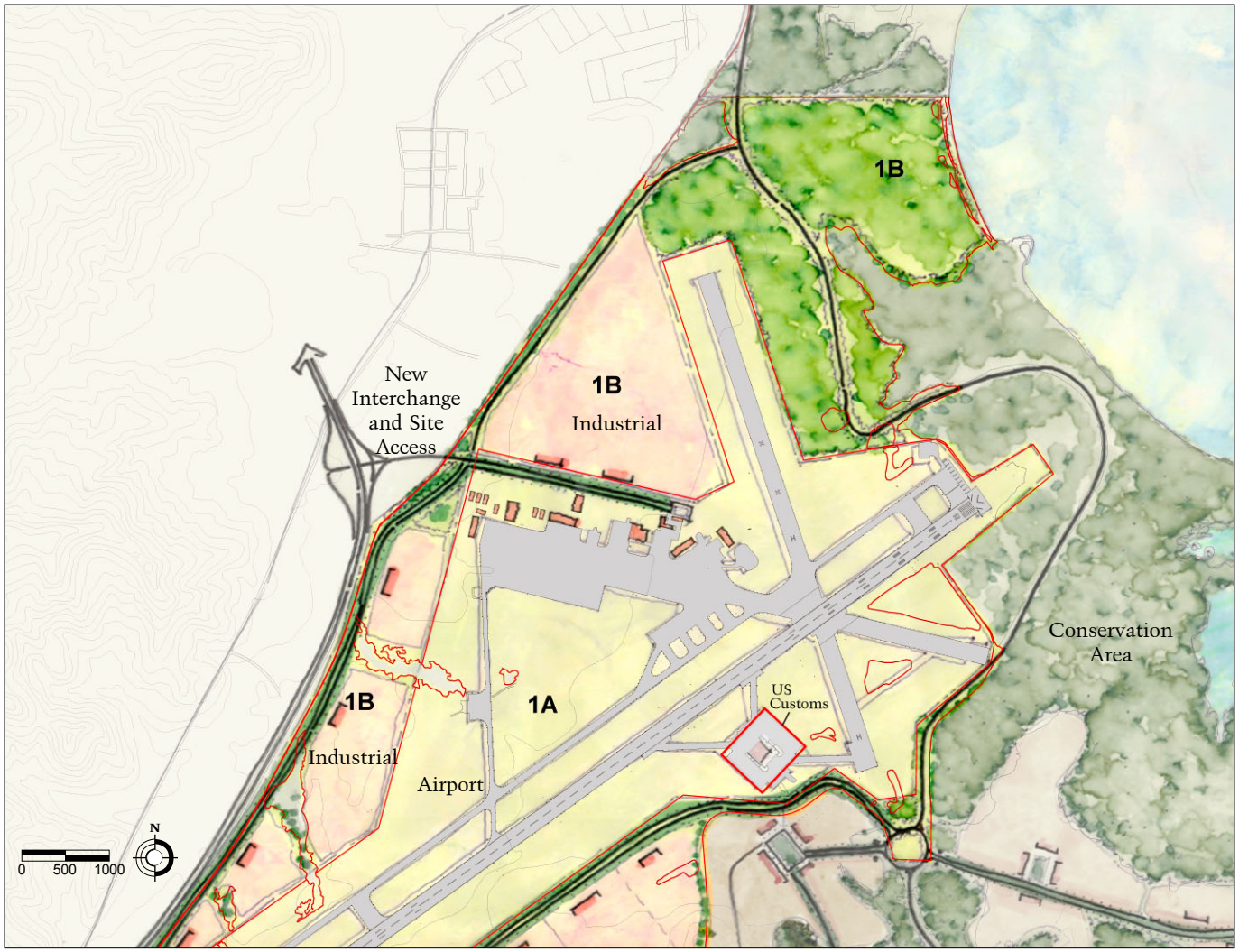


Figure VI.1
Composite Illustrative Rendering

Places with a distinct, lively and well-maintained character attract people and activity. Strolling along a working waterfront, dining outdoors among shady, decoratively lighted trees; studying in a laboratory with views of both sea and mountains; kayaking through sea grass and mangroves—these and many more memorable and unique experiences are waiting to be created here in Puerto Rico.

Framework Plan by Zone

Figure VI.1
Zone 1 (N)



Zone 1 (N) General: *Zone 1 will serve as the "front door" to much of the redevelopment area and demands signature landscaping and well-defined roadways with lighting and wayfinding and easily accessible parking. Developable land immediately surrounding the Airfield will be redeveloped for transportation-dependent industrial uses. These are bracketed to the northeast and southwest by open space reserves within the Airport's flight path noise zone.*

Zone 1 (N): Precedents:
L to R: International Trade Center (Cranbury, NJ); Palm-Lined Boulevard (Los Angeles, CA)

Zone 1A: Airport: A new highway interchange will establish a distinctively-landscaped gateway to the airport and industrial areas, relieving pressure from the circuitous road from the Northern Entrance through the Conservation Area. A boulevard lined with palm trees and contemporary decorative lighting leads to the terminal area.

Figure VI.2
Zone 1 (S)

Zone 1(S) General Description: *The Southern Entrance serves the redevelopment and the larger community with highway-oriented commercial development. The large, relatively low industrial buildings of this zone will sit behind well-landscaped and maintained setbacks along the roads.*

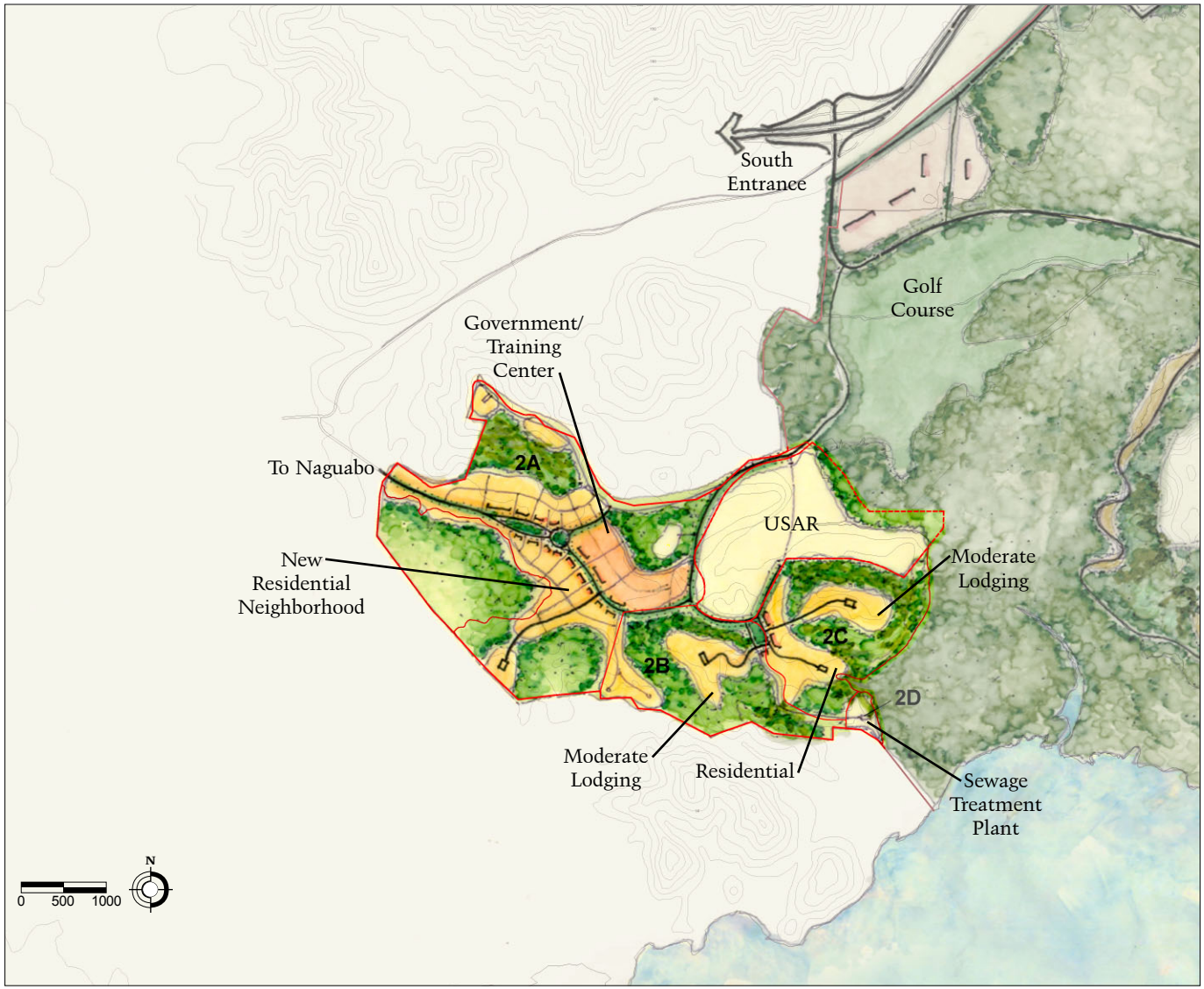
Zone 1(S) Industrial Precedents:
All Images: International Trade Center (Cranbury, NJ)

Zone 1B: Industrial & Southern Entrance:

- *Industrial:* Serviced by multi-modal transportation, these large parcels will be ideal for high-value, international manufacturing, assembly, and distribution uses. Generous landscaped roads will provide signature addresses to each site, including the airport terminal boulevard, the boulevard parallel to the highway, and the southern boulevard, visually screened from the airport with well-designed landscaping.

- *Southern Entrance:* The existing highway interchange makes this location very convenient both to Roosevelt Roads users as well as neighboring communities. It is envisioned as a regional shopping and commercial center, whose position as main gateway to the residential and Downtown commercial uses demands a high level of design and maintenance for landscape, buildings, signage and roads. For example, a well-landscaped open space area across from the existing golf course (Zone 3A) complements the desirable image en route to Downtown, the schools, new residential neighborhoods and the university campus.

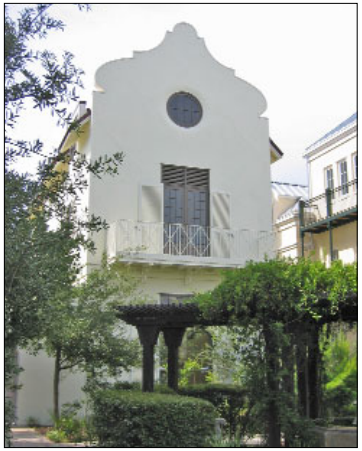
Figure VI.3
Zone 2



Zone 2 General: *Within a hilly landscape, a range of low-intensity uses forms clusters of development activity at the southwestern end of Roosevelt Roads. Accessed through and amenitized by the expanded golf course, these neighborhoods will feel quite distinct, surrounded largely by wetlands and undevelopable slopes. A maximum of three stories in height, the buildings in this zone will benefit from utilizing broad overhangs and careful orientation to create climate-responsive homes and facilities. Using traditional and distinctive Spanish Colonial and Caribbean architectural elements reduces energy consumption and promotes sustainability and cohesive neighborhoods.*

Zone 2: Government/ Training Center and Residential Precedents:
Clockwise from Top Left: Spanish Revival Home (Palm Beach, FL); Private House (Rosemary Beach, FL); Existing Views from Site (NSRR, Puerto Rico); Residential Street (Key West, FL); Private House (Seaside, FL); Private House (Rosemary Beach, FL)



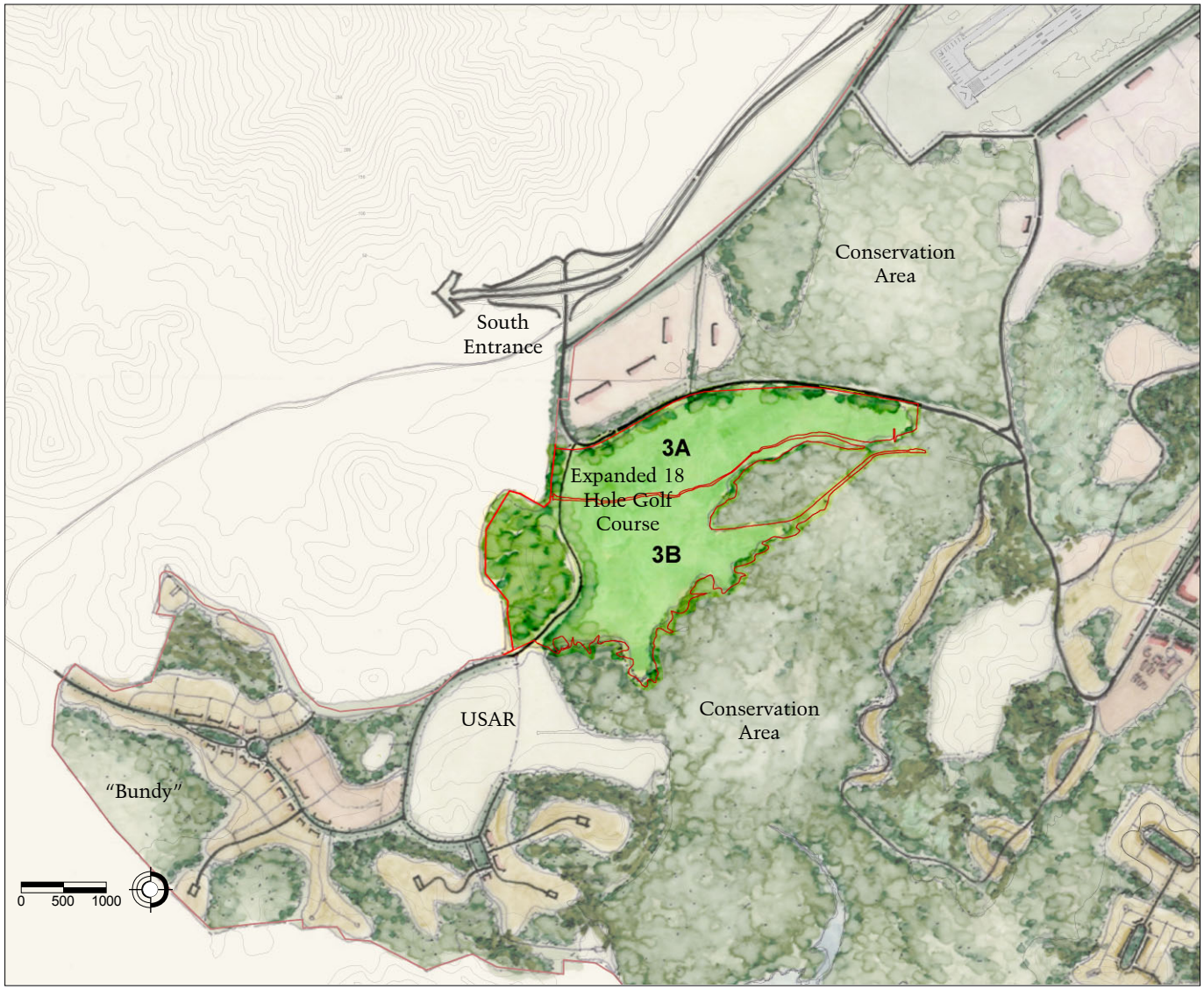



Zone 2A: Government/Training Center and Variable-Density Residential: Gently curving tree-lined streets with pockets of park-like landscaping characterize this precinct. Public open spaces and sidewalks throughout encourage front-porch living and neighborliness. Front yards with consistent setbacks are suitable for children's play, separated from traffic by on-street parking and planting areas.

Zone 2B: Moderate Lodging: This hilltop site reached through a landscaped square makes a memorable spot to spend a day or two of work-related travel or a week to two of vacation. Compact development will capitalize on fantastic views of El Yunque, sweeping Conservation Areas and the water while creating a distinct campus.

Zone 2C: Medium-Density Residential and Moderate Lodging: Smaller, more affordable lots share a generous public square for outdoor leisure activities. While secluded and free from through traffic, open spaces and sidewalks encourage front-porch living and neighborliness. The hilltop to the northeast provides another great lodging location in a compact, site-responsive configuration.

Figure VI.4
Zone 3



General: *Just inside the Southern Entrance of Roosevelt Roads, the existing 9-hole golf course (3A) is expanded and re-engineered to a full 18-hole public course (3A, 3B). Bordering on a large Conservation Area, this public recreational zone contributes to the redevelopment's restrained balance of natural terrain, cultivated terrain and developed terrain.*

Zone 3: Golf Course Precedents:
Golf Courses in Puerto Rico

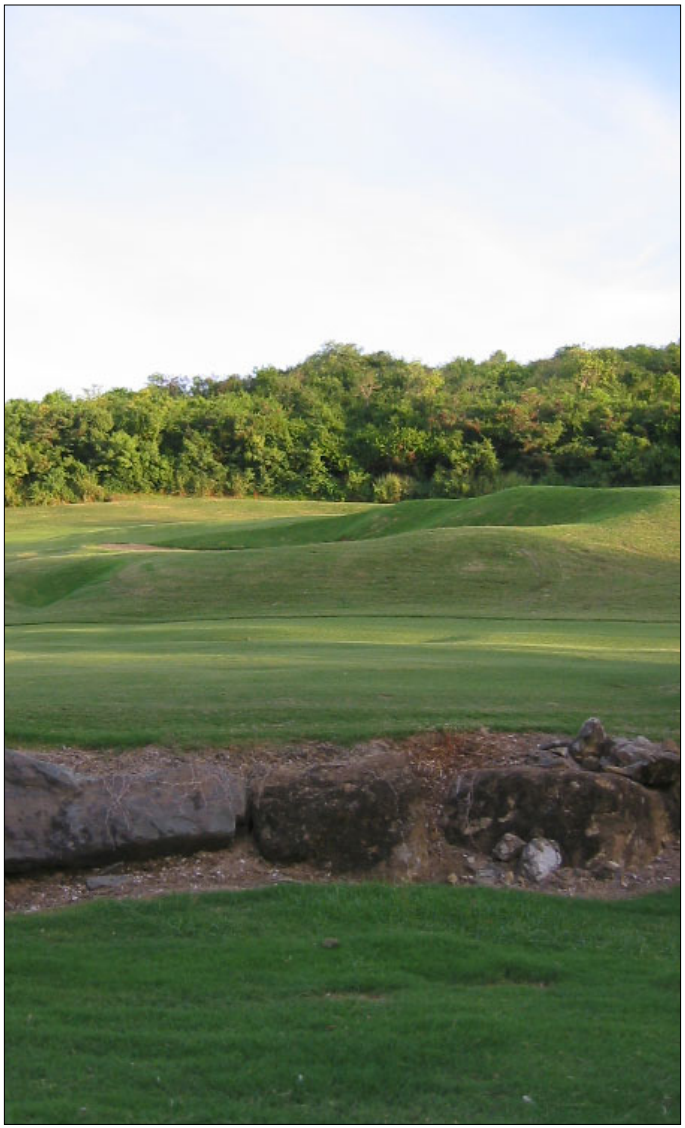
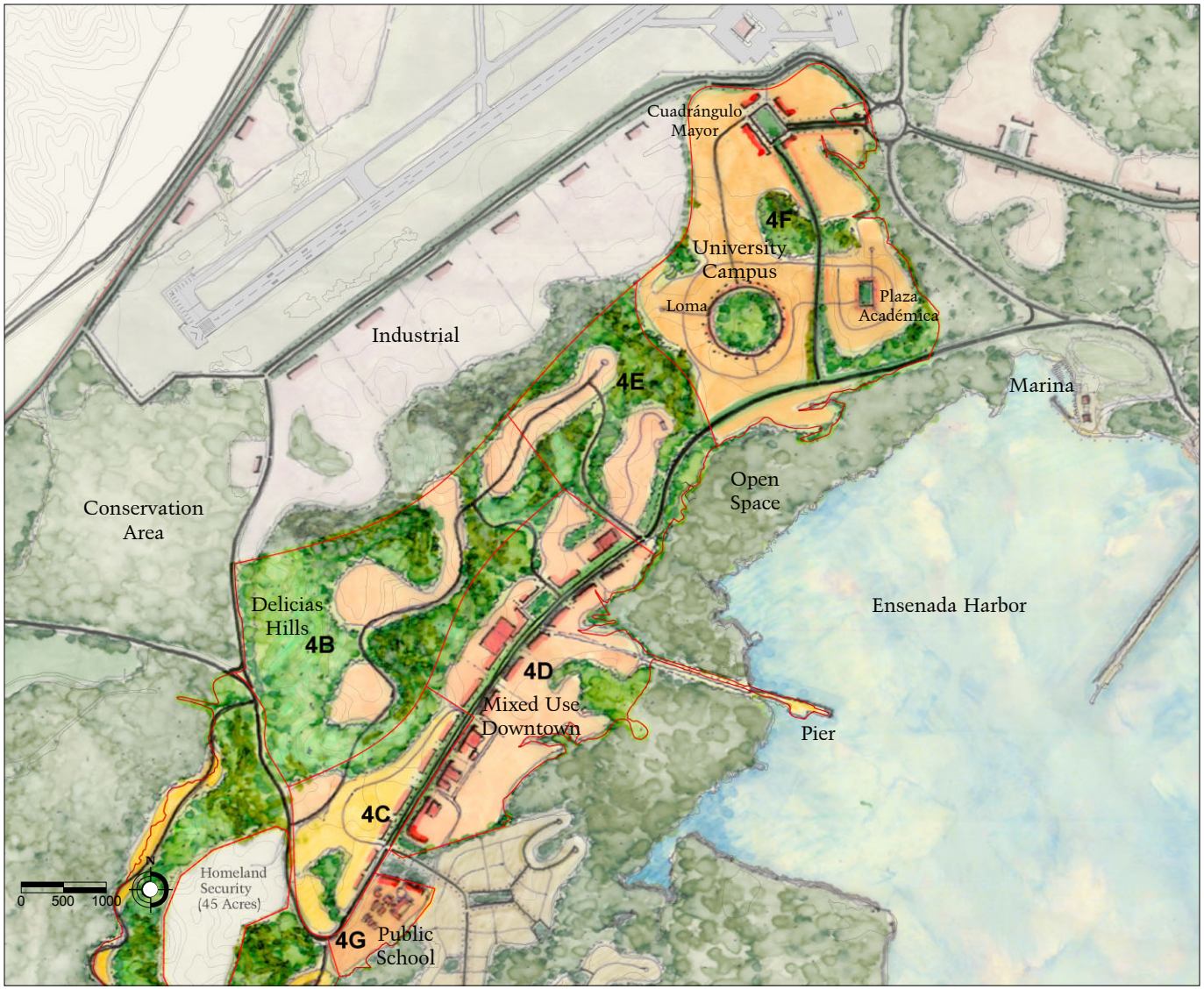


Figure VI.5
Zone 4 (N)



General: *The foothills of the Delicias Hills frame the neighborhoods of Zone 4, creating a vibrant mixed-use district at the center of Roosevelt Roads. This lively "Downtown" is bracketed by the University campus to its north and low- to medium-density residential uses to the south, conveniently adjacent to a middle/high school. Views to Ensenada Honda and El Yunque from the development sites at higher elevations could have significant appeal.*

Zone 4 (N): University and Lodging Precedents: *Clockwise from Top Left: Cityplace (Dallas, TX); Marbella Club Condominiums at Palmas del Mar (Humacao, Puerto Rico); Old San Juan (San Juan, Puerto Rico); El Convento Hotel (San Juan, Puerto Rico)*

Zone 4E: Moderate Lodging, Open Space and Mixed-Use Commercial: An open space reserve terminates the Downtown boulevard as a green punctuation mark. Just up the hill is a newly-constructed multi-family lodging or potential residential site that leads right into the lively Downtown core. Farther up the hill is another opportunity for a mix of uses with magnificent views (see Zone 4B, Figure VI.5).

Zone 4F: University Research Campus: At the nexus between the airport, industrial, Downtown, and science park precincts is the University Research Campus. The Campus will advantageously draw on many aspects of its location in curriculum planning (including wetlands ecology, marine biology, aviation and nautical engineering) as well as burgeoning industries—especially pharmaceutical and bioscience—that are growing in Puerto Rico. The location is well connected to road, air and water transportation and convenient to housing, commercial, industrial and recreational uses. Three major open spaces organize the campus settings: the "Cuadrángulo Mayor" near the airport, the hilltop "Loma" near Downtown and the "Plaza Académica" to the east. The Cuadrángulo Mayor will anchor the first phase of the Campus, linked by a stately boulevard to the proposed new traffic circle to the east. Later expansion will encircle the Loma while the Plaza Académica could be the center of on-campus residential life and a new water view faculty row.

Figure VI.6
Zone 4 (S)

Zone 4 (S) General: *"Downtown" includes a dedicated open space reserve, a public school, mixed commercial uses, moderate lodging and medium-density residential development. This urban-style blend of uses is served by an urban boulevard with sidewalks and four rows of trees framing divided traffic lanes. Where it creates a greater diversity of occupation, development up to three stories high is appropriate in Downtown with four-story elements for architectural expression at appropriate corners. However, ridgeline development should not exceed three stories. In general, development should line streets closely with well-landscaped setbacks. Most off-street parking should be located behind new development with only token short-term convenience parking in front, enabling the development of frontage buildings of the scale appropriate to Main Street commercial and retail districts.*

Zone 4 (S): Medium Density Residential and Mixed-Use Commercial Precedents:
Clockwise from Top Left: Cityplace (West Palm Beach, FL); Santana Row (San Jose, CA); University Avenue (Palo Alto, CA); Truman Annex (Key West, FL); Plaza (San Juan, Puerto Rico)





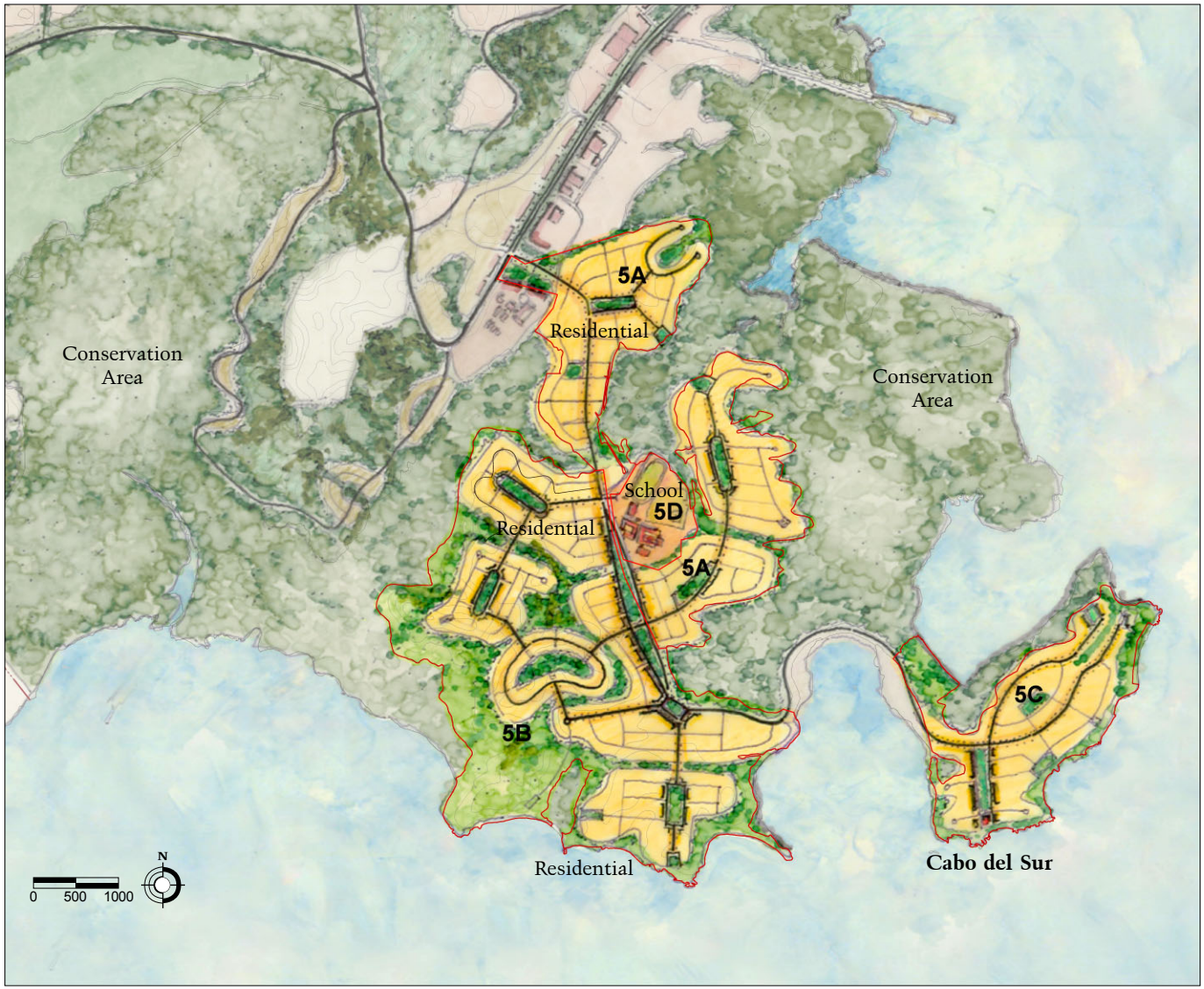
Zone 4A: Low- and Medium-Density Residential: Climate- and site-responsive homes nestle at the base of the hill following the curving topography of the tropical wetlands and will have expansive views to the mountains. To the northwest, one and two-story single-family homes hug the road and are therefore low-slung with deep verandahs to shade the afternoon sun, maintaining a rural character. The southeast sites allow clustered medium-density homes up to three stories high encircling landscaped gardens and recreational open spaces. Sidewalks in developed areas connect to bike paths leading to downtown shops, services and the public school.

Zone 4B: Mixed-Use Commercial: These ridgeline sites have fantastic views both towards El Yunque and the harbor. Possible uses include small-scale commercial enterprises and medium-density housing, up to three stories maximum in any case. Compact development patterns should be used here rather than low-intensity "carpet" development, particularly due to irregularly-shaped and fragmented site configuration.

Zone 4C: Medium-Density Residential: Nestled around the foothills, these parcels are within walking distance of both the public school and Downtown commercial activity. Slopes and lot configurations should encourage a variety of more compact and affordable housing typologies, such as walk-up flats and duplexes.

Zone 4D: Downtown Mixed-Use Commercial: Framing a beautiful palm-lined boulevard, the commercial core of Roosevelt Roads presents an opportunity to create a pedestrian environment—a "park once and walk" area. Bringing new development toward the street and placing parking behind is essential to creating a cohesive scale and frontage and a distinctive, true downtown environment. The fairly level terrain and potential for mixed commercial, retail, restaurant and residential uses can create a vibrant place with complementary daytime, evening and weekend uses.

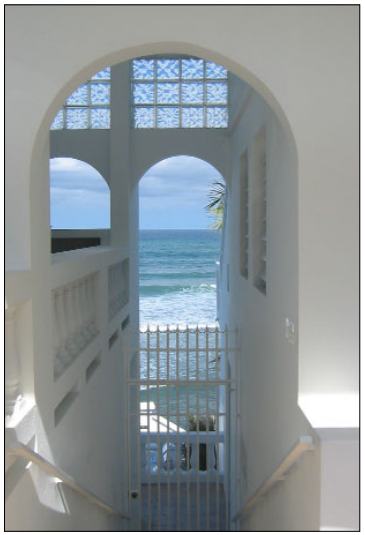
Figure VI.7
Zone 5



Zone 5 General:
"Cabo del Sur," the southern stretch of Roosevelt Roads, provides a variety of low-density homesites, from hillside aeries to wetlands-adjacent parcels to waterfront lots. Each neighborhood is centered on one or more landscaped public open spaces linked by tree-lined streets. In this scenario, the NSRR high school is reused as a private bilingual academy. In general, two and a half stories should be the maximum height for single family homes with selected three-story buildings and higher elements in prominent locations. School development may have up to three stories. The buildings in this zone will utilize the tradition of overhangs and green, planted courtyards for shading and cooling, and careful orientation to create climate-responsive homes and facilities with a distinctively Caribbean character. Significant open space in this zone will provide a range of neighborhood recreational opportunities and waterfront amenities.

Zone 5: Variable-Density Residential Precedents:
Clockwise from Top Left: Residential Courtyard (San Jose, CA); Residential Street (Key West, FL); Private Residence (Vieques, Puerto Rico); Private Residence (Vieques, Puerto Rico); Front Garden (Key West, FL)




Zones 5A, 5B & 5C: Variable-Density Residential: Each neighborhood provides a variety of lot types and sizes. Primary residential streets traverse each neighborhood, linking their parks/open spaces and frequently leading to pocket parks and overlooks at their termini. These landscaped spaces and sidewalks throughout encourage front-porch living and neighborliness. Front yards are suitable for children's play, separated from primary street traffic by on-street parking and planting areas. Sidewalks and bike paths link the neighborhoods to Downtown and the public school.

Zone 5D: Private Bilingual Academy: The former US Navy high school is given a second life as a bilingual academy

Figure VI.8
Zone 6

Zone 6 General: *A very active industrial area during the Navy's tenure, this zone has the potential to be a great waterfront district, including recreational opportunities, restaurants and ferry services alongside working port and industrial uses. Quality commercial streets with trees, sidewalks and on-street parking will serve all of these uses well, creating an appealing tourist destination. Every opportunity must be taken to create a broad, hardscaped path along the water that can be used both for work and leisure, giving everyone access to the waterfront. The existing hilltop medical facility will be reused by the wider community. Where it creates a greater diversity of occupation, development up to three stories high is appropriate in waterside areas of Zone 6, always however preserving or framing view corridors.*

Zone 6: Commercial Waterfront/Marina Precedents: *Clockwise from Top Left: Waterfront Cafe (Fire Island, NY); Marina (Puerto del Rey, Puerto Rico); Waterfront Esplanade (San Diego, CA); Mixed-Use Building (Cape Town, South Africa);Victoria and Albert Waterfront (Cape Town, South Africa)*

Zone 6A: Fuel Depot and Open Space Reserve: Existing fuel storage and delivery facilities will remain. The developable terrain between and around them will be dedicated as open space and planted to provide screening of the fuel depot.

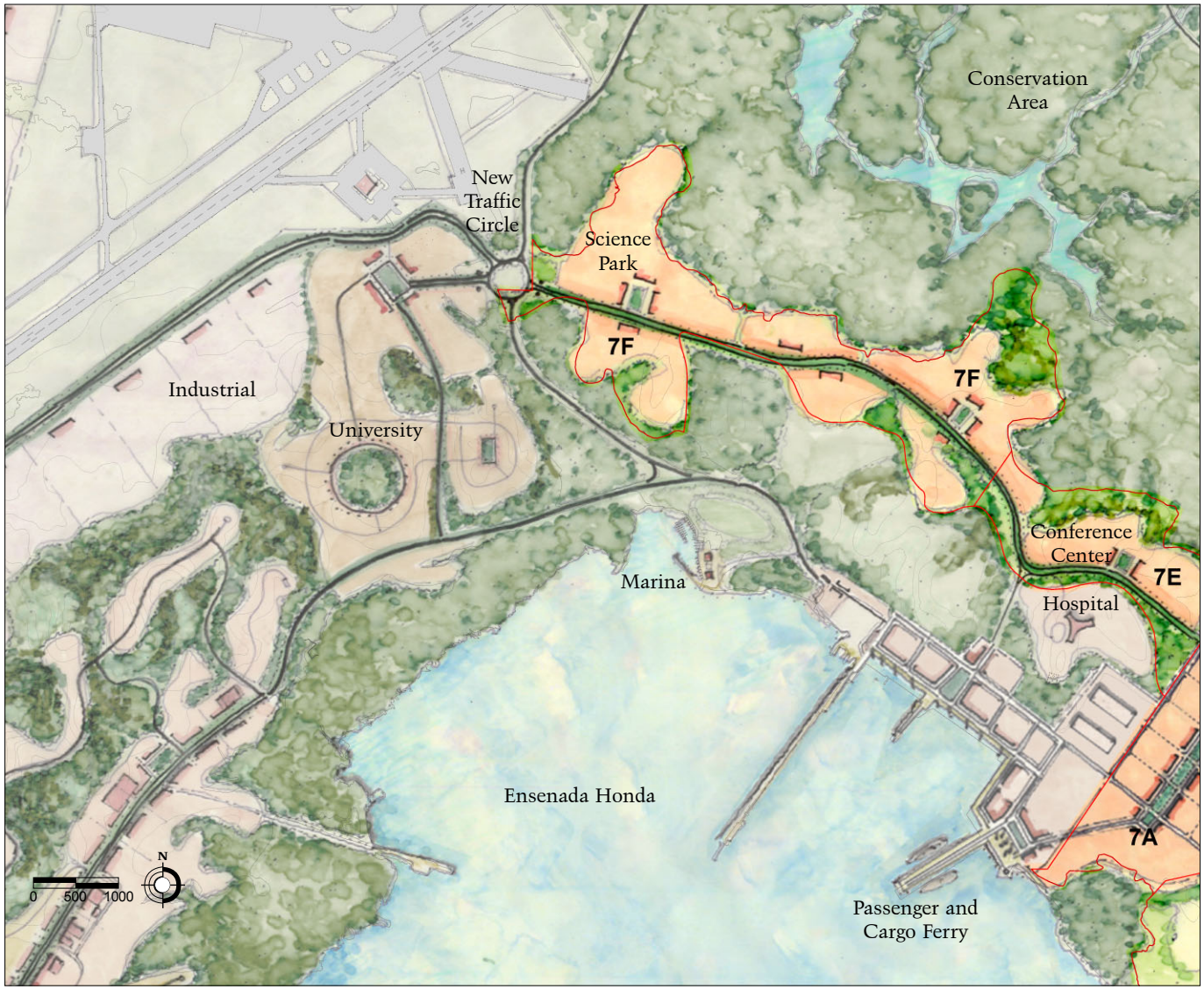
Zone 6B: Marina and Recreational Area: The main road will bend "behind" this zone, clustering athletic fields or other outdoor recreational facilities, with the marina, and waterfront activities, thus creating a sea-to-land recreational area. As the transition from Conservation Area to the Harborfront District, it is important that development here be attractive, of high quality, and well-maintained.

Zone 6C and 6E: Working Mixed-Use Waterfront: A landward commercial street and a seaward promenade frame this area, which may include water-related commercial activities as well as retail, restaurants, and other commercial uses. Mixed uses that generally operate on different schedules (early morning marine activity and evening restaurants and bars, as just one of many possible examples) could produce the following favorable results:

- Create a true mixed-use district with energy and activity day, night and weekend;
- Maximize public access to the limited stretches of waterfront not within Conservation Areas;
- Maximize the potential economic benefit of ferry activity (both tourists and residents);
- Realize the maximum potential of the existing infrastructure; and
- Provide a flexible framework for inevitable change in this area.

Zone 6D: Hospital: The existing hilltop medical facilities will be reused by the wider community. Such a hospital might also tie into the science park and Research University uses at Roosevelt Roads.

Figure VI.9
Zone 7 (N)



Zone 7 (S) General: *A world-class research and development and light manufacturing district, the science park builds on Puerto Rico's pharmaceutical and biotechnology sectors, aspiring to promote collaboration among a range of endeavors and projects. Linked to the airport, industrial and university uses, the science park provides large development parcels with excellent road, air and water transportation options, highly amenitized by the natural setting adjacent to prime conservation land.*

Zone 7 (N): Science Park and Conference Center Precedents:
Clockwise from Top Left: Bay Meadows proposal (San Mateo, CA); Middleton Inn (Charleston, SC); Bay Meadows (San Mateo, CA); Memphis Riverfront proposal (Memphis, TN); NJ Institute of Technology (Newark, NJ);





Zones 7E and 7F: Research Drive; Science Park: A broad, informal boulevard amenitized by an accompanying bicycle path links the Central Waterfront to the University area, stringing together a series of appealing R&D campus sites framed by conservation areas along its way. With a combination of larger and smaller development parcels, a variety of users will be able to find the perfect location. Associated compatible uses that support the science park focus are encouraged.

Figure VI.10
Zone 7 (S)

Zone 7 (S) General: *This rather large and attenuated terrain includes four districts: the Central Waterfront (7A), the Southern Peninsula (7B and 7C), the Northern Peninsula (7D) and the Research Drive district (7E and 7F). Supporting amenities, proximity to the passenger and cargo ferry, and outstanding water views all contribute to the unusual and highly synergistic development potential here.*

Nearby high-quality residential, recreational and commercial resources help make this an attractive and rather unique location in the entire Caribbean region. Conference facilities could serve local and regional users as well as those from the US and international locations.

Zone 7 (S): Hotel/ Conference Center, and Commercial Precedents:
Clockwise from Top Left: Beach Club at Palmas del Mar (Humacao, Puerto Rico); Victoria and Albert Waterfront (Cape Town, South Africa); Beach Club Pool (Humacao, Puerto Rico); Eaplanade (San Diego CA); Bay Meadows proposal (San Mateo, CA); Verandah at Beach Club (Humacao, Puerto Rico)

Zone 7A: Central Waterfront and Prado de las Ciencias: Organized in a generous street and block system, Cabo del Norte's Central Waterfront district provides a framework for a wide variety of purposes and will be a key and necessary amenity to assure the viability of the science park. Uses in addition to R&D that contribute to the liveliness of the neighborhood, especially if they help users "park once and walk," are welcome. A generous landscaped spine, the Prado de las Ciencias, provides a second, landward open space focus. These two open spaces will be framed with one to four story buildings close to the sidewalk while parking and service uses will be relegated to the side and rear access lanes.

Zone 7B: Southern Peninsula: Recreational Terrain: The recreational and leisure activities of the Central Waterfront continue on the northern and eastern coasts of Zone 7B. Most of the remaining territory is used for outdoor recreation, such as park, passive open space or golf, with supporting amenities such as a clubhouse and restaurants functioning at the water's edge. Structures should not exceed two stories.

Zone 7C: Southern Peninsula: Conference Facilities: Small-scale conference facilities not exceeding two stories cluster on Cabo del Norte's remote island, its "boot", connected by a low-slung causeway. This beautiful and secluded location supports small meetings and reflective working retreats and celebratory events.

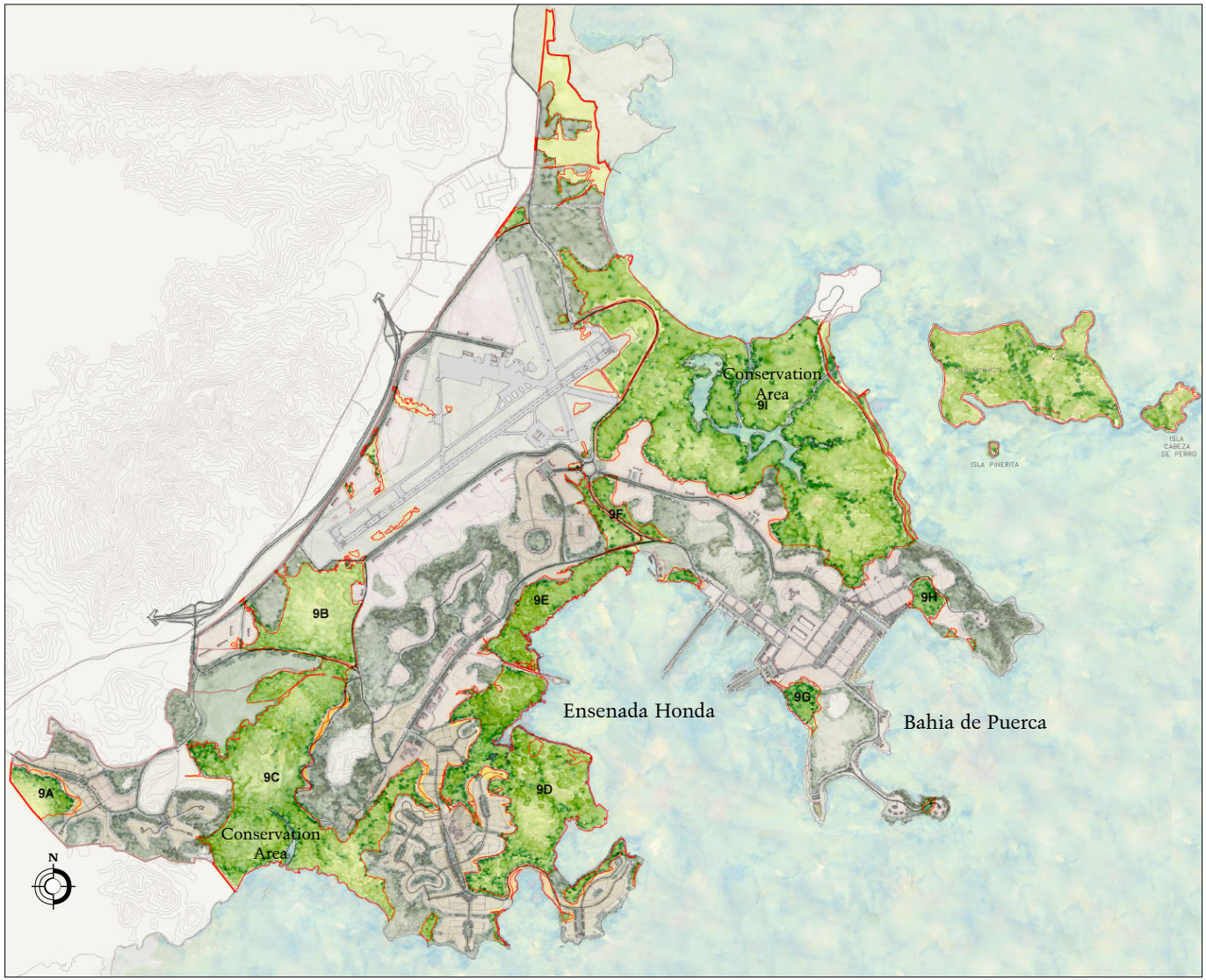
Zone 7D: Northern Peninsula: The Science Park's Conference Facility: Atop the eastern knoll is another small-scale component of the conference center, while the broader developable swaths of land to the west will provide breathtaking views on sites for science park R&D and related uses. Development in Zone 7D should typically be two and a half story structures.

Figure VI.11
Zone 8

Zone 8 General: *The Northern gateway area is preserved for public open space, recreation, access to the Ceiba fishing pier facilities and Ceiba Beach. Maintained landscaping along the road provides a suitable entrance to the redevelopment from the north, including a bicycle path. This area provides a critical opportunity to reconnect the town of Ceiba to its beachfront.*

Zone 8: Open Space Existing Conditions:
All Images: NSRR and Ceiba, Puerto Rico

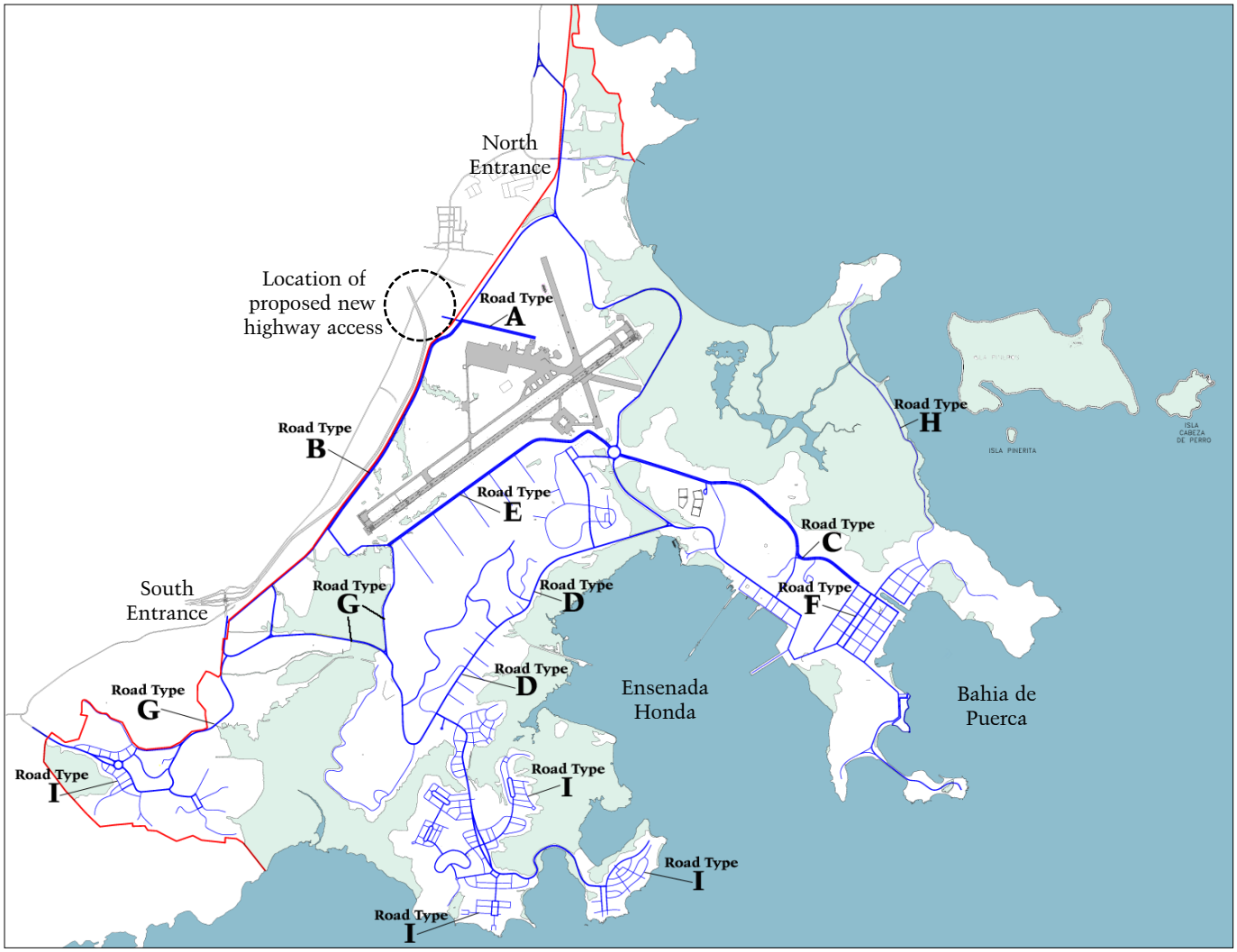
Figure VI.12
Zone 9



Zone 9 General: *Much of the property provides habitat for many species of flora and fauna, including the Yellow Shouldered Blackbird and the West Indian Manatee. Extensive wetlands, mangrove forests and surrounding sea grass beds are protected in several extensive Conservation Areas. A few paths through the conservation areas that provide access and utility routes will be preserved, modestly extended and improved. This complex ecosystem presents an opportunity for well-maintained and controlled nature-based tourist activities (kayaking and canoeing, hiking, wildlife watching, educational trips and the like). To that end, very limited compact and low-scale development to support educational and eco-tourism activities is encouraged, such as visitor interpretive center, eco-lodge overnight accommodation, and administrative and maintenance facilities. Visitors to El Yunque, Vieques and other natural areas of eastern Puerto Rico can make Roosevelt Roads their base.*

Zone 9: Open Space Reserve Precedents:
Clockwise from Top Left: Wetlands (NSRR, Puerto Rico); Windsurfer (Key West, FL); Wetlands Boardwalk (Fire Island, NY); Canoeing (Windmark, FL)

Figure VI.13
Road Types. Letters indicate location of specific types, detailed on following pages



Street Sections

A significant contribution to the differentiation among the new districts at NSRR will be the creation of landscaped roads, specific to their use and location and always of an appropriately high quality. The range of roads will include relatively formal boulevards Downtown and at the airport, simple curbless drives in undeveloped areas, and pedestrian-friendly streets with sidewalks, trees and on-street parking. Across the redeveloped site, dedicated paths for pedestrians, joggers and bicyclists will provide a safe alternative to private automobile use and a unifying open space linkage between the key areas of the plan.

Figure VI.14
Type "A" Road Section
Airport Boulevard.
Zone 1A
4 moving lanes;
wide planted median;
planted, edged road beds
with no sidewalk

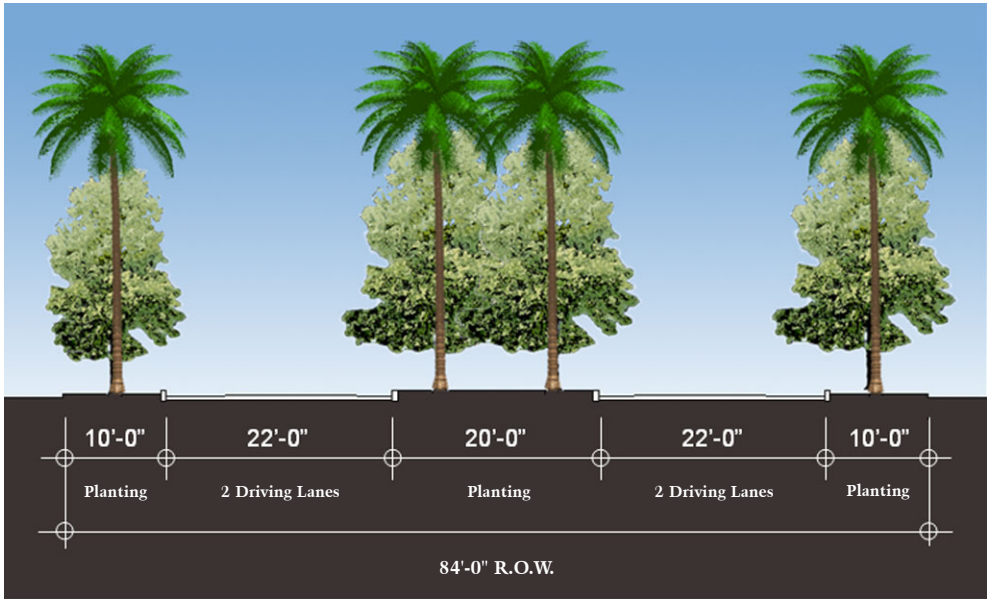


Figure VI.15
Type "B" Road Section
North Industrial Drive.
Zone 1B, NW of Airport
4 moving lanes,
screen planting both
sides with no curbs or
sidewalk

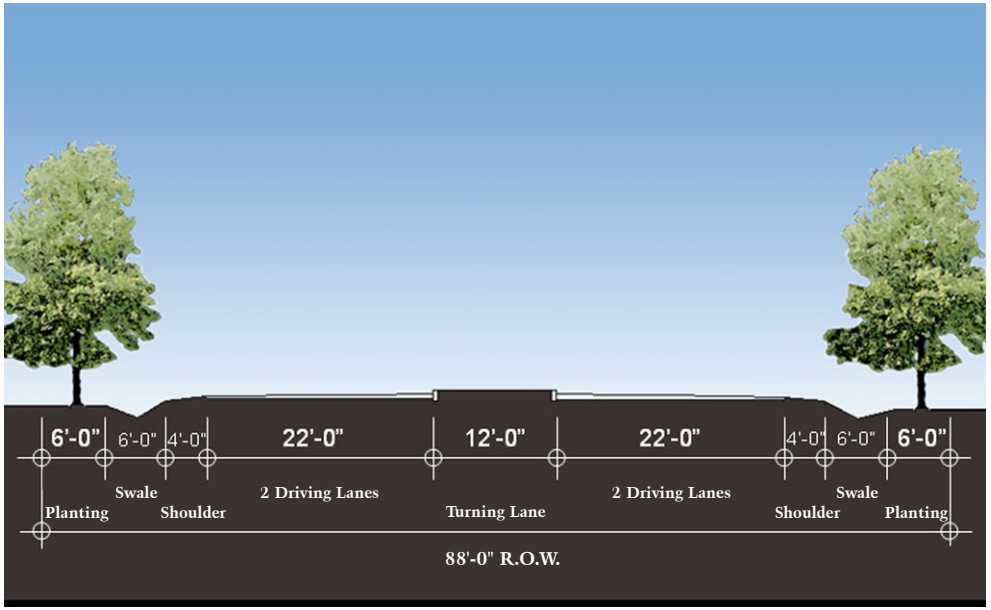


Figure VI.16
C: Type C Road Section
Science Park Drive
Zones 7E, 7F
4 moving lanes on divided curbless road with planted curbless median. Sidewalk on building side

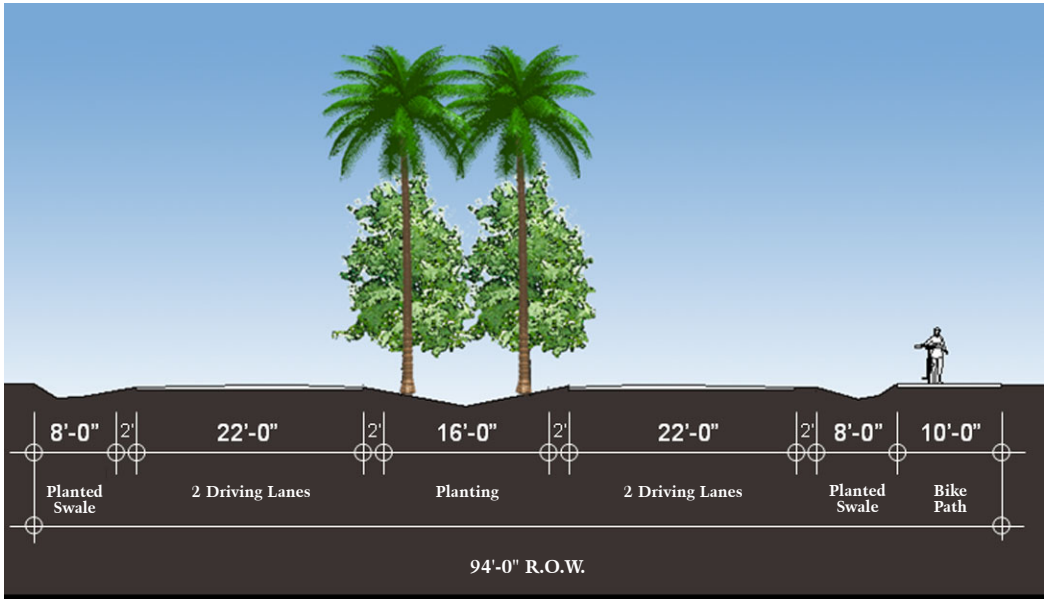


Figure VI.17
D: "Downtown" Boulevard
Zones 4B, 4D, 4E
4 Moving lanes along a curbed planted median. Planted and shaded walkways, both sides.

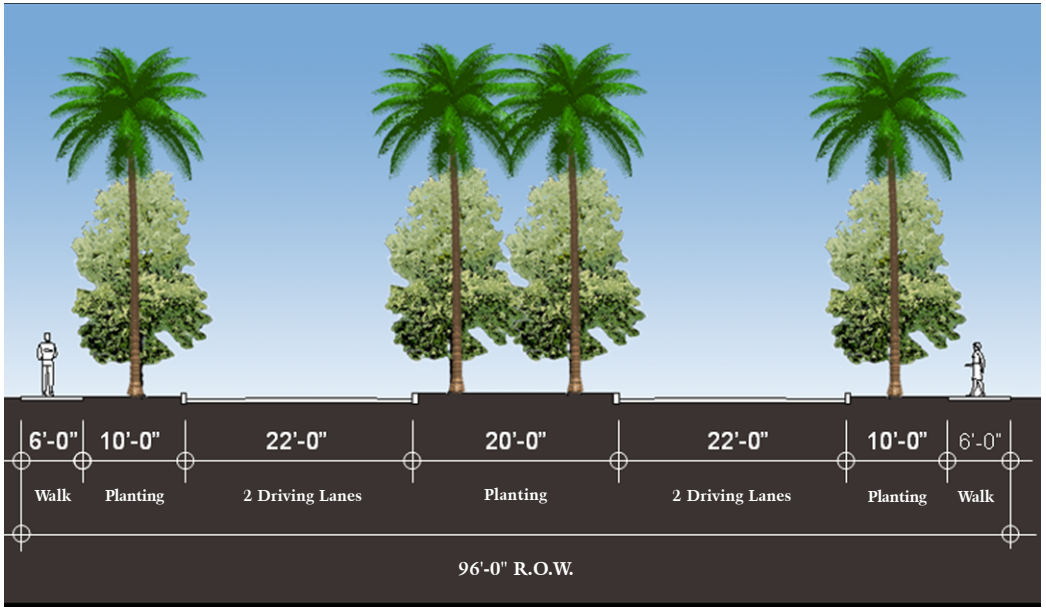


Figure VI.18
E: South Industrial Drive
Zone 1B
South of Airport
4 moving lanes curbed only along planted median and along south side. Landscaped screen along airport frontage. Shaded sidewalk along south side.

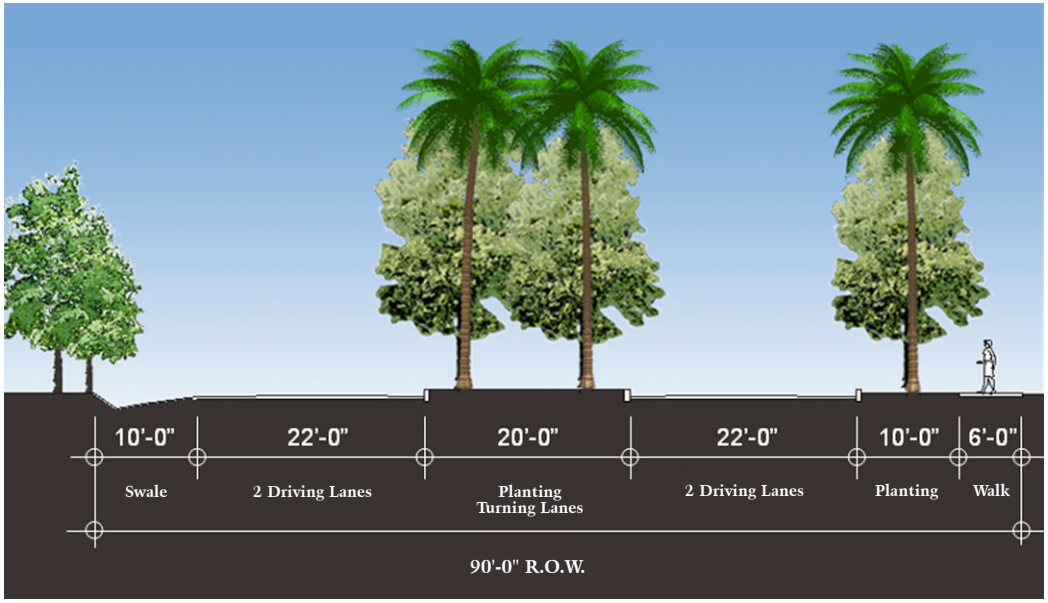


Figure VI.19
F: Prado de las Ciencias & Other Squares
Zone 7A)
Traditional, formal boulevard with regularly spaced palms, landscaped sidewalks and ornamental paving across pedestrian crossings.

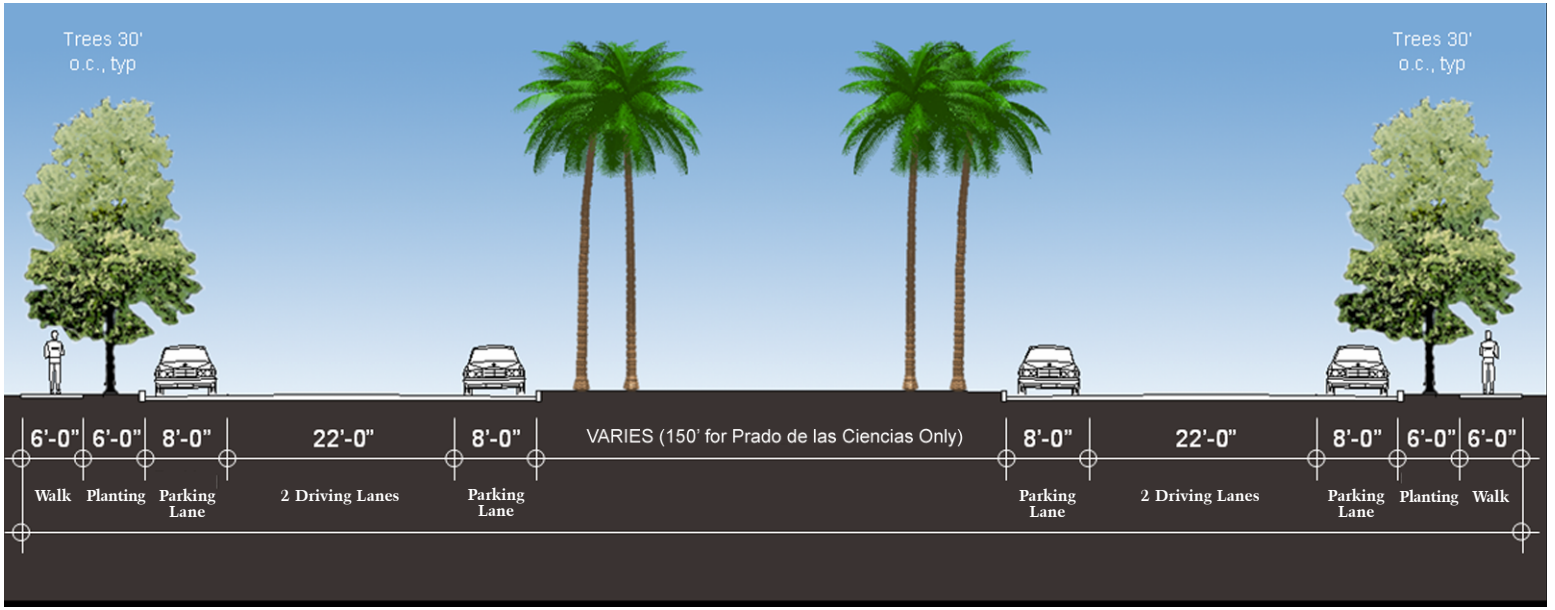
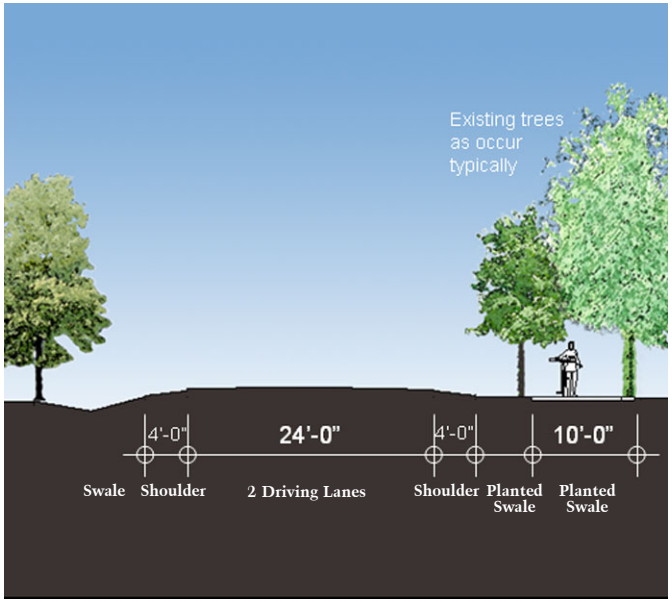


Figure VI.20
G: Type 1
Collector Street
2 moving lanes with softly landscaped swales.



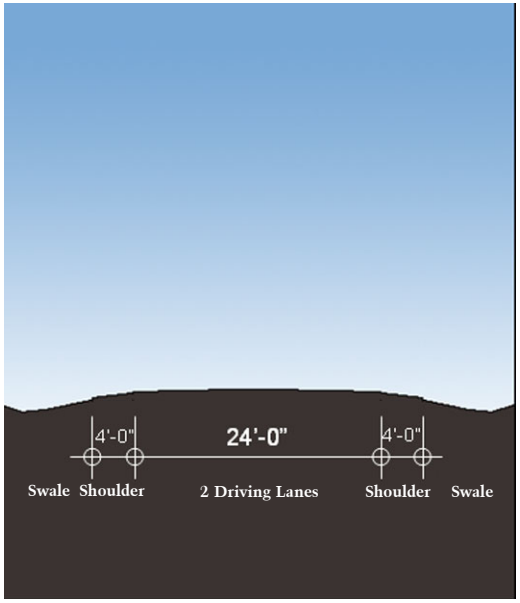
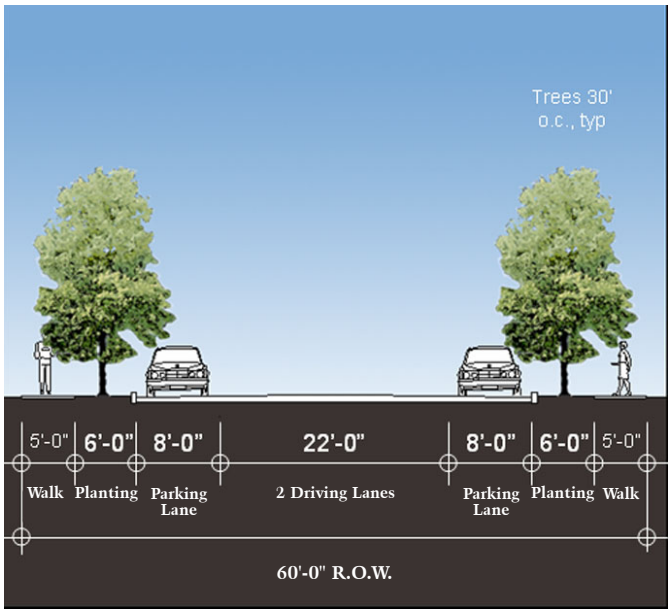


Figure VI.22
H: Type 2
Collector Street
2 moving lanes. To be minimally intrusive within environmentally sensitive conservation area.

Figure VI.21
I: Principal Street
2 moving lanes, 2 parking lanes. The typical neighborhood street, with shaded, residential-scaled walkways



VII. Infrastructure: Circulation, Utilities and Public Services

1. Introduction

This chapter summarizes the existing infrastructure and utility systems on Roosevelt Roads, which was presented in detail in the April 2004 working draft report *Site, Context & Market Conditions* (see Appendix A). It goes on to describe the Land Use Plan as it relates to these systems. This was done to determine if the systems, including water, sanitary sewer, storm water, electrical, telecommunications, and roads, will need to be upgraded and expanded, based on proposed "full buildout" improvements included in the Land Use Plan.

Required upgrades to systems are described, along with assumptions and clarifications used. Main components are identified by system; secondary and tertiary upgrades have not and cannot be quantified until a detailed plan is developed. The chapter touches on some of the considerations that must be given to maintaining the systems and possibly transferring them to public service agencies in Puerto Rico. The ultimate buildout of the base will differ from the land use described herein, and as such, system requirements will need to be studied at that time to confirm required upgrades.

This chapter includes order of magnitude, capital development costs for the utility and infrastructure upgrades of the Land Use Plan. These include sanitary sewer system, water supply system, power distribution system and road ways. Site improvement costs (building demolition and construction, landscaping, etc) are not included. Since the end user will determine which buildings will be scheduled for demolition and which for retrofit/reuse, capital costs for these items could not be determined. However, based on the number and square footage of buildings on the site, it is estimated that the costs for building demolition could reach as much as US$50 million.

The total investment required to develop utility and infrastructure upgrades of the Land Use Plan could reach US$102 million, based on Yr2004 dollars. This budget number represents full buildout of the base and does not take into account escalation for buildout in future years. Cost estimates for development are provided later in this chapter and are broken into phases. This opinion of cost is exclusive of upgrades to systems for some of the public benefit and economic development conveyances, and upgrades to systems to make them acceptable to and code compliant with utility authorities that may take over the systems from the Navy. As estimated by the Puerto Rico Aquaduct and Sewer Authority (PRASA) and Puerto Rico Electric and Power Authority (PREPA), the costs associated with upgrades to the water/wastewater and electric systems are approximately US$5.4 million and US$3.2 million respectively. It should be noted that the future use of the airport (whether public conveyance or not) is to be determined, and could necessitate significant improvements to the existing systems.

Costs for infrastructure and utility upgrades are of two types: those that are needed simply for new distribution, i.e., new development areas which previously had no utilities or road access; and costs that are needed to upgrade an existing system based on added demand.

All costs are order of magnitude for budgetary purposes only. The text is specific about what is included in the development of these opinions of probable cost. Assumptions of size, type, materials and unit costs of components were estimated based on past experience. No detailed designs have been performed to generate these costs.

2. Guiding Policies

a. Use Existing Infrastructure To The Extent Possible In Land Use Plan: Consideration was given to existing systems, before and during development of the Land Use Plan. The infrastructure on the base, with the exception of storm water collection, is fairly extensive and was developed and maintained by the Navy for their installations. Since the Navy installations were spread throughout the base, the basic roadways and utility systems already extend into the vicinity of each zone considered for reuse. Based on interviews with Navy personnel on site, review of Technical Data Packages prepared for the Navy, age of systems, maintenance records, and cursory visual inspection, it appears that the existing system components are in good working order.

The base storm drainage is collected via a system of drop inlets, drainage ditches, culverts and pipes and diverted to outfalls in the mangrove areas and the surrounding bays. The Navy maintains a stormwater discharge permit which is fully transferable. The water system provides both potable and fire water to all developed areas of the base. There are 3 wastewater treatment plants on base, all covered under the National Pollution Discharge Elimination System (NPDES) permit. These plants provide tertiary treatment, making the recycled water acceptable for irrigation, toilet flushing, and other recycled water uses. Roadways are for the most part two-lane and would need to be expanded to four-lane roads and/or improved with lighting, planted medians, curbs and gutters, in some areas of high-density traffic.

b. Ensure That Operationally Significant Systems Are In Working Order and Properly Permitted:

i. The base's water and wastewater systems are scheduled to be transferred to PRASA. On behalf of PRASA, CMA Architects and Engineers LLP conducted a condition survey of these systems. The survey and related costs are contained in a report titled *Roosevelt Roads Water and Wastewater Systems Evaluation Report* September 2004. Cost estimates were prepared by CMA for the improvements of the water and wastewater systems. As indicated in the report, the cost of necessary improvements to the potable water and wastewater systems is US$1,358,488, with an additional US$4,078,120 for improvements to the water filtration plant for anticipated, future water quality regulations for a total improvements cost of US$5,436,608.

ii. Water supply system. The reservoir, treatment plant, pump stations and distribution lines on the base are in good working order, according to most recent Technical Data Package prepared for the Navy.

iii. Wastewater treatment plants. These are currently covered under one permit. That permit is set to expire in the next year. With the base closed and personnel moved out, there is little wastewater being processed. This will compromise the functioning of the plant(s), and may void the permit. It is important to keep the permit active if the plants are to be incorporated into future uses on the base. The permitting process is arduous and long.

iv. Stormwater discharge. The Navy currently maintains a storm water discharge permit, which is fully

transferable. Future development may require a stormwater management system.

v. *Electrical substations:* There are two main high voltage (38 kV) feeds into the base; one to the airfield and one at Daguao, which serve 11 substations throughout the base that step down and distribute power to each zone.

c. Phase Infrastructure Improvements Based On New Development: The Land Use Plan involves phased construction, based on demand. Improvements to infrastructure should be phased to correlate with development. This is described in detail later in this section.

d. Consider Key Issues

i. *Wastewater treatment plants:* It is important to keep the plants operational and the NPDES permit valid.

ii. *Conveyances:* The Homeland Security area, Army Reserve area, and the US customs area will be transferred by the Navy. The airport, port/ferry terminal, etc. may be conveyed by the Navy to various other agencies. Populations, building square footages, demand for utilities etc. for these conveyances are not known at this time and are therefore not included in this section. The demands on the utilities due to the hospital and schools, which could be conveyed by the Navy, have been estimated. The future use of airport and associated fuel tanks and Pier 1 must be determined and analyzed.

iii. *Water tapping and water quality:* It is said that the raw water conduit that conveys water from Rio Blanco to Roosevelt Roads is tapped outside the base by residents. This water is not safe to drink, and notices have been sent around to residents by the Navy Public Works Department. It is unknown what quantity of raw water is collected in this way, and whether this practice will grow in the future.

iv. *The installations on Roosevelt Roads* were constructed by the Navy, and some of the systems may be constructed to different standards than are acceptable to certain municipal, Commonwealth, or Federal agencies. Code compliance was not included in this scope of work. The systems on the base are not metered. All new development will need to include meters as part of the infrastructure improvement program.

3. Land Use Plan, as it Relates to the Utilities and Infrastructure

The Land Use Plan is described and graphically shown in Chapter V. There are several parcels of land that will likely be conveyed to various entities. The proposed conveyances are referenced within this chapter for the utilities and infrastructure, such as they relate to the overall demand on and capacity of the systems. With the exception of the Army Reserve area, the Homeland Security area and other possible conveyances (the airport and port/ferry terminal), the loads from these conveyances have been estimated and considered in determining upgrades.

The Base has been divided into zones, based on existing land uses, development and geography. The zones and potential development that are described herein were used to determine adequacy of existing infrastructure and utility systems to accommodate improvements.

- **Zone 1** includes the existing airfield. The Puerto Rico Ports Authority (PRPA) has commissioned a Master Plan study for the airport, separate from this report. The final master plan is not available as of the writing of this report. A preliminary report summary has been issued thus far. The remainder of Zone 1 is planned for light industrial and retail development. At full buildout, there is a potential for 6.9 million square feet of light industrial space, employing 6,900 people, and 500,000 square feet of retail space. The buildings in Zone 1B (see Figures V.2 and V.4) may be demolished to make way for the new development. The ultimate

use of the airport may drive the need for infrastructure improvements.

- **Zone 2** preferred development involves new moderately priced lodging on the order of 400 rooms; 310 new residential dwelling units; and a 120,000 SF government/training center. It would need to be determined by future developers whether buildings in Zones 2B and 2C (see Figure V.6) could be retrofitted or demolished to accommodate new uses.
- **Zone 3** includes upgrading the existing 9-hole golf course, which is prone to flooding, to an 18 hole, semi-dry course. It is assumed that irrigation for watering the course could be available from treated wastewater.
- **Zone 4** involves 150,000 square feet of commercial space; 650,000 square feet to be used for back-office, call center; 364 new residential dwelling units; and a 900,000 square feet university campus. The public school in 4G will be used as a middle/high school (see Figures V.10 and V.12).
- **Zone 5** involves 1,200 new dwelling units on 350 acres. The future developer of this zone would determine which, if any, buildings are retrofitted or demolished to make way for new construction. It is assumed that the public school in 5D (see Figure V.14) would be retained as a private bilingual school.
- **Zone 6** The Land Use Plan for Zone 6 includes expanding the existing, 72-slip marina to 250-slips; developing 10,000 square feet of marine commercial activity; 50,000 square feet of water-oriented commercial space; and 300,000 square feet of commercial and warehouse space; along with the ferry terminal proposed by PRPA for transporting people and cargo to/from Vieques and Culebra. Marina expansion could involve the depletion of 10-20 acres of sea-grass beds, which may need to be mitigated with Puerto Rico environmental regulatory agencies. The cost for this mitigation is not included in the capital cost numbers given at the end of this section. The Land Use Plan includes development in Zones 6B, C and E. Future developers would determine which if any existing buildings should be salvaged or demolished (See Figure V.16).
- **Zone 7** involves creating a research and development science park center, on the order of 1.1 million square feet; a conference center with 250 rooms; and 1,250,000 square feet of research and development as a gateway to Science Park. All buildings in Zone 7 would likely need to be demolished in this scenario (see Figures V.18 and V.20). The existing landfill is retained in this scheme, and capped. It is assumed that the cost of capping the landfill will be incurred by the Navy. Therefore, the cost for this item (estimated at $20 million) is not included in this analysis.
- **Zone 8** The Land Use Plan for Zone 8 does not involve providing utilities or infrastructure (see Figure V.22). No capital costs have been developed for Zone 8.
- **Zone 9** This area is designated in the Reuse Plan as a conservation area. While there may be some utilities and infrastructure required to serve educational and ecotourism-related activities in this zone, no plans have been formulated. As a result, capital costs have not been estimated.

4. Water System

a. Water Supply and Distribution System: The water supply system for Roosevelt Roads is described in detail in the *Site, Context & Market Conditions* working draft report. The raw, untreated water is conveyed to Roosevelt Roads via a 27-inch diameter reinforced concrete water main from the Rio Blanco River to the 43 million gallon capacity reservoir inside the Base. From there, the water enters the filtration plant. The filtration plant renders the water potable. The plant's 4 million gallons per day capacity is used for both potable water and fire protection.

The treated water is distributed throughout the site by predominantly polyvinyl chloride (PVC) pipe, boosted by pump stations. PVC pipe may not be acceptable to future users, including a master developer and Puerto Rico's public utility agencies. However, it is assumed in this analysis that PVC pipe will be acceptable. The upgrades to the system described herein assume new PVC pipe, approved by the American Waterworks Association (AWWA).

The existing water distribution system was modeled using Haestad's WaterCAD v6.5 software. The existing system is so large that to model every single element of the system would not be practical for this investigation. At this preliminary planning stage, including each individual service connection, valve, and numerous other elements that make up the actual network is unwarranted and unnecessary. It would be beneficial to perform this type of analysis when ultimate users are known.

The model developed for this limited study is a simplified version of the existing network. The portions of the network that are not modeled are not ignored; rather, they are included as attributes. In this way, the integrity of the system remains intact while the number of elements in the model is reduced and simplified.

b. Sensitivity of the System Based on Re-development or New Development: The Roosevelt Roads Reuse Plan is broken down into zones based on previous land use. Once specific development activity is planned, the water line connections should be carefully designed and coordinated to maximize use of the existing water distribution system. New development on the Base is sensitive to geographical locations within the Base and also relative location with respect to utility infrastructure. This section describes the sensitivity of the water system to accommodate peak demands and fire flows.

There are a few options available to upgrade the existing system depending on the locations of the new facilities within each zone. One of the options is to reconstruct portions of the existing system within the new areas of development. This option would be less expensive than others, but will require that the additional peak and fire flow demands associated with the proposed facilities be limited and thus not significantly increase the capacity of the zone. The new facilities would have to be located fairly close to the existing main water line and at relatively the same elevations as the existing buildings and or roadways for this option to be realized. Another upgrade option is to install booster pump stations along the existing line. This option is more expensive than the first but would allow the new facilities to be located farther away from the existing water mains, be located at higher elevations if necessary, and could place slightly larger demands on the existing system without failing. A third upgrade option is to install either an elevated or ground level tank. This option would be more expensive than the others but it would not restrict the location of the new facilities within the zones. This option would allow the new facilities to be located on even higher elevations with the ability to place much higher demands on the existing system without failing.

Although the most expensive option, there are several advantages to installing tanks. Proper tank location helps to stabilize pressure in the lines, and tanks will allow the peak and fire flow demands to be increased dramatically throughout the zone.

The proposed development plan requires a minimum treated water capacity of 1,275 gallons per minute (GPM) or approximately 1.85 million gallons per day (MGD) which is well under the existing system maximum capacity of 4.0 MGD. The limiting factor for the existing system is the size of the water mains, the available line pressure, and the elevation of the existing and proposed facilities. Since the demands on the system from the Homeland Security area, the Army Reserve area, Federal transfer areas, the airport and the port/ferry terminal were not considered, it is possible

that the combined demand from proposed new development could exceed current capacity.

Potable demands for each zone were determined from the following reference, Hydraulic Design Handbook (1999) by Larry W. Mays. The demands were based on land use, acreage, and residents and/or occupants using the facilities in gallons per day. The demands in gallons per day were then converted to gallons per minute for use in the WaterCAD model.

Fire flow demands for each zone were determined from the following reference, Water Distribution Modeling (First Edition 2001) by Haestad and were shown in gallons per minute, requiring no conversion for the WaterCAD model.

c. Land Use Plan: Water Requirements: The model was prepared based on the proposed development outlined in this report. If any changes are made to the proposed developments and uses, the system should be re-analyzed at that time, to determine adequacy to meet demand.

- **Zone 1** is located in the northwestern portion of the project site and contains approximately 773 acres that are currently developed and roughly another 861 acres which are developable. The airport is located within this developed portion of the zone and is not operating at the present time. The developable portion of this zone is slated for industrial and retail space.

i. New Main: With new industrial development north and south of the existing runway, it is expected that 4,700 linear feet of new water main would be required for distribution.

ii. Upgrades to System: The potable demand required for Zone 1 was approximated to be 200 gallons per minute (GPM). The fire flow demands for Zone 1 were added to the potable demands at the same locations. The total fire flow demand required for Zone 1 was approximated to be 2,500 GPM, in addition to the potable demand of 200 GPM.

Based on the model runs for this zone both the peak demands and the fire flow demands were achieved without encountering negative residual pressures. The current system will handle the potential future 6.9 million square feet industrial space and 500,000 square feet retail space without upgrades.

- **Zone 2** is located in the southwestern corner of the project site and contains approximately 87 acres that are currently developed and roughly 80 acres which are developable.

i. New Main: No new water main is anticipated.

ii. Upgrades to System: The potable demand required for Zone 2 was approximated to be 160 GPM. The fire flow demands for Zone 2 were added to the peak demands at the same locations. The total fire flow demand required for Zone 2 was approximated to be 750 GPM, in addition to the potable demand of 160 GPM.

Based on the model runs for this zone both the peak demands and the fire flow demands were achieved without encountering negative residual pressures. The current system will handle the potential future residential development without upgrades.

- **Zone 3** is located just to the north of Zone 2 and contains approximately 78 acres that are currently developed and roughly 88 acres which are developable. The available portion of this zone is slated for golf course expansion.

i. New Main: No new water main is anticipated for the golf course expansion. If necessary, recycled wastewater could be piped to golf course for irrigation.

ii. Upgrades to System: The potable demand required for Zone 3 was approximated to be 25 GPM. This demand was applied at one location within the zone. The fire

flow demand for Zone 3 was added to the potable demands at the same location. The total fire flow demand required for Zone 3 was approximated to be 500 GPM, is in addition to the potable demand of 25 GPM.

Based on the model runs for this zone both the peak demands and the fire flow demands were achieved without encountering negative residual pressures. The current system will handle the potential future expansion of the golf course without upgrades.

- **Zone 4** is located southeast of the existing airport and contains approximately 219 acres that are currently developed and roughly 258 acres which are developable. Residential and university space is recommended for the available land in Zone 4.

i. New Main: No new water main is anticipated.

ii. Upgrades to System: The potable demand required for Zone 4 was approximated to be 200 GPM. This demand was applied at four locations within the zone. The fire flow demand for Zone 4 was added to the potable demands at the same four locations. The total fire flow demand required for Zone 4 was approximated to be 2,000 GPM, in addition to the potable demand of 200 GPM.

Based on the model runs for this zone both the peak demands and the fire flow demands were achieved without encountering negative pressures. The current system will handle the future residential area and university additions without upgrades.

- **Zone 5** is located on the southeastern tip of the project site and contains approximately 308 acres that are currently developed and roughly 180 acres which are developable. The preferred land uses for the zone are residential and school.

i. New Main: The Land Use Plan involves development in Sub-Zone 5A, where previously there was none. A total of 4,195 linear feet of new water main may be necessary for the proposed improvements.

ii. Upgrades to System: The potable demand required for Zone 5 was approximated to be 140 GPM. This demand was applied at two locations within the zone. The fire flow demand for Zone 5 was added to the potable demands at the same locations. The total fire flow demand required for Zone 5 was approximated to be 1,000 GPM, in addition to the potable demand of 140 GPM.

Based on the model runs for this zone both the peak demands and fire flow demands were achieved without encountering negative pressures. The current system will handle the potential future residential areas and the new school without upgrades.

- **Zone 6** is located northeast of Zone 4 and contains approximately 237 acres that are currently developed and roughly 45 acres which are developable. The proposed land uses are a 250-slip marina; 10,000 square feet of marine commercial activity; 50,000 square feet of water-oriented commercial space; and 300,000 square feet of commercial and warehouse space; along with the ferry terminal proposed by PRPA for transporting people and cargo to/from Vieques and Culebra.

i. New Main: No new water main is anticipated.

ii. Upgrades to System: The potable demand required for Zone 6 was approximated to be 100 GPM. The fire flow demand for Zone 6 was added to the potable demand at the same locations. The total fire flow demand required for Zone 6 was approximated to be 1,500 GPM, in addition to the potable demand of 100 GPM.

Based on the model runs for this zone the peak demands were achieved without encountering negative pressures. However, when the fire flow demands were added to the potable demands the system began to breakdown and negative residual pressures were

encountered. The current system will not handle the potential future commercial development demands without upgrades. A suggestion for upgrades of the existing system would be to incorporate a booster pump station to help meet the fire flow demands. This pump station would have to be located near the main water line and would feed the new facilities that are planned.

- **Zone 7** is located on the eastern most portion of the project site and contains approximately 213 acres that are currently developed and roughly 407 acres which are developable. The preferred land use for this zone is science park/conference center.

i. New Main: No new water main is anticipated.

ii. Upgrades to System: The potable demand required for Zone 7 was approximated to be 450 GPM. The fire flow demand for Zone 7 was added to the potable demand at the same locations. The total fire flow demand required for Zone 7 was approximated to be 2,200 GPM, in addition to the potable demand of 450 GPM.

Based on the model runs for this zone the peak demands were achieved without encountering negative pressures. However, when the fire flow demands were added to the potable demands the system began to breakdown and negative residual pressures were encountered. The current system will not handle the potential future science park development demands without upgrades. A suggestion for upgrades of the existing system would be to incorporate either a booster pump station or a tank to help meet the required fire flow demands. This pump station would have to be located near the main water line and would feed the new facilities that are planned.

d. Assumptions and Clarifications

- New hydrants would be located along all new mains. New main would be tied into existing via wet tapping method. New meters would be required for each of the new buildings. Figure VII.1 illustrates the areas in which new water mains may be required.
- For the purposes of this study, a design flow of 2 million gallons per day from filtration plant was assumed.
- Only water mains were estimated, not laterals.
- Water meters and hydrants are included in capital cost.
- The demands of the hospital and schools were approximated for this study. Demand resulting from Federal transfers, prospective public benefit conveyances and economic development conveyances are unknown at this time and therefore were not considered.

5. Sanitary Sewer System

a. Sanitary Collection and Treatment System: The wastewater collection system at Roosevelt Roads consists of approximately 32.5 miles of gravity lines, 9.5 miles of force mains, approximately 906 manholes, 28 pump stations, 6 grinder stations and three treatment plants. The original collection system was installed in the 1940's with upgrades and new installations made in the 1990's. The system is described in detail in Site, Context & Market Conditions. Treated wastewater is discharged into the ocean. The average daily treated flow from the three plants was approximately 0.81 million gallons per day, when the base was active. Since it receives tertiary treatment, treated wastewater could be used for irrigation, flushing toilets, and other recycled water uses.

b. **Land Use Plan:**
Sanitary: New sewer lines and ancillary components.

- **Zone 1** Approximately 13,300 linear feet of new sanitary line would be required to service proposed industrial park.
- **Zone 2** The new development at the northwest corner of Zone 2 could require 1,000 linear feet of new sanitary line.
- **Zone 3** No new main sanitary lines are anticipated as a result of the golf course expansion.

- **Zone 4** No new main sanitary lines are anticipated as a result of the Land Use Plan.
- **Zone 5** The Land Use Plan involves development in Zone 5A, where previously there was none. A total of 4,100 linear feet of new sanitary main may be necessary for proposed improvements.
- **Zone 6** No new main sanitary lines are anticipated as a result of Land Use Plan.
- **Zone 7** Approximately 4,500 linear feet of new sanitary main could be required for service to Zone 7D.
- **Zone 8** No new upgrades to sanitary are anticipated.

Upgrades due to demand: With maximum buildout of 2.4 million square feet of science park, the Land Use Plan will tax the capacity of the Forrestal treatment plant in Zone 7. For the purposes of this study, it was assumed that one of the following would be required: either a prepackaged treatment plant on the order of 500,000 gallons per day at Forrestal; or a bypass system to convey the wastewater to the Bundy treatment plant in Zone 2, via the Capehart bypass. The Bundy plant has excess capacity under full buildout condition. The cost of the systems is comparable. The capacity of the Capehart treatment plant is adequate to service the needs for proposed improvements in Zones 5. This does not consider any improvements to the Zone 1 airfield, which is the subject of an Airport Master Plan by PRPA. Figure VII.2 illustrates proposed upgrades to sanitary system.

c. Assumptions and Clarifications:

- The demands on the sanitary sewer due to the Navy conveyances, with the exception of the hospital and the schools, are not considered in this study.
- Only main lines were estimated for capital costs. House connections were not estimated, and are assumed to be within the budget number for building construction.
- Permitted capacities of existing treatment plants were used to determine required upgrades.

6. Storm Drainage System

a. Drainage System: Stormwater runoff is collected via a system of drop inlets, drainage ditches, culverts and pipes and diverted to outfalls in the mangrove areas and the surrounding bays. Any new development on the Base will have to analyze drainage patterns to determine if new drainage systems are required.

b. Land Use Plan; Drainage Considerations: The Land Use Plan did not delve into the development of areas with varying grades. The topography and surface grading treatment of the ultimate development will dictate new drainage requirements. Drainage components are not included in the capital cost estimates.

7. Electricity and Telecommunications Systems

a. Electrical Supply and Distribution System: The Puerto Rico Electric and Power Authority (PREPA) may take over the Base electrical system. PREPA is currently considering the takeover of Alpha, Bundy, Charlie, Coral Sea, Delta, FDR and India substations, and the incoming and outgoing circuits at each substation. PREPA has indicated that improvements necessary to meet the standards of both PREPA and the security industry would require an estimated US$3.2 million investment, with an estimated $450,000 per substation. The improvements included in the estimate are the acquisition of new land around the substations to provide adequate access for service vehicles; installation of driveways and new fences; upgrades to electrical equipment and integration of the NSRR substations into PREPA's energy administration system. PREPA noted that these estimates do not include any necessary improvements to the transmission system.

There are two main high voltage (38 kV) feeds into the Base; one to the airfield and one at Daguao, which serve 11 substations throughout the Base that step down and distribute power in their vicinity at 13.2 kV, 4.16 kV and 480 V. There are no reported deficiencies with the power distribution system.

b. Land Use Plan; Power and Telecommunications: New power/telecommunication lines and ancillary components:

- **Zone 1** The 6.9 million square feet of industrial space and 500,000 square feet of retail space at full buildout would require an additional substation for power, and associated distribution lines for power and telecommunication.
- **Zone 2** The Land Use Plan would require an additional substation in Zone 2. Approximately 1,000 linear feet of each power and telecommunications would be required for distribution.
- **Zone 3** Approximately 2,000 linear feet of power and telecommunication distribution lines are anticipated as a result of the golf course expansion.
- **Zone 4** The Land Use Plan would require 2 new substations. Approximately 1,000 linear feet of each power and telecommunications would be required for distribution.
- **Zone 5** The differential of the 1200 new residential dwelling units in the Land Use Plan over the existing 800+/- will require a new substation, and approximately 4,500 linear feet of new power and telecommunications lines.
- **Zone 6** The Land Use Plan would require 2 new substations. Approximately 2,000 linear feet of each power and telecommunications would be required for distribution.
- **Zone 7** the 2.4 million square feet of research and development facilities and 250 room conference center included in the Land Use Plan will require 2 new substations, and approximately 3,000 linear feet each of power and telecommunications lines.
- **Zone 8** No new upgrades to power or communication systems are anticipated.

Figure VII.3 illustrates the potential substation locations that would be required based on Land Use Plan.

c Assumptions and Clarifications

- The power demand from Federal transfers and other conveyances, with the exception of the hospital and the schools, are not considered in this study.
- Only main distribution lines were estimated for capital costs. Individual connections to buildings are not included, and are assumed to be within the budget number for building construction.

8. Road Systems

a. Roadway Network: NSRR is easily accessible via both PR-3 (a two lane highway) and PR-53 (a four lane highway). The majority of the primary roads on the Base are two lanes wide and paved asphalt. The roads extend throughout the Base to virtually all areas on the Base. In most areas there are no curbs and gutters, and minimal if any lighting. These roads are in fair to good condition, but would need to be upgraded for heavy traffic.

b. Land Use Plan; Road Upgrades: A roadway circulation plan was developed for the Land Use Plan. In this circulation plan, a number of roadway types are specified for the Base, that would link the different zones on the Base. Most of these primary roads include 4 driving lanes, with various types of landscaping and plantings, positive drainage, and lighting. The circulation plan results in approximately 45 miles of primary road throughout Zones 1 through 7. In the absence of a detailed condition report of all the roads in the Base, it was assumed that the existing roads would be re-grad-

ed or re-constructed The capital costs included at the end of this chapter are therefore 'worst case scenarios' with regard to road demolition and construction. It would be up to the future developers to determine the extent of new construction and the level of landscaping elements (grasses, trees, lighting). The cost estimates do not include landscaping or lighting since there is large variability in type and quality of such architectural elements.

c. Assumptions and Clarifications

- This study did not include siting developments beyond a zone level. Detailed design would be required to analyze potential congestion areas and to determine levels of service for various roadways.
- Only primary roads were considered in the study. Upgrades and new secondary roads may be necessary for actual developments.

9. Phased Construction

Based on the phasing program developed as part of this study, the development of the site is assumed to take place over the course of approximately 34 years. The upgrades to and construction of new infrastructure elements should be phased to correlate to new areas of development. In this way, only those improvements necessary to support the utility demands at any given point in time are performed. This will spread the cost for infrastructure improvements over the approximately 34 year period.

Figures VII.1 through VII.3 show the assumed areas for utility upgrades and new utility installation based on the Illustrative Phasing Program developed for Roosevelt Roads. The cost estimates were developed to reflect these phased improvements(see Tables VII.1 through VII.22).

10. Capital Costs

The total cost for upgrades to the utility and infrastructure systems in the Land Use Plan is estimated at US$102 million. (This figure does not include the US$8.6 million in new upgrades to systems to make them acceptable to and code compliant with utility authorities.) Table VII.1 shows how improvements could be phased to match the development program. It should be noted that of this US$102 million, approximately US$21 million is estimated for construction of new collector roads. If the existing roads were improved instead of newly reconstructed, the total cost could be around US$80 million.

It should be noted that:

- *Costs associated with replacing existing PVC water and sewer lines, should that be required by a developer, is not included herein. It is assumed that PVC pipe is acceptable and all new piping is assumed to be PVC.*
- *Costs for lighting and landscaping the road sections are not included in this order of magnitude estimate, since neither landscape nor lighting design has been performed. There is a large variation in costs by planting type and light fixture type.*
- *Costs for upgrading the existing water and sewer to be PRASA compliant are being developed by PRASA. The costs were not available at the time of this writing.*
- *Costs for upgrading the existing electrical system to be PREPA compliant were not available at the time of this writing.*
- *Costs for relocating utilities as a result of road construction were not included. It is assumed the existing utility runs will be satisfactory.*
- *Costs for mitigation for taking sea-grass beds are not included.*
- *Analysis of infrastructure does not include future*

demand from Federal transfers such as the Homeland Security areas, the Army Reserve area, and other conveyances, including but not limited to the airport and the Vieques/ Culebra ferry terminal and related port uses. As such, costs for any necessary upgrades associated with Federal transfers and other Navy conveyances cannot be estimated at this time and have not been included.

All costs are order of magnitude for budgetary purposes only. Assumptions of size, type, materials and unit costs of components were estimated based on past experience. No detailed designs have been performed to generate these costs.

Table VII.1
Order of Magnitude Cost Summary by Zone and Phase
Notes: Phasing based on Illustrative Phasing Program Revised August 8 2004 as developed by CB Richard Ellis. Phase 1 of the referenced plan assumes no development. Property transfer only.

		PHASE 2	PHASE 3	PHASE 4	TOTAL BY ZONE
ZONE 1	*Utilities: Water*	*$147,000*	*$365,000*	*$9,000*	
	Utilities: Sewer	*$74,400*	*$220,000*	*$237,000*	
	Utilities: Power & Communications	*$688,000*	*$1,205,000*	*$680,000*	
	Roads	*$22,511,000*	*$3,244,000*	*$5,090,000*	
	Total	***$23,420,400***	***$5,034,000***	***$6,016,000***	***$34,470,400***
ZONE 2	*Utilities: Water*	*$55,000*	–	–	
	Utilities: Sewer	*$43,000*	–	–	
	Utilities: Power & Communications	*$585,000*	–	–	
	Roads	*$4,634,000*	–	–	
	Total	***$5,317,000***	–	–	***$5,317,000***
ZONE 3	*Utilities: Water*	*$1,000*	–	–	
	Utilities: Sewer	–	–	–	
	Utilities: Power & Communications	*$258,000*	–	–	
	Roads	*$812,000*	–	–	
	Total	***$1,071,000***	–	–	***$1,071,000***
ZONE 4	*Utilities: Water*	*$4,000*	*$58,000*	*$6,000*	
	Utilities: Sewer	–	–	–	
	Utilities: Power & Communications	–	*$378,000*	*$378,000*	
	Roads	*$5,126,000*	*$4,445,000*	*$4,637,000*	
	Total	***$5,130,000***	***$4,881,000***	***$5,021,000***	***$15,032,000***
ZONE 5	*Utilities: Water*	*$113,000*	*$349,000*	–	
	Utilities: Sewer	*$24,000*	*$139,000*	–	
	Utilities: Power & Communications	*$187,000*	*$971,000*	–	
	Roads	*$6,144,000*	*$6,891,000*	–	
	Total	***$6,468,000***	***$8,350,000***	–	***$14,818,000***
ZONE 6	*Utilities: Water*	*$1,000*	*$21,000*	*$1,000*	
	Utilities: Sewer	–	–	–	
	Utilities: Power & Communications	–	*$593,000*	*$338,000*	
	Roads	*$4,425,000*	*$1,364,000*	*$407,000*	
	Ferry Terminal	*$3,700,000*	–	–	
	Total	***$8,126,000***	***$1,978,000***	***$746,000***	***$10,850,000***
ZONE 7	*Utilities: Water*	*$1,000*	–	*$20,000*	
	Utilities: Sewer	*$180,000*	–	*$1,500,000*	
	Utilities: Power & Communications	*$205,000*	*$455,000*	*$536,000*	
	Roads	*$8,630,000*	*$8,804,000*	–	
	Total	***$8,746,000***	***$9,259,000***	***$2,056,000***	***$40,061,000***
	TOTAL Zones 1–7	**$58,278,400**	**$29,502,000**	**$13,839,000**	**$101,619,400**

Table VII.2
Zone 1
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$147,000**
New Water Main	1,860	LF	$70	$130,200
Water Tap to Existing Main	1	EA	$5,000	$5,000
New Hydrants	4	EA	$2,400	$8,928
Meters: Industrial	5	EA	$530	$2,650
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$74,400**
New Sewer Main	1,860	LF	$40	$74,400
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$688,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	2,500	LF	$60	$150,000
New Switchgear,Meters&Xmrs	5	EA	$40,000	$200,000
New Telecommunications	2,500	LF	$35	$87,500
6.ROADS				**$22,511,000**
Type A	1	LS	$1,256,000	$1,256,696
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$6,254,381	$6,254,381
Type J	0	LS	–	–
New Overpass Access to Airport	1	LS	$15,000,000	$15,000,000
TOTAL				**$23,420,000**

Table VII.3
Zone 1
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$365,000**
New Water Main	4,733	LF	$70	$331,310
Water Tap to Existing Main	1	EA	$5,000	$5,000
New Hydrants	9	EA	$2,400	$22,718
Meters: Industrial	12	EA	$530	$6,360
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$220,000**
New Sewer Main	5,497	LF	$40	$219,880
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$220,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	5,000	LF	$60	$300,000
New Switchgear,Meters&Xmrs	12	EA	$40,000	$480,000
New Telecommunications	5,000	LF	$35	$175,000
6.ROADS				**$3,244,000**
Type A	0	LS	–	–
Type B	1	LS	$2,152,618	$2,152,618
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$1,091,653	$1,091,653
Type J	0	LS	–	–
New Overpass Access to Airport	0	LS	$15,000,000	–
TOTAL				**$5,034,000**

Table VII.4
Zone 1
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$9,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	17	EA	$530	$9,010
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$237,000**
New Sewer Main	5,390	LF	$40	$237,000
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$688,000**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	17	EA	$40,000	$680,000
New Telecommunications	0	LF	$35	–
6.ROADS				**$5,090,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	1	LS	3,086,601	3,086,601
Type F	0	LS	–	–
Type G	1	LS	2,003,507	2,003,507
Type J	0	LS	–	–
New Overpass Access to Airport	0	LS	$15,000,000	–
TOTAL				**$6,016,000**

Table VII.5
Zone 2
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$55,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	6	EA	$530	$3,180
Meters: Residential	300	EA	$107	$32,100
New Pump Station	1	EA	$20,000	$20,000
4.UTILITIES: SEWER				**$43,000**
New Sewer Main	1,063	LF	$40	$42,520
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$585,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	1,000	LF	$60	$60,000
New Switchgear,Meters&Xmrs	5	EA	$40,000	$240,000
New Telecommunications	1,000	LF	$35	$35,000
6.ROADS				**4,634,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$1,120,666	$1,120,666
Type J	1	LS	$3,513,729	$3,513,729
TOTAL				**$5,317,000**

Table VII.6
Zone 2
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	–	–
TOTAL				**–**

Table VII.7
Zone 2
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	–	–
TOTAL				**–**

Table VII.8
Zone 3
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$1,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	1	EA	$530	$530
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$258,000**
New Substations	0	EA	$250,000	–
New Distribution Lines	2,000	LF	$60	$120,000
New Switchgear,Meters&Xmrs	3	EA	$40,000	$120,000
New Telecommunications	500	LF	$35	$17,500
6.ROADS				**$812,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$812,333	$812,333
Type J	0	LS	–	–
TOTAL				**$1,071,000**

Table VII.9
Zone 3
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	$2,152,618	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	$1,091,653	–
Type J	0	LS	–	–
TOTAL				**–**

Table VII.10
Zone 3
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	–	–
TOTAL				**–**

Table VII.11
Zone 4
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$4,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	7	EA	$530	$3,710
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**$5,126,000**
Type A	1	LS	$344,428	$344,428
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	1	LS	$1,937,160	$1,937,160
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$2,196,305	$2,196,305
Type J	1	LS	$648,501	$648,501
TOTAL				**$5,130,000**

Table VII.12
Zone 4
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$58,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	6	EA	$530	$3,180
Meters: Residential	515	EA	$107	$55,105
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$378,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	500	LF	$60	$30,000
New Switchgear,Meters&Xmrs	2	EA	$40,000	$80,000
New Telecommunications	500	LF	$35	$17,500
6.ROADS				**$4,445,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$366,437	$366,437
Type J	1	LS	$4,078,987	$4,078,987
TOTAL				**$4,881,000**

Table VII.13
Zone 4
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$6,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	12	EA	$530	$6,360
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$378,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	500	LF	$60	$30,000
New Switchgear,Meters&Xmrs	2	EA	$40,000	$80,000
New Telecommunications	200	LF	$35	$17,500
6.ROADS				**$4,637,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$1,054,945	$1,054,945
Type J	1	LS	$3,581,616	$3,581,616
TOTAL				**$5,021,000**

Table VII.14
Zone 5
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$113,000**
New Water Main	660	LF	$70	$46,200
Water Tap to Existing Main	2	EA	$5,000	$10,000
New Hydrants	1	EA	$2,400	$3,186
Meters: Industrial	0	EA	$530	–
Meters: Residential	500	EA	$107	$53,500
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$24,000**
New Sewer Main	600	LF	$40	$24,000
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$187,000**
New Substations	0	EA	$250,000	–
New Distribution Lines	1,125	LF	$60	$67,500
New Switchgear,Meters&Xmrs	3	EA	$40,000	$80,000
New Telecommunications	1,125	LF	$35	$39,375
6.ROADS				**$6,144,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	1	LS	$6,144,004	$6,144,004
TOTAL				**$6,468,000**

Table VII.15
Zone 5
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$349,000**
New Water Main	3,535	LF	$70	$247,450
Water Tap to Existing Main	2	EA	$5,000	$10,000
New Hydrants	7	EA	$2,400	$16,968
Meters: Industrial	0	EA	$530	–
Meters: Residential	700	EA	$107	$74,900
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$139,000**
New Sewer Main	3,475	LF	$40	$139,000
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$971,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	3,375	LF	$60	$202,500
New Switchgear,Meters&Xmrs	10	EA	$40,000	$400,000
New Telecommunications	3,375	LF	$35	$118,125
6.ROADS				**$6,891,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$703,713	$703,713
Type J	1	LS	$6,187,098	$6,187,098
TOTAL				**$8,350,000**

Table VII.16
Zone 5
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	–	–
TOTAL				**–**

Table VII.17
Zone 6
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$1,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	1	EA	$530	$530
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**–**
New Substations	0	EA	$250,000	–
New Distribution Lines	0	LF	$60	–
New Switchgear,Meters&Xmrs	0	EA	$40,000	–
New Telecommunications	0	LF	$35	–
6.ROADS				**$4,425,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$2,044,468	$2,044,468
Type J	1	LS	$2,380,814	$2,380,814
8.FERRY TERMINAL				**$3,700,000**
Construction Cost				$3,700,000
Operation Cost				–
TOTAL				**$8,126,000**

Table VII.18
Zone 6
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$21,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	2	EA	$530	$1,060
Meters: Residential	0	EA	$107	–
New Pump Station	1	EA	$20,000	$20,000
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$593,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	1,500	LF	$60	$90,000
New Switchgear,Meters&Xmrs	5	EA	$40,000	$200,000
New Telecommunications	1,500	LF	$35	$52,500
6.ROADS				**$1,364,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	1	LS	$1,363,646	$1,363,646
8.FERRY TERMINAL				**–**
Construction Cost				–
Operation Cost				–
TOTAL				**$1,978,000**

Table VII.19
Zone 6
Phase 4
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$1,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	2	EA	$530	$1,060
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$338,000**
New Substations	0	EA	$250,000	$250,000
New Distribution Lines	0	LF	$60	$30,000
New Switchgear,Meters&Xmrs	0	EA	$40,000	$40,000
New Telecommunications	0	LF	$35	$17,500
6.ROADS				**$407,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	$406,862	$406,862
8.FERRY TERMINAL				**–**
Construction Cost				–
Operation Cost				–
TOTAL				**$746,000**

Table VII.20
Zone 7
Phase 2
Cost Breakdown

PHASE 2: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$1,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	2	EA	$530	$1,060
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**$180,000**
New Sewer Main	4,500	LF	$40	$180,000
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$205,000**
New Substations	0	EA	$250,000	–
New Distribution Lines	825	LF	$60	$49,500
New Switchgear,Meters&Xmrs	3	EA	$40,000	$120,000
New Telecommunications	1,000	LF	$35	$35,000
6.ROADS				**$8,360,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	1	LS	–	$3,192,427
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	1	LS	$5,167,371	$5,167,371
TOTAL				**$8,746,000**

Table VII.21
Zone 7
Phase 3
Cost Breakdown

PHASE 3: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**–**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	0	EA	$20,000	–
4.UTILITIES: SEWER				**–**
New Sewer Main	0	LF	$40	–
New Sewage Plant	0	EA	$1,500,000	–
5.UTILITIES: POWER & COMMUNICATIONS				**$455,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	825	LF	$60	$49,500
New Switchgear,Meters&Xmrs	3	EA	$40,000	$120,000
New Telecommunications	1,000	LF	$35	$35,000
6.ROADS				**$8,804,000**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	1	LS	$3,163,644	$3,163,644
Type J	1	LS	$5,640,685	$5,640,685
TOTAL				**$9,259,000**

Table VII.22
Zone 7
Phase 4
Cost Breakdown

PHASE 4: DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
3.UTILITIES: WATER				**$20,000**
New Water Main	0	LF	$70	–
Water Tap to Existing Main	0	EA	$5,000	–
New Hydrants	0	EA	$2,400	–
Meters: Industrial	0	EA	$530	–
Meters: Residential	0	EA	$107	–
New Pump Station	1	EA	$20,000	$20,000
4.UTILITIES: SEWER				**$1,500,000**
New Sewer Main	0	LF	$40	–
New Sewage Plant	1	EA	$1,500,000	$1,500,000
5.UTILITIES: POWER & COMMUNICATIONS				**$536,000**
New Substations	1	EA	$250,000	$250,000
New Distribution Lines	850	LF	$60	$51,000
New Switchgear,Meters&Xmrs	5	EA	$40,000	$200,000
New Telecommunications	1,000	LF	$35	$35,000
6.ROADS				**–**
Type A	0	LS	–	–
Type B	0	LS	–	–
Type C	0	LS	–	–
Type D	0	LS	–	–
Type E	0	LS	–	–
Type F	0	LS	–	–
Type G	0	LS	–	–
Type J	0	LS	–	–
TOTAL				**$2,056,000**

Fig. VII.1 Infrastructure: Water.

Note: New mains are schematic, and intended to show approximate locations only. Exact locations would be determined by actual future development.

Source: Moffatt & Nichol

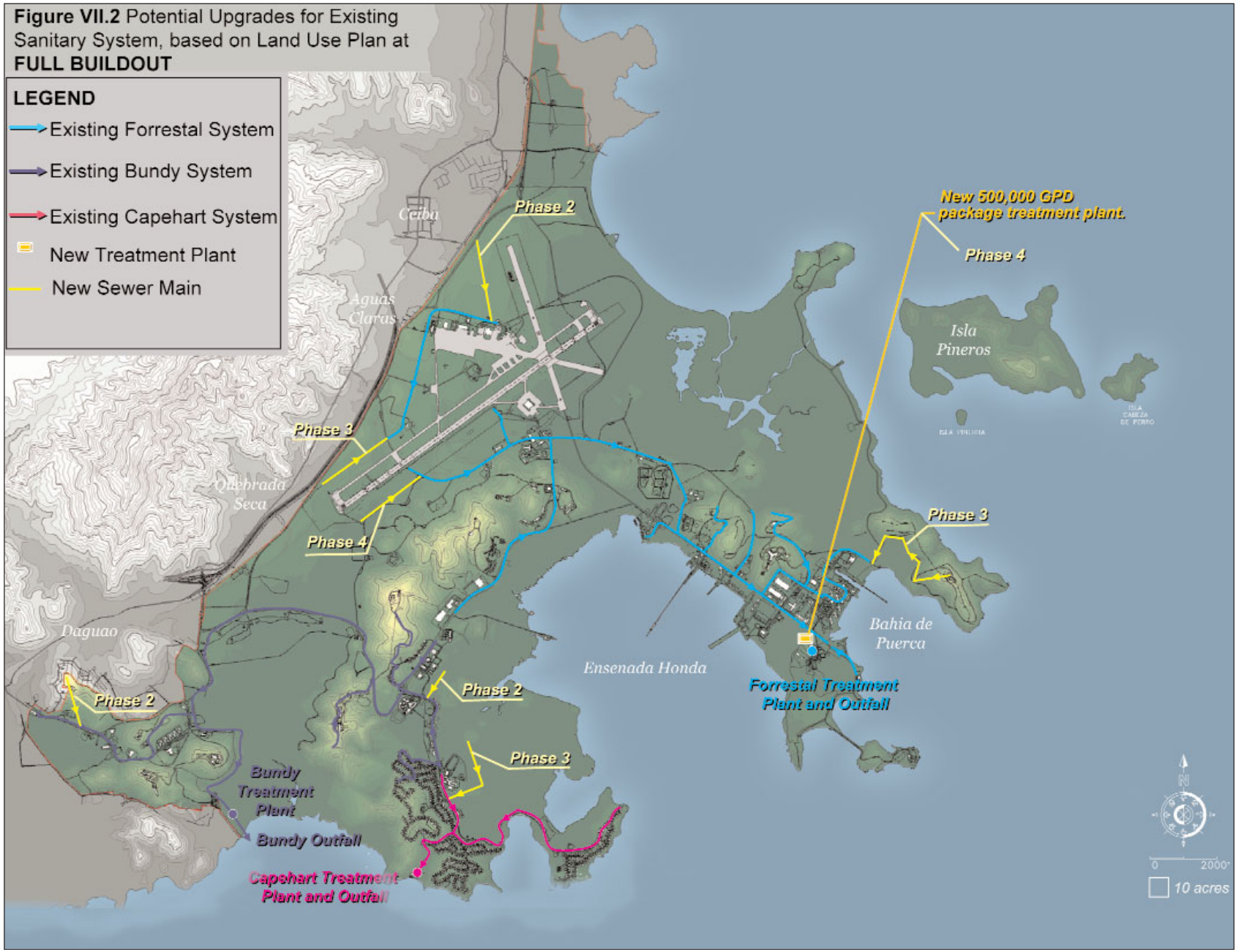


Fig. VII.2
Infrastructure: Wastewater.
Note: New mains and new infrastructure components are schematic, and intended to show approximate locations only. Exact locations would be determined by actual future development.

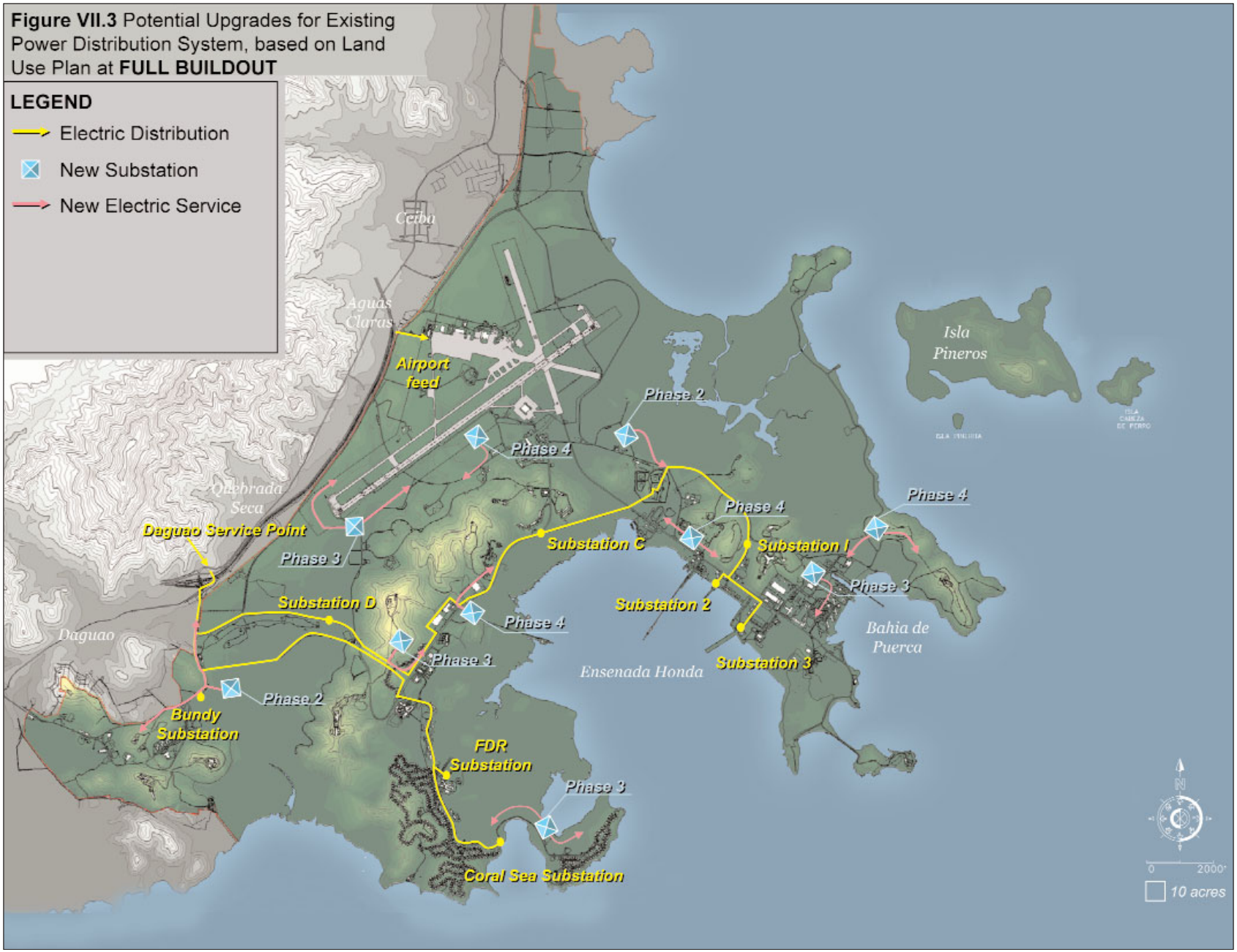
Source: Moffatt & Nichol

Fig. VII.3
Infrastructure: Electricity.

Note: New service and new substations are schematic, and intended to show approximate locations only. Exact locations would be determined by actual future development

Locations of substations assume new substations can be powered from existing substations without new high voltage feed to area.

Source: Moffatt & Nichol



VIII. Notice of Interest Responses for Public Benefit Conveyances

On May 3, 2004, the U.S. Navy published its notice of surplus property regarding NSRR in The San Juan Star and in *El Nuevo Día*. Pursuant to, and in excess of, the requirements of 24 C.F.R. § 586.20(c), on May 4, 2004 the LRA published a Notice of Availability of Surplus Property to Commonwealth and Local Interests in two newspapers of general circulation in the vicinity of the installation, i.e., The San Juan Star and *El Vocero*. In the newspaper notice, the LRA announced that it would receive notices of interest ("NOI") until August 3, 2004, a time period that exceeds the 90 day period required by the regulations.

The LRA used this same process to solicit NOIs from both homeless services providers and from public and non-profit entities interested in public benefit conveyances ("PBCs"). Nevertheless, the purpose of the PBC and homeless services NOIs is fundamentally different in the Reuse Plan process, since none of these PBCs have the same kind of priority that the law gives to homeless services providers. The NOIs for PBCs were viewed by the LRA as an additional mechanism for community participation, which would help educate the LRA as to potential uses of the property. While most of the NOIs were formally received on August 3, 2004, the LRA had been in communication for various months before that with most of the interested parties, and their interests have helped shape the decisions made in this Reuse Plan.

There are several mechanisms for the Navy to dispose of the real property on NSRR. PBCs are one such mechanism. Other methods are negotiated sales, Economic Development Conveyances ("EDCs"), which are specifically recognized in the BRAC law, and public sales. The LRA and the Navy will agree on a disposition strategy after the Reuse Plan is finalized.

The acceptance of a formal PBC application by the Navy, which would not take place until after the Reuse Plan is finalized, is within the discretion of the Navy. The PBC mechanism can be useful in accomplishing certain objectives in the Reuse Plan, but it must be used carefully because of the various restrictions imposed on properties transferred through PBCs, primarily that the property be used for the specific purpose of the PBC for a period of at least 30 years, otherwise, the property would revert to the Navy.

The NOIs received by the LRA are all described on the following pages.

A. Low Income Self Help Housing Assistance

The legal authority for this kind of transfer is codified at 40 U.S.C. § 550(f).

1. Ceiba Housing and Economic Development Corporation. Elderly Housing for Independent Living Project in the Algodones housing complex (Buildings 1916, 897, 895 and 893). This interested party is an eligible nonprofit organization, but the proposed project does not qualify for a low income housing PBC because it is not a self-help project as required by the statute. The LRA, however, views a project of this kind favorably and the Reuse Plan establishes various areas within the base where this kind of project could be developed. The LRA will continue to work with this proponent to attempt to make a project of this kind a reality.

2. Ceiba Housing and Economic Development Corporation. Low Income Housing for Young Couples in the Rainbow or Nimitz housing area. This project does not qualify for a low income housing PBC because it is not a self help project, as required by the statute. Nevertheless, the LRA also views a project of this kind favorably and the Reuse Plan establishes various areas within the base where this kind of project could be developed. The LRA will continue to work with this proponent to attempt to make a project of this kind a reality.

3. Hogar de Envejecientes Betesda, Inc. Housing assistance for elderly people who do not earn social security. This interested party is an eligible nonprofit organization, but this project does not qualify for a low income housing PBC because it is not a self help project, as required by the statute. No specific buildings were identified for this project. The building requirements described in the NOI do not fit any existing structure or set of structures and would require significant construction of new facilities.

B. Public Health

The legal authority for this kind of transfer is codified at 40 U.S.C. § 550(d).

1. Servicios de Salud Episcopales, Inc. Hospital. This interested party is an eligible 501(3) not for profit organization, which proposes to provide the following services in the existing hospital (Building 1790 and adjoining facilities): emergency room; secondary level inpatient services for general medicine, surgery, Ob-Gyn, nursery and pediatrics; transportation and referral system; rehabilitation services; and ancillary and administrative support. This NOI is responsive to some of the most important needs described by the community, particularly the emergency room. The LRA endorses the trtansfer of the hospital facilities as a PBC.

2. Department of Health, Commonwealth of Puerto Rico. Use of the hospital (Building 1790 and adjoining facilities) for a rehabilitation facility for individuals with neurological impairments. While there is a great need for a facility of this kind in Puerto Rico, this proposal is less responsive to the needs of the communities of Ceiba and Naguabo than the proposal by Servicios de Salud Episcopal, Inc. Accordingly, the LRA would prefer to see a facility that would provide emergency room services.

3. Department of Veterans Affairs ("DVA"). Community-Based Outpatient Clinic ("CBOC") and State Veterans Nursing Home. The NOI identifies three options for the CBOC project: (i) the conveyance of ten acres of land for the DVA to build its own facility; (ii) use of the existing clinic (Building 2082) and adjoining areas for expansion and parking; and (iii) use of the existing dental clinic (Building 2338) and adjoining areas for parking. As a Federal agency, the DVA is not eligible for a PBC, but the LRA recognizes the need to provide more accessible health care facilities to the 13,000 veterans residing in the eastern area of Puerto Rico. The

LRA believes that the existing clinic and the adjoining land provide the best option for the DVA to establish the CBOC. The LRA is evaluating alternatives that will allow the DVA to use this facility for the CBOC. The Nursing Home project is a longer term option that should be addressed at a later stage.

C. Education

1. Department of Education. This proponent presented various proposals within one NOI: (i) a language school in the existing elementary school (Building 2085); (ii) a high school specializing in arts, physical education, and academically talented students (Buildings 2200 and 2295); (iii) a mechanical aviation vocational school (unidentified hangar and runway in the airport); and (iv) an academic development center (30,000 square feet of offices and classrooms for training and 200 parking spaces (no specific structure identified)). The LRA recognizes the need in the community for a new high school. The LRA believes that through zoning, the facilities of the former Elementary School (Building 2085) can be preserved for use as a public high school that could fit the concept presented by the Department of Education. Any purchaser of this property will know in advance that the property has to be used for a public school. Accordingly, the property will be ultimately conveyed to the Department of Education without the restrictions inherent in an educational PBC. In order to maintain a better mix of educational facilities in the base, the LRA is recommending that the bilingual school be privately operated, as indicated above. The LRA is recommending that the airport facilities be transferred to the Puerto Rico Ports Authority. The LRA encourages the Ports Authority and the Department of Education to reach an agreement that could allow the Department of Education to operate its mechanical aviation vocational school within the airport facilities.
2. Quality Schools International. Bilingual School. The LRA strongly endorses the need for a private bilingual school within the base facilities, as essential to the redevelopment plans outlined in the Reuse Plan. The LRA believes that through zoning, the facilities of the former middle/high school (Buildings 2200 and 2295) can be preserved for use as a bilingual school. The LRA is currently evaluating options to guarantee that the existing school buildings can be used for a school, without the restrictions inherent in an educational PBC. In this case, in particular, the interested party is not eligible for a PBC because it is not a recognized 501(c)(3) organization.
3. University of Puerto Rico-Humacao. Research activities of the Departments of Chemistry and Biology, including a marine education center (Buildings 885, 886 and 888). The indicated buildings are located in an area of the base that the LRA has determined is better suited for residential use. Nevertheless, the interest expressed by this proponent has helped bolster the concept of a science park, which the Reuse Plan proposes for Zone 7. The LRA will be requesting an EDC of an area within Zone 7, where the activities described by this proponent could be undertaken.
4. Polytechnic University, Pre-engineering Program. The NOI details various needs in terms of both buildings and other facilities, which the proponent states could be accommodated by using the high school buildings (Buildings 2200 and 2295) and the former dry dock facility. The LRA has decided to use the existing high school as a bilingual school, but the interest expressed by this proponent has helped bolster the concept of the university campus and the science park. The LRA is confident that the activities described by this proponent could be conducted in the facilities of the EDC to be requested by the LRA.
5. Polytechnic University, Center for Ocean Research and Engineering. The NOI details various needs in

terms of both buildings and other facilities, which the proponent states could be accommodated by using the high school buildings (Buildings 2200 and 2295) and the dry dock facility. These facilities seem to be essentially the same as in the NOI for the pre-engineering program. The interest expressed by this proponent has also helped to bolster the concept of the science park. The LRA is confident that the activities described by this proponent could be conducted in the facilities of the EDC to be requested by the LRA.

6. Ann Wigmore Natural Health Institute. Educational center for lifestyle improvements for greater health. This interested party, an eligible 501(c)(3) organization, has indicated a desire to use Buildings 725 through 729 and Building 1688 for this educational center concept. The community has requested that these buildings be designated for reuse as moderately priced lodging facilities. This NOI has been withdrawn.

7. Santa Maria Boat School of Puerto Rico, Inc. Deep water pier for the 135' R/V Santa Maria, a small warehouse, and a building with 25 rooms for classes, laboratories and administrative offices and a museum, and 4-5 houses or dormitories. This interested party is a nonprofit corporation, but it is unclear from the NOI whether it is recognized as a 501(c)(3). The proposed activity is consistent with the science park concept proposed in the Reuse Plan for Zone 7. The LRA is confident that the activities described by this interested party could be conducted in the facilities of the EDC to be requested by the LRA in Zone 7 or in the Port facilities in Zone 6.

D. Public Park or Recreation

The legal authority for this kind of transfer is codified at 40 U.S.C. § 550(c). There is a separate authority available to the Department of Defense to convey lands for conservation purposes under 10 U.S.C. § 2694a.

1. Department of Environmental and Natural Resources. 4,250[1] acres for conservation through a public park PBC. The Department has indicated a willingness to work with other entities, such as the Puerto Rico Conservation Trust, to achieve its conservation goals. The LRA understands this is the best alternative.

2. Puerto Rico Conservation Trust. Medio Mundo and Daguao Reserves System. Approximately 4,250[1] acres (to be confirmed) in four conservation units: Daguao River Reserve, the Guayacan Conservation Area, the Medio Mundo and Punta Puerca Coastal and Marine Reserve, and the Piñero and Piñerito Islands. The LRA recognizes the need to protect the natural resources of the areas as essential to a successful Reuse Plan. The natural beauty and unspoiled resources in the surrounding areas are one of the main attractions for the use of developable lands in the base. The LRA believes that the Conservation Trust, a not for profit 501(c)(3) organization, would be the best steward of these lands. At the same time, the LRA understands that there is a strong sentiment in the community that these lands become public lands. The best approach would be to transfer the lands to the Department of Environmental and Natural Resources through a conservation conveyance, with the understanding that the Department will enter into a long term lease or a conservation easement with the Conservation Trust that will give the Trust the necessary flexibility and long-term guarantees to administer these lands. The LRA understands that some portions of the land identified by this interested party can also be protected even if it is disposed of through other mechanisms.

3. Municipality of Ceiba. Los Machos Beach. The LRA endorses the need to transfer the Los Machos Beach to the Municipality of Ceiba through a recreation PBC or a conservation conveyance.

4. Municipality of Ceiba. 300 acres around Los Machos Beach and Piñeros Island. The LRA believes the Municipality should have the opportunity to adminis-

1. Acreage to be confirmed following further environmental assessment and survey.

ter some of the lands adjoining the beaches, for the enjoyment of its citizens and should receive these lands through a recreation PBC or conservation conveyance. The LRA encourages the Municipality to use displaced workers from the Base to administer the recreational facilities in this area. Because the Conservation Trust has also requested the opportunity to administer Piñeros Island, the LRA encourages the Municipality of Ceiba to reach an agreement with the Conservation Trust, that will take advantage of the skills of the Trust in administering ecologically sensitive property, while still making the same accessible to the community.

5. Municipality of Ceiba. Marina. Buildings 2334, 467, 1724, 1716, the 72 slip marina and the adjoining lands. The Municipality would contract with the Cooperativa Marina Roosevelt Roads for the operation of this marina. Because there are concerns regarding the long-term operational viability of this marina under the strict requirements of a recreational PBC, the LRA believes it is best if the LRA applies to obtain the marina as a recreation PBC and the LRA would subsequently delegate the operation to another entity, which could be the members of the Cooperative Marina Roosevelt Roads if they present a viable plan. The LRA believes that the marina should be operated as a recreational and commercial marina, but the LRA believes that selection of an operator is best left to the marketplace.

6. Municipality of Ceiba. Golf Course. The LRA believes that the existing golf course should become a public course available to the community. The LRA, endorses the municipality's NOI for a PBC for the golf course, but encourages the municipality to explore options that will allow for the expansion to an 18 hole course.

7. JUPPA, Inc. Ecoparque la Seyba. Recreational and educational activities in 1,200 acres of unspecified wetlands, mangroves, estuaries and coastal areas. The LRA encourages the Conservation Trust to contact and work with organizations interested in promoting educational activities in the ecologically valuable lands of Roosevelt Roads.

E. Airport

The legal authority for this kind of transfer is codified at 49 U.S.C. § 47151.

1. Puerto Rico Ports Authority. Use of runway and surrounding facilities for a civilian cargo and passenger airport. The LRA recognizes the airport as one of the most significant assets in the base and strongly supports its transfer to the Puerto Rico Ports Authority under a PBC that would allow for a self-sufficient airport operation.

F. Maritime Port

The legal authority for this kind of transfer is codified at 40 U.S.C. § 554.

1. Puerto Rico Ports Authority. Maritime Port. Port area from Pier 1 to Pier 3 and adjoining lands and buildings SW of Forrestal Drive, and the related tank farm. The LRA supports the use of these facilities as a combined cargo and passenger operation, including transfer of the cargo and passenger ferry operation from Fajardo. The LRA supports transferring these facilities to the Puerto Rico Ports Authority as a Port PBC. The NOI also includes the port area NW of Pier 1, but this area was transferred to the Customs Service and is not available for reuse.

G. Other

During the May 18, 2004 workshop on the NOI process, a number of entities expressed interest in promoting projects that did not fit into any of the PBC categories recognized in the law. Some of these projects involved

particular private businesses. Participants were advised that, pursuant to the BRAC law, the EDC mechanism was available only to the LRA itself, but that in order to educate the LRA as to the kinds of business enterprises that could be located in NSRR participants were encouraged to use the NOI format to submit some of these ideas to the LRA. In drafting its Reuse Plan, the LRA has used this information as one additional reference point.

1. Aeolus Corporation. Energy powered by windmills. This NOI is labeled as a PBC, but since Aeolus Corporation is a private business it would not qualify or be eligible for a PBC. The interest of this business, however, has been noted by the LRA and the proponent is encouraged to keep himself informed of the property disposition process.

2. Tactical K-9 Services. K-9 unit training facility. This NOI is labeled as a PBC, but since Tactical K-9 services is a private business it would not qualify or be eligible for a PBC. The interest of this business, however, has been noted by the LRA and the proponent is encouraged to keep himself informed of the property disposition process.

3. National Oceanographic and Atmospheric Administration ("NOAA"). Caribbean Marine Science, Biotechnology and Aquaculture Center. As a Federal Agency, NOAA is not eligible for a PBC, but they were encouraged to submit information to the LRA through the NOI process, to alert the LRA as to potential uses for the property. This proposal is consistent with the LRA's plans to develop a science park in Zone 7. The LRA will be requesting an EDC of an area within this Zone, where the activities described by this proponent could be undertaken.

4. Phazer-A-Tact Systems, Inc. Tactical security monitoring corporation. Since the proponent is a private business it would not qualify or be eligible for a PBC. The interest of this business, however, has been noted by the LRA and the proponent is encouraged to keep himself informed of the property disposition process.

5. Ceiba Housing and Economic Development Corporation. Navy Lodge and Bowling Center. This proposal does not qualify and is not eligible as a PBC. It is also outside of the area where the LRA intends to propose an EDC to the Navy. The LRA also believes that these properties should be administered by entities with more experience in administering these types of facilities and that it is best determined through the regular property disposition process. The LRA, however, believes that the Navy Lodge should remain as a lodging facility. The LRA would like to see the bowling center remain as such, but its ultimate use is best left to the market.

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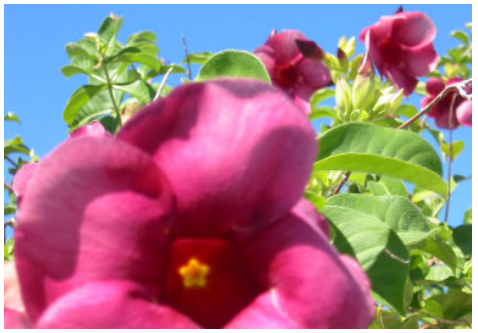
Appendix A: Roosevelt Roads Reuse Plan: Site, Context, & Market Conditions





Prepared for

Local Redevelopment Authority
US Naval Station Roosevelt Roads

&

Department of Economic Development
and Commerce, Commonwealth of Puerto Rico

April 2004

CBRE CB RICHARD ELLIS | Cooper, Robertson & Partners | MOFFATT & NICHOL | Puerto Rico Management & Economic Consultants

Appendix A: Table of Contents

A.I Introduction

IN AUGUST 2003, the Department of Economic Development and Commerce of the Commonwealth of Puerto Rico retained a consulting team lead by CB Richard Ellis Consulting to assist in identifying reuse opportunities for Naval Station Roosevelt Roads (NSRR). In late September 2003, the U.S. Congress ordered the Secretary of the Navy to close NSRR within six months and to do so pursuant to the Defense Base Realignment and Closure Act of 1990 ("BRAC"). That event triggered a series of actions organized around the need to prepare a Reuse Plan for the base. The CB Richard Ellis Consulting team is now assisting the Local Redevelopment Authority in preparing the Reuse Plan.

The Consulting Team is composed of:

- CB Richard Ellis Consulting: Real Estate and Development Advisors
- Cooper, Robertson & Partners: Architecture and Urban Design
- Moffatt & Nichol Engineers: Engineering
- Puerto Rico Management & Economic Consultants, Inc.: Economics

This progress report focuses on an analysis of existing conditions at the base and on the potential market support for its reuse. Specifically, it addresses the site's location, physical condition and natural features; buildings; infrastructure; transportation systems; environmental considerations; and the economic and real estate market conditions that will influence the likelihood of attracting an array of different land uses (e.g. residential, hotel, industrial, manufacturing, research and development, marina, etc.) to the site. The findings from this report will be used as a basis for developing reuse alternatives and, ultimately, for formulating a preferred reuse plan.

Report Organization

This report is designed to present the results of the Consulting Team's assessment of existing conditions and focused market analysis. In order to provide as concise a report as possible, we have captured summary level information in the body of the report while providing detailed data and back-up material in the appendices.

Following this introduction, the report is organized as follows:

- Executive summary
- Overview of location, physical conditions and natural features
- Potential development areas
- Opportunities and constraints

Information contained in the appendices includes: real estate market analysis; environmental, transportation and infrastructure assessment; and an assessment of existing buildings.

Important Notice

A great deal of the material obtained and reviewed by the Consulting Team comes from documents provided by governmental agencies including the Department of the Navy and various consultants. In reviewing these documents, the Consulting Team found certain conflicting information related to a number of conditions including, for example, the location of wetlands, mangroves, and bird habitats. Efforts are currently under way to resolve the inconsistencies in order to better understand the existing site conditions that will influence reuse opportunities.

For these reasons, the information in this progress report should be treated as preliminary only and subject to revision as additional information becomes known. Together with the Local Redevelopment Authority (LRA), the Consulting Team is trying to move quickly to understand the site to the degree necessary to identify realistic reuse options. The NEPA process (National Environmental Policy Act) and work by other consultants retained by the LRA should help facilitate resolution of the many environmental issues surrounding the site.

In conclusion, it would be inappropriate and premature to reach conclusions and begin to advocate a specific reuse scenario until the outstanding issues are resolved. This progress report is intended primarily for the benefit of the LRA as it works with the Consulting Team to formulate a Reuse Plan.

A.II Executive Summary

This summary presents preliminary findings and conclusions related to each of the subject areas analyzed by the Consultant Team including:

- Location, physical conditions and natural features
- Economic and market analysis
- Environmental, transportation and infrastructure
- Existing buildings

Location, Physical Conditions & Natural Features

The Consultant Team conducted an overview of adjacent neighborhoods, the site's physical conditions and natural features order to identify the physical development opportunities and constraints associated with the reuse of Roosevelt Roads. Our team collected and reviewed base and facilities drawings, documents and previous studies and other secondary sources provided by the Navy, other agencies and conservation groups. Amplified by field notes and photographs taken during our field trips to the site, the team's work effort results in a series of analytic drawings illustrating these physical informational layers, and which provide an understanding of the site's unique characteristics, its development constraints and an introduction to the opportunities for future reuse.

Elements considered in the overview included regional and local context, site structure, dimensions, topography and hydrology, existing vegetation, wetlands and ecology, and archeological sites. Existing land uses and supporting infrastructure were identified and mapped, as were the site's varying gradients, which must be considered when identifying areas for potential development. These conditions were then organized as a series of overlays, culminating in a summary of Constraints and Opportunities for future reuse of the base. (A separate section on Existing Building Assessment is included in Appendix C).

Our findings from this investigation are included in Sections III, IV and V of this report and are summarized below:

- The site is at the physical center of the Eastern Caribbean region. Excellent air and ship transportation is readily available; San Juan is one of the busiest and largest air, cruise and cargo ports in the region. The Roosevelt Roads site has the advantage of proximity to existing and new tourist resorts and second home market developing along the eastern coast, as well as to Vieques and Culebra, both in sight of the base, across the sound.

- At the foothills of El Yunque and at the edge of the sea, Roosevelt Roads is intrinsically linked to its regional ecology of rainforests, marine habitat, migratory birds, and coastal flora. There is the opportunity to augment a widely recognized emerging regional eco-tourism, forming a regional recreational linkage with such tourist sites both within Puerto Rico, Vieques and Culebra, and the islands of the Greater Antilles Archipelago.

- Ceiba and Naguabo are small neighboring coastal towns, both formerly agricultural, and now primarily residential in character, with supporting small-scale retail and institutional facilities. These towns are visibly impacted by the closure of the Naval operations at Roosevelt Roads, with For Sale signs proliferating throughout the residential streets and neighborhoods and now along some of the prime retail sites at the center of town. There is little industry in either town; both were dependent on the Navy for local employment. With the closure of the base, it appears that many local residents are relocating out of the immediate area. The town has enjoyed beach access and development of a fishing boat pier on property belonging to the Navy, to the east of the northern gate. A concern is how ownership of this portion of the property will be determined in the future.

- Access to the site is limited and circuitous at the northern end of the site and would require reconfiguration and wayfinding. Access to the southern gate from the regional road network is direct and well market. Of great advantage, there is the opportunity for direct access to the airport area, regardless of whether it remains an active airfield or is redeveloped for other purposes. The airfield has helipads and multiple runways, the longest over 11,000 feet in length, and as such, can accommodate virtually any size aircraft. While the airfield today is visually screened from outlying areas by heavy vegetation, it could become visible to the main highway with selective tree thinning creating value for new commercial development activity.

- One of the largest coastal properties in Puerto Rico remaining in single ownership, the site encompasses a sweeping 8,300 acres on mainland Puerto Rico plus two smaller islands, Isla Pineros Isla and Cabeza de Perro that together represent some 300 additional acres. The site geographically is the easternmost extension of the foothills of El Yunque, forming notable, twin "booted" peninsulas that together frame Ensenada Honda, the large and well-protected harbor at the center of the site with a distinctive ring of hills, nearly 300 feet at the highest point. A smaller bay, Bahia de Puerca, presents a second "outboard" opportunity for water-related activity and adjacent development.

- Limited largely by topography and mangrove forest preserves, opportunity for direct access to the water is restricted to a few locations at the site's small but charming beachfronts, and along the extensively bulkheaded frontage of the harbor along the northern peninsula. Along this formerly industrial waterfront, the infrastructure is sufficient to support a variety of regionally appropriate uses, such as a passenger terminal to Vieques and Culebra.

- The encircling Delicias Hills influence the direction of the site's surface water drainage in addition to providing dramatic water and coastal views to the north and south. They also serve to contain noise generated by activity at the airfield, which is located in the site's major northeast/southwest valley. Dual views of El Yunque to the west and Island Pineros and Vieques to the east are equally compelling, and can be best seen from two spectacular vantage points, Punto Medio Mundo, jutting into the bay at the northernmost high point of the site, and at the site's dramatic northern eastern "heel" on the peninsula, among the most valuable on the site.

- The richness of natural diversity, of natural flora, extensive wetlands, mangrove forests and surrounding sea grass beds, underscores multiple ecologies and biodiversity present at the site. The site is an important coastal resource and potential habitat for a number of threatened and endangered species including the Yellow Shouldered Blackbird and the West Indian Manatee. Again, under single ownership, this presents a unique opportunity for conservation as well as development. Additionally, there are a number of listed archeological sites potentially warranting future investigation.

- Existing development at the base falls within six fragmented zones separated by topography, wetlands or land use: the airfield, Bundy to the southwest, "Downtown" at the center of the site, Capehart (residential neighborhoods on the southern peninsula), the waterfront along the northern bulkhead of Ensenada Honda, and Camp Moscrip at the edge of Bahia de Puerca. Each area is dominated by a singe land use with supporting adjacent facilities; each is adaptable to reuse or appropriate for redevelopment. Support facilities at the base are diverse and include a recently renovated hospital, a well-equipped ambulatory care medical and dental facility, two air-conditioned schools, libraries, a theater, a public works building, refrigerated storage areas, commercial buildings of varying sizes and recreational facilities that include tennis courts, small-boat marina, fitness center, a 9-hole golf course and a variety of ball fields. As with most military installations and with few exceptions, base facilities were developed with little regard to aesthetic quality or siting, designed to be purely functional and operationally necessary, with minimal support facilities. It is an environment of mostly well-maintained, "no-frills" structures and facilities.

- Infrastructure at the base was developed in support of specific land uses and zones, and while adequate to support reuse, it is likely that with reuse of the base, elements of existing infrastructure will require updating and modification, particularly roads, which are not designed to service significant traffic generated by private vehicles, and piers, which are sized to service naval and tanker vessels not passenger ferries or private charter boats.

- With much of the site falling within wetland areas, the 100-year floodplain and areas with greater than 15% gradient or in existing development or the 521 acres reserved for new development at the airport, new development is limited 1,208 acres throughout the remainder of the site.

- Areas of concern (AOCs) related to the presence of potential contaminants, and solid waste management units (SWMUs) require further definition and clarification, and will present significant constraint to future development. The Navy's Environmental Assessment, currently underway, will provide additional information regarding these areas, and the scope of potential cleanup.

Economic and Market Analysis

The Consulting Team conducted an economic and real estate market overview in order to assess the market opportunities and constraints likely to be associated with the reuse of Roosevelt Roads. Uses considered in the market analysis included research and development (science park), industrial, retail, lodging, cruise ship terminal, marinas, nautical tourism, and residential. The anticipated outcome of this overview is the identification of the types of land uses that are likely to be supported from a market perspective. Findings and preliminary conclusions from the market analysis are presented in detail in Appendix A and are summarized below.

- Some of the uses considered are more likely to be supportable in the near-term while others will require a longer-term perspective to find market acceptance. Market findings indicate that supportable near-term uses, including reuse of some existing buildings, include:
  - Residential
  - Research and development in the form of university sponsored research and educational programs
  - Industrial including distribution, warehouse and, perhaps, some manufacturing
  - Marina
  - Eco-tourism activities
- In the longer-term, several additional uses could be supportable as demand grows and as the market acknowledges the success of early projects at Roosevelt Roads. These other uses could include:
  - Resort hotels
  - Specialty retail/restaurants in a marina and tourist port setting
  - Convenience retail (i.e. a grocery store-anchored neighborhood shopping center) to serve the needs of local residents living at Roosevelt Roads and in immediately surrounding neighborhoods
- Current residential market conditions in the Fajardo/Ceiba Region are depressed, with declining prices and increased vacancy, which are due primarily to the closure of Roosevelt Roads and the departure of associated military and civilian jobs. In the near term, Roosevelt Roads is not proximate to job centers, which will temper demand for housing. However, the Fajardo/Ceiba Region is projected to require 13,000 new housing units by 2025 to keep up with population growth. Therefore, future demand for housing located at Roosevelt Roads could be strong, either for re-use of current housing or construction of new units, especially as jobs are attracted to Roosevelt Roads over time. The site attributes of Roosevelt Roads, including spectacular views and existing infrastructure including schools, hospital, etc., as well as the future improvements in access to San Juan via new highway construction, could make the site an attractive location for both the primary and second-home markets.
- Past case study research performed by CBRE Consulting indicates that Roosevelt Roads has many of the attributes necessary for a Science Park. There has been preliminary interest expressed by both the University of Puerto Rico and the Polytechnic University of Puerto Rico in locating select research and development efforts on the site. If one of the universities were to serve as an anchor for the park, the ability to attract additional public and private sector tenants would be greatly enhanced.
- Potential demand for industrial development at Roosevelt Roads appears to be somewhat limited based

on the current supply of general-purpose industrial buildings in the Fajardo/Ceiba Region and the corresponding vacancy rate in the Region. However, Roosevelt Roads does have an advantage in the presence of the base airport, which could be attractive to industrial users. Additionally, Roosevelt Roads has the potential to attract industrial owner-occupiers, such as pharmaceutical and high technology manufacturers.

- There appears to be good potential for a marina at Roosevelt Roads given its location within the Fajardo/Ceiba Region, where many of Puerto Rico's marinas are concentrated, as well as its proximity to Vieques and Culebra. However, the marina inventory in the eastern region could be increasing significantly in the coming years if proposed expansion plans at various marinas are executed, which could temper demand at Roosevelt Roads.

- Roosevelt Roads has several attributes that support the potential for ecotourism on the site, including existing mangroves that may be explored by hiking and/or kayaking excursions, canoeing and other forms of boating that may be launched from the existing marina on the site, and ecotourism-oriented visits that could be organized to the islands off the northeast coast of Puerto Rico, such as Vieques and Culebra. Given its location, coastal setting, and environmentally sensitive areas, Roosevelt Roads could be well positioned to cater to this growing tourism sector.

- The lodging market in Puerto Rico has been stable or growing throughout the past ten years, as evidenced by the steady growth in the inventory of hotel rooms on the island. The Fajardo/Ceiba Region is known for its access to activities and amenities such as El Yunque, the sister islands of Vieques and Culebra, and water sport activities and golf, and is anticipated to experience increasing demand in the lodging market. Such demand could be captured by a potential lodging development at Roosevelt Roads, which could capitalize on the beauty of the site, its proximity to Vieques, and Culebra, and complementary land uses (such as a marina and a golf course) that could be accommodated nearby.

- Due to a lack of expressway visibility and direct access, the location of Roosevelt Roads does not lend itself to major shopping center development. However, the site does have characteristics that could support other types of retail development. There will be potential for a grocery-anchored neighborhood shopping center supported by local residents currently living in the area and future residents at Roosevelt Roads, once there are a significant number of occupied homes on the site. Additionally, specialty retail, adjacent to the water, could also be supportable if it is developed with the appropriate mix of adjacent uses (e.g., residential, marina, lodging, and tourist-oriented facilities).

- Due to Puerto Rico's location within the Eastern Caribbean, most cruise ships that make port of call stops in San Juan do so for only a partial day, often in the afternoon and evening. As a result, San Juan is an attractive destination because passengers can enjoy city activities during their brief time on the island. Interviews with planning executives at two major cruise lines indicate that there is not sufficient demand for a cruise ship terminal at Roosevelt Roads because of the site's disadvantageous location from an itinerary planning perspective.

Environmental, Transportation, and Infrastructure

The Consulting Team was tasked with reviewing existing data on infrastructure at NSRR, and supplementing with field notes and photos during field trips to the site. The team collected existing reports, base maps, coastal charts, construction plans, and utility information to ascertain that the general infrastructure of the base is currently adequate to support the existing development on the base, and has capacity to support additional development. The specifics of the surplus capacity will be studied during the alternatives analyses. Appendix B of this report details specifics of the base infrastructure, in addition to documenting environmental considerations and regional transportation system. The most important aspects of this desktop study and of Appendix B are summarized below.

- NSRR is a fully functioning base, with adequate infrastructure systems to convey potable water, fire water and power to buildings and facilities. The systems have been developed and maintained in accordance with or above the standard of care.

- Base wastewater is treated and discharged and is fully permitted under a National Pollution Discharge Elimination System permit. With the decommissioning of the base, the sanitary system will cease to be operational. If any one of the three wastewater systems ceases to be operational, the NPDES permit will become invalid. Keeping the permit valid is of key importance, since applying for and obtaining new permits for wastewater treatment and discharge is a long and arduous process. The NSRR Public Works Department plans to "mothball" and maintain equipment for the next two years.

- Base maintenance for other systems is also important. The buildings will quickly succumb to mildew and rot without minimum level of air conditioning.

- The base receives its water from a pipeline from Rio Blanco in the El Yunque Mountains. The raw water is treated and distributed throughout the base. Monitoring data for trihalomethanes (THMs) at the discharge of the treatment plant and at remote points on the water distribution system show that the addition of chlorine for disinfection at the plant is causing the formation of this organic chemical contaminant at unacceptable concentrations. THMs may be controlled by various techniques, including enhanced treatment process control, removal of the precursor organic chemicals, elimination of chlorine as the disinfecting agent or removal of the fully formed THMs by physical or chemical treatment. This should be evaluated further with regard to regulations governing Roosevelt Roads.

- NSRR, on mainland Puerto Rico, is approximately 8,600 acres in area. This area consists of military installations, residential regions, an airfield, wetlands and floodplains. Approximately 4,250 acres, or 53% of the total area, consists of mangroves, seagrass beds, natural animal habitats and other environmentally sensitive areas.

- An Area of Concern (AOC) is an area identified for possible contamination. If confirmation of contamination is obtained, the area becomes a Solid Waste Management Unit (SWMU). A process is currently in place for identifying and designating SWMUs and AOCs on the base. It is the subject of a concurrent study being completed by the LRA. For the purposes of this report, AOC and SWMU locations are not necessarily eliminated from consideration for development, since they can be remediated.

- The marine infrastructure of the base consists of 6 piers, bulkheading, one drydock, and a landing ship tank (LST) ramp. The pier adjacent to the drydock is dilapidated and does not lend itself to remediation. The visible features of the drydock, those above the waterline, are in

a state of disrepair. The remaining piers, bulkhead and LST ramp are or were recently operational, and have been maintained.

- The federal channel to Ensenada Honda is maintained to a depth of 40 ft Mean Sea Level (MSL). This is not considered a deepwater commercial port, which would be on the order of 50 ft below MSL.

- There is a 72 slip marina on base that was constructed in the mid-1990s. Each ship service box provides potable water and 110 V power. Conduit has been placed for cable television but cables were never installed. The average depth at the seawall is approximately 6–8 feet. The facility is generally in good condition as it is relatively new.

- The airfield at Roosevelt Roads has several runways, the longest of which is 11,000 feet. Future development around the runway must respect hazard zones and noise zones. These are documented in Appendix B.

Existing Building Assessment

The Team assessed the existing facilities on the base using data supplied by the Navy and on-site inspections during February 2004. One outcome of these studies and investigations was the realization that approximately 10% of the 1,600 facilities on the Base have not yet been mapped and documented to the same degree as the remaining 90%. The team is in the process of attempting to verify information about these "Unconfirmed" facilities. That said, a number of conclusions can still be drawn regarding the existing facilities at Roosevelt Roads.

The facilities were built over the course of the past 65 years from the beginnings of the Base in the late 1930s right up until the present. Approximately 75% of the buildings were built before the end of the 1960s. Most of the built facilities at Roosevelt Roads have been adequately maintained over the years and are in good condition.

A small but significant number of facilities are considered essential for continued operation of the Base infrastructure, airport or seaport. In addition, 29% of the remaining facilities are judged to be of high economic value due to their unique characteristics. Taken together these figures total more than 500 facilities spread out over the entire Base. The cost of maintaining this large number of essential or economically valuable facilities will be significant.

The remaining facilities comprise more than 1,000 structures currently serving a myriad of uses by the Navy. Because their physical condition, quality of construction and location vary considerably, their future usefulness will depend largely on the specific re-use plans developed and implemented. Again, the shear number of facilities falling into this category will make even minimal maintenance a costly endeavor. Serious consideration will have to be given to demolition of facilities that are not either used or minimally maintained in the near future to limit the cost of stabilizing and securing such a vast number of structures.

In terms of re-use of the existing facilities approximately 98% of the Net Square Footage (NSF) on the Base could be used for civilian purposes. Approximately 60% of this Square Footage (SF) consists of Residential, Institutional and Recreational facilities. The remainder is comprised largely of Commercial and Industrial facilities including offices, stores, warehouses, workshops, etc. Most of these can be readily adapted to serve any number of uses depending on the final re-use plans adopted.

A.III Overview: Location, Physical Condition, Natural Features

Every property is unique; its precise location and a broad range of physical characteristics combine to form the essential qualities of any given site.

The consulting team has reviewed a number of detailed environmental assessments of the site, extensively toured the site and has researched a number of the site's physical characteristics. The following chapter focuses on the key findings with respect to the physical nature of the site. It is then followed by a study of the existing facilities, infrastructure, land uses and development potential.

Location

Regional Context: The Caribbean

Puerto Rico is strategically located as the easternmost island of the Greater Antilles, centrally located among the eastern Caribbean archipelago. It enjoys excellent access from the U.S. Mainland via air and water transportation, and is a jumping off point to neighboring U.S. and British Virgin Islands, as well as Anguilla, Nevis and St. Kitts and the West Indies.

Among the larger islands in the Caribbean islands Puerto Rico is approximately 110 miles long and 55 miles wide and has a population that is approaching 4 million residents.

The Atlantic Ocean lies off the northern coast of Puerto Rico, the Caribbean Sea off the southern coast. Off the coast of the eastern portion of the island, two significantly sized islands, Vieques and Culebra, are separated from mainland Puerto Rico by surrounding bays, Passages de Vieques and the Sonda de Vieques.

Figure III.1
Location Context

Sources: Puerto Rico Planning Board; and CBRE Consulting

Island Context: Gold Coast

The eastern side of the island is characterized by a topographically dramatic juxtaposition of tropical rainforest and beaches framed by mangrove preserves and steeply sloping promontories affording unparalleled waterfront views.

With its peak of 3533' above sea level, El Yunque and the Caribbean National Forest in the Sierra de Luquillo Mountains is visible from nearly every venue at Roosevelt Roads, presenting a dramatic backdrop to the west, often concealed in the clouds. Its terrain changes from gentle slopes at lower elevations to deeply vegetated and rock-faced mountain slopes that exceed 60% gradient at higher elevations. To the east, the craggy coastline is characterized by distinctive heavily-vegetated and steeply sloping peninsulas framing bays and coves and limited beach accessibility.

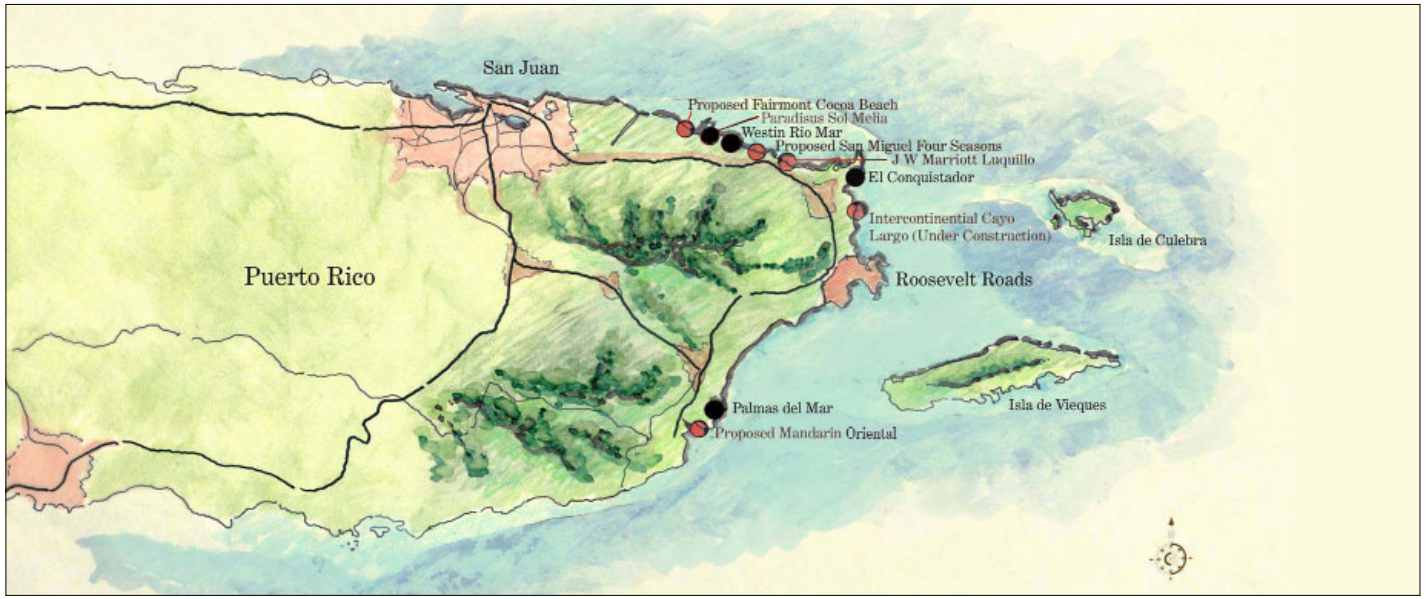


Figure III.2
The Gold Coast

Sources: Puerto Rico Planning Board; and CBRE Consulting

Approximately thirty-three (33) miles southeast of San Juan, Roosevelt Roads is situated mid-east coast, equidistant along the Gold Coast between the resorts to the northeast, including the Westin Rio Mar and Paradisus Sol Melia, and the proposed Fairmont, Four Season, J.W. Marriott, and Intercontinental properties; and those to the southeast, Palmas del Mar and the proposed Mandarin Oriental Resort near Humacao. The emerging resorts on Vieques and Culebra are accessed by ferry from Fajardo, a large town on the eight miles north of the property.

Puerto del Rey, one of the Caribbean's major recreational marinas is located less than three miles to the north of Roosevelt Roads. Ensenada Honda is one of the Gold Coast's most unspoiled and significant bays and lies at the center of the Roosevelt Roads property. The bay is twelve (12) nautical miles from Isabel Segunda on the north coast of Vieques and six (6) miles from its southwestern pier. It is also forty-four (44) nautical miles from St. Thomas; sixty (60) nautical miles from Christiansted, St.Croix; and sixty-five (65) miles from Tortola, BVI.

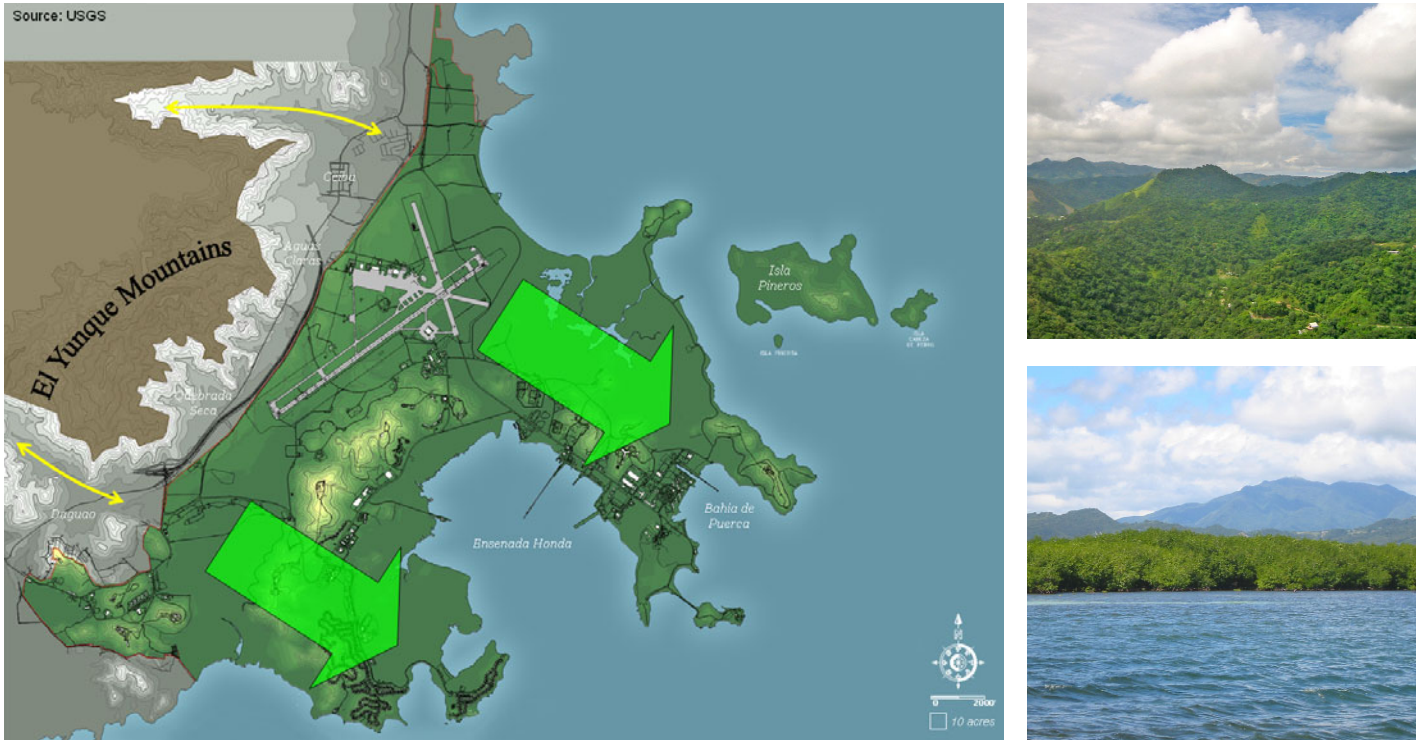
Local Context: Surrounding Neighborhoods
Ceiba and Naguabo

Two small neighboring towns, Ceiba to the west of the Roosevelt Roads Naval Base and Naguabo to the south are the nearest centers of local population. Ceiba, founded in 1838, derives its name from the name of a famous tree that grows on the island, Ceiba Pentandra.

Both Ceiba and Naguabo were rooted to agriculture as their main source of economic activity prior to the Navy's siting of the Roosevelt Roads Naval Base in the 1940s.

Figure III.3
Site Structure

Source:USGS



Site Structure

The site is a natural extension of the continuous foothills of the rainforest, forming a visually powerful backdrop and termination of the rainforest watershed.

Ensenada Harbor, the large sound at the center of the site is framed by dual southeast-oriented peninsulas, typical of the geographic character of Puerto Rico's eastern shore. The northern peninsula is higher; its top elevation approaches 200' above sea level at its peak. The southern peninsula is somewhat lower in elevation and is completely ringed by mangroves at the water's edge with limited exception. A pair of "boots", the small points at the end of the peninsulas create parallel "islands" into the sea.

Bahia de Puerca, a small bay at the northern peninsula is a smaller-scale mirror version of the overall site, framed by two smaller waterfront promontories that orient toward the long vista toward Vieques.

Off the coast of the northern peninsula, two additional small islands are part of the property. The larger one, Isla Pineros, is 1 mile by ½ mile in dimension; Cabeza de Perro, the smaller one, is ¼ mile in diameter.

Physical Condition

Site Dimensions

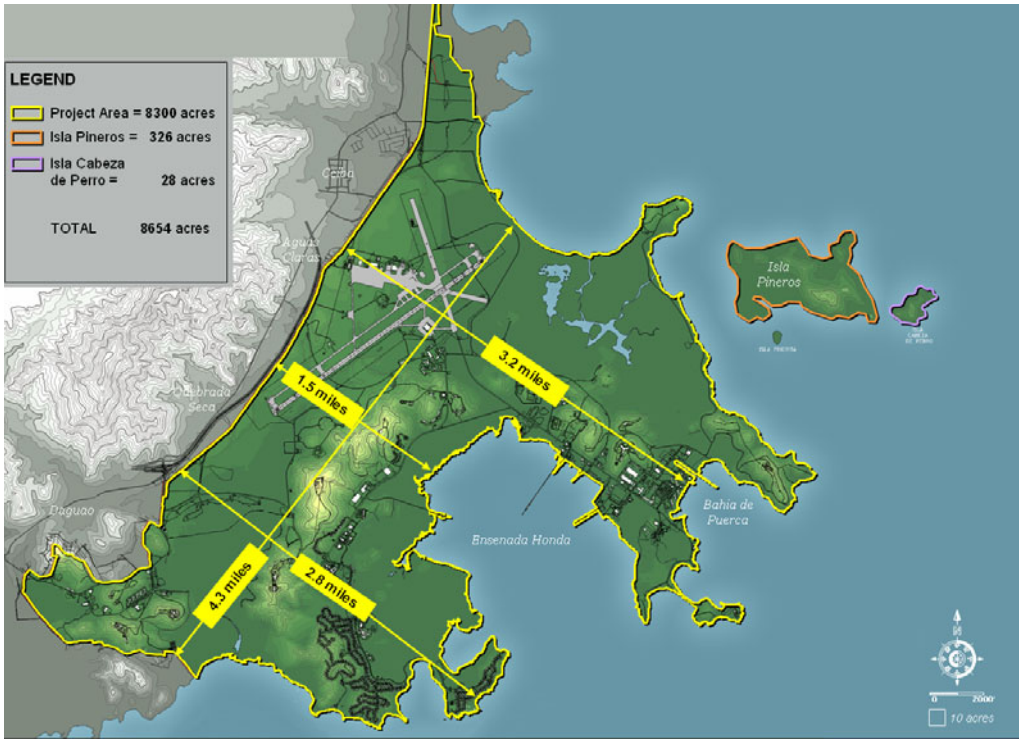


Figure III.4
Site Dimensions:

A remarkable expanse of coastal waterfront property, the Roosevelt Roads site encompasses just over 8,300 acres. Certainly this is one of the largest coastal properties under single ownership on the island.

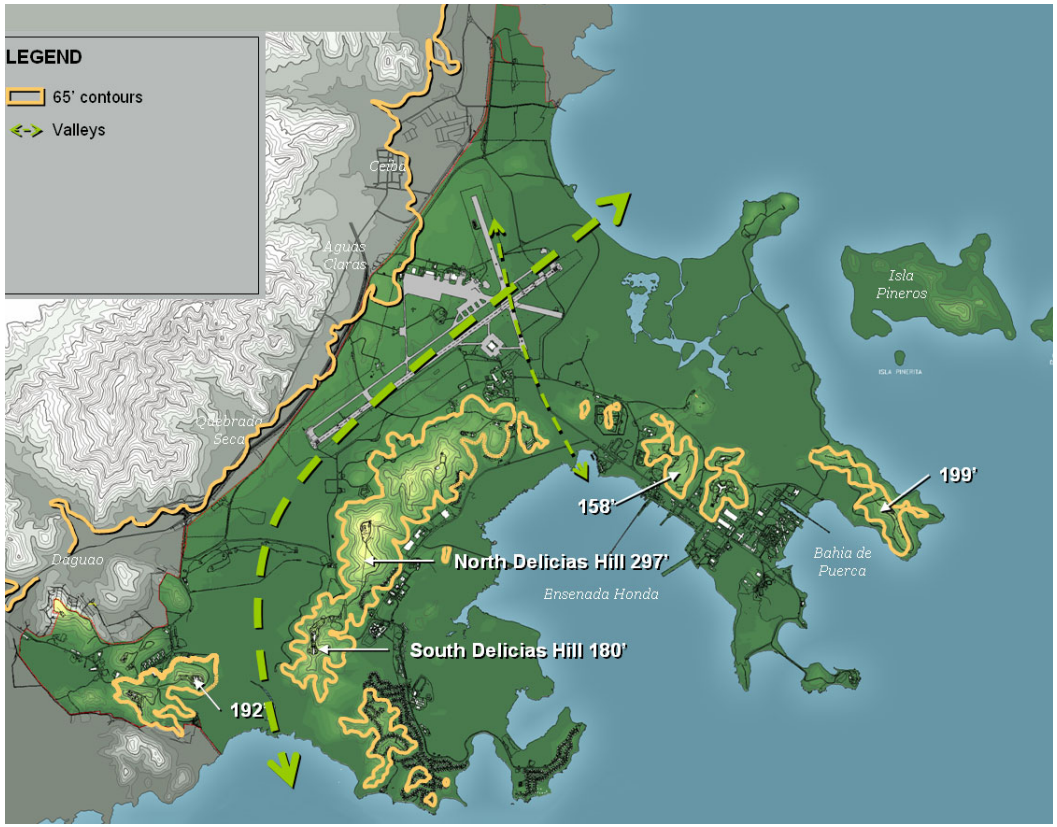
In dimensions it measures nearly five miles across (northeast to southwest) and nearly four miles at its width (northwest to southeast). At its narrowest, the midsection of the site is 1.5 miles wide.

Ensenada Honda is a large and naturally protected harbor measuring roughly 1.25 miles wide by 2.15 miles long. The smaller Bahia de Puerca is exposed to the prevailing outboard swells and chop of open water; it measures approximately .5 miles wide by .7miles long.

Local Site Topography

Figure III.5
Local Site Topography: Varied, broad range from sea level to 297' in elevation

Sources: USGS, BakerCAD



The site has a varied topographical aspect, typical of the eastern coastal properties of this region and the foothills of the rainforest. There is a broad range in elevation from sea level to 297' vertical elevation at the high point in the middle of the site's central ridge.

The site's principal defining topographic feature is the distinctive ring of nearly continuous hills framing Ensenada Honda from the southern peninsula to the northern peninsula. At its midpoint in the center of the site is a high ridge dividing the upland airport from the harbor. On the central northern peninsula, the hills have been cut away to create a significantly sized building pad for the public works building.

The hills create major northeast/southwest valley, an ideal site to have aligned and located the well-protected, visually protected airfield with a naturally "built-in" wind screen. From the west, and the east, the airport's main runways are effectively hidden by topography, enhanced by dense vegetation. A secondary valley aligned along the northwest/southeast secondary runway alignment, penetrates the ring of hills.

Another cluster of hills at the southern end of the site afford substantial elevation and therefore views south toward Naguabo and Humacao.

North of Bahia de Puerca, the site consists of a large rectangular high promontory of nearly 200' elevation above sea level. Surrounded by densely vegetated and steeply sloping terrain, this point has sweeping views overlooking the harbor, all of the surrounding and distant islands, and a singular view toward northern coastline to the recently restored Cabezas Lighthouse and to Fajardo.

Natural Features

Hydrology and Watercourses

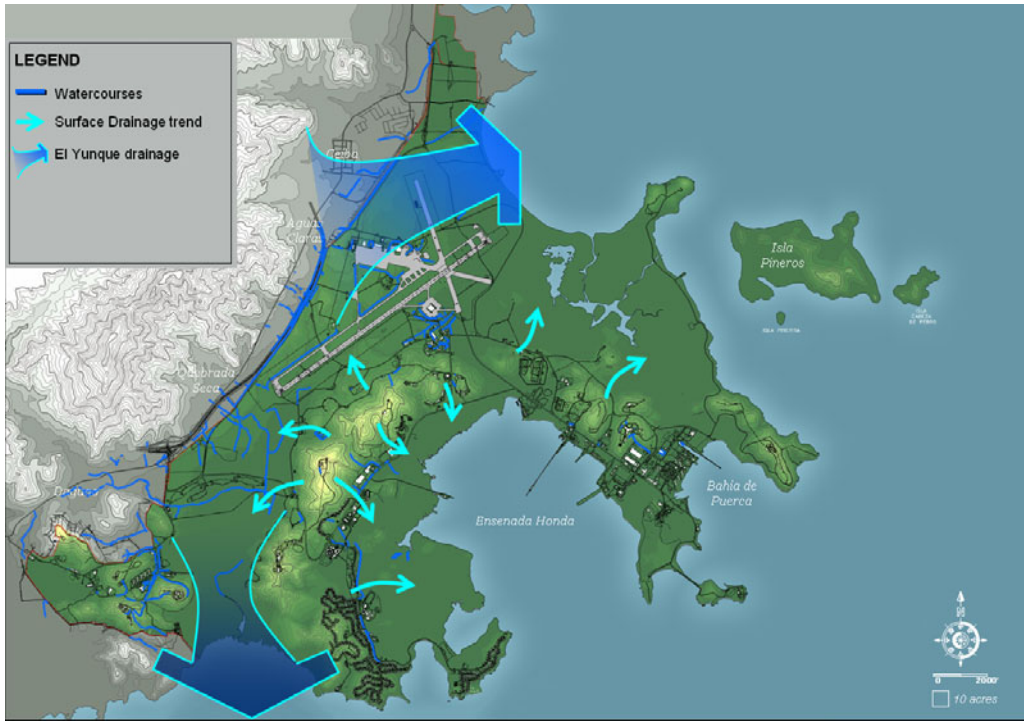


Figure III.6
Hydrology and Watercourses: In the accompanying figure, large blue arrows indicate how larger regional ground water drainage patterns seek coastal outlet. Light blue arrows indicate general natural drainage patterns leading from Delicias Hills and the elevated areas of the site.

Source: BakerCAD

Generally, the subsurface at Roosevelt Roads is a combination of volcanic rock and a range of more permeable materials close in to the water's edge.

In the heavy rainfall that this part of Puerto Rico experiences annually, groundwater runoff will likely be accelerated because of these conditions.

The site's proximity to the sea results in a high presence of salinity in on-site ground water. Additionally, relatively slow recharge rates indicate poor suitability for generating potable water from local wells.

Water Depth

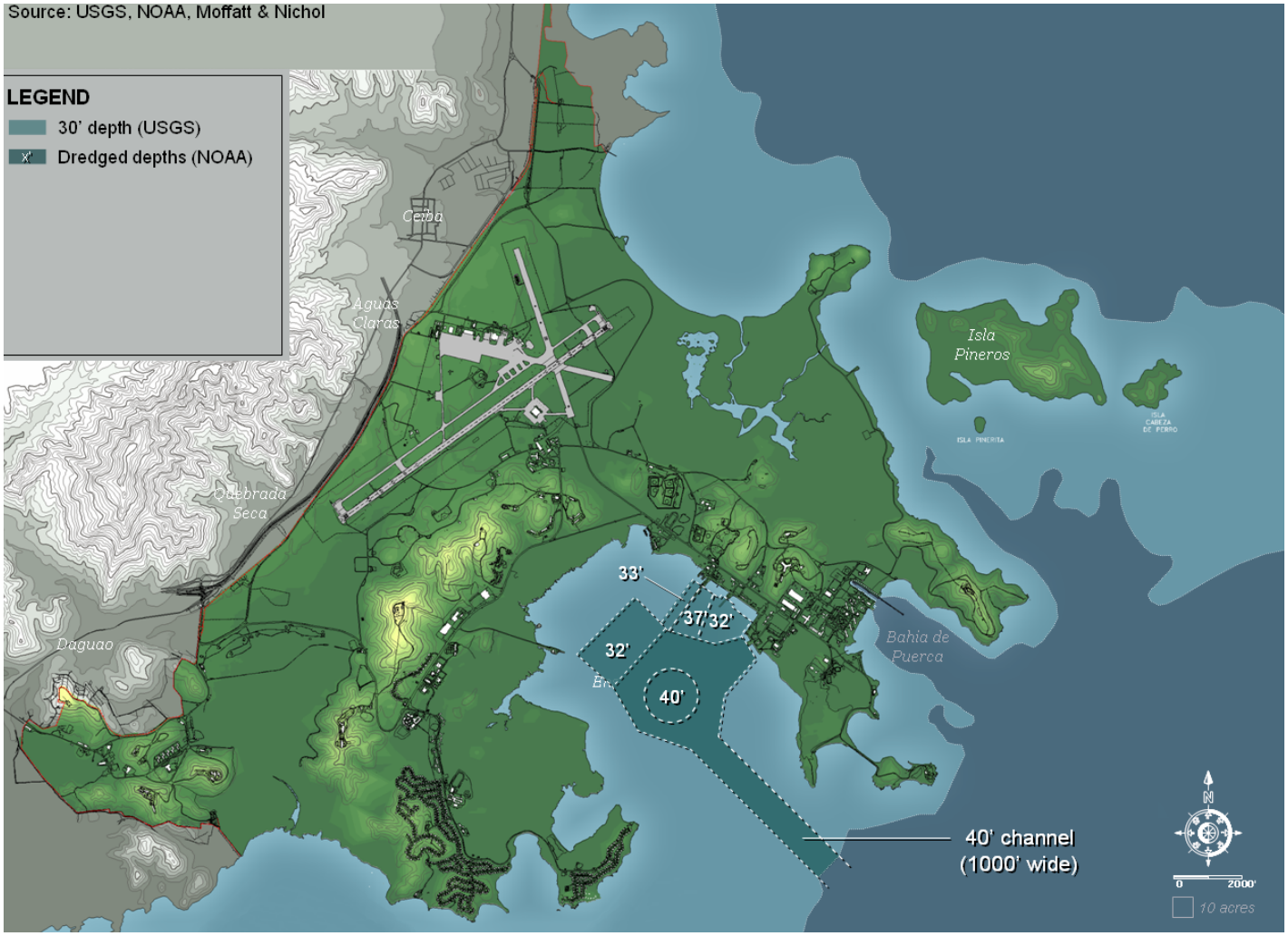


Figure III.7
Water Depth. For additional information on the central channel and condition of the piers, please refer to Appendix B.

Source: USGS, NOAA, Moffatt & Nichol

The site is surrounded by water on three sides. Along its extensive coastline, the depth of water at the coastal shelf is variable, and ranges from zero (0) to 30 feet. These shallow shelves extend up to 4000 linear feet off the coastline along the Puerto Medio Mundo, while deeper waters approach the north peninsula north of Bahia de Puerca. The shelf of up to 30' deep extends out 10,000' south of the southern peninsula.

There is an existing deep-water channel leading into the harbor, allowing larger vessels and fuel tankers access to the naval piers located along the northern edge of harbor.

Existing Vegetation

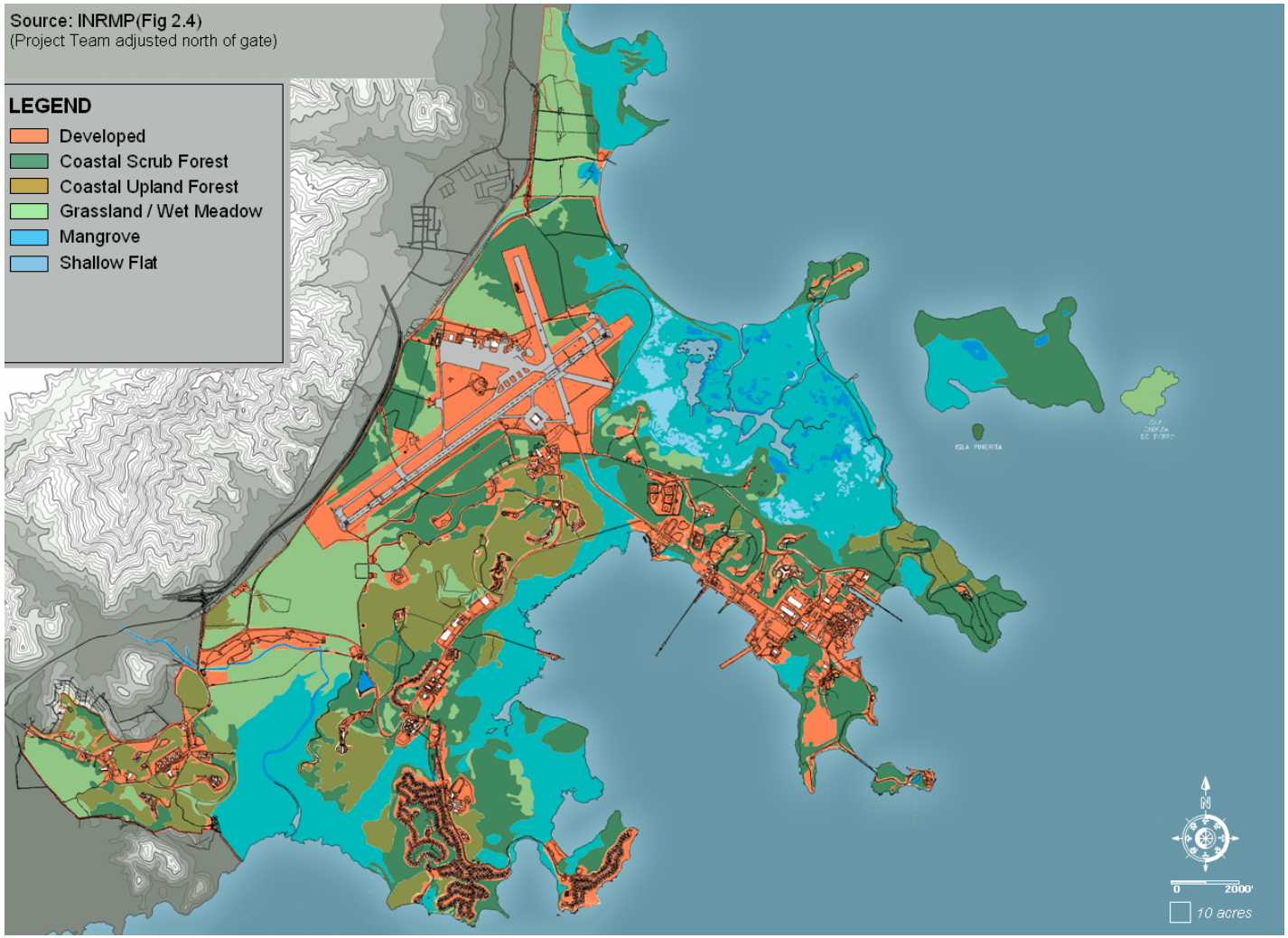


Figure III.8
Existing Vegetation

Source: INRMP (fig 2.4) (Project Team adjusted north of gate)

Existing vegetation at Roosevelt Roads is richly diverse, reflecting the multiple adjacent ecologies present on the site. A variety of native flora species underscore the characteristic of the site's range of biodiversity: upland forests, coincident with higher elevations on the site; coastal scrub forest coincident with the mid-sections; grassy, meadowed fresh water wetlands coincident with the inland floodplain; and coastal wetlands, coincident with the tidal "outboard" areas of the site. Of the 8,300 acres that comprise the site, approximately 2,900 acres are designated wetlands according to the recent ECP report, and of those 60% are mangroves, considered protected under Federal Law.

The prevailing vegetation found along the coastal regions of eastern Puerto Rico and at Roosevelt Roads include:

- Upland and Coastal Scrub Forests: Native vegetation at the site includes small trees such as: leadtree, boxbriar, sweet acacia, Australian corkwood tree; larger trees including ucar, sand box, ficus, flamboyants, Puerto Rica Royal Palm, ginep and Indian almond. There is a predominance of successional stands of small trees, that are essential to enhancement of watershed protection areas and ground water recharge

- Grassland/Wet Meadow: this is predominant in the "valley" floor of the site to the northwest and southwest of the airport. Native species would include cattails, and a variety of grasses, a natural habitat for herons, egrets, coots, and fresh water turtles that are found in these areas.

- Mangrove and Shallow flats are distributed throughout the low-lying coastal areas of the site. Ambient average water temperature in these areas ranges from 75° to 84°. Typically, these areas require stable salinity of 35 parts per 1000, clear water allowing deep light penetration to enhance the quality of the habitat for a diversity of species. Sea grass beds, critical habitat for manatees, and the site's coral reefs are prime candidates for conservation. The mangroves are essentially "self-maintaining" coastal landscape areas to the extent that they are protected from encroachment or pollution.

- Beach strand ecosystem: This occurs on slightly elevated sandy ridges that are seen in a few areas of the sight. Common shrubs include the bay cedar and the sea grape. Trees typically found in these areas include coconut, buttonbush and poisonous manzanillo.

According to the environmental assessments completed previously at the sight, a number of protected species that have inhabited undeveloped areas of Roosevelt Roads include:

Fauna

- West Indian Manatee.
- Yellow-Shouldered Blackbird
- Artic Peregrine
- Brown Pelican
- Roseate Tern
- Loggerhead Sea Turtle
- Green Sea Turtle
- Leatherback Sea Turtle
- Hawksbill Sea Turtle
- Puerto Rican Boa

Flora

- Cobana Negra




Wetlands & Mangroves

Figure III.9
Wetlands

Source: NSRR uplands X-ref drawing

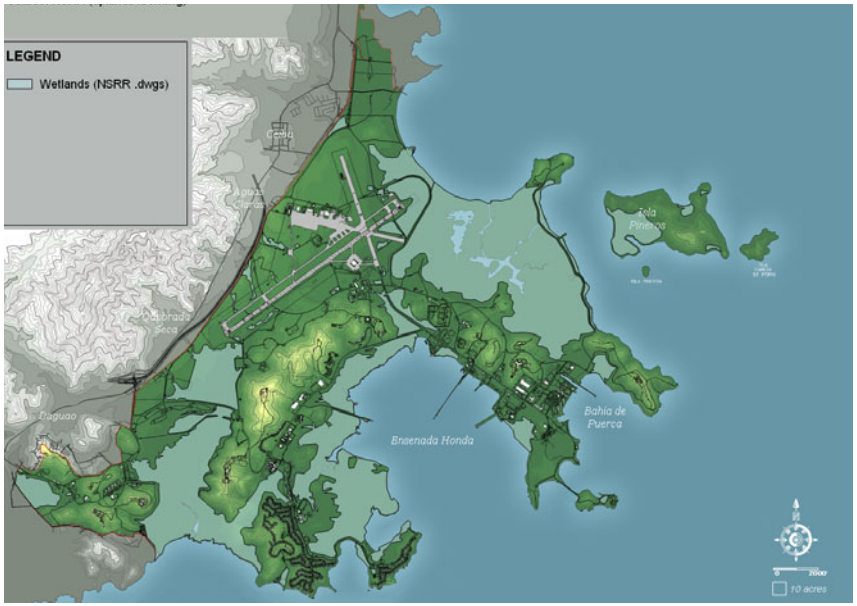
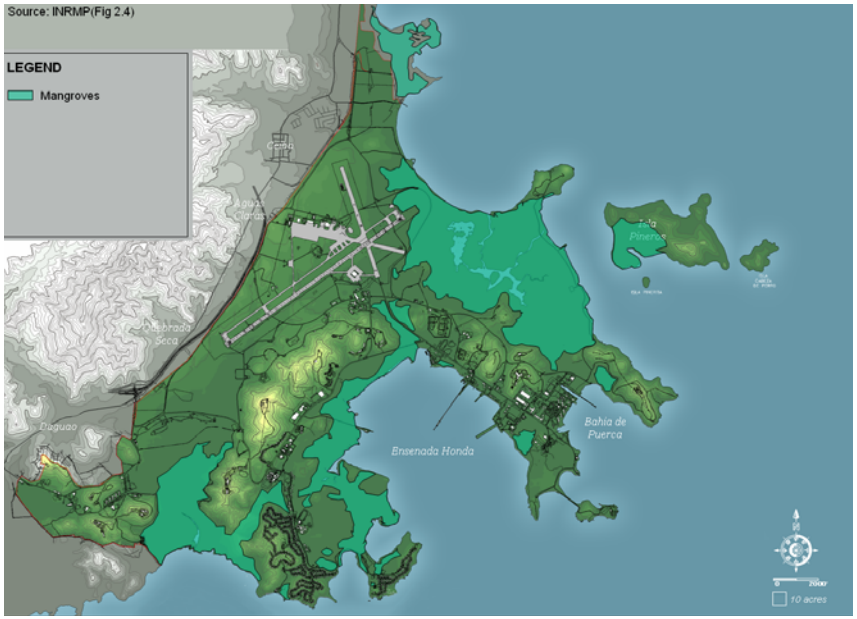


Figure III.10
Mangroves

Source: INRP (Fig 2.4)



Inclusive of the two smaller islands, approximately 3,882 acres or 45% of the Roosevelt Roads site is identified as wetlands. Within these areas, 10% are categorized as fresh water wetland and 60% are mangroves (2,295 acres).

Of the more than six (6) miles of coastline at Roosevelt Roads, mangroves line the majority of land at the water's edge, defining areas of access and limiting access to the water's edge. Within these designated areas, three types of mangroves are found and each serves a different but vital ecological function. Key in protecting and supporting the low-level organisms in the food chain, each has unique characteristics:

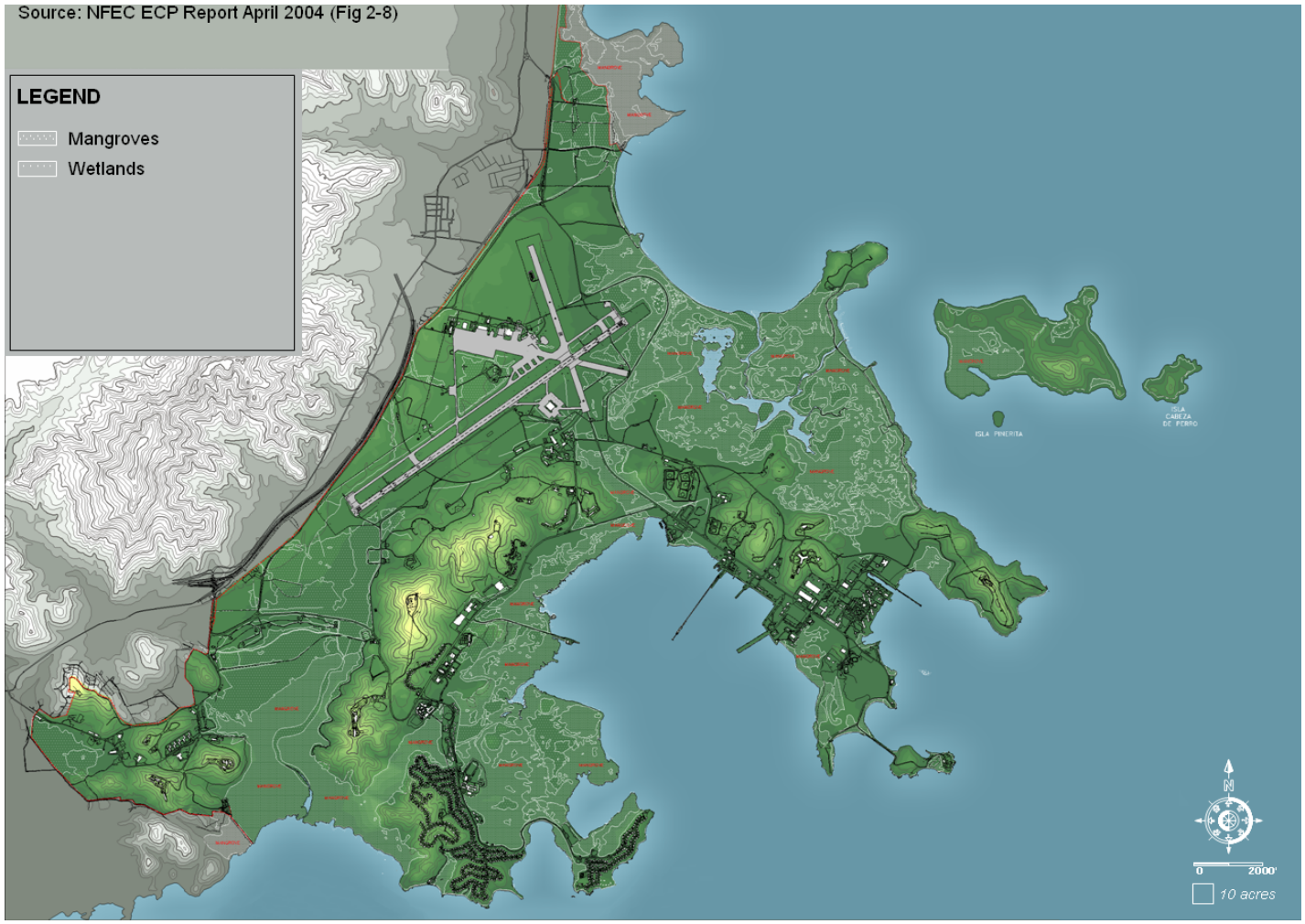
a) **Red Mangroves:** located at the seaward sites, and requiring the highest salinity, these are the first line of defense with respect to beach erosion. Their highly visible and arching prop root systems are typically partially submerged, creating a kind of marine peat, an ideal breeding environment for marine organisms.

b) **Black Mangroves:** to be found closer inland from the shore, typically reached at high tide. Its characteristically high tannin black root system cannot tolerate total submersion.

c) **White Mangroves:** found in upland coastal areas and are rarely inundated with sea water. Their characteristic prop roots are highly visible and the trees are fast growing in fertile soil.
source: INRNP

Figure III.12
Wetlands and Mangroves

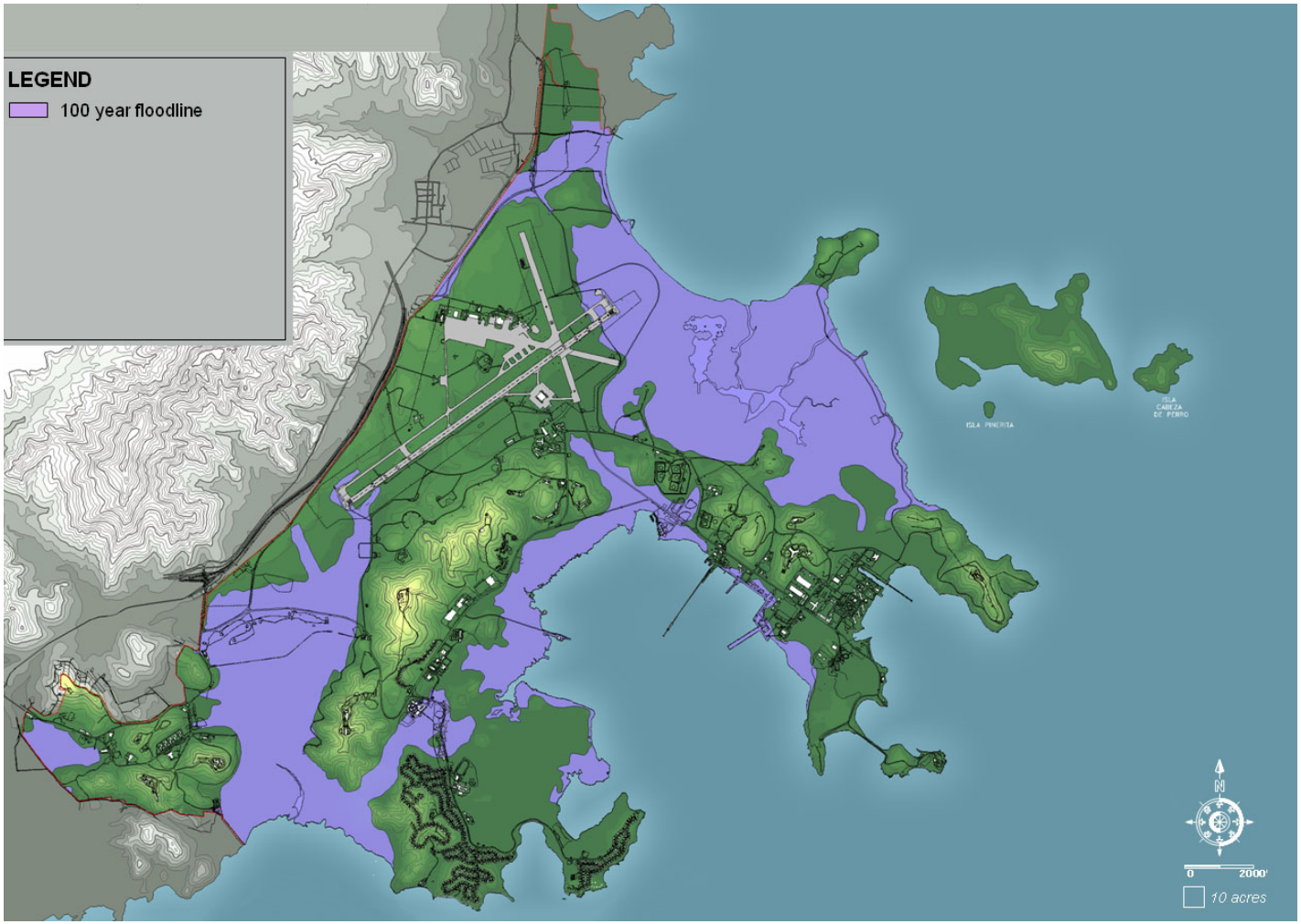
Source: NFEC Report April 2004 (Fig 2–8)



100-Year Floodplain

Figure III.12
100 Year Floodplain

Source: FEMA combined zones A, AE, and VE



According to the FEMA maps for Roosevelt Roads, the 100-year floodline extends beyond the coastal areas at several points far into the northern areas of the site.

The Floodline takes into account the A, AE and VE FEMA zones.

Whereas these areas are to be avoided in development, mitigation measures may be taken to facilitate development of selected locations within the floodplain if required or economically feasible.

Marine Ecology

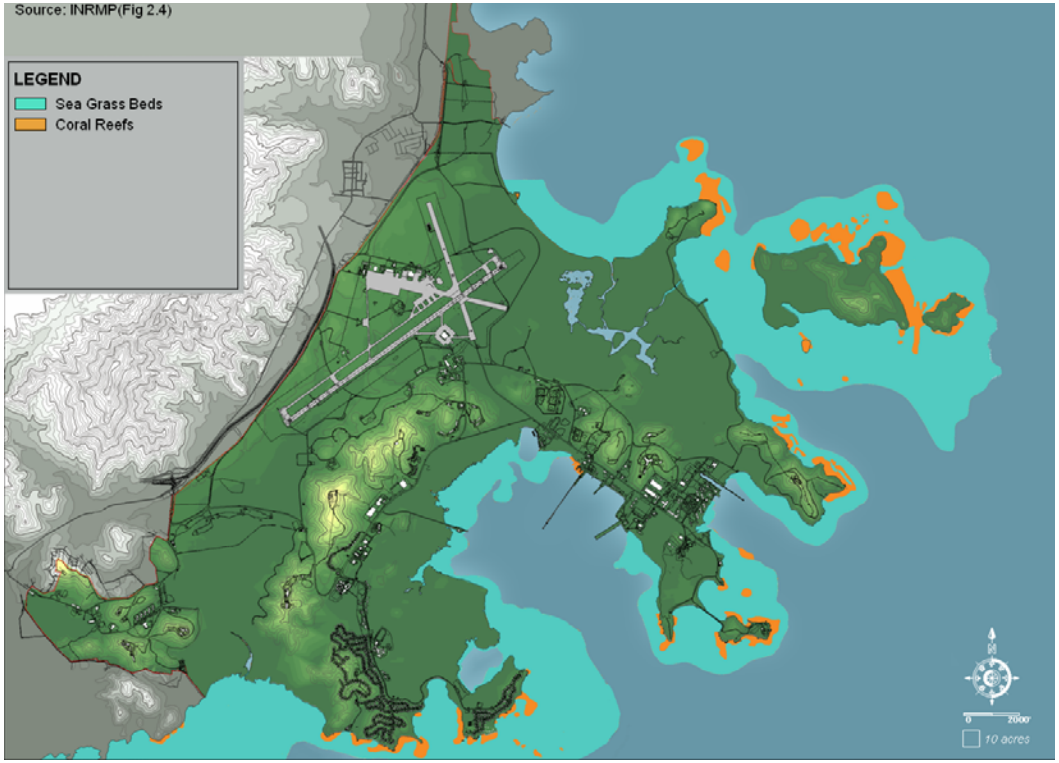


Figure III.13
Marine Ecology

Source: FEMA combined zones A, AE, and VE

With the exception of bulkheading on the northern peninsula and small recreational facilities at two beach areas, much of the coastline at Roosevelt Roads is undeveloped. Thus, marine ecology along the coastline at the site has developed with relatively few permanent intrusions.

According to a report entitled *Critical Conservation Areas Roosevelt Roads Naval Station, Ceiba, Puerto Rico* August 2003, issued by the Conservation Trust of Puerto Rico, four endangered species use the marine habitat in and around the site: the Leatherback Turtle; the Green Sea Turtle, the West Indian Manatee and the Brown Pelican; migratory birds and waterfowl use this area on their migratory route. The Conservation Trust's report asserts the regionally synergistic ecological relationship between the Cabezas de San Juan Nature Reserve, the Vieques Western Conservation Areas, the Humacao and Culebra coastal lagoons and the Roosevelt Roads property.

Among the most important features of the site's marine ecology are the vast seagrass beds that provide critical breeding grounds and habitat for the West Indian manatee population. In addition, in conjunction with mangrove forests, the seagrass beds are extremely important breeding grounds for a number of commercially productive species such as snappers and lobsters.

Figure III.14
West Indian Manatee

Source: www.elenas-vieques.com

According to mapping provided by prior environmental assessments of Roosevelt Roads, the sea grass area measured from drawing "INRMP Fig 2-4" is 4,000 acres. Conservation Trust suggests this is one of the most significant areas of undisturbed sea grass beds remaining in Puerto Rico, estimating an area of up to 30,000 acres adjacent to the base, subject to verification.

Fringing coral reefs appear in many of the coastal areas of the site and small islands off the site's northern coast. Considered potentially significant by the Conservation Trust, they are estimated to be of high quality due to lower use pressure of these habitats around the station.

Yellow Shouldered Blackbird

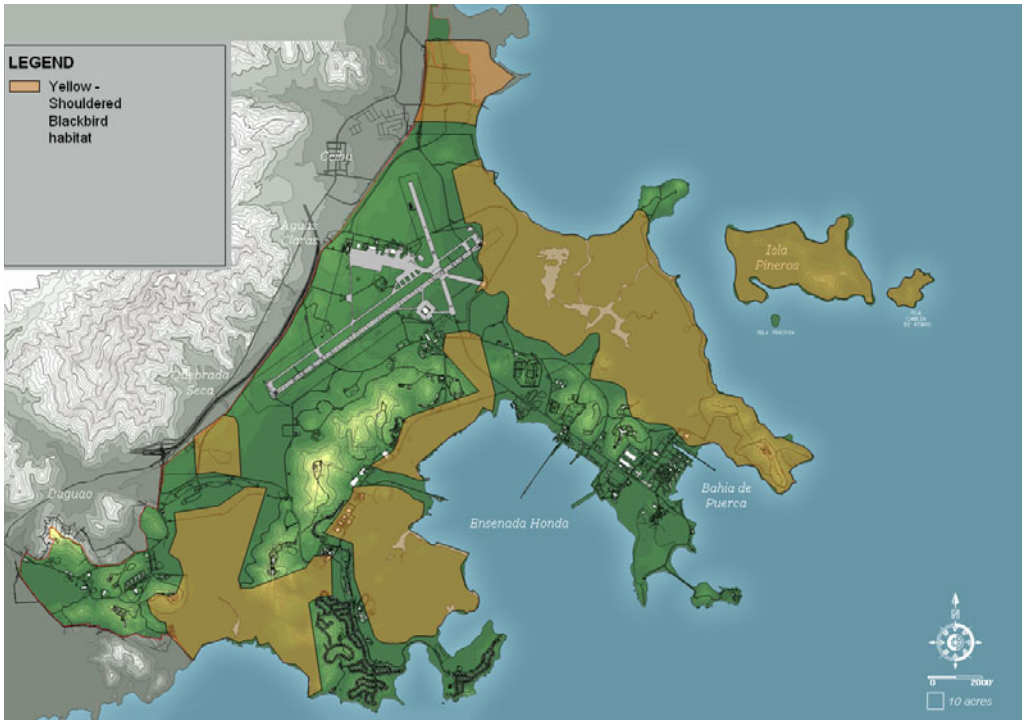


Figure III.15
Yellow Shouldered Blackbird: 1980 Agreement

Source: 1980 Agreement Between US Navy and US National Fish & Wildlife Service

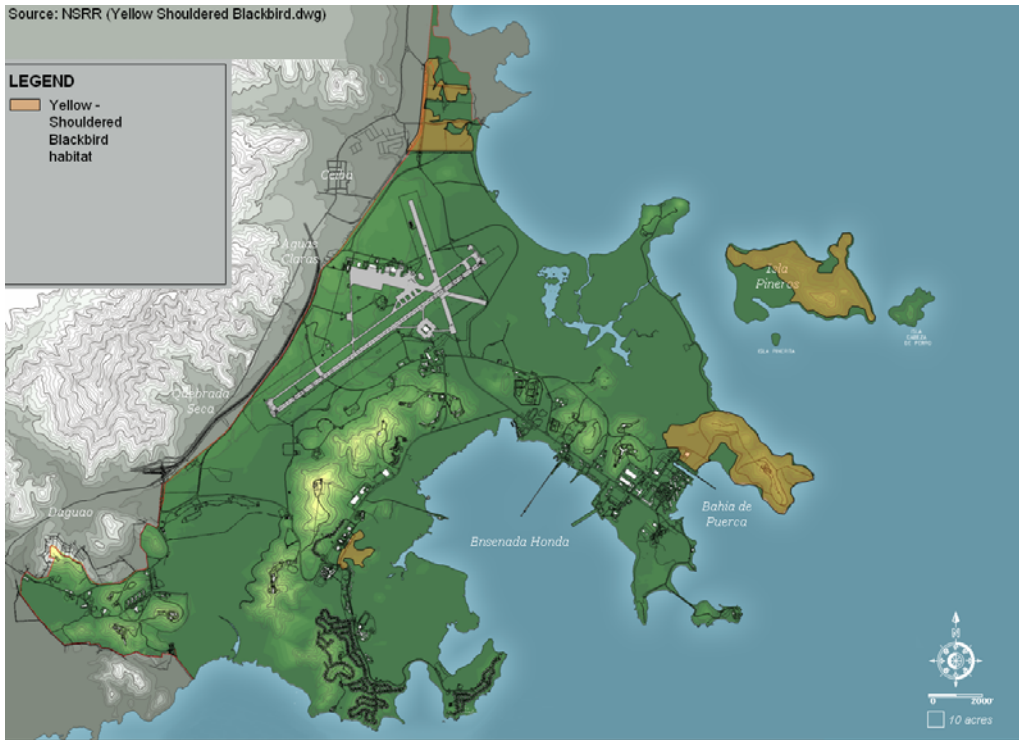
The presence of the Yellow Shouldered Blackbird, (YSBB), a species of "Critical Concern", is one of the most sensitive environmental issues that the reuse plan will address. Its area of natural habitat is the mangrove forest; the extent to which the birds nest in areas beyond those boundaries will be addressed in the on-going environmental assessment.

Figure III.16
Yellow Shouldered Blackbird

Source: Peter Ferrera.

Figure III.17
Yellow Shouldered Blackbird Habitat

Source: NSRR (Yellow Shouldered Blackbird.dwg)



A number of mappings show conflicting information with respect to the area of critical habitat:

- 1976: the entire NSRR site was the declared habitat for the birds;

- 1980: an agreement was reached between the Navy and U.S. NFWS (U.S. National Fish & Wildlife Service) that would exempt certain areas within the site from categorization as critical habitat (see Figure III.16).

- 1985: procedures with USNFWS were simplified to allow for project development in "unmarked" areas of the property without express consideration; and a USNFWS review for projects within the "marked" areas with advice to the Navy if the project had no impact. If a project has deemed to have impact on the Yellow Shouldered Blackbird, it would have a formal Section 7 consultation with the USFWS prior to initiation.

- 1996: a study was conducted to better delineate areas that could be used as habitat; per this study, mangrove forests should be considered the most important habitats for the YSBB.

- Present: The latest NSRR drawings indicate that the YSBB habitat is in a very limited area of the site, pending clarification from the the current environmental assessment effort recently initiated by the navy (see Figure III.17).

Marine Turtles

According to the US Fish & Wildlife Service, all six sea turtle species are protected under the endangered species act of 1973. Four species of sea turtles are known to utilize habitats at the Roosevelt Roads property:

- Loggerhead Sea Turtle, *threatened*
- Green Sea Turtle, *endangered*
- Leatherback Sea Turtle, *endangered*
- Hawksbill Sea Turtle, *threatened*

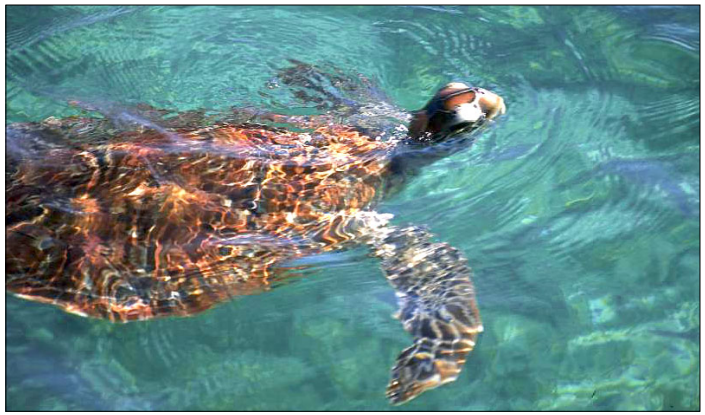


Figure III.19
Loggerhead Sea Turtle

Source: micktravels.com

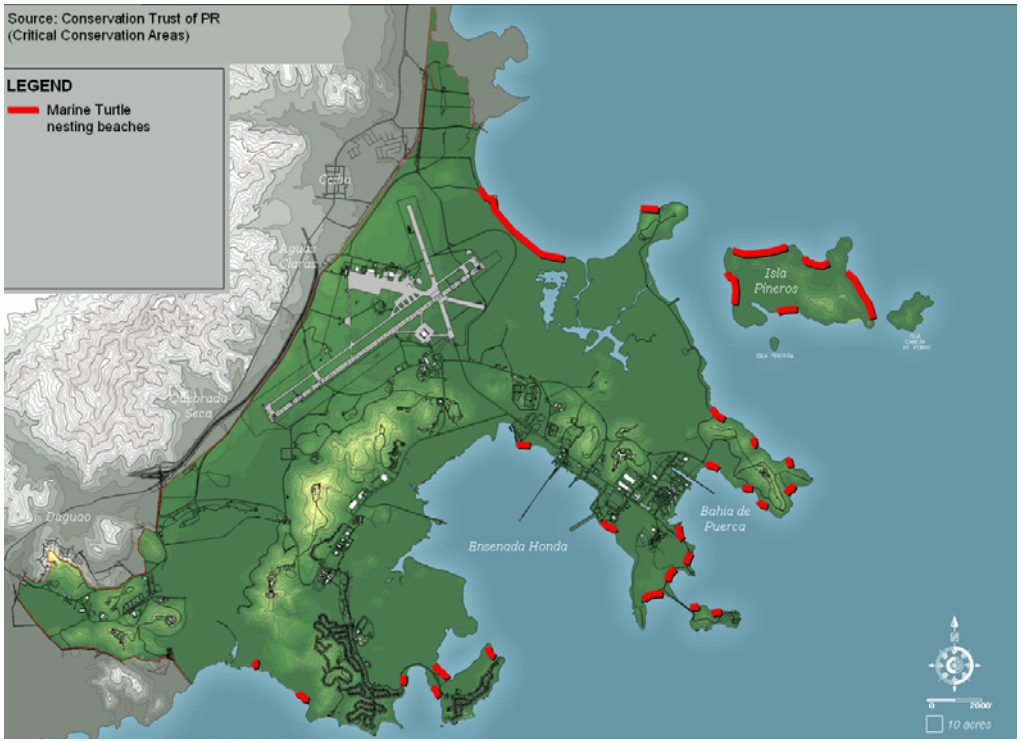


Figure III.18
Marine Turtle Beaches

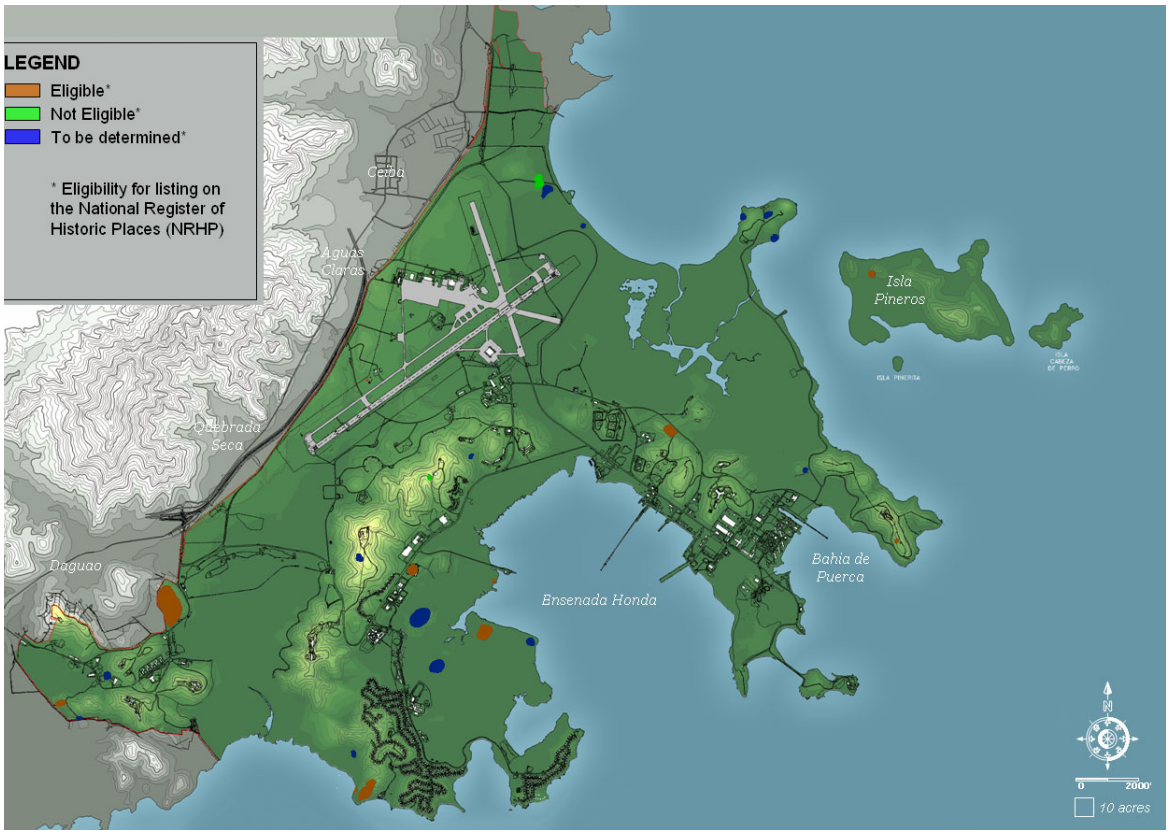
Source: Conservation Trust of PR (Critical Conservation Areas)

Figure III.18 indicates areas believed potential sea turtle nesting beaches according to the Conservation Trust of Puerto Rico; these will be subject to confirmation in the coming months. Designated nesting areas in St. Croix, Isla de Mona and Culebra, established by the Fish and Wildlife Service, are mapped on their

Archaeological Sites

Figure III.20
Archaeological Sites

source: ECP (Figure 2–7, Arch.Sites.dwg)



In accordance with Section 110 of the National Historical Preservation Act, the Navy performed a survey to identify cultural sites at Roosevelt Roads. Findings include evidence of settlement during the Archaic and Ceramic Ages, and the period occurring during the Spanish Colonial occupation period up to 20th Century historic period. These were evidenced among the noted findings:

- small tenant-farmer agricultural sites dating prior to development of the Naval base, which is entirely consistent with local development patterns;
- a 19th century Spanish Colonial domestic site on the southern fringe of Ensenada Honda
- a 19th century sugar complex in higher elevation Bundy area

Of the twenty-nine sites explored, four (4) are Spanish Colonial, seventeen (17) are Pre-Columbian, four (4) are multi-component sites from both periods, and four (4) are rock art sites. In summary, two (2) sites were determined eligible for NRHP listing, another twenty (20) were determined to be potentially eligible for listing, three (3) determined not to be eligible; and four (4) were not evaluated.

A.IV Potential Development Areas

Parallel with the study of physical and natural aspects of the site, the consulting team identified areas of the Roosevelt Roads that could potentially support development while observing constraints that its coastal ecology presents.

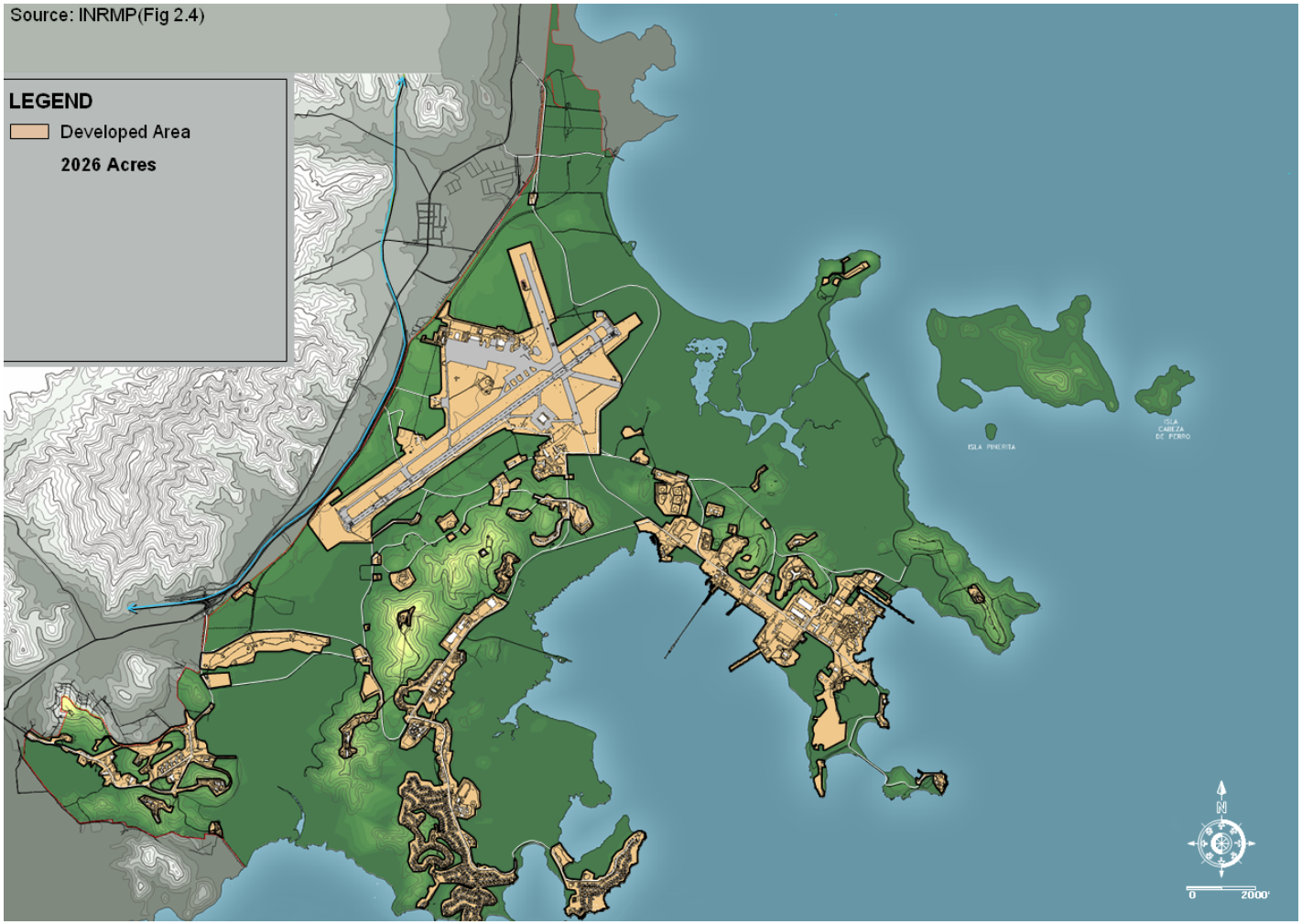
The consulting team investigated existing land use and existing infrastructure. They sought to identify and then quantify potential developable areas through a series of key "lenses" that non-subsidized development would typically address relative to valuation.

Existing Land Uses: Developed Area

Roosevelt Roads today consists of non-contiguous or "fragmented" concentrations of existing development. Existing land use on the base is clearly related to topography, and building typology, partially explaining the predominance of small-scale rather than large-scale structures. The total existing developed area of the base approaches 2,026 acres, exclusive of most of the infrastructure.

Figure IV.1
Developed Area

Source:INRMP Report (fig. 2.4)



According to land configuration, existing developed areas within these precincts are "multi-use" versus "mixed-use": adjacent structures house relatively similar or related uses, rather than a broad mix of uses within a given area. Uses therefore tend to be clustered together.

- Airfield: The primary runway (7-25) at the airfield is 11,200 linear feet long, exceeding the length of the runway at San Juan International airport. A secondary runway (18) is 6,000 feet, including its southern extension south of the main runway. There are also two helicopter landing pads at the airport. Together with a series of buildings north and south of the airfield that include hangars, repair shops, an operations building, and those used specifically for military purposes (weapons buildings, survival equipment workshops, etc) and storage facilities, the airport facilities are a major asset for the site and the entire region. A small "campus" of classroom and office buildings, with an adjacent gymnasium and other support facilities, are clustered near the vehicular entry to the airfield.

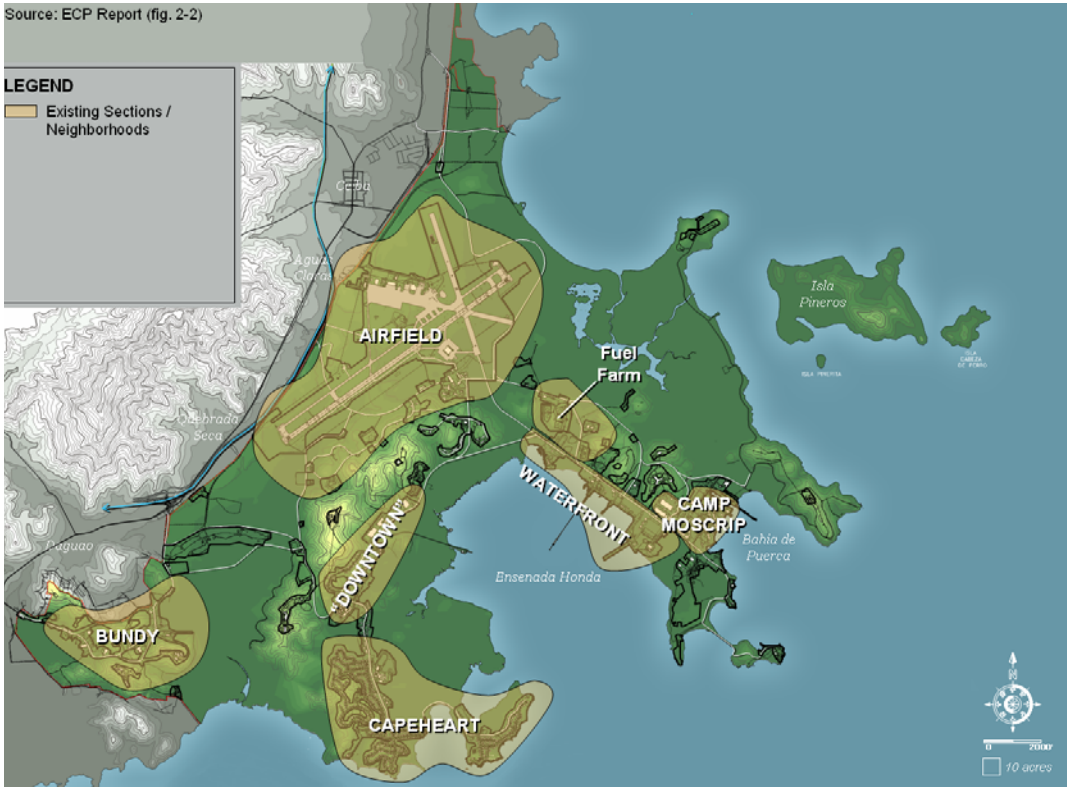


Figure IV.2
Developed Area

Source:ECP Report (fig. 2-2)

Figure IV.3
Airfield Terminal

Source:CRP

- Bundy: Accessed directly through Gate 2, the controlled southern access gate to the property, as well as with a small outlet near Naguabo, the Bundy area is the western-most grouping of facilities at the site. Its pre-dominant land uses include multiple clusters of multi-family housing and supporting facilities (fitness center, small theater, library, outdoor recreational fields). There are also a number of small storage and office buildings.

- "Downtown": Between the eastern ridge of the Delicias Hills and the mangroves along the center of the harbor, the "Downtown" area of the base contains many of the commercial and institutional use buildings: the Commissary, the Navy Exchange (PX), an ambulatory medical facility with doctor and dental offices, the chapel, the day care center, the bowling alley, a fast food restaurant. There is also the base's "hotel", the Navy Lodge, a number of multi-family structures to the north that house new and recently renovated quarters for enlisted personnel. To the east, one single pier at the center of the harbor affords a sweeping view over Ensenada Harbor and the Caribbean beyond.

- Capehart: Southeast of the Downtown, the Capehart area is the primary residential district at Roosevelt Roads. The northern portion of this area consists of family-sized garden apartment buildings, a large elementary school, housing office building, and metal storage buildings. The central section of Capehart consists primarily of smaller one (1,800'–1,900' SF) and two family houses, some with water views, many recently renovated. A large middle/high school with air-conditioned gymnasium and dining facilities is sited conveniently to this residential area. The largest houses, many sited along the elevated waterfront promontory and located at the "boot" of the southern peninsula, range in size from 2,100 to 3,200 SF, housing ranking officers and their families.

Figure IV.4
Bundy

Source:CRP

Figure IV.5
Capeheart

Source:CRP

- Waterfront: A 2,600' long fuel mooring pier dominates the waterfront, jutting far enough into the harbor to allow large tankers to pump out their fuel loads to be stored in the "fuel tank farm" to the north. Other facilities include many of the water-related facilities on the base: a 1,200' long cargo pier, a small marina, the port operations buildings; various hauling facilities, and extensive bulkheading characterize this portion of the site. Adjacent to the harbor front, across the peninsula's main access road, the commanding officer's headquarters, the public works building, and a significant refrigerated storage facility are clustered together, their siting carved out of the surrounding ridge. Overlooking the waterfront, at the upper portion of the surrounding hills, the base hospital, a staff residential facility and a small restaurant have outstanding views of the harbor as well as the islands to the north.

Figure IV.6
The waterfront at Ensenada Honda

Source:CRP

- Camp Moscrip: A cluster of facilities is located at the southeastern end of the northern peninsula. It includes numerous two-story military quarters buildings and adjacent support facilities, the dry-dock/pier, new, never-occupied Navy Seal administrative offices and new barracks. It also includes the large-scale former dry-dock facility (now-flooded), the Army Reserve facilities and equipment/truck parking lot.

Figure IV.7
The fuel pier

Source:CRP

Figure IV.8
The new Navy Seal administrative offices at Camp Moscrip

Source:CRP

Infrastructure Supports Existing Land Use

Infrastructure at the base supports the existing land uses. Infrastructure is purely functional, and has not been designed to have an aesthetic quality. Please refer to Appendix B of this report for a thorough overview of all key aspects of the base's infrastructure including roads, water, sanitary systems, electricity, and fiber optics and communications. The two small islands to the north have no infrastructure improvements. As long as the systems are maintained, the site's existing infrastructure allows for accelerated "early phase" activity at the base without major investment in infrastructure to the extent that it occurs within the confines of existing developed areas. A summary of Land Uses and their locations are indicated on the drawing below.

Figure IV.9
Land Use

Sources: Project Team

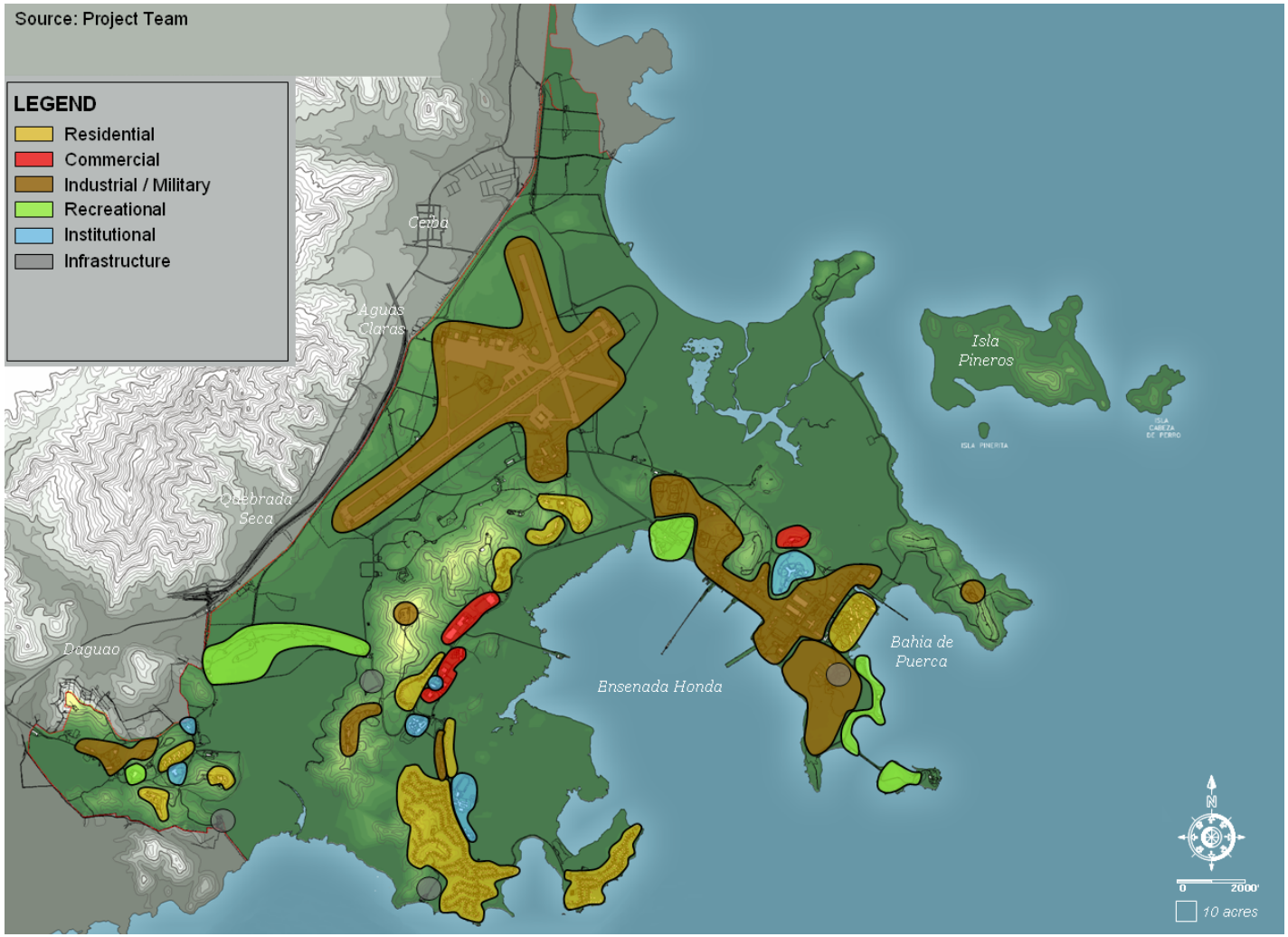
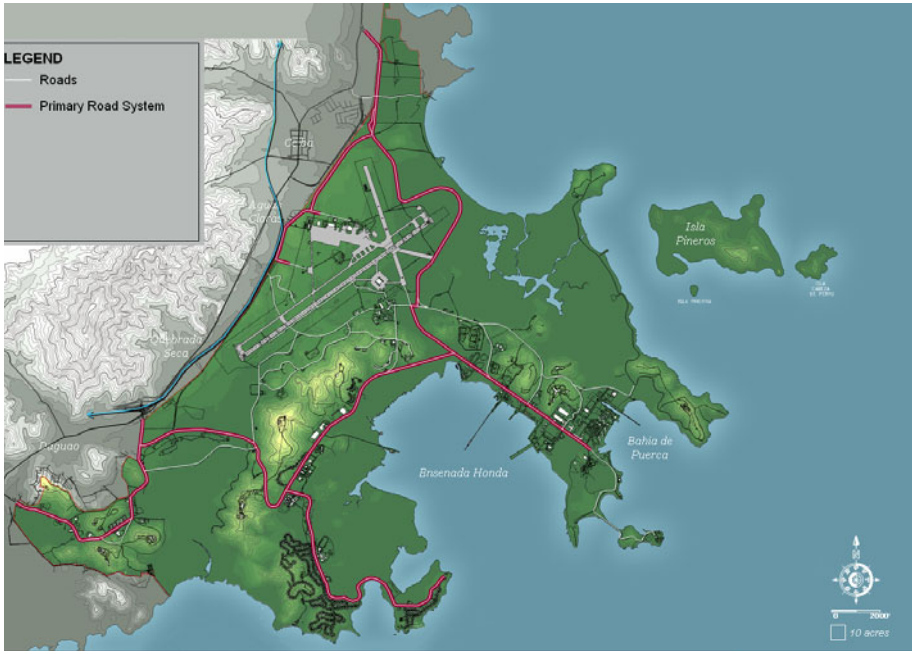


Figure IV.10
Roads

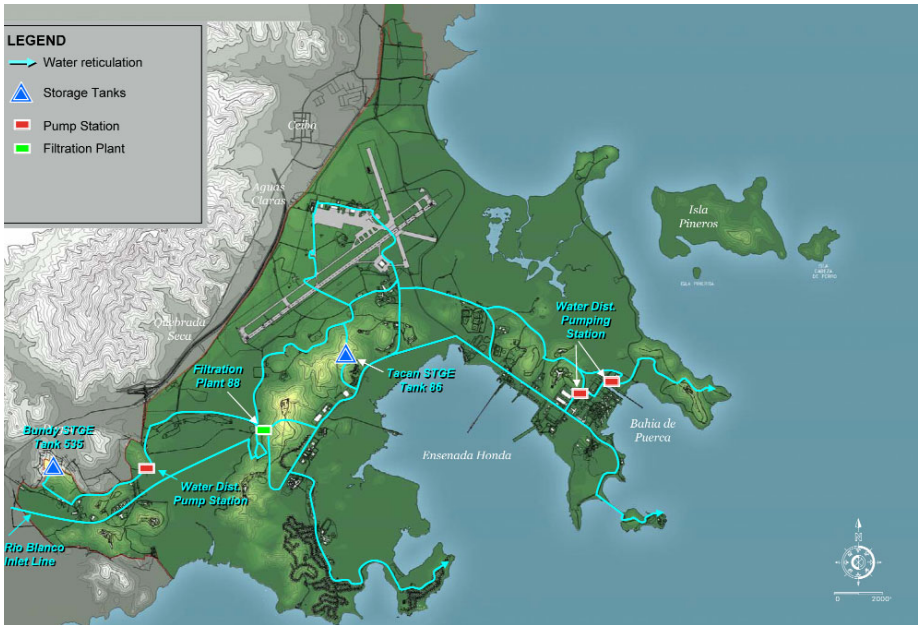
Source: NSRR



Roads: The two main gates to the base, one to the north of Ceiba, and another south of town are controlled access points. The northern gate can easily service the airfield and could be isolated if required. There is a central road through each of the two peninsulas, lined by the access road through the "Downtown" portion of the site. To the west, the Bundy access roads could potentially outlet toward Naguabo.

Figure IV.11
Water Distribution System for Roosevelt Roads

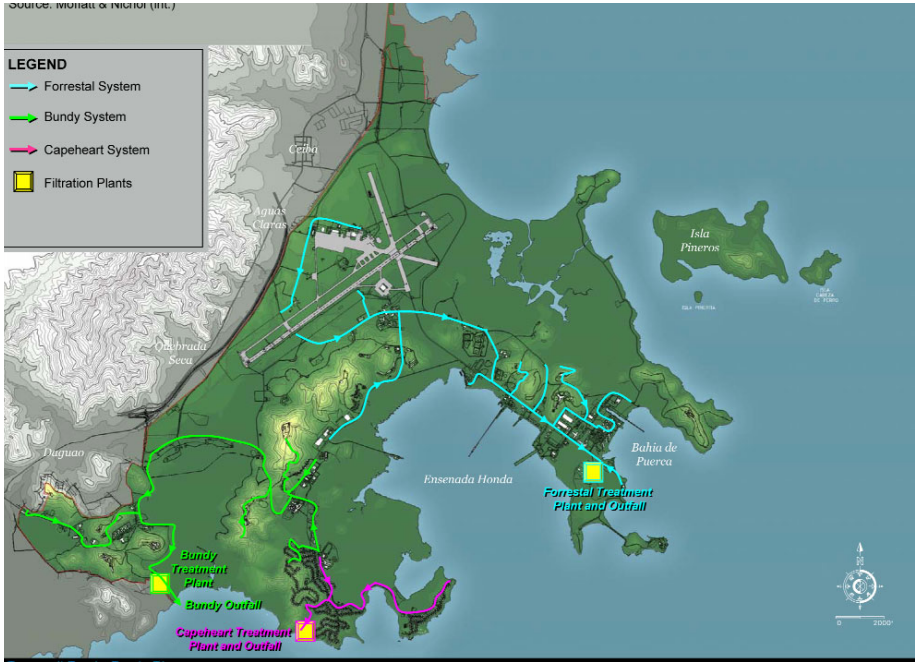
Sources:
NSRR Jan 2004
Water Distribution Dwg



Water: Raw water is sourced from the Rio Blanco River in the Sierra Loquillo Mountains of the rain forest preserve. An extensive water filtering, storage, and distribution system exists at the site, and can provide up to 4,000,000 gpd. The potable/fire protection system is combined at the base.

Figure IV.12
Sanitary Infrastructure

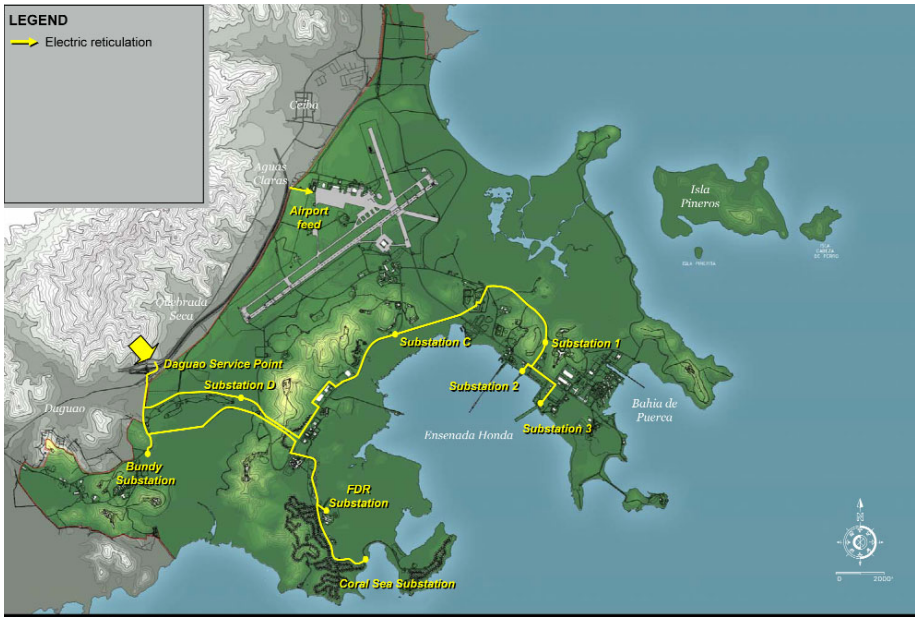
Sources: Moffat & Nichol (int.)



Wastewater: There are three waste water filtration treatment plants, each with its system of pump/lift stations and distribution system: Bundy, Capehart and Forrestal on the northern peninsula.

Figure IV.13
Electricity Infrastructure

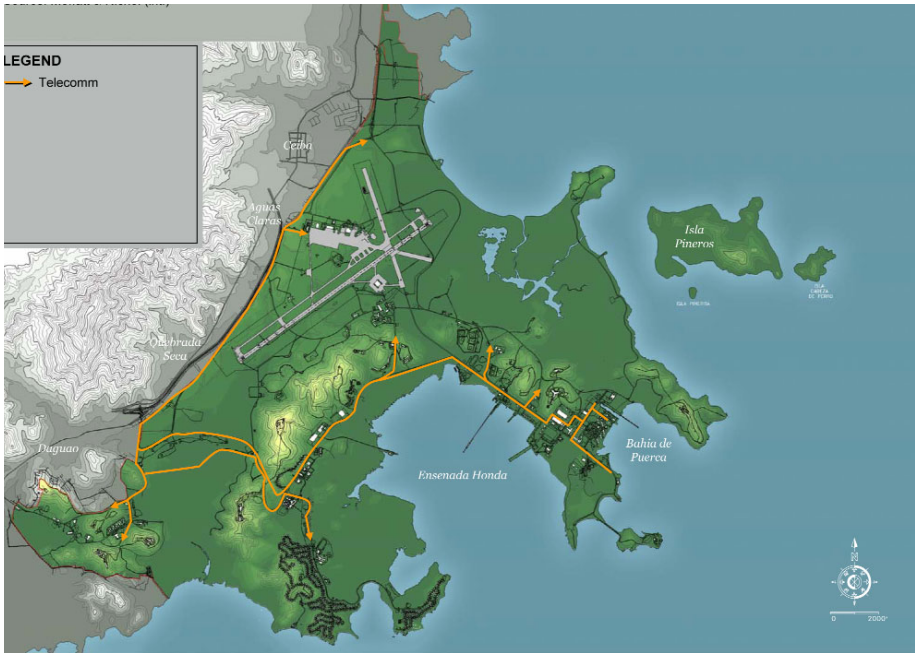
Sources: Moffat & Nichol (int.)



Electricity: The prime feed for electric service is the Daguao Service Point; the airport has its own independent main electrical service feed. A series of substations and primary distribution system are indicated on the drawing.

Figure IV.14
Telecomm Infrastructure

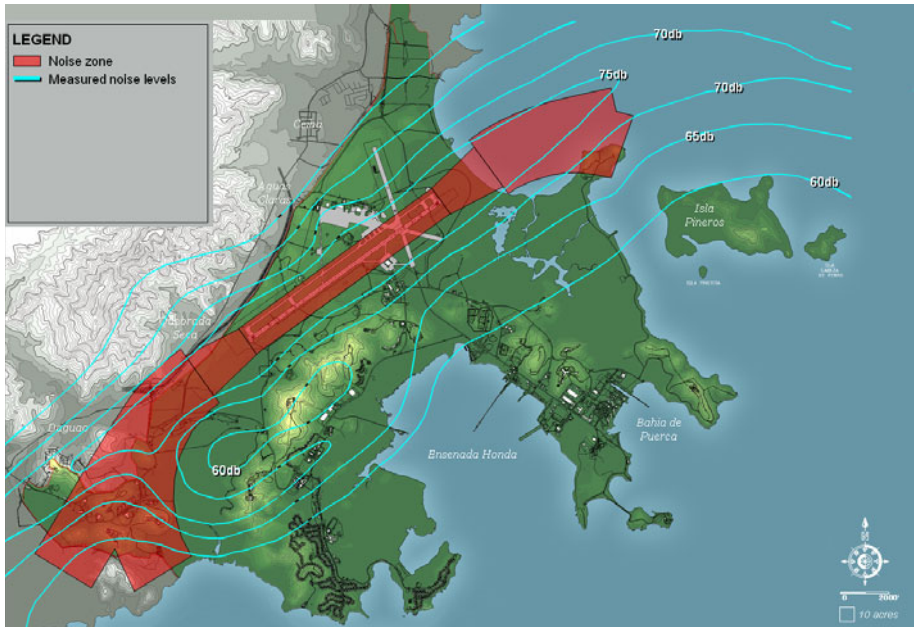
Sources: Moffat & Nichol (int.)



Fiberoptic/Telecomm: Communications at Roosevelt Roads had been upgraded to fiber optics at all of key operational sites and the Downtown areas. The residential areas at Capehart have had cable installed but the final wiring was not implemented prior to base closure.

Figure IV.15
Airport Noise

Source: Baker CAD



Airport Noise: The noise zone created at takeoff and landing is indicated in the above drawing. The configuration of the hills surrounding the airfield helps to contain the noise from the "Downtown" area. Bundy is the area most extensively impacted by the airfield noise.

Development Constraints

The consulting team's investigation of natural, physical characteristics together with man-made impacts to the site yield a series of analytic drawings culminating in "layers" of development constraints. These superimposed constraints reveal the resulting developable land.

Gradient Constraints

The first constraint relates to the site's topography. The consultants mapped the site's gradients in 5% increments from 0% to 25% in order to locate the most easily developable areas of the site. Figures IV.16–IV.20 indicate the sequence and outcome of this investigation.

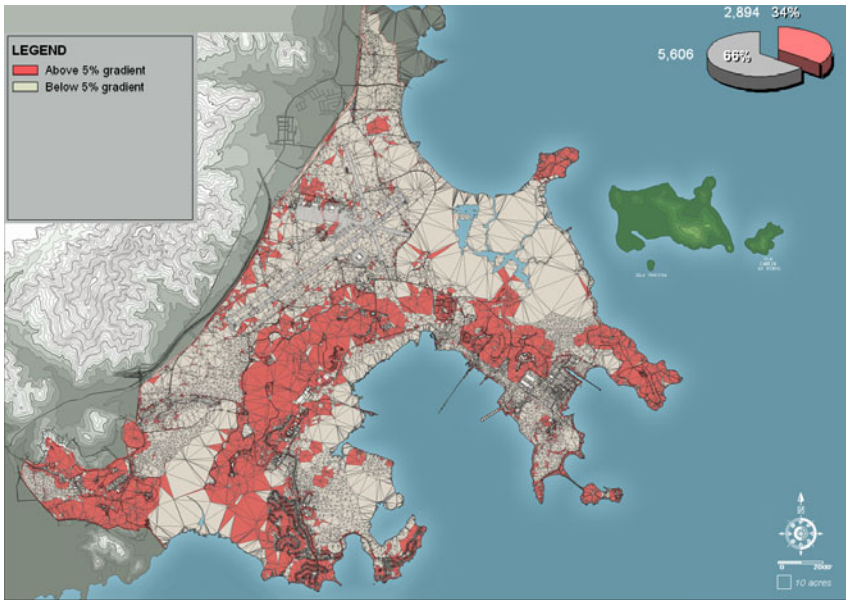


Figure IV.16
5% Gradient

Source: CRP

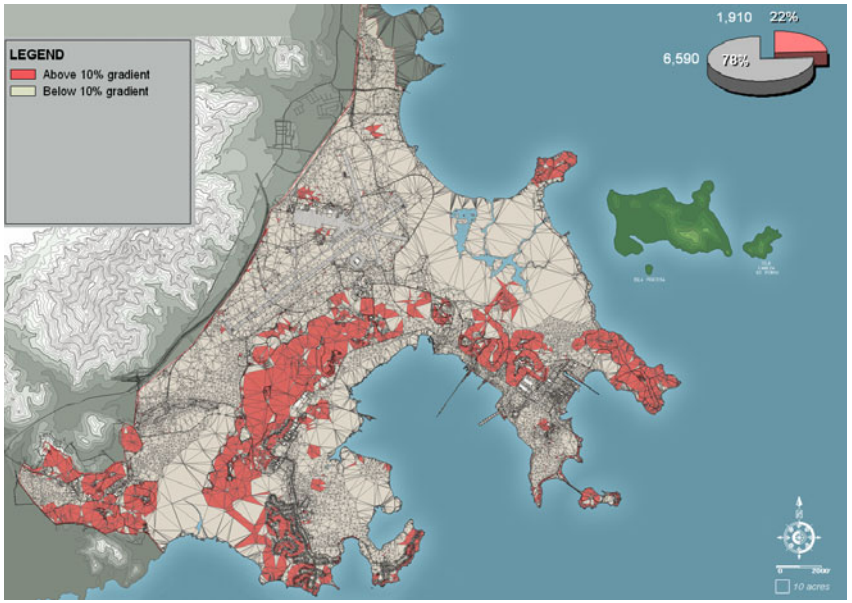


Figure IV.17
10% Gradient

Source: CRP

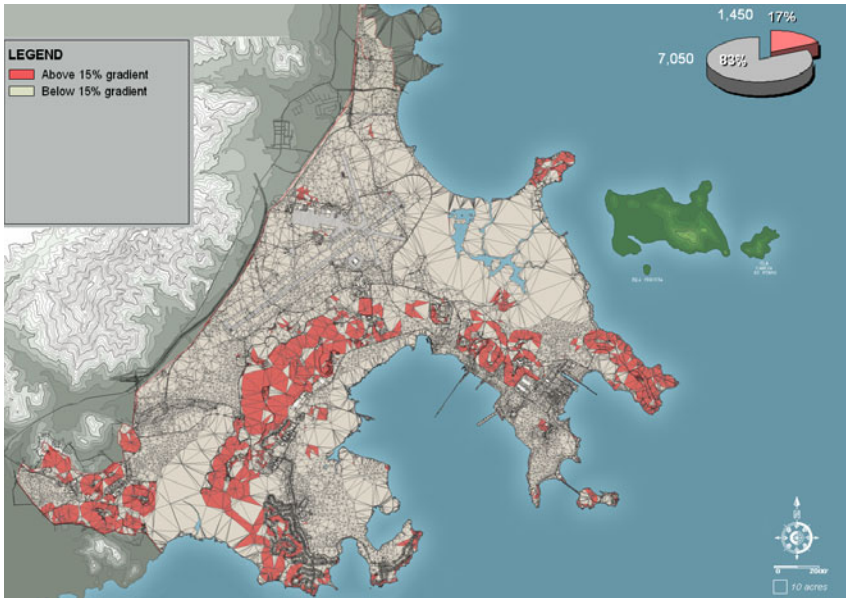


Figure IV.18
15% Gradient

Source: CRP

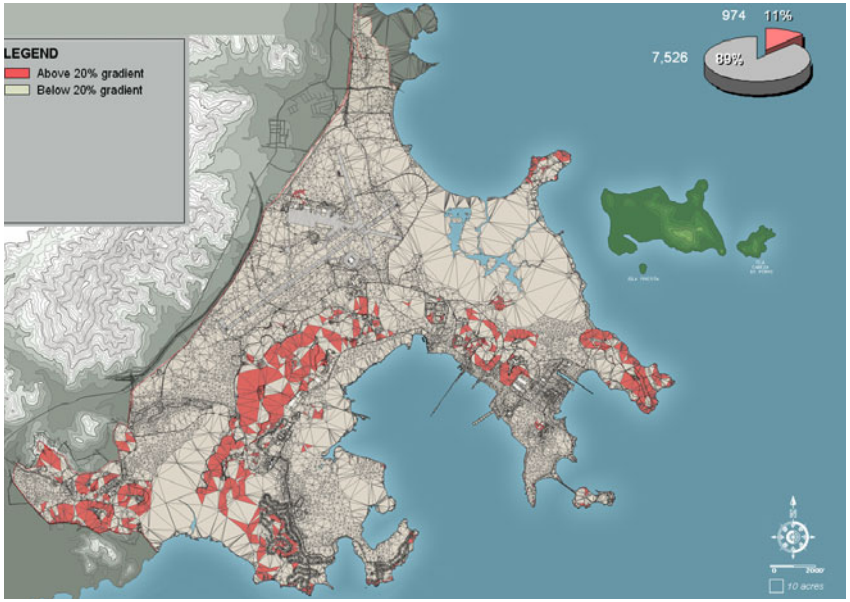


Figure IV.19
20% Gradient

Source: CRP

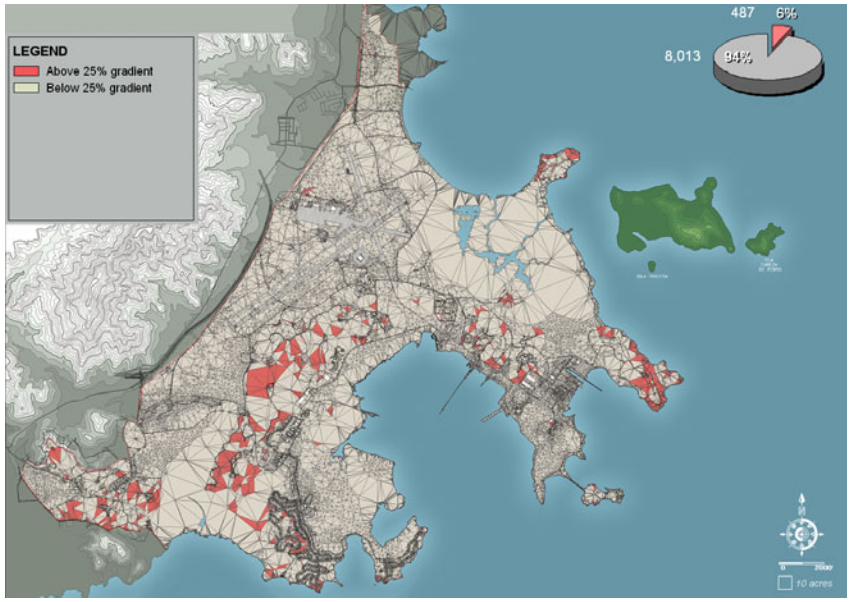


Figure IV.20
25% Gradient

Source: CRP

Summary of Gradient Constraints

The site's varied topography and steep slopes impact where development can occur without significant cost penalty. The site's gradients are depicted in the series of accompanying drawings, and quantified at 5% increments above and below 5%, 10%, 15%, 20% and 25% slopes. Typically, a gradient above 15% is determined too steep to build on with out additional cost premium for earthwork, foundations and sitework and is therefore a development constraint.

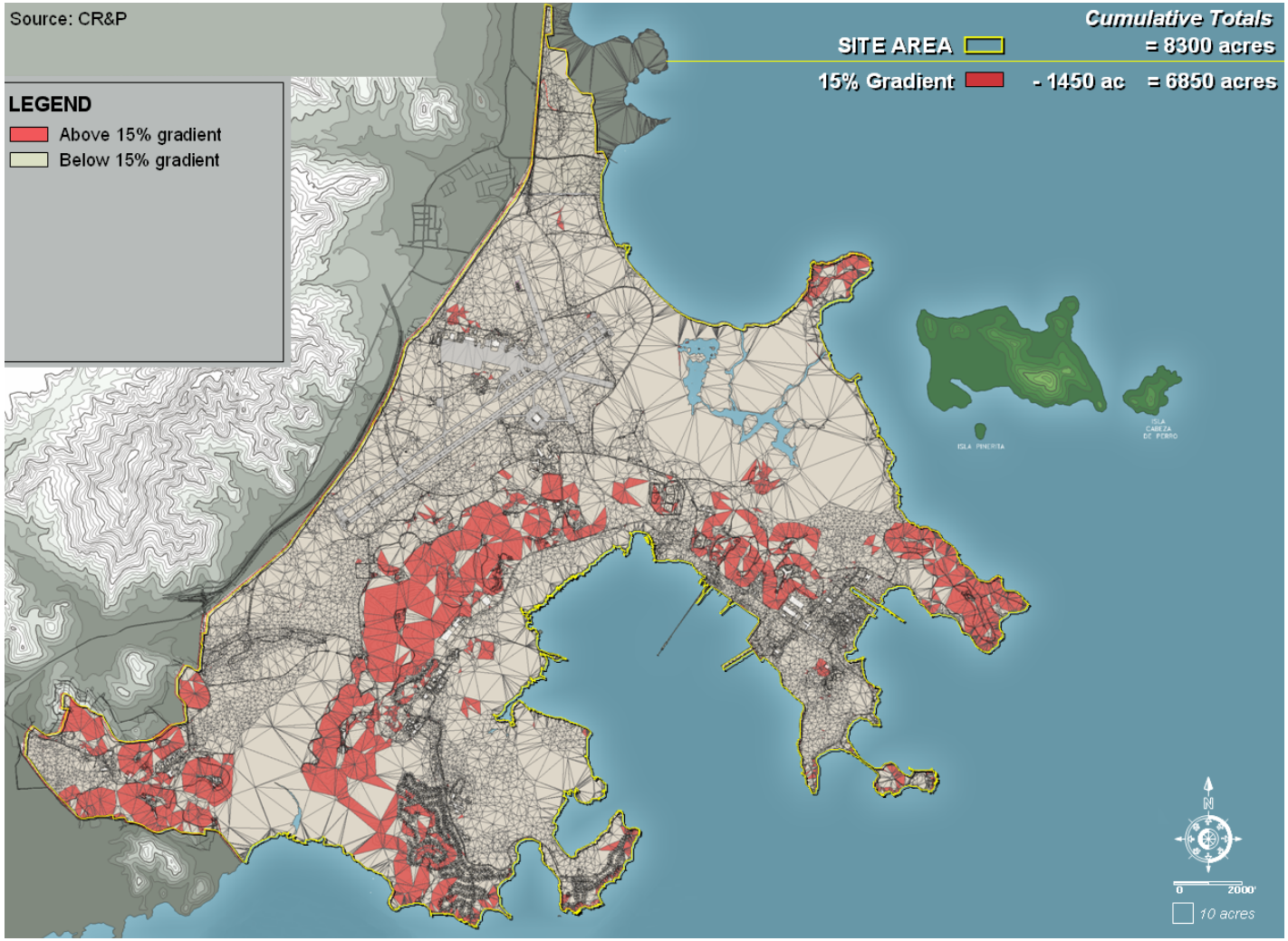


Figure IV.21
In this analysis, site area is understood in terms of resulting land area above and below this threshold. Approximately 83% of the site area, or 6,850 acres is 15% gradient or below; 1,450 acres are above 15% gradient. Total site area less 15% gradient leaves 6,850 remaining acres.

Source: Project Team

Water Access: Coastline

Of the 21 actual mile length of the Roosevelt Roads coastline, approximately 9.1miles of waterfront is inaccessible due to wetlands, and another 2.9 miles of waterfront is inaccessible due to the site's steep topography. Just under half of the coastline, 9.3 miles is accessible.

Figure IV.22
Water Access

source: Project Team

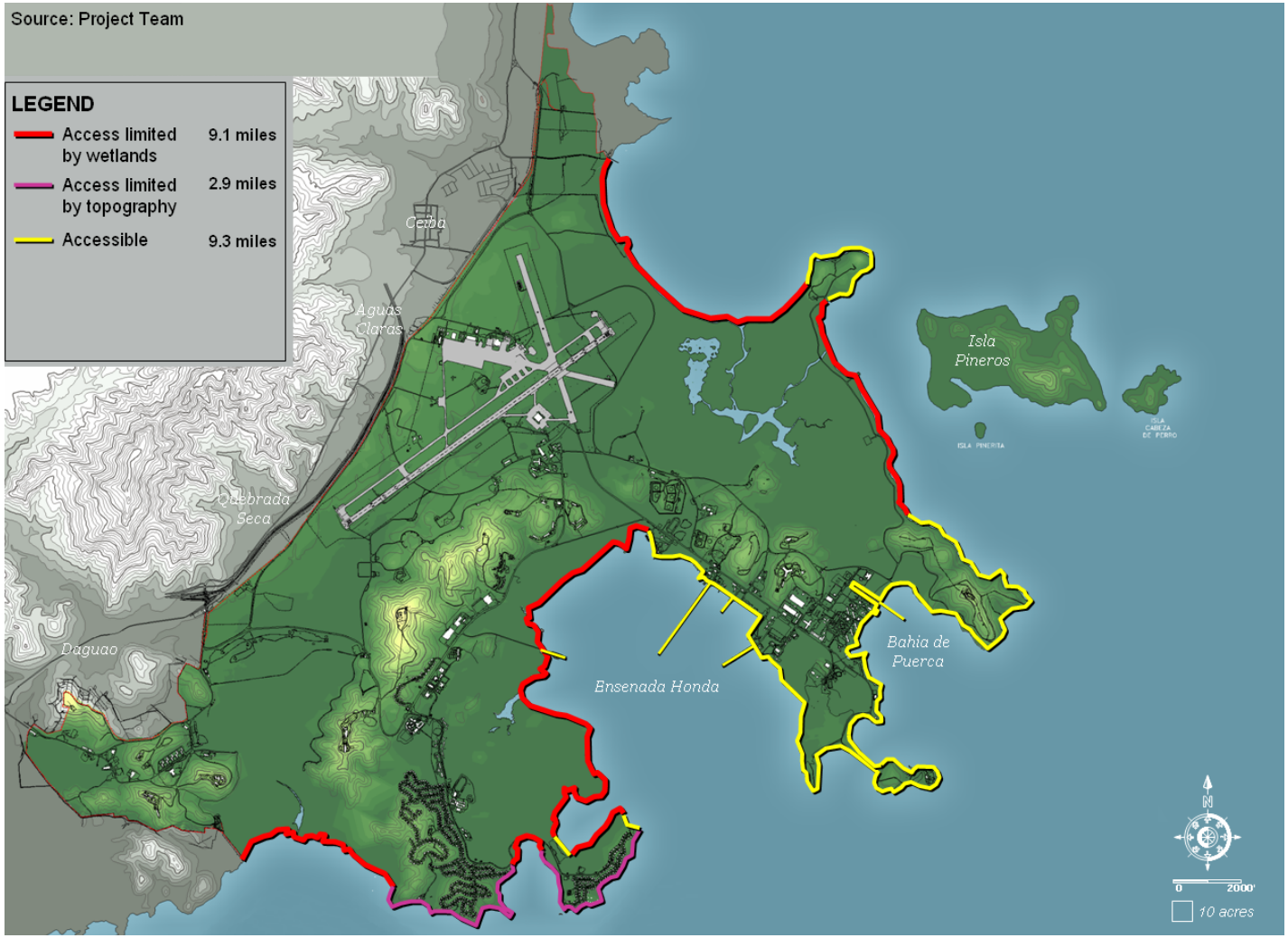
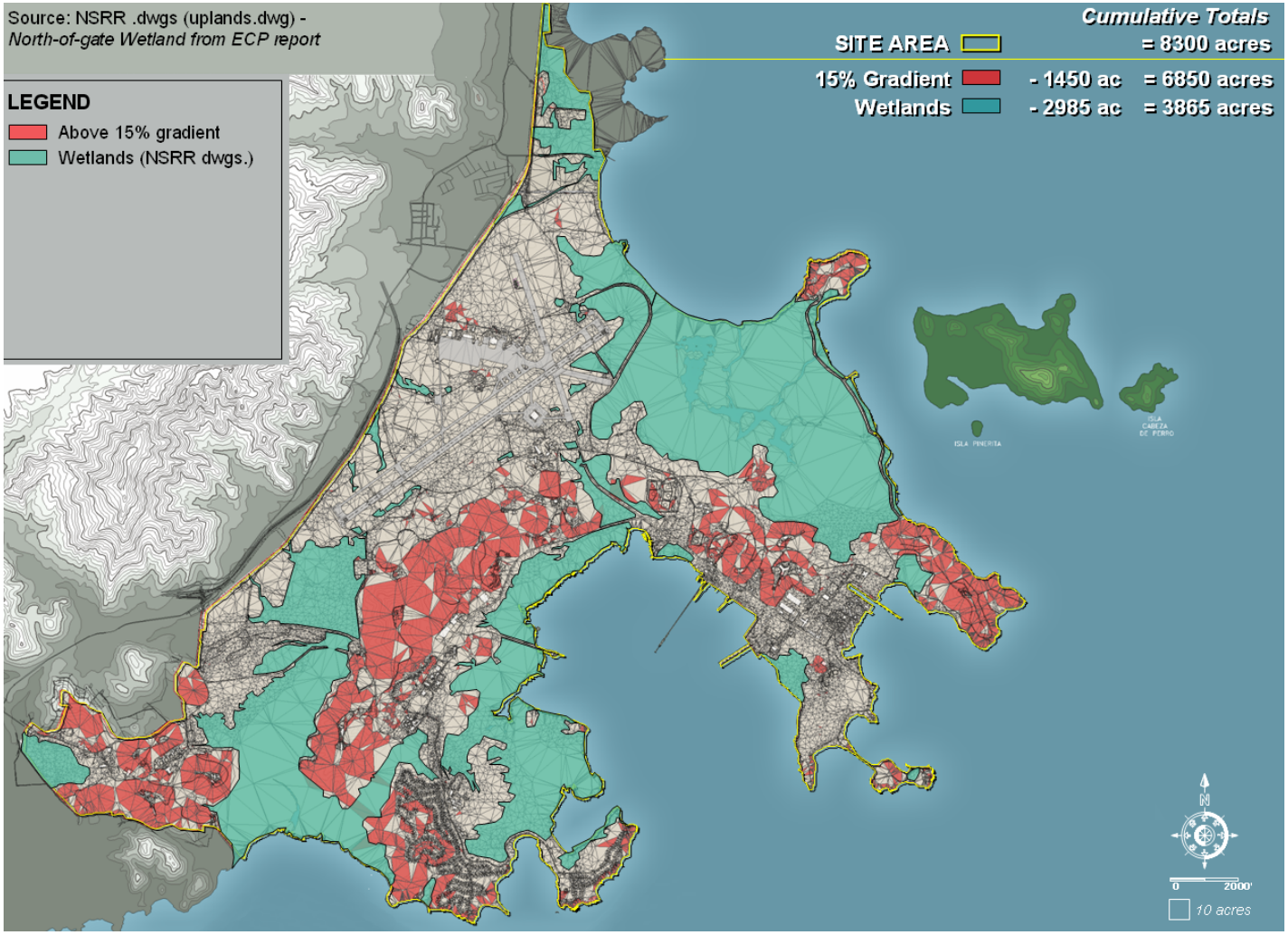


Figure IV.23
Wetlands and Gradient

Source: NSRR (uplands.dwg)- North-of-gate Wetland from ECP Report



Wetlands with Gradients

Taken together, the site's extensive wetlands including the mangrove forests and wetland meadows present a development constraint, limiting water access and restricting sites for new development. The accompanying drawing locates 2,985 acres of combined wetlands (inclusive of mangroves per the Navy ECP report) on the site superimposed on the 1,450 acre area with above 15% gradient. Together these yield remaining developable area of 3,865 acres.

Wetlands, Gradients and Existing Development

The existing development at Roosevelt Roads encompasses 2,026 acres. inclusive of some portion of roads and infrastructure. When this acreage is combined with 521 acres of additional airport property potentially developable for airport-related or public benefit purposes, this totals 2,547 acres. There are 1,318 acres available for development, exclusive of wetlands, gradient constraints, existing development, and the potential airport related development area (521 acres).

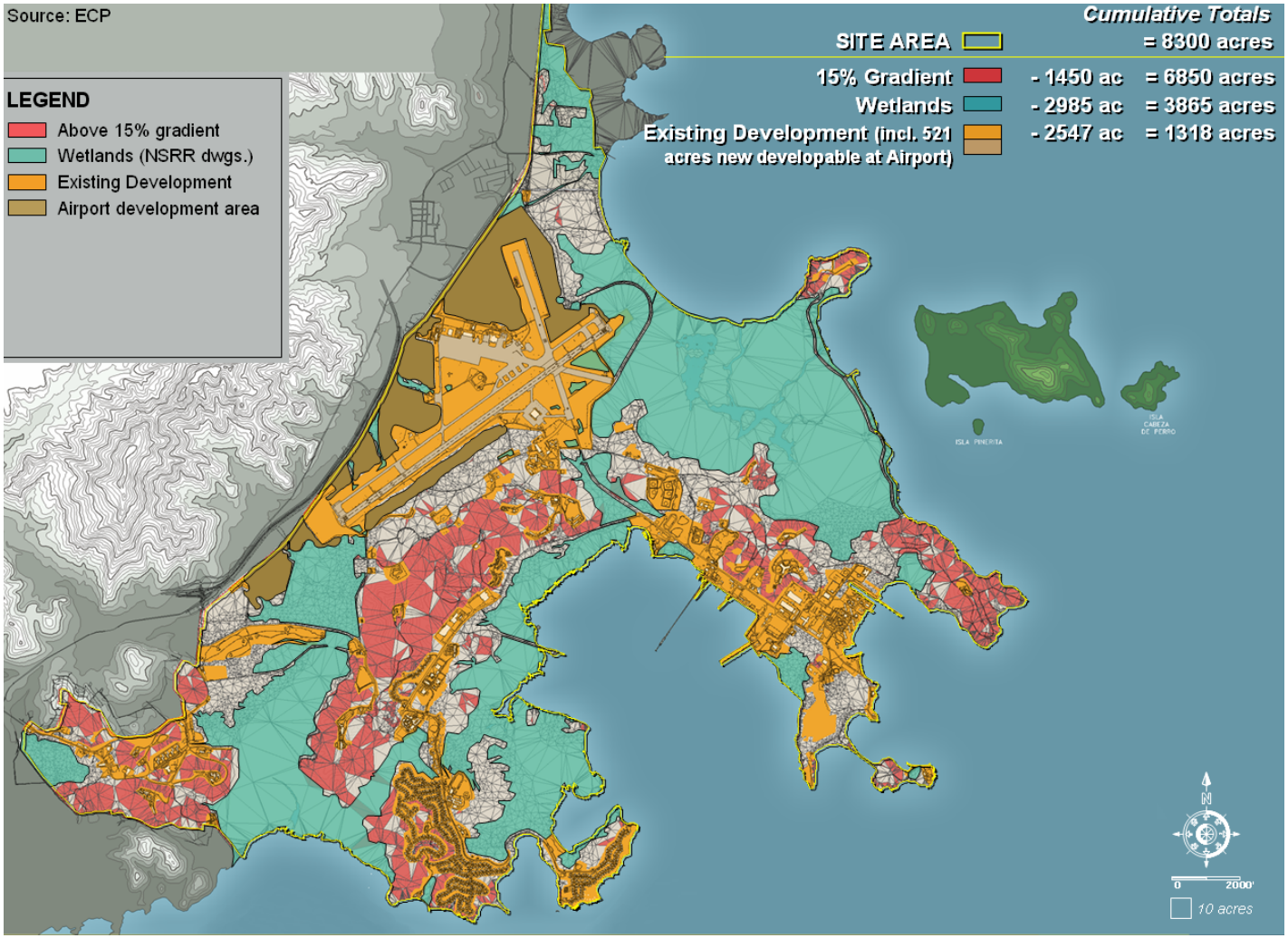


Figure IV.24
Wetlands, Gradient and Existing Development

Source: NSRR (uplands.dwg)- North-of-gate Wetland

Wetlands, Gradients, Existing Development and Floodplain

The 100-year Floodplain limits potential development even further. When floodplain acreage is excluded, the resulting acreage available for new development is 1208 acres (exclusive of the 521 acres of development area at the airport).

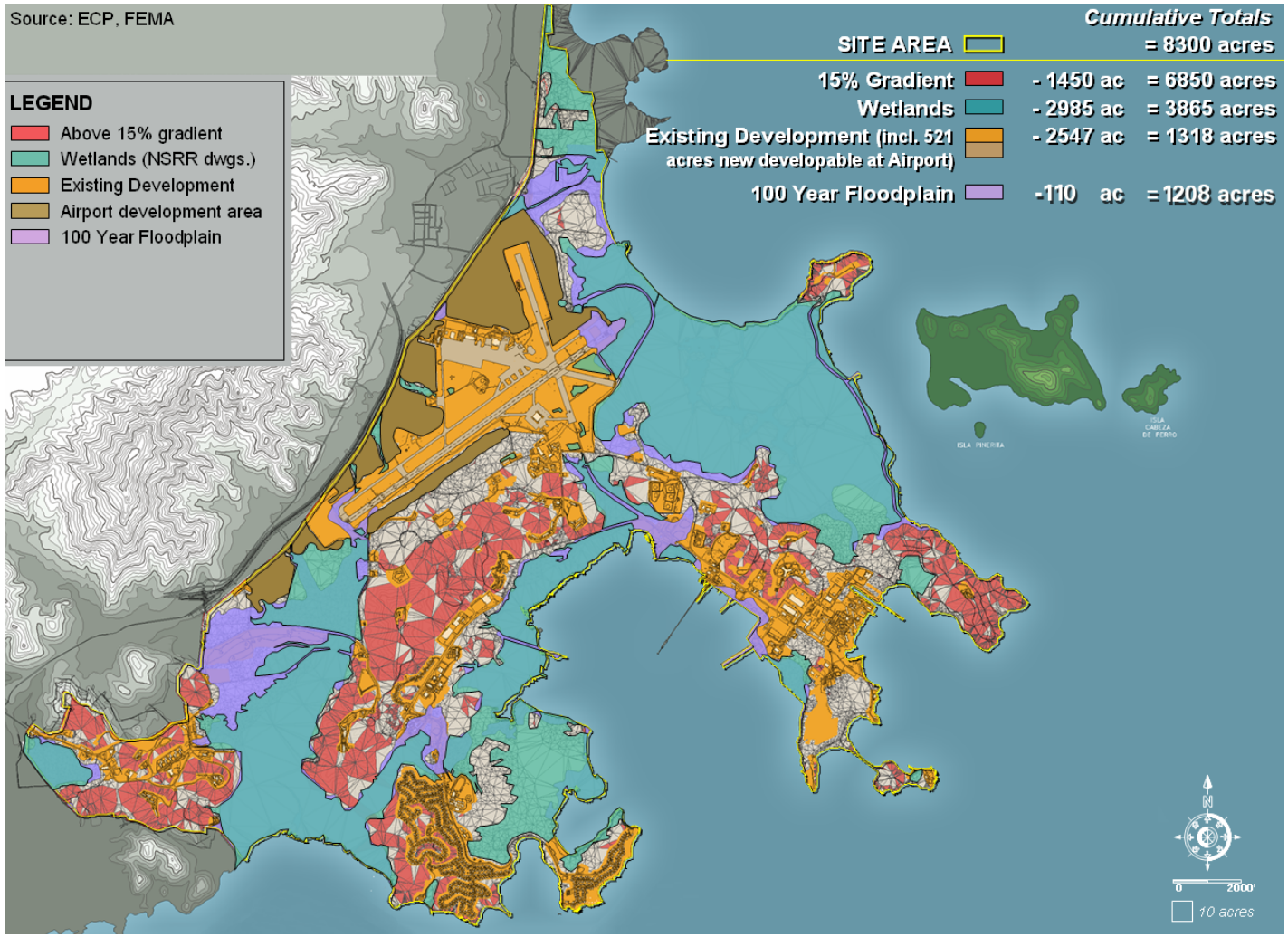


Figure IV.25 *Wetlands, Gradient, Existing Development and 100 year Floodplain*

Source: ECP

Summary of Developable Land

Combined area available for development and re-development = 3,755 acres, including the 521 acres of new airport development.

Figure IV.26
New and Re-Developable Land

Source: North-of-gate Wetland from ECP Report

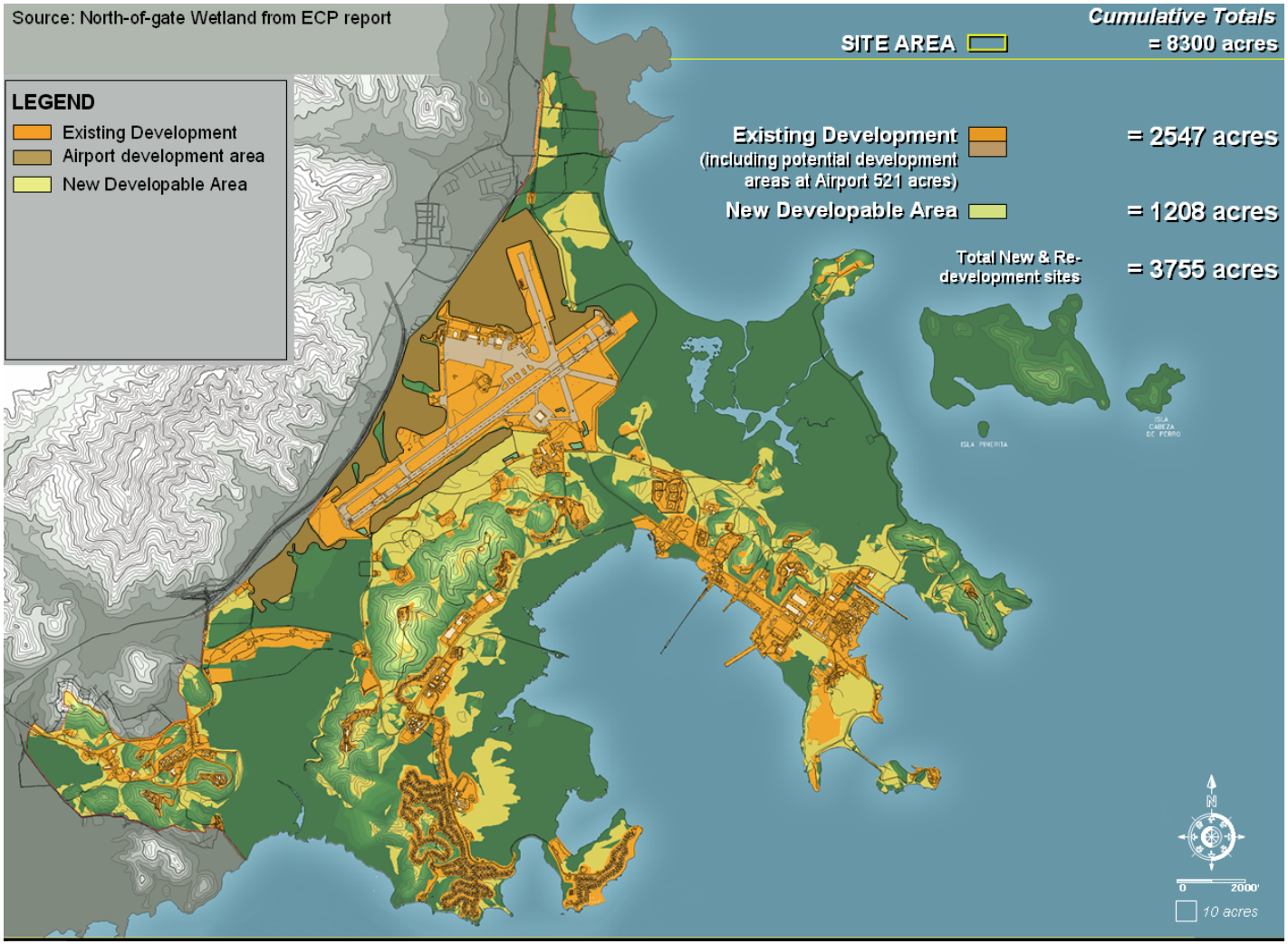
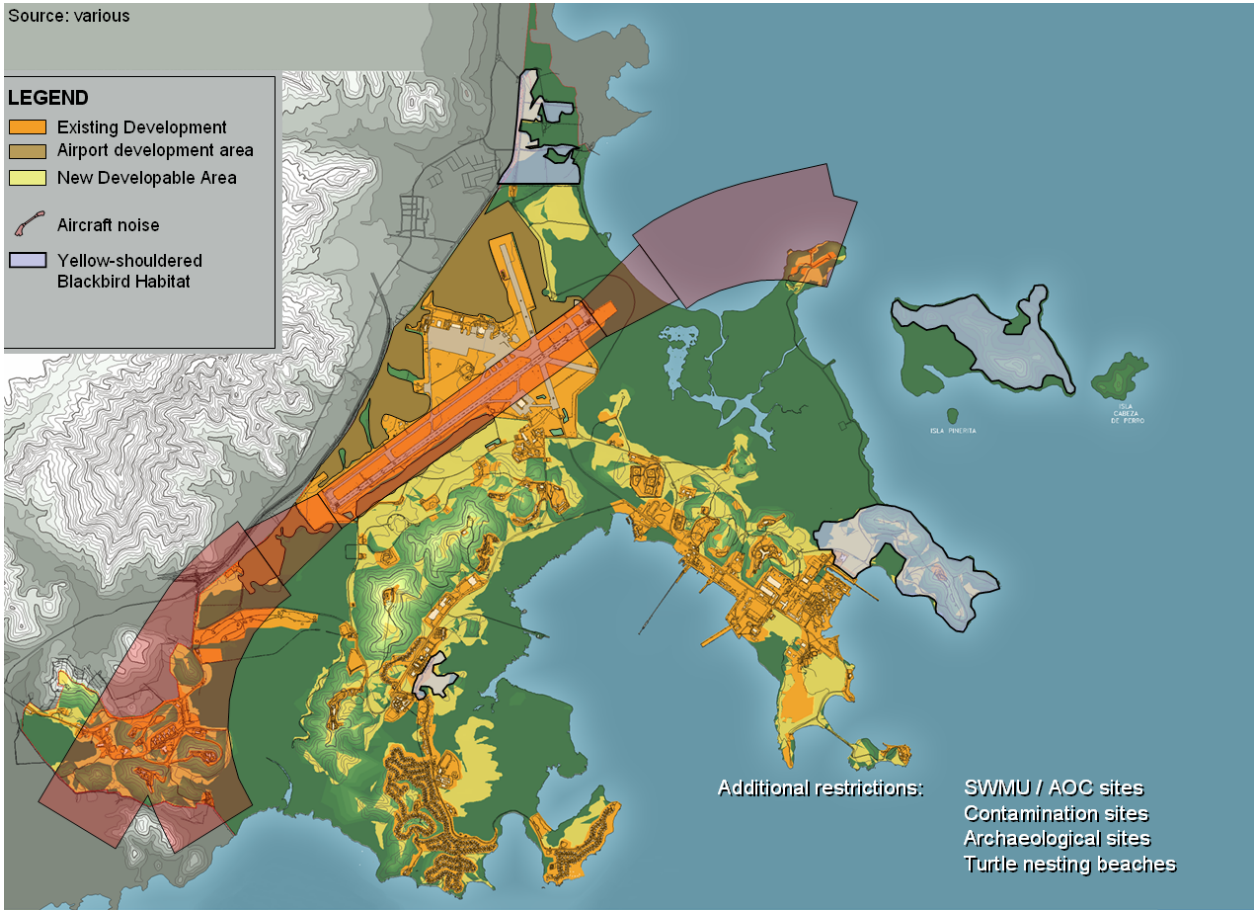


Figure IV.27
Additional Constraints

Source: North-of-gate Wetland from ECP Report



Additional Development Constraints

There are several additional potential development constraints that are awaiting further clarification with respect to precise location, permanence and adjacency to new development:

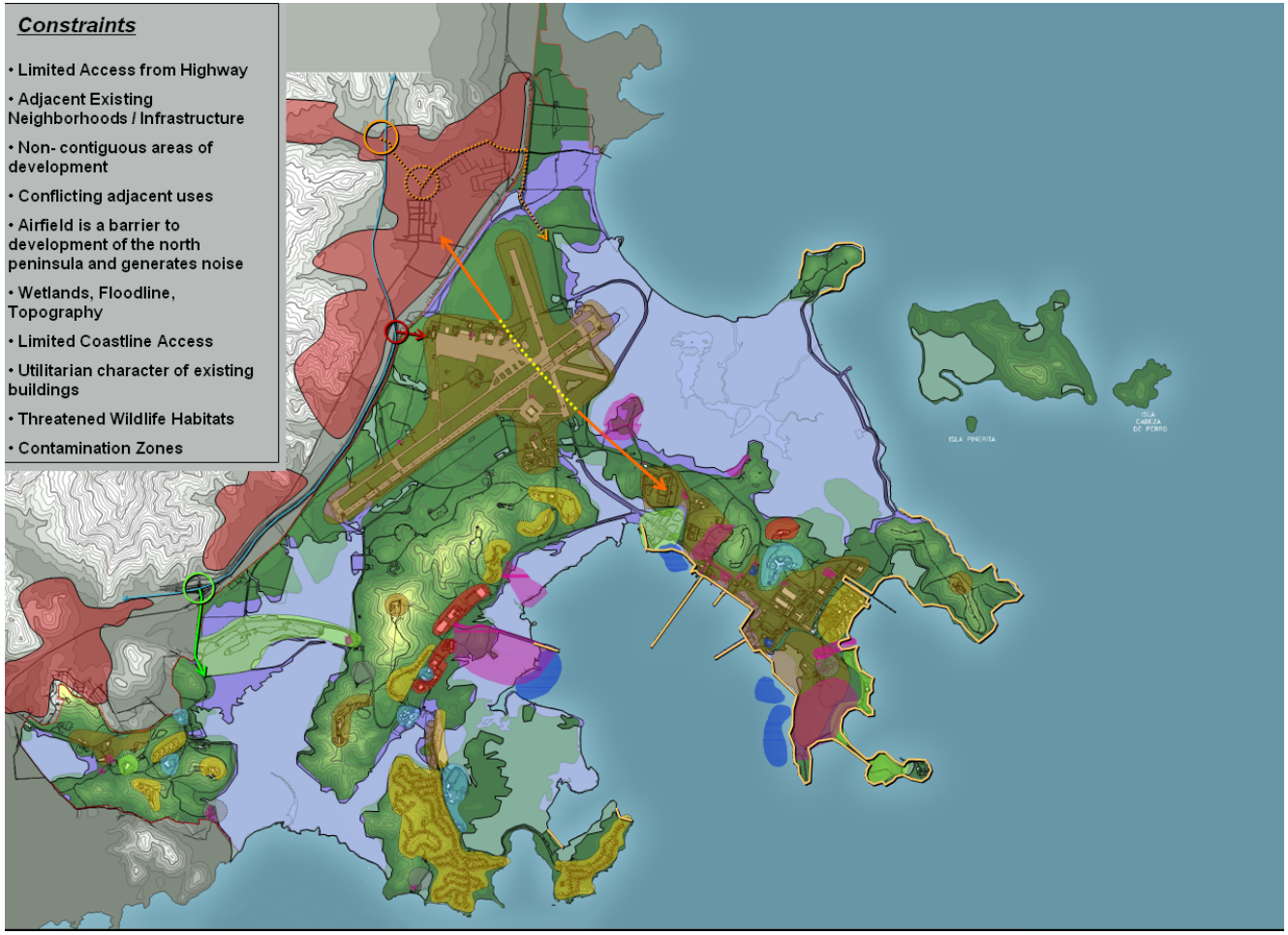
- Solid Waste Management Unit (SWMU) Sites
- Area of Concern (AOC) Sites
- Contamination Sites
- Archaeological Sites
- Yellow-Shouldered Blackbird Habitat
- Turtle Nesting Beaches
- Aircraft noise

Section A.V Opportunities & Constraints

The following is a summary of the physical constraints facing any development effort at Roosevelt Roads.

Figure V.1
Summary of Constraints

Source: Consulting Team



Summary of Constraints

- **Limited Access from Highway:**
  At first glance, Roosevelt Roads appears to be well-serviced by the PR-53 Freeway which runs tangential to a fairly long section of its western boundary. However, the Bundy section in the south is well served by the Bennington Road offramp while the northern gate is served only via a circuitous route through Ceiba. No direct access is currently available from the freeway in the airport vicinity.

- **Adjacent Existing Neighborhoods / Infrastructure:**
  The adjacent neighborhoods of Ceiba, Aguas Claras, Quebrada Seca and Daguao offer little in the way of commercial or infrastructural support.

- **Non- contiguous areas of development:**
  Existing development on the station is characterized by a fragmented arrangement of developed areas tenuously connected by a network of low capacity roads. Future development may concentrate on "stitching together" the disparate parts in order to create a more cohesive built environment.

- **Conflicting adjacent uses:**
  In cases where pockets of development do meet each other, adjecent uses occasionally conflict and do not allow for a synergistic relationship between them.

- **Airfield is a barrier to development of the north peninsula:**
  Almost half the length of Roosevelt Roads is rendered inaccessible by the sheer length of the airfield runway. Access to the north peninsula in particular is compromised due to the relatively short stretch of land between the runway and the ocean which is non-developable mangrove forest. The airfield also generates substantial noise, particularly in the Bundy area.

- **Wetlands, Floodline, Topography:**
  The combination of designated wetlands, mangrove forests, and low, flat topography in the valleys as well as the potential flood inundation of almost half the site results in the scarce availability of developable ground. The haphazard arrangement of existing development reflects this.

- **Limited Coastline Access**
  As a result of steep topography at the peninsula extremities and low-lying wetlands between them, just under half the coastline of Roosevelt Roads offers water accessibility.

- **Utilitarian character of existing buildings**
  Although many of the existing buildings at the station are in good condition, few could be considered to exhibit any architectural character upon which to develop a vernacular.

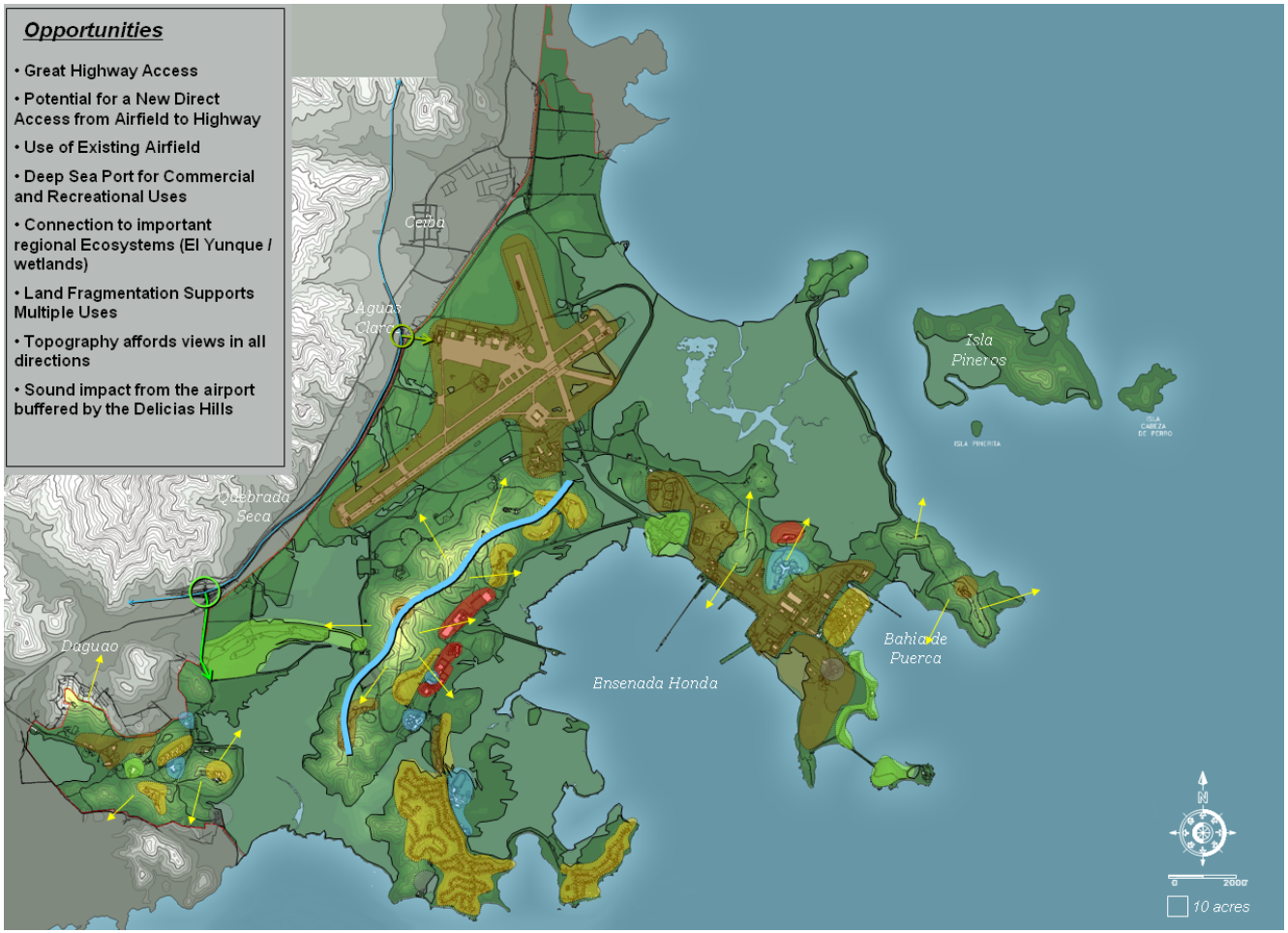
- **Threatened Wildlife Habitats**
  The extent and location of natural habitats for several threatened and endangered species of flora and fauna need to be considered before any development of Roosevelt Roads can be considered.

- **Contamination Zones**
  The clean-up or mitigation of identified areas of concern (AOCs) and solid waste management units (SWMUs) would be an essential prerequisite to development.

The site affords several opportunities which will be explored further as part of the design options in the next phase of work.

Figure V.2
Summary of Opportunities

Source: Consulting Team



Summary of Opportunities

- **Direct Highway Access at Southern Gate**
  Particularly good highway access is available from the south from the Bennington Road offramp to Bundy. This route also feeds into Langley Drive providing access to the "Downtown" and north peninsula areas.

- **Potential for a New Direct Access to Airfield from Highway:**
  The introduction of a third highway interchange in the airport vicinity would greatly improve airport accessibility.

- **Use of Existing Airfield**
  The airfield is well served by its support facilities and would be a tremendous asset to certain future development scenarios.

- **Deep Sea Port for Commercial and Recreational Uses**
  The current dredge depth of 40' in Ensenada Honda and 30' in Bahia de Puerca widens the range of marine craft docking possibilities.

- **Connection to important regional Ecosystems (El Yunque/wetlands)**
  The linkage of regional marine ecosystems to that of the El Yunque rainforest is a rare asset. This adjacency provides a unique opportunity to forge a network of seamless preserves and open spaces

- **Land Fragmentation Supports Multiple Uses**
  The physical arrangement of land sections (peninsulas and valleys) allow for the potential separate development of unrelated land uses if deemed desirable by further market analysis.

- **Topography affords views in all directions**
  Views in all directions are afforded by the steep topography of the Delicias Hills and other promontories around the site.

- **Sound impact from the airport is buffered by the Delicias Hills**
  Ensanada Honda is protected from intrusive airport noise by the ribbon of hills surrounding it.

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Appendix A.a:
Economic & Real Estate Market Overview Analysis

Appendix A.a:
Economic & Real Estate Market Overview Analysis

Appendix A.a
I. Introduction

Introduction & Purpose

CB Richard Ellis Consulting ("CBRE Consulting" was retained by the Department of Economic Development and Commerce of the Commonwealth of Puerto Rico as the lead firm for the preparation of a redevelopment plan for the reuse and redevelopment of the 8,600-acre U.S. Naval Station Roosevelt Roads ("Roosevelt Roads"), which ceased operations on March 31, 2004. As part of this broader effort, CBRE Consulting was tasked with conducting an economic and real estate market overview in order to assess the market opportunities and constraints likely to be associated with Roosevelt Roads. The anticipated outcome of this overview is the identification of the types of land uses that are likely to be supported from a market perspective at Roosevelt Roads. These uses will then become an input to future conceptual planning for the site.

Methodology

In conducting this review, CBRE Consulting completed the following tasks:

1. Conducted multiple site visits beginning in fall of 2003.

2. Researched economic and demographic data on Puerto Rico and the region surrounding Roosevelt Roads prepared by local associations and other conventional sources;

3. Interviewed representatives of universities, industry associations, government agencies, and other interested parties to ascertain level of potential support for development at Roosevelt Roads.

4. Contacted local real estate-related professionals in Puerto Rico in order to gather data on the various real estate markets; and

5. Researched and evaluated available market data for these land uses.

Summary of Major Findings

- According to the 2000 Census, the Fajardo/Ceiba Region included 280,000 residents, representing approximately 7.4 percent of the total population in Puerto Rico. The Region's population grew by 1.0 percent per year since 1990. Population growth in the Fajardo/Ceiba Region is projected to increase by 0.5 percent per year through 2025. Loiza and Las Piedras are projected to experience the highest growth rates in the Region, at 0.8 percent per year, while Ceiba and Naguabo are projected to experience lower growth rates of 0.3 percent per year. Note that these projections were prepared by the Puerto Rico Planning Board prior to the announcement of the closure of Roosevelt Roads.

- Puerto Rico's economy is largely driven by the manufacturing sector, namely chemical and pharmaceutical manufacturing. Additionally, the service sector, including tourism, is a major economic driver in Puerto Rico.

- Past case study research performed by CBRE Consulting indicates that Roosevelt Roads has many of the attributes necessary for a Science Park. There has been preliminary interest expressed by both the University of Puerto Rico and the Polytechnic University of Puerto Rico in locating select research and development efforts on the site. If one of the universities were to serve as an anchor for the park, the ability to attract additional public and private sector tenants would be greatly enhanced. There appears to be potential demand for a Science Park at Roosevelt Roads.

- Potential demand for industrial development at Roosevelt Roads appears to be somewhat limited based on the current supply of general-purpose industrial buildings in the Fajardo/Ceiba Region and the corresponding vacancy rate in the Region. However, Roosevelt Roads does have an advantage in the presence of the base airport, which could be attractive to industrial users. Additionally, Roosevelt Roads has the potential to attract industrial owner-occupiers, such as pharmaceutical and high technology manufacturers.

- Although the location of Roosevelt Roads does not lend itself to shopping center development, due to a lack of expressway visibility and access, the site does have characteristics that could support other types of retail development. A grocery-anchored neighborhood shopping center could potentially be supported by local residents currently living in the area and future residents at Roosevelt Roads, if there were a significant number of residents on the site. Additionally, specialty retail adjacent to the water, could also be supportable if it is developed with the appropriate mix of adjacent uses (e.g. residential marina, lodging, and tourist-oriented facilities).

- The lodging market in Puerto Rico has been stable or growing throughout the past ten years, as evidenced by the steady growth in the inventory of hotel rooms on the island. The Fajardo/Ceiba Region is known for its access to activities and amenities such as El Yunque, the sister islands of Vieques and Culebra, and water sport activities and golf, and is anticipated to experience increasing demand in the lodging market. Such demand could be captured by a potential lodging development at Roosevelt Roads, which could capitalize on the beauty of the site, its proximity to Vieques, and Culebra, and complementary land uses (such as a marina and a golf course) that could be accommodated on the site.

- Interviews with planning executives at two major cruise lines resulted in the opinion that there is not sufficient demand for a tourism port at Roosevelt Roads because of the site's disadvantageous location from an itinerary planning perspective.

1. Includes the municipalities of Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.

- There appears to be good potential for a marina at Roosevelt Roads given its location within the Fajardo/Ceiba Region, where many of Puerto Rico's marinas are concentrated, as well as its proximity to Vieques and Culebra. However, the marina inventory in the eastern region could be increasing significantly in the coming years if proposed expansion plans at various marinas are executed, which could temper demand at Roosevelt Roads.

- Roosevelt Roads has several attributes that support the potential for ecotourism on the site, including existing mangroves that may be explored by hiking and/or kayaking excursions, canoeing and other forms of boating that may be launched from the existing marina on the site, and ecotourism-oriented visits that could be organized to the islands off the northeast coast of Puerto Rico, such as Vieques and Culebra. Given its location, coastal setting, and environmentally sensitive areas, Roosevelt Roads could be well positioned to cater to this growing tourism sector.

- In the near term, Roosevelt Roads is not proximate to job centers, which will temper demand for housing. However, the Fajardo/Ceiba Region is projected to require 13,000 new housing units by 2025 to keep up with population growth. Therefore, future demand for housing located at Roosevelt Roads could be strong, either for re-use of current housing or construction of new units, especially as jobs are attracted to Roosevelt Roads over time. The site attributes of Roosevelt Roads, including spectacular views and existing infrastructure including schools, hospital, etc., as well as the future improvements in access to San Juan via new highway construction, could make the site an attractive location for both the primary and second-home markets.

- The Roosevelt Roads site provides a unique opportunity to master plan approximately 8,600 acres of prime real estate on Puerto Rico's desirable eastern coast. Residential and lodging/resort uses appear to be the most readily supportable uses from a market perspective. These uses could serve as the impetus for complementary development including supporting retail and an expansion of the marina. The potential development of a Science Park on the site could drive greater and faster absorption of other land uses (including industrial, residential, and retail). Although initial interest in the site has been expressed by several universities, the true potential for future development of this type will need to be vetted through follow up discussions with these institutions.

Appendix A:
II. Economic & Demographic Conditions & Trends

Overview: Puerto Rico

CBRE Consulting assembled and analyzed comparative economic and demographic data including population, household, and income trends to help inform the real estate market analyses. Included were: 1990 Census data, 2000 Census data, and the Puerto Rico Planning Board's population projections through 2025. The data are displayed in Exhibits 1 through 4 and focus on three geographic areas: Puerto Rico, the San Juan Metropolitan Area[2], and the Fajardo/Ceiba Region, which includes the municipalities of Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.

According to the 2000 Census, Puerto Rico had a total population of slightly more than 3.8 million people (see Exhibits 1 and 2). Between 1990 and 2000, Puerto Rico experienced slight population growth of less than 1.0 percent per year, while the median age climbed from 28.4 to 32.1 years. The population was 98.8 percent Hispanic, with ethnic Puerto Ricans accounting for 95.1 percent of all residents. Median household income in Puerto Rico increased 62 percent between 1990 and 2000, from $8,900 to $14,400, reflecting a compound annual growth rate of 4.9 percent. While employment was strongest in the education, health and social services, manufacturing, and retail trade sectors, only 40 percent of the population 16 years old and older was in the labor force. In February 2004, Puerto Rico's unemployment rate stood at 10.3 percent, according to the United States Department of Labor's Bureau of Labor Statistics. In fiscal year 2002, the most recent year for which data were available, real Gross National Product declined 0.2 percent in Puerto Rico. This can be explained by the Puerto Rican economy's heavy dependence on the United States' economy, whose well-documented downturn has negatively affected Puerto Rico.

San Juan has long been the commercial center for Puerto Rico. In addition to being the island's capital city, San Juan is the hub of the primary metropolitan area, which houses about 30 percent of the island's total population and households. As displayed in Exhibit 2, Metropolitan San Juan's population was relatively more affluent and slightly older than the island-wide average in 2000, with a median household income ranging between $12,852 and $26,211 and median age ranging between 30.8 and 35.0 years[3]. Although poverty in most of the municipalities within the Metropolitan Area was significantly less than the island-wide average of 44.6 percent, Catano was higher with 46.7 percent of its residents below the poverty line.

As shown in the following table, Puerto Rico's population is projected to grow by 11 percent to 4.2 million residents by 2025, according to government projections. The most significant population growth is projected for Toa Alta, a municipality directly west of San Juan, which is expected to grow by 25,000 residents (38.7 percent), while Catano is expected to see the largest decline in population (negative 1.7 percent).

2. The San Juan Metropolitan Area includes the following municipalities: Bayamon, Carolina, Catano, Guaynabo, San Juan, and Trujillo Alto.
3. Median household income and median age data are only available by municipality. As a result, a range is cited for the San Juan Metropolitan Area.

	Municipality	2000 Population	2025 Population	Amount	Percent
GREATEST GROWTH	*Toa Alta*	*64,261*	*89,125*	*24,864*	*38.7%*
	Gurabo	*36,878*	*46,091*	*9,213*	*25.0%*
	Penuelas	*26,794*	*33,099*	*6,305*	*23.5%*
	Las Piedras	*34,600*	*42,520*	*7,920*	*22.9%*
	Loiza	*32,617*	*40,048*	*7,431*	*22.8%*
LEAST GROWTH	*Bayamon*	*224,153*	*231,381*	*7,228*	*3.2%*
	San Juan	*434,519*	*443,778*	*9,259*	*2.1%*
	Mayaguez	*98,393*	*98,454*	*61*	*0.1%*
	Vieques	*9,107*	*9,063*	*(44)*	*(0.5%)*
	Catano	*30,027*	*29,513*	*(514)*	*(1.7%)*
	Puerto Rico			***400,383***	***10.5%***

Table A.1
Projected Population Growth in Puerto Rico: Municipalities Experiencing the Greatest and Least Growth by Percent Change 2000–2025

Sources: Puerto Rico Planning Board; and CBRE Consulting

The Fajardo/Ceiba Region

The northeastern coast of Puerto Rico is home to Roosevelt Roads, and for the purposes of this report, CBRE Consulting examined the demographic and economic characteristics of the eight municipalities within the Fajardo/Ceiba Region (see Exhibit 2). In 2000, the Region had a total of 280,000 residents, having grown 1.0 percent per year since 1990 (see Exhibits 3 and 4). Median household income ranged from $11,200 to $16,400 in the eight municipalities, with Ceiba claiming the most affluent population in the Region ($16,400). Loiza and Naguabo had the two lowest median household income figures, at $11,200 and $11,500, respectively. The average household size in the Region was 3.05, higher than the island-wide average and primarily attributable to the 3.38 average household size in the municipality of Loiza. Fajardo and Ceiba each trailed the island-wide average in household size, with 2.86 and 2.92 persons per household, respectively. The median age in the Region was consistent with the island average, ranging from 27.2 to 32.2 years. The largest municipality in terms of population was Humacao, while Ceiba was the smallest.

The labor force in the Fajardo/Ceiba Region was consistent with the island average, with 39.9 percent of the 16-and-older population in the job market. The strongest employment sectors were also consistent with the island, as education, health, and social services and manufacturing were the sectors with the highest employee counts.

Population growth in the Fajardo/Ceiba Region is projected to increase by 0.5 percent per year through 2025. Loiza and Las Piedras are projected to experience the highest growth rates in the Region, at 0.8 percent per year, while Ceiba and Naguabo are projected to experience lower growth rates of 0.3 percent per year. (Note that these projections were prepared by the Puerto Rico Planning Board prior to the announcement of the closure of Roosevelt Roads.)

Key Industries in Puerto Rico

Puerto Rico's economy is largely driven by the manufacturing sector, which generated 45.7 percent of net domestic income in 2002, according to the Government Development Bank. The service sector, including tourism, is also a significant force on the island, having accounted for 51.7 percent of non-farm payroll employment and 40.5 percent of net domestic income in fiscal year 2002. Within key economic sectors, the following trends have emerged in recent years:

- The chemical industry led the manufacturing sector in fiscal year 2002, with a 63.7 percent share of net domestic manufacturing income. Other key industries within the manufacturing sector include machinery and food.

- The widening presence of the pharmaceutical industry in Puerto Rico has positively impacted the island's economy in recent years. The industry experienced a 6.9 percent and 6.3 percent increase in employment in calendar years 2001 and 2002, respectively, which were the highest growth rates in many years. The pharmaceutical industry has been the driving force behind the island's growth in exports in recent years. Drug exports more than tripled between fiscal years 1997 and 2002, from $8.3 billion to $31.1 billion.

- Tourism represents a small segment of the economy when measured in terms of direct expenditures by non-resident tourists, but the importance of tourism is much greater when the impact of employment and income multipliers are considered. Steady growth in visitor expenditures over the past decade not only helped the tourism industry, their effects rippled into related industries such as transportation, communications, and retail trade. The tourism sector has been growing in terms of the number of visitors coming to the island, visitor expenditures, and the total inventory of hotel rooms on the island.

Appendix A:
III. Overview of Real Estate Market Trends & Conditions

Introduction

CBRE Consulting analyzed real estate market data for Puerto Rico and the region surrounding Roosevelt Roads from a variety of sources, including the Puerto Rico Industrial Development Company ("PRIDCO"), the Puerto Rico Tourism Company, the Puerto Rico Ports Authority, and the U.S. Census, to gain an understanding of the local real estate market. Additionally, CBRE Consulting interviewed a number of local professionals in various industries as well as local governmental departments to better understand the science park, industrial, retail, tourism, and residential markets. These interviews provided a significant amount of data on the local real estate market because the area lacks a conventional real estate database or entity that collects and reports market statistics.

Location

Roosevelt Roads is located on the eastern coast of Puerto Rico, just east of and adjacent to the small municipality of Ceiba. Northeast Puerto Rico is home to the largest rain forest in the U.S. National Forest System (El Yunque) and Luquillo Beach, which is one of the best-known beaches on the island. It is also known for golf courses, diving, snorkeling, kayaking, fishing and sailing trips from Fajardo, historic plazas, and its proximity to the sister islands of Vieques and Culebra (the Spanish Virgin Islands). Vieques is known for its bioluminescent bay and a recently restored lighthouse while Culebra has a nature preserve and many attractive beaches.

Science Park Market

A science park ("Science Park") is defined as "an organization managed by specialized professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a Science Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies, and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services."[4] A Science Park may include private sector users and/or an affiliation with a university or other public sector users (e.g., governmental laboratories).

4. International Association of Science Parks.

Science Park Location Criteria

Although there are no existing Science Parks in Puerto Rico at this time, location criteria for Science Parks in the mainland U.S. may be utilized to help assess the potential for a Science Park at Roosevelt Roads. In a recent research study, CBRE Consulting analyzed Science Park attributes by researching select successful Science Parks including the following: Stanford Research Park in Palo Alto, California; Princeton Forrestal Center in Plainsboro, New Jersey; Johns Hopkins Bayview Research Campus in Baltimore, Maryland; University of California at San Francisco in San Francisco, California; and Irvine University Research Park in Irvine, California. Case study research found consistency in several key attributes for successful Science Parks, including:

- Convenient transportation access from desirable residential communities or neighborhoods where researchers are likely to reside. Both vehicular and public transit access are important.

- Sufficiently large site to accommodate a range of uses, including academic research laboratories, space for start-up firms, and established successful firms.

- An attractive "lifestyle" environment that provides landscaped open space and recreational facilities. Adjacent open space and nearby commercial districts providing amenities such as restaurants, a hotel, support retail, and services are important factors. A campus environment can be achieved in an urban area if the site is large enough to benefit from specialized urban design applications.

A June 1998 study of 18 international Science Parks by the Association of University Related Research Parks provides insight into the critical components of successful parks. The major components common to 75 percent of Science Parks surveyed included:

- Affiliation with academic medical center

- Wet lab space

- Incubator space

- High speed data links

Major characteristics of the surveyed parks included:

- Average park size was 150 acres accommodating 1.4 million square feet of building area.

- Average annual absorption for private space was 60,000 square feet, ranging from 25,000 to in excess of 200,000 square feet.

- Universities, governments, or non-profit entities developed 90 percent of the survey parks.

- Economic benefits, including job creation, were the main reason for Science Park development.

In a second recent study, CBRE Consulting analyzed several other Science Parks, including the following: Mission Bay in San Francisco, California; University Park at Massachusetts Institute of Technology in Cambridge, Massachusetts; and Virginia Biotechnology Research Park in Richmond, Virginia. Case study research identified critical elements to develop, grow, and attract companies to a Science Park, including:

- Close proximity to a major biotechnology research university, research clinics, laboratories, or major biotechnology/ pharmaceutical company bearing recognition as a leader in one or more scientific fields relevant to the park's planned orientation.

- The presence of a high-quality human resources pool, generally provided by local industry and universities.

- Presence of a strong business infrastructure, such as lawyers, accountants, venture capitalists, and suppliers.

- Availability of good quality housing nearby, suitable for research scientists who command good salaries and who are accustomed to excellent housing.

- Provision of transportation access to the park that allows reasonable commute times from housing areas to the research park and between the research park and university.

- Provision of regional transportation access, including air access, both for transporting personnel and for transporting highly valued cargo; excellent highway access is important for connecting to nearby major cities.

- Presence of environmental amenities, such as views, landscaping, open space, jogging trails, and exercise facilities.

- Provision of a high quality of living including climate, quality of infrastructure, cultural, and recreational amenities.

University Interest in Roosevelt Roads

Roosevelt Roads has the potential to offer many of these location criteria to prospective tenants in a Science Park, given its large size, proximity to housing (both on and off the base), natural beauty, and complementary uses envisioned as part of the redevelopment plan. It would be likely that a university would be necessary to anchor a Science Park at Roosevelt Roads. With renovation of some of the existing single-family housing, Roosevelt Roads could provide an appealing package to prospective Science Park tenants including office buildings and housing in a highly attractive physical setting. Additionally, a university anchor would attract scientists, researchers, and graduate students to the site, who might utilize the well-educated workforce in Puerto Rico. Several universities and research institutions have expressed interest in the possible use of Roosevelt Roads as a future location for science-related activities. They are detailed as follows.

- The University of Puerto Rico has a Primate Center at Sabana Seca, which is approximately 10 miles west of San Juan. The University also operates the Cayo Santiago field station, located on an island off the coast of Puerto Rico to the south of Roosevelt Roads. Cayo Santiago is a free-ranging colony of rhesus monkeys, which is used primarily for behavioral research. Researchers from institutions such as Harvard University and Columbia University visit Cayo Santiago every year to study the monkeys with their staff. The University is in need of housing as well as support facilities such as offices, laboratories, a vivarium, and lecture halls near the island. The University is interested in combining its primate research with a tourism component such as a natural history museum and planetarium to attract visitors and provide outreach regarding its mission. Such a tourism/outreach component has been integrated in other primate centers in the U.S. such as the Tulane National Primate Research Center and the Washington National Primate Research Center.

- Polytechnic University of Puerto Rico has expressed interest in locating a Center for Ocean Research and Engineering at Roosevelt Roads. Requirements for the facility would include approximately 10,000 square feet of building space for classrooms, laboratories, and offices. The space would need to be located close to a marina/dock that could handle boats up to 100 feet in length.

- Industry/University Research Consortium ("INDUNIV") is an organization committed to promoting collaboration

among industry, academia, and government to solve scientific problems of interest to Puerto Rico. Members of INDUNIV include Abbott, Amgen, Hewlett-Packard, Pfizer, the Polytechnic University of Puerto Rico, the University of Puerto Rico System, and PRIDCO, among others. INDUNIV is planning future science centers, including ones focused on pharmaceutical and biotechnology regulation, biomedical materials science, dry delivery systems, and biopharmaceutical science and engineering. Roosevelt Roads could potentially be the location of a future INDUNIV science center.

Conclusions

Roosevelt Roads has many of the attributes necessary for a Science Park, as identified by past case study research performed by CBRE Consulting. Given the potential interest expressed by both the Polytechnic University of Puerto Rico and the University of Puerto Rico in locating select research and development efforts on the site, there appears to be potential for a Science Park at Roosevelt Roads. If one of the universities were to serve as an anchor for the park, the ability to attract additional public and private sector tenants would be greatly enhanced.

Industrial Park Market

Puerto Rico

The industrial market in Puerto Rico is characterized primarily by owner-occupied manufacturing facilities (including, in particular, pharmaceuticals) and for-lease properties owned by PRIDCO. PRIDCO estimates that it owns approximately 88 percent of the total industrial space available for lease in Puerto Rico. As of April 1, 2004, PRIDCO owned approximately 24.8 million square feet of industrial buildings. Of this total, approximately 75 percent was leased. Of the 25 percent of inventory that was vacant, 23 percent was reserved for prospective tenants and 17 percent was under negotiation. Historical construction of PRIDCO-owned industrial facilities is detailed in the following table.

Table A.2 *Historical Construction of PRIDCO-Owned Industrial Facilities Completed for Fiscal Years Ended June 30*

Year	Square Feet
1998	*276,696*
1999	*336,826*
2000	*144,698*
2001	*240,228*
2002	*133,693*
Total	***1,132,141***

Sources: PRIDCO; and CBRE Consulting.

As detailed in Table A.2, PRIDCO constructed on average just over 225,000 square feet of new industrial space per year between 1998 and 2002. During this five-year period, the overall supply of industrial space owned by PRIDCO increased by the modest amount of approximately 4.7 percent. Anticipated construction of future industrial facilities by PRIDCO is detailed in the following table

Table A.3
Projected Construction of Industrial Facilities to be Completed During Fiscal Years Ending June 30

Sources: Puerto Rico Planning Board; and CBRE Consulting.

Year	Square Feet
2003	*505,000*
2004	*563,000*
2005	*428,000*
2006	*447,000*
2007	*467,000*
Total	***2,410,000***

As detailed in Table A.3, as of March 31, 2003, PRIDCO projected that it would construct a total of just over 2.4 million square feet of industrial space between 2003 and 2007, or an average of approximately 482,000 square feet per year. During this five-year period, it is projected that PRIDCO's overall inventory will increase by approximately 9.5 percent, double that which was experienced between 1998 and 2002.

Historically, PRIDCO constructed general-purpose buildings in advance of demand and special industrial buildings on demand. For several years prior to fiscal year 2003, PRIDCO did not construct general-purpose buildings in advance of demand but began to do so again in that fiscal year. As a result, four new projects and four remodeling projects were under development in 2003. These circumstances account for the difference between the average construction per year that occurred between 1998 and 2002 and the construction that is projected to occur between 2003 and 2007

Fajardo/Ceiba Region

As of April 1, 2004, PRIDCO owned approximately 2.5 million square feet of industrial buildings in the Fajardo/Ceiba Region. This accounted for approximately 10 percent of its island-wide inventory. The following table details the allocation of industrial space by municipality in the Region.

Table A.4
PRIDCO-Owned Industrial Facilities in the Fajardo/Ceiba Region As of April 1, 2004

Sources: PRIDCO; and CBRE Consulting.

	Ceiba	Fajardo	Humacao	Las Piedras	Loiza	Luquillo	Naguabo	Rio Grande	*Total*
Total Inventory	*177,031*	*276,313*	*820,077*	*299,148*	*113,667*	*268,995*	*222,406*	*354,459*	***2,532,096***
Vacancy Rate	*13%*	*21%*	*11%*	*0%*	*20%*	*21%*	*10%*	*57%*	***19%***

As shown in Table A.4, the greatest amount of PRIDCO-owned As shown in Table A.4, the greatest amount of PRIDCO-owned industrial space in the Fajardo/Ceiba Region is located in Humacao (32 percent), followed by Rio Grande with 14 percent and Las Piedras with 12 percent. The overall vacancy rate for the Region is 19 percent, and the individual municipality vacancy rates range from zero percent to 57 percent. Ceiba, the municipality closest to Roosevelt Roads, has the smallest amount of industrial space with just over 177,000 square feet and a current vacancy rate of 13 percent. In addition to the PRIDCO-owned industrial facilities in the area, Roosevelt Roads has some existing industrial and warehouse buildings near the base airport that may be reused in conjunction with future airport activity

Conclusions

With just over 2.5 million square feet of industrial space owned by PRIDCO (10 percent of PRIDCO's total inventory of industrial space in Puerto Rico) and an average vacancy rate of 19 percent, the current supply of industrial space in the Region appears to be adequate to serve its needs. This would indicate that the potential for industrial development at Roosevelt Roads is somewhat limited unless it was for an owner-occupier such as a pharmaceutical manufacturing plant. However, Roosevelt Roads does have an advantage in the presence of the base airport, which could be attractive to potential industrial users. These future users would benefit from proximity to the airport if their operations require cargo transport, charter flights, or other aviation needs that might be fulfilled through the base airport. Proximity to the base airport could reduce the additional costs and inconvenience of using a facility that is farther away from their operations

Retail Market

Puerto Rico

Driven by consistently strong sales, Puerto Rico's retail market experienced a development boom in the 1990s, with about 11 million square feet of new retail space constructed between 1996 and 1999. The market is dominated by shopping centers with big box retailers as anchor tenants and demand for retail space in Puerto Rico continues to be strong. Although development has stalled since the expansion period of the 1990s, the island-wide vacancy rate is approximately 5.0 percent and rental rates have been stable, according to James DeWinter, CB Richard Ellis' Director of Retail Services for Latin America and the Caribbean. In fact, major retailers located in Puerto Rico continue to seek expansion opportunities, while big box retail chains without a presence in Puerto Rico look for opportunities to penetrate the market.

As shown in Table A.5 at right, retail sales in Puerto Rico increased 46 percent between 1992 and 1997, the most recent years for which data were available. Particularly strong sales occurred in Automotive Dealerships, which accounted for 14 to 20 percent of total retail sales and increased twofold in the five-year period.

Retail Category	1992 (millions)	1997 (millions)	Change
Building Materials	*$616*	*$973*	*58.0%*
General Merchandise	*$1,503*	*$2,230*	*48.4%*
Food	*$2,960*	*$3,621*	*22.3%*
Automotive dealers	*$1,688*	*$3,396*	*101.2%*
Gasoline Service Stations	*$711*	*$1,141*	*60.5%*
Apparel and Accessories	*$1,205*	*$1,414*	*17.3%*
Home Furniture	*$772*	*$1,119*	*44.9%*
Eating & Drinking	*$934*	*$1,445*	*54.7%*
Drug and Proprietary	*$657*	*$897*	*36.5%*
Misc. Retail	*$661*	*$853*	*29.0%*
Total	***$11,707***	***$17,088***	***46.0%***

Table A.5
Comparison of Total Retail Sales, Puerto Rico 1992 & 1997

Sources: U.S. Census Bureau; and CBRE Consulting

Table A.6
Sales in Retail Establishments, by Municipality 1997

Sources: U.S. Census Bureau; and CBRE Consulting

Geographic Area	Total Retail Sales (000s)	Total Establishments
Puerto Rico	*$17,087,950*	*14,582*
San Juan Region	*$8,540,285*	*5,414*
Fajardo/Ceiba Region	*$884,889*	*877*
Ceiba	*$13,656*	*32*
Fajardo	*$236,936*	*207*
Humacao	*$365,303*	*303*
Las Piedras	*$69,273*	*120*
Loiza	*$18,796*	*37*
Luquillo	*$32,184*	*56*
Naguabo	*$22,138*	*40*
Rio Grande	*$90,603*	*82*

Table A.6 identifies the San Juan Region as Puerto Rico's primary retail market, having accounted for half of total retail sales in Puerto Rico in 1997. Among its many retail offerings, the San Juan Region boasts two shopping centers, Plaza las Americas and Plaza Carolina, with more than one million square feet of space. Although the San Juan population could support additional retail space, a scarcity of suitable land prevents further large-scale development. Sales in the Fajardo/Ceiba Region were more modest, with Fajardo and Humacao constituting the primary retail centers in the Region. The PMI Realty-owned shopping centers in Humacao (Plaza Palma Real) and Fajardo (Plaza Fajardo) are currently each 100 percent occupied and generate $370 and $340 in sales per square foot, respectively

Conclusions

The majority of shopping centers in Puerto Rico are on major thoroughfares or expressways with good visibility and access. Developers and retailers insist on these characteristics for community or larger shopping centers, like those found in the San Juan Region and Plaza Fajardo in Fajardo. Roosevelt Roads does not fit the criteria for shopping center development because of its location off the highway. Along the same lines, big box retailers are not likely to be attracted to existing buildings at Roosevelt Roads, since they too demand highway visibility and good access.

Roosevelt Roads does have characteristics that could lend the site to other types of retail development. A grocery-anchored neighborhood shopping center could potentially be supported by local residents currently living in the area and future residents at Roosevelt Roads. However, the Amigo's grocery store in Ceiba does not perform particularly well, and Roosevelt Roads would need to attract a significant number of new residents in order to support an additional grocery store in the area. Specialty retail, adjacent to the water, could also be supportable if it is developed with the appropriate mix of adjacent uses (e.g., residential, marina, lodging, and tourist-oriented facilities).

Tourism & Lodging Markets

Although tourism in Puerto Rico represents a small segment of the economy when measured in terms of direct expenditures by non-resident tourists, its overall importance and impact is much greater in terms of employment and income multipliers. There were approximately 4.4 million visitors to Puerto Rico during fiscal year 2002. These visitors spent a total of nearly $2.4 billion during their time on the island. Total direct, indirect, and induced employment in the tourism industry during fiscal year 2002 was just over 56,000 persons.

Lodging: Puerto Rico

There were a total of 12,768 hotel rooms[5] in Puerto Rico as of June 30, 2002 (see Exhibit 6). The inventory of hotel rooms was split between metropolitan area hotels and non-metropolitan area hotels. Approximately 76 percent of the hotel rooms were in tourist hotels, which are facilities that include one of the following attractions: casino, restaurant, beach, swimming pool, water sport facilities, and outdoor sport facilities. The island-wide inventory of hotel rooms has been growing steadily during the past ten years, experiencing a compound annual growth rate of 4.1 percent during the 1993-2002 period, which equates to an average addition of 465 rooms to the total inventory per year.

The average annual occupancy rate for all hotels and paradores in Puerto Rico has been declining or stagnant in recent years, much like hotel occupancy rates in other regions within the U.S. (see Exhibit 7). The average annual occupancy rate for fiscal year 2002 was 63 percent for all hotels, 70 percent for metropolitan area hotels, 58 percent for non-metropolitan area hotels, and 46 percent for paradores. These rates indicate a decrease of approximately 12 percent from the highest rates achieved during the 1993 to 2002 period, in fiscal year 1999. During the 1993 to 2002 period, the average annual occupancy rate ranged from 63 percent to 72 percent, with the peak occurring in 1999 and the low occurring in 2002.

The Puerto Rico Trade and Convention Center District is under development in San Juan, situated on 113 acres of land and anticipated to encompass over 4.0 million square feet upon buildout. The mixed-use development is anchored by a 1.3 million-square-foot convention center, which is expected to be completed in September 2005. The convention center will be complemented by a hotel (which includes 81,000 square feet of meeting space), 717,000 square feet of office space, 163,000 square feet of commercial space (including a 62,000-square-foot cinema), and 225 residential units. As of September 2003, the convention center was 29 percent complete.

Lodging: Fajardo/Ceiba Region

The northeast region of Puerto Rico is regarded as one of the premiere destinations on the island due to its proximity to El Yunque and the sister islands of Vieques and Culebra (known as the Spanish Virgin Islands) and its abundance of golf courses and marinas. Several well-known hotels are located in the Fajardo/Ceiba Region, including the Westin Rio Mar Beach Resort and Ocean Villas in Rio Grande and the Wyndham El Conquistador Resort and Las Casitas Village in Fajardo. The Westin Rio Mar Beach Resort is a 600-room property with two 18-hole championship golf courses. Adjoining the resort is the Ocean Villas development, which includes 58 one, two, and three-bedroom beachfront condominium villas. Approximately 65 percent of the Westin Rio Mar's business is groups while the remaining 35 percent is leisure.

The Wyndham El Conquistador Resort is a 750-room property with eleven restaurants, casino, 18-hole golf course, spa and fitness center, shopping arcade, marina, and offshore island with water sport activities and beaches. Las Casitas Village offers 144 deluxe rooms and suites in 90 condominium-hotel villas. The units range in size from one to three bedrooms and are operated by the resort under a rental agreement with the condominium owners. Approximately 60 percent of El Conquistador's business is groups while the remaining 40 percent is leisure.

5. Includes establishments endorsed by the Puerto Rico Tourism Company only.
6. Metropolitan area comprises San Juan's urban areas as classified by the Puerto Rico Planning Board, including the municipalities of San Juan, Bayamon, Guaynabo, Catano, Trujillo Alto, and Carolina. Non-metropolitan area includes urban and rural areas other than the San Juan Metropolitan Area.

There are several new resorts that are under construction or planned in the Fajardo/Ceiba Region, as detailed in the table below.

	Project	Municipality	Total New Rooms	New Hotel Rooms	New Condo/ Hotel Keys	New Villas Turisticas	New Timeshare Rooms	Start of Construct.	Start of Operation
UNDER CONSTRUCTION	*InterContinental Cayo Largo Resort*	*Fajardo*	*314*	*314*	*0*	*0*	*0*	*2000*	*n/a*
	Las Casitas II- Wyn. El Conquistador	*Fajardo*	*137*	*0*	*137*	*0*	*0*	*Apr. 2003*	*Jul. 2004*
	Paradisus Sol Melia (1st phase)	*Rio Grande*	*490*	*490*	*0*	*0*	*0*	*Nov. 2000*	*Mar. 2004*
PLANNED	*Villa Castillo*	*Humacao*	*24*	*0*	*0*	*24*	*0*	*Jan. 2004*	*Oct. 2004*
	Fairmont Resort Coco Beach	*Rio Grande*	*412*	*412*	*0*	*0*	*0*	*Jun. 2004*	*Sep. 2006*
PRELIMINARY PLANNING	*Cotton Bay Resort*	*Naguabo*	*256*	*100*	*156*	*0*	*0*	*n/a*	*n/a*
	J.W. Marriott Dos Mars (1st phase)	*Fajardo*	*350*	*350*	*0*	*0*	*0*	*n/a*	*n/a*
	King's Place Resort Spa & Casino	*Rio Grande*	*110*	*110*	*0*	*0*	*0*	*n/a*	*n/a*
	Mandarin Oriental Palmas del Mar	*Humacao*	*252*	*152*	*100*	*0*	*0*	*n/a*	*n/a*
	San Miguel Partners (Four Seasons)	*Luquillo*	*375*	*250*	*50*	*0*	*75*	*n/a*	*n/a*

Table A.7
Under Construction and Planned Resort Projects in the Fajardo/Ceiba Region

Sources: Puerto Rico Tourism Company; and CBRE Consulting

The Fairmont Resort at Coco Beach is a five-star resort that is anticipated to include a spa and two 18-hole golf courses. The Inter-Continental Cayo Largo Resort is a luxury resort that will include four restaurants, two bar and lounge facilities, meeting space, spa and fitness center, 18-hole championship golf course, and tennis courts. Construction is presently 90 percent complete but due to ongoing legal issues, the anticipated completion date and commencement of operations is unknown. Las Casitas II is the second phase of the Las Casitas development at the Wyndham El Conquistador, which is slated to add 67 luxury villas and two swimming pools to the Las Casitas property. The Paradisus Sol Melia is an all-inclusive resort with hotel, spa, and meeting facilities. This property will be Puerto Rico's first all-inclusive resort.

Lodging Conclusions

The lodging market in Puerto Rico has been relatively stable throughout the past ten years, even after the events of September 11, 2001, due to Puerto Rico's aggressive marketing strategy, which offered travel incentives and significant discounts. The steady growth in the inventory of hotel rooms on the island indicates continuous demand for new product that appeals to both business and leisure travelers. Although there are a significant number of projects under construction or planned in the Fajardo/Ceiba Region, only three are under construction currently, with two of the three having planned openings in 2004. As the Region is known for its access to activities and amenities such as El Yunque, the sister islands of Vieques and Culebra, and water sport activities and golf, it is anticipated to experience increasing demand in the lodging market. Such demand could be captured by a potential lodging development at Roosevelt Roads, which could capitalize on the beauty of the site, its proximity to Vieques, and Culebra, and complementary land uses (such as a marina and a golf course) that could be accommodated on the site.

The Cruise Industry: Puerto Rico

The Caribbean is a popular cruise destination and currently San Juan and Ponce are the only ports in Puerto Rico that host cruise lines. Cruise ship trips to Puerto Rico totaled 625 in 2002, with 1,276,301 cruise ship visitors and $129.1 million in spending. The number of cruise ship trips to Puerto Rico has declined during the past ten years, decreasing at an average annual rate of -3.0 percent per year during the 1993–2002 period, although the total number of cruise ship visitors has increased at a rate of 2.3 percent per year during that same period. Puerto Rico is disadvantaged compared to other Caribbean ports because cruise lines generally make San Juan their first port of call in the Caribbean, en route from homeports in Florida, which results in ships arriving late in the day and spending very few hours on the island before leaving for the next port.

CBRE Consulting interviewed a representative within the planning department at Carnival Cruise Lines to gauge its potential interest in the possible creation of a tourism port at Roosevelt Roads. At this time, Carnival has no interest in the Roosevelt Roads site because the location does not work from an itinerary planning perspective either as a homeport or as a destination within Puerto Rico. Carnival did not expect that its opinion would change in the foreseeable future.

CBRE Consulting also interviewed a representative within the planning department at Norwegian Cruise Line ("NCL") and found out that NCL has made a decision to leave Puerto Rico altogether after April 2004. NCL currently has one ship that uses San Juan as a homeport and that ship has been redeployed to Hawaii starting May 2004. Furthermore, the NCL ships that cruise in the Eastern Caribbean are not scheduled to make port of call stops in San Juan. At this time, NCL does not have any plans to homeport a ship in Puerto Rico or to make any consistent port of call stops in Puerto Rico. As a result, NCL would not consider Roosevelt Roads as a potential port (homeport or port of call) in the near term or foreseeable future.

Cruise Industry Conclusions.

Due to Puerto Rico's location within the Eastern Caribbean, most cruise ships that make port of call stops in San Juan do so for only a partial day, often in the afternoon and evening. As a result, San Juan is an attractive destination because passengers can enjoy city activities during their brief time on the island. Both interviews with planning executives at two major cruise lines resulted in the opinion that there is not sufficient demand for a tourism port at Roosevelt Roads because of the site's disadvantageous location from an itinerary planning perspective.

7. *Incentive Program to Promote & Regulate Nautical Tourism in Puerto Rico*, October 6, 2003 by Dornbusch Associates.

Marinas and Nautical Tourism: Puerto Rico

The marinas in Puerto Rico primarily cater to individual boat owners, as opposed to nautical tourism, which includes charter fleets and mega yachts that are available for rent by tourists with or without crews. There are currently no charter fleets and very few mega yachts based in Puerto Rico. Puerto Rico does offer some competitive advantages for nautical tourism such as access to the sister islands of Vieques and Culebra, the relatively inexpensive cost of fuel, and an infrastructure of services and facilities such as airports, hotels, restaurants and shops that appeal to nautical tourists. However, Puerto Rico's position to attract nautical tourists is disadvantaged by the excise tax levied on boat owners and the lack of development incentives offered to induce investment in boats used for nautical tourism.

Marinas and Nautical Tourism: Fajardo/Ceiba Region.

There are a total of 41 marinas in Puerto Rico, which are distributed throughout the island but are concentrated (approximately 70 percent) in the eastern region (which includes the municipalities of Fajardo, Ceiba, Naguabo, Humacao, Yabucoa, and Maunabo).[8] In the eastern region, there are a total of approximately 3,600 spaces, which are distributed into wet slips (approximately 62 percent) and dry stacks (approximately 38 percent), as show in Table A.8 below. Although specific occupancy data were not available for the marinas, anecdotal information suggests that occupancy is high for smaller slips (90 percent or greater) and low for larger slips (46 feet and up).

Table A.8
Marinas in the Eastern Region of Puerto Rico

Marina Name	Wet Slips	Dry Stacks	Total Spaces
Puerto Chico	*278*	*276*	*554*
Sea Lovers	*110*	*0*	*110*
Villa Marina	*266*	*576*	*842*
Puerto del Rey	*1,000*	*524*	*1,524*
El Conquistador	*22*	*0*	*22*
Isleta Marina	*240*	*0*	*240*
Palmas del Mar	*230*	*0*	*230*
Roosevelt Roads	*72*	*0*	*72*
Total	***2,218***	***1,376***	*3,594*

Sources: Robert F. McCloskey Associates; Puerto del Rey, Inc.; and CBRE Consulting.

8. Robert F. McCloskey Associates

Several marinas in the eastern region have plans for potential wet slip expansion. These potential expansions could increase the inventory in the region by approximately 1,000 wet slips, or 27 percent, as detailed in the following table.

Table A.9
Eastern Region Marinas with Planned Expansions

Sources: Robert F. McCloskey Associates; Puerto del Rey, Inc.; and CBRE Consulting.

Marina Name	Wet Slip Expansion
Puerto Chico	*150*
Sea Lovers	*100*
Palmas del Mar	*180*
Sun Bay	*282*
Fajardo Bay (Puerto Real)	*250*
Total	*962*

Roosevelt Roads has an existing marina that includes 72 boat slips and 25 moorings. Each boat slip is approximately 12 feet in width and most are approximately 31 feet long, with a few in the range of 17 to 25 feet. The facility is generally in good condition as it is relatively new.

Marinas and Nautical Tourism Conclusions.

There appears to be good potential for a marina at Roosevelt Roads given its location within the Fajardo/Ceiba Region, where many of Puerto Rico's marinas are concentrated, as well as its proximity to Vieques and Culebra due to the attractions on those islands, such as beaches, snorkel/dive sites, restaurants, shops, and the bioluminescent bay in Vieques. However, the inventory in the eastern region could be increasing significantly in the coming years if possible expansion plans at various marinas are executed, which could temper demand at Roosevelt Roads.

Ecotourism

"Ecotourism" and "soft adventure" are the fastest growing tourism sectors in the United States. Roosevelt Roads potentially could be an ideal site for ecotourism due to its location and setting. CB Richard Ellis Consulting gathered the following information on ecotourism for various projects in recent years.

According to Eco-Tourism International, "Tourism is changing rapidly as nature, heritage, and recreational destinations become more important, and as conventional tourism is forced to meet tougher environmental requirements." Ecotourism is defined by The Ecotourism Society as "responsible travel to natural areas, which conserves the environment and sustains the well-being of local people."

The Ecotourism Market: In the late 1990s, a survey of 3,342 households by Bruskin Goldring for Visit Florida, designed to produce a representative sample of the 47 mainland states outside Florida, found that regardless of the destination of their vacation, respondents had an even chance (48.1 percent) of participating in nature-based activities during their trip. Furthermore, 30 percent of respondents planned trips that focused some or a majority of time on nature-based activities.

Green Travel Products*:* The Travel Industry Association of America estimated in the late 1990s that 83 percent of U.S. travelers are inclined to support "green" travel companies and are willing to spend an average of 6.2 percent more for travel services and products provided by environmentally responsible travel suppliers. For example, an additional $2 million in new business and a higher occupancy rate was achieved at the Boston Plaza Hotel in Boston after the hotel implemented environmentally conscious initiatives, energy efficient lighting, water efficient showerheads, comprehensive recycling, and thermopane windows and a filtration system that allow the hotel to recycle two-thirds of its water and retain most of its heat.

Recreation Activity: A survey of 2,009 Americans conducted by the Recreation Roundtable in recent years reported that nearly six in ten respondents participate in outdoor recreation at least monthly. Their motivations are fun, relaxation, stress relief, experiencing nature, and exercise. Midwesterners are the most active, with 66 percent taking part in outdoor recreation. Northeasterners are the second most active at 59 percent, followed by Westerners at 56 percent, and Southerners at 51 percent.

Wildlife-Watching: The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation in the late 1990s found 62.9 million U.S. residents (31 percent of the U.S. population 16 years and older) enjoyed a variety of wildlife-watching activities. A total of 60.8 million people enjoyed wildlife around their homes while 23.7 million took trips away from their homes for the primary purpose of participation in wildlife-watching recreation. Wildlife-watching participants spent $9.4 billion on trips to pursue their activities.

Adventure Travel: According to the Adventure Travel Society, adventure travel is a $200 billion business in the United States. In the U.S. there are 10,000 adventure travel companies and 147 million people have experienced some form of adventure travel.

Ecotourism Conclusions: Roosevelt Roads has several attributes that support the potential for ecotourism on the site, including existing mangroves that may be explored by hiking and/or kayaking excursions, canoeing and other forms of boating that may be launched from the existing marina on the site, and ecotourism-oriented visits that could be organized to the islands off the northeast coast of Puerto Rico, such as Vieques and Culebra. Several countries are leveraging the ecotourism trend by developing programs that showcase natural and cultural resources in an environmentally and socially responsible approach, while providing an exciting and compelling experience for tourists. Given its location, coastal setting, and environmentally sensitive areas, Roosevelt Roads could be well positioned to cater to this growing tourism sector.

Residential Market

CBRE Consulting analyzed current and historic comparative housing data including total housing units, annual addition of new units, and recent sales data to gain an understanding of the residential market in Puerto Rico and assess the demand for housing at Roosevelt Roads. The data are displayed in Exhibits 4, 8 and 9.

Estimated Inventory

Estimated Total Housing Units: According to the 2000 Census, there were 1.4 million total housing units in Puerto Rico, up from 1.2 million units in 1990, representing an average annual growth rate of 1.8 percent (see Exhibit 4). The majority of housing units in Puerto Rico, 73 percent, was owner-occupied. Owner-occupied housing values grew 8 percent per year between 1990 and 2000, reaching $75,000 in 2000.

The Fajardo/Ceiba Region had 108,000 total housing units in 2000, according to the Census. The percentage of owner-occupied housing was higher than the island average, at 78 percent. The Region's vacancy rate of 16 percent was higher than the island average of 11 percent. Humacao had the greatest number of housing units and accounted for 21 percent of the total inventory in the Region, while Ceiba had the fewest units, and accounted for 6 percent of the inventory.

Estimated New Housing Units Authorized by Building Permits Per Year: Exhibit 8 shows the total number of residential building permits issued in Puerto Rico and the Fajardo/Ceiba Region between 1998 and 2003. During that period, 105,000 total permits were issued in Puerto Rico, reflecting an average of 17,500 units per year. The

total value of housing permits increased by over 12 percent per year. On average, there were 2,145 permits issued per year in the Fajardo/Ceiba Region between 1998 and 2003. A sharp increase in permits occurred in 2001 and 2002, with each year seeing more than 3,000 permits issued. Roughly half of the units authorized during the six-year period were in Rio Grande and Humacao, while Loiza experienced fewer than 100 authorized units per year. A total of 420 building permits were issued in Fajardo and Ceiba in 1998, which decreased to 263 and 260 in 1999 and 2000, respectively. Activity then rebounded with 549 permits issued in 2001, 501 in 2002, and 413 in 2003.

Exhibit 9 examines demand for additional housing units based on future population growth, as projected by the Puerto Rico Planning Board. The greatest demand for new housing was expected in 2000 through 2005, with 42,000 new units needed to keep up with population growth. Population growth is projected to taper off in the second half of the next decade, slowing demand for new housing. By 2025, the Fajardo/Ceiba Region is projected to require about 13,000 additional housing units to accommodate 38,000 new residents.

New Projects in the Fajardo/Ceiba Region

There are several residential developments currently selling in Fajardo, primarily targeting San Juan professionals seeking second homes. As shown in Table A.10 below, strong monthly absorption rates and steadily increasing prices typify the market. Product types include single-family homes, such as those at Puertas del Sol and La Costa Garden Homes, and attached condominiums/ townhomes at Castillos del Mar, Costa Brava, and La Costa Walkups.

Table A.10
Projects Currently Selling in Fajardo/ Ceiba, February 2004

Sources: Developers' Sales Staff; and CBRE Consulting.

Project/ Location	Total Units	Bedrooms/ Bathrooms	Unit Size (Square Foot)	Recent Price Range	Price Per Square Foot	Overall Monthly Absorption
La Costa Garden Homes	*109*	*3 bd / 2.5 ba*	*1,930*	*$175,000–$195,000*	*$91–$101*	*4.2* [1]
La Costa Walk-ups	*144*	*3 bd / 2 ba*	*1,312*	*$170,000–$211,000*	*$130–$161*	*n/a*
Puertas del Sol	*96*	*3 bd / 2 or 2.5 ba*	*2,030–2,338*	*$225,000–$265,000*	*$111–$113*	*3.4*
Costa Brava (phase I)	*112*	*3 bd / 2 ba*	*1,077*	*$156,000–$161,000*	*$145–$150*	*4.0* [2]
Costa Brava (phase 2)	*90*	*3 bd / 2 ba*	*1,183*	*$137,000–$180,000*	*$116–$152*	*90* [3]
Castillos del Mar	*230*	*3 bd / 2 ba*	*1,376–1,423*	*$195,000–$245,000*	*$142–$172*	*12.5*

1. In one year of release, 50 units were reserved with options. Construction will begin in April or May 2004.
2. Includes 48 completed sales and 61 options.
3. Released and sold all 90 units in three weeks.
Sources: Developers' sales staff; and CBRE Consulting.

Interviews with sales staff at several of the residential developments revealed the following:

- Sales staff at Castillos del Mar reported swift absorption of units, as 200 total units were sold between November 2002 and February 2004. Representing the most expensive condominiums in the market area, Castillos del Mar's units have ocean views and amenities including a security gate and two parking spaces per unit.

- Sales at Costa Brava's first phase were strong, with four units closing per month. The second phase experienced overwhelming speed in absorption, as the 90-unit phase sold out in three weeks, even though price points were higher than the first phase.

- The single-family home market experienced solid absorption at both projects surveyed, La Costa Garden Homes and Puertas del Sol. Puertas del Sol has averaged 3.4 unit sales per month during its two years on the market, and only 14 units remain unsold.

Case Study: Palmas Del Mar

The experience at Palmas Del Mar could serve as a case study for future potential residential development at Roosevelt Roads. Beginning construction in 1969, the master planned community was envisioned to include 9,000 total dwelling units on 2,700 acres. To date, approximately 3,500 units have been built. Absorption has averaged 140 to 150 new units and 20 to 30 resales per year in recent years. The owner-residents at Palmas Del Mar tend to be locals, with only 20 percent of buyers coming from the mainland, and about half consider Palmas Del Mar to be their primary residence.

Conclusions

Current residential market conditions in the Fajardo/Ceiba Region are depressed, with declining prices and increased vacancy, which are due primarily to the closure of Roosevelt Roads and the departure of associated military and civilian jobs. In the near term, Roosevelt Roads is not proximate to job centers, which will temper demand for housing. Since the Region will require 13,000 new housing units by 2025 to keep up with population growth, future demand for housing located at Roosevelt Roads could be strong, either for re-use of current housing or construction of new units, especially as jobs are attracted to Roosevelt Roads over time. The site attributes of Roosevelt Roads, including spectacular views and existing infrastructure including schools, hospital, etc., as well as the future improvements in access to San Juan via new highway construction, could make the site an attractive location for both the primary and second-home markets. However, it is anticipated that annual absorption of housing units at Roosevelt Roads would not surpass approximately 200 to 250 units per year based upon the future population growth in the area and the absorption experience at existing new developments in the market area.

The contents of this report are subject to the appended Assumptions and General Limiting Conditions.

ASSUMPTIONS AND GENERAL LIMITING CONDITIONS

CB Richard Ellis Consulting has made extensive efforts to confirm the accuracy and timeliness of the information contained in this study. Such information was compiled from a variety of sources, including interviews with government officials, review of City and County documents, and other third parties deemed to be reliable. Although CB Richard Ellis Consulting believes all information in this study is correct, it does not warrant the accuracy of such information and assumes no responsibility for inaccuracies in the information by third parties. We have no responsibility to update this report for events and circumstances occurring after the date of this report. Further, no guarantee is made as to the possible effect on development of present or future federal, state or local legislation, including any regarding environmental or ecological matters.

The accompanying projections and analyses are based on estimates and assumptions developed in connection with the study. In turn, these assumptions, and their relation to the projections, were developed using currently available economic data and other relevant information. It is the nature of forecasting, however, that some assumptions may not materialize, and unanticipated events and circumstances may occur. Therefore, actual results achieved during the projection period will likely vary from the projections, and some of the variations may be material to the conclusions of the analysis.

Contractual obligations do not include access to or ownership transfer of any electronic data processing files, programs or models completed directly for or as by-products of this research effort, unless explicitly so agreed as part of the contract.

This report may not be used for any purpose other than that for which it is prepared. Neither all nor any part of the contents of this study shall be disseminated to the public through publication advertising media, public relations, news media, sales media, or any other public means of communication without prior written consent and approval of CB Richard Ellis Consulting.

EXHIBIT 1
COMPARISON OF ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS
PUERTO RICO
1990 - 2000

Description	1990		2000		Change	Average Annual Growth 1990 - 2000
Population	3,522,037		3,808,610		286,573	0.8%
Households	1,054,924		1,261,325		206,401	
Average Household Size	3.31		2.98			-1.0%
Average Family Size	3.69		3.41			-0.8%
Total Housing Units	1,188,985		1,418,476		229,491	1.8%
Income						
Median Household Income	$8,895		$14,412		$5,517	4.9%
Per Capita Income	$4,177		$8,185		$4,008	7.0%
Median Owner-Occupied Housing Value	$36,200		$75,000		$38,800	7.6%
Population by Gender						
Male	1,705,642	48.4%	1,833,577	48.1%		
Female	1,816,395	51.6%	1,975,033	51.9%		
	3,522,037	100.0%	3,808,610	100%		
Population by Age						
Under 19	1,284,936	36.5%	1,219,804	32.0%		
20 - 34	812,076	23.1%	835,523	21.9%		
35 - 54	818,337	23.2%	978,699	25.7%		
55 - 64	265,804	7.5%	349,447	9.2%		
Age 65 and older	340,884	9.7%	425,137	11.2%		
	3,522,037	100.0%	3,808,610	100.0%		
Median Age	28.4		32.1			
Pop. Age 25+ by Educational Attainment						
Less than 9th grade	691,835	35.4%	581,225	25.4%		
Some High School, no diploma	290,173	14.9%	335,179	14.6%		
High School Graduate (or GED)	410,559	21.0%	509,856	22.3%		
Some College, no degree	171,553	8.8%	280,089	12.2%		
Associate Degree	109,695	5.6%	163,724	7.2%		
Bachelor Degree	208,940	10.7%	310,443	13.6%		
Graduate or Professional Degree	69,542	3.6%	107,810	4.7%		
	1,952,297	100.0%	2,288,326	100.0%		
Employed Pop. Age 16+ by Occupation[1]						
Management, Professional, and Related	N/A	N/A	255,417	27.4%		
Service	N/A	N/A	150,657	16.2%		
Sales and Office	N/A	N/A	260,317	28.0%		
Farming, Forestry and Fishing	N/A	N/A	10,371	1.1%		
Construction, Extraction, and Maintenance	N/A	N/A	112,776	12.1%		
Production, Transportation and Material Moving	N/A	N/A	141,327	15.2%		
			930,865	100.0%		
Employment by Industry[2]						
Agriculture, Forestry, Fishing and Hunting, and Mining	N/A	N/A	15,899	1.7%		
Construction	N/A	N/A	80,288	8.6%		
Manufacturing	N/A	N/A	125,450	13.5%		
Wholesale trade	N/A	N/A	40,518	4.4%		
Retail trade	N/A	N/A	109,339	11.7%		
Transportation and warehousing, and utilities	N/A	N/A	39,509	4.2%		
Information	N/A	N/A	20,877	2.2%		
Finance, Insurance, Real Estate, and Rental and Leasing	N/A	N/A	46,353	5.0%		
Professional, Scientific, Management, Admin, and Waste Mgmt	N/A	N/A	62,994	6.8%		
Educational, Health and Social Services	N/A	N/A	179,374	19.3%		
Arts, Entertainment, Recreation, Accommodation and Food Svcs	N/A	N/A	60,873	6.5%		
Other Services (except Public Administration)	N/A	N/A	50,123	5.4%		
Public Administration	N/A	N/A	99,268	10.7%		
			930,865	100.0%		
Employed Pop. Age 16+ by Class of Worker						
Private Wage or Salary Workers	591,208	63.2%	631,932	67.9%		
Government Workers	284,648	30.5%	226,717	24.4%		
Self-Employed Workers	56,785	6.1%	69,181	7.4%		
Unpaid Family Workers	2,095	0.2%	3,035	0.3%		
	934,736	100.0%	930,865	100.0%		

Notes:
(1) Due to a change in Census occupation categories, 1990 data are not applicable
(2) Due to a change in Census industry groupings, 1990 data are not applicable

Sources: US Census Bureau; and CBRE Consulting

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EXHIBIT 2
GENERAL ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS
PUERTO RICO AND FAJARDO/CEIBA REGION
2000

	PUERTO RICO		FAJARDO/ CEIBA REGION[1]		CEIBA	FAJARDO	HUMACAO	LAS PIEDRAS	LOIZA	LUQUILLO	NAGUABO	RIO GRANDE
Population	3,808,610		280,705		18,004	40,712	59,035	34,485	32,537	19,817	23,753	52,362
Hispanic	3,762,746		273,656		14,636	39,585	58,288	34,246	32,343	19,327	23,510	51,721
Puerto Rican	3,623,392		266,480		13,770	38,197	57,047	33,679	31,524	18,768	23,105	50,390
Total Households	1,261,325		90,836		5,750	14,176	19,293	11,145	9,597	6,573	7,872	16,430
Average Household Size	2.98		3.05		2.92	2.86	3.03	3.08	3.38	3.00	2.97	3.14
Total Housing Units	1,418,476		107,915		6,742	17,136	22,559	12,421	10,927	9,327	8,875	19,928
Occupied Housing Units	1,261,325		90,836		5,750	14,176	19,293	11,145	9,597	6,573	7,872	16,430
Owner Occupied	919,769	72.9%	70,578	77.7%	3,675	10,826	14,661	8,713	8,086	5,134	5,956	13,527
Renter Occupied	341,556	27.1%	20,258	22.3%	2,075	3,350	4,632	2,432	1,511	1,439	1,916	2,903
Vacancy Rate	11.1%		15.8%		14.7%	17.3%	14.5%	10.3%	12.2%	29.5%	11.3%	17.6%
Homeowner Vacancy Rate	1.7%		N/A		2.3%	2.0%	1.7%	2.8%	2.1%	1.9%	2.4%	1.1%
Rental Vacancy Rate	7.4%		N/A		4.7%	9.0%	8.5%	9.2%	5.0%	14.2%	6.0%	8.7%
Median Household Income	14,412		14,163		16,440	15,410	14,345	14,622	11,200	13,631	11,461	15,006
Population 16 years and over	2,842,876		206,321		13,266	30,095	44,213	25,634	22,406	14,676	17,646	38,385
Percent in labor force	40.7%		39.9%		47.8%	41.9%	39.3%	40.5%	36.5%	41.4%	35.7%	39.5%
Percent out of labor force	59.3%		60.1%		52.2%	58.1%	60.7%	59.5%	63.5%	58.6%	64.3%	60.5%
Percentage of families below poverty line	44.6%		N/A		37.0%	38.1%	43.7%	44.9%	56.9%	46.3%	69.0%	63.4%
Employed Population 16 years and over	930,865		64,158		4,151	10,131	14,115	8,019	5,972	4,670	5,059	12,041
Employment by Industry												
Educational, health, and social services	179,374	19.3%	11,731	18.3%	757	1,629	2,826	1,347	1,336	934	806	2,096
Manufacturing	125,450	13.5%	9,818	15.3%	317	1,305	2,947	2,193	313	663	721	1,359
Retail Trade	109,339	11.7%	7,207	11.2%	576	1,277	1,514	634	684	455	661	1,406
Public administration	99,268	10.7%	7,742	12.1%	692	1,227	1,365	927	914	534	603	1,480
Construction	80,288	8.6%	6,878	10.7%	367	896	1,501	921	648	469	891	1,185
Professional, scientific, management, administrative, waste management	62,994	6.8%	3,525	5.5%	202	494	869	373	335	223	257	772
Arts, entertainment, recreation, accommodation and food service	60,873	6.5%	5,631	8.8%	579	1,372	878	354	489	606	344	1,009
Other services (except public administration)	50,123	5.4%	3,240	5.1%	232	474	726	421	375	190	208	614
FIRE	46,353	5.0%	2,308	3.6%	128	302	426	281	204	155	196	616
Wholesale Trade	40,518	4.4%	1,882	2.9%	129	186	396	175	180	145	128	543
Transportation and Warehousing, and utilities	39,509	4.2%	2,505	3.9%	93	640	373	140	305	156	130	668
Information	20,877	2.2%	1,074	1.7%	57	261	176	83	147	110	41	199
Agriculture, forestry, fishing and hunting, and mining	15,899	1.7%	617	1.0%	22	68	118	170	42	30	73	94
	930,865	100.0%	64,158	100.0%	4,151	10,131	14,115	8,019	5,972	4,670	5,059	12,041
Employment by Occupation												
Sales and office	260,317	28.0%	16,637	25.9%	1,276	2,602	3,534	1,614	1,726	1,149	1,397	3,339
Management, professional and related	255,417	27.4%	14,583	22.7%	867	2,298	3,389	1,922	1,166	1,179	1,028	2,734
Service	150,657	16.2%	12,180	19.0%	900	2,249	2,278	1,118	1,409	980	837	2,409
Production, transportation, and material moving	141,327	15.2%	10,989	17.1%	502	1,623	2,694	1,963	660	741	755	2,051
Construction, extraction, and maintenance	112,776	12.1%	9,392	14.6%	589	1,315	2,125	1,303	991	611	996	1,462
Farming, fishing, and forestry	10,371	1.1%	377	0.6%	17	44	95	99	20	10	46	46
	930,865	100.0%	64,158	100.0%	4,151	10,131	14,115	8,019	5,972	4,670	5,059	12,041

Notes:
(1) Includes the municipalities of Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.

Sources: U.S. Census Bureau, Census 2000; and CBRE Consulting.
R:\03047_00\documents\Reports\April 15 Deliverable\[1203030 Exhibits.xls]Exhibit 6 - Hotel Rooms 16-Apr-04

Continued…

EXHIBIT 2 (continued)
GENERAL ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS
SAN JUAN METROPOLITAN AREA
2000

	SAN JUAN METRO AREA[1]		SAN JUAN	BAYAMON	CAROLINA	GUAYNABO	CATANO	TRUJILLO ALTO
Population	1,050,346		434,374	224,044	186,076	100,053	30,071	75,728
Hispanic	1,032,114		425,652	221,144	183,125	97,639	29,653	74,901
Puerto Rican	943,147		371,587	210,883	169,892	90,349	28,543	71,893
Total Households	368,567		163,462	73,693	63,546	34,068	9,638	24,160
Average Household Size	2.79		2.59	2.97	2.91	2.85	3.11	3.08
Total Housing Units	406,357		182,101	79,476	71,347	36,826	10,366	26,241
Occupied Housing Units	368,567		163,462	73,693	63,546	34,068	9,638	24,160
Owner-Occupied	242,558	55.6%	90,955	54,014	46,382	26,241	6,254	18,712
Renter-Occupied	126,009	44.4%	72,507	19,679	17,164	7,827	3,384	5,448
Vacancy Rate	9.3%		10.2%	7.3%	10.9%	7.5%	7.0%	7.9%
Homeowner Vacancy Rate	N/A		2.1%	1.7%	1.5%	1.7%	0.7%	1.3%
Rental Vacancy Rate	N/A		6.8%	7.0%	9.7%	7.5%	5.9%	9.3%
Median Household Income	19,535		17,367	19,861	21,236	26,211	12,852	21,980
Population 16 years and over	597,491		129,630	170,958	142,247	76,876	21,581	56,199
Percent in labor force	42.7%		35.8%	42.1%	46.0%	47.8%	37.9%	46.9%
Percent out of labor force	57.3%		64.3%	57.9%	54.0%	52.2%	62.1%	53.1%
Percentage of families below poverty line	N/A		37.0%	31.8%	30.7%	28.3%	46.7%	31.5%
Employed Population 16 years and over	311,469							
Employment by Industry								
Educational, health, and social services	58,627	18.8%	24,564	12,211	9,961	6,205	906	4,780
Retail Trade	35,401	11.4%	12,925	8,508	6,922	3,728	795	2,523
Public administration	31,392	10.1%	12,035	6,484	6,257	3,205	897	2,514
Professional, scientific, management, administrative, waste management	31,133	10.0%	14,812	4,550	4,746	4,231	581	2,213
FIRE	23,862	7.7%	10,520	3,879	4,403	2,807	343	1,910
Arts, entertainment, recreation, accommodation and food service	23,396	7.5%	11,126	4,111	4,824	1,508	434	1,393
Construction	21,667	7.0%	9,949	3,864	3,163	2,483	490	1,718
Other services (except public administration)	20,180	6.5%	9,845	3,254	3,599	1,833	284	1,365
Manufacturing	19,491	6.3%	6,500	5,006	3,875	1,963	559	1,588
Wholesale Trade	18,625	6.0%	7,141	4,328	2,981	2,362	476	1,337
Transportation and Warehousing, and utilities	15,744	5.1%	5,235	3,321	4,402	1,291	310	1,185
Information	10,828	3.5%	4,580	2,380	1,666	1,250	292	660
Agriculture, forestry, fishing and hunting, and mining	1,123	0.4%	398	220	209	117	65	114
	311,469	100.0%	129,630	62,116	57,008	32,983	6,432	23,300
Employment by Occupation								
Management, professional and related	104,378	33.5%	46,215	18,570	15,899	14,089	1,758	7,847
Sales and office	100,829	32.4%	39,385	21,810	20,056	10,069	2,011	7,498
Service	47,986	15.4%	22,145	8,811	9,411	3,492	1,060	3,067
Construction, extraction, and maintenance	29,484	9.5%	12,223	5,942	5,344	2,686	744	2,545
Production, transportation, and material moving	28,262	9.1%	9,506	6,896	6,166	2,615	794	2,285
Farming, fishing, and forestry	530	0.2%	156	87	132	32	65	58
	311,469	100.0%	129,630	62,116	57,008	32,983	6,432	23,300

Notes:
(1) Includes the municipalities of San Juan, Bayamon, Carolina, Guaynabo, Catano, and Trujillo Alto.

Sources: U.S. Census Bureau, Census 2000; and CBRE Consulting.

R:\03047_00\documents\Reports\April 15 Deliverable\[1203030 Exhibits.xls]Exhibit 6 - Hotel Rooms 16-Apr-04

EXHIBIT 3
POPULATION
PUERTO RICO, SAN JUAN AND FAJARDO/CEIBA REGIONS
1990 - 2000

Municipality	1990	2000	Average Annual Growth 1990-2000
Puerto Rico	3,522,037	3,808,610	0.8%
Fajardo/Ceiba Region			
Ceiba	17,145	18,004	0.5%
Fajardo	36,882	40,712	1.0%
Humacao	55,203	59,035	0.7%
Las Piedras	27,896	34,485	2.1%
Loiza	29,307	32,537	1.1%
Luquillo	18,100	19,187	0.6%
Naguabo	22,620	23,753	0.5%
Rio Grande	45,648	52,362	1.4%
Regional Total/Average	**252,801**	**280,075**	**1.0%**
San Juan Region			
San Juan	437,745	434,374	-0.1%
Bayamon	220,262	224,044	0.2%
Carolina	177,806	186,076	0.5%
Guaynabo	92,886	100,053	0.7%
Catano	34,587	30,071	-1.4%
Trujillo Alto	61,120	75,728	2.2%
Regional Total/Average	**1,024,406**	**1,050,346**	**0.3%**

Sources: United States Census Bureau; and CBRE Consulting.

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EXHIBIT 4
GROWTH IN POPULATION AND HOUSING UNITS
PUERTO RICO
1990 - 2000

Region	Population		Housing Units		Population Growth 1990 - 2000		Housing Units Growth 1990 - 2000	
	1990	2000	1990	2000	Number	Avg. Annual	Number	Avg. Annual
Puerto Rico								
Total Number	3,522,037	3,808,610	1,188,985	1,418,476	286,573	0.8%	229,491	1.8%
Fajardo/Ceiba Region[1]								
Total Number	252,801	280,075	85,142	107,915	27,274	1.0%	22,773	2.4%
Percent of Puerto Rico	7.2%	7.4%	7.2%	7.6%	9.5%	N/A	9.9%	N/A
San Juan Region[2]								
Total Number	1,026,635	1,063,610	362,952	411,062	36,975	0.4%	48,110	1.3%
Percent of Puerto Rico	29.1%	27.9%	30.5%	29.0%	12.9%	N/A	21.0%	N/A

Notes:
(1) Includes the following municipalities: Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.
2) Includes the following municipalities: San Juan, Bayamon, Carolina, Guaynabo, Catano, and Trujillo Alto.

Sources: United States Census Bureau, Puerto Rico Planning Board; and CBRE Consulting.

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EXHIBIT 5
TOTAL VISITORS AND VISITOR EXPENDITURES
PUERTO RICO
1993 - 2002[1]

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Visitors	3,868,958	4,022,595	4,086,579	4,110,160	4,349,687	4,670,779	4,221,326	4,565,954	4,907,753	4,364,061
Total Expenditures	########	########	########	########	########	########	########	########	########	$2,486,427

Notes:
(1) As of June 30 each year.

Sources: Puerto Rico Tourism Company; and CBRE Consulting.

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EXHIBIT 6
HOTEL ROOM INVENTORY[1]
PUERTO RICO
1993 - 2002 [2]

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Metropolitan Area										
Tourist Hotels	4,697	4,680	5,205	5,102	5,008	5,869	4,713	5,375	5,436	5,414
Commercial Hotels	282	282	282	312	326	326	326	326	330	330
Guest Houses	254	262	272	257	238	238	243	243	218	256
Condo Hotels	319	319	319	273	273	273	325	325	325	325
Apartment Villas							7	7	7	7
Total	5,552	5,543	6,078	5,944	5,845	6,706	5,614	6,276	6,316	6,332
Non-Metropolitan Area										
Tourist Hotels	2,065	2,973	3,139	3,144	3,738	3,842	3,798	3,898	4,040	4,222
Commercial Hotels	197	197	197	217	217	217	173	188	167	191
Guest Houses	86	95	104	114	140	129	152	164	232	249
Condo Hotels						15	194	224	240	352
Apartment Villas	25	27	27	27	69	33	33	41	135	101
Time Sharing							180	180	260	260
Paradores	656	684	706	816	860	906	958	957	963	1,061
Total	3,029	3,976	4,173	4,318	5,024	5,142	5,488	5,652	6,037	6,436
Grand Total	8,581	9,519	10,251	10,262	10,869	11,848	11,102	11,928	12,353	12,768
Increase(Decrease) In Total Inventory from Previous Year		938	732	11	607	979	(746)	826	425	415

Notes:
(1) As of June 30 each year.
(2) Includes establishments endorsed by the Puerto Rico Tourism Company only.

Sources: Puerto Rico Tourism Company; and CBRE Consulting.

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EXHIBIT 7
SUMMARY OF HOTEL OCCUPANCY RATES (AVERAGE ANNUAL)
PUERTO RICO
1993 - 2003[1]

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Hotels & Paradores	**68.5%**	**68.7%**	**68.0%**	**69.0%**	**69.8%**	**67.3%**	**71.9%**	**70.7%**	**66.7%**	**63.2%**
Metropolitan Area Hotels	72.6%	74.0%	72.8%	74.9%	76.7%	74.1%	80.0%	79.4%	74.2%	70.3%
Non Metropolitan Area Hotels	62.8%	63.1%	64.2%	63.0%	64.7%	62.8%	64.9%	64.4%	60.4%	57.5%
Paradores	54.5%	52.9%	51.9%	52.6%	49.7%	45.9%	52.3%	49.1%	49.5%	46.2%

Notes:
(1) Fiscal year data.

Sources: Puerto Rico Tourism Company; and CBRE Consulting.

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EXHIBIT 8
PERMITS FOR PUBLIC AND PRIVATE HOUSING UNITS
1998 - 2003

City or Area	1998	1999	2000	2001	2002	2003	Average Annual
Ceiba							
Permits	57	142	194	295	137	174	167
Value (in thousands)	$2,132	$2,985	$16,989	$12,664	$4,745	$8,520	$6,588
Fajardo							
Permits	363	121	66	254	364	239	235
Value (in thousands)	$11,605	$5,102	$2,700	$10,427	$13,271	$23,763	$7,186
Humacao							
Permits	601	198	354	273	1,153	394	496
Value (in thousands)	$13,205	$13,530	$40,837	$19,305	$67,738	$34,549	$25,771
Las Piedras							
Permits	122	132	460	476	303	261	292
Value (in thousands)	$4,934	$4,573	$16,269	$23,629	$21,102	$10,998	$11,753
Loiza							
Permits	43	90	5	29	282	49	83
Value (in thousands)	$885	$3,284	$176	$1,101	$7,927	$4,695	$2,231
Luquillo							
Permits	31	186	251	171	215	104	160
Value (in thousands)	$1,281	$6,336	$9,124	$8,537	$8,478	$7,017	$5,628
Naguabo							
Permits	46	133	135	110	162	292	146
Value (in thousands)	$1,884	$5,064	$4,383	$4,765	$5,988	$9,008	$3,683
Rio Grande							
Permits	439	212	363	1,432	534	422	567
Value (in thousands)	$16,465	$6,513	$34,133	$27,055	$28,007	$22,820	$18,697
Total Fajardo/Ceiba Region							
Permits	1,702	1,214	1,828	3,040	3,150	1,935	2,145
Value (in thousands)	$52,391	$47,387	$124,611	$107,483	$157,256	$121,370	$81,523
Total Puerto Rico							
Permits	15,024	14,370	17,548	20,840	18,724	18,916	17,570
Value (in thousands)	$571,028	$580,672	$876,288	$968,211	$997,530	########	$665,623

Sources: Puerto Rico Planning Board; and CBRE Consulting.

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EXHIBIT 9
HOUSING DEMAND GROWTH
SELECT PUERTO RICO MUNICIPALITIES
2000 - 2025

Region	2000 - 2005 [1]	2005 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	Total 2000 - 2025
Puerto Rico						
New Residents	123,865	92,283	80,376	61,714	42,145	400,383
Average Annual Growth	0.6%	0.5%	0.4%	0.3%	0.2%	0.4%
New Housing Units[2]	41,565	30,967	26,972	20,709	14,143	134,357
Fajardo/Ceiba Region[3]						
New Residents	11,534	9,208	7,427	5,922	4,017	38,108
Average Annual Growth	0.8%	0.6%	0.5%	0.4%	0.3%	0.5%
New Housing Units[2]	3,870	3,090	2,492	1,987	1,348	12,788
San Juan Region[4]						
New Residents	18,189	7,540	11,368	6,758	6,004	49,859
Average Annual Growth	0.3%	0.1%	0.2%	0.1%	0.1%	0.2%
New Housing Units[2]	6,104	2,530	3,815	2,268	2,015	16,731

Notes:
1) These figures are based on the estimated population as of July 1, 2000, as provided by the Puerto Rico Planning Board.
2) Based on the island-wide average of 2.98 persons per household.
3) Includes the following municipalities: Ceiba, Fajardo, Humacao, Las Piedras, Loiza, Luquillo, Naguabo, and Rio Grande.
4) Includes the following municipalities: San Juan, Bayamon, Carolina, Guaynabo, Catano, and Trujillo Alto.

Sources: United States Census Bureau, Puerto Rico Planning Board; and CBRE Consulting.

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Appendix A.b:
Environmental, Transportation, & Infrastructure Assessment

Appendix A.b: Environmental, Transportation, & Infrastructure Assessment

Appendix A.b:
I. Environmental

Naval Station Roosevelt Roads, on mainland Puerto Rico, is approximately 8,600 acres in area. This area consists of military installations, residential regions, an airfield, wetlands and floodplains. Approximately 4,250 acres, or 53% of the total area, consists of mangroves, seagrass beds, natural animal habitats and other environmentally sensitive areas as shown on Figure 1. Mangrove forests provide protected nurseries for fishes, crustacean and shellfish and provide food for a multitude of marine species. Their branches provide nesting areas for birds. The seagrass beds and coral reefs provide a habitat for the West Indian Manatee, which is an endangered species. The site also has approximately 150 storage tanks, both above and below ground, which store various types of oil. Due to these factors, environmental considerations need to be well thought-out in developing a reuse plan. A detailed assessment of the environmental considerations is outside the scope of this report. Outlined below is a summary of known information on environmental conditions based on previously performed assessments and reports.

Permits & Documented Information

Wastewater

The base has three wastewater treatment plants on site, the 0.65 MGD Bundy Sewage Treatment Plant, the 1.1 MGD Capehart Treatment Plant and the 1.0 MGD Forrestal Sewage Treatment Plant.

A National Pollution Discharge Elimination System (NPDES) permit is required to operate the wastewater treatment plants. Currently one permit covers all wastewater systems throughout the site. Separate permits would be required if the base were divided, i.e. owned/operated by more than one entity. The permit process could take several years. Turning the treatment plants over to the Puerto Rico Aqueduct and Sewer Authority (PRASA) may alleviate the need for separate permits.

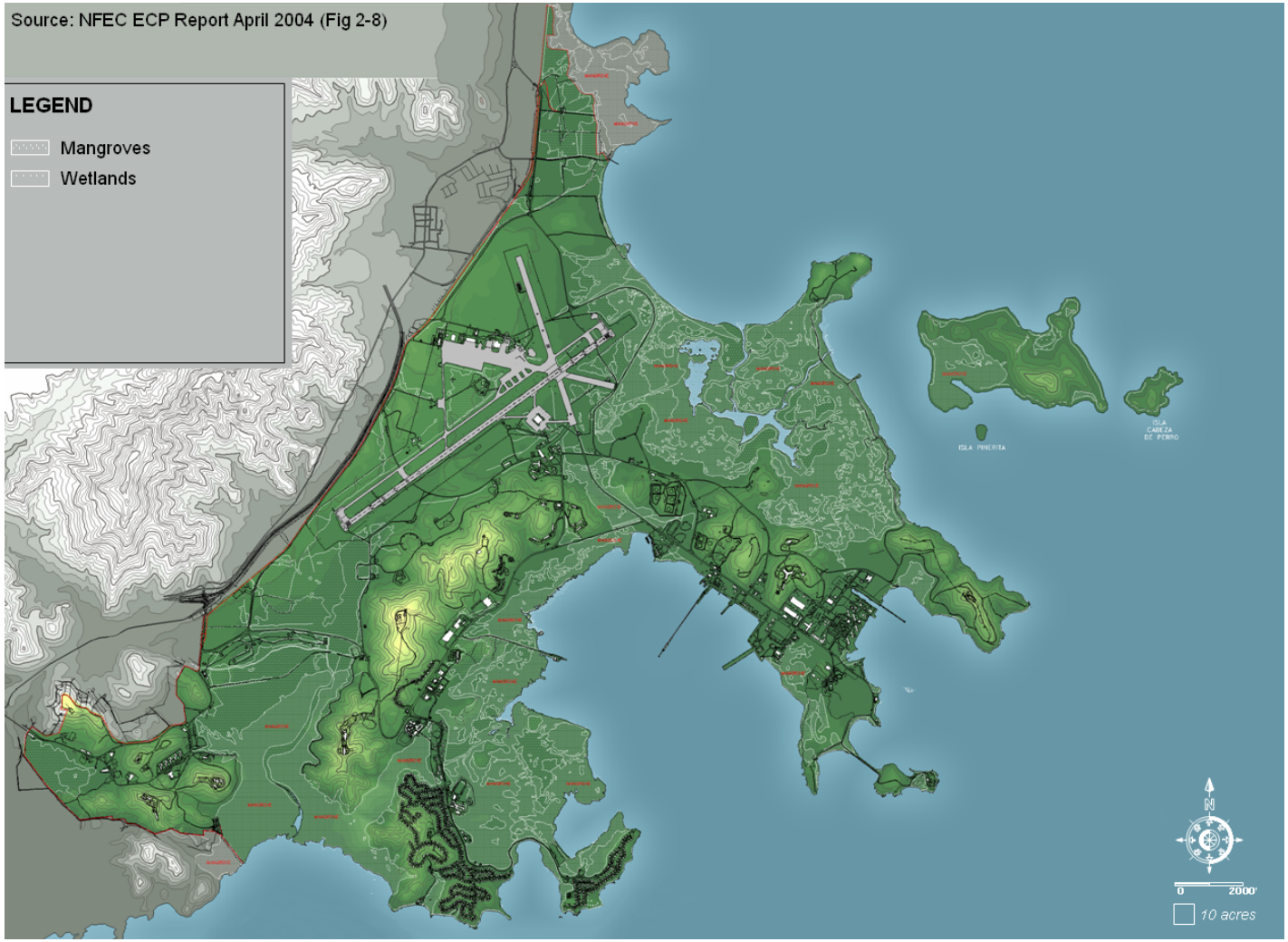

Figure B.1
Environmentally Sensitive Areas on Roosevelt Roads

Sources:
NFEC ECP Report April 2004 Fig 2–8

Underground Storage Tanks and Aboveground Storage Tanks

Naval Station Roosevelt Roads contains approximately 150 aboveground and underground storage tanks which store various types of oil ranging from jet fuel to diesel. The majority of tanks at Roosevelt Roads require a Spill Prevention Control and Countermeasures (SPCC) Plan. The SPCC plan covers only oil, not hazardous waste. An SPCC plan addresses the issue of spill prevention, response actions, and containment. The SPCC plan is a specific report developed for a particular site under the guidelines of the Code of Federal Regulations, 40 CFR 112. This particular code covers all ASTs, subterranean vaulted tanks and bunkered tanks. (Baker 2003)

A facility requires an SPCC plan if the following two criteria are BOTH met: the spill can reasonably be expected to reach navigable waters and storage capacity exceeds 1320 gallons in all containers greater than 55 gallons. Since the site is more analogous to a multi-facility town than a single facility industrial plant, the whole site is covered by one plan. (Baker 2003) This may change if the site is divided among different owners/operators.

The SPCC Plan for Roosevelt Roads was prepared in January 2003. The SPCC Plan covers needed repairs, installations, upgrades, inspections (daily/weekly/monthly/annually), etc. required for tanks, loading/unloading areas, oil water separators, etc. to be compliant with governing regulations. The report is very detailed with regard to the above. The report divides Roosevelt Roads into smaller areas (Airfield, Atlantic Facility Weapons Training Facility (AFWTF), Fuel Division, Public Works, etc) and lists the tanks covered in each area, deficiencies, required repairs and required inspections. The report also includes some preliminary cost estimates for items required to be installed/repaired, if tanks are to remain in service. If the tanks will be removed from service, it must be done in accordance with Puerto Rico Environmental Quality Board requirements. The SPCC report also includes a log of reported spills at NSRR. (Baker 2003)

A SPCC Corrective Action Plan also exists which was prepared by CAPE Environmental Management. It is an action plan to correct deficiencies outlined in the SPCC Plan. CAPE was awarded a delivery order to perform upgrades on selected USTs and ASTs (18 USTs and 35 ASTs). The Public Works Department has informed that the work contained in this report has been completed.

A Phase I Environmental Condition of Property Report was prepared by the Navy in March 2004 in anticipation of the closure of the base and subsequent transfer of the property. This document is a survey of the existing environmental conditions at Roosevelt Roads. The report is based on the results of investigations, interviews with persons familiar with NSRR and a review of available information and data.

Areas of Concern & Solid Waste Management Units

An Area of Concern (AOC) is an area identified for possible contamination. If confirmation of contamination is obtained, the area becomes a Solid Waste Management Unit (SWMU). A process is currently in place for identifying and designating SWMUs and AOCs. The handling and disposal of waste products associated with SWMUs is regulated by the Resource Conservation and Recovery Act (RCRA) under the Hazardous and Solid Waste Amendments (HSWA). If any SWMU or AOC is suspected to be a source of a contaminant, the owner or operator of the facility is required to perform a RCRA Facility Investigation (RFI) to define the nature and extent of the release. (USEPA 1994) Under these guidelines, the Navy is responsible for the cleanup and remediation of these sites and as such contracts disposal work to contractors. RFI Phase I activities are limited to sampling and analysis of environmental media. Pending the results of Phase I, a full RFI may be required. A full RFI is performed to determine the nature, rate, direction and extent of hazardous waste.

The USEPA Region II has issued a Part B Permit to NSRR. A Part B Permit is required for any facility that currently or plans to treat, store or dispose of hazardous waste and is governed by the guidelines of RCRA. The permit contains a list for RFI activities at 24 SWMUs and 3 AOCs at Naval Station Roosevelt Roads. These areas consist of reported fuel leaks, solid waste landfills, hazardous material spills, chemical spills,

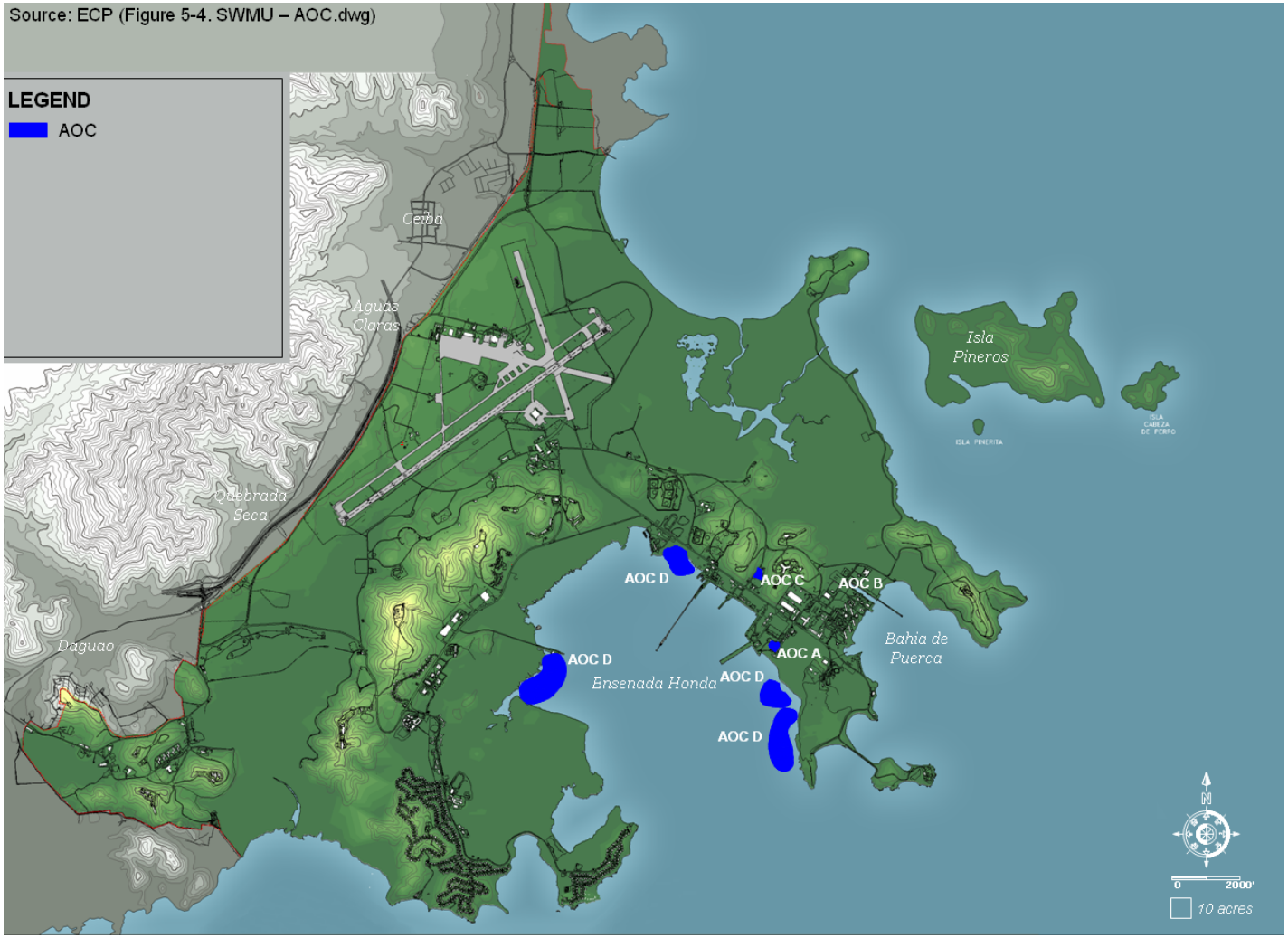

Figure B.2
Areas of Concern

Sources:
ECP (Figure 5-4. SWMU-AOC.dwg)

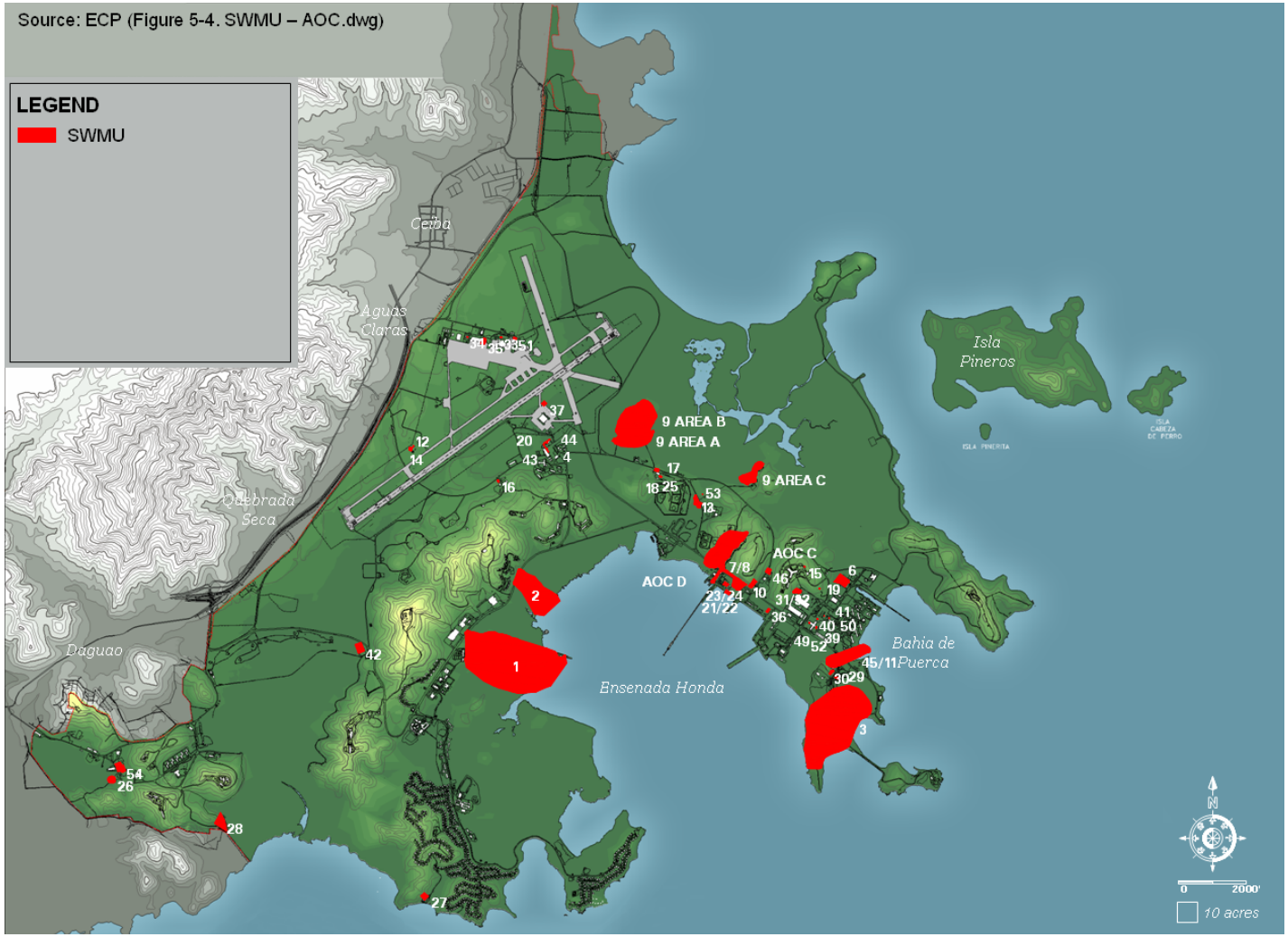

Figure B.3
Solid Waste Management Units

Sources:
ECP (Figure 5-4. SWMU-AOC.dwg)

PCBs and metal deposits. The list includes such RFI activities as soil sampling, ground water sampling, and surface water sampling. The list also outlines whether Phase I only or Full RFI are required for each SWMU. Examples of SWMU's outlined in the Permit are the 159 acre landfill (SWMU #3), an out-of-service power plant located on Cabras de Tierra (SWMU #11) and a plume resulting from a fuel tank leak (SWMU # 7 and #8), which has been contained below the fuel farm.

Baker Environmental prepared a report entitled Final Data Collection Quality Assurance Plan which lists the required sampling and analyses for the RFI at NSRR. It also includes permit requirements, SWMU/AOC status, data collection strategy and requirements, field investigations, etc. The report includes procedures to be followed for soil borings, test wells and rock cores. etc. Baker Environmental and CH2MHILL were contracted to prepare RFI reports for Naval Station Roosevelt Roads. These consultants prepared RCRA Facility Investigation reports for Phase I and Phase II, respectively. The Phase II report covers only SWMU #30, which is an incinerator, formerly used to burn contaminated fuels, waste oils and sludge. These reports include detailed information on existing conditions and background information for the sites in question. The reports include recommendations for any further action to be taken. Under the regulations of the Part B Permit, once an RFI is complete, a Corrective Measures (CM) plan is to be developed by the permittee to remediate the site. The CM is to be approved by the USEPA.(BakerRFI 2000, CH2MHILL 2000)

Stormwater

The Navy currently maintains a storm water discharge permit, which is fully transferable.

Landfill

The landfill located at the end of Forrestal Drive is the only one in this area of Puerto Rico. The permit to operate the landfill is scheduled to expire in August 2004. According to Public Works personnel, the Navy has no plans to renew the permit. If there is a need to keep the permit open, notice should be given to the Navy and Department of Public Works.

Wildlife Habitat

According to the Public Works Department, all sandy beaches along the shoreline of the base are protected turtle nesting areas. Currently the only declared critical habitat is that of the Yellow Shouldered Blackbird. Mangroves are considered the most important habitat for the Yellow Shouldered Blackbird. Other species of consideration are the Puerto Rican Boa and the West Indian Manatee.

The Integrated Natural Resources Management Plan, prepared by Geomarine in April 1998, details some of the ecological considerations for Roosevelt Roads and how best to protect them. The plan covers 10 years from 1998-2007 but is reviewed annually and will be reapproved after five years. The plan is an ecosystem based plan for management of fish, wildlife, forest, coastal resources and land. The report covers NSRR, Isla Pineros, Cabeza de Perro, Pico de Este, Crown Mountain, St. Thomas, Spratt Hall, St. George Hill and St. Croix. A separate report was developed for Vieques in July 1996. The report recommends obtaining a US Army Corp of Engineers approved delineation of all wetlands areas for identification and protection of threatened and endangered plant and animal species. There are also recommendations for maintenance of protected areas and associated cost estimates. The report also recommends hiring a full time manager to implement the plan and requires that the position of Fish and Wildlife Conservationist be funded and filled. (Geomarine 1998)

Appendix A.b:
II. Transportation

Regional Transportation Systems

Roadways, Bus, Ferry

NSRR is easily accessible via both PR-3, a two lane highway, and PR-52, a four lane highway. There are three gates which access the main base: Gate 1 at the north end of the base, Gate 3, which is south of the airfield at the intersection of PR-3 and PR-52, and Gate 4, a third entry point further south which accesses the Bundy area. Gate 1 is located at the intersection of Tarawa Drive and Boxer Drive and is accessed via Tarawa Drive via PR-3. From Gate 1, it is approximately 5 miles to Fajardo and 42 miles to San Juan. Gate 3 is located at the east end of Bennington Road, which can be accessed by both PR-3 and PR-52 . The gate which accesses Bundy is located at the west end of Bennington Road. A fourth access point (Gate 2) services the airfield from PR-3. This access point is located between Gate 1 and Gate 3.

The majority of the roads on the base are two lanes wide and paved. In most areas there are no curbs and gutters. A review of records at the Public Works building revealed that the existing pavement section consists of an 8-inch thick base course with a 2 to 4-inch thick asphalt top course. Some areas have been overlaid throughout the years. A preliminary investigation showed that most of the road surfaces are in fair to good condition with a considerable amount of serviceable life remaining, depending on the projected uses and traffic conditions/ loadings.

Puerto Rico is without islandwide city-to-city bus and rail service. However, públicos (part-bus, part-taxi) vehicles are an inexpensive way to traverse the island. Públicos transport up to ten people over somewhat flexible routes and distances Monday through Saturday. Each city has its own terminal. Few have phone service; to get a schedule one must visit the terminal.

The ferry service in San Juan is owned and operated by the Puerto Rico Port Authority (PRPA). Passengers can take a ferry from the tourist dock in San Juan to Fajardo, Vieques, Catano, Old San Juan and Mayaguez. Ferry service also exists from Fajardo to Vieques and Fajardo to Culebra. The PRPA has expressed interest in relocating the Fajardo-Vieques ferry from Fajardo to NSRR.

Figure B.4
Aerial View of Naval Station Roosevelt Roads

Airport

The airfield at Roosevelt Roads has several runways, the longest of which is 11,000 feet. Based on information obtained on Boeing's website, a jumbo 747 jet should be able to land on a runway of this length.

The information obtained from the Navy base map for 2004 indicates Air Installation Compatibility Use Zone (AICUZ) designations to show the restrictions for building around the airfield. The categories listed on this base map are as follows: clear zone, primary surface, APZ I, with noise restrictions and APZ II with noise restrictions. The clear zone is a 3000 foot by 3000 foot area closest to the end of the runway. This is the most hazardous area outside the runway. The primary surface corresponds to the landing surface. The areas designated APZ are Accident Potential Zones. These are the areas with the greatest potential for planes to crash. APZ I areas are 3000 feet wide by 5000 feet long while APZ II areas are 3000 feet wide by 7000 feet long. Constructing in these areas is highly limited due to the hazard. In the APZ I area, residential construction is forbidden, transportation and utilities can be built in the area, and select service industries, manufacturing plants, cultural/entertainment industries, and resource production can occur in this area. The APZ II area allows a wider range of construction because it is a lower hazard area.

The noise zones in the AICUZ refer to the following: Zone I, 65–70 dB, Zone II, 70–75 dB, Zone III, 75–80 dB, Zone IV, 80+ dB. These contours are developed based on the Day-Night Average Sound Level which is used for all of the United States except California. Table B.1 is a general list of building restrictions for all four zones. However, for each specific use, the code needs to be interpreted.

Table B.1
Compatibility Land Use for AICUZ Noise Zones

Generalized Land Use	Zone I 65–70 dB	Zone II 70–75 dB	Zone III 75–80 dB	Zone IV 80+ dB
Residential	**No**	**No**	**No**	**No**
Manufacturing	*Yes*	*Yes*	*Yes*	*Yes*
Transportation, Communications, Utilities	*Yes*	*Yes*	*Yes*	**No**
Trade, Business, Offices	*Yes*	*Yes*	*Yes*	**No**
Shopping Districts	*Yes*	*Yes*	*Yes*	**No**
Public, Quasi-Public Services	**No**	**No**	**No**	**No**
Recreation	*Yes*	*Yes*	**No**	**No**
Public Assembly	**No**	**No**	**No**	**No**
Agriculture & Mining	*Yes*	*Yes*	*Yes*	*Yes*

There is a restriction on building heights in and around the airfield. These restrictions are regulated by the Federal Aviation Administration under 14 CFR Part 77. If the airfield is to remain active, this code will govern the heights of new construction.

Marine

Naval Station Roosevelt Roads is constructed around the perimeter of Ensenada Honda. Ensenada Honda is approximately 1 to 1 ½ miles wide and 2 miles long. Along the East side of the harbor are 4 piers (Fuel Mooring Pier, Pier 1, Pier 2 and Pier 3) with varying alongside depths of 32–44 feet. Between these piers are several bulkheads which provide additional moorings with depths of approximately 15 feet. Located in Ensenada Honda to the West of the fuel mooring pier is a small craft marina.

Figure B.4
Ensenada Honda

Bahia de Puerca lies approximately 1 mile Northeast of Ensenada Honda. This bay is approximately ½ mile wide and ¾ mile long with depths of 37 feet or more. A dry dock facility is located inshore on Bahia de Puerca. The dry dock is located off Barnes Street at the eastern end of the base, just South of Punta Puerca. The dry dock was visited in October 2003 by the team and was observed to be in need of repair as it was clear that it has not been maintained.

Ensenada Honda is serviced by a 1000 foot wide, 40 foot deep navigation channel which passes between Cabra de Tierra and Punta Cascajo. The channel is oriented south-east-northwest. The harbor is somewhat sheltered from sea and swell by the partial encircling of shore and reefs.

Customs Pier

The customs pier is a 184 feet long by 35 feet wide pier.

Figure B.5
Customs Pier

Dry Dock Facility

The dry dock facility consists of a 140 foot wide by 1100+ foot long slip that was once maintained to a depth of at least 40 feet. A 27-foot wide by 670-foot long pier extends from the north end of the dry dock into Bahia de Puerca. The pier is in poor condition. The water depth at the pier is 40 feet, based on a National Oceanographic and Atmospheric Administration (NOAA) nautical chart.

Figure B.6
Dry Dock

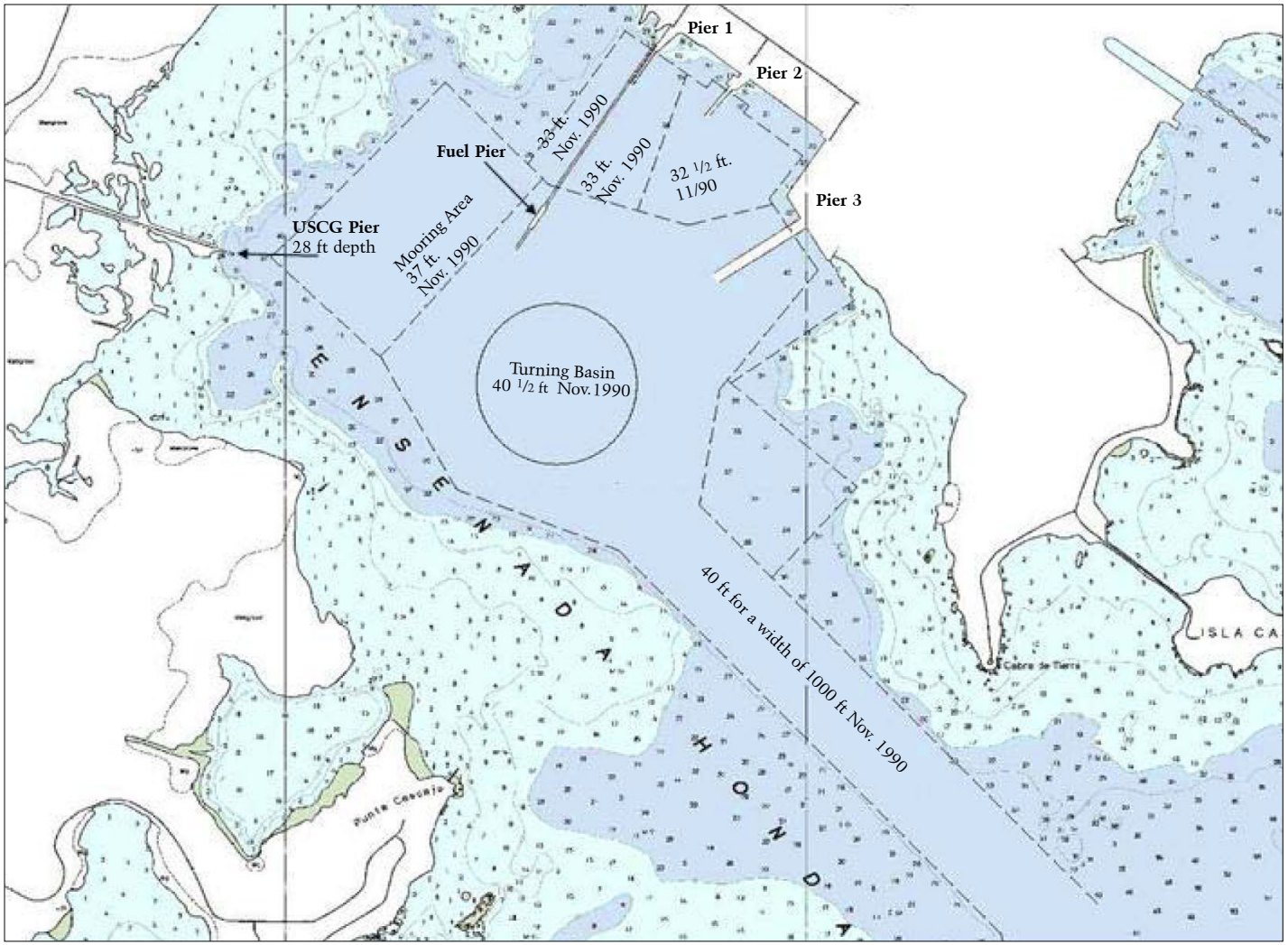

Figure B.7
Bathymetric Chart

Figure B.8
Fuel Pier: Fueling Stations in Background

Figure B.9
Pier 1 (Fuel Mooring Pier in Background

Fuel Mooring Pier

The Fuel Mooring Pier extends 2650 feet into Ensenada Honda. The pier consists of a concrete deck supported by square concrete piles, housing a fueling platform with two berths—Berth 1 on the east side and Berth 2 on the west side. The pier has 6 loading stations, each equipped with two fuel stations (diesel and JP-5) and a potable water connection. Monitoring wells are in place along the North side of the fuel pier. Three of the loading stations have a 4" sanitary sewer connection. The middle loading station on Berth 1 is equipped with three telephone connections. The water depth at the fuel pier is currently maintained at 40 feet. The pier is approximately 15 years old, appears to be well maintained and in good overall condition.

Pier 1

Pier 1 is located adjacent to the fuel pier. The overall length of Pier 1 is approximately 448 feet and its width is 34 feet. The concrete deck pier is supported by square concrete piles and continuous bent caps with concrete encased steel beams spanning between bent caps. The pier offers water service, F44/ JP5 fuel and a water depth of 36 feet. The pier is approximately 50 years old and appears to have existed without any significant repair work being performed. The pier's close proximity to the fuel pier, approximately 20 feet, renders its west side inoperable for berthing. Fuel lines run along its east side for the entire length of the pier. A preliminary inspection of the underside of the pier from the vantage point of the adjacent rip-rap revealed a significant amount of deterioration. Spalled concrete was observed along the bent caps and the underside of the deck. Exposed reinforcing steel and steel beams were observed to be corroded. A damaged protection dolphin was observed along the southwest corner of the pier. Debris was observed between pier 1 and the fuel pier.

Figure B.10
Pier 2

Pier 2

Pier 2 is a 400-foot long by 38-foot wide concrete deck, concrete pile supported structure, with 38-foot water depth. There are two berths along Pier 2 and each one is serviced by four phone connections, sanitary sewer, water and electrical connections. The fender system consists of battered timber piles connected to horizontal timber sections connected to the pier deck via trapezoidal rubber fenders. Foam filled fenders are installed toward the waterside end of the pier. The bollards along the pier are seated and bolted to large concrete slabs. The connecting bolts have rusted/ corroded. The limited view of the pier's support system revealed both plumb and battered square concrete piles, which appeared to be in sound condition. The pier is approximately 50 years old.

Figure B.11
Pier 3

Pier 3

Pier 3 is a 1200-foot long by 120-foot wide structure with two berths, one on either side, built in the early 1960s. The alongside depth is approximately 40 feet on the North side of the pier and 44 feet on the South side. The pier has an approximate elevation of +10 MLW. One light tower stands at each end of the pier. The pier consists of 14 fueling stations. Services at the fueling stations include F-44/ JP5 fuel by tanker truck, diesel, potable water, sanitary sewer, telephone and electrical. The utilities are housed in chases on either side of the pier. The pier is supported by steel H piles and precast concrete piles with individual pile caps. The fender system consists of 1H:12V battered timber piles with horizontal timber wales along the side of the pier and 12-foot long foam filled fenders. The timber system has been damaged in some locations. This fender system was repaired during the mid-90s.

Figure B.12
LST Ramp and Bulkhead C

Bulkheads & Landing Ship Tank (LST) Ramp

The bulkhead system in the vicinity of the piers consists of Bulkhead A (823 feet), Bulkhead B (1000 feet), Bulkhead C (800 feet) and Bulkhead D (300 feet—west of Pier 3, 340 feet—east of Pier 3). The bulkheads are approximately 20 to 30 years old. Bulkhead A stretches from Pier 1 to Pier 2, Bulkhead B from pier 2 to the LST ramp, Bulkhead C runs from the LST ramp south to Bulkhead D and Bulkhead D runs east-west extending out from pier 3. The Bulkhead construction is steel sheet pile with concrete cap. All visible sheet piling is showing signs of rust and corrosion. Diagonal rubber fenders are fixed to the concrete cap. The bulkheads are equipped with sanitary sewer, potable water and electric services in some areas. The water depth is 10 feet at Bulkhead A, 15 feet at bulkhead B, C and D. Bulkhead D is the primary berth for Atlantic Fleet Weapons Training Facility AFWTF vessels. An LST ramp is located at the corner of Bulkhead B and Bulkhead C. The ramp is approximately 75 feet wide and extends into the water reaching an elevation of -1.0 MLW. The surface of the ramp was in fair to good condition with some surface cracking.

Figure B.13
Marina

Marina

The small craft marina is located off of Towaway Drive on the west side of the fuel-mooring pier. The facility was constructed during the late 1990s and consists of 72 boat slips and 25 moorings. Each boat slip is approximately 12-foot wide. In general, each set of two slips is bordered by two 3-foot wide finger piers and the steel sheet pile bulkhead retaining system. A three-foot wide concrete cap sits atop the steel sheeting. Rubber diagonal fenders are attached to the finger piers. A single pile at the waterside end of each set of slips marks the division between the two slips. A ship service box is located on the sidewalk at the center of each pair of slips. Each box provides potable water and 110 V power. Conduit has been placed for cable television but cables were never installed. The average depth at the seawall is approximately 6–8 feet. The facility is generally in good condition as it is relatively new. There is some cracking along the sidewalk and seawall cap.

Appendix A.b:
III. Infrastructure

Potable Water

Description of Components

Naval Station Roosevelt Roads' raw water supply is obtained from the Rio Blanco River within the rainforest of the Sierra de Luquillo mountains of El Yunque as shown in Figure 3. Rainfall is collected in the Rio Blanco River where raw water is drawn from two intake points to supply NSRR. One is near the Rio Blanco hydroelectric plant, the other is from the hydroelectric plant's outfall. The intakes are well located and quality of the raw water is very good (Baker/Weston 1993). Reliability of the source is subject to the flow fluctuations of the Rio Blanco River and the strength of arrangements with the Puerto Rico Authority of Electric Energy that operates the hydroelectric plant.

Raw water is transported from the intakes through a reinforced concrete grit chamber. At this point the water is at approximate elevation 95 feet above mean sea level (MSL). Degritted water flows by gravity through an 11 mile, 27-inch, reinforced concrete pipe (RCP), to the 43.6 million-gallon reservoir, which is at approximate elevation 47 feet MSL. Average raw water withdrawn from the river over a nine (9) month period is 1,011,555 gallons per day. The raw water is converted to potable water by treatment on site at Water Treatment Plant 88. According to NSRR Public Works Department, local residents have been tapping into the 27" RCP at points upstream of the reservoir and filtration plant. The water upstream of the filtration plant is still in a raw, untreated state. These casual connections also provide inlets for contamination to the water supply since there are no backflow preventers installed. Letters have been sent to the local authorities, advising that this water has not been treated and is unsuitable for consumption. (Baker/Weston 1993, G&FTDPW 2002)

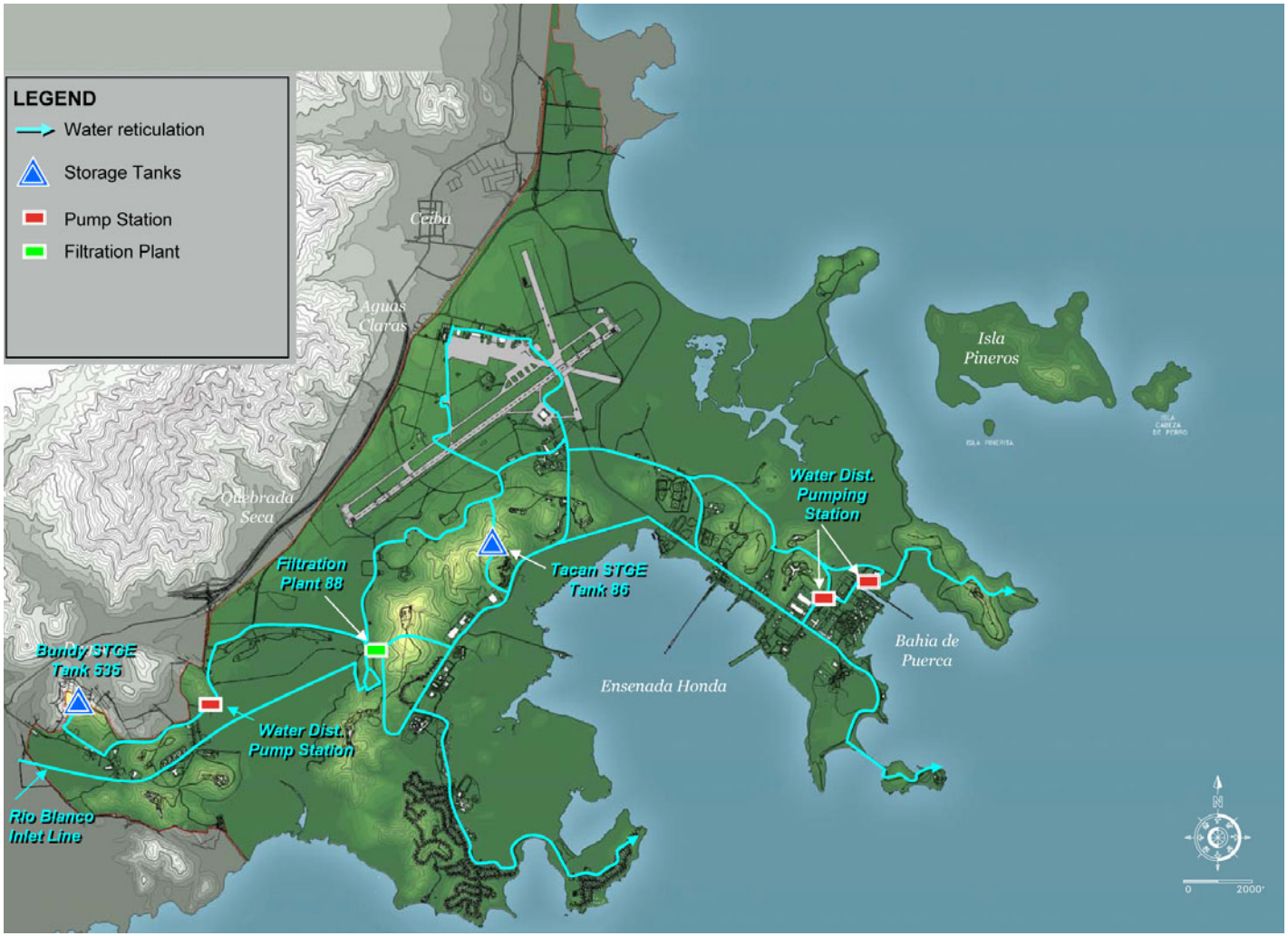

Figure B.14
Water Distribution System for Roosevelt Roads

Sources:
NSRR Jan 2004
Water Distribution Dwg

The potable water distribution system inside the base consists of approximately 64.4 miles of distribution piping up to 18 inches in diameter, 7 pump stations, and 5 ground storage tanks. The original distribution system was installed in the 1940s. Pipe materials include approximately less than 1% copper pipe, less than 1% ductile iron pipe (DI), 1% galvanized steel pipe (Galv), 6% cast iron pipe (CI), 76% polyvinyl chloride pipe (PVC), and 17% unknown materials. The water system is a combined potable and fire protection system. There are 179 hydrants within the system. Distribution system pressures are unknown.

Raw Water Reservoir: The raw water reservoir provides 10 days of emergency reserve during design flow and 25 days of reserve during average flow (Baker/Weston 1993). It has a 5.6 acre surface area with a 30-foot design depth. The reservoir is a reinforced concrete lined basin with a distribution inlet, an overflow and a discharge structure incorporating two discharge pipes. The reservoir inlet is a 24 inch diameter cast iron pipe. The reservoir overflow is a broad-crested concrete weir that drains to a paved concrete ditch surrounding the reservoir. There is a 16 inch discharge pipe that may be used to drain the reservoir and allow sediment to discharge into the concrete paved ditch. The three drainage valves which control this discharge pipe were noted in a September 1993 inspection to be inoperable. This allows sediment to build up in the reservoir. Fine river sediments carried with the water from the Rio Blanco settle to the bottom of the reservoir. Sediments accumulated in the reservoir were found to be approximately 2 feet thick, which has reduced the capacity of the reservoir. (Baker/ Weston 1993)

The 24 inch discharge main extends to the Treatment Plant Building 88 where two raw water booster pumps are located. The booster pumps are provided for the purpose of moving water from the raw water reservoir to the treatment plant in the event that water levels in the reservoir are below the operating level in the plant. The two booster pumps are 12 inch, split case, double suction, horizontal centrifugal type pumps. The water flows either by gravity or is discharged by the booster pumps into the flash mixing basin. (Baker/ Weston 1993, G&FTDPW 2002)

Water can also be withdrawn from below the surface through either of two gate valves located at elevations 35.5 and 18.7 feet.

Water Treatment Plant 88: Water Treatment Plant 88 is located on Langley Drive, North of the Raw Water Reservoir. It is a conventional sand filtration type water treatment plant and was constructed in 1942. The raw water source is the Rio Blanco River. The permitted capacity is unknown. The average daily flow is 1,000,000 gallons per day (gpd) and the maximum daily flow is 4,000,000 gpd. The water treatment plant is operated by an operations and maintenance company under contract to the Navy. (G&FTDPW 2002)

Raw water enters the treatment plant from the raw water reservoir to the South of the plant. As the flow is sent to the flash mix basin, chlorine is added to minimize biological activity. The flow next passes to the coagulation basins where flocculation occurs. Flocculated water exits the coagulation basins through two 30 inch wide stop plates and enters a series of channels and openings which distribute flow uniformly across the sedimentation tank. At the sedimentation basins, lime can be added. From the sedimentation basins, flow passes to the rapid sand filters. The rapid sand filters remove any floc from the water flow which was not removed in the sedimentation basin. Settled water exits the sedimentation basin effluent channel through a 24 inch diameter main located at the channel midpoint. The main transports flow to the filter distribution channel which in turn brings water to each of the four multimedia rapid sand filters. Since the particulate matter is filtered by the sand, the sand needs to be washed out periodically to prevent problems with mud balls, bed cracking or sand incrustation. The water that washes out the filters is known as backwash, which is diverted back through the rapid sand filter for refiltering. After the rapid sand filters, fluoride is added. Flow then passes to the clear well where chlorine is added for disinfection. The existing chlorine contact tank is a nominal 120,000 gallon rectangular buried tank. It is approximately

56 feet long and 25 feet wide and is baffled. Filtered water enters the clearwell in the lower right corner of the tank. Lastly, flow is pumped by the finished water pumps to the distribution system. (Baker/ Weston 1993, G&FTDPW 2002)

The current alum feed system consists of a 2,500 gallon bulk storage tank, two metering pumps, associated piping and valves and a submerged alum feed pipe located at the rapid mix basin. The lime feed system consists of a dry lime feeder, solution tank and aboveground gravity feed lines to the rapid mix basin and to the final cell of the sedimentation basin. The water filtration plant uses gaseous chlorine stored on site in 1 ton cylinders. Chlorinators are located in the chlorine feed room in the control building. Two chlorinators are used. One doses chlorine to the 20 inch diameter raw water feed line, while the other is used to dose chlorine into the clearwell. (Baker/ Weston 1993)

Two sludge lagoons were constructed for the purpose of capturing and thickening solids generated during the treatment process. Solids can be stored in the lagoon until they can be conveniently removed for ultimate disposal. During normal operations, solids are discharged to one of the two lagoons and allowed to settle out. The supernatant from the lagoon is decanted back to the head of the plant for reuse. A decant structure equipped with a variable position slide gate is located in each lagoon. This structure allows a maximum solids storage level elevation of 11 feet and a maximum liquid level elevation of 17 feet. These operating levels allow approximately 1 foot of freeboard at the maximum liquid level. The sludge lagoons are 115 feet by 175 feet wide at the top elevation. The sides of each lagoon are sloped at a pitch of 2.5 to 1, resulting in bottom dimensions of 50 feet wide by 110 feet long. Each lagoon will hold an estimated 1 million gallons of waste. (Baker/ Weston 1993)

Water Pump Stations: The potable water system consists of 7 pump stations. There are a total of 17 pumps located within the 7 pump stations. Of these 17 pumps, 5 are fire pumps, 3 are jockey pumps and 9 are potable water pumps. The potable water pump stations are shown on Figure 3. The fire pumps range in capacity from 600 gpm to 2,000 gpm with heads ranging from 106 feet to 231 feet. The jockey pumps range in capacity from 22 gpm to 90 gpm with heads ranging from 116 feet to 285 feet. The potable water pumps range in capacity from 22 gpm to 1,500 gpm with heads ranging from 150 feet to 252 feet. All of the pumps are centrifugal pumps. All but one pump is powered with electricity. Fire pump #1 is a diesel powered pump. Fire pump #1 is located at pump station 460, which has a 500 gallon concrete diesel storage tank.

Water Tanks: There are five (5) water tanks located on the site. Of the five, four are constructed of concrete and one is steel. Potable water tank 86 is located on Gulf Road, east of Building 784. This tank is an aboveground potable water tank with a storage volume of 1,500,000 gallons. The tank is a 128 feet by 94 feet rectangular, concrete tank that is 20 feet tall.

Fire protection tank 459 is located on Tarawa Drive, next to pump station 460. This tank is an aboveground fire protection tank with a storage volume of 400,000 gallons. The tank is 46 feet in diameter, 32 feet tall and constructed of steel.

Potable water tank 535 is located on top of the hill at the end of Esperance Road. This tank is an underground potable water tank with a storage capacity of 750,000 gallons. The tank is a 84 feet by 63 feet rectangular, concrete tank that is 19 feet tall.

Fire protection tank 771 is located on South Delicias Road, east of Building 2296. This tank is an aboveground fire protection tank with a storage volume of 120,000 gallons. The tank is a 45 feet by 32 feet rectangular, concrete tank that is 11 feet tall.

Fire protection tank 2304 is located North of Building 786 at the Telemetry Site. This tank is an aboveground fire protection tank with a storage capacity of 20,000 gallons. The tank is rectangular and made of concrete and is 6 feet tall. (G&FTDPW 2002)

Conditions Assessment

The Technical Data Package (TDP) prepared by Gannett Fleming in June 2002 assesses the condition of the potable water system components (i.e. piping, tanks, water treatment plant).

The TDP uses a rating system to classify the condition of the components. The TDP indicates that the overall condition ratings were assigned based on visual observations, personnel interviews, available records and reports. The rating system has three categories: good, fair, poor. These categories are defined by the following:

- *Good*

1. The component is performing its intended function adequately.
2. The overall appearance is without defects.
3. No obvious deficiencies are evident.
4. Maintenance records are complete and up-to-date.
5. The component has at least 75% or a percentage up to 100% of its remaining useful life.

- *Fair*

1. The component periodically does not perform its intended function adequately.
2. The overall appearance is deteriorated.
3. Major items that make up the component are not functioning correctly or are deteriorated.
4. Evidence that maintenance is not occurring such as locks rusted closed, entrances rusted closed, incomplete or not up-to-date maintenance logs.
5. The component has 50% of its remaining useful life. (This criteria alone does not indicate a Fair rating.)

• *Poor*

1. The component consistently does not perform its intended function adequately.
2. The overall appearance is greatly deteriorated.
3. Major items that make up the component are not functioning at all or are greatly deteriorated.
4. Evidence that no maintenance is being performed.
5. The component has 25% or less of its remaining useful life. (This criteria alone does not indicate a Poor rating.)

The TDP yields a rating of good for all components of the potable water system. No deficiencies were identified.

Future Consideration

New legislation has been enacted under the Safe Drinking Water Act affecting drinking water systems. Specifically of concern at NSRR is the formation of volatile organic chemical contaminants called trihalomethanes (THMs). THMs are a group of compounds that have come under scrutiny in recent years as an important contaminant in drinking water. THMs are formed by the action of chlorine on certain naturally occurring organic chemicals in the raw water. Monitoring data for THMs at the discharge of the treatment plant and at remote points on the water distribution system show that the addition of chlorine for disinfection at the plant is causing the formation of this organic chemical contaminant at unacceptable concentrations. THMs may be controlled by various techniques, including enhanced treatment process control, removal of the precursor organic chemicals, elimination of chlorine as the disinfecting agent or removal of the fully formed THMs by physical or chemical treatment. This should be evaluated further with regard to regulations governing Roosevelt Roads. (Baker/ Weston 1993)

Domestic Wastewater

Description of Components

Piping and Manholes: The wastewater collection system at Roosevelt Roads consists of approximately 32.5 miles of gravity lines, 9.5 miles of force mains, approximately 906 manholes, 28 pump stations and 6 grinder stations. The original collection system was installed in the 1940s with upgrades and new installations made in the 1990s. The gravity system pipe materials include less than 1% ductile iron (DI) pipe, less than 1% asbestos cement pipe, less than 1% concrete pipe, 44% polyvinyl chloride (PVC) pipe and 55% unknown materials. The gravity mains vary in size up to 24 inches. The force main system pipe materials include 7% DI, 81% PVC and 12% unknown materials. The force mains consist of pipe ranging in size up to 10 inches. The force main system was installed in the 1980s and 1990s. The layout of the sanitary system is shown in Figure B.14.

Pump Stations: There are 28 wastewater pump stations throughout the base. These stations house pumps with capacities ranging from 100 to 1500 gpm, heads ranging from 10 to 124 feet and motors ranging from 1.5 to 50 horsepower. The pumps are mostly submersible with some wet pit type types. Appurtenances include diesel storage tanks, diesel generators, float pump control, radio telemetry and local alarms.

Wastewater Treatment Plants: Wastewater is collected and conveyed to one of three wastewater treatment plants on site for treatment and final disposal. Treated wastewater is discharged into the ocean. The average daily treated flow from the three plants was approximately 0.81 million gallons per day, when the base was active.

The base has three wastewater treatment plants on site. Bundy Treatment Plant is located at the Southern end of a dirt road at the intersection of Marqus Road, Rendova Street and Kwajalein Street. Capehart Treatment Plant is located at the Southern end of Intrepid Drive. Forrestal Treatment Plant is located on Forrestal Drive adjacent to Building 38. All three plants were originally constructed in the 1970s and all three were upgraded from secondary to tertiary treatment plants in 1996. With the exception of a cross over connection pump which is capable of diverting flow from Capehart to Bundy, each plant operates independently.

The Bundy and Forrestal treatment plants each consist of two primary tanks, trickling filters, denitrification system, a digestor, drying beds, contact tanks, a grit remover and is equipped with a tertiary system and generator. Access to the Bundy plant is by way of a steep gravel and dirt trail, which becomes unnavigable during heavy storms. Access to Forrestal is via a paved road off of Forrestal Drive at the eastern end of the base. Capehart is located at the end of Intrepid Street, which is accessed via Lexington Drive. The

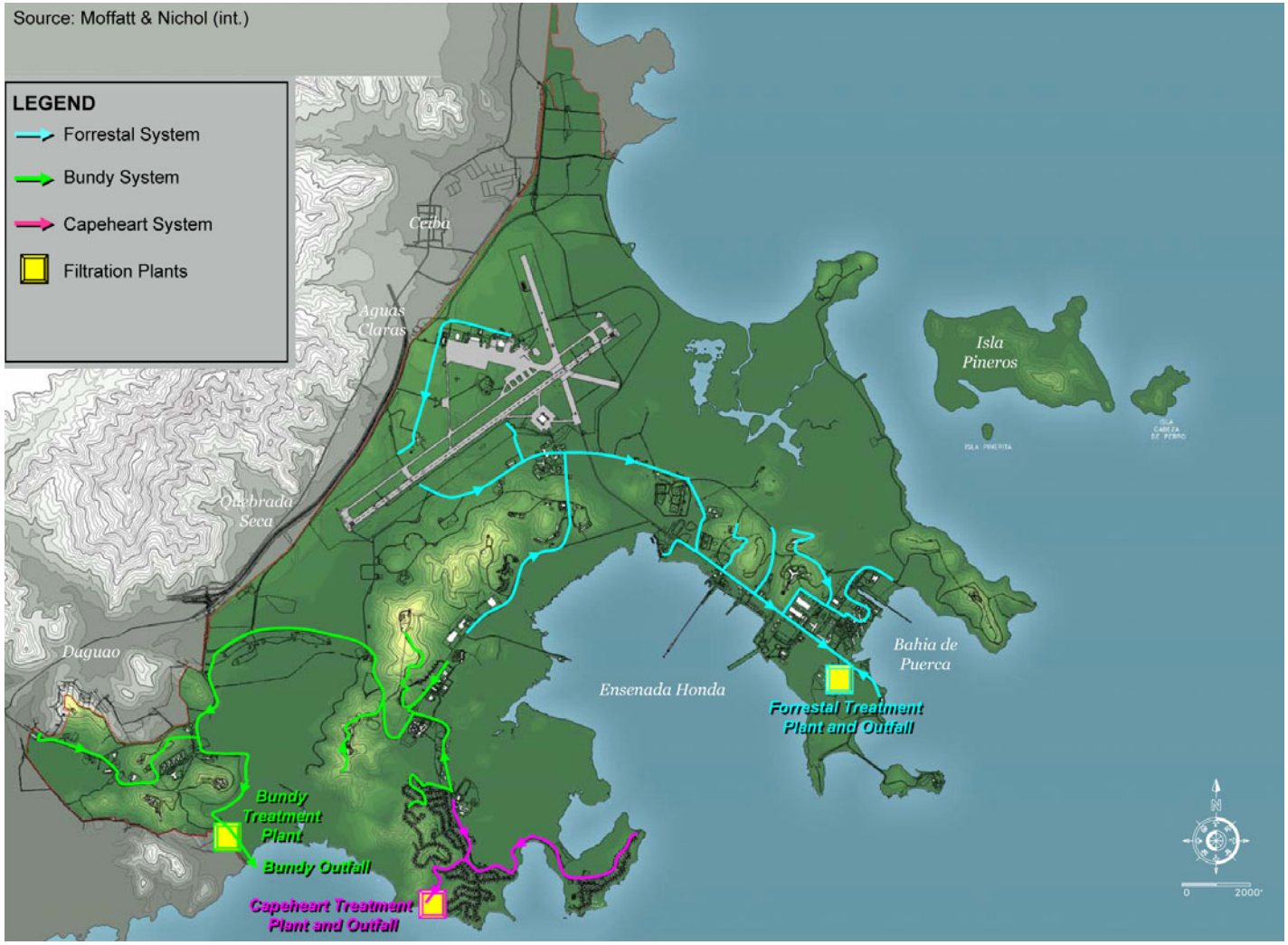

Figure B.15
Sanitary Sewer Layout

Sources:
Moffatt & Nichol Int.

primary tanks at Bundy are in operation but the pits are overgrown with vegetation. The flow transmitter is inoperable at Bundy. The Capehart facility consists of two primary tanks, a denitrification system, a digestor, drying beds, contact tanks, grit remover, an aeration tank with RAS system and is equipped with a tertiary system and generator.

Conditions Assessment

The Technical Data Package (TDP) prepared by Gannett Fleming in June 2002 assesses the condition of the sewage system components (i.e. piping, manholes, pump stations and wastewater treatment plants). The information contained in the TDP will be combined with more recent information received from Public Works Department to provide an outline of the condition of all components of the domestic wastewater system. The TDP rating system (good, fair, poor) used to classify the condition of the components is outlined previously in the potable water section. Refer to this section for ratings.

The TDP yields a rating of good for most components of the sewage system. Every component of the domestic wastewater collection piping and manholes was given a good rating in the TDP. All components of the domestic wastewater sump/grinder/ejector stations were given good ratings. No additional inspection information is available for these components of the sewage system.

All but two components of the domestic wastewater pump stations were given a good rating in the TDP. Facility number 2033 was given a fair rating and facility 2204 was given a poor rating. Information dated March 2004 from Public Works indicates several other pump stations with deficiencies, including eight inoperable pumps.

All domestic wastewater treatment plants were given good ratings in the TDP. Information from Public Works dated April 2003 indicates some components of the wastewater treatment plants were identified with deficiencies in operable components and maintenance items.

Future Considerations

The Base decommissioning, currently underway, will result in less solid waste production which will have a detrimental effect on the sewage treatment plants' ability to process wastewater. Without the production of solid waste, the microorganisms that digest the organic materials will die off rendering the plants inoperable. The Navy's current plan is to maintain the treatment plants by supplying them with available wastewater flows as long as possible. Once they are no longer operable, the plants will be shut down and all equipment "mothballed"—a process by which all equipment would be oiled, greased and bagged and thereby maintained. The Navy will operate and/or maintain the plants for the next two years. Serious consideration should be given to continuing to maintain these plants, as new permits will be required to restart the plants if any of the three is lost. According to Public Works, the permitting process can take up to eight years to complete. Minimum flow requirements to maintain the various plant operations were not available at the time of the site visit.

Storm Drain & Retention

Stormwater runoff is collected via a system of drop inlets, drainage ditches, culverts and pipes and diverted to outfalls in the mangrove areas and the surrounding bays.

Electrical & Gas Services

The electricity for the base is purchased from the Puerto Rico Electric Power Authority (PREPA). 38 KV is transferred to the site at two delivery points, "DAGUAO" (two 38 kV circuits) and a single 38 kV circuit at the Airfield. The 38 KV circuits serve eleven substations and those substations in turn serve loads in their vicinity at 13.2 KV, 4.16 KV, and 480 KV. Figure B.15 shows the 38 kV feeds to the substations. All loads on the distribution circuits can be fed from more than one substation (NSRR Public Works Department).

In 2001, it was estimated by Hayes, Seay, Mattern & Mattern, Inc. in their Final Technical Data Package (HSMM/2001) that maximum demand for the Daguao Service was approximately 15,788 kVA and annual

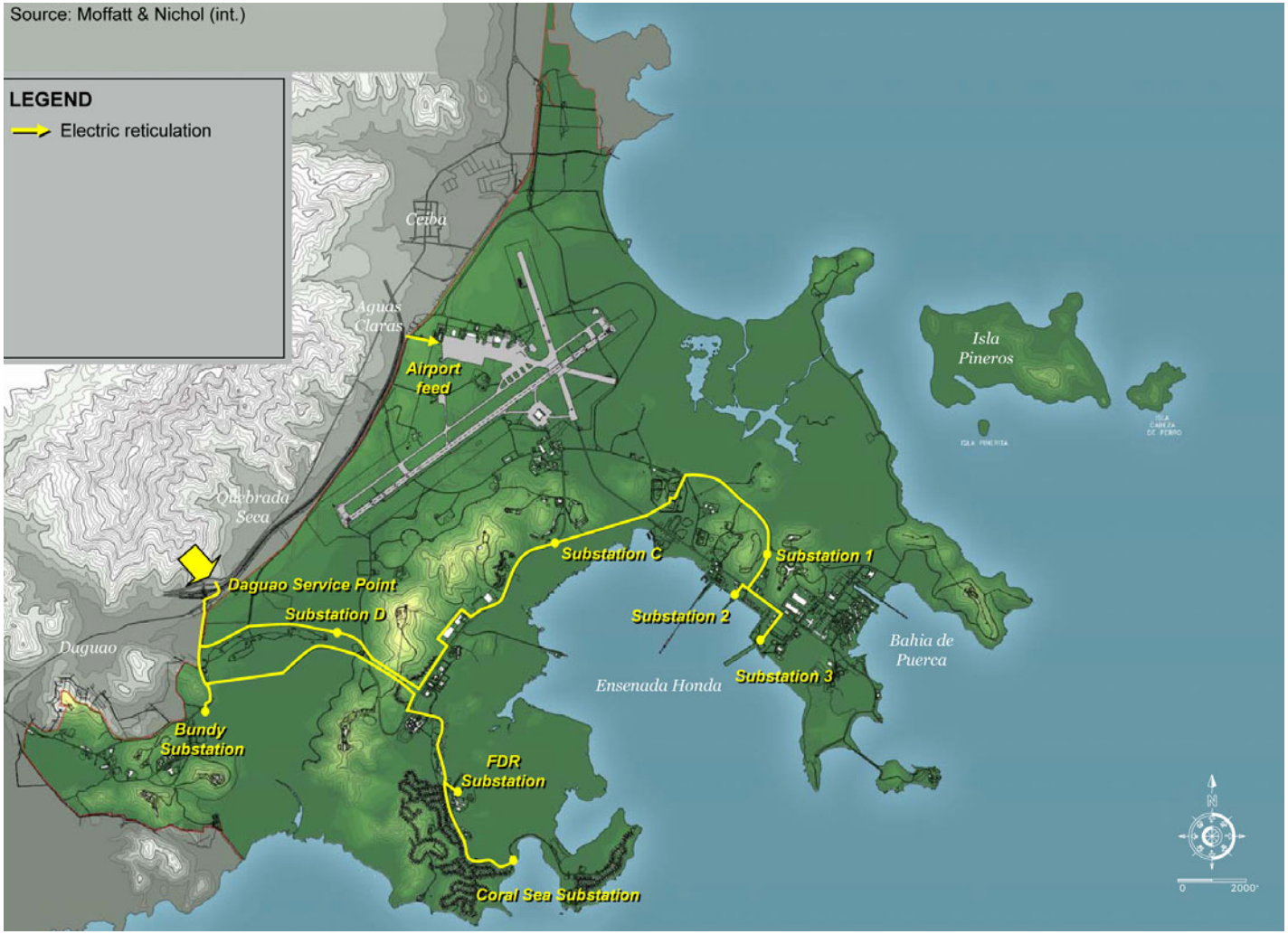

Figure B.16
Primary Electrical Distribution System in Roosevelt Roads

Source:
Moffatt & Nichol Int.

consumption was approximately 95,496 MWH. The other point of delivery is the Airfield Service, a single 38 kV circuit, located near the center of the eastern side of the base. Maximum demand for the Airfield Service was approximately 1,463 kVA and annual consumption was approximately 7,682 MWH. The two main points of entry service the substations listed in Table B.2.

Table B.2
Substations Summary

Substation	Transformer Capacity (kV)	Primary Voltage (kV)	Secondary Voltage (kV)	Number of Circuits
Substation C	*6500*	*38*	*13.2*	*3*
Substation D	*5000*	*38*	*13.2*	*4*
Substation T-492	*750*	*38*	*0.48*	*3*
Substation I	*5000*	*38*	*13.2*	*2*
Pier 2 Substation	*2000*	*38*	*0.48*	*8*
Pier 3 Substation	*2500*	*38*	*0.48*	*24*
Bundy Substation	*3000*	*38*	*4.16*	*2*
FDR Substation	*5000*	*38*	*4.16*	*4*
Coral Sea Substation	*5000*	*38*	*4.16*	*3*
Substation A	*3000*	*38*	*13.2*	*4*
Substation 24	*500*	*13.2*	*2.4*	*1*

The Daguao Service consists of two incoming 38 kV circuits from PREPA, Circuits 13800 and 5500. There is a meter at this service point. In most cases loads serviced at the 38 KV level are substation. There are three transformers serving individual buildings, which are served directly from the 38 kV circuits. Both of the 38 kV circuits utilize 46 kV rated insulators. 1/0 Cu Aerial conductors connect the Daguao Service to Bundy Substation and Substation D. Similarly Substation C is fed from Substation D and Substation I from Substation C. Coral Sea Substation is fed from FDR Substation which in turn is fed from Substation D also via 1/0 Cu Aerial conductors. The above noted construction is in fair condition. (HSMM/2001)

The airport service is a 38 kV circuit from PREPA. The circuit serves Substation A. There is a meter at this service point. 1/0 Cu conductors are suspended from wood poles and connect the service point to Substation A. (HSMM/2001).

It should be noted that both underground and aerial power lines service the housing areas, making one of the systems redundant. Underground conduits for cable and telephone are also in place for housing but cables for these utilities were never installed.

Substation C

Substation C is located along Langley Drive near the intersection with Marina by-pass. The 38 kV line enters and exits the station on a primary steel structure and there is a 38 kV tap to each of two transformers. Transformer A is a 5000 kVA 38 kV-13.2 kV unit, is protected with a 38 kV breaker and Transformer B is a 1500 kVA 38 kV-13.2 kV unit. Transformer A supplies a main breaker and three distribution breakers. The fenced area is 87'X66'. Table B.3 shows the transformers at Substation C.

Table B.3
Transformers Substation C

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
Transformer A	*5000*	*38*	*13.2*
Transformer B	*1500*	*38*	*13.2*

The substation distributes 13.2 kV via 3 feeders: the first of which services 19 transformers, the second 24 transformers and the last 9 transformers at which points the voltages are reduced to 120/240, 208/120, 480/277 V. The feeders and subsequent transformers serviced by each feeder were noted to be in fair to good condition. (HSMM/2001)

Substation D

Substation D is located between Langley Drive and Nimitz Drive. Circuits 13800 and 5500 enter Substation D from the Daguao Service and then split into individual outgoing 38 kV feeders. There is a 38 kV breaker that protects a 5000 kVA 38 kV-13.2 kV transformer. The transformer serves four 15 kV distribution circuit breakers in a walk-in metal-clad outdoor enclosure. The fenced area is 79'X79'. The substation was replaced during the late 1990s. Table B.4 shows the transformers at Substation D.

Table B.4
Transformers Substation D

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
Sub D	*5000*	*38*	*13.2*

The substation distributes 13.2 kV via four feeders: the Nimitz feeder which services 7 transformers, the FWTC Feeder which services 9 transformers, the Elem School Feeder which services 17 transformers and the Sub C & Swamp Feeder which services 15 transformers. These transformers then provide 120/240, 208/120, 480/277 V to other service points. The 13.2 kV feeders and subsequent transformers and switches were noted to be in fair to good condition. (HSMM/2001)

Substation T-492

Substation T-492 is a small substation that feeds three buildings at 480 V. A single 38 kV circuit enters the substation and terminates at a switch mounted on top of a steel structure. The transformer is protected with 38 kV fuses mounted below the switch. As of April 2001 a new transformer and secondary switchgear were scheduled to be installed. The fenced area is 47'X34'. (HSMM/2001)

Substation I

Substation I is fed from the 38 kV overhead distribution system. There is a 5000 kVA 38 kV–13.2 kV three-phase transformer protected with a 38 kV three phase breaker. The transformer feeds a main 15 kV breaker and three 15 kV circuit breakers. Two distribution circuits, service 23 and 130 transformers, respectively. These transformers then provide 120/240, 208/120, 480/277 V to other service points. The transformers fed from these feeders were noted to be in fair to good condition with the exception of T-364 and T-373. The fenced area for Substation I is 61'X61'. Table B.5 shows the transformers at Substation I. The transformer was noted to be in fair condition (HSMM/2001).

Table B.5
Transformers Substation I

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
India	*5*	*38*	*13.2*

Pier 2 Substation

Pier 2 Substation is served from the overhead 38 kV distribution system. There is a 38 kV switch and 38 kV transformer fuses. The transformer secondary serves a 480 volt main breaker and eight distribution circuit breakers. The eight distribution breakers serve the shore power stations on Pier 2. The fenced area is 37' x 24'. Table B.6 shows transformers at Pier 2 Substation. (HSMM/2001)

Table B.6
Transformers Pier 2 Substation

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
Pier 2	*2*	*38*	*0.48*

Pier 3 Substation

Pier 3 Substation is served from the overhead 38 kV distribution system. Both station transformers are on one set of 38 kV fuses and each transformer serves a separate 480 volt bus. Each bus has 12 distribution circuit breakers and all 24 of the 480 volt circuits provide power to the shore power stations on Pier 3. The fenced area is 60' x 37'. Table B.7 shows the transformers at Pier 3 Substation. (HSMM/2001)

Table B.7
Transformers Pier 3 Substation

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
Pier 3	*2.5*	*38*	*0.48*
Pier 3	*2.5*	*38*	*0.48*

Bundy Substation

The Bundy substation is located along Bennington Road, south of the golf course. The Bundy Substation is fed from the overhead 38 kV distribution system. There are two 1500 kVA, 38 kV–4.16 kV transformers each supplying a 4.16 kV breaker and distribution circuit. The fenced area is 60' x 40'. Table B.8 shows the transformers at Bundy Substation.

Table B.8
Transformers BundySubstation

Name	Capacity (MVA)	Primary Voltage(kV)	Secondary Voltage(kV)
Bundy 1	*1.5*	*38*	*4.16*
Bundy 2	*1.5*	*38*	*4.16*

The transformers were noted to be in fair condition. The secondary circuits, Bundy 1 and Bundy 2 service 27 and 76 transformers, respectively which in turn provide 120/240, 208/120, 480/277 V service.

FDR Substation

The FDR Substation is located along FDR Drive at Saratoga Road. The FDR Substation is fed at 38 kV from overhead Circuit 5500, which passes through the station. The transformer primary is tapped from the overhead line with a Gang-Operated Air-Break (GOAB) switch which feeds an SF6 circuit breaker. This circuit breaker in turn feeds a 5000 kVA, 38–4.16 kV transformer. The substation is enclosed in a fence (39' x 49').

The transformer was noted to be in good condition. Two feeders supply 4.16 kV to 31 and 51 transformers, respectively which in turn supply 120/240, 208/120, 480/277 V to various points.

Coral Sea Substation

The Coral Sea Substation is served from the 38 kV overhead distribution circuit number 5500. The 38 kV overhead terminates on the steel structure before going to the transformer which is 5000 kVA 38 kV–4.16 kV substation type unit. As of April 2001, there was an additional transformer inside the fence which was disconnected and not in service.

Three secondary feeders provide 4.16 V to 69, 54 and 31 transformers, respectively. These transformers then provide 120/240, 208/120, 480/277 V to various points.

Substation A

Substation A is fed from the overhead 38 kV Airport Service distribution. There are two 1500 kVA 38 kV–13.2 kV transformers. The fenced area is 71' x 45'. Substation A is equipped with primary metering. The transformers were noted to be in fair condition. AA Feeder Ckt 1 supplies 13.2 kV to 13 transformers and AB Feeder Ckt 1 supplies the same voltage to 51 transformers. (HSMM/2001)

Substation 24

Substation 24 is located on the airfield, east of Bldg 1749. Substation 24 is a small station on the airfield fed underground from Substation A, 13.2 kV, AB Feeder Ckt 1. The transformer is a 500 kVA 13.2 kV–2.4 kV unit that feeds a bank of transformers for airfield lighting. The fenced area is 37' x 22'. The transformer at substation 24 were noted to be in fair condition.

Tele-Communications

Information received to date indicates manholes and fiber optic cable for the telecommunications system. It is assumed that this equipment is for data transmission. Refer to Figure B.16 for a layout of system.

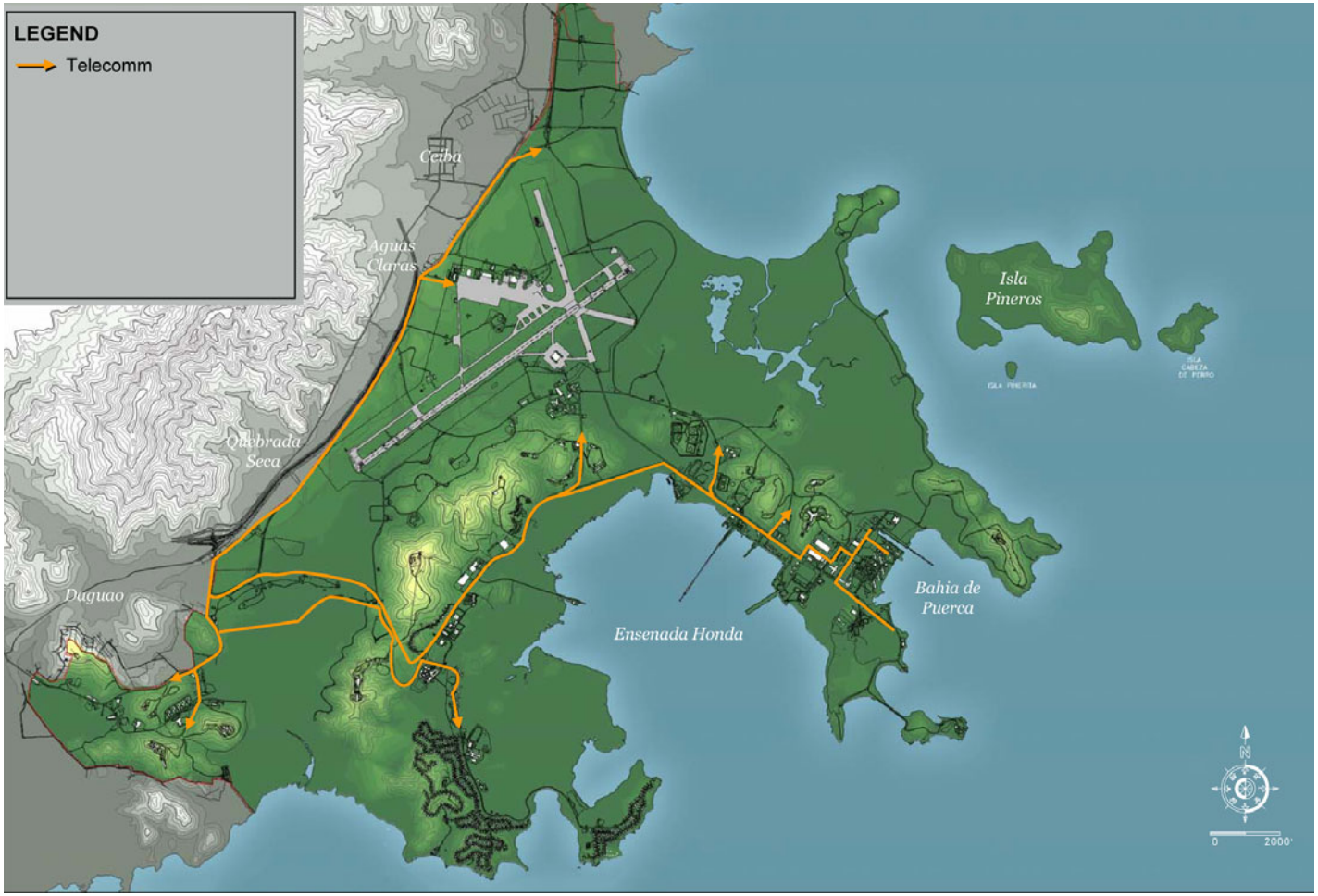

Figure B.17
Fiber-Optic Cable Telecommunications System

Source:
Moffatt & Nichol Int.

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Appendix A.c:
Existing Building Assessment

Appendix A.c
Existing Building Assessment

Building Evaluation Criteria

The building evaluation criteria were developed to aid in the analysis of the existing conditions assessment of the buildings and structures on the US Naval Station Roosevelt Roads. An initial site analysis resulted in a division of the Base into 8 distinct Zones. Each zone is distinguished both by location and overall usage. Further analysis of the facilities resulted in categorization and assessment of each facility based on qualitative and quantitative criteria. The most important of these include:

- Construction Type: Concrete masonry, metal or wood
- Building Type: Based on usage
- General Condition: Very Good to Poor
- Building Value: High to Low
- Adaptive Re-use: Highly to Poorly Adaptable
- Area: in Square Feet (SF)
- Facility Number: assigned by the Navy
- Year of Construction
- Number of Stories
- Facility Name: assigned by the Navy
- View: rated 0 to 3 with 3 being the most desirable views
- Operationally Significant: Yes or No

While some of these criteria are self-evident others require judgments to be made by the evaluation team. The more significant of these criteria are described further on the following pages.

Zones

Historically, the facilities were developed in distinct building campaigns that supported the expansion of military operations at Roosevelt Roads. Seventy-five percent (75%) of the buildings and structures were built before 1960. For the purpose of our analysis we divided the Base into eight (8) geographic zones with corresponding sub-zones, representing distinct groupings or land uses on the Base.

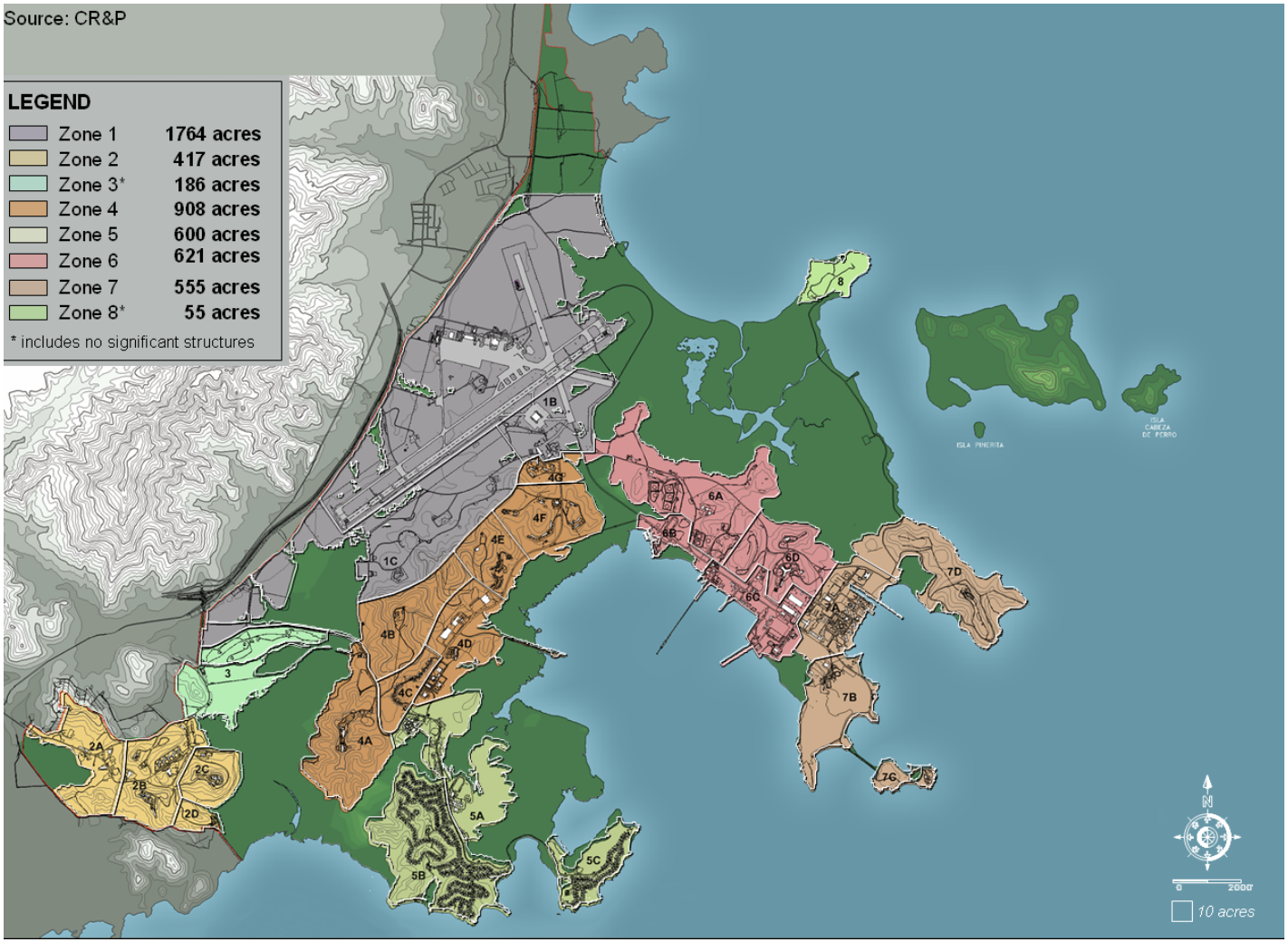


Figure C.1
Study Zones

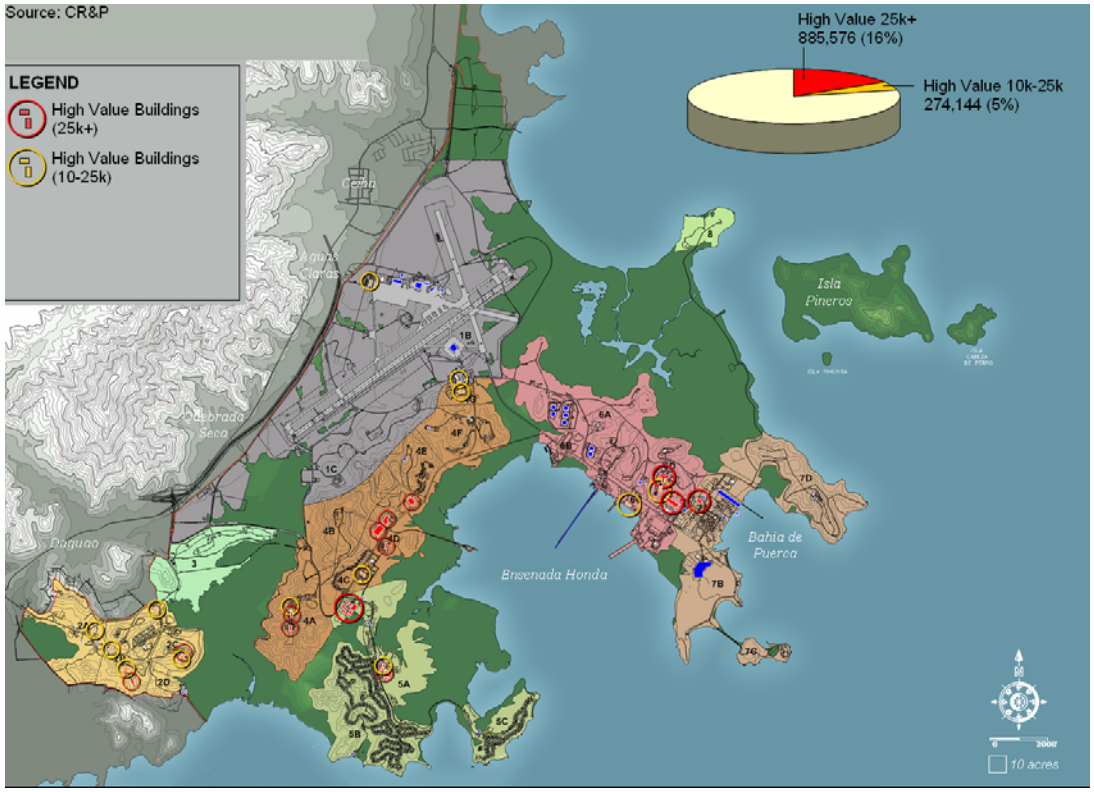
Source: CRP

Building Type

Each building and facility was categorized by type in accordance with the Building Use and Occupancy Classifications of the 2003 edition of the International Building Code (IBC). The IBC was chosen because the United States Government recently adopted the IBC for all of its facilities. Military, Educational and Recreational use categories were added to supplement the IBC designations in order to provide a fine grain description of the existing facilities.

Figure C.2
High Value Buildings

Source: CRP

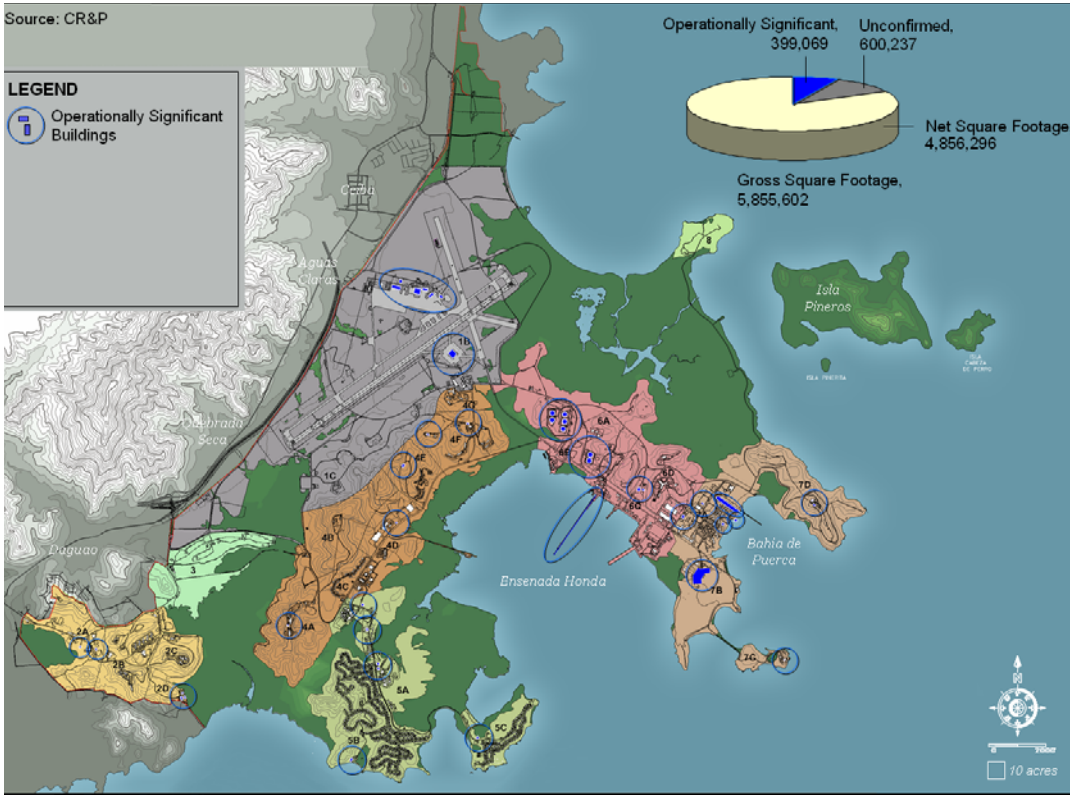


Building Value

High Value: Facilities categorized as High Value were sited on the base map. High Value facilities include those that offer a significant use or adaptive re-use opportunities in their current location, or, in the case of residential buildings, are over 3,000 SF and have been recently renovated. Due to their significant value, retention of high value facilities should be given careful consideration in any future re-use plans.

Figure C.3
Operationally Significant

Source CRP



Medium Value: Facilities with a medium value are those that are in very good or good condition, are well constructed, are varied in their potential re-use adaptability or have a good view. Medium value facilities can be adapted to complement a variety of proposed land uses. Facilities categorized as medium value have development potential and would require a more in-depth assessment to evaluate their true value relative to specific re-use proposals.

Low Value: Facilities with a low value are those structures that are in fair or poor condition, obsolete, or poorly constructed and/or usually pre-fabricated metal buildings having square footages typically in the range of 10,000 SF or below and have little to no view. Low value buildings and structures should be carefully considered for demolition in any proposed reuse plan.

Operationally Significant

Facilities characterized as "Operationally Significant" include a broad range of facilities that provide necessary support to the base utility infrastructure, the airport facilities and the seaport facilities. These buildings are usually concrete or steel framed structures and in good condition.

Figure C.4
Operationally Significant Airport

Source CRP

Some of the infrastructure facilities serve Base-wide or multi-zone areas. However, it should be noted that even some of these facilities could easily be adapted to serve individual zones or sub-zones in the future without compromising the overall base infrastructure. Facilities related to the airport include the air traffic support buildings, aircraft maintenance, fuel storage facilities, cargo handling facilities and the fuel pier.Facilities related to the seaport include the support buildings required to maintain the vessels and the fuel storage facilities. The berthing piers and bulkheads are not considered as operationally significant since they would require modifications to accommodate recreation or civilian commercial vessels

Summary of Facility Assets

The team performed on-site visual assessment of NSRR facilities during an extensive four-day inspection on February 24-27, 2004. Sources for this study include the Consultant Team review of the following reports and construction documents provided by the Navy.

- Navy's NSRR Buildings and Structures 110503;
- NSRR Super Map;
- LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study, June 8 2001;
- Various construction documents and information provided by the Navy's on-site personnel.

Overview of Existing Facilities

There are over 1,600 listed facilities including buildings and other structures at Roosevelt Roads comprising more than 5,800,000 square feet (SF). Buildings range in size from the largest—the Public Works Building at 120,640 SF, to the smallest—a 64 SF utility building. The average building size is 3,600 SF.

Of the approximate 5,800,000 SF of listed facilities nearly 7%, or 399,069 SF, are deemed to be "Operationally Significant" and are essential to the on-going operation of NSRR's existing infrastructure, its port and its airport. These include such facilities as the fuel pier, the main hangar at the airport, jet fuel tanks, the sewage treatment plants, etc.

Another 600,237 SF of listed facilities are "Unconfirmed" at this time with respect to condition, use or location resulting from inconsistencies or omissions from the reference data provided by NSRR. This will require additional time and research to resolve and is outside of the scope of this effort.

Net Square Footage Allocations

The Net Square Footage of built facilities that we will consistently reference totals 4,856,296 SF. This Net Square Footage derives from the total of approximately 5,800,000 SF and excludes those facilities identified as "Operationally Significant" (399,069SF) or "Unconfirmed" (600,237 SF).

In broad terms the general use of the facilities breaks down as follows:

- There are more than 801 Residential buildings including single and small scale multi-family dwellings, apartment houses and a hotel. These buildings comprise 2,417,010 SF, or 50% of the net square footage.
- There are also facilities in use as commercial, retail, offices and industrial facilities. These approximate 1,225,000 SF in area, or 25% of the net square footage.
- Educational, institutional and public amenity purpose buildings comprise 370,000 SF or 8% of the net square footage; and
- Storage structures (both in permanent structures or metal buildings) comprise 541,621 SF and represent slightly more than 11% of the net square footage.
- The remaining square footage serves municipal, utilitarian, military or open space recreational functions and comprises approximately 302,700 SF, or 6% of the total.

Table C.1
Tabular Summary of Facility Square Footages

Total Facilities	***5,800,000 SF***
Less Operationally Significant	*-399,069 (400,000 SF)*
Subtotal	***5,400,000 SF***
Less Unconfirmed	*-600,237 SF*
Facilities Net Square Footage Subtotal	***4,856,296 SF***

Facility Type	Net Square Footages	Percent of Total
Residential	*2,417,010 SF*	*49.77%*
Business	*500,548 SF*	*10.31%*
Industrial	*459,293 SF*	*9.46%*
Storage	*434,998 SF*	*8.96%*
Retail	*189,543 SF*	*3.90%*
Recreation	*185,864 SF*	*3.83%*
Educational	*182,125 SF*	*3.75%*
Institutional	*142,717 SF*	*2.94%*
Assembly	*120,724 SF*	*2.49%*
High Hazard	*106,623 SF*	*2.20%*
Utility	*74,339 SF*	*1.53%*
Municipal	*21,395 SF*	*0.44%*
Military	*21,117 SF*	*0.43%*
Subtotal	***4,856,296 SF***	*100%*

Facilities Assessment

With a few exceptions, the prevailing condition of the existing facilities at NSRR is good. This may be attributable to the degree of maintenance provided over the years by a combination of Navy personnel and civilian employees.

There are a number of newly constructed facilities at NSRR that have just been completed but never occupied. These include a new office building and a new barracks for the Navy Seals. Another project just nearing completion is the new BEQ (Bachelors and Enlisted Quarters) residential facility.

In addition, a number of facilities have been recently renovated. These include the Navy Exchange, the Hospital, the Commissary, and a number of single family residential buildings.

With consistency, most facilities at the base were sited, designed and constructed for functionality and lack any sense of specific aesthetic quality or architectural style. Similarly, their access, siting and open space are absent any landscape design.

A number of buildings were scheduled for renovation or gutted in anticipation of an imminent renovation. They remain in that unusable condition.

Numerous buildings, particularly some of the older metal storage buildings, are obsolete or deteriorated and are candidates for removal.

Figure C.5
BEQ Apartments

Notes by Selected Facility Type

Residential: Existing housing stock at NSRR includes 801 single and multi-family residential facilities comprising 2,417,010 SF.

Of those, 676 are single family dwellings comprising 1,233,185 SF, or 51% of the total residential building area. The majority of single family houses are small, concrete block structures with punched windows and low-sloped built-up roofs and range in size from 1,600 to 2,000 SF. Larger single family structures, typically allocated as officer's housing, are similar in style and approach 3,000 SF. Of the 676 single family dwellings, 319 have been recently renovated.

Another 98 buildings consist of small multi-family dwellings designed to accommodate 2 to 8 families. These comprise 474,000 SF, or 20% of the total residential area.

The remaining 29% of the residential area is made up of 27 Large Scale Multi-family or Lodging buildings, comprising 710,000 SF.

Operationally Significant: Facilities in this category include those necessary for basic infrastructure and utilities, airport operation and port usage. Excluding Pier 3, there are 113 Operationally Significant structures on the Base comprising 399,000 SF. This amounts to 7% of the total built area for the Base and about 7% of the total number of facilities.

High Value Facilities: Buildings and structures in this category include those that are necessary to support utility or port infrastructure , offer a significant public amenity in their current location (e.g. hospital) or, in the case of residential buildings, have been recently renovated.

This category includes many small structures. Excluding facilities under 3,000 SF in area, there are a total of 116 High Value structures totaling 1,700,000 SF in area. This is approximately 29% of the 5,800,000 SF total built area on the Base.

In terms of size breakdown of the High Value facilities there is 933,000 SF in facilities over 25,000 SF, 335,000 SF in facilities between 10,000 SF and 25,000 SF in area and 401,000 SF in facilities between 3,000 SF and 10,000 SF in area.

Figure C.6
Single Family Dwelling

Figure C.7
Operationally Significant Seaport

Figure C.8
Facility distribution by building type

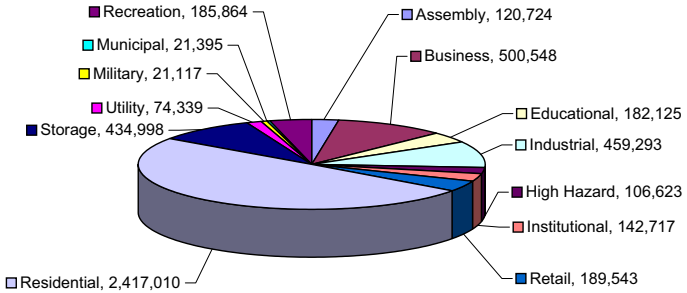


Figure C.9
Facility distribution by building type

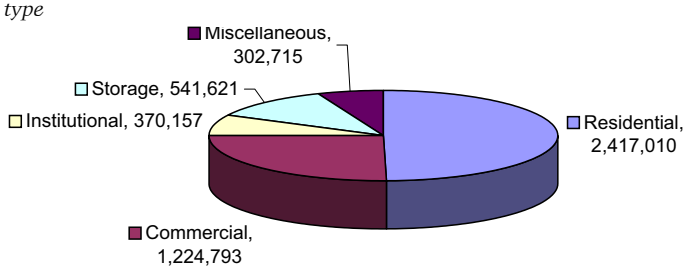


Figure C.10
Residential building type distribution

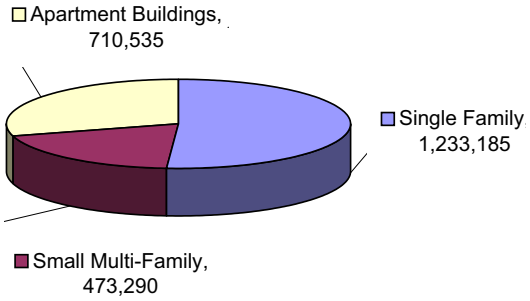


Figure C.11
Facility distribution by general usage (SF)

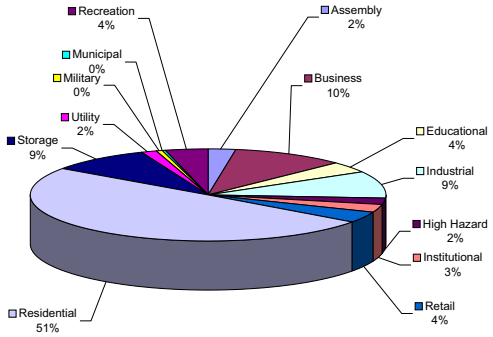


Figure C.12
Facility distribution by general usage (percentage of net SF)

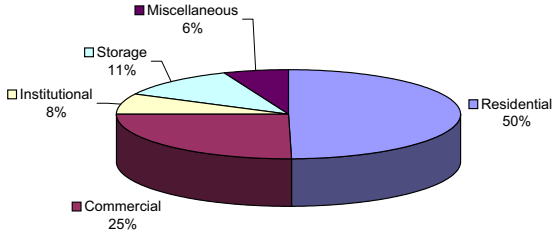
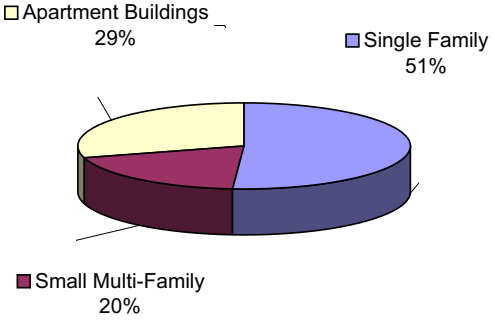


Figure C.13
Residential building type distribution percentage



Building Size

Naval Station Roosevelt Roads Buildings and Structures Assessment by Building Size

LEGEND

Zones

	Zone 1
	Zone 2
	Zone 3
	Zone 4
	Zone 5
	Zone 6
	Zone 7
	Zone 8

Construction Type

C	Concrete / Concrete Block
M	Metal
W	Wood
P	Permanent
S	Semi-Pemanent
T	Temporary

General Condition

VG	Very Good
G	Good
F	Fair
P	Poor

Building Value

H	High
M	Medium
L	Low

Adaptive Re-use

HA	Highly Adaptive
FA	Fairly Adaptive
PA	Poorly Adaptive
NA	Not Adaptive

Recent Renovation

Y	Yes
N	No

View

0	None
1	Some
2	Good
3	Best

Operationally Significant

Y	Yes
N	No

SUMMARY

Building Type - International Building Code 2003 - Use and Occupancy Classification		*Square Footage by Building Type*	*No. of Facilities*
Assembly	Theaters, Restaurants and Churchs	120,724	14
Business	Airport, Post Offices, Radio and TV Stations	500,548	53
Educational	K thru 12 Schools and Day Care Facilities	182,125	6
Industrial	Factories, Manufacturing and Assembly	459,293	39
High Hazard	Storage of Hazardous Materials and Explosives	106,623	57
Institutional	Assisted Living Quarters, Hospitals and Correctional Facilities	142,717	3
Retail (Mercantile)	Department Stores, Markets and Fuel Stations	189,543	4
Residential	Hotels, Apartment Buildings and Single Family Houses	2,417,010	801
Storage	Repair and Storage Facilities	434,998	84
Utility	Aircraft hangars, carports and towers	74,339	28
Military	Supports military operations	21,117	12
Municipal	Infrastructure supporting facilties	21,395	2
Recreation	Residential recreation	185,864	48
	Total Square Footage	4,856,296	1151 Total
Unconfirmed Facilities		*600,237*	*392*

No. of High Value Bldgs.	*Building Size Sqaure Footage Calculations*	
14	885,576	25K and above for High Value Buildings and Structures
18	274,144	10K to 25K for High Value Buildings and Structures
71	347,477	3K to 10K for High Value Buildings and Structures
	1,507,197	Total SF of High Value Buildings and Structures over 3K sf
103		Total number of High Value Buildings over 3K sf

Sources :

Buildings and Structures Inventory - Excel File: *NSRR Bldgs and Struct 110503* is the base information used to compile the list of facilities

AutoCADD drawing: *NSRR super-map-Prenew-xref* is the base drawing used to locate the buildings within the zones and sub-zones

LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study dated June 8, 2001 was used to formulate base existing conditions of each of the catelogued structures

Various Construction Documents and other information provided by the Navy's on-site personnel.

An extensive visual assessment of the facilities by the design team was conducted during a four-day site visit between February 24-27, 2004

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
2	B	C	Assembly	VG	H	FA		19,760	1687	1969	1	GYMNASIUM/FITNESS CENTER	0	N	Excellent Outdoor Pool		
4	F	C	Assembly	G	M	FA		14,430	1808	1976	1	ENLISTED MEN'S DINING HALL.		N			
2	B	C	Assembly	VG	H	PA		13,374	729	1960	2	FINNIGANS OFFICERS CLUB	2	N			
6	D	C	Assembly	VG	H	FA	Y	13,350	1684	1969	1	HARBOR LIGHTS/CROSSROADS	3	N	Restaurant		
4	D	C	Assembly	G	M	FA	N	11,856	2337	1993	1	CHAPEL		N			10K to 25K
2	B	C	Assembly	G	H	PA		10,060	629	1957	1	THEATRE	0	N	Plays 1st Run Movies	tl. sf	**56,544**
7	A	M	Assembly	F	L	HA	N	9,600	3046	1969	1	EM DINING FACILITY		N			
4	F	C	Assembly	G	M	FA		7,710	206	1957	1	BASE LIBRARY	1	N	Converted to EM Club 1990		
7	A	C	Assembly	P	M	HA	N	6,275	3034	1969	1	EM CLUB		N	Duplicate Bldg #		
3		P	Assembly	G	M	PA		5,420	1211	1968	1	GOLF CLUB HOUSE	0	N	Addition 1996		
5	B	C	Assembly	G	L	FA		5,029	1811	1977	1	COMMUNITY CENTER		N			
6	B	C/W	Assembly	P	L	FA		1,600	1715	1972	1	FLEET REC PARK	1	N			
6	B	C/W	Assembly	G	L	FA		1,300	1724	1972	1	YACHT CLUB	1	N			
7	A	M	Assembly	G	L	HA	N	960	3023	1969	1	CHAPEL	3	N			
4	A	C	Business	VG	H	HA		46,318	386	1962	3	AFWR HDQTRS	2	N	Admin Offices- Communication		
4	D	C/M	Business	G	H	FA	Y	43,688	1970	1979	1	NAVY EXCHANGE COMPLEX	0	N	Town Center Building		
4	A	C	Business	VG	H	PA	Y	35,783	1817	1978	2	COMM. OPERATIONS BUILDING	2	N	Base Communications		25K and above
2	C	C	Business	VG	H	FA		33,675	598	1962	2	NAVY FORCES REGION SOCOM	2	N	Admin. Offices	tl. sf	**159,464**
6	C	C	Business	G	M	FA		24,864	1205	1968	2	NAVSTARR QTRDECK/SUPP/ADP	1	N	Admin. Offices		
4	D	C/M	Business	G	M	PA	Y	23,690	2035	1984	1	CARIBBEAN LANES/BOWLING ALLEY	0	N			
4	A	C	Business	G	H	FA	N	22,011	2296	1989	3	ADMINISTRATIVE BLDG AFWTF		N			
2	B	C	Business	G	M	HA	N	19,200	2357	1994	2	MARCOR RSVE TRAINING BLDG		N			
1	B	C	Business	VG	H	FA		17,264	376	1959	2	WEAPONS DEPT		N	Admin. Offices		
4	G	C/W	Business	VG	M	FA		16,290	202	1957	2	PERS SUPPT OFF/PASS OFFICE		N	Eligible for Historic Preservation		
4	G	C/W	Business	VG	M	FA		16,290	203	1957	2	HRO/NAVOSH/NAVRES ADMIN OFF		N	Admin. Offices		
4	G	C	Business	VG	H	FA		16,290	78	1957	2	NAVY RESERVE TRNG BLDG		N	Dorms converted into office		
4	D	C	Business	G	M	FA	N	15,927	2339	1993	1	SERVICE STA/MINI-MART		N	BLDG # INCLUDES SERVICE STATION		
2	C	C	Business	G	H	FA		15,030	724	1959	3	NAVAL COMMUNICATIONS CENTER	2	N	Admin Offices- Communication		
4	D	C	Business	G	M	HA	N	14,719	2338	1993	1	DENTAL CLINIC/NILSO		N			10K to 25K
2	A	C	Business	F	H	FA		12,652	519	1962	1	C-3/7TH SFG ADMIN HDQTRS.		N	Admin. Offices	tl. sf	**83,247**
7	B	C	Business	G	M		N	9,094	1685	1969	1	US CUSTOMS ENFORCEMENT	2	N	Admin. Offices		
1	A	C	Business	G	H	HA	N	9,088	2343	1993	1	AVIATION SUPPT DIV BY B379		Y			
4	D	C	Business	G	H	HA	N	8,620	2202	1986	1	FAMILY SERVICES CENTER		N			
7	A	C	Business	G	M	HA	N	8,450	2334	1993	1	BOATHOUSE/MARINA		N			
7	A	C	Business	G	M	HA	N	8,000	2297	1990	1	ARMY RESERVES ADMIN & TRAINING CENTER	1	N	Square footage uncertain		
6	C	M	Business	G	H	FA	Y	7,505	1759	1973	1	FLEET POST OFFICE PIER AREA	1	N	Renovated 2000		
2	A	C	Business	G	M	FA		6,569	500	1959	2	US ARMY SOUTH	0	N	Admin. Offices		
4	B	C	Business	G	M	NA		6,562	296	1944	1	TELEVISION STUDIO		N	Part of Base Communications		

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
4	D	C	Business	G	M	FA	N	4,500	2313	1991	1	MCDONALD'S	1	N			
6	C	M	Business	G	M	HA		4,064	1795	1974	1	EXCHANGE LAUNDRY FACILITY		N	Converted to Laundromat		
6	C	M	Business	G	M	HA	Y	4,000	2024	1972	1	LIBERTY CENTER/ITT TRAVEL		N			
7	A	C	Business	G	L	HA	N	4,000	3191	1989	1	CPO "COUNTRY" RESTAURANT	3	N	Square footage uncertain		
7	A	C	Business	F	L	PA	N	3,700	29	1943	1	SEAL TEAM BUILDING	1	N			3K to 10K
5	A	C	Business	G	H	HA	N	3,676	2439	2000	1	NEW HOUSING WELCOME CENTER		N		tl. sf	**28,889**
2	B	C	Business	G	M	FA		3,240	502	1957	1	SECURITY ADMIN OFFICE	0	N	Admin. Offices		
4	C	C	Business	G	M	NA		3,140	737	1959	1	NAVCOMMSTA BUILDING	0	N	Telecommunication Equip		
4	G	P	Business	G	M	FA		3,000	2450	2000	1	WELLNESS CENTER		N			
7	A	M	Business	G	M	HA	N	3,000	2282	1988	1	CLASSRM/SUPP/OPRTN'L BLDG		N			
4	D	C	Business	G	M	HA	N	2,880	2336	1993	1	NFCU (CREDIT UNION)		N			
7	A	C	Business	G	L	HA	N	2,400	3015	1969	1	DISPENSARY/DENTAL	2	N			
4	A	P	Business	P	L	PA	N	2,002	664	1957	1	ROC SUPPORT BLDG.	1	N	Admin. Offices / Demolish		
7	A	M	Business	G	L	HA	N	1,920	3016	1969	1	OPERATIONS/ENGINEERING	2	N			
7	A	M	Business	G	L	HA	N	1,920	3017	1969	1	CONF.ROOM/MAS.CHIEF/QC&P&E	2	N			
7	A	S	Business	G	L	HA	N	1,920	3018	1969	1	ADMINISTRATION	2	N	Duplicate Bldg #		
7	A	M	Business	G	L	HA	N	1,920	3019	1969	1	ADMIN./PHOTO. OFFICE	2	N	Duplicate Bldg #		
2	B	C	Business	G	M	FA		1,679	501	1957	1	SECURITY ADMIN OFFICE	0	N	Admin. Offices		
2	B	M	Business		M	HA	N	1,500	5000	2000	1	SOCSOUTH ADMIN BLDG	G	N	Square footage uncertain		
2	B	M	Business		M	HA	N	1,500	5003	2000	1	SOCSOUTH ADMIN BLDG	G	N	Square footage uncertain		
7	A	C	Business	G	M	HA	N	1,369	2430	1999	1	CONTROL BLD AT LANDFILL		N			
6	A	P	Business		L			1,011	64	1953	1	MESS HALL AND GALLEY OP	0	N			
6	A	C	Business	F	M	PA		1,000	1729	1971	1	LINK 11 (COMM BLDG)	2	N	Base Communications Network		
7	A	M	Business	G	M	HA	N	960	3168	1986	1	CBLANT DET OFFICE	2	N			
6	C	M	Business	G	L	HA	N	960	3022	1969	1	CHARLIE COMPANY OFFICE	3	N	Duplicate Bldg #		
6	C	M	Business	G	L	HA	N	960	3020	1969	1	POST OFFICE/BARBER SHOP/OFFI	3	N			
6	A	C	Business	F	M	NA		380	242	1959	1	RADIO X-MTR GEN PL-LINK 11		N	Part of Base Communications		
6	A	M	Business	G	H	HA	N	238	31	1945	1	OFFICE @ ROBC	0	N			
4	B	C	Business	F	M	PA		130	1703	1970	1	AM RADIO TRANSMITTER	2	N	Base Communications Network		
5	A	C	Educational	G	H	FA	Y	85,280	2085	1986	1	ELEMENTARY SCHOOL	1	N			
5	A	C	Educational	G	H	FA	Y	52,255	2200	1960	1	ACSS HIGH SCHOOL	1	N			25K and above
4	D	C	Educational	G	H	FA	N	17,807	2362	1994	1	CHILD DEV CENTER/PLAYGROUND		N		tl. sf	**155,342**
5	A	C	Educational	G	H	PA	N	13,769	2295	1988	1	HIGH SCHOOL GYMNASIUM	1	N		tl. sf	10K to 25K **13,769**
5	A	C	Educational	F	M	FA	N	7,918	886	1960	2	NAVY CAMPUS	0	N	Residence Hall Conversion		
5	A	C	Educational	F	M	FA	N	5,096	887	1960	2	NAVY COLLEGE	0	N	Residence Hall Conversion		
7	B	C	High Hazard	P	L	NA	N	24,500	38	1944	1	HAZD WASTE STGE	0	N	Asbestos Contamination/Eligible for Hist Pres		
1	C	C	High Hazard	P	L	NA		13,806	207	1943	1	WEAPONS INERT STOREHOUSE		N	Weapons Storage		
7	A	C	High Hazard	F	L	FA	N	13,086	30	1943	1	EOD OPNS BLDG	0	N	Stores disposed explosives		
1	C	C	High Hazard	F	L	FA		8,000	303	1964	1	STGE/O/STORMC		N	Weapons Storage		
7	A	C	High Hazard	F	L	FA	N	4,517	30	1944	2	RESTAURANT @ ROBC	0	N	Stores disposed explosives		
1	C	C	High Hazard	F	L	FA		4,000	300	1943	1	SMALL ARMS/PYROTECH MAGAZINE		N	Weapons Storage		
1	C	C	High Hazard	F	L	FA		4,000	300	1964	1	SEA CADET BLDG.		N	Weapons Storage		
1	C	C	High Hazard	F	L	FA		4,000	302	1943	0	MAGAZINE/1Y3/		N	Weapons Storage		
1	C	C	High Hazard	F	L	FA		3,111	303	1943	0	MAGAZINE/124/		N	Weapons Storage		

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
6	D	C	High Hazard	G	L	FA	N	2,501	2034	1983	1	PEST CONTROL BUILDING/PESTICIDE STORAGE		N	
1	B	C	High Hazard	G	H	FA	N	2,303	2365	1994	1	FLAMM SUPP STGE BY B860		N	
1	C	C	High Hazard	F	L	FA		1,431	384	1958	0	HIGH EXPLOSIVES MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		1,404	311	1943	0	HIGH EXPLOSIVE MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		1,404	312	1943	0	HIGH EXPLOSIVES MAGAZINES		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		1,404	313	1943	0	HIGH EXPLOSIVES MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	G	L	PA		1,404	1681	1969	0	MAGAZINE	0	N	Weapons Storage
1	C	C	High Hazard	G	L	PA		1,404	1682	1969	0	MAGAZINE	0	N	Weapons Storage
4	A	M/C	High Hazard	F	L	PA		1,200	764	1962	0	MAGAZINE - 7NC5	0	N	Store Inert Ordinance
4	A	M/C	High Hazard	F	L	PA		1,200	765	1962	1	MAGAZINE - 7NC6	0	N	Store Inert Ordinance
4	A	M/C	High Hazard	F	L	PA		1,200	766	1962	0	MAGAZINE - 7NC7	0	N	Store Inert Ordinance
1	D	C	High Hazard	F	L	FA		1,134	314	1943	0	HIGH EXPLOSIVES MAGAZINES		N	Weapons Storage
4	A	C	High Hazard	F	L	FA		1,000	358	1943	0	PYROTECHNIC MAGAZINE RI		N	Weapons Storage
4	A	C	High Hazard	F	L	FA		1,000	359	1943	0	PYROTECHNIC MAGAZINE RI		N	Weapons Storage
4	A	C	High Hazard	F	L	FA		1,000	360	1943	0	JET BOOSTER		N	Weapons Storage
1	C	M	HIgh Hazard	G	L	NA	N	720	T11	1969	0	OPEN AMMUNITION STORAGE PAD	0	N	
1	B	M	High Hazard	G	L	PA	N	600	2366	1994	1	FLAM SUPP STGE BY B-860		N	
7	B	C	High Hazard	G	L	PA	N	550	2086	1985	1	FLAM LIQD STGE BLDG BY SUROP		N	
7	A	C	High Hazard	G	M	FA	N	503	2434	1999	1	BIOMED WASTE STGE/STRLZTN		N	Medical Waste Facility
7	A	C	High Hazard	F	L	NA		455	111	1954	1	DOPE-THINNER WAREHOUSE		N	
6	A	M	High Hazard	G	L	FA	N	400	2009	1981	1	DRMO FLAMMABLE STORAGE		N	
1	B	C	High Hazard	P	L	FA		400	255	1962	1	GARBAGE HOUSE		N	Weapons Storage
7	A	C	High Hazard	F	L	FA	N	324	3152	1983	1	PEST CONTROL BUILDING	1	N	
1	C	C	High Hazard	F	L	FA		308	301	1943	0	MAGAZINE/3HT4/		N	Weapons Storage
1	B	C	High Hazard	P	L	FA		308	255	1949	1	OPERATIONAL STORAGE		N	Weapons Storage
7	A	C	High Hazard	F	H	FA	N	231	3158	1983	1	A CO. BATTERY CHARGE FAC	1	N	
1	C	C	High Hazard	F	L	FA		187	305	1943	0	FUSE-DETONATOR MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		187	306	1943	0	MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		187	307	1943	0	FUSE-DETONATOR MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		187	308	1943	0	FUSE-DETONATOR MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		187	309	1943	0	FUSE-DETONATOR MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	F	L	FA		187	310	1943	0	MAGAZINE		N	Weapons Storage
1	C	C	High Hazard	G	L	PA		63	1665	1967	0	READY ISSUE MAG	0	N	Weapons Storage
1	C	C	High Hazard	G	L	PA		63	1666	1967	0	READY ISSUE MAG	0	N	Weapons Storage
1	C	C	High Hazard	G	L	PA		63	1667	1967	0	READY ISSUE MAG	0	N	Weapons Storage
1	C	C	High Hazard	G	L	PA		63	1668	1967	0	READY ISSUE MAG	0	N	Weapons Storage
1	C	C	HIgh Hazard	G	L	NA	N	63	RSL-4	1967	1	READY ISSUE MAG	0	N	
1	C	C	HIgh Hazard	G	L	NA	N	63	RSL-5	1967	1	READY ISUE MAG	0	N	
1	C	C	HIgh Hazard	G	L	NA	N	63	RSL-6	1967	1	READY ISSUE MAG	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
Airport		C	High Hazard	G	L	PA		63	1589	1967	1	READY ISSUE MAG	0	N	Weapons Storage		
Airport		C	High Hazard	G	L	PA		63	1591	1967	1	READY ISSUE MAG	0	N	Weapons Storage		
Airport		C	High Hazard	G	L	PA		63	1593	1967	1	READY ISSUE MAG	0	N	Weapons Storage		
Airport		C	High Hazard	G	L	PA		63	1623	1967	1	READY ISSUE MAG	0	N	Weapons Storage		
6	A	P	High Hazard	G	M	NA			82	1943	0	DIESEL FUEL STGE TNK		N	Vital to Infrastructure by Zone		
6	A	P	High Hazard	G	M	NA			83	1943	0	DIESEL FUEL STORAGE TNK		N	Vital to Infrastructure by Zone		
1	C	C	High Hazard	F	L	FA			313	1966	0	DIESEL FUEL ABOVE G		N	Weapons Storage		
6	A	M/C	High Hazard	P	L	NA			381	1958	0	JET (JP-5) FUEL STR TANK		N	Missle Guidance		
6	C	C	Industrial	VG	M	NA		144,360	799	1966	0	BERTHING PIER #3	2	Y	Seaport Infrastructure		25K and above
6	D	M	Industrial	VG	H	HA	N	120,640	31	1943	2	PUBLIC WORKS DEPARTMENT	0	N		tl. sf	**120,640**
1	A	C	Industrial	VG	H	PA		19,308	378	1958	2	MIS HANDLING-TESTING BLDG		N	Several Renovations		10K to 25K
1	A	P	Industrial	G	H	FA	N	16,398	2011	1981	0	ACFT WASHRACK BLDGS 379/1625		N		tl. sf	**35,706**
6	C	M	Industrial	F	L	HA		16,160	394	1958	1	TORPEDO SHOP/UNDERGROUND DEP		N	Weapons Assembly		
2	A	C	Industrial	F	L			15,890	1686	1970	1	F. B. I. OFFICE		N	Vacant		
6	A	C	Industrial	F	M	HA		10,000	377	1958	1	GRND ELECTRONICS MAINT SHOP		N	Missle Guidance		
7	A	C	Industrial	G	M	HA	N	10,000	2432	1999	1	RECYCLE BLDG AT LANDFILL		N			
1	A	C	Industrial	G	L	HA		6,920	826	1968	1	GROUND SUPPORT SHOP		N			
1	A	C	Industrial	G	L	HA	Y	6,758	790	1966	1	PHOTO LAB		N			
Airport		C	Industrial	VG		NA		6,585	827	1962	2	ACFT FIRE RESCUE STA			Airport Infrastructure		
5	A	M	Industrial	G	L	HA		6,400	793	1966	1	SELF HELP/THRIFT SHOP/TEEN C		N			
6	C	C	Industrial	G	M	HA	N	6,240	2332	1993	1	PRINTING PLANT		N			
7	A	C	Industrial	G	M	HA	N	5,706	3166	1985	2	BRAVO CARPENTER SHOP	2	N			
7	A	M	Industrial	G	L	HA	N	5,706	3190	1985	2	U.T. SHOP BRAVO CO	3	N			
6	A	C	Industrial	G	H	PA	N	5,200	2351	1995	1	HARBOR PATROL		N			
6	C	C	Industrial	G	M	FA		4,479	1739	1969	1	NAVAL RESEARCH LAB (NRL)		N			
1	B	M	Industrial	G	M	HA		4,000	1728	1971	1	MECH. AND ELEC. MAINT. SHOP	0	N			
6	C	C	Industrial	G	M	FA		4,000	1730	1969	1	MK-48 TORPEDO SHOP	0	N	Weapons Assembly Plant		
6	C	M	Industrial	G	L	HA		4,000	1683	1970	1	PW MAINT. STORAGE	0	N	Paint Shop		
7	A	C	Industrial	G	L	HA		4,000	787	1966	1	NAVSPECWARUNIT4 MAANTSHOP	2	N			
7	A	C	Industrial	G	L	HA		4,000	792	1966	1	NSWU-4 VEH/BOAT SHOP MAINT	2	N			
7	A	C	Industrial	G	M	FA	N	3,600	2431	1999	1	MAINT BLDG AT LANDFILL		N			3K to 10K
7	A	C	Industrial	VG	H	FA	N	3,572	2418	1998	1	PW VEHICLE REFUELING SHOP		N		tl. sf	**8,772**
6	B	P	Industrial	G	L	FA		3,321	467	1960	1	EXCHANGE MARINE CENTER	1	N			
2	B	C	Industrial	G	M	PA	N	2,670	2358	1994	1	MARCOR RSVE VEH MAINT BLDG		N			
6	C	M	Industrial	P	L	FA		2,499	870	1964	1	ASROC FACILITY	0	N			
1	C	C	Industrial	F	L	PA	N	2,460	982	1967	1	BATTERY SHOP	0	N			
Airport		M	Industrial	P	L	FA		2,400	801	1966	1	FLYING CLUB		N			
7	A	C	Industrial	G	M	NA	N	2,000	2298	1990	1	ARMY RESERVES VEHICLE MAINT. SHOP	1	N	Square footage uncertain		

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
6	C	C	Industrial	G	M	FA	N	2,000	2300	1990	1	ARMY RESERVES BOAT SHOP	3	N	Square footage uncertain		
5	B	M	Industrial	G	L	HA		1,600	1698	1970	1	CAPEHART CARPENTRY SHOP	1	N			
7	A	M	Industrial	G	H	NA	N	1,400	2426	1998	0	PW VEH WASH PLATFORM B-31		N			
6	C	M	Industrial	G	L	PA		1,100	1026	1960	1	AUTOMOTIVE MAINT. SHOP	0	N			
1	B	M	Industrial	F	L	HA		960	1819	1973	1	ELECTRONIC MAINT SHOP		N			
6	C	C	Industrial	G	L	FA		889	466	1960	1	RPR SHOP STGE/REDY ISSU MISC		N	Converted to Storage		
6	A	C	Industrial	G	M	PA	N	800	2435	1998	1	SPNT LEAD ACID BAT STGE DRMO		N			
1	A	C	Industrial	G	M	PA	N	672	2352	1993	1	SLAT SUPPT MAINT FAC B-378		N			
7	A	C	Industrial	G	M	HA	N	600	2299	1990	1	ARMY RESERVES MAINT SHED	1	N	Square footage uncertain		25K and above
6	D	C	Institutional	G	H	FA		130,906	1790	1973	3	HOSPITAL	3	N	Needs Continuous Maintenance	tl. sf	**130,906**
5	A	C	Institutional	F	M	FA	N	7,918	888	1960	2	MEDICAL CLINICS (EIP/MDO)	0	N	Residence Hall Conversion		
4	F	C	Institutional	G	L	PA		3,893	1807	1975	1	BRIG		N			
		C/M	Military	G	L	NA	N	?	2002	1980	0	WATER DECANTING POOL		N			
7	D	C	Military	G	M	PA	N	9,222	2304	1989	3	TELEMETRY BLDG	3	N			
1	C	M	Military	G	M	FA	N	4,000	2023	1974	1	BOMB BUILD UP AREA		N			
1	C	C	Military	F	L	FA	N	2,405	DN2-3	1960	1	GUIDED MISS OPER CONTROL CEN	0	N			
1	B	M	Military	G	L	NA		2,241	1734	1970	1	DRONE TEST FACILITY	0	N			
Airport		C	Military	G	L	PA		1,514	380	1959	1	MISSILE TEST ASSY BLDG		N	Missle Guidance		
3		C	Military	P	L	NA		506	646	1957	1	GATEHOUSE #3		N			
7	C	C	Military	G	L	PA	N	351	2065	1982	1	CABRAS RANGE OPS FACILITY/OBSERVATION POST		N			
4	G	C	Military	G	L	NA	N	289	2045	1985	0	RADAR TOWER/TURNTABLE		N			
1	A	C	Military	G	L	PA	N	256	2395	1998	1	NEW GATE #1/SENTRY HOUSE		N			
8	A	P	Military	P	L	FA	N	169	2189	1982	1	STORAGE SHED AT RIFLE RANGE	0	N			
4	B	C	Military	F	L	NA		164	161	1943	1	GENR BLDG FOR GMOC UHF-VHF		N	Missle Guidance		
6	C	C	Municipal	G	H	FA	Y	15,356	2252	1987	3	WATERFRONT OPNS BLDG		N		tl. sf	10K to 25K **15,356**
4	D	C	Municipal	F	M	HA		6,039	277	1943	0	SURFOPS PIER FAC		N	Ferry Pier		
2	A	C	Recreation	F	L	NA		108,900	643	1961	0	PLAYING FIELD AND FAC		N			
4	G	C	Recreation	VG	M	FA	Y	11,700	201	1957	1	AUTO HOBBY SHOP/ FITNESS CTR		N	Renovated in 2000		
7	A	C	Recreation	F	L	NA	N	7,200	3162	1984	0	TENNIS COURT	2	N			
2	A	C	Recreation	P	L	NA		7,200	640	1957	0	PLAYING COURT-TENNIS		N			
2	A	C	Recreation	P	L	NA		7,200	641	1957	0	BUNDY BASKETBALL COURTS		N			
5	B	C	Recreation	G	M	FA	N	7,165	2305	1990	1	YOUTH CENTER		N			
5	A	-	Recreation	P	L	NA	N	5,625	1918	1971	0	SOFTBALL FIELD (ALGODONES)	1	N			
7	A	M	Recreation	F	L	HA	N	4,800	3164	1985	1	PHYSICAL FITNESS CENTER	2	N			
6	C	C	Recreation	G	M	NA		3,200	1733	1974	0	HOSPITAL COURTS CONCRETE SOF	1	N			10K to 3K

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments	
6	B	C	Recreation	VG	H	NA		3,200	1726	1972	0	TENNIS COURTS(LIGHTED)	1	N	tl. sf	3,200
7	A	C	Recreation	G	L	NA	N	2,418	2205	1985	0	BAND STAND BLDG @ E.M.BEACH	3	N		
6	B	-	Recreation	VG	L	NA		2,417	1713	1972	0	BASEBALL FIELD MARINA	1	N		
7	C	C/W	Recreation	G	L	PA		2,411	104	1949	1	OFFICERS BEACH HOUSE		N	Recently renovated	
5	C	M	Recreation	G	L	NA	N	1,900	1942	1978	1	*Beach shelters*/REC GRNDS COMM BEACH	3	N	19 Metal Beach Shelters on concrete pads/ SF incertain	
5	C	-	Recreation	G	L	NA		1,600	1800	1974	0	TENNIS COURT		N		
6	C	M	Recreation	G	L	HA	N	1,600	2242	1987	1	VACANT/GAME & TV ROOM BATHROOM-SNACK BAR		N		
5	B	C	Recreation	G	M	NA		1,056	1577	1962	1	EM POOL	1	N	Bath House	
6	B	C	Recreation	VG	L	NA		1,044	1714	1972	0	BASKETBALL COURT BY MARINA	1	N		
7	A	C	Recreation	G	L	NA	N	900	3146	1978	1	BEACH PAVILION	3	N		
2	B	M	Recreation	G	L	NA	N	600	2048	1985	1	SHELTER @ BUNDY TENNIS COURTS	0	N	Square footage uncertain	
5	B	C	Recreation	G	M	PA		592	1469	1960	0	EM SWIM POOL/PUMP/FLTR HSE	1	N		
7	C	C	Recreation	G	L	FA	Y	441	2433	1995	1	NEW ALL HANDS BEACH HUT		N	COMMERCIAL STAND	
5	A	C	Recreation	P	L	NA	N	225	1919	1968	1	TOILETS @ SOFTBALL FIELD	1	N		
6	D	P	Recreation	G	L	NA		200	2225	1985	1	CABANA HUT BY BLDG 1791	3	N		
5	C	C	Recreation	G	L	NA	N	117	2538	1972	1	COMMUNITY BEACH SHELTER	3	N		
5	C	C	Recreation	G	L	NA	N	117	2539	1972	1	COMMUNITY BEACH SHELTER	4	N		
5	C	C	Recreation	G	L	NA	N	117	2540	1972	1	COMMUNITY BEACH SHELTER	5	N		
5	C	C	Recreation	G	L	NA	N	117	2541	1972	1	COMMUNITY BEACH SHELTER	6	N		
5	C	C	Recreation	G	L	NA	N	117	2542	1972	1	COMMUNITY BEACH SHELTER	7	N		
5	C	C	Recreation	G	L	NA	N	117	2543	1972	1	COMMUNITY BEACH SHELTER	8	N		
5	C	C	Recreation	G	L	NA	N	117	2544	1972	1	COMMUNITY BEACH SHELTER	9	N		
5	C	C	Recreation	G	L	NA	N	117	2545	1972	1	COMMUNITY BEACH SHELTER	10	N		
5	C	C	Recreation	G	L	NA	N	117	2546	1972	1	COMMUNITY BEACH SHELTER	11	N		
5	C	C	Recreation	G	L	NA	N	117	2547	1972	1	COMMUNITY BEACH SHELTER	12	N		
5	C	C	Recreation	G	L	NA	N	117	2548	1972	1	COMMUNITY BEACH SHELTER	13	N		
5	C	C	Recreation	G	L	NA	N	117	2549	1972	1	COMMUNITY BEACH SHELTER	14	N		
5	C	C	Recreation	G	L	NA	N	117	2550	1972	1	COMMUNITY BEACH SHELTER	15	N		
5	C	C	Recreation	G	L	NA	N	117	2551	1972	1	COMMUNITY BEACH SHELTER	16	N		
5	C	C	Recreation	G	L	NA	N	117	2552	1972	1	COMMUNITY BEACH SHELTER	17	N		
5	C	C	Recreation	G	L	NA	N	117	2553	1972	1	COMMUNITY BEACH SHELTER	18	N		

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
5	C	C	Recreation	G	L	NA	N	117	2554	1972	1	COMMUNITY BEACH SHELTER	19	N			
5	C	C	Recreation	G	L	NA	N	117	2555	1972	1	COMMUNITY BEACH SHELTER	20	N			
7	C	M	Recreation	P	L	NA	N	100	2026	1978	1	BEACH SHELTERS @ EM BEACH	3	N	7 SMALL BEACH SHELTERS ON CONCRETE PADS		
7	C	C	Recreation	F	L	NA		64	454	1985	1	BEACH SHELTER		N			
5	C	-	Recreation	G	M	NA			1303	1961	0	PLAYING FIELD BASEBALL	0	N			
5	C	-	Recreation	G	M	NA			1316	1961	0	PLAYGROUND 3	0	N			
4	G	C	Recreation	G	L	NA			484	1960	0	TENNIS COURT		N	Recently resurfaced		
4	F	C	Recreation		L				1929	1969	0	PLAYING COURTS(MARINE BRKS)		N	Volleyball Court		
4	D	C	Residential	G	H	FA	N	73,751	2303	1991	4	NAVY LODGE (120 UNITS)	2	N	Hotel		25K and above
2	B	C	Residential	VG	H	FA		49,685	1688	1969	5	BOQ TRANS W1/W2 AND O1/O2	3	N	Hotel	tl. sf	**123,436**
7	A	C	Residential	P	L	PA	N	38,002	3180	1989	3	BEQ 1B	3	N			
7	A	C	Residential	P	L	PA	N	38,002	3181	1989	3	BEQ 1A	3	N			
2	B	C	Residential	P	M	FA	N	32,899	734	1960	3	BEQ	0	N			
4	F	C	Residential	VG	L	PA		32,583	1707	1972	3	BEQ	3	N			
4	F	C	Residential	VG	L	PA		32,583	1708	1972	3	BEQ	3	N			
4	F	C	Residential	VG	L	PA		32,583	1709	1972	3	BEQ	3	N			
2	B	C	Residential	P	M	FA	N	31,807	733	1960	3	BEQ	0	N			
2	B	C	Residential	G	M	FA	N	31,200	731	1960	3	BEQ	0	N			
2	B	C	Residential	P	M	FA	N	31,200	732	1960	3	UEPH	0	N			
4	F	C	Residential	G	L	PA		29,258	1814	1977	3	BEQ	2	N			
2	B	C	Residential	P	M	FA	N	29,178	735	1960	3	COMMUNITY FAC/USA SOCSOUTH	0	N			
7	A	C	Residential	P	L	PA	N	27,335	3176	1988	2	BEQ 3B (CPO)	3	N			
7	A	C	Residential	P	L	PA	N	27,280	3178	1988	2	BEQ 3A	3	N			
7	A	C	Residential	P	L	PA	N	27,280	3179	1988	2	BEQ 2	3	N	2,417,010		
4	F	C	Residential	G	L	PA		26,405	1815	1977	3	BEQ	2	N			
2	B	C	Residential	VG	H	PA		21,207	726	1960	3	BOQ TRAN W3/W5 & O3/ABOVE	2	N			
4	F	C	Residential	G	L	PA		15,807	1813	1977	3	BEQ	2	N			
7	A	C	Residential	P	L	PA	N	14,640	3175	1989	2	BOQ	3	N			
4	F	C	Residential	G	L	PA	Y	14,224	1209	1967	2	BEQ (TRANSIENTS)	1	N	Renovated 1998		
6	D	C	Residential	G	H	FA		12,422	1791	1973	2	BEQ HOSP CORPSMAN	3	N			
2	B	C	Residential	VG	H	PA		11,996	725	1960	3	BOQ TRAN PTY W3-W-5 & O3/ABV	2	N			
2	B	C	Residential	VG	H	PA		11,996	727	1960	3	BOQ TRAN W3/W5 & O3/ABOVE	2	N			10K to 25K
2	B	C	Residential	VG	H	PA		11,901	728	1960	3	BOQ TRANS W3/W5 & O3/ABOVE	2	N		tl. sf	**69,522**
5	A	C	Residential	P	L	FA	N	8,168	889	1960	2	889 A/B/C/D/E/F/G/H EN-2R	0	N			
5	A	C	Residential	P	L	FA	N	8,168	897	1960	2	897 A/B/D/E/F/G/H EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1822	1975	2	1 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1824	1975	2	3 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1830	1975	2	9 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1831	1975	2	10 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1832	1975	2	11 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1833	1975	2	12 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1835	1975	2	14 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1838	1975	2	17 A/B/C/D NIMITZ EN-2R	0	N			
4	C	C	Residential	G	M	PA		6,170	1840	1975	2	19 A/B/C/D NIMITZ EN-2R	0	N			
5	B	C	Residential	VG	H	PA	Y	6,170	1858	1975	2	2 A/B/C/D AM. CIRC EN-2R	0	N			
5	B	C	Residential	VG	H	PA	Y	6,170	1860	1975	2	4 A/B/C/D AM. CIRC. EN-3R	0	N			

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5	B	C	Residential	VG	H	PA	Y	6,170	1865	1975	2	9 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1866	1975	2	10 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1867	1975	2	11 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1868	1975	2	12 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1869	1975	2	13 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1870	1975	2	14 A/B/C/D AM. CIRC EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1871	1975	2	15 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1873	1975	2	17 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1878	1975	2	22 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1880	1975	2	24 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1881	1975	2	25 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1883	1975	2	27 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1884	1975	2	28 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1885	1975	2	29 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1886	1975	2	30 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1894	1975	2	39 A/B/C/D AMER. CIR. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1899	1975	2	45 A/B/C/D AM. CIRC. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1903	1975	2	4 A/B/C/D POINT CRUZ EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1904	1975	2	53 A/B/C/D SARA. DR. EN-2R	0	N	
5	B	C	Residential	VG	H	PA	Y	6,170	1909	1975	2	84 A/B/C/D SARA DR. EN-2R	0	N	
5	C	C	Residential	VG	H	PA		5,248	1820	1975	2	7 CABOT SR-4R	3	N	
5	C	C	Residential	VG	H	PA		5,248	1821	1975	2	26 CABOT SR-4R	3	N	
5	A	C	Residential	P	L	FA	N	5,096	891	1959	2	891 A/B/C/D EN-3R	0	N	
5	A	C	Residential	P	L	FA	N	5,096	893	1959	2	893 A/B/C/D EN-3R	0	N	
5	A	C	Residential	P	L	FA	N	5,096	895	1959	2	895 A/B/C/D EN-3R	0	N	
5	A	C	Residential	P	L	FA	N	5,096	899	1959	2	899 A/B/C/D EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,164	1844	1975	2	23 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1845	1975	2	24 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1846	1975	2	25 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1847	1975	2	26 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1852	1975	2	31 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1853	1975	2	32 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1854	1975	2	33 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,164	1856	1975	2	36 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		4,036	1825	1975	2	4 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1828	1975	2	7 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1829	1975	2	8 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1836	1975	2	15 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1837	1975	2	16 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1841	1975	2	20 A/B NIMITZ EN-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
4	C	C	Residential	G	M	PA		4,036	1842	1975	2	21 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1843	1975	2	22 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1848	1975	2	27 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1849	1975	2	28 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1850	1975	2	29 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1851	1975	2	30 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		4,036	1855	1975	2	34 A/B NIMITZ EN-3R	0	N	
4	C	C	Residential	G	M	PA		3,988	1823	1975	2	2 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		3,988	1826	1975	2	5 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		3,988	1827	1975	2	6 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		3,988	1834	1975	2	13 A/B NIMITZ EN-4R	0	N	
4	C	C	Residential	G	M	PA		3,988	1839	1975	2	18 A/B NIMITZ EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1857	1975	2	1 A/B AMERICAN CIRCLE EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1859	1975	2	3 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1861	1975	2	5 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1862	1975	2	6 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1863	1975	2	7 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1864	1975	2	8 A/B AM. CIRC EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1872	1975	2	16 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1874	1975	2	18 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1875	1975	2	19 A/B AMERICAN CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1876	1975	2	20 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1877	1975	2	21 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1879	1975	2	23 A/B AM. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1882	1975	2	26 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1887	1975	2	31 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1888	1975	2	32 A/B AMER CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1889	1975	2	34 A/B AMER CIRC EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1890	1975	2	35 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1891	1975	2	36 A/B AMER CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1892	1975	2	37 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1893	1975	2	38 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1895	1975	2	40 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1896	1975	2	41 A/B AMER CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1897	1975	2	42 A/B AMER CIRC EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1898	1975	2	43 A/B AMER. CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1900	1975	2	47 A/B AMER CIRC. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1901	1975	2	1 A/B POINT CRUZ EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1902	1975	2	2 A/B POINT CRUZ EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1905	1975	2	55 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1906	1975	1	57 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1907	1975	1	59 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1908	1975	2	61 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1910	1975	2	86 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1911	1975	1	88 A/B SARA DR. EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	3,988	1912	1975	1	90 A/B SARA DR. EN-4R	0	N	3K to 10K
5	B	C	Residential	VG	H	PA	Y	3,988	1913	1975	1	92 A/B SARA DR. EN-4R	0	N	tl. sf **285,816**
7	A	C	Residential	P	L	HA	N	3,080	3090	1969	1	OFFICERS LIVING ROOM	2	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	C	C	Residential	VG	H	PA	Y	2,971	970	1959	2	1 FDR -CAPTAINS	3	N	
5	C	C	Residential	VG	H	PA	Y	2,971	972	1959	2	3 FDR -CAPTAINS	3	N	
5	C	C	Residential	VG	H	PA	Y	2,971	974	1959	2	5 FDR -CAPTAINS	3	N	
5	C	C	Residential	G	M	PA		2,258	914	1959	1	16 FDR -SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,258	920	1959	1	22 FDR -SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,258	930	1959	1	2 MONTEREY -SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,258	934	1959	1	6 MONTEREY -SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,258	938	1959	1	10 MONTEREY-SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,258	1037	1959	1	1 CABOT-SR-4R	2	N	
5	C	C	Residential	VG	H	PA	Y	2,258	904	1959	1	6FDR-SR-4R	2	N	
5	C	C	Residential	G	M	PA		2,231	672	1959	1	UOPH		N	Single Officer Housing
5	C	C	Residential	G	M	PA		2,153	905	1959	1	11FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	907	1959	1	13 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	908	1959	1	10 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	909	1959	1	15 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	910	1959	1	12 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	911	1959	1	17 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	912	1959	1	14 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	913	1959	1	19 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	916	1959	1	18 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	918	1959	1	20 FDR-SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	929	1959	1	1 MONTEREY -SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	931	1959	1	3 MONTEREY -SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	932	1959	1	4 MONTEREY-SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	933	1959	1	5 MONTEREY -SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	935	1959	1	7 MONTEREY-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	936	1959	1	8 MONTEREY-SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,153	937	1959	1	9 MONTEREY-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	939	1959	1	11 MONTEREY-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	941	1959	1	13 MONTEREY-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	1038	1959	1	2 CABOT-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	1040	1959	1	4 CABOT -SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	1042	1959	1	6 CABOT-SR-3R	3	N	
5	C	C	Residential	G	M	PA		2,153	1044	1959	1	8 CABOT-SR-3R	3	N	
5	C	C	Residential	VG	H	PA	Y	2,153	900	1959	1	2 FDR SR-3R	2	N	
5	C	C	Residential	VG	H	PA	Y	2,153	901	1959	1	7 FDR SR-3R	2	N	
5	C	C	Residential	VG	H	PA	Y	2,153	902	1959	1	4 FDR -SR-3R	2	N	
5	C	C	Residential	VG	H	PA	Y	2,153	903	1959	1	9FDR -SR-3R	2	N	
5	C	C	Residential	VG	H	PA	Y	2,153	906	1959	1	8 FDR -SR-3R	2	N	
5	C	C	Residential	G	M	PA		2,045	922	1959	1	24 FDR -JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	924	1959	1	26 FDR -JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	928	1959	1	30 FDR -JR4R	2	N	
5	C	C	Residential	G	M	PA		2,045	942	1959	1	14 MONTEREY-JR4R	2	N	
5	C	C	Residential	G	M	PA	Y	2,045	954	1959	1	26 MONTEREY JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	956	1959	1	28 MONTEREY JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	969	1959	1	41 MONTEREY-JR-4R	3	N	
5	C	C	Residential	G	M	PA		2,045	987	1959	1	1 SAIPAN -JR-4R	1	N	
5	C	C	Residential	G	M	PA		2,045	990	1959	1	2 SAN JACINTO JR-4R	0	N	
5	C	C	Residential	G	M	PA		2,045	994	1959	1	6 SAN JACINTO -JR-4R	0	N	
5	C	C	Residential	G	M	PA		2,045	1009	1959	1	1 COWPENS -JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	1019	1959	1	11 COWPENS -JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	1025	1959	1	17 COWPENS -JR-4R	2	N	
5	C	C	Residential	G	M	PA		2,045	1030	1959	1	2 BATAAN-JR-4R	0	N	
5	C	C	Residential	G	M	PA		2,045	1031	1959	1	3 BATAAN JR-4R	0	N	
5	C	C	Residential	G	M	PA		2,045	1058	1959	1	22 CABOT-JR-4R	3	N	
5	B	C	Residential	G	M	PA		1,967	1220	1959	1	20 HORNET EN-4R	3	N	
5	B	C	Residential	F	L	PA		1,967	1290	1959	1	4 INTREPID EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,967	1307	1959	1	1 RANDOLPH EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,967	1340	1959	1	76 LEXINGTON EN-4R	0	N	
5	B	C	Residential	G	M	PA		1,929	1118	1959	1	56 YORKTOWN EN-4R	1	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	G	M	PA		1,929	1122	1959	1	52 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1124	1959	1	50 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1129	1959	1	39 YORKTOWN EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1134	1959	1	40 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1135	1959	1	33 YORKTOWN EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1136	1959	1	38 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1140	1959	1	34 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1152	1959	1	17 YORKTOWN EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1156	1959	1	18 YORKTOWN EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1159	1959	1	9 YORKTOWN EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1162	1959	1	12 YORKTOWN EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1166	1959	1	8 YORKTOWN EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1185	1959	1	5 HORNET EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1189	1959	1	9 HORNET EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1193	1959	1	13 HORNET EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1194	1959	1	22 HANCOCK EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1197	1959	1	17 HORNET EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1199	1959	1	19 HORNET EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1200	1959	1	28 HANCOCK EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1202	1959	1	2 HORNET EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1214	1959	1	14 HORNET EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1218	1959	1	18 HORNET EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1222	1959	1	22 HORNET EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1224	1959	1	24 HORNET EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1233	1959	1	5 RANGER EN-4R	0	N	
5	B	C	Residential	G	M	PA		1,929	1243	1959	1	15 RANGER EN-4R	0	N	
5	B	C	Residential	G	M	PA		1,929	1245	1959	1	17 RANGER EN-4R	0	N	
5	B	C	Residential	G	M	PA		1,929	1257	1959	1	29 RANGER EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1260	1959	1	34 RANGER EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1261	1959	1	33 RANGER EN-4R	1	N	
5	B	C	Residential	G	M	PA		1,929	1262	1959	1	36 RANGER EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1264	1959	1	38 RANGER EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1266	1959	1	40 RANGER EN-4R	2	N	
5	B	C	Residential	G	M	PA		1,929	1269	1959	1	41 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1270	1959	1	44 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1272	1959	1	46 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1273	1959	1	45 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1277	1959	1	49 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1281	1959	1	53 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1283	1959	1	53 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1285	1959	1	57 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1286	1959	1	60 RANGER EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,929	1287	1959	1	59 RANGER EN-4R	3	N	
5	B	C	Residential	F	L	PA		1,929	1288	1959	1	2 INTREPID EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1293	1959	1	5 INTREPID EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1300	1959	1	13 INTREPID EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1309	1959	1	3 RANDOLPH EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1310	1959	1	4 RANDOLPH EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1311	1959	1	5 RANDOLPH EN-4R	0	N	
5	B	C	Residential	F	L	PA		1,929	1317	1959	1	11 RANDOLPH EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1345	1959	1	71 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1349	1959	1	67 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1353	1959	1	63 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1355	1959	1	61 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1375	1959	1	41 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1383	1959	1	33 LEXINGTON EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1452	1959	1	38 ENTERPRISE EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1454	1959	1	40 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,929	1478	1959	1	4 MIDWAY EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1499	1959	1	21 ESSEX EN-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	P	L	PA		1,929	1557	1959	1	43 SARATOGA EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1572	1959	1	60 SARATOGA EN-4R	1	N	
5	B	C	Residential	P	L	PA		1,929	1586	1959	1	74 SARATOGA EN-4R	1	N	
5	B	C	Residential	P	L	PA		1,929	1643	1959	1	1 ANZIO EN-4R	0	N	
5	B	C	Residential	P	L	PA		1,929	1644	1959	1	4 ANZIO EN-4R	0	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1066	1959	1	6 FRANKLIN -EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1070	1959	1	10 FRANKLIN -EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1071	1959	1	11 FRANKLIN-EN-4R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1089	1959	1	27 CORAL SEA -EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1097	1959	1	19 CORAL SEA -EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1099	1959	1	17 CORAL SEA -EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1101	1959	1	15 CORAL SEA-EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1074	1959	1	14 FRANKLIN-EN-4R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,929	1076	1959	1	16 FRANKLIN -EN-4R	3	N	
5	B	C	Residential	G	M	PA		1,796	1117	1959	1	51 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1119	1959	1	49 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1120	1959	1	54 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1121	1959	1	47 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1123	1959	1	45 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1125	1959	1	43 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1126	1959	1	48 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1127	1959	1	41 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1128	1959	1	46 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1130	1959	1	44 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1131	1959	1	37 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1132	1959	1	42 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1133	1959	1	35 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1137	1959	1	31 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1138	1959	1	36 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1139	1959	1	29 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1141	1959	1	27 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1142	1959	1	32 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1144	1959	1	30 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1145	1959	1	23 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1147	1959	1	20 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1148	1959	1	26 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1149	1959	1	19 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1150	1959	1	24 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1151	1959	1	17 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1153	1959	1	15 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1154	1959	1	20 YORKTOWN EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1155	1959	1	13 YORKTOWN EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1157	1959	1	11 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1158	1959	1	16 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1160	1959	1	14 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1161	1959	1	7 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1163	1959	1	5 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1164	1959	1	10 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1167	1959	1	1 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1168	1959	1	6 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1169	1959	1	1 HANKCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1170	1959	1	4 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1171	1959	1	3 HANCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1172	1959	1	2 YORKTOWN EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1173	1959	1	5 HANCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1174	1959	1	2 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1175	1959	1	7 HANCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1176	1959	1	4 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1177	1959	1	9 HANCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1178	1959	1	6 HANCOCK EN-3R	3	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	G	M	PA		1,796	1179	1959	1	11 HANCOCK EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1180	1959	1	8 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1181	1959	1	1 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1182	1959	1	10 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1183	1959	1	3 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1184	1959	1	12 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1186	1959	1	14 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1188	1959	1	16 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1191	1959	1	11 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1192	1959	1	20 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1195	1959	1	15 HORNET EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1196	1959	1	24 HANCOCK EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1201	1959	1	21 HORNET EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1204	1959	1	4 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1206	1959	1	6 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1208	1959	1	8 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	FA		1,796	1210	1959	1	10 HORNET EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1212	1959	1	12 HORNET EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1216	1959	1	16 HORNET EN-3R	2	N	
5	B	C	Residential	G	M	PA		1,796	1226	1959	1	26 HORNET EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1228	1959	1	2 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1229	1959	1	1 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1230	1959	1	4 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1232	1959	1	6 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1234	1959	1	8 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1235	1959	1	7 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1236	1959	1	10 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1237	1959	1	9 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1238	1959	1	12 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1239	1959	1	11 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1240	1959	1	14 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1241	1959	1	13 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1242	1959	1	16 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1244	1959	1	18 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1246	1959	1	10 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1247	1959	1	19 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1248	1959	1	22 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1249	1959	1	21 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1250	1959	1	24 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1251	1959	1	23 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1252	1959	1	26 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1253	1959	1	25 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1254	1959	1	28 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1255	1959	1	27 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1256	1959	1	30 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1258	1959	1	32 RANGER EN-3R	0	N	
5	B	C	Residential	G	M	PA		1,796	1259	1959	1	31 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1263	1959	1	35 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1265	1959	1	37 RANGER EN-3R	1	N	
5	B	C	Residential	G	M	PA		1,796	1268	1959	1	42 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1271	1959	1	43 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1274	1959	1	48 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1275	1959	1	47 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1276	1959	1	50 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1278	1959	1	52 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1279	1959	1	51 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1280	1959	1	54 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1282	1959	1	56 RANGER EN-3R	3	N	
5	B	C	Residential	G	M	PA		1,796	1284	1959	1	55 RANGER EN-4R	3	N	
5	B	C	Residential	F	L	PA		1,796	1289	1959	1	1 INTREPID EN-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	F	L	PA		1,796	1291	1959	1	3 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1292	1959	1	6 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1295	1959	1	7 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1296	1959	1	10 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1297	1959	1	9 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1299	1959	1	11 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1301	1959	1	13 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1302	1959	1	16 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1304	1959	1	18 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1306	1959	1	20 INTREPID EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1308	1959	1	2 RANDOLPH EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1312	1959	1	6 RANDOLPH EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1313	1959	1	7 RANDOLPH EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1315	1959	1	9 RANDOLPH EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1319	1959	1	13 RANDOLPH EN-3R	0	N	
5	B	C	Residential	F	L	PA		1,796	1321	1959	1	15 RANDOLPH EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1323	1959	1	93 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1324	1959	1	92 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1325	1959	1	91 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1326	1959	1	90 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1327	1959	1	89 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1328	1959	1	88 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1329	1959	1	87 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1330	1959	1	86 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1331	1959	1	85 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1332	1959	1	84 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1334	1959	1	82 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1335	1959	1	81 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1336	1959	1	80 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1337	1959	1	79 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1338	1959	1	78 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1341	1959	1	75 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1342	1959	1	74 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1343	1959	1	73 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1344	1959	1	72 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1346	1959	1	70 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1347	1959	1	69 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1348	1959	1	68 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1350	1959	1	66 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1351	1959	1	65 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1352	1959	1	64 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1354	1959	1	62 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1356	1959	1	60 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1357	1959	1	59 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1359	1959	1	57 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1360	1959	1	56 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1361	1959	1	55 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1363	1959	1	53 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1364	1959	1	52 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1365	1959	1	51 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1366	1959	1	50 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1369	1959	1	47 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1370	1959	1	46 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1371	1959	1	45 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1372	1959	1	44 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1373	1959	1	43 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1374	1959	1	42 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1376	1959	1	40 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1377	1959	1	39 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1378	1959	1	38 LEXINGTON EN-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	P	L	PA		1,796	1379	1959	1	37 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1381	1959	1	35 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1382	1959	1	34 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1384	1959	1	32 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1385	1959	1	31 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1387	1959	1	29 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1388	1959	1	28 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1389	1959	1	27 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1391	1959	1	25 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1392	1959	1	24 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1393	1959	1	23 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1394	1959	1	22 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1395	1959	1	21 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1396	1959	1	20 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1397	1959	1	19 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1399	1959	1	17 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1400	1959	1	16 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1401	1959	1	15 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1402	1959	1	14 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1403	1959	1	13 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1404	1959	1	12 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1405	1959	1	11 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1406	1959	1	10 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1407	1959	1	9 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1408	1959	1	8 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1409	1959	1	7 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1410	1959	1	6 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1411	1959	1	5 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1412	1959	1	4 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1413	1959	1	3 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1414	1959	1	2 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1415	1959	1	1 LEXINGTON EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1416	1959	1	2 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1417	1959	1	1 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1419	1959	1	3 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1420	1959	1	6 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1421	1959	1	5 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1422	1959	1	8 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1423	1959	1	7 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1424	1959	1	10 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1425	1959	1	9 ENTERPRICE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1426	1959	1	12 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1427	1959	1	11 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1428	1959	1	14 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1429	1959	1	13 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1430	1959	1	16 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1433	1959	1	17 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1434	1959	1	20 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1435	1959	1	19 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1436	1959	1	22 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1437	1959	1	21 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1438	1959	1	24 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1439	1959	1	23 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1440	1959	1	26 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1441	1959	1	25 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1442	1959	1	28 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1443	1959	1	27 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1444	1959	1	30 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1445	1959	1	29 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1446	1959	1	32 ENTERPRISE EN-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	P	L	PA		1,796	1447	1959	1	31 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1448	1959	1	34 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1449	1959	1	33 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1450	1959	1	36 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1451	1959	1	35 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1453	1959	1	37 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1455	1959	1	39 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1456	1959	1	42 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1457	1959	1	41 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1458	1959	1	44 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1460	1959	1	46 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1461	1959	1	45 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1463	1959	1	47 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1464	1959	1	50 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1465	1959	1	49 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1466	1959	1	52 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1467	1959	1	51 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1468	1959	1	54 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1470	1959	1	56 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1474	1959	1	60 ENTERPRISE EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1476	1959	1	2 MIDWAY EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1477	1959	1	1 MIDWAY EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1479	1959	1	1 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1480	1959	1	2 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1481	1959	1	3 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1483	1959	1	5 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1484	1959	1	6 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1485	1959	1	7 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1486	1959	1	8 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1487	1959	1	9 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1488	1959	1	10 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1489	1959	1	11 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1490	1959	1	2 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1491	1959	1	13 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1492	1959	1	14 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1493	1959	1	15 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1494	1959	1	16 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1495	1959	1	17 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1500	1959	1	22 ESSEX EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1502	1959	1	2 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1503	1959	1	3 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1504	1959	1	4 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1505	1959	1	5 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1506	1959	1	6 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1507	1959	1	7 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1508	1959	1	8 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1509	1959	1	9 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1510	1959	1	10 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1512	1959	1	12 TICONDEROGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1514	1959	1	2 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1515	1959	1	1 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1517	1959	1	3 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1518	1959	1	6 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1519	1959	1	5 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1520	1959	1	8 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1521	1959	1	7 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1522	1959	1	10 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1524	1959	1	12 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1525	1959	1	11 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1526	1959	1	14 SARATOGA EN-3R	1	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	P	L	PA		1,796	1527	1959	1	13 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1529	1959	1	15 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1531	1959	1	17 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1532	1959	1	20 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1533	1959	1	19 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1534	1959	1	22 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1535	1959	1	21 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1536	1959	1	24 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1537	1959	1	23 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1538	1959	1	26 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1539	1959	1	25 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1540	1959	1	28 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1541	1959	1	27 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1542	1959	1	30 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1543	1959	1	29 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1544	1959	1	32 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1545	1959	1	31 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1546	1959	1	34 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1547	1959	1	33 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1548	1959	1	36 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1549	1959	1	35 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1550	1959	1	38 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1551	1959	1	37 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1552	1959	1	40 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1553	1959	1	39 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1554	1959	1	42 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1555	1959	1	41 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1556	1959	1	44 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1558	1959	1	46 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1559	1959	1	45 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1560	1959	1	48 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1561	1959	1	47 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1562	1959	1	50 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1563	1959	1	49 SARATOGA EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1564	1959	1	52 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1566	1959	1	54 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1568	1959	1	56 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1570	1959	1	58 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1574	1959	1	62 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1576	1959	1	64 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1580	1959	1	68 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1582	1959	1	70 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1584	1959	1	72 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1588	1959	1	76 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1590	1959	1	78 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1592	1959	1	80 SARATOGA EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1595	1959	1	1 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1596	1959	1	2 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1597	1959	1	3 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1598	1959	1	4 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1599	1959	1	5 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1600	1959	1	6 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1601	1959	1	7 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1602	1959	1	8 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1604	1959	1	10 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1605	1959	1	11 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1609	1959	1	15 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1610	1959	1	16 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1611	1959	1	17 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1612	1959	1	18 WASP EN-3R	1	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	B	C	Residential	P	L	PA		1,796	1614	1959	1	20 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1616	1959	1	22 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1617	1959	1	23 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1619	1959	1	25 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1621	1959	1	27 WASP EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1622	1959	1	28 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1626	1959	1	32 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1630	1959	1	36 WASP EN-3R	1	N	
5	B	C	Residential	P	L	PA		1,796	1633	1959	1	1 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1634	1959	1	2 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1635	1959	1	3 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1636	1959	1	4 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1637	1959	1	5 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1638	1959	1	6 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1639	1959	1	7 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1640	1959	1	8 BUNKER HILL EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1642	1959	1	2 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1645	1959	1	3 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1646	1959	1	6 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1648	1959	1	8 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1649	1959	1	7 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1650	1959	1	10 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1651	1959	1	9 ANZIO EN-3R	0	N	
5	B	C	Residential	P	L	PA		1,796	1652	1959	1	12 ANZIO EN-3R	0	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1061	1959	1	1 FRANKLIN -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1063	1959	1	3 FRANKLIN-EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1064	1959	1	4 FRANKLIN-EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1065	1959	1	5 FRANKLIN-EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1067	1959	1	7 FRANKLIN-EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1068	1959	1	8 FRANKLIN-EN 3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1069	1959	1	9 FRANKLIN-EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1072	1959	1	12 FRANKLIN-EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1079	1959	1	37 CORAL SEA -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1083	1959	1	33 CORAL SEA -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1085	1959	1	31 CORAL SEA-EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1087	1959	1	29 CORAL SEA -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1091	1959	1	25 CORAL SEA -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1094	1959	1	24 CORAL SEA -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1095	1959	1	21 CORAL SEA -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1096	1959	1	22 CORAL SEA -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1098	1959	1	20 CORAL SEA -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1100	1959	1	18 CORAL SEA-EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1102	1959	1	16 CORAL SEA -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1103	1959	1	13 CORAL SEA -EN3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1104	1959	1	14 CORAL SEA -EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1105	1959	1	11 CORAL SEA EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1106	1959	1	12 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1108	1959	1	10 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1109	1959	1	7 CORAL SEA EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1110	1959	1	8 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1111	1959	1	5 CORAL SEA EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1112	1959	1	6 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1113	1959	1	3 CORAL SEA EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1114	1959	1	4 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1115	1959	1	1 CORAL SEA EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1116	1959	1	2 CORAL SEA EN-3R	2	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1078	1959	1	18 FRANKLIN -EN-3R	3	N	
5	B	C	Residential	VG	H	PA	Y	1,796	1081	1959	1	35 CORAL SEA-EN-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	915	1959	1	21 FDR -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	917	1959	1	23 FDR -JR-3R	2	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	C	C	Residential	G	M	PA		1,737	921	1959	1	27 FDR -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	923	1959	1	29 FDR -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	925	1959	1	31 FDR -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	927	1959	1	33 FDR -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	940	1959	1	12 MONTEREY-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	943	1959	1	15 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	944	1959	1	16 MONTEREY-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	945	1959	1	17 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	947	1959	1	19 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	948	1959	1	20 MONTEREY-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	949	1959	1	21 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	950	1959	1	22 MONTEREY-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	951	1959	1	23 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	952	1959	1	24 MONTEREY-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	953	1959	1	25 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	955	1959	1	27 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	957	1959	1	29 MONTEREY-JR-3R 3R	3	N	
5	C	C	Residential	G	M	PA		1,737	958	1959	1	30 MONTEREY JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	960	1959	1	32 MONTEREY JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	961	1959	1	33 MONTEREY JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	962	1959	1	34 MONTEREY JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	963	1959	1	35 MONTEREY -JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	964	1959	1	36 MONTEREY -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	965	1959	1	37 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	966	1959	1	38 MONTEREY -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	967	1959	1	39 MONTEREY -JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	971	1959	1	43 MONTEREY-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	973	1959	1	45 MONTEREY JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	975	1959	1	47 MONTEREY JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	979	1959	1	51 MONTEREY JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	981	1959	1	53 MONTEREY JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	983	1959	1	55 MONTEREY -JR-2R	3	N	
5	C	C	Residential	G	M	PA		1,737	984	1959	1	2 WRIGHT -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	985	1959	1	3 WRIGHT -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	988	1959	1	6 WRIGHT -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	993	1959	1	3 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	995	1959	1	5 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	996	1959	1	8 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	997	1959	1	7 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	998	1959	1	10 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	999	1959	1	9 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1000	1959	1	12 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1001	1959	1	11 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1003	1959	1	13 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1004	1959	1	16 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1006	1959	1	18 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1008	1959	1	20 SAN JACINTO -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1011	1959	1	3 COWPENS -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1012	1959	1	4 COWPENS -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	1013	1959	1	5 COWPENS-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1014	1959	1	6 COWPENS -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	1015	1959	1	7 COWPENS -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1016	1959	1	8 COWPENS -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	1017	1959	1	9 COWPENS -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1018	1959	1	10 COWPENS-JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	1020	1959	1	12 COWPENS -JR-3R	1	N	
5	C	C	Residential	G	M	PA		1,737	1021	1959	1	13 COPWPENS -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1023	1959	1	15 COWPENS -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1027	1959	1	19 COWPENS-JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1029	1959	1	1 BATAAN -JR-3R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	C	C	Residential	G	M	PA		1,737	1032	1959	1	4 BATTAN -JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1033	1959	1	5 BATAAN JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1034	1959	1	6 BATAAN JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1036	1959	1	8 BATAAN JR-3R	0	N	
5	C	C	Residential	G	M	PA		1,737	1039	1959	1	3 CABOT -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1041	1959	1	5 CABOT -JR-3R	2	N	
5	C	C	Residential	G	M	PA		1,737	1048	1959	1	12 CABOT-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	1050	1959	1	14 CABOT-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	1052	1959	1	16 CABOT -JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	1054	1959	1	18 CABOT-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	1056	1959	1	20 CABOT-JR-3R	3	N	
5	C	C	Residential	G	M	PA		1,737	1060	1959	1	24 CABOT-JR-3R	3	N	
5	B	C	Residential	G	M	PA		1,591	1198	1959	1	26 HANCOCK EN-2R	3	N	
5	B	C	Residential	G	M	PA		1,591	1267	1959	1	39 RANGER EN-2R	1	N	
5	B	C	Residential	F	L	PA		1,591	1294	1959	1	8 INTREPID EN-2R	0	N	
5	B	C	Residential	G	M	PA		1,569	1143	1959	1	25 YORKTOWN EN-2R	2	N	
5	B	C	Residential	G	M	PA		1,569	1146	1959	1	28 YORKTOWN EN-2R	3	N	
5	B	C	Residential	G	M	PA		1,569	1165	1959	1	3 YORKTOWN EN-2R	1	N	
5	B	C	Residential	G	M	PA		1,569	1187	1959	1	7 HORNET EN-2R	1	N	
5	B	C	Residential	G	M	PA		1,569	1190	1959	1	18 HANCOCK EN-2R	3	N	
5	B	C	Residential	G	M	PA		1,569	1231	1959	1	3 RANGER EN-2R	0	N	
5	B	C	Residential	F	L	PA		1,569	1298	1959	1	12 INTREPID EN-2R	0	N	
5	B	C	Residential	F	L	PA		1,569	1314	1959	1	8 RANDOLPH EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1333	1959	1	83 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1339	1959	1	77 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1358	1959	1	58 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1362	1959	1	54 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1367	1959	1	49 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1368	1959	1	48 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1380	1959	1	36 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1386	1959	1	30 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1390	1959	1	26 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1398	1959	1	18 LEXINGTON EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1418	1959	1	4 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1431	1959	1	15 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1432	1959	1	18 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1459	1959	1	43 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1462	1959	1	48 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1472	1959	1	58 ENTERPRISE EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1482	1959	1	4 ESSEX EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1496	1959	1	18 ESSEX EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1497	1959	1	19 ESSEX EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1498	1959	1	20 ESSEX EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1501	1959	1	1 TICONDEROGA EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1516	1959	1	4 SARATOGA EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1523	1959	1	9 SARATOGA EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1528	1959	1	16 SARATOGA EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1530	1959	1	18 SARATOGA EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1565	1959	1	51 SARATOGA EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1578	1959	1	66 SARATOGA EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1594	1959	1	82 SARATOGA EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1603	1959	1	9 WASP EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1606	1959	1	12 WASP EN-2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1607	1959	1	13 WASP EN-2R	0	N	
5	B	C	Residential	P	L	PA		1,569	1608	1959	1	14 WASP EN 2R	1	N	
5	B	C	Residential	P	L	PA		1,569	1613	1959	1	19 WASP EN-2R	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
5	B	C	Residential	P	L	PA		1,569	1615	1959	1	21 WASP EN-2R	0	N			
5	B	C	Residential	P	L	PA		1,569	1618	1959	1	24 WASP EN-2R	1	N			
5	B	C	Residential	P	L	PA		1,569	1620	1959	1	26 WASP EN-2R	1	N			
5	B	C	Residential	P	L	PA		1,569	1624	1959	1	30 WASP EN-2R	1	N			
5	B	C	Residential	P	L	PA		1,569	1628	1959	1	34 WASP EN-2R	1	N			
5	B	C	Residential	P	L	PA		1,569	1632	1959	1	38 WASP EN-2R	1	N			
5	B	C	Residential	P	L	PA		1,569	1647	1959	1	5 ANZIO EN-2R	0	N			
5	B	C	Residential	VG	H	PA	Y	1,569	1062	1959	1	2 FRANKLIN -EN-2R	3	N			
5	B	C	Residential	VG	H	PA	Y	1,569	1093	1959	1	23 CORAL SEA -EN-2R	3	N			
5	B	C	Residential	VG	H	PA	Y	1,569	1107	1959	1	9 CORAL SEA EN-2R	3	N			
5	C	C	Residential	G	M	PA		1,501	919	1959	1	25 FDR -JR-2R	2	N			
5	C	C	Residential	G	M	PA		1,501	926	1959	1	28 FDR -JR-2R	2	N			
5	C	C	Residential	G	M	PA		1,501	946	1959	1	18 MONTEREY-JR-2R	2	N			
5	C	C	Residential	G	M	PA		1,501	977	1959	1	49 MONTEREY JR-2R	3	N			
5	C	C	Residential	G	M	PA		1,501	986	1959	1	4 WRIGHT -JR-2R	1	N			
5	C	C	Residential	G	M	PA		1,501	991	1959	1	1 SAN JACINTO -JR-2R	0	N			
5	C	C	Residential	G	M	PA		1,501	992	1959	1	4 SAN JACINTO -JR-2R	0	N			
5	C	C	Residential	G	M			1,501	1002	1959	1	14 SAN JACINTO -JR-2R	0	N			
5	C	C	Residential	G	M	PA		1,501	1010	1959	1	2 COWPENS-JR-2R	1	N			
4	D	C/M	Retail	G	H	HA		100,861	1796	1973	1	NAVY EXCHANGE COMPLEX	0	N	Town Center Building		25K and above
4	D	C	Retail	G	H	FA	N	62,671	2394	2003	1	COMMISSARY		N		tl. sf	**163,532**
2	B	C	Retail	G	L	FA	N	25,051	730	1960	1	NEX CENTRAL WHSE	0	N	Mini-Mart , Cyber Café		
6	C	M	Retail	G	L	HA		960	1706	1969	1	TEMP CPO HUT/PIER 3 PUB	1	N			
6	C	M/C	Storage	G	M	PA		89,105	1207	1968	1	SUPPLY DEPT WHRSE & ADDITION	0	N	Refrigerated and Dry Storage		
7	A	M	Storage	G	L	HA	N	35,721	3188	1989	1	ALFA CO MAINT BLDG	3	N			25K and above
7	A	M	Storage	G	H	HA	N	32,256	27	1957	1	SERVMART	0	N		tl. sf	**32,256**
6	A	C	Storage	G	M	HA	N	12,500	1973	1976	1	DRMO GEN WHSE		N			
6	A	C	Storage	G	M	HA	N	9,700	2344	1993	1	MWR CLUB STGE		N			
6	A	C	Storage	G	M	HA	N	9,600	2345	1993	1	MWR STGE BLDG BY BLDG 377		N			
6	D	C	Storage	G	M	HA		8,944	1810	1978	1	HOSPITAL STORAGE		N			
5	A	C	Storage	P	M	FA	N	8,168	885	1960	2	PERSONAL PROPERTY BUILDING	0	N	Residence Hall Conversion		
5	B	M	Storage	P	M	HA		8,000	1756	1974	1	HOUSING STORAGE/WHSE		N			
2	A	C	Storage	P	L	PA		7,960	529	1957	1	WAREHOUSE		N	Abandoned		
7	C	M	Storage	G	M	HA	N	6,000	2004	1982	1	DRONE BAL/STOR. FAC-CABRAS		N			
4	D	M	Storage	G	L	HA	N	6,000	2262	1987	1	U S CUSTOMS BLDG		N			
7	A	M	Storage	P	L	HA	N	6,000	3093	1969	1	CBLANT WAREHOUSE	2	N			
7	A	M	Storage	P	L	HA	N	6,000	3095	1969	1	CENTRAL SUPPLY ROOM	2	N			
4	A	C	Storage	G	M	HA	N	4,960	2278	1988	1	AFWTF (OFFICE ANNEX) B#386		N			
6	C	M	Storage	F	L	HA		4,800	1788	1970	1	EXCHANGE WAREHOUSE		N			
1	A	C	Storage	G	H	HA	N	4,800	2315	1991	1	AVIATION SUPPORT DIV. (ASD)		N			
3			Storage	G	M	HA	N	4,600	2371	1998	1	GOLF CART STORAGE		N			
7	A	M	Storage	G	M	HA	Y	4,375	3148	1982	1	MLO LUMBER STORAGE	1	N			
1	A	C	Storage	G	M	HA	N	4,314	2245	1987	1	MK-30 MAINT BLDG BY B378		N			
7	A	M	Storage	G	M	HA	N	4,312	2276	1988	1	UDT ADMIN/ARMORY BLDG		N			
6	C	C	Storage	G	M	HA	N	4,240	2279	1988	1	MOE BLDG		N			
1	B	C	Storage	G	M	HA	N	4,100	2052	1985	1	OPRTNL STGE BLDG BY B376		N			
1	B	M	Storage	G	M	HA	N	4,000	1967	1978	1	PROD EQUIP MAINT SHOP		N			

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments		
1	B	C	Storage	G	M	HA	N	4,000	2350	1993	1	SUPPLY STGE BLDG		N			
4	G	M	Storage	G	M	HA	Y	4,000	1981	1978	1	ELECTRIC MAINT SHOP (AFWTF)		N			
6	A	M	Storage	G	M	HA	Y	4,000	2010	1981	1	DRMO GENERAL WAREHOUSE		N			
7	A	M	Storage	G	M	HA	N	4,000	2281	1988	1	UDT ISOLATION/MEDICAL BLDG		N			
1	A	M	Storage	P	M	HA		4,000	1749	1970	1	GROUNG SUPPORT SHOP		N			
5	B	M	Storage	P	M	HA		4,000	1755	1971	1	HOUSING MAINTENANCE SHOP		N			
1	B	M	Storage	F	L	HA		4,000	372	1957	1	AVIATION WHSE		N	Missle Guidance		
6	C	M	Storage	F	L	HA		4,000	371	1958	1	OPERATIONAL STORAGE		N	Missle Guidance		
4	G	C	Storage	G	L	HA	N	4,000	2359	1994	1	RADAR MAINT SHOP BY B78		N			
6	C	C	Storage	G	L	HA	N	4,000	2342	1993	1	MOE OPN'L STGE BY B-394		N			
1	C	M	Storage	P	L	HA		4,000	1674	1969	1	GND SUPPORT EQUIPT STORAGE	0	N			
7	A	M	Storage	P	L	HA	N	4,000	3091	1969	1	EMBARK WAREHOUSE	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3092	1969	1	EMBARK WAREHOUSE	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3094	1969	1	CBLANT WAREHOUSE	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3096	1969	1	CENTRAL SUPPLY ROOM	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3097	1969	1	CENTRAL TOOL ROOM	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3098	1969	1	CENTRAL TOOL ROOM	2	N			
7	A	M	Storage	P	L	HA	N	4,000	3109	1976	1	MLO STORAGE WAREHOUSE	3	N			
6	A	M	Storage	G	H	HA	N	4,000	2403	1996	1	ALFT MINT EQUIP STGE BY B826		N			
1	A	M	Storage	G	H	HA	N	4,000	2415	1997	1	AIR FIELD MAINT. ADMIN/STRG		N			
1	A	M	Storage	G	H	HA		4,000	1673	1969	1	AIMD STORAGE	0	N			3K to 10K
7	A	M	Storage	G	H	HA	N	4,000	2275	1988	1	U.D.T. BOATSHOP		N		tl. sf	**20,800**
2	B	C	Storage	P	M	PA		3,375	504	1957	1	NEX - COMMUNITY STGE		N	Personal Storage		
7	A	C	Storage	G	H	HA	N	3,358	2234	1986	1	HYPERBARIC/WTRFRNT SVCE BLDG		N			
1	B	C	Storage	G	L	FA		3,200	825	1962	1	Q2C DRONE STORAGE		N			
6	C	M	Storage	G	L	HA	N	3,189	2306	1990	1	PAMPERED PET		N			
6	A	C	Storage	G	M	HA	N	3,067	2008	1981	1	STOR & MAINT FACILITY/FIRE		N			
4	A	C	Storage	P	L	NA	N	3,056	663	1957	1	G.E./CONTRACTOR ADMIN	1	N	Demolish		
7	A	M	Storage	G	M	HA	N	3,000	2277	1988	1	WEIGHT ROOM/LOUNGE UDT		N			
1	A	M	Storage	P	H	HA	N	2,800	1930	1971	1	GROUND SUPPORT EQUIPMENT SHED	0	N			
7	A	M	Storage	P	L	HA	N	2,720	3118	1978	1	SPECIAL SERVICE BLDG	4	N			
6	D	M	Storage	G	M	HA	N	2,400	2328	1991	1	STGE BLDG/WTRFRONT BY B2036		N			
1	B	C	Storage	F	L	NA		2,240	256	1949	1	NEED OFFICE		N	Bldg. Converted to Gen. Storage		
4	F	M	Storage	G	L	HA		1,920	1801	1974	1	TRAINING BLDG		N			
6	A	C	Storage	G	L	HA	N	1,560	2059	1985	1	COMMUNICATION BLDG BY B1729		N	*Law Gibb Study has 4,100sf*		
6	C	C	Storage	G	M	HA	Y	1,525	2036	1983	1	SHORE SUPPORT BUILDING		N			
2	B	M	Storage		M	HA	N	1,500	5002	2000	1	SOCSOUTH STORAGE	G	N	Square footage uncertain		
2	B	M	Storage		M	HA	N	1,500	5004	2000	1	SOCSOUTH ADMIN BLDG	G	N	Square footage uncertain		
2	B	M	Storage		M	HA	N	1,500	5006	2000	1	*UNDEFINED USE- LOCATED AT AIRFIELD*	G	N	Square footage uncertain		

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
1	A	M	Storage	G	H	HA	N	1,500	5007	2000	1	UNDEFINED USE-LOCATED AT AIRFIELD		N	*Square footage uncertain*
6	C	M	Storage	G	L	PA	N	1,380	2022	1958	1	VEHICLE PAINT BOOTH		N	
6	C	M	Storage	P	L	HA		1,302	1787	1974	1	ZOONOSIS CONTROL		N	
4	B	M	Storage	G	L	HA	N	1,092	2256	1986	1	MEDIA CTR ANNEX TO B-296		N	
6	C	M	Storage	G	L	HA	N	1,040	2007	1981	1	ASSP MAINT SHOP(ATWTF) HAZD WASTE		N	
7	A	C	Storage	G	M	HA	N	1,008	3151	1982	1	STGE/BERTHING HUT	1	N	
7	A	M	Storage	G	M	HA	N	1,000	3144	1978	1	SOILS LABORATORY	1	N	
7	A	C	Storage	G	L	FA	N	1,000	3014	1970	1	ARMORY	2	N	Square footage uncertain
7	C	C	Storage	G	L	HA	N	1,000	2353	1993	1	DRONE HNDLNG FAC CABRAS IS		N	
6	D	M	Storage	G	L	HA	N	960	3021	1969	1	COMM. STA./ELECT. MAINT.	3	N	Duplicate Bldg #
6	C	M	Storage	F	L	FA		750	832	1962	1	MISC STORAGE	2	N	
7	D	C	Storage	G	L	HA	N	512	1931	1971	1	TELEMETRY BUILDING/ Frequency Analysis		N	
1	A	C	Storage	G	M	HA	N	400	2363	1994	1	CPO HUT VC-8		N	
4	A	C	Storage	G	L	FA	N	364	2248	1986	1	UPS SHLTR FOR B#386		N	
7	A	C	Storage	F	L	FA	N	340	3159	1983	1	MLO GAS BOTTLE STORAGE	1	N	
2	C	C	Storage	F	L	PA		228	760	1962	1	MISC STGE BY BLDG. 598		N	Formally Water Pump House
1	A	C	Storage	G	L	HA	N	176	2186	1981	1	PAINT LOCKER FOR VC-8		N	
8	A	C	Storage	F	L	HA	N	169	2188	1982	1	STORAGE SHED AT PISTOL RANGE		N	
7	A	C	Storage	G	M	HA	N	168	2347	1992	1	STGE BLDG BY B#1685		N	
6	C	M	Storage	G	L	HA	N	144	2191	1983	1	METAL SHED(BLKHEAD A)PIER 1		N	
6	C	C	Storage	G	L	HA	N	100	2015	1971	1	TORPEDO PAINT SHOP		N	
1	B	C	Utility	G	M	HA		29,172	860	1964	1	DRONE SUPPORT BLDG	0	N	
1	B	M	Utility	G	M	HA	Y	6,000	1980	1978	1	OPERATIONAL STORAGE		N	
7	A	C	Utility	G	M	NA	N	2,520	3137	1969	1	VEHICLE WASH RACK	1	N	Open Vehicle Wash
5	C	C	Utility	G	L	NA	N	1,778	2440	1999	1	EM BEACH HEADS (ALL HANDS)	3	N	
4	A	C	Utility	G	M	PA	N	1,472	2293	1989	1	ROC. UTILITY BLDG		N	Maybe vital to another building's operation-AC equipment
6	B	C/W	Utility	P	L	NA		1,168	1716	1972	1	REST ROOM (HEAD & SHOWERS)	1	N	
6	C	C	Utility	G	M	PA	N	1,104	1963	1970	1	PW VEH WASH RACK/Vehicle Wash Garage		N	
2	C	C	Utility	G	M	FA	N	800	2445	2000	1	AC MACHINERY BLDG		N	Square footage uncertain/Contingent on use with other buildiung
6	D	C	Utility	G	H	NA	N	800	2264	1987	0	FINGER PIER BTW PIER 2&3	3	N	
6	D	C	Utility	G	H	NA	N	800	2265	1987	0	FINGER PIER BTW PIER 1&2	3	N	
7	A	C	Utility	F	L	PA	N	650	29	1941	1	LADIES BATH HSE @ ROBC	0	N	
7	A	C	Utility	G	M	NA	N	480	3138	1978	1	EDF EMERGENCY GENERATOR SHED	1	N	
5	C	C	Utility	G	L	NA	N	390	2170	1984	1	COMMUNITY BEACH HEADS(TOILETS)	3	N	
Airport/Fuel Tks		C	Utility	G	L	PA	N	312	2228	1960	1	STANDBY GENERATOR FOR TV STUDIO		N	Contingent on use of TV Studio Bldg
6	D	S	Utility					300	1731	1974	1	COMP GAS STG HOSPITAL			
7	A	C	Utility	G		FA	N	256	3169	1986	1	HEAD FAC MLO/A-CO (TOILETS)			

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
7	A	W	Utility	F	L	FA	N	243	3160	1984	1	PHONE PAVILLION	1	N	
7	C	C	Utility		L			192	120	1955	1	OFFICER BEACH BATHHOUSE		N	
7	A	C	Utility	G	M	NA	N	171	2360	1993	1	WATER PUMP STA (DRYDOCK)		N	May be necessary for Drydock functionality
2	B	C	Utility	P	L	PA	N	160	761	1962	1	TOILET AT SOFT BALL FIELD	0	N	
6	C	C	Utility	G	L	NA		140	193	1955	1	TOILET/PIER 1 AREA		N	
1	C	C	Utility	F	L	FA		36	306	1971	0	ANTNA TOWER SUPPTD (MICROWAV		N	Weapons Storage
6	D	P						10,008	1805	1975	0	NAVHOSP HELO PAD			
6	C	P						8,100	2331	1991	0	CONC SLAB/MEMBRANE B#1207			
7	C	P						3,819	1794	1974	0	DRONE LAUNCH PAD (CABRAS ISL			
7	A	P						2,718	445	1938	2	VACANT			
7	C	P						750	1793	1974	0	DRONE LAUNCH PAD (CABRAS ISL			
6	D	M		G	L	NA			1792	1973	0	FLAGPOLE/HOSPITAL		N	

Residential

Naval Station Roosevelt Roads Buildings and Structures Breakdown by Residential Use Types

LEGEND

Zones

	Zone 1
	Zone 2
	Zone 3
	Zone 4
	Zone 5
	Zone 6
	Zone 7
	Zone 8

Construction Type

C	Concrete / Concrete Block
M	Metal
W	Wood
P	Permanent
S	Semi-Permanent
T	Temporary

General Condition

VG	Very Good
G	Good
F	Fair
P	Poor

Building Value

H	High
M	Medium
L	Low

Adaptive Re-use

HA	Highly Adaptive
FA	Fairly Adaptive
PA	Poorly Adaptive
NA	Not Adaptive

Recent Renovation

Y	Yes
N	No

View

0	None
1	Some
2	Good
3	Best

Operationally Significant

Y	Yes
N	No

SUMMARY

Residential Use Types		*Square Footage by Type*	*No. of Bldgs.*	*No. of DU's*
Hotel	Navy Lodge	73,751	1	55
Apt. Bldgs.	BEQ / BOQ	604,526	24	1003
Assembly	Officers Living Room	32,258	2	2
Eight	Enlisted Housing	16,336	2	16
Quad	Enlisted Housing	199,314	33	132
Duplex	2 unit residential	257,640	63	126
Single	Enlisted and Officer	1,233,185	676	676
	Total Square Footage	2,417,010	801	2,010 Total

Sources :

Buildings and Structures Inventory - Excel File: *NSRR Bldgs and Struct 110503* is the base information used to compile the list of facilities

AutoCADD drawing: *NSRR super-map-Prenew-xref* is the base drawing used to locate the buildings within the zones and sub-zones

LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study dated June 8, 2001 was used to formulate base existing conditions of each of the catelogued structures

Various Construction Documents and other information provided by the Navy's on-site personnel.

An extensive visual assessment of the facilities by the design team was conducted during a four-day site visit between February 24-27, 2004

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
7	A	C	Residential	OFFICERS LIVING ROOM	Assembly	1	3,080	3,080	3090	1969	1	P	L	HA	N	0	N	
5	C	C	Residential	UOPH	BEQ		2,231		672	1959	1	G	M	PA		0	N	
2	B	C	Residential	BOQ TRANS W3/W5 & O3/ABOVE	BEQ		11,901		728	1960	3	VG	H	PA		0	N	
2	B	C	Residential	BOQ TRAN PTY W3-W-5 & O3/ABV	BEQ		11,996		725	1960	3	VG	H	PA		0	N	
2	B	C	Residential	BOQ TRAN W3/W5 & O3/ABOVE	BEQ		11,996		727	1960	3	VG	H	PA		0	N	
6	C	C	Residential	BEQ HOSP CORPSMAN	BEQ		12,422		1791	1973	2	G	H	FA		0	N	
4	F	C	Residential	BEQ (TRANSIENTS)	BEQ		14,224		1209	1967	2	G	L	PA	Y	0	N	
7	A	C	Residential	BOQ	BEQ		14,640		3175	1989	2	P	L	PA	N	0	N	
4	F	C	Residential	BEQ	BEQ		15,807		1813	1977	3	G	L	PA		0	N	
2	B	C	Residential	BOQ TRAN W3/W5 & O3/ABOVE	BEQ		21,207		726	1960	3	VG	H	PA		0	N	
4	F	C	Residential	BEQ	BEQ		26,405		1815	1977	3	G	L	PA		0	N	
7	A	C	Residential	BEQ 2	BEQ		27,280		3179	1988	2	P	L	PA	N	0	N	
7	A	C	Residential	BEQ 3A	BEQ		27,280		3178	1988	2	P	L	PA	N	0	N	
7	A	C	Residential	BEQ 3B (CPO)	BEQ		27,335		3176	1988	2	P	L	PA	N	0	N	
4	F	C	Residential	BEQ	BEQ		29,258		1814	1977	3	G	L	PA		0	N	
2	B	C	Residential	UEPH	BEQ		31,200		732	1960	3	P	M	FA	N	0	N	
2	B	C	Residential	BEQ	BEQ		31,200		731	1960	3	G	M	FA	N	0	N	
2	B	C	Residential	BEQ	BEQ		31,807		733	1960	3	P	M	FA	N	0	N	
4	F	C	Residential	BEQ	BEQ		32,583		1707	1972	3	VG	L	PA		0	N	
4	F	C	Residential	BEQ	BEQ		32,583		1708	1972	3	VG	L	PA		0	N	
4	F	C	Residential	BEQ	BEQ		32,583		1709	1972	3	VG	L	PA		0	N	
2	B	C	Residential	BEQ	BEQ		32,899		734	1960	3	P	M	FA	N	0	N	
7	A	C	Residential	BEQ 1A	BEQ		38,002		3181	1989	3	P	L	PA	N	0	N	
7	A	C	Residential	BEQ 1B	BEQ		38,002		3180	1989	3	P	L	PA	N	0	N	
2	B	C	Residential	BOQ TRANS W1/W2 AND O1/O2	BEQ	24	49,685	604,526	1688	1969	5	VG	H	FA		0	N	
2	B	C	Residential	COMMUNITY FAC/USA SOCSOUTH	Community	1	29,178	29,178	735	1960	3	P	M	FA	N	0	N	
5	B	C	Residential	1 A/B AMERICAN CIRCLE EN-4R	Duplex		3,988		1857	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	1 A/B POINT CRUZ EN-4R	Duplex		3,988		1901	1975	2	VG	H	PA	Y	0	N	
4	C	C	Residential	13 A/B NIMITZ EN-4R	Duplex		3,988		1834	1975	2	G	M	PA		0	N	
5	B	C	Residential	16 A/B AM. CIRC. EN-4R	Duplex		3,988		1872	1975	2	VG	H	PA	Y	2	N	
5	B	C	Residential	18 A/B AM. CIRC. EN-4R	Duplex		3,988		1874	1975	2	VG	H	PA	Y	3	N	
4	C	C	Residential	18 A/B NIMITZ EN-4R	Duplex		3,988		1839	1975	2	G	M	PA		1	N	Renovated 1998
5	B	C	Residential	19 A/B AMERICAN CIRC. EN-4R	Duplex		3,988		1875	1975	2	VG	H	PA	Y	2	N	
4	C	C	Residential	2 A/B NIMITZ EN-4R	Duplex		3,988		1823	1975	2	G	M	PA		2	N	
5	B	C	Residential	2 A/B POINT CRUZ EN-4R	Duplex		3,988		1902	1975	2	VG	H	PA	Y	2	N	
5	B	C	Residential	20 A/B AM. CIRC. EN-4R	Duplex		3,988		1876	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	21 A/B AM. CIRC. EN-4R	Duplex		3,988		1877	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	23 A/B AM. CIRC. EN-4R	Duplex		3,988		1879	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	26 A/B AMER. CIRC. EN-4R	Duplex		3,988		1882	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	3 A/B AM. CIRC. EN-4R	Duplex		3,988		1859	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	31 A/B AMER. CIRC. EN-4R	Duplex		3,988		1887	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	32 A/B AMER CIRC. EN-4R	Duplex		3,988		1888	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	34 A/B AMER CIRC EN-4R	Duplex		3,988		1889	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	35 A/B AMER. CIRC. EN-4R	Duplex		3,988		1890	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	36 A/B AMER CIRC. EN-4R	Duplex		3,988		1891	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	37 A/B AMER. CIRC. EN-4R	Duplex		3,988		1892	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	38 A/B AMER. CIRC. EN-4R	Duplex		3,988		1893	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	40 A/B AMER. CIRC. EN-4R	Duplex		3,988		1895	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	41 A/B AMER CIRC. EN-4R	Duplex		3,988		1896	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	42 A/B AMER CIRC EN-4R	Duplex		3,988		1897	1975	2	VG	H	PA	Y	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Square Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	43 A/B AMER. CIRC. EN-4R	Duplex		3,988		1898	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	47 A/B AMER CIRC. EN-4R	Duplex		3,988		1900	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	5 A/B AM. CIRC. EN-4R	Duplex		3,988		1861	1975	2	VG	H	PA	Y	0	N	
4	C	C	Residential	5 A/B NIMITZ EN-4R	Duplex		3,988		1826	1975	2	G	M	PA		0	N	
5	B	C	Residential	55 A/B SARA DR. EN-4R	Duplex		3,988		1905	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	57 A/B SARA DR. EN-4R	Duplex		3,988		1906	1975	1	VG	H	PA	Y	0	N	
5	B	C	Residential	59 A/B SARA DR. EN-4R	Duplex		3,988		1907	1975	1	VG	H	PA	Y	0	N	
5	B	C	Residential	6 A/B AM. CIRC. EN-4R	Duplex		3,988		1862	1975	2	VG	H	PA	Y	0	N	
4	C	C	Residential	6 A/B NIMITZ EN-4R	Duplex		3,988		1827	1975	2	G	M	PA		0	N	
5	B	C	Residential	61 A/B SARA DR. EN-4R	Duplex		3,988		1908	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	7 A/B AM. CIRC. EN-4R	Duplex		3,988		1863	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	8 A/B AM. CIRC EN-4R	Duplex		3,988		1864	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	86 A/B SARA DR. EN-4R	Duplex		3,988		1910	1975	2	VG	H	PA	Y	0	N	
5	B	C	Residential	88 A/B SARA DR. EN-4R	Duplex		3,988		1911	1975	1	VG	H	PA	Y	0	N	
5	B	C	Residential	90 A/B SARA DR. EN-4R	Duplex		3,988		1912	1975	1	VG	H	PA	Y	0	N	
5	B	C	Residential	92 A/B SARA DR. EN-4R	Duplex		3,988		1913	1975	1	VG	H	PA	Y	0	N	
4	C	C	Residential	15 A/B NIMITZ EN-3R	Duplex		4,036		1836	1975	2	G	M	PA		0	N	
4	C	C	Residential	16 A/B NIMITZ EN-3R	Duplex		4,036		1837	1975	2	G	M	PA		0	N	
4	C	C	Residential	20 A/B NIMITZ EN-3R	Duplex		4,036		1841	1975	2	G	M	PA		0	N	
4	C	C	Residential	21 A/B NIMITZ EN-3R	Duplex		4,036		1842	1975	2	G	M	PA		0	N	
4	C	C	Residential	22 A/B NIMITZ EN-3R	Duplex		4,036		1843	1975	2	G	M	PA		0	N	
4	C	C	Residential	27 A/B NIMITZ EN-3R	Duplex		4,036		1848	1975	2	G	M	PA		1	N	
4	C	C	Residential	28 A/B NIMITZ EN-3R	Duplex		4,036		1849	1975	2	G	M	PA		1	N	
4	C	C	Residential	29 A/B NIMITZ EN-3R	Duplex		4,036		1850	1975	2	G	M	PA		1	N	
4	C	C	Residential	30 A/B NIMITZ EN-3R	Duplex		4,036		1851	1975	2	G	M	PA		1	N	
4	C	C	Residential	34 A/B NIMITZ EN-3R	Duplex		4,036		1855	1975	2	G	M	PA		1	N	
4	C	C	Residential	4 A/B NIMITZ EN-3R	Duplex		4,036		1825	1975	2	G	M	PA		3	N	
4	C	C	Residential	7 A/B NIMITZ EN-3R	Duplex		4,036		1828	1975	2	G	M	PA		1	N	
4	C	C	Residential	8 A/B NIMITZ EN-3R	Duplex		4,036		1829	1975	2	G	M	PA		3	N	
4	C	C	Residential	23 A/B NIMITZ EN-4R	Duplex		4,164		1844	1975	2	G	M	PA		2	N	
4	C	C	Residential	24 A/B NIMITZ EN-4R	Duplex		4,164		1845	1975	2	G	M	PA		3	N	
4	C	C	Residential	25 A/B NIMITZ EN-4R	Duplex		4,164		1846	1975	2	G	M	PA		2	N	
4	C	C	Residential	26 A/B NIMITZ EN-4R	Duplex		4,164		1847	1975	2	G	M	PA		3	N	
4	C	C	Residential	31 A/B NIMITZ EN-4R	Duplex		4,164		1852	1975	2	G	M	PA		2	N	
4	C	C	Residential	32 A/B NIMITZ EN-4R	Duplex		4,164		1853	1975	2	G	M	PA		3	N	
4	C	C	Residential	33 A/B NIMITZ EN-4R	Duplex		4,164		1854	1975	2	G	M	PA		2	N	
4	C	C	Residential	36 A/B NIMITZ EN-4R	Duplex		4,164		1856	1975	2	G	M	PA		3	N	
5	B	C	Residential	25 A/B/C/D AM. CIRC. EN-2R	Duplex		6,170		1881	1975	2	VG	H	PA	Y	2	N	
5	B	C	Residential	45 A/B/C/D AM. CIRC. EN-2R	Duplex	63	6,170	257,640	1899	1975	2	VG	H	PA	Y	3	N	
5	A	C	Residential	889 A/B/C/D/E/F/G/H EN-2R	Eight		8,168		889	1960	2	P	L	FA	N	2	N	
5	A	C	Residential	897 A/B/D/E/F/G/H EN-2R	Eight	2	8,168	16,336	897	1960	2	P	L	FA	N	3	N	
4	D	C	Residential	NAVY LODGE (55 UNITS)	Hotel	1	73,751	73,751	2303	1991	4	G	H	FA	N	2	N	
5	A	C	Residential	891 A/B/C/D EN-3R	Quad		5,096		891	1959	2	P	L	FA	N	3	N	
5	A	C	Residential	893 A/B/C/D EN-3R	Quad		5,096		893	1959	2	P	L	FA	N	2	N	
5	A	C	Residential	895 A/B/C/D EN-3R	Quad		5,096		895	1959	2	P	L	FA	N	3	N	
5	A	C	Residential	899 A/B/C/D EN-3R	Quad		5,096		899	1959	2	P	L	FA	N	2	N	
4	C	C	Residential	1 A/B/C/D NIMITZ EN-2R	Quad		6,170		1822	1975	2	G	M	PA		3	N	
5	B	C	Residential	10 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1866	1975	2	VG	H	PA	Y	2	N	
4	C	C	Residential	10 A/B/C/D NIMITZ EN-2R	Quad		6,170		1831	1975	2	G	M	PA		3	N	
5	B	C	Residential	11 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1867	1975	2	VG	H	PA	Y	2	N	
4	C	C	Residential	11 A/B/C/D NIMITZ EN-2R	Quad		6,170		1832	1975	2	G	M	PA		3	N	
5	B	C	Residential	12 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1868	1975	2	VG	H	PA	Y	3	N	
4	C	C	Residential	12 A/B/C/D NIMITZ EN-2R	Quad		6,170		1833	1975	2	G	M	PA		3	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	13 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1869	1975	2	VG	H	PA	Y	2	N	
5	B	C	Residential	14 A/B/C/D AM. CIRC EN-2R	Quad		6,170		1870	1975	2	VG	H	PA	Y	3	N	
4	C	C	Residential	14 A/B/C/D NIMITZ EN-2R	Quad		6,170		1835	1975	2	G	M	PA		2	N	
5	B	C	Residential	15 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1871	1975	2	VG	H	PA	Y	2	N	
5	B	C	Residential	17 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1873	1975	2	VG	H	PA	Y	2	N	
4	C	C	Residential	17 A/B/C/D NIMITZ EN-2R	Quad		6,170		1838	1975	2	G	M	PA		3	N	
4	C	C	Residential	19 A/B/C/D NIMITZ EN-2R	Quad		6,170		1840	1975	2	G	M	PA		2	N	
5	B	C	Residential	2 A/B/C/D AM. CIRC EN-2R	Quad		6,170		1858	1975	2	VG	H	PA	Y	3	N	
5	B	C	Residential	22 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1878	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	24 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1880	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	27 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1883	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	28 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1884	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	29 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1885	1975	2	VG	H	PA	Y	1	N	
4	C	C	Residential	3 A/B/C/D NIMITZ EN-2R	Quad		6,170		1824	1975	2	G	M	PA		1	N	
5	B	C	Residential	30 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1886	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	39 A/B/C/D AMER. CIR. EN-2R	Quad		6,170		1894	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	4 A/B/C/D AM. CIRC. EN-3R	Quad		6,170		1860	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	4 A/B/C/D POINT CRUZ EN-2R	Quad		6,170		1903	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	53 A/B/C/D SARA. DR. EN-2R	Quad		6,170		1904	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	84 A/B/C/D SARA DR. EN-2R	Quad		6,170		1909	1975	2	VG	H	PA	Y	1	N	
5	B	C	Residential	9 A/B/C/D AM. CIRC. EN-2R	Quad		6,170		1865	1975	2	VG	H	PA	Y	1	N	
4	C	C	Residential	9 A/B/C/D NIMITZ EN-2R	Quad	33	6,170	199,314	1830	1975	2	G	M	PA		1	N	
5	C	C	Residential	1 SAN JACINTO -JR-2R	Single		1,501		991	1959	1	G	M	PA		1	N	
5	C	C	Residential	14 SAN JACINTO -JR-2R	Single		1,501		1002	1959	1	G	M			1	N	
5	C	C	Residential	18 MONTEREY-JR-2R	Single		1,501		946	1959	1	G	M	PA		1	N	
5	C	C	Residential	2 COWPENS-JR-2R	Single		1,501		1010	1959	1	G	M	PA		3	N	
5	C	C	Residential	25 FDR -JR-2R	Single		1,501		919	1959	1	G	M	PA		1	N	
5	C	C	Residential	28 FDR -JR-2R	Single		1,501		926	1959	1	G	M	PA		3	N	
5	C	C	Residential	4 SAN JACINTO -JR-2R	Single		1,501		992	1959	1	G	M	PA		1	N	
5	C	C	Residential	4 WRIGHT -JR-2R	Single		1,501		986	1959	1	G	M	PA		3	N	
5	C	C	Residential	49 MONTEREY JR-2R	Single		1,501		977	1959	1	G	M	PA		1	N	
5	B	C	Residential	1 TICONDEROGA EN-2R	Single		1,569		1501	1959	1	P	L	PA		3	N	
5	B	C	Residential	12 INTREPID EN-2R	Single		1,569		1298	1959	1	F	L	PA		1	N	
5	B	C	Residential	12 WASP EN-2R	Single		1,569		1606	1959	1	P	L	PA		3	N	
5	B	C	Residential	13 WASP EN-2R	Single		1,569		1607	1959	1	P	L	PA		1	N	
5	B	C	Residential	14 WASP EN 2R	Single		1,569		1608	1959	1	P	L	PA		3	N	
5	B	C	Residential	15 ENTERPRISE EN-2R	Single		1,569		1431	1959	1	P	L	PA		1	N	
5	B	C	Residential	16 SARATOGA EN-2R	Single		1,569		1528	1959	1	P	L	PA		3	N	
5	B	C	Residential	18 ENTERPRISE EN-2R	Single		1,569		1432	1959	1	P	L	PA		1	N	
5	B	C	Residential	18 ESSEX EN-2R	Single		1,569		1496	1959	1	P	L	PA		3	N	
5	B	C	Residential	18 HANCOCK EN-2R	Single		1,569		1190	1959	1	G	M	PA		1	N	
5	B	C	Residential	18 LEXINGTON EN-2R	Single		1,569		1398	1959	1	P	L	PA		3	N	
5	B	C	Residential	18 SARATOGA EN-2R	Single		1,569		1530	1959	1	P	L	PA		1	N	
5	B	C	Residential	19 ESSEX EN-2R	Single		1,569		1497	1959	1	P	L	PA		3	N	
5	B	C	Residential	19 WASP EN-2R	Single		1,569		1613	1959	1	P	L	PA		2	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	2 FRANKLIN -EN-2R	Single		1,569		1062	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	20 ESSEX EN-2R	Single		1,569		1498	1959	1	P	L	PA		2	N	
5	B	C	Residential	21 WASP EN-2R	Single		1,569		1615	1959	1	P	L	PA		3	N	
5	B	C	Residential	23 CORAL SEA -EN-2R	Single		1,569		1093	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	24 WASP EN-2R	Single		1,569		1618	1959	1	P	L	PA		3	N	
5	B	C	Residential	25 YORKTOWN EN-2R	Single		1,569		1143	1959	1	G	M	PA		2	N	
5	B	C	Residential	26 LEXINGTON EN-2R	Single		1,569		1390	1959	1	P	L	PA		3	N	
5	B	C	Residential	26 WASP EN-2R	Single		1,569		1620	1959	1	P	L	PA		2	N	
5	B	C	Residential	28 YORKTOWN EN-2R	Single		1,569		1146	1959	1	G	M	PA		1	N	
5	B	C	Residential	3 RANGER EN-2R	Single		1,569		1231	1959	1	G	M	PA		1	N	
5	B	C	Residential	3 YORKTOWN EN-2R	Single		1,569		1165	1959	1	G	M	PA		1	N	
5	B	C	Residential	30 LEXINGTON EN-2R	Single		1,569		1386	1959	1	P	L	PA		1	N	
5	B	C	Residential	30 WASP EN-2R	Single		1,569		1624	1959	1	P	L	PA		1	N	
5	B	C	Residential	34 WASP EN-2R	Single		1,569		1628	1959	1	P	L	PA		2	N	
5	B	C	Residential	36 LEXINGTON EN-2R	Single		1,569		1380	1959	1	P	L	PA		2	N	
5	B	C	Residential	38 WASP EN-2R	Single		1,569		1632	1959	1	P	L	PA		2	N	
5	B	C	Residential	4 ENTERPRISE EN-2R	Single		1,569		1418	1959	1	P	L	PA		3	N	
5	B	C	Residential	4 ESSEX EN-2R	Single		1,569		1482	1959	1	P	L	PA		3	N	
5	B	C	Residential	4 SARATOGA EN-2R	Single		1,569		1516	1959	1	P	L	PA		3	N	
5	B	C	Residential	43 ENTERPRISE EN-2R	Single		1,569		1459	1959	1	P	L	PA		3	N	
5	B	C	Residential	48 ENTERPRISE EN-2R	Single		1,569		1462	1959	1	P	L	PA		3	N	
5	B	C	Residential	48 LEXINGTON EN-2R	Single		1,569		1368	1959	1	P	L	PA		0	N	
5	B	C	Residential	49 LEXINGTON EN-2R	Single		1,569		1367	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 ANZIO EN-2R	Single		1,569		1647	1959	1	P	L	PA		0	N	
5	B	C	Residential	51 SARATOGA EN-2R	Single		1,569		1565	1959	1	P	L	PA		0	N	
5	B	C	Residential	54 LEXINGTON EN-2R	Single		1,569		1362	1959	1	P	L	PA		0	N	
5	B	C	Residential	58 ENTERPRISE EN-2R	Single		1,569		1472	1959	1	P	L	PA		0	N	
5	B	C	Residential	58 LEXINGTON EN-2R	Single		1,569		1358	1959	1	P	L	PA		0	N	
5	B	C	Residential	66 SARATOGA EN-2R	Single		1,569		1578	1959	1	P	L	PA		0	N	
5	B	C	Residential	7 HORNET EN-2R	Single		1,569		1187	1959	1	G	M	PA		0	N	
5	B	C	Residential	77 LEXINGTON EN-2R	Single		1,569		1339	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 RANDOLPH EN-2R	Single		1,569		1314	1959	1	F	L	PA		0	N	
5	B	C	Residential	82 SARATOGA EN-2R	Single		1,569		1594	1959	1	P	L	PA		0	N	
5	B	C	Residential	83 LEXINGTON EN-2R	Single		1,569		1333	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 CORAL SEA EN-2R	Single		1,569		1107	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	9 SARATOGA EN-2R	Single		1,569		1523	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 WASP EN-2R	Single		1,569		1603	1959	1	P	L	PA		0	N	
5	B	C	Residential	26 HANCOCK EN-2R	Single		1,591		1198	1959	1	G	M	PA		0	N	
5	B	C	Residential	39 RANGER EN-2R	Single		1,591		1267	1959	1	G	M	PA		0	N	
5	B	C	Residential	8 INTREPID EN-2R	Single		1,591		1294	1959	1	F	L	PA		0	N	
5	C	C	Residential	1 BATAAN -JR-3R	Single		1,737		1029	1959	1	G	M	PA		0	N	
5	C	C	Residential	10 COWPENS-JR-3R	Single		1,737		1018	1959	1	G	M	PA		0	N	
5	C	C	Residential	10 SAN JACINTO -JR-3R	Single		1,737		998	1959	1	G	M	PA		0	N	
5	C	C	Residential	11 SAN JACINTO -JR-3R	Single		1,737		1001	1959	1	G	M	PA		0	N	
5	C	C	Residential	12 CABOT-JR-3R	Single		1,737		1048	1959	1	G	M	PA		1	N	
5	C	C	Residential	12 COWPENS -JR-3R	Single		1,737		1020	1959	1	G	M	PA		0	N	
5	C	C	Residential	12 MONTEREY-JR-3R	Single		1,737		940	1959	1	G	M	PA		1	N	
5	C	C	Residential	12 SAN JACINTO -JR-3R	Single		1,737		1000	1959	1	G	M	PA		0	N	
5	C	C	Residential	13 COPWPENS -JR-3R	Single		1,737		1021	1959	1	G	M	PA		1	N	
5	C	C	Residential	13 SAN JACINTO -JR-3R	Single		1,737		1003	1959	1	G	M	PA		0	N	
5	C	C	Residential	14 CABOT-JR-3R	Single		1,737		1050	1959	1	G	M	PA		1	N	
5	C	C	Residential	15 COWPENS -JR-3R	Single		1,737		1023	1959	1	G	M	PA		0	N	
5	C	C	Residential	15 MONTEREY-JR-3R	Single		1,737		943	1959	1	G	M	PA		1	N	
5	C	C	Residential	16 CABOT -JR-3R	Single		1,737		1052	1959	1	G	M	PA		2	N	
5	C	C	Residential	16 MONTEREY-JR-3R	Single		1,737		944	1959	1	G	M	PA		1	N	
5	C	C	Residential	16 SAN JACINTO -JR-3R	Single		1,737		1004	1959	1	G	M	PA		2	N	
5	C	C	Residential	17 MONTEREY-JR-3R	Single		1,737		945	1959	1	G	M	PA		1	N	
5	C	C	Residential	18 CABOT-JR-3R	Single		1,737		1054	1959	1	G	M	PA		2	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	C	C	Residential	18 SAN JACINTO -JR-3R	Single		1,737		1006	1959	1	G	M	PA		1	N	
5	C	C	Residential	19 COWPENS-JR-3R	Single		1,737		1027	1959	1	G	M	PA		2	N	
5	C	C	Residential	19 MONTEREY-JR-3R	Single		1,737		947	1959	1	G	M	PA		1	N	
5	C	C	Residential	2 WRIGHT -JR-3R	Single		1,737		984	1959	1	G	M	PA		3	N	
5	C	C	Residential	20 CABOT-JR-3R	Single		1,737		1056	1959	1	G	M	PA		3	N	
5	C	C	Residential	20 MONTEREY-JR-3R	Single		1,737		948	1959	1	G	M	PA		3	N	
5	C	C	Residential	20 SAN JACINTO -JR-3R	Single		1,737		1008	1959	1	G	M	PA		3	N	
5	C	C	Residential	21 FDR -JR-3R	Single		1,737		915	1959	1	G	M	PA		3	N	
5	C	C	Residential	21 MONTEREY-JR-3R	Single		1,737		949	1959	1	G	M	PA		3	N	
5	C	C	Residential	22 MONTEREY-JR-3R	Single		1,737		950	1959	1	G	M	PA		3	N	
5	C	C	Residential	23 FDR -JR-3R	Single		1,737		917	1959	1	G	M	PA		3	N	
5	C	C	Residential	23 MONTEREY-JR-3R	Single		1,737		951	1959	1	G	M	PA		3	N	
5	C	C	Residential	24 CABOT-JR-3R	Single		1,737		1060	1959	1	G	M	PA		3	N	
5	C	C	Residential	24 MONTEREY-JR-3R	Single		1,737		952	1959	1	G	M	PA		3	N	
5	C	C	Residential	25 MONTEREY-JR-3R	Single		1,737		953	1959	1	G	M	PA		3	N	
5	C	C	Residential	27 FDR -JR-3R	Single		1,737		921	1959	1	G	M	PA		3	N	
5	C	C	Residential	27 MONTEREY-JR-3R	Single		1,737		955	1959	1	G	M	PA		3	N	
5	C	C	Residential	29 FDR -JR-3R	Single		1,737		923	1959	1	G	M	PA		3	N	
5	C	C	Residential	29 MONTEREY-JR-3R 3R	Single		1,737		957	1959	1	G	M	PA		3	N	
5	C	C	Residential	3 CABOT -JR-3R	Single		1,737		1039	1959	1	G	M	PA		3	N	
5	C	C	Residential	3 COWPENS -JR-3R	Single		1,737		1011	1959	1	G	M	PA		3	N	
5	C	C	Residential	3 SAN JACINTO -JR-3R	Single		1,737		993	1959	1	G	M	PA		3	N	
5	C	C	Residential	3 WRIGHT -JR-3R	Single		1,737		985	1959	1	G	M	PA		3	N	
5	C	C	Residential	30 MONTEREY JR-3R	Single		1,737		958	1959	1	G	M	PA			N	Single Officer Housing
5	C	C	Residential	31 FDR -JR-3R	Single		1,737		925	1959	1	G	M	PA		2	N	
5	C	C	Residential	32 MONTEREY JR-3R	Single		1,737		960	1959	1	G	M	PA		2	N	
5	C	C	Residential	33 FDR -JR-3R	Single		1,737		927	1959	1	G	M	PA		2	N	
5	C	C	Residential	33 MONTEREY JR-3R	Single		1,737		961	1959	1	G	M	PA		2	N	
5	C	C	Residential	34 MONTEREY JR-3R	Single		1,737		962	1959	1	G	M	PA		2	N	
5	C	C	Residential	35 MONTEREY -JR-3R	Single		1,737		963	1959	1	G	M	PA		2	N	
5	C	C	Residential	36 MONTEREY -JR-3R	Single		1,737		964	1959	1	G	M	PA		2	N	
5	C	C	Residential	37 MONTEREY-JR-3R	Single		1,737		965	1959	1	G	M	PA		2	N	
5	C	C	Residential	38 MONTEREY -JR-3R	Single		1,737		966	1959	1	G	M	PA		2	N	
5	C	C	Residential	39 MONTEREY -JR-3R	Single		1,737		967	1959	1	G	M	PA		2	N	
5	C	C	Residential	4 BATTAN -JR-3R	Single		1,737		1032	1959	1	G	M	PA		2	N	
5	C	C	Residential	4 COWPENS -JR-3R	Single		1,737		1012	1959	1	G	M	PA		2	N	
5	C	C	Residential	43 MONTEREY-JR-3R	Single		1,737		971	1959	1	G	M	PA		2	N	
5	C	C	Residential	45 MONTEREY JR-3R	Single		1,737		973	1959	1	G	M	PA		2	N	
5	C	C	Residential	47 MONTEREY JR-3R	Single		1,737		975	1959	1	G	M	PA		2	N	
5	C	C	Residential	5 BATAAN JR-3R	Single		1,737		1033	1959	1	G	M	PA		2	N	
5	C	C	Residential	5 CABOT -JR-3R	Single		1,737		1041	1959	1	G	M	PA		2	N	
5	C	C	Residential	5 COWPENS-JR-3R	Single		1,737		1013	1959	1	G	M	PA		2	N	
5	C	C	Residential	5 SAN JACINTO -JR-3R	Single		1,737		995	1959	1	G	M	PA		2	N	
5	C	C	Residential	51 MONTEREY JR-3R	Single		1,737		979	1959	1	G	M	PA		2	N	
5	C	C	Residential	53 MONTEREY JR-3R	Single		1,737		981	1959	1	G	M	PA		2	N	
5	C	C	Residential	55 MONTEREY -JR-2R	Single		1,737		983	1959	1	G	M	PA		2	N	
5	C	C	Residential	6 BATAAN JR-3R	Single		1,737		1034	1959	1	G	M	PA		2	N	
5	C	C	Residential	6 COWPENS -JR-3R	Single		1,737		1014	1959	1	G	M	PA		3	N	
5	C	C	Residential	6 WRIGHT -JR-3R	Single		1,737		988	1959	1	G	M	PA		2	N	
5	C	C	Residential	7 COWPENS -JR-3R	Single		1,737		1015	1959	1	G	M	PA		3	N	
5	C	C	Residential	7 SAN JACINTO -JR-3R	Single		1,737		997	1959	1	G	M	PA		2	N	
5	C	C	Residential	8 BATAAN JR-3R	Single		1,737		1036	1959	1	G	M	PA		3	N	
5	C	C	Residential	8 COWPENS -JR-3R	Single		1,737		1016	1959	1	G	M	PA		2	N	
5	C	C	Residential	8 SAN JACINTO -JR-3R	Single		1,737		996	1959	1	G	M	PA		3	N	
5	C	C	Residential	9 COWPENS -JR-3R	Single		1,737		1017	1959	1	G	M	PA		2	N	
5	C	C	Residential	9 SAN JACINTO -JR-3R	Single		1,737		999	1959	1	G	M	PA		3	N	
5	B	C	Residential	1 BUNKER HILL EN-3R	Single		1,796		1633	1959	1	P	L	PA		2	N	
5	B	C	Residential	1 CORAL SEA EN-3R	Single		1,796		1115	1959	1	VG	H	PA	Y	3	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	1 ENTERPRISE EN-3R	Single		1,796		1417	1959	1	P	L	PA		2	N	
5	B	C	Residential	1 ESSEX EN-3R	Single		1,796		1479	1959	1	P	L	PA		3	N	
5	B	C	Residential	1 FRANKLIN -EN-3R	Single		1,796		1061	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	1 HANKCOCK EN-3R	Single		1,796		1169	1959	1	G	M	PA		3	N	
5	B	C	Residential	1 HORNET EN-3R	Single		1,796		1181	1959	1	G	M	PA		2	N	
5	B	C	Residential	1 INTREPID EN-3R	Single		1,796		1289	1959	1	F	L	PA		3	N	
5	B	C	Residential	1 LEXINGTON EN-3R	Single		1,796		1415	1959	1	P	L	PA		2	N	
5	B	C	Residential	1 MIDWAY EN-3R	Single		1,796		1477	1959	1	P	L	PA		3	N	
5	B	C	Residential	1 RANGER EN-3R	Single		1,796		1229	1959	1	G	M	PA		2	N	
5	B	C	Residential	1 SARATOGA EN-3R	Single		1,796		1515	1959	1	P	L	PA		3	N	
5	B	C	Residential	1 WASP EN-3R	Single		1,796		1595	1959	1	P	L	PA		2	N	
5	B	C	Residential	1 YORKTOWN EN-3R	Single		1,796		1167	1959	1	G	M	PA		3	N	
5	B	C	Residential	10 ANZIO EN-3R	Single		1,796		1650	1959	1	P	L	PA		2	N	
5	B	C	Residential	10 CORAL SEA EN-3R	Single		1,796		1108	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	10 ENTERPRISE EN-3R	Single		1,796		1424	1959	1	P	L	PA		2	N	
5	B	C	Residential	10 ESSEX EN-3R	Single		1,796		1488	1959	1	P	L	PA		3	N	
5	B	C	Residential	10 HANCOCK EN-3R	Single		1,796		1182	1959	1	G	M	PA		2	N	
5	B	C	Residential	10 HORNET EN-3R	Single		1,796		1210	1959	1	G	M	FA		3	N	
5	B	C	Residential	10 INTREPID EN-3R	Single		1,796		1296	1959	1	F	L	PA		2	N	
5	B	C	Residential	10 LEXINGTON EN-3R	Single		1,796		1406	1959	1	P	L	PA		2	N	
5	B	C	Residential	10 RANGER EN-3R	Single		1,796		1236	1959	1	G	M	PA		3	N	
5	B	C	Residential	10 RANGER EN-3R	Single		1,796		1246	1959	1	G	M	PA		2	N	
5	B	C	Residential	10 SARATOGA EN-3R	Single		1,796		1522	1959	1	P	L	PA		3	N	
5	B	C	Residential	10 TICONDEROGA EN-3R	Single		1,796		1510	1959	1	P	L	PA		2	N	
5	B	C	Residential	10 WASP EN-3R	Single		1,796		1604	1959	1	P	L	PA		3	N	
5	B	C	Residential	10 YORKTOWN EN-3R	Single		1,796		1164	1959	1	G	M	PA		2	N	
5	B	C	Residential	11 CORAL SEA EN-3R	Single		1,796		1105	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	11 ENTERPRISE EN-3R	Single		1,796		1427	1959	1	P	L	PA		3	N	
5	B	C	Residential	11 ESSEX EN-3R	Single		1,796		1489	1959	1	P	L	PA		3	N	
5	B	C	Residential	11 HANCOCK EN-3R	Single		1,796		1179	1959	1	G	M	PA		3	N	
5	B	C	Residential	11 HORNET EN-3R	Single		1,796		1191	1959	1	G	M	PA		3	N	
5	B	C	Residential	11 INTREPID EN-3R	Single		1,796		1299	1959	1	F	L	PA		3	N	
5	B	C	Residential	11 LEXINGTON EN-3R	Single		1,796		1405	1959	1	P	L	PA		3	N	
5	B	C	Residential	11 RANGER EN-3R	Single		1,796		1239	1959	1	G	M	PA		3	N	
5	B	C	Residential	11 SARATOGA EN-3R	Single		1,796		1525	1959	1	P	L	PA		3	N	
5	B	C	Residential	11 WASP EN-3R	Single		1,796		1605	1959	1	P	L	PA		1	N	
5	B	C	Residential	11 YORKTOWN EN-3R	Single		1,796		1157	1959	1	G	M	PA		1	N	
5	B	C	Residential	12 ANZIO EN-3R	Single		1,796		1652	1959	1	P	L	PA		1	N	
5	B	C	Residential	12 CORAL SEA EN-3R	Single		1,796		1106	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	12 ENTERPRISE EN-3R	Single		1,796		1426	1959	1	P	L	PA		1	N	
5	B	C	Residential	12 FRANKLIN-EN-3R	Single		1,796		1072	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	12 HANCOCK EN-3R	Single		1,796		1184	1959	1	G	M	PA		0	N	
5	B	C	Residential	12 HORNET EN-3R	Single		1,796		1212	1959	1	G	M	PA		0	N	
5	B	C	Residential	12 LEXINGTON EN-3R	Single		1,796		1404	1959	1	P	L	PA		0	N	
5	B	C	Residential	12 RANGER EN-3R	Single		1,796		1238	1959	1	G	M	PA		0	N	
5	B	C	Residential	12 SARATOGA EN-3R	Single		1,796		1524	1959	1	P	L	PA		0	N	
5	B	C	Residential	12 TICONDEROGA EN-3R	Single		1,796		1512	1959	1	P	L	PA		0	N	
5	B	C	Residential	13 CORAL SEA -EN3R	Single		1,796		1103	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	13 ENTERPRISE EN-3R	Single		1,796		1429	1959	1	P	L	PA		0	N	
5	B	C	Residential	13 ESSEX EN-3R	Single		1,796		1491	1959	1	P	L	PA		0	N	
5	B	C	Residential	13 INTREPID EN-3R	Single		1,796		1301	1959	1	F	L	PA		0	N	
5	B	C	Residential	13 LEXINGTON EN-3R	Single		1,796		1403	1959	1	P	L	PA		0	N	
5	B	C	Residential	13 RANDOLPH EN-3R	Single		1,796		1319	1959	1	F	L	PA		0	N	
5	B	C	Residential	13 RANGER EN-3R	Single		1,796		1241	1959	1	G	M	PA		0	N	
5	B	C	Residential	13 SARATOGA EN-3R	Single		1,796		1527	1959	1	P	L	PA		0	N	
5	B	C	Residential	13 YORKTOWN EN-3R	Single		1,796		1155	1959	1	G	M	PA		0	N	
5	B	C	Residential	14 CORAL SEA -EN-3R	Single		1,796		1104	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	14 ENTERPRISE EN-3R	Single		1,796		1428	1959	1	P	L	PA		2	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	14 ESSEX EN-3R	Single		1,796		1492	1959	1	P	L	PA		1	N	
5	B	C	Residential	14 HANCOCK EN-3R	Single		1,796		1186	1959	1	G	M	PA		2	N	
5	B	C	Residential	14 LEXINGTON EN-3R	Single		1,796		1402	1959	1	P	L	PA		1	N	
5	B	C	Residential	14 RANGER EN-3R	Single		1,796		1240	1959	1	G	M	PA		2	N	
5	B	C	Residential	14 SARATOGA EN-3R	Single		1,796		1526	1959	1	P	L	PA		1	N	
5	B	C	Residential	14 YORKTOWN EN-3R	Single		1,796		1160	1959	1	G	M	PA		2	N	
5	B	C	Residential	15 ESSEX EN-3R	Single		1,796		1493	1959	1	P	L	PA		1	N	
5	B	C	Residential	15 HORNET EN-3R	Single		1,796		1195	1959	1	G	M	PA		2	N	
5	B	C	Residential	15 LEXINGTON EN-3R	Single		1,796		1401	1959	1	P	L	PA		1	N	
5	B	C	Residential	15 RANDOLPH EN-3R	Single		1,796		1321	1959	1	F	L	PA		2	N	
5	B	C	Residential	15 SARATOGA EN-3R	Single		1,796		1529	1959	1	P	L	PA		1	N	
5	B	C	Residential	15 WASP EN-3R	Single		1,796		1609	1959	1	P	L	PA		2	N	
5	B	C	Residential	15 YORKTOWN EN-3R	Single		1,796		1153	1959	1	G	M	PA		2	N	
5	B	C	Residential	16 CORAL SEA -EN-3R	Single		1,796		1102	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	16 ENTERPRISE EN-3R	Single		1,796		1430	1959	1	P	L	PA		2	N	
5	B	C	Residential	16 ESSEX EN-3R	Single		1,796		1494	1959	1	P	L	PA		0	N	
5	B	C	Residential	16 HANCOCK EN-3R	Single		1,796		1188	1959	1	G	M	PA		0	N	
5	B	C	Residential	16 HORNET EN-3R	Single		1,796		1216	1959	1	G	M	PA		0	N	
5	B	C	Residential	16 INTREPID EN-3R	Single		1,796		1302	1959	1	F	L	PA		0	N	
5	B	C	Residential	16 LEXINGTON EN-3R	Single		1,796		1400	1959	1	P	L	PA		0	N	
5	B	C	Residential	16 RANGER EN-3R	Single		1,796		1242	1959	1	G	M	PA		0	N	
5	B	C	Residential	16 WASP EN-3R	Single		1,796		1610	1959	1	P	L	PA		0	N	
5	B	C	Residential	16 YORKTOWN EN-3R	Single		1,796		1158	1959	1	G	M	PA		2	N	
5	B	C	Residential	17 ENTERPRISE EN-3R	Single		1,796		1433	1959	1	P	L	PA		3	N	
5	B	C	Residential	17 ESSEX EN-3R	Single		1,796		1495	1959	1	P	L	PA		2	N	
5	B	C	Residential	17 LEXINGTON EN-3R	Single		1,796		1399	1959	1	P	L	PA		3	N	
5	B	C	Residential	17 SARATOGA EN-3R	Single		1,796		1531	1959	1	P	L	PA		2	N	
5	B	C	Residential	17 WASP EN-3R	Single		1,796		1611	1959	1	P	L	PA		3	N	
5	B	C	Residential	17 YORKTOWN EN-3R	Single		1,796		1151	1959	1	G	M	PA		3	N	
5	B	C	Residential	18 CORAL SEA-EN-3R	Single		1,796		1100	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	18 FRANKLIN -EN-3R	Single		1,796		1078	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	18 INTREPID EN-3R	Single		1,796		1304	1959	1	F	L	PA		3	N	
5	B	C	Residential	18 RANGER EN-3R	Single		1,796		1244	1959	1	G	M	PA		3	N	
5	B	C	Residential	18 WASP EN-3R	Single		1,796		1612	1959	1	P	L	PA		3	N	
5	B	C	Residential	19 ENTERPRISE EN-3R	Single		1,796		1435	1959	1	P	L	PA		3	N	
5	B	C	Residential	19 LEXINGTON EN-3R	Single		1,796		1397	1959	1	P	L	PA		3	N	
5	B	C	Residential	19 RANGER EN-3R	Single		1,796		1247	1959	1	G	M	PA		0	N	
5	B	C	Residential	19 SARATOGA EN-3R	Single		1,796		1533	1959	1	P	L	PA		0	N	
5	B	C	Residential	19 YORKTOWN EN-3R	Single		1,796		1149	1959	1	G	M	PA		0	N	
5	B	C	Residential	2 ANZIO EN-3R	Single		1,796		1642	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 BUNKER HILL EN-3R	Single		1,796		1634	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 CORAL SEA EN-3R	Single		1,796		1116	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	2 ENTERPRISE EN-3R	Single		1,796		1416	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 ESSEX EN-3R	Single		1,796		1480	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 ESSEX EN-3R	Single		1,796		1490	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 HANCOCK EN-3R	Single		1,796		1174	1959	1	G	M	PA		0	N	
5	B	C	Residential	2 LEXINGTON EN-3R	Single		1,796		1414	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 MIDWAY EN-3R	Single		1,796		1476	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 RANDOLPH EN-3R	Single		1,796		1308	1959	1	F	L	PA		0	N	
5	B	C	Residential	2 RANGER EN-3R	Single		1,796		1228	1959	1	G	M	PA		0	N	
5	B	C	Residential	2 SARATOGA EN-3R	Single		1,796		1514	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 TICONDEROGA EN-3R	Single		1,796		1502	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 WASP EN-3R	Single		1,796		1596	1959	1	P	L	PA		0	N	
5	B	C	Residential	2 YORKTOWN EN-3R	Single		1,796		1172	1959	1	G	M	PA		0	N	
5	B	C	Residential	20 CORAL SEA -EN-3R	Single		1,796		1098	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	20 ENTERPRISE EN-3R	Single		1,796		1434	1959	1	P	L	PA		0	N	
5	B	C	Residential	20 HANCOCK EN-3R	Single		1,796		1192	1959	1	G	M	PA		0	N	
5	B	C	Residential	20 INTREPID EN-3R	Single		1,796		1306	1959	1	F	L	PA		0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	20 LEXINGTON EN-3R	Single		1,796		1396	1959	1	P	L	PA		0	N	
5	B	C	Residential	20 SARATOGA EN-3R	Single		1,796		1532	1959	1	P	L	PA		0	N	
5	B	C	Residential	20 WASP EN-3R	Single		1,796		1614	1959	1	P	L	PA		0	N	
5	B	C	Residential	20 YORKTOWN EN-3R	Single		1,796		1147	1959	1	G	M	PA		0	N	
5	B	C	Residential	20 YORKTOWN EN-3R	Single		1,796		1154	1959	1	G	M	PA		0	N	
5	B	C	Residential	21 CORAL SEA -EN-3R	Single		1,796		1095	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	21 ENTERPRISE EN-3R	Single		1,796		1437	1959	1	P	L	PA		0	N	
5	B	C	Residential	21 HORNET EN-3R	Single		1,796		1201	1959	1	G	M	PA		0	N	
5	B	C	Residential	21 LEXINGTON EN-3R	Single		1,796		1395	1959	1	P	L	PA		0	N	
5	B	C	Residential	21 RANGER EN-3R	Single		1,796		1249	1959	1	G	M	PA		0	N	
5	B	C	Residential	21 SARATOGA EN-3R	Single		1,796		1535	1959	1	P	L	PA		0	N	
5	B	C	Residential	22 CORAL SEA -EN-3R	Single		1,796		1096	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	22 ENTERPRISE EN-3R	Single		1,796		1436	1959	1	P	L	PA		0	N	
5	B	C	Residential	22 ESSEX EN-3R	Single		1,796		1500	1959	1	P	L	PA		0	N	
5	B	C	Residential	22 LEXINGTON EN-3R	Single		1,796		1394	1959	1	P	L	PA		0	N	
5	B	C	Residential	22 RANGER EN-3R	Single		1,796		1248	1959	1	G	M	PA		0	N	
5	B	C	Residential	22 SARATOGA EN-3R	Single		1,796		1534	1959	1	P	L	PA		0	N	
5	B	C	Residential	22 WASP EN-3R	Single		1,796		1616	1959	1	P	L	PA		0	N	
5	B	C	Residential	23 ENTERPRISE EN-3R	Single		1,796		1439	1959	1	P	L	PA		0	N	
5	B	C	Residential	23 LEXINGTON EN-3R	Single		1,796		1393	1959	1	P	L	PA		0	N	
5	B	C	Residential	23 RANGER EN-3R	Single		1,796		1251	1959	1	G	M	PA		0	N	
5	B	C	Residential	23 SARATOGA EN-3R	Single		1,796		1537	1959	1	P	L	PA		0	N	
5	B	C	Residential	23 WASP EN-3R	Single		1,796		1617	1959	1	P	L	PA		0	N	
5	B	C	Residential	23 YORKTOWN EN-3R	Single		1,796		1145	1959	1	G	M	PA		0	N	
5	B	C	Residential	24 CORAL SEA -EN-3R	Single		1,796		1094	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	24 ENTERPRISE EN-3R	Single		1,796		1438	1959	1	P	L	PA		0	N	
5	B	C	Residential	24 HANCOCK EN-3R	Single		1,796		1196	1959	1	G	M	PA		0	N	
5	B	C	Residential	24 LEXINGTON EN-3R	Single		1,796		1392	1959	1	P	L	PA		0	N	
5	B	C	Residential	24 RANGER EN-3R	Single		1,796		1250	1959	1	G	M	PA		0	N	
5	B	C	Residential	24 SARATOGA EN-3R	Single		1,796		1536	1959	1	P	L	PA		0	N	
5	B	C	Residential	24 YORKTOWN EN-3R	Single		1,796		1150	1959	1	G	M	PA		0	N	
5	B	C	Residential	25 CORAL SEA -EN-3R	Single		1,796		1091	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	25 ENTERPRISE EN-3R	Single		1,796		1441	1959	1	P	L	PA		0	N	
5	B	C	Residential	25 LEXINGTON EN-3R	Single		1,796		1391	1959	1	P	L	PA		0	N	
5	B	C	Residential	25 RANGER EN-3R	Single		1,796		1253	1959	1	G	M	PA		0	N	
5	B	C	Residential	25 SARATOGA EN-3R	Single		1,796		1539	1959	1	P	L	PA		0	N	
5	B	C	Residential	25 WASP EN-3R	Single		1,796		1619	1959	1	P	L	PA		0	N	
5	B	C	Residential	26 ENTERPRISE EN-3R	Single		1,796		1440	1959	1	P	L	PA		0	N	
5	B	C	Residential	26 HORNET EN-3R	Single		1,796		1226	1959	1	G	M	PA		0	N	
5	B	C	Residential	26 RANGER EN-3R	Single		1,796		1252	1959	1	G	M	PA		0	N	
5	B	C	Residential	26 SARATOGA EN-3R	Single		1,796		1538	1959	1	P	L	PA		0	N	
5	B	C	Residential	26 YORKTOWN EN-3R	Single		1,796		1148	1959	1	G	M	PA		0	N	
5	B	C	Residential	27 ENTERPRISE EN-3R	Single		1,796		1443	1959	1	P	L	PA		0	N	
5	B	C	Residential	27 LEXINGTON EN-3R	Single		1,796		1389	1959	1	P	L	PA		0	N	
5	B	C	Residential	27 RANGER EN-3R	Single		1,796		1255	1959	1	G	M	PA		0	N	
5	B	C	Residential	27 SARATOGA EN-3R	Single		1,796		1541	1959	1	P	L	PA		0	N	
5	B	C	Residential	27 WASP EN-3R	Single		1,796		1621	1959	1	P	L	PA		0	N	
5	B	C	Residential	27 YORKTOWN EN-3R	Single		1,796		1141	1959	1	G	M	PA		0	N	
5	B	C	Residential	28 ENTERPRISE EN-3R	Single		1,796		1442	1959	1	P	L	PA		0	N	
5	B	C	Residential	28 LEXINGTON EN-3R	Single		1,796		1388	1959	1	P	L	PA		0	N	
5	B	C	Residential	28 RANGER EN-3R	Single		1,796		1254	1959	1	G	M	PA		0	N	
5	B	C	Residential	28 SARATOGA EN-3R	Single		1,796		1540	1959	1	P	L	PA		0	N	
5	B	C	Residential	28 WASP EN-3R	Single		1,796		1622	1959	1	P	L	PA		0	N	
5	B	C	Residential	29 CORAL SEA -EN-3R	Single		1,796		1087	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	29 ENTERPRISE EN-3R	Single		1,796		1445	1959	1	P	L	PA		0	N	
5	B	C	Residential	29 LEXINGTON EN-3R	Single		1,796		1387	1959	1	P	L	PA		0	N	
5	B	C	Residential	29 SARATOGA EN-3R	Single		1,796		1543	1959	1	P	L	PA		0	N	
5	B	C	Residential	29 YORKTOWN EN-3R	Single		1,796		1139	1959	1	G	M	PA		0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	3 ANZIO EN-3R	Single		1,796		1645	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 BUNKER HILL EN-3R	Single		1,796		1635	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 CORAL SEA EN-3R	Single		1,796		1113	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	3 ENTERPRISE EN-3R	Single		1,796		1419	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 ESSEX EN-3R	Single		1,796		1481	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 FRANKLIN-EN-3R	Single		1,796		1063	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	3 HANCOCK EN-3R	Single		1,796		1171	1959	1	G	M	PA		0	N	
5	B	C	Residential	3 HORNET EN-3R	Single		1,796		1183	1959	1	G	M	PA		0	N	
5	B	C	Residential	3 INTREPID EN-3R	Single		1,796		1291	1959	1	F	L	PA		0	N	
5	B	C	Residential	3 LEXINGTON EN-3R	Single		1,796		1413	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 SARATOGA EN-3R	Single		1,796		1517	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 TICONDEROGA EN-3R	Single		1,796		1503	1959	1	P	L	PA		0	N	
5	B	C	Residential	3 WASP EN-3R	Single		1,796		1597	1959	1	P	L	PA		0	N	
5	B	C	Residential	30 ENTERPRISE EN-3R	Single		1,796		1444	1959	1	P	L	PA		0	N	
5	B	C	Residential	30 RANGER EN-3R	Single		1,796		1256	1959	1	G	M	PA		0	N	
5	B	C	Residential	30 SARATOGA EN-3R	Single		1,796		1542	1959	1	P	L	PA		0	N	
5	B	C	Residential	30 YORKTOWN EN-3R	Single		1,796		1144	1959	1	G	M	PA		0	N	
5	B	C	Residential	31 CORAL SEA-EN-3R	Single		1,796		1085	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	31 ENTERPRISE EN-3R	Single		1,796		1447	1959	1	P	L	PA		0	N	
5	B	C	Residential	31 LEXINGTON EN-3R	Single		1,796		1385	1959	1	P	L	PA		0	N	
5	B	C	Residential	31 RANGER EN-3R	Single		1,796		1259	1959	1	G	M	PA		0	N	
5	B	C	Residential	31 SARATOGA EN-3R	Single		1,796		1545	1959	1	P	L	PA		0	N	
5	B	C	Residential	31 YORKTOWN EN-3R	Single		1,796		1137	1959	1	G	M	PA		0	N	
5	B	C	Residential	32 ENTERPRISE EN-3R	Single		1,796		1446	1959	1	P	L	PA		0	N	
5	B	C	Residential	32 LEXINGTON EN-3R	Single		1,796		1384	1959	1	P	L	PA		0	N	
5	B	C	Residential	32 RANGER EN-3R	Single		1,796		1258	1959	1	G	M	PA		0	N	
5	B	C	Residential	32 SARATOGA EN-3R	Single		1,796		1544	1959	1	P	L	PA		0	N	
5	B	C	Residential	32 WASP EN-3R	Single		1,796		1626	1959	1	P	L	PA		0	N	
5	B	C	Residential	32 YORKTOWN EN-3R	Single		1,796		1142	1959	1	G	M	PA		0	N	
5	B	C	Residential	33 CORAL SEA -EN-3R	Single		1,796		1083	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	33 ENTERPRISE EN-3R	Single		1,796		1449	1959	1	P	L	PA		0	N	
5	B	C	Residential	33 SARATOGA EN-3R	Single		1,796		1547	1959	1	P	L	PA		0	N	
5	B	C	Residential	34 ENTERPRISE EN-3R	Single		1,796		1448	1959	1	P	L	PA		0	N	
5	B	C	Residential	34 LEXINGTON EN-3R	Single		1,796		1382	1959	1	P	L	PA		0	N	
5	B	C	Residential	34 SARATOGA EN-3R	Single		1,796		1546	1959	1	P	L	PA		0	N	
5	B	C	Residential	35 CORAL SEA-EN-3R	Single		1,796		1081	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	35 ENTERPRISE EN-3R	Single		1,796		1451	1959	1	P	L	PA		0	N	
5	B	C	Residential	35 LEXINGTON EN-3R	Single		1,796		1381	1959	1	P	L	PA		0	N	
5	B	C	Residential	35 RANGER EN-3R	Single		1,796		1263	1959	1	G	M	PA		0	N	
5	B	C	Residential	35 SARATOGA EN-3R	Single		1,796		1549	1959	1	P	L	PA		0	N	
5	B	C	Residential	35 YORKTOWN EN-3R	Single		1,796		1133	1959	1	G	M	PA		0	N	
5	B	C	Residential	36 ENTERPRISE EN-3R	Single		1,796		1450	1959	1	P	L	PA		0	N	
5	B	C	Residential	36 SARATOGA EN-3R	Single		1,796		1548	1959	1	P	L	PA		0	N	
5	B	C	Residential	36 WASP EN-3R	Single		1,796		1630	1959	1	P	L	PA		0	N	
5	B	C	Residential	36 YORKTOWN EN-3R	Single		1,796		1138	1959	1	G	M	PA		0	N	
5	B	C	Residential	37 CORAL SEA -EN-3R	Single		1,796		1079	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	37 ENTERPRISE EN-3R	Single		1,796		1453	1959	1	P	L	PA		0	N	
5	B	C	Residential	37 LEXINGTON EN-3R	Single		1,796		1379	1959	1	P	L	PA		0	N	
5	B	C	Residential	37 RANGER EN-3R	Single		1,796		1265	1959	1	G	M	PA		0	N	
5	B	C	Residential	37 SARATOGA EN-3R	Single		1,796		1551	1959	1	P	L	PA		0	N	
5	B	C	Residential	37 YORKTOWN EN-3R	Single		1,796		1131	1959	1	G	M	PA		0	N	
5	B	C	Residential	38 LEXINGTON EN-3R	Single		1,796		1378	1959	1	P	L	PA		0	N	
5	B	C	Residential	38 SARATOGA EN-3R	Single		1,796		1550	1959	1	P	L	PA		0	N	
5	B	C	Residential	39 ENTERPRISE EN-3R	Single		1,796		1455	1959	1	P	L	PA		0	N	
5	B	C	Residential	39 LEXINGTON EN-3R	Single		1,796		1377	1959	1	P	L	PA		0	N	
5	B	C	Residential	39 SARATOGA EN-3R	Single		1,796		1553	1959	1	P	L	PA		0	N	
5	B	C	Residential	4 BUNKER HILL EN-3R	Single		1,796		1636	1959	1	P	L	PA		0	N	
5	B	C	Residential	4 CORAL SEA EN-3R	Single		1,796		1114	1959	1	VG	H	PA	Y	0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	4 FRANKLIN-EN-3R	Single		1,796		1064	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	4 HANCOCK EN-3R	Single		1,796		1176	1959	1	G	M	PA		0	N	
5	B	C	Residential	4 HORNET EN-3R	Single		1,796		1204	1959	1	G	M	PA		0	N	
5	B	C	Residential	4 LEXINGTON EN-3R	Single		1,796		1412	1959	1	P	L	PA		0	N	
5	B	C	Residential	4 RANGER EN-3R	Single		1,796		1230	1959	1	G	M	PA		0	N	
5	B	C	Residential	4 TICONDEROGA EN-3R	Single		1,796		1504	1959	1	P	L	PA		0	N	
5	B	C	Residential	4 WASP EN-3R	Single		1,796		1598	1959	1	P	L	PA		0	N	
5	B	C	Residential	4 YORKTOWN EN-3R	Single		1,796		1170	1959	1	G	M	PA		0	N	
5	B	C	Residential	40 LEXINGTON EN-3R	Single		1,796		1376	1959	1	P	L	PA		0	N	
5	B	C	Residential	40 SARATOGA EN-3R	Single		1,796		1552	1959	1	P	L	PA		0	N	
5	B	C	Residential	41 ENTERPRISE EN-3R	Single		1,796		1457	1959	1	P	L	PA		0	N	
5	B	C	Residential	41 SARATOGA EN-3R	Single		1,796		1555	1959	1	P	L	PA		0	N	
5	B	C	Residential	41 YORKTOWN EN-3R	Single		1,796		1127	1959	1	G	M	PA		0	N	
5	B	C	Residential	42 ENTERPRISE EN-3R	Single		1,796		1456	1959	1	P	L	PA		0	N	
5	B	C	Residential	42 LEXINGTON EN-3R	Single		1,796		1374	1959	1	P	L	PA		0	N	
5	B	C	Residential	42 RANGER EN-3R	Single		1,796		1268	1959	1	G	M	PA		0	N	
5	B	C	Residential	42 SARATOGA EN-3R	Single		1,796		1554	1959	1	P	L	PA		0	N	
5	B	C	Residential	42 YORKTOWN EN-3R	Single		1,796		1132	1959	1	G	M	PA		0	N	
5	B	C	Residential	43 LEXINGTON EN-3R	Single		1,796		1373	1959	1	P	L	PA		0	N	
5	B	C	Residential	43 RANGER EN-3R	Single		1,796		1271	1959	1	G	M	PA		0	N	
5	B	C	Residential	43 YORKTOWN EN-3R	Single		1,796		1125	1959	1	G	M	PA		0	N	
5	B	C	Residential	44 ENTERPRISE EN-3R	Single		1,796		1458	1959	1	P	L	PA		0	N	
5	B	C	Residential	44 LEXINGTON EN-3R	Single		1,796		1372	1959	1	P	L	PA		0	N	
5	B	C	Residential	44 SARATOGA EN-3R	Single		1,796		1556	1959	1	P	L	PA		0	N	
5	B	C	Residential	44 YORKTOWN EN-3R	Single		1,796		1130	1959	1	G	M	PA		0	N	
5	B	C	Residential	45 ENTERPRISE EN-3R	Single		1,796		1461	1959	1	P	L	PA		0	N	
5	B	C	Residential	45 LEXINGTON EN-3R	Single		1,796		1371	1959	1	P	L	PA		0	N	
5	B	C	Residential	45 SARATOGA EN-3R	Single		1,796		1559	1959	1	P	L	PA		0	N	
5	B	C	Residential	45 YORKTOWN EN-3R	Single		1,796		1123	1959	1	G	M	PA		0	N	
5	B	C	Residential	46 ENTERPRISE EN-3R	Single		1,796		1460	1959	1	P	L	PA		0	N	
5	B	C	Residential	46 LEXINGTON EN-3R	Single		1,796		1370	1959	1	P	L	PA		0	N	
5	B	C	Residential	46 SARATOGA EN-3R	Single		1,796		1558	1959	1	P	L	PA		0	N	
5	B	C	Residential	46 YORKTOWN EN-3R	Single		1,796		1128	1959	1	G	M	PA		0	N	
5	B	C	Residential	47 ENTERPRISE EN-3R	Single		1,796		1463	1959	1	P	L	PA		0	N	
5	B	C	Residential	47 LEXINGTON EN-3R	Single		1,796		1369	1959	1	P	L	PA		0	N	
5	B	C	Residential	47 RANGER EN-3R	Single		1,796		1275	1959	1	G	M	PA		0	N	
5	B	C	Residential	47 SARATOGA EN-3R	Single		1,796		1561	1959	1	P	L	PA		0	N	
5	B	C	Residential	47 YORKTOWN EN-3R	Single		1,796		1121	1959	1	G	M	PA		0	N	
5	B	C	Residential	48 RANGER EN-3R	Single		1,796		1274	1959	1	G	M	PA		0	N	
5	B	C	Residential	48 SARATOGA EN-3R	Single		1,796		1560	1959	1	P	L	PA		0	N	
5	B	C	Residential	48 YORKTOWN EN-3R	Single		1,796		1126	1959	1	G	M	PA		0	N	
5	B	C	Residential	49 ENTERPRISE EN-3R	Single		1,796		1465	1959	1	P	L	PA		0	N	
5	B	C	Residential	49 SARATOGA EN-3R	Single		1,796		1563	1959	1	P	L	PA		0	N	
5	B	C	Residential	49 YORKTOWN EN-3R	Single		1,796		1119	1959	1	G	M	PA		0	N	
5	B	C	Residential	5 BUNKER HILL EN-3R	Single		1,796		1637	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 CORAL SEA EN-3R	Single		1,796		1111	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	5 ENTERPRISE EN-3R	Single		1,796		1421	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 ESSEX EN-3R	Single		1,796		1483	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 FRANKLIN-EN-3R	Single		1,796		1065	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	5 HANCOCK EN-3R	Single		1,796		1173	1959	1	G	M	PA		0	N	
5	B	C	Residential	5 LEXINGTON EN-3R	Single		1,796		1411	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 SARATOGA EN-3R	Single		1,796		1519	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 TICONDEROGA EN-3R	Single		1,796		1505	1959	1	P	L	PA		0	N	
5	B	C	Residential	5 WASP EN-3R	Single		1,796		1599	1959	1	P	L	PA		1	N	
5	B	C	Residential	5 YORKTOWN EN-3R	Single		1,796		1163	1959	1	G	M	PA		0	N	
5	B	C	Residential	50 ENTERPRISE EN-3R	Single		1,796		1464	1959	1	P	L	PA		1	N	
5	B	C	Residential	50 LEXINGTON EN-3R	Single		1,796		1366	1959	1	P	L	PA		0	N	
5	B	C	Residential	50 RANGER EN-3R	Single		1,796		1276	1959	1	G	M	PA		1	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	50 SARATOGA EN-3R	Single		1,796		1562	1959	1	P	L	PA		0	N	
5	B	C	Residential	51 ENTERPRISE EN-3R	Single		1,796		1467	1959	1	P	L	PA		1	N	
5	B	C	Residential	51 LEXINGTON EN-3R	Single		1,796		1365	1959	1	P	L	PA		0	N	
5	B	C	Residential	51 RANGER EN-3R	Single		1,796		1279	1959	1	G	M	PA		1	N	
5	B	C	Residential	51 YORKTOWN EN-3R	Single		1,796		1117	1959	1	G	M	PA		0	N	
5	B	C	Residential	52 ENTERPRISE EN-3R	Single		1,796		1466	1959	1	P	L	PA		1	N	
5	B	C	Residential	52 LEXINGTON EN-3R	Single		1,796		1364	1959	1	P	L	PA		0	N	
5	B	C	Residential	52 RANGER EN-3R	Single		1,796		1278	1959	1	G	M	PA		1	N	
5	B	C	Residential	52 SARATOGA EN-3R	Single		1,796		1564	1959	1	P	L	PA		0	N	
5	B	C	Residential	53 LEXINGTON EN-3R	Single		1,796		1363	1959	1	P	L	PA		1	N	
5	B	C	Residential	54 ENTERPRISE EN-3R	Single		1,796		1468	1959	1	P	L	PA		0	N	
5	B	C	Residential	54 RANGER EN-3R	Single		1,796		1280	1959	1	G	M	PA		1	N	
5	B	C	Residential	54 SARATOGA EN-3R	Single		1,796		1566	1959	1	P	L	PA		0	N	
5	B	C	Residential	54 YORKTOWN EN-3R	Single		1,796		1120	1959	1	G	M	PA		1	N	
5	B	C	Residential	55 LEXINGTON EN-3R	Single		1,796		1361	1959	1	P	L	PA		0	N	
5	B	C	Residential	55 RANGER EN-4R	Single		1,796		1284	1959	1	G	M	PA		1	N	
5	B	C	Residential	56 ENTERPRISE EN-3R	Single		1,796		1470	1959	1	P	L	PA		0	N	
5	B	C	Residential	56 LEXINGTON EN-3R	Single		1,796		1360	1959	1	P	L	PA		1	N	
5	B	C	Residential	56 RANGER EN-3R	Single		1,796		1282	1959	1	G	M	PA		0	N	
5	B	C	Residential	56 SARATOGA EN-3R	Single		1,796		1568	1959	1	P	L	PA		1	N	
5	B	C	Residential	57 LEXINGTON EN-3R	Single		1,796		1359	1959	1	P	L	PA		0	N	
5	B	C	Residential	58 SARATOGA EN-3R	Single		1,796		1570	1959	1	P	L	PA		1	N	
5	B	C	Residential	59 LEXINGTON EN-3R	Single		1,796		1357	1959	1	P	L	PA		0	N	
5	B	C	Residential	6 ANZIO EN-3R	Single		1,796		1646	1959	1	P	L	PA		1	N	
5	B	C	Residential	6 BUNKER HILL EN-3R	Single		1,796		1638	1959	1	P	L	PA		0	N	
5	B	C	Residential	6 CORAL SEA EN-3R	Single		1,796		1112	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	6 ENTERPRISE EN-3R	Single		1,796		1420	1959	1	P	L	PA		0	N	
5	B	C	Residential	6 ESSEX EN-3R	Single		1,796		1484	1959	1	P	L	PA		1	N	
5	B	C	Residential	6 HANCOCK EN-3R	Single		1,796		1178	1959	1	G	M	PA		0	N	
5	B	C	Residential	6 HORNET EN-3R	Single		1,796		1206	1959	1	G	M	PA		1	N	
5	B	C	Residential	6 INTREPID EN-3R	Single		1,796		1292	1959	1	F	L	PA		0	N	
5	B	C	Residential	6 LEXINGTON EN-3R	Single		1,796		1410	1959	1	P	L	PA		1	N	
5	B	C	Residential	6 RANDOLPH EN-3R	Single		1,796		1312	1959	1	F	L	PA		0	N	
5	B	C	Residential	6 RANGER EN-3R	Single		1,796		1232	1959	1	G	M	PA		1	N	
5	B	C	Residential	6 SARATOGA EN-3R	Single		1,796		1518	1959	1	P	L	PA		0	N	
5	B	C	Residential	6 TICONDEROGA EN-3R	Single		1,796		1506	1959	1	P	L	PA		1	N	
5	B	C	Residential	6 WASP EN-3R	Single		1,796		1600	1959	1	P	L	PA		0	N	
5	B	C	Residential	6 YORKTOWN EN-3R	Single		1,796		1168	1959	1	G	M	PA		1	N	
5	B	C	Residential	60 ENTERPRISE EN-3R	Single		1,796		1474	1959	1	P	L	PA		0	N	
5	B	C	Residential	60 LEXINGTON EN-3R	Single		1,796		1356	1959	1	P	L	PA		1	N	
5	B	C	Residential	62 LEXINGTON EN-3R	Single		1,796		1354	1959	1	P	L	PA		0	N	
5	B	C	Residential	62 SARATOGA EN-3R	Single		1,796		1574	1959	1	P	L	PA		1	N	
5	B	C	Residential	64 LEXINGTON EN-3R	Single		1,796		1352	1959	1	P	L	PA		0	N	
5	B	C	Residential	64 SARATOGA EN-3R	Single		1,796		1576	1959	1	P	L	PA		1	N	
5	B	C	Residential	65 LEXINGTON EN-3R	Single		1,796		1351	1959	1	P	L	PA		0	N	
5	B	C	Residential	66 LEXINGTON EN-3R	Single		1,796		1350	1959	1	P	L	PA		1	N	
5	B	C	Residential	68 LEXINGTON EN-3R	Single		1,796		1348	1959	1	P	L	PA		0	N	
5	B	C	Residential	68 SARATOGA EN-3R	Single		1,796		1580	1959	1	P	L	PA		1	N	
5	B	C	Residential	69 LEXINGTON EN-3R	Single		1,796		1347	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 ANZIO EN-3R	Single		1,796		1649	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 BUNKER HILL EN-3R	Single		1,796		1639	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 CORAL SEA EN-3R	Single		1,796		1109	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	7 ENTERPRISE EN-3R	Single		1,796		1423	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 ESSEX EN-3R	Single		1,796		1485	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 FRANKLIN-EN-3R	Single		1,796		1067	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	7 HANCOCK EN-3R	Single		1,796		1175	1959	1	G	M	PA		1	N	
5	B	C	Residential	7 INTREPID EN-3R	Single		1,796		1295	1959	1	F	L	PA		1	N	
5	B	C	Residential	7 LEXINGTON EN-3R	Single		1,796		1409	1959	1	P	L	PA		1	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	7 RANDOLPH EN-3R	Single		1,796		1313	1959	1	F	L	PA		1	N	
5	B	C	Residential	7 RANGER EN-3R	Single		1,796		1235	1959	1	G	M	PA		1	N	
5	B	C	Residential	7 SARATOGA EN-3R	Single		1,796		1521	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 TICONDEROGA EN-3R	Single		1,796		1507	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 WASP EN-3R	Single		1,796		1601	1959	1	P	L	PA		0	N	
5	B	C	Residential	7 YORKTOWN EN-3R	Single		1,796		1161	1959	1	G	M	PA		1	N	
5	B	C	Residential	70 LEXINGTON EN-3R	Single		1,796		1346	1959	1	P	L	PA		0	N	
5	B	C	Residential	70 SARATOGA EN-3R	Single		1,796		1582	1959	1	P	L	PA		1	N	
5	B	C	Residential	72 LEXINGTON EN-3R	Single		1,796		1344	1959	1	P	L	PA		0	N	
5	B	C	Residential	72 SARATOGA EN-3R	Single		1,796		1584	1959	1	P	L	PA		1	N	
5	B	C	Residential	73 LEXINGTON EN-3R	Single		1,796		1343	1959	1	P	L	PA		0	N	
5	B	C	Residential	74 LEXINGTON EN-3R	Single		1,796		1342	1959	1	P	L	PA		1	N	
5	B	C	Residential	75 LEXINGTON EN-3R	Single		1,796		1341	1959	1	P	L	PA		0	N	
5	B	C	Residential	76 SARATOGA EN-3R	Single		1,796		1588	1959	1	P	L	PA		1	N	
5	B	C	Residential	78 LEXINGTON EN-3R	Single		1,796		1338	1959	1	P	L	PA		0	N	
5	B	C	Residential	78 SARATOGA EN-3R	Single		1,796		1590	1959	1	P	L	PA		1	N	
5	B	C	Residential	79 LEXINGTON EN-3R	Single		1,796		1337	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 ANZIO EN-3R	Single		1,796		1648	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 BUNKER HILL EN-3R	Single		1,796		1640	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 CORAL SEA EN-3R	Single		1,796		1110	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	8 ENTERPRISE EN-3R	Single		1,796		1422	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 ESSEX EN-3R	Single		1,796		1486	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 FRANKLIN-EN 3R	Single		1,796		1068	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	8 HANCOCK EN-3R	Single		1,796		1180	1959	1	G	M	PA		1	N	
5	B	C	Residential	8 HORNET EN-3R	Single		1,796		1208	1959	1	G	M	PA		0	N	
5	B	C	Residential	8 LEXINGTON EN-3R	Single		1,796		1408	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 RANGER EN-3R	Single		1,796		1234	1959	1	G	M	PA		0	N	
5	B	C	Residential	8 SARATOGA EN-3R	Single		1,796		1520	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 TICONDEROGA EN-3R	Single		1,796		1508	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 WASP EN-3R	Single		1,796		1602	1959	1	P	L	PA		1	N	
5	B	C	Residential	80 LEXINGTON EN-3R	Single		1,796		1336	1959	1	P	L	PA		0	N	
5	B	C	Residential	80 SARATOGA EN-3R	Single		1,796		1592	1959	1	P	L	PA		1	N	
5	B	C	Residential	81 LEXINGTON EN-3R	Single		1,796		1335	1959	1	P	L	PA		1	N	
5	B	C	Residential	82 LEXINGTON EN-3R	Single		1,796		1334	1959	1	P	L	PA		1	N	
5	B	C	Residential	84 LEXINGTON EN-3R	Single		1,796		1332	1959	1	P	L	PA		1	N	
5	B	C	Residential	85 LEXINGTON EN-3R	Single		1,796		1331	1959	1	P	L	PA		1	N	
5	B	C	Residential	86 LEXINGTON EN-3R	Single		1,796		1330	1959	1	P	L	PA		1	N	
5	B	C	Residential	87 LEXINGTON EN-3R	Single		1,796		1329	1959	1	P	L	PA		0	N	
5	B	C	Residential	88 LEXINGTON EN-3R	Single		1,796		1328	1959	1	P	L	PA		0	N	
5	B	C	Residential	89 LEXINGTON EN-3R	Single		1,796		1327	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ANZIO EN-3R	Single		1,796		1651	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ENTERPRICE EN-3R	Single		1,796		1425	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ESSEX EN-3R	Single		1,796		1487	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 FRANKLIN-EN-3R	Single		1,796		1069	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	9 HANCOCK EN-3R	Single		1,796		1177	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 INTREPID EN-3R	Single		1,796		1297	1959	1	F	L	PA		0	N	
5	B	C	Residential	9 LEXINGTON EN-3R	Single		1,796		1407	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 RANDOLPH EN-3R	Single		1,796		1315	1959	1	F	L	PA		0	N	
5	B	C	Residential	9 RANGER EN-3R	Single		1,796		1237	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 TICONDEROGA EN-3R	Single		1,796		1509	1959	1	P	L	PA		0	N	
5	B	C	Residential	90 LEXINGTON EN-3R	Single		1,796		1326	1959	1	P	L	PA		0	N	
5	B	C	Residential	91 LEXINGTON EN-3R	Single		1,796		1325	1959	1	P	L	PA		0	N	
5	B	C	Residential	92 LEXINGTON EN-3R	Single		1,796		1324	1959	1	P	L	PA		0	N	
5	B	C	Residential	93 LEXINGTON EN-3R	Single		1,796		1323	1959	1	P	L	PA		0	N	
5	B	C	Residential	1 ANZIO EN-4R	Single		1,929		1643	1959	1	P	L	PA		0	N	
5	B	C	Residential	10 FRANKLIN -EN-4R	Single		1,929		1070	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	11 FRANKLIN-EN-4R	Single		1,929		1071	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	11 RANDOLPH EN-4R	Single		1,929		1317	1959	1	F	L	PA		3	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Square Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	7 RANDOLPH EN-3R	Single		1,796		1313	1959	1	F	L	PA		1	N	
5	B	C	Residential	7 RANGER EN-3R	Single		1,796		1235	1959	1	G	M	PA		1	N	
5	B	C	Residential	7 SARATOGA EN-3R	Single		1,796		1521	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 TICONDEROGA EN-3R	Single		1,796		1507	1959	1	P	L	PA		1	N	
5	B	C	Residential	7 WASP EN-3R	Single		1,796		1601	1959	1	P	L	PA		0	N	
5	B	C	Residential	7 YORKTOWN EN-3R	Single		1,796		1161	1959	1	G	M	PA		1	N	
5	B	C	Residential	70 LEXINGTON EN-3R	Single		1,796		1346	1959	1	P	L	PA		0	N	
5	B	C	Residential	70 SARATOGA EN-3R	Single		1,796		1582	1959	1	P	L	PA		1	N	
5	B	C	Residential	72 LEXINGTON EN-3R	Single		1,796		1344	1959	1	P	L	PA		0	N	
5	B	C	Residential	72 SARATOGA EN-3R	Single		1,796		1584	1959	1	P	L	PA		1	N	
5	B	C	Residential	73 LEXINGTON EN-3R	Single		1,796		1343	1959	1	P	L	PA		0	N	
5	B	C	Residential	74 LEXINGTON EN-3R	Single		1,796		1342	1959	1	P	L	PA		1	N	
5	B	C	Residential	75 LEXINGTON EN-3R	Single		1,796		1341	1959	1	P	L	PA		0	N	
5	B	C	Residential	76 SARATOGA EN-3R	Single		1,796		1588	1959	1	P	L	PA		1	N	
5	B	C	Residential	78 LEXINGTON EN-3R	Single		1,796		1338	1959	1	P	L	PA		0	N	
5	B	C	Residential	78 SARATOGA EN-3R	Single		1,796		1590	1959	1	P	L	PA		1	N	
5	B	C	Residential	79 LEXINGTON EN-3R	Single		1,796		1337	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 ANZIO EN-3R	Single		1,796		1648	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 BUNKER HILL EN-3R	Single		1,796		1640	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 CORAL SEA EN-3R	Single		1,796		1110	1959	1	VG	H	PA	Y	1	N	
5	B	C	Residential	8 ENTERPRISE EN-3R	Single		1,796		1422	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 ESSEX EN-3R	Single		1,796		1486	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 FRANKLIN-EN 3R	Single		1,796		1068	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	8 HANCOCK EN-3R	Single		1,796		1180	1959	1	G	M	PA		1	N	
5	B	C	Residential	8 HORNET EN-3R	Single		1,796		1208	1959	1	G	M	PA		0	N	
5	B	C	Residential	8 LEXINGTON EN-3R	Single		1,796		1408	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 RANGER EN-3R	Single		1,796		1234	1959	1	G	M	PA		0	N	
5	B	C	Residential	8 SARATOGA EN-3R	Single		1,796		1520	1959	1	P	L	PA		1	N	
5	B	C	Residential	8 TICONDEROGA EN-3R	Single		1,796		1508	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 WASP EN-3R	Single		1,796		1602	1959	1	P	L	PA		1	N	
5	B	C	Residential	80 LEXINGTON EN-3R	Single		1,796		1336	1959	1	P	L	PA		0	N	
5	B	C	Residential	80 SARATOGA EN-3R	Single		1,796		1592	1959	1	P	L	PA		1	N	
5	B	C	Residential	81 LEXINGTON EN-3R	Single		1,796		1335	1959	1	P	L	PA		1	N	
5	B	C	Residential	82 LEXINGTON EN-3R	Single		1,796		1334	1959	1	P	L	PA		1	N	
5	B	C	Residential	84 LEXINGTON EN-3R	Single		1,796		1332	1959	1	P	L	PA		1	N	
5	B	C	Residential	85 LEXINGTON EN-3R	Single		1,796		1331	1959	1	P	L	PA		1	N	
5	B	C	Residential	86 LEXINGTON EN-3R	Single		1,796		1330	1959	1	P	L	PA		1	N	
5	B	C	Residential	87 LEXINGTON EN-3R	Single		1,796		1329	1959	1	P	L	PA		0	N	
5	B	C	Residential	88 LEXINGTON EN-3R	Single		1,796		1328	1959	1	P	L	PA		0	N	
5	B	C	Residential	89 LEXINGTON EN-3R	Single		1,796		1327	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ANZIO EN-3R	Single		1,796		1651	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ENTERPRICE EN-3R	Single		1,796		1425	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 ESSEX EN-3R	Single		1,796		1487	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 FRANKLIN-EN-3R	Single		1,796		1069	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	9 HANCOCK EN-3R	Single		1,796		1177	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 INTREPID EN-3R	Single		1,796		1297	1959	1	F	L	PA		0	N	
5	B	C	Residential	9 LEXINGTON EN-3R	Single		1,796		1407	1959	1	P	L	PA		0	N	
5	B	C	Residential	9 RANDOLPH EN-3R	Single		1,796		1315	1959	1	F	L	PA		0	N	
5	B	C	Residential	9 RANGER EN-3R	Single		1,796		1237	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 TICONDEROGA EN-3R	Single		1,796		1509	1959	1	P	L	PA		0	N	
5	B	C	Residential	90 LEXINGTON EN-3R	Single		1,796		1326	1959	1	P	L	PA		0	N	
5	B	C	Residential	91 LEXINGTON EN-3R	Single		1,796		1325	1959	1	P	L	PA		0	N	
5	B	C	Residential	92 LEXINGTON EN-3R	Single		1,796		1324	1959	1	P	L	PA		0	N	
5	B	C	Residential	93 LEXINGTON EN-3R	Single		1,796		1323	1959	1	P	L	PA		0	N	
5	B	C	Residential	1 ANZIO EN-4R	Single		1,929		1643	1959	1	P	L	PA		0	N	
5	B	C	Residential	10 FRANKLIN -EN-4R	Single		1,929		1070	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	11 FRANKLIN-EN-4R	Single		1,929		1071	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	11 RANDOLPH EN-4R	Single		1,929		1317	1959	1	F	L	PA		3	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Square Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	12 YORKTOWN EN-4R	Single		1,929		1162	1959	1	G	M	PA		3	N	
5	B	C	Residential	13 HORNET EN-4R	Single		1,929		1193	1959	1	G	M	PA		3	N	
5	B	C	Residential	13 INTREPID EN-4R	Single		1,929		1300	1959	1	F	L	PA		3	N	
5	B	C	Residential	14 FRANKLIN-EN-4R	Single		1,929		1074	1959	1	VG	H	PA	Y	3	N	
5	B	C	Residential	14 HORNET EN-4R	Single		1,929		1214	1959	1	G	M	PA		3	N	
5	B	C	Residential	15 CORAL SEA-EN-4R	Single		1,929		1101	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	15 RANGER EN-4R	Single		1,929		1243	1959	1	G	M	PA		0	N	
5	B	C	Residential	16 FRANKLIN -EN-4R	Single		1,929		1076	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	17 CORAL SEA -EN-4R	Single		1,929		1099	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	17 HORNET EN-4R	Single		1,929		1197	1959	1	G	M	PA		2	N	
5	B	C	Residential	17 RANGER EN-4R	Single		1,929		1245	1959	1	G	M	PA		2	N	
5	B	C	Residential	17 YORKTOWN EN-4R	Single		1,929		1152	1959	1	G	M	PA		2	N	
5	B	C	Residential	18 HORNET EN-4R	Single		1,929		1218	1959	1	G	M	PA		2	N	
5	B	C	Residential	18 YORKTOWN EN-4R	Single		1,929		1156	1959	1	G	M	PA		3	N	
5	B	C	Residential	19 CORAL SEA -EN-4R	Single		1,929		1097	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	19 HORNET EN-4R	Single		1,929		1199	1959	1	G	M	PA		3	N	
5	B	C	Residential	2 HORNET EN-4R	Single		1,929		1202	1959	1	G	M	PA		2	N	
5	B	C	Residential	2 INTREPID EN-4R	Single		1,929		1288	1959	1	F	L	PA		3	N	
5	B	C	Residential	21 ESSEX EN-3R	Single		1,929		1499	1959	1	P	L	PA		2	N	
5	B	C	Residential	22 HANCOCK EN-4R	Single		1,929		1194	1959	1	G	M	PA		3	N	
5	B	C	Residential	22 HORNET EN-4R	Single		1,929		1222	1959	1	G	M	PA		2	N	
5	B	C	Residential	24 HORNET EN-4R	Single		1,929		1224	1959	1	G	M	PA		3	N	
5	B	C	Residential	27 CORAL SEA -EN-4R	Single		1,929		1089	1959	1	VG	H	PA	Y	2	N	
5	B	C	Residential	28 HANCOCK EN-4R	Single		1,929		1200	1959	1	G	M	PA		3	N	
5	B	C	Residential	29 RANGER EN-4R	Single		1,929		1257	1959	1	G	M	PA		2	N	
5	B	C	Residential	3 RANDOLPH EN-4R	Single		1,929		1309	1959	1	F	L	PA		3	N	
5	B	C	Residential	33 LEXINGTON EN-4R	Single		1,929		1383	1959	1	P	L	PA		3	N	
5	B	C	Residential	33 RANGER EN-4R	Single		1,929		1261	1959	1	G	M	PA		3	N	
5	B	C	Residential	33 YORKTOWN EN-4R	Single		1,929		1135	1959	1	G	M	PA		3	N	
5	B	C	Residential	34 RANGER EN-4R	Single		1,929		1260	1959	1	G	M	PA		3	N	
5	B	C	Residential	34 YORKTOWN EN-4R	Single		1,929		1140	1959	1	G	M	PA		3	N	
5	B	C	Residential	36 RANGER EN-4R	Single		1,929		1262	1959	1	G	M	PA		3	N	
5	B	C	Residential	38 ENTERPRISE EN-4R	Single		1,929		1452	1959	1	P	L	PA		3	N	
5	B	C	Residential	38 RANGER EN-4R	Single		1,929		1264	1959	1	G	M	PA		2	N	
5	B	C	Residential	38 YORKTOWN EN-4R	Single		1,929		1136	1959	1	G	M	PA		3	N	
5	B	C	Residential	39 YORKTOWN EN-4R	Single		1,929		1129	1959	1	G	M	PA		2	N	
5	B	C	Residential	4 ANZIO EN-4R	Single		1,929		1644	1959	1	P	L	PA		3	N	
5	B	C	Residential	4 MIDWAY EN-4R	Single		1,929		1478	1959	1	P	L	PA		2	N	
5	B	C	Residential	4 RANDOLPH EN-4R	Single		1,929		1310	1959	1	F	L	PA		3	N	
5	B	C	Residential	40 ENTERPRISE EN-3R	Single		1,929		1454	1959	1	P	L	PA		2	N	
5	B	C	Residential	40 RANGER EN-4R	Single		1,929		1266	1959	1	G	M	PA		3	N	
5	B	C	Residential	40 YORKTOWN EN-4R	Single		1,929		1134	1959	1	G	M	PA		2	N	
5	B	C	Residential	41 LEXINGTON EN-4R	Single		1,929		1375	1959	1	P	L	PA		3	N	
5	B	C	Residential	41 RANGER EN-4R	Single		1,929		1269	1959	1	G	M	PA		2	N	
5	B	C	Residential	43 SARATOGA EN-4R	Single		1,929		1557	1959	1	P	L	PA		3	N	
5	B	C	Residential	44 RANGER EN-4R	Single		1,929		1270	1959	1	G	M	PA		2	N	
5	B	C	Residential	45 RANGER EN-4R	Single		1,929		1273	1959	1	G	M	PA		3	N	
5	B	C	Residential	46 RANGER EN-4R	Single		1,929		1272	1959	1	G	M	PA		2	N	
5	B	C	Residential	49 RANGER EN-4R	Single		1,929		1277	1959	1	G	M	PA		3	N	
5	B	C	Residential	5 HORNET EN-4R	Single		1,929		1185	1959	1	G	M	PA		2	N	
5	B	C	Residential	5 INTREPID EN-4R	Single		1,929		1293	1959	1	F	L	PA		3	N	
5	B	C	Residential	5 RANDOLPH EN-4R	Single		1,929		1311	1959	1	F	L	PA		2	N	
5	B	C	Residential	5 RANGER EN-4R	Single		1,929		1233	1959	1	G	M	PA		3	N	
5	B	C	Residential	50 YORKTOWN EN-4R	Single		1,929		1124	1959	1	G	M	PA		2	N	
5	B	C	Residential	52 YORKTOWN EN-4R	Single		1,929		1122	1959	1	G	M	PA		3	N	
5	B	C	Residential	53 RANGER EN-4R	Single		1,929		1281	1959	1	G	M	PA		2	N	
5	B	C	Residential	53 RANGER EN-4R	Single		1,929		1283	1959	1	G	M	PA		0	N	
5	B	C	Residential	56 YORKTOWN EN-4R	Single		1,929		1118	1959	1	G	M	PA		0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Square Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	B	C	Residential	57 RANGER EN-4R	Single		1,929		1285	1959	1	G	M	PA		0	N	
5	B	C	Residential	59 RANGER EN-4R	Single		1,929		1287	1959	1	G	M	PA		0	N	
5	B	C	Residential	6 FRANKLIN -EN-4R	Single		1,929		1066	1959	1	VG	H	PA	Y	0	N	
5	B	C	Residential	60 RANGER EN-4R	Single		1,929		1286	1959	1	G	M	PA		0	N	
5	B	C	Residential	60 SARATOGA EN-4R	Single		1,929		1572	1959	1	P	L	PA		0	N	
5	B	C	Residential	61 LEXINGTON EN-4R	Single		1,929		1355	1959	1	P	L	PA		0	N	
5	B	C	Residential	63 LEXINGTON EN-4R	Single		1,929		1353	1959	1	P	L	PA		0	N	
5	B	C	Residential	67 LEXINGTON EN-4R	Single		1,929		1349	1959	1	P	L	PA		0	N	
5	B	C	Residential	71 LEXINGTON EN-4R	Single		1,929		1345	1959	1	P	L	PA		0	N	
5	B	C	Residential	74 SARATOGA EN-4R	Single		1,929		1586	1959	1	P	L	PA		0	N	
5	B	C	Residential	8 YORKTOWN EN-4R	Single		1,929		1166	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 HORNET EN-4R	Single		1,929		1189	1959	1	G	M	PA		0	N	
5	B	C	Residential	9 YORKTOWN EN-4R	Single		1,929		1159	1959	1	G	M	PA		0	N	
5	B	C	Residential	1 RANDOLPH EN-4R	Single		1,967		1307	1959	1	F	L	PA		0	N	
5	B	C	Residential	20 HORNET EN-4R	Single		1,967		1220	1959	1	G	M	PA		0	N	
5	B	C	Residential	4 INTREPID EN-4R	Single		1,967		1290	1959	1	F	L	PA		0	N	
5	B	C	Residential	76 LEXINGTON EN-4R	Single		1,967		1340	1959	1	P	L	PA		0	N	
5	C	C	Residential	1 COWPENS -JR-4R	Single		2,045		1009	1959	1	G	M	PA		0	N	
5	C	C	Residential	1 SAIPAN -JR-4R	Single		2,045		987	1959	1	G	M	PA		0	N	
5	C	C	Residential	11 COWPENS -JR-4R	Single		2,045		1019	1959	1	G	M	PA		0	N	
5	C	C	Residential	14 MONTEREY-JR4R	Single		2,045		942	1959	1	G	M	PA		0	N	
5	C	C	Residential	17 COWPENS -JR-4R	Single		2,045		1025	1959	1	G	M	PA		0	N	
5	C	C	Residential	2 BATAAN-JR-4R	Single		2,045		1030	1959	1	G	M	PA		0	N	
5	C	C	Residential	2 SAN JACINTO JR-4R	Single		2,045		990	1959	1	G	M	PA		0	N	
5	C	C	Residential	22 CABOT-JR-4R	Single		2,045		1058	1959	1	G	M	PA		0	N	
5	C	C	Residential	24 FDR -JR-4R	Single		2,045		922	1959	1	G	M	PA		0	N	
5	C	C	Residential	26 FDR -JR-4R	Single		2,045		924	1959	1	G	M	PA		0	N	
5	C	C	Residential	26 MONTEREY JR-4R	Single		2,045		954	1959	1	G	M	PA	Y	0	N	
5	C	C	Residential	28 MONTEREY JR-4R	Single		2,045		956	1959	1	G	M	PA		0	N	
5	C	C	Residential	3 BATAAN JR-4R	Single		2,045		1031	1959	1	G	M	PA		0	N	
5	C	C	Residential	30 FDR -JR4R	Single		2,045		928	1959	1	G	M	PA		0	N	
5	C	C	Residential	41 MONTEREY-JR-4R	Single		2,045		969	1959	1	G	M	PA		0	N	
5	C	C	Residential	6 SAN JACINTO -JR-4R	Single		2,045		994	1959	1	G	M	PA		0	N	
5	C	C	Residential	1 MONTEREY -SR-3R	Single		2,153		929	1959	1	G	M	PA		0	N	
5	C	C	Residential	10 FDR -SR-3R	Single		2,153		908	1959	1	G	M	PA		0	N	
5	C	C	Residential	11 MONTEREY-SR-3R	Single		2,153		939	1959	1	G	M	PA		0	N	
5	C	C	Residential	11FDR -SR-3R	Single		2,153		905	1959	1	G	M	PA		0	N	
5	C	C	Residential	12 FDR -SR-3R	Single		2,153		910	1959	1	G	M	PA		0	N	
5	C	C	Residential	13 FDR -SR-3R	Single		2,153		907	1959	1	G	M	PA		0	N	
5	C	C	Residential	13 MONTEREY-SR-3R	Single		2,153		941	1959	1	G	M	PA		0	N	
5	C	C	Residential	14 FDR -SR-3R	Single		2,153		912	1959	1	G	M	PA		0	N	
5	C	C	Residential	15 FDR -SR-3R	Single		2,153		909	1959	1	G	M	PA		0	N	
5	C	C	Residential	17 FDR -SR-3R	Single		2,153		911	1959	1	G	M	PA		0	N	
5	C	C	Residential	18 FDR -SR-3R	Single		2,153		916	1959	1	G	M	PA		0	N	
5	C	C	Residential	19 FDR -SR-3R	Single		2,153		913	1959	1	G	M	PA		0	N	
5	C	C	Residential	2 CABOT-SR-3R	Single		2,153		1038	1959	1	G	M	PA		0	N	
5	C	C	Residential	2 FDR SR-3R	Single		2,153		900	1959	1	VG	H	PA	Y	0	N	
5	C	C	Residential	20 FDR-SR-3R	Single		2,153		918	1959	1	G	M	PA		0	N	
5	C	C	Residential	3 MONTEREY -SR-3R	Single		2,153		931	1959	1	G	M	PA		0	N	
5	C	C	Residential	4 CABOT -SR-3R	Single		2,153		1040	1959	1	G	M	PA		0	N	
5	C	C	Residential	4 FDR -SR-3R	Single		2,153		902	1959	1	VG	H	PA	Y	0	N	
5	C	C	Residential	4 MONTEREY-SR-3R	Single		2,153		932	1959	1	G	M	PA		0	N	
5	C	C	Residential	5 MONTEREY -SR-3R	Single		2,153		933	1959	1	G	M	PA		0	N	
5	C	C	Residential	6 CABOT-SR-3R	Single		2,153		1042	1959	1	G	M	PA		0	N	

Zone	Subzone	Const. Type	Bldg. Type	Facility Name	Housing Type	No. Type	Area in s.f.	Square Footage Summary	Facility No.	Year Built	No. of Stories	Gen. Cond.	Bldg Value	Adapt. Re-use	Recent Renov.	View	Oper. Sign	Comments
5	C	C	Residential	7 FDR SR-3R	Single		2,153		901	1959	1	VG	H	PA	Y	0	N	
5	C	C	Residential	7 MONTEREY-SR-3R	Single		2,153		935	1959	1	G	M	PA		3	N	
5	C	C	Residential	8 CABOT-SR-3R	Single		2,153		1044	1959	1	G	M	PA		3	N	
5	C	C	Residential	8 FDR -SR-3R	Single		2,153		906	1959	1	VG	H	PA	Y	3	N	
5	C	C	Residential	8 MONTEREY-SR-3R	Single		2,153		936	1959	1	G	M	PA		3	N	
5	C	C	Residential	9 MONTEREY-SR-3R	Single		2,153		937	1959	1	G	M	PA		2	N	
5	C	C	Residential	9FDR -SR-3R	Single		2,153		903	1959	1	VG	H	PA	Y	2	N	
5	C	C	Residential	1 CABOT-SR-4R	Single		2,258		1037	1959	1	G	M	PA		2	N	
5	C	C	Residential	10 MONTEREY-SR-4R	Single		2,258		938	1959	1	G	M	PA		2	N	
5	C	C	Residential	16 FDR -SR-4R	Single		2,258		914	1959	1	G	M	PA		2	N	
5	C	C	Residential	2 MONTEREY -SR-4R	Single		2,258		930	1959	1	G	M	PA		2	N	
5	C	C	Residential	22 FDR -SR-4R	Single		2,258		920	1959	1	G	M	PA		3	N	
5	C	C	Residential	6 MONTEREY -SR-4R	Single		2,258		934	1959	1	G	M	PA		3	N	
5	C	C	Residential	6FDR-SR-4R	Single		2,258		904	1959	1	VG	H	PA	Y	3	N	
5	C	C	Residential	1 FDR -CAPTAINS	Single		2,971		970	1959	2	VG	H	PA	Y	3	N	
5	C	C	Residential	3 FDR -CAPTAINS	Single		2,971		972	1959	2	VG	H	PA	Y	3	N	
5	C	C	Residential	5 FDR -CAPTAINS	Single		2,971		974	1959	2	VG	H	PA	Y	3	N	Hotel
5	C	C	Residential	26 CABOT SR-4R	Single		5,248		1821	1975	2	VG	H	PA		3	N	Hotel
5	C	C	Residential	7 CABOT SR-4R	Single	676	5,248	1,233,185	1820	1975	2	VG	H	PA		3	N	Hotel

Operationally Signifigant

Naval Station Roosevelt Roads Buildings and Structures Assessment by Operationally Significant

LEGEND

Zones

	Zone 1
	Zone 2
	Zone 3
	Zone 4
	Zone 5
	Zone 6
	Zone 7
	Zone 8

Construction Type

C	Concrete / Concrete Block
M	Metal
W	Wood
P	Permanent
S	Semi- Permanent
T	Temporary

General Condition

VG	Very Good
G	Good
F	Fair
P	Poor

Building Value

H	High
M	Medium
L	Low

Adaptive Re-use

HA	Highly Adaptive
FA	Fairly Adaptive
PA	Poorly Adaptive
NA	Not Adaptive

Recent Renovation

Y	Yes
N	No

View

0	None
1	Some
2	Good
3	Best

Operationally Significant

Y	Yes
N	No

SUMMARY

Building Type - International Building Code 2003 - Use and Occupancy Classification		*Square Footage by Building Type*	*No. of Faci*
Assembly	Theaters, Restaurants and Churchs	0	0
Business	Airport, Post Offices, Radio and TV Stations	20,988	1
Educational	K thru 12 Schools and Day Care Facilities	0	0
Industrial	Factories, Manufacturing and Assembly	69,725	15
High Hazard	Storage of Hazardous Materials and Explosives	50,852	26
Institutional	Assisted Living Quarters, Hospitals and Correctional Facilities	0	0
Retail (Mercantile)	Department Stores, Markets and Fuel Stations	0	0
Residential	Hotels, Apartment Buildings and Single Family Houses	0	0
Storage	Repair and Storage Facilities	4,450	3
Utility	Aircraft hangars, carports and towers	199,248	10
Military	Supports military operations	0	0
Municipal	Infrstructure supporting facilties	53,806	58
Recreation	Residential recreation	0	0
	Total Square Footage	399,069	113 Total

Note: The total square footage and total number of facilities include above ground buildings and structures only.

Sources :

Buildings and Structures Inventory - Excel File: *NSRR Bldgs and Struct 110503* is the base information used to compile the list of facilities

AutoCADD drawing: *NSRR super-map-Prenew-xref* is the base drawing used to locate the buildings within the zones and sub-zones

LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study dated June 8, 2001 was used to formulate base existing conditions of each of the catelogued structures

Various Construction Documents and other information provided by the Navy's on-site personnel.

An extensive visual assessment of the facilities by the design team was conducted during a four-day site visit between February 24-27, 2004

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
1	A	P	Business	VG	H	NA		20,988	426	1959	5	OPER BLDG-CONTROL TOWER		Y	Airport Infrastructure
6	C	W	High Hazard	G	H	PA	N	9,000	2312	1989	0	HAZ WASTE STGE BY B#2042		Y	Hazardous Waste
6	A	M	High Hazard	G	H	NA	N	6,000	2270	1988	0	JP-5 (FUEL SUPPORT PT)		Y	Airport Infrastructure
6	A	M	High Hazard	G	H	NA	N	6,000	2271	1988	0	JP-5 (FUEL SUPPORT PT)		Y	Airport Infrastructure
6	A	M	High Hazard	G	H	NA	N	6,000	2272	1988	0	JP-5 (FUEL SUPPORT PT)		Y	Airport Infrastructure
6	A	M	High Hazard	G	H	NA	N	6,000	2273	1988	0	JP-5 (FUEL SUPPORT PT)		Y	Airport Infrastructure
6	A	M	High Hazard	G	H	NA	N	6,000	2274	1988	0	DEFENSE FUEL SUPPT POINT		Y	Vital to Infrastructure by Zone
7	A	M	High Hazard	G	H	PA	N	5,427	2335	1993	1	HAZ/FLAMM STGE		Y	
6	C	C	High Hazard	F	H	FA	Y	4,923	192	1956	1	PETROLEUM TEST(FUEL)LAB		Y	Renovated in 2000
6	C	C	High Hazard	G	H	FA	N	600	2326	1990	1	FLAMMABLE STORAGE		Y	Square footage uncertain
6	C	C	High Hazard	G	H	PA	N	484	2349	1993	1	MOE FLAMM STGE BLDG B#2015		Y	
6	D	C	High Hazard	G	H	NA	N	222	2288	1989	1	OPER HAZ/FLAMMABLE STORAGE		Y	
7	A	C	High Hazard	G	H	PA	N	196	2283	1988	1	FUEL GAS STGE AT UDT		Y	
6	A	M/C	High Hazard	G	M	NA			215	1943	0	DFM STORAGE		Y	Part of Base Infrastructure
		M/C	High Hazard	G	M	NA			216	1943	0	DIESEL FUEL STGE TNK		Y	Part of Base Infrastructure
		M/C	High Hazard	G	M	NA			217	1943	0	SLVDGE TANK		Y	Part of Base Infrastructure
6	A	M/C	High Hazard	G	H				1084	1968	0	JET FUEL STORAGE TANK/JP-5	2	Y	Airport Infrastructure
6	A	M/C	High Hazard	G	H				1086	1968	0	JET FUEL STORAGE TANK/JP-5	2	Y	Airport Infrastructure
6	A	C	High Hazard	G	H				1088	1968	0	JET FUEL STORAGE TANK JP-5	2	Y	Airport Infrastructure
6	D	C	High Hazard	G	H				1080	1968	0	D.F.M. TNK	2	Y	Seaport Infrastructure
6	A	C	High Hazard	G	H				1082	1968	0	DFM TANK	2	Y	Seaport Infrastructure
7	B	C	High Hazard	G	H	NA			84	1943	0	JET FUEL STORAGE TANK (JP-5)		Y	Airport Infrastructure
7	B	C	High Hazard	G	H	NA			85	1944	0	JET (JP-5) FUEL STOR TANK		Y	Airport Infrastructure
Airport - UG		M/C	High Hazard	G	H	NA			212	1943	0	U/G 50000 GA DL-2 FUEL TANK		Y	Airport Infrastructure
Airport - UG		M/C	High Hazard	G	H	NA			213	1943	0	(UNLEADED) GAS STGE		Y	Airport Infrastructure
Airport - UG		M/C	High Hazard	G	H	NA			213	1964	0	A/G VAULTED DFM W/LK D-SYS		Y	Airport Infrastructure
Airport - UG		M/C	High Hazard	G	H	NA			214	1943	0	DFM STORAGE		Y	Part of Base Infrastructure
6	C	C	Industrial	VG	H	NA		15,120	267	1954	0	PIER NO 2/CARGO/ BOLLES WETSLIP/SM CRFT		Y	Seaport Infrastructure
7	A	C	Industrial	P	H	FA		12,366	844	1943	0	BERTH	2	Y	Requires Extensive Repairs
6	C	C	Industrial	VG	H	NA		11,898	266	1943	1	FUEL PIER NO 1		Y	Vital to Infrastructure by Zone
1	A	C	Industrial	VG	H	NA		8,715	777	1966	1	SURVIVAL EQUIPMENT SHOP		Y	Airport Infrastructure
1	A	C	Industrial	G	H	PA	N	7,596	2333	1993	1	AIR CARGO TERMINAL		Y	
6	A	M	Industrial	G	H	NA	N	6,000	2437	2000	0	JP-5 FUEL STGE BY FAC #2410		Y	Airport Infrastructure
6	A	M	Industrial	G	H	NA	N	4,000	2436	2000	0	DSL BULK FUEL TNK BY 1995/96		Y	Square footage uncertain
4	F	M	Industrial	F	L	PA		3,850	422	1958	1	LOX/LIN FAC	1	Y	Vital to Infrastructure by Zone
Airport		C	Industrial	G	H	NA	N	180	2369	1993	1	GENR BY B-827		Y	
6	C	C	Industrial	G	H	NA			280	1944	0	SMALL CRAFT BERTHING		Y	Vital to Infrastructure by Zone
7	A	C/S	Industrial	P	H	HA			281	1943	0	NSWU-4 PIER/HELO-PAD		Y	Needs extensive repair
7	A	C/S	Industrial	P	H	HA			281	1943	0	NSWU-4 PIER/HELO-PAD		Y	Needs extensive repair
6	C	P	Industrial	VG	H	NA			2346	1993	0	FUEL MOORING FACILITY	3	Y	Airport Infrastructure
6	C	P	Industrial						2346	1993	0	FUEL MOORING FACILITY		Y	Airport Infrastructure
6	C	T	Industrial						2217	1968	0	LST RAMP WEST OF FUEL PIER			

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
2	C	C	Municipal	G	H	NA	N	10,000	2080	1984	1	SEWAGE TREATMENT PLANT		Y	Vital to Infrastructure by Zone
7	B	C	Municipal	G	H	NA	N	10,000	2075	1985	1	SEWAGE TREATMENT PLANT		Y	Vital to Infrastructure by Zone
3		C	Municipal	G	H	NA		6,261	88	1944	2	FILTRATION PLANT		Y	Vital to Infrastructure by Zone
2	A	C	Municipal	P	L	NA		5,292	535	1957	0	WATER STGE TANKS AT BUNDY		Y	
6	A	C	Municipal	VG	H	NA		4,348	798	1966	1	STRUCTURAL FIRE STATION	2	Y	Vital to Infrastructure by Zone
4	A	C	Municipal	G	H	NA		1,984	771	1963	0	FIRE PROTEC WTR TNK BY B386		Y	Vital to Infrastructure
1	A	C	Municipal	F	H	NA		1,668	459	1960	1	WATER STORAGE TANK/FIRE/		Y	Vital to Infrastructure by Zone
1	A	C	Municipal	F	H	NA		1,492	460	1938	1	PUMP HOUSE		Y	Vital to Infrastructure by Zone
6	C	M	Municipal	G	H	FA	N	1,200	2040	1983	1	HOSE RACK FUEL DIVISION		Y	Seaport Infrastructure
7	D	C	Municipal	G	H	NA		1,040	774	1966	1	GENR AT TELEMETRY W/DF TNK	3	Y	Vital to Infrastructure by Zone
7	A	C	Municipal		H	NA		692	3034	1983	1	STANDBY GENERATOR BLDG(WASS)		Y	Duplicate Bldg #
2	A	C	Municipal	G	H	NA	N	648	1914	1978	1	EXCHANGE MAINTENANCE SHOP/Potable Water *Pump Station*		Y	Vital to Infrastructure by Zone
4	E	C	Municipal	G	H	NA		550	784	1966	1	TACAN UNIT/GEN BUILDING		Y	Vital to Infrastructure by Zone
Airport/Fuel Tks		C	Municipal	G	H	NA	N	500	2116	1976	1	ELECTRICAL SUBSTATION		Y	Vital to Infrastructure by Zone
		C	Municipal	G	H	NA	N	450	2382	1995	1	SWGE PUMP STATION		Y	Vital to Infrastructure by Zone
7	C	C	Municipal	G	H	NA	N	442	2037	1983	1	GENERATOR BLDG AT CABRAS IS		Y	Vital to Infrastructure by Zone
4	A	C	Municipal	G	L	NA	N	416	2014	1981	1	EMERG. GENR BLDG BY B# 386		Y	Contingent on use of Bldg 386
5	A	C	Municipal	G	H	NA		360	1471	1959	1	SEWAGE PUMPING STA CAPEHART	1	Y	Vital to Infrastructure by Zone
		C	Municipal	G	H	NA	N	333	2019	1982	1	GENERATOR HOUSE BY LS 1758		Y	*Generator bldg. Serving unknown use*
4	F	C	Municipal	G	H	NA	N	320	2018	1982	1	GENERATOR HOUSE BY LS 423		Y	*Generator bldg. Serving unknown use*
7	A	C	Municipal	G	H	NA		294	124	1955	1	GAS FILLING STA		Y	Part of Base Infrastructure
6	C	C	Municipal	G	H	NA	N	288	39	1944	1	SEWAGE PUMPING STATION	0	Y	
4	F	C	Municipal	G	H	NA	N	286	1978	1978	1	STANDBY GENR-B#1808 GALLEY		Y	Vital to Infrastructure by Zone
5	B	C	Municipal	G	H	NA		280	968	1959	1	SEWAGE PUMPING STA(CAPEHART)	0	Y	Vital to Infrastructure by Zone
5	C	C	Municipal	G	H	NA		280	1059	1959	2	SEWAGE LIFT STATION/CAPEHT		Y	Vital to Infrastructure by Zone
2	D	C	Municipal	G	H	NA	N	271	2021	1982	1	GENR HSE BY BUNDY LS #24NDY		Y	*Generator bldg. Serving unknown use*
6	A	C	Municipal	G	H	NA	N	268	2020	1982	1	GEN HSE/LS CENT BY B2033/ SERVES SEWAGE PUMP		Y	Vital to Infrastructure by Zone
2	A	C	Municipal	F	H	NA		240	644	1957	1	SEWAGE PUMPING STATION		Y	Vital to Infrastructure by Zone
6	A	C	Municipal	G	H	NA	N	240	2033	1943	1	SEW PUMP STA 2 AT FIRE STA		Y	Vital to Infrastructure by Zone
5	A	C	Municipal	G	H	NA	N	224	1920	1977	1	STANDBY GEN BY BLDG #1471		Y	Vital to Infrastructure by Zone

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
5	C	C	Municipal	G	H	NA	N	224	1972	1977	1	STANDBY GENERATOR BY B#1513		Y	Vital to Infrastructure by Zone
6	D	C	Municipal	G	H	NA	N	208	1977	1978	1	POTABLE WATER PUMP HOUSE		Y	Vital to Infrastructure by Zone
2	D	C	Municipal	F	H	NA	N	192	1757	1969	1	WATER TREATMENT FACILITY	0	Y	Vital to Infrastructure by Zone
2	D	C	Municipal	F	H	NA	N	192	1758	1969	1	WATER TREATMENT FACILITY	0	Y	Vital to Infrastructure by Zone
2	A	C	Municipal	G	M	NA	N	171	2361	1993	1	WATER PUMP-STA (BUNDY)		Y	Vital to Infrastructure by Zone
5	C	C	Municipal	G	H	NA		170	1513	1959	1	SEWAGE LIFT STATION	1	Y	Vital to Infrastructure by Zone
2	A	C	Municipal	P	H	NA		150	542	1957	1	SEWER PUMP HOUSE		Y	Vital to Infrastructure
7	D	C	Municipal		H	NA		150	2389	1989	1	SWGE LIFT STA BY B-2304		Y	Vital to Infrastructure by Zone
4	A	C	Municipal	G	H	NA	N	144	1922	1978	1	POT. WTR. DISTBN BLDG		Y	Vital to Infrastructure by Zone
5	A	C	Municipal	G	H			143	2385	1994	1	NEW GENR BLDG BY B884		Y	Vital to Infrastructure by Zone
5	A	C	Municipal	G	H	NA	N	143	2388	1994	1	NEW GENR BLDG BY LS-1917		Y	Vital to Infrastructure by Zone
4	D	C	Municipal		H			143	2384	1994	1	NEW GEN BLDG BY B1971		Y	Vital to Infrastructure by Zone
5	B	C	Municipal		H			143	2386	1994	1	NEW GENR BLDG BY B-LS-968		Y	Vital to Infrastructure by Zone
5	C	C	Municipal		H			143	2387	1994	1	NEW GENR BLDG BY LS-1059		Y	Vital to Infrastructure by Zone
6	D	C	Municipal		H			143	2383	1995	1	NEW GENERATOR BLDG BY LS-39		Y	Vital to Infrastructure by Zone
4	D	C	Municipal	G	H	NA	N	130	1971	1979	1	SWGE PUMP HSE BY B#1970		Y	Vital to Infrastructure by Zone
4	F	C	Municipal	P	H	NA		130	423	1959	2	SEWAGE PUMPING STATION		Y	Vital to Infrastructure by Zone
6	D	C/S	Municipal	G	H	NA	N	100	1993	1978	1	PUMP HOUSE		Y	*Function not known*
5	A	P	Municipal	G	M	NA	N	64	1916	1978	1	SEWAGE LIFT/ALGODONES APTS.		Y	Vital to Infrastructure by Zone
4	A	C	Municipal	G	H	NA	N	64	1924	1971	1	SEWAGE PUMP ST		Y	Vital to Infrastructure by Zone
5	B	C	Municipal	G	H	NA	N	64	1917	1978	1	SEWAGE LIFT/TURNKEY HSG.		Y	Vital to Infrastructure by Zone
6	B	C	Municipal	G	H	NA	N	64	1812	1970	1	SEWAGE LIFT STATION/MARINA	2	Y	Vital to Infrastructure by Zone
7	A	C	Municipal	G	H	NA	N	64	1969	1978	1	SANITARY SEWER COLL/PMP STAT	0	Y	Vital to Infrastructure by Zone
3		C	Municipal	G	H	NA			87	1943	0	RAW WATER RESERVOIR		Y	Vital to Infrastructure by Zone
4	E	C	Municipal	G	H	NA			86	1942	0	WATER STGE TANKS TACAN SITE		Y	Vital to Infrastructure by Zone
5	B	C	Municipal	G	H	NA			1691	1969	1	SEWAGE TREATMENT PLANT	1	Y	Vital to Infrastructure by Zone
6	C	C	Municipal	G	H	NA			90	1943	1	ELECTRIC SUBSTATION		Y	Vital to Infrastructure by Zone
6	C	C	Municipal	G	H	NA			978	1966	1	ELECTRICAL SUBSTATION	0	Y	Vital to Infrastructure by Zone
6	C	M	Storage	G	H	PA		2,250	1816	1977	1	HOSE HOUSE	0	Y	Seaport Infrastructure
6	C	M	Storage	G	H	PA		1,200	976	1966	1	HOSE RACK SHED	2	Y	Seaport Infrastructure
6	C	M	Storage	G	H	HA	N	1,000	2042	1965	1	STORAGE BLDG WITH LOADING DOCK		Y	Square footage uncertain
1	B	M	Utility	VG	H	FA		72,771	200	1943	2	HANGAR		Y	Airport Infrastructure
1	A	M/C	Utility	VG	H	HA		61,275	379	1959	2	AIRCRAFT MAINTENANCE HANGAR		Y	Airport Infrastructure
1	A	M	Utility	VG	H	HA		44,988	1625	1968	2	HANGAR VC-8	0	Y	Vital to Infrastructure by Zone
6	C	P	Utility	G	H	NA		5,494	1982	1978	1	POL (9) PUMP HSE 850KW SBG		Y	
6	A	P	Utility	G	H	NA		5,400	1995	1978	0	DIESEL FUEL STGE TNK		Y	Base Infrastructure

Zone	Subzone	Const. Type	Bldg. Type	Gen. Condition	Bldg Value	Adapt. Re-use	Recent Renov.	Area in s.f.	Facility No.	Year Built	Story	Facility Name	View	Oper. Sign	Comments
6	A	P	Utility	G	H	NA		5,400	1996	1978	0	DIESEL FUEL STGE TNK		Y	Base Infrastructure
6	B	C	Utility	G	H	NA	N	2,000	2267	1975	0	MARINA PIERS	3	Y	Square footage uncertain
1	B	M	Utility	VG	H	FA		1,920	200	1964	1	ADMIN BLDG		Y	Airport Infrastructure
6	B	P	Utility						2268	1975	0	GAS TNK ABOVE GRND (MARINA)			
6	B	P	Utility						2269	1975	0	GAS TNK ABV GRND (MARINA)			

Unconfirmed Facilities

Naval Station Roosevelt Roads Buildings and Structures Assessment - Unconfirmed Facilities Sorted by Zone

LEGEND

Zones

	Zone 1
	Zone 2
	Zone 3
	Zone 4
	Zone 5
	Zone 6
	Zone 7
	Zone 8

Construction Type

C	Concrete / Concrete Block
M	Metal
W	Wood
P	Permanent
S	Semi- Pemanent
T	Temporary

Building Type - International Building Code 2003 - Use and Occupancy Classification

Assembly	Theaters, Restaurants and Churchs
Business	Airport, Post Offices, Radio and TV Stations
Educational	K thru 12 Schools and Day Care Facilities
Industrial	Factories, Manufacturing and Assembly
High Hazard	Storage of Hazardous Materials and Explosives
Institutional	Assisted Living Quarters, Hospitals and Correctional Facilities
Retail (Mercantile)	Department Stores, Markets and Fuel Stations
Residential	Hotels, Apartment Buildings and Single Family Houses
Storage	Repair and Storage Facilities
Utility	Aircraft hangars, carports and towers
Military	Supports military operations
Municipal	Infrastructure supporting facilties
Recreation	Residential recreation

General Condition

VG	Very Good
G	Good
F	Fair
P	Poor

Building Value

H	High
M	Medium
L	Low

Adaptive Re-use

HA	Highly Adaptive
FA	Fairly Adaptive
PA	Poorly Adaptive
NA	Not Adaptive

Recent Renovation

Y	Yes
N	No

View

0	None
1	Some
2	Good
3	Best

Operationally Significant

Y	Yes
N	No

392	Total Number of Unconfirmed Facilities
600,237	Total Square Footage of Unconfirmed Facilities

Sources :

Buildings and Structures Inventory - Excel File: *NSRR Bldgs and Struct 110503* is the base information used to compile the list of facilities

AutoCADD drawing: *NSRR super-map-Prenew-xref* is the base drawing used to locate the buildings within the zones and sub-zones

LawGibb Group NSRR Architectural Resources Inventory and Evaluation Study dated June 8, 2001 was used to formulate base existing conditions of each of the catelogued structures

Various Construction Documents and other information provided by the Navy's on-site personnel.

An extensive visual assessment of the facilities by the design team was conducted during a four-day site visit between February 24-27, 2004

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
1	A	P		2452	2000	1	ADMIN BLDG BY MK-30 ARFLD A	4,000	G		H	N		FA	
1	A	P		2453	2000	1	MAINT BLDG BY MK30 @ ARFLD	4,000	G		H	N		FA	
1	A	P		2454	2000	1	WHSE BLDG BY MK-30 @ ARFLD	4,000	G		H	N		FA	
1	A	P		2355	1993	1	R/W EDGE LIGHTING DISTR.BLDG	711							
1	B	P		483	1959	1	BUS SHLTR EAST ON LANGLEY	140							
1	B	P		2079	1970	1	STANDBY GEN PLT BY BLDG 860	420							
1	B	P		2302	1990	1	AIRFIELD ALARM CONTROL CTR	1,200							
1	C	P		1927	1971	1	BOMB BUILDUP AREA	315							
2	B	P		1962	1977	1	SEC. STGE BEHIND B504	432							
2	B	P		1991	1980	1	STANDBY GENR BY SEC B# 504	80							
2	B	P		2017	1982	1	GENER HOUSE BY LS 644/CENT	268							
2	B	P		2082	1985	1	KENNEL	1,320							
2	B	P		2224	1985	1	COVERED PATIO	289							
2	B	P		2253	1987	1	RECREATION PAVILION	471							
2	C	P		2327	1989	0	AUTO PWR CONTROL VAN B724	2,025							
3		P		2287	1988	1	GENERATOR BLDG B#88	170							
4	A	P		2207	1987	1	BUS SHLTR S. DELICIAS	70							
4	C	C		737	1959	1	NAVCOMMSTA BUILDING	3,140	G		M	N		NA	Telecommunication Equip
4	C	S		1762	1972	1	BUS SHLTR N.W. TEL EXCH	70							
4	C	P		2177	1991	1	ELECTRICAL EQUIPMENT SHELTER	169							
4	D	S		1763	1972	1	BUS SHLTR S.W. TEL. EXCH	70							
4	D	P		2303?	1966	2	RANGE OPERATIONS BLDG	2,964							Duplicate Bldg. number
4	D	P		2317	1991	0	PLAYGROUND AREA(NAVY LODGE)								
4	F	S		1781	1968	1	BUS SHLTR NEAR NEW GALLEY	75							
4	F	S		1994	1978	1	UEPH LAUNDROMAT	833							
4	F	P		2178	1982	1	CABANA/BBQ GRILL 1708-09	117							
4	F	P		2254	1987	1	BUS SHLTR ACROSS GALLEY	190							
4	F	P		2263	1987	1	LAUNDROMAT AT UEPH BY B#1710	1,369							
4	F	P		2367	1995	0	BASKETBALL CT BTWN 1708&1709								
4	G	C		78	1957	2	NAVY RESERVE TRNG BLDG	16,290	VG		H	N		FA	Dorms converted into office
4	G	P		2450	2000	1	WELLNESS CENTER	3,000	G		M	N		FA	
4	G	P		482	1959	1	BUS SHLTR W. ON LANGLEY BK A	140							
5	A	P		1916	1978	1	SEWAGE LIFT/ALGODONES APTS.	64	G		M	Y	N	NA	Vital to Infrastructure by Zone
5	B	P		1073	1962	1	BUS SHLTR FDR DR (HSG)	140							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
5	B	P		1581	1962	1	BUS SHLTR BY COMM CTR	75							
5	B	P		2378	1978	1	SWIM POOL FILTER HOUSE	144							
5	C	P		1075	1962	1	BUS SHLTR/CASCAJO OFFCRS HSG	190							
5	C	P		2221	1986	1	MALE/FEM HEAD AT BALLFIELD	75							
5	C	P		2223	1986	0	COMM. BEACH BALLFLD B&DUGOUT								
5	C	P		2237	1986	1	CONCESS STGECOM BCH BALLFL	144							
5	C	P		2251	1987	1	ADDTNL STGE B1811	336							
6	A	P		1995	1978	0	DIESEL FUEL STGE TNK	5,400	G		H	Y		NA	Base Infrastructure
6	A	P		1996	1978	0	DIESEL FUEL STGE TNK	5,400	G		H	Y		NA	Base Infrastructure
6	A	P		64	1953	1	MESS HALL AND GALLEY OP	1,011		0	L	N			
6	B	P		2268	1975	0	GAS TNK ABOVE GRND (MARINA)								
6	B	P		2269	1975	0	GAS TNK ABV GRND (MARINA)								
7	A	P		445	1938	2	VACANT	2,718							
8	A	P		2189	1982	1	STORAGE SHED AT RIFLE RANGE	169							
		P		2449	2000	1	BOAT MAINT SHEDS - SQDN 2	3,478	G		H	N		PA	Seaport Infrastructure
		P		28	1945	1	MENS BATH HOUSE @ ROBC	650			L	N			
		P		60	1946	2	OBSERVATION POST BUILDING	1,600							
		P		61	1946	1	REPAIR SHOP & STORAGE OP	444							
		P		100	1940	2	LIVING QTRS	6,290							
		P		101	1940	1	ROC SUPPORT	441							
		S		102	1975	1	METAL STORAGE BLDG	1,200							
		P		157	1943	1	WTR GRIT CHAMBER-RIO BLANCO	800							
		P		214	1964	1	DIVER CHANGE HOUSE	252							
		P		231	1948	1	TELEPHONE CABLE HUT	35							
		P		233	1948	1	TELEPHONE CABLE HUT	35							
		S		243	1962	1	MAINTENANCE BLDG	6,059							
		P		247	1948	1	TELEPHONE CABLE HUT	35							
		S		304	1973	1	TOOL STGE AGRO-VIEQUES INC. LAWNMOWER HEAVY	225							
		P		367	1956	1	EQUIP SHOP	1,960							
		P		396	1958	1	GUARD SHELTER	36							
		P		401	1958	1	PRNG BLDG	1,886							
		P		421	1943	0	WATER STOR TANK-PT PUERCA	319							
		P		440	1938	2	NAVYHOUSE STOP 7 1/2	3,386							
		P		441	1938	2	ADMIN BLDG STOP 7 1/2	6,660							
		P		442	1938	1	STORAGE-STOP 7 1/2	1,260							
		P		443	1942	2	SEA CADETS-STOP 7 1/2	4,454							
		P		444	1938	2	BOQ-STOP 7 1/2	2,063							
		P		446	1938	2	VACANT	2,718							
		P		447	1938	2	FBP-CIV HSG STOP 7 1/2	2,642							
		P		448	1938	2	BOQ-STOP 7 1/2	2,736							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		P		461	1995	1	GATE/SENTRY HOUSE STOP 7.5	64							
		P		496	1961	1	BUS SHLTR FORESTAL (SUROPS)	75							
		P		561	1967	1	US ARMY SOCSOUTH WHSE	102,666							
		P		748	1964	1	BUS SHLTR SOFTBALL FLD BUNDY	60							
		S		751	1968	0	DOUBLE WATER STORAGE TANK								
		S		752	1968	0	WATER STORAGE TANK								
		S		753	1968	0	WATER STORAGE TANK								
		S		754	1968	0	WATER STORAGE TANK								
		S		755	1968	0	WATER STORAGE TANK								
		P		772	1964	0	TRASH CONTAINERS STORAGE	549							
		P		773	1964	1	BUS SHLTR LNGLEY/BNGTN S.	60							
		P		789	1966	0	GOLF COURSE								
		P		896	1966	1	VALVE PIT - PIER #3	512							
		S		1003	1971	1	WEAPONS RANGE TOWER C.MATIAS	100							
		P		1005	1971	1	GEN. BLDG. AND REPAIR SHOP F	960							
		P		1006	1971	0	POTABLE WATER STORAGE TANK								
		P		1013	1969	0	POTABLE WATER STORAGE TANK								
		P		1024	1903	0	CISTERN UNDRGRND PTO FERRO								
		P		1035	1913	0	CISTERN UNDERGRND PTO FERRO	3,740							
		S		1100	1960	1	SENTRY BOOTH	35							
		P		1102	1965	1	PWR PLNT/VIDEO CAMERA SHACK	64							
		S		1103	1970	0	MARINES BUNKER OP7								
		S		1123	1959	1	WATER POINT	1,400							
		S		1126	1961	0	WATER TANK AT WATER POINT								
		S		1130	1967	0	WATER TANK AT WATER POINT								
		S		1131	1967	0	WATER TANK AT WATER POINT								
		S		1132	1975	0	GRND LVL POTABL WATER TANK								
		S		1133	1975	0	GRND LVL POTABL WATER TANK								
		C	Military	1203	1968	1	PASS OFFICE GATE#1	1,680	G	0				PA	
		P		1720	1972	1	PICNIC PAVILLION	64							
		S		1725	1972	1	BUS STOP SHELTER BY MARINA	50							
		P		1745	1998	0	THEODOLITE TRNST STA CABRAS	80							
		S		1764	1972	1	BUS SHEL LANGLEY/BOR HTS NOR	70							
		S		1765	1972	1	BUS STOP SHELT/SOUTH BEQ/	70							
		S		1915	1975	1	NAVGTN'L AID TWR PT. PUERCA	4,983							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		S		1975	1978	1	FLAMMABLE STOREHOUSE HAZMAT STORAGE	36							
		P		1984	1982	1	HANGAR 200	1,026							
		T		1985	1978	0	VEHICLE WASHRACK WATERFRONT	1,400							
		P		1992	1977	0	AIRCRAFT ARRES GEAR-WEST SEC								
		S		2005	1980	1	SENTRY (GATE 1)	48							
		P		2006	1996	1	GENERATOR SHLTR NEAR GATE 3	120							
		P		2013	1981	1	DRONE LAUNCH PAD (CABRAS IS)	2,150							
		P		2016	1982	1	GENR CEN ALARM LS 542	290							
		P		2046	1983	0	CRASH CREW FIRE TRAINING	962							
		S		2057	1985	1	MISSILE TEST ASSY SHED	784							
		S		2061	1981	1	SEC. POLICE GUARDHOUSE	325							
		S		2061	1984	0	FAR FIELD CALIBRATION TWR								
		S		2062	1984	0	ITCS RADAR TOWER "A"								
		S		2063	1984	0	ITCS RADAR TOWER "B"								
		P		2068	1984	1	ITCS BLDG	1,700							
		P		2077	1969	0	SWIMMING POOL-BUNDY	2,500							
		P		2165	1983	0	CONTAMINATED FUEL TANK/PUMP								
		P		2169	1981	0	PAINT STORAGE ADJ: B# 1683	240							
		M	Utility	2206	1987	1	BUS SHLTR N. DELICIAS	70	G				N	NA	
		P		2243	1987	0	OIL/WATER SPRTRS/BY B 379								
		P		2244	1986	0	OIL/WTR SPRTS/BY B826								
		P		2266	1983	1	EMGCY GENR FOR B# 1807	80							
		P		2289	1989	0	PLAY LOT NO.1	4,524							
		P		2290	1989	0	PLAY LOT NO.2								
		P		2291	1989	0	PLAYLOT NO. 3								
		P		2292	1989	0	PLAY LOT 4 @ BLDG 2305								
		P		2294	1989	1	SUB-STA/FLEET RECRE PARK	12							
		P		2308	1990	1	BUS SHELTER BY B#1205	50							
		P		2309	1990	1	BUS SHELTER BY B#1625	50							
		S		2318	1991	1	NAVY LODGE STORAGE SHED	216							
		P		2364	1994	0	HEAVY EQUIP VEH WASHRACK	3,575							
		P		2368	1995	1	FLAMM STGE BTWN 1708 & 1709	200							
		P		2380	1993	0	DISEL TNK W/SPILL CON B2361								
		P		2381	1993	0	DISEL TNK W/SPILL CON B2360								
		P		2391	1994	0	BASKETBALL CT BY YOUTH CENTE								
		P		2397	1994	0	A/G WASTE OIL TNK BY B-31								

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		P		2398	1995	1	PWD BATTERY STGE	121							
		P		2402	1966		TUGBOAT STGE/WK SPACE	560							
		P		2405	1995	0	A/G FUEL TANK BY B860								
		P		2406	1994	1	GEN BLDG BY B2382 (OLD 1916)	143							
		P		2410	1959	0	ACFT DIRECT FUELING SYS								
		P		2411	1997	1	SEAL'S POINT RECREATION PAV	2,744							
		P		2412	1997	0	A/G VAULT TYPE FUEL STGE TNK								
		P		2421	1997	1	BUS STOP SHLTR BY B-31	50							
		P		2422	1998	1	BUS STOP SHLTR BY B-1790	50							
		P		2423	1998	1	BUS STOP SHLTR BY B-2338	70							
		P		2424	1997	1	BUS STOP SHLTR ACROSS B-2338	70							
		P		2425	1997	1	BUS STOP SHLTR BY B-2024	50							
		P		2427	1997	1	BUS SHLTR GATE #1	75							
		P		2428	1997	1	BUS SHLTR W/ON LANGLEY	190							
		P		2429	1997	1	BUS SHLTR E/ON LANGLEY	190							
		P		2438	2000	1	REC CENTER VP SQUADRON	240							
		P		2441	1995	0	POT WATER TNK BY B-1922								
		P		2442	2000	1	CHLER PLT BOQ'S 725/729/1688	797							
		P		2455	2001	1	SPACE SURVEILANCE FACILITY	8,500							
		P		2456	2001	1	SCHOOL MAINTENANCE BLDG	943							
		P		2457	1995	1	HAZ FLAMM STGE AIMD	228							
		P		2458	2001	1	PUMP STATION	168							
		P		2467	2000	1	ELECTRONIX/COMMS MAINT. SHOP	7,395							
		P		2474	2003	1	ZOONOSIS CONTROL	3,120							
		S		2479	2003	1	PAVILLION	285							
		P		2481	2003	1	GENERATOR HELTER AT BLDG 88	72							
		P		2482	1998		DIESEL TANK @ BLDG 88								
		P		2483	1999		DIESEL TANK AT BLDG 161								
		P		2485	2003	1	GATEHOUSE WITH TURNSTILES	560							
		P		2486	1999	1	PAVILLION BY BLDG 202	196							
		P		2487	2003		DIESEL TANK BY BLDG 296								
		P		2488	2003	1	STORAGE SHED	544							
		P		2489	2003	1	COVERED STORAGE BY BLDG 371	420							
		P		2490	2003		FUEL TANK BY BLDG 378								
		P		2491	2003	1	GATEHOUSE WITH TURNSTILES	560							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		P		2492	2003		FUEL TANK BY BLDG 1625								
		P		2493	2003	1	PAVILLION BY BLDG 386	92							
		P		2495	2003		DIESEL FUEL TANK BY BLDG 519								
		P		2496	2003	1	RIDING STABLES	6,161							
		P		2500	2003	1	BUS STOP	60							
		P		2501	2003		DIESEL TANK BLDG 737								
		P		2502	2003	1	GENERATOR BLDG AT BLDG 737	182							
		P		2503	2003	1	WEATHER SHELTER BY BLD 760	64							
		P		2504	2003		FUEL TANK BY BLDG 2045								
		P		2505	2003		FUEL TANK BY BLDG 790 (NEW)								
		P		2506	2003	1	STORAGE SHED NEAR BLDG 825	1,760							
		P		2508	2003	1	MATERIAL STORAGE SHED	338							
		P		2509	2003		DRAINAGE PIT HI POWER AREA								
		P		2510	2003		FUEL TANK BY BLDG 1203								
		P		2514	2003	1	VC-8 PR/ AME SHOP	240							
		P		2515	2003	1	RECREATION PAVILLION	121							
		P		2516	2003	1	RECREATION CENTER - FIRST CL	430							
		P		2517	2003	1	1ST LT STORAGE	64							
		P		2518	2003	1	RECYCLE STORAGE	72							
		P		2519	2003	1	GATEHOUSE WITH TURNSTILES	560							
		S		2520	2003	1	STORAGE SHED WEST END OF HGR	99							
		S		2521	2003	1	HAZARDOUS WASTE COLLECTION	224							
		S		2522	2003		CONTAMINATED FUEL COLLECTION								
		S		2523	2003	0	VEHICLE WASH RACK	289							
		S		2524	2003	1	RECREATION PAVILLION - SMOKE	529							
		S		2529	2003		FUEL TANK BY BLD 1734								
		S		2530	2003	1	RECREATION PAVILLION	108							
		S		2531	2003	1	RECREATION PAVILLION	108							
		P		2532	2003	1	STORAGE SHED BY BLD 1701	912							
		P		2533	2003	1	OPERATIONAL STORAGE	192							
		S		2534	2003	1	WEATHER SHELTER	169							
		S		2536	1995	1	PAVILLION AT BLDG 1817	92							
		P		2556	2003	1	MAINTENANCE STORAGE	300							
		P		2557	1988	1	FLAMMABLE STRG SHED NR 825	204							
		P		2564	1981	1	VC-8 LINE SHACK	486							
		S		2565	1982		GENERATOR FUEL TANK								
		P		2566	2003		CARRIBEAN LANES MIN GOLF								
		S		2567	1982	1	CARRIBEAN LANES PAVILLION	336							
		P		2568	2000		CARRIBEAN LANES TANK								

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		S		2569	2000		CARRIBEAN LANES TANK								
		P		2570	1996		CONTAMINATED FUEL TANK								
		S		2571	1996		FIRE PIT CRASH TRAINING AREA								
		S		2572	1996		FUEL TANK								
		S		2573	1996		CONTAMINATED WATER TANK								
		S		2574	1985	1	SECURITY STORAGE	225							
		S		2577	1986		ELEMENTARY SCHOOL PLAYGROUND								
		S		2578	1986	1	ELEMENTARY SCHOOL PAVILLION	120							
		S		2579	1986	1	ELEMENTARY SCHOOL PAVILLION	600							
		S		2580	1986	1	ELEMENTARY SCHOOL PAVILLION	600							
		P		2581	1991		DIESEL FUEL STORAGE TANK								
		P		2582	1982	1	WX SHELTER PISTOL RANGE	240							
		P		2583	1982	1	WX SHELTER RIFLE RANGE	240							
		P		2584	1960	1	SCHOOL FLAMMABLE STORAGE	189							
		P		2585	1960	1	SCHOOL FREEZER SHELTER	306							
		P		2591	1988		HIGH SCHOOL BASEBALL FIELD								
		P		2592	1988		HIGH SCHOOL SOFTBALL FIELD								
		P		2593	1988		HIGH SCHOOL FOOTBALL FIELD								
		P		2594	1988		HIGH SCHOOL BASKETBALL COURT								
		P		2595	1988		HIGH SCHOOL POOL								
		P		2596	1988	1	HIGH SCHOOL POOL TOILET	264							
		P		2597	1988	1	HIGH SCHOOL POOL PUMPHOUSE	300							
		P		2598	1988	1	HIGH SCHOOL POOL PAVILLION	75							
		P		2599	1990		FUEL TANK								
		P		2601	1990	1	YOUTH CENTER REC PAVILLION	1,736							
		P		2603	1991		MCDONALD'S PLAYGROUND								
		P		2605	1991		NAVY LODGE DIESEL TANK								
		S		2612	1993		DIESEL FUEL TANK								
		P		2613	1993		SERVICE STA DIESEL FUEL TANK								
		S		2614	1993	1	SERVICE STA HAZARDOUS STOR	36							
		S		2616	1993	1	SERVICE MISC SHELTER	64							
		P		2618	1993	1	PAVILLION BY BLDG 2351	600							
		S		2621	1994		FUEL TANK								
		P		2622	1993	1	GOLF MAINTENANCE SHED	144							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		P		2623	2003		DIESEL FUEL STORAGE TANK								
		P		2624	2003		MOTOR GAS FUEL TANK								
		P		2625	2003		FUEL TANK NR BLDG 2394								
		P		2626	2003		FUEL TANK NR BLDG 2394								
		P		2627	1996	1	MANATEE TRAIL DISPLAY	532							
		P		2628	1996	3	MANATEE OBSERVATION TOWER	360							
		P		2629	1996	1	FLAMMABLE STORAGE BY 2403	88							
		P		2630	1999		GENERATOR BLDG BY 2382	50							
		P		2632	2001	1	HAZMAT STORAGE BY BLDG2454	152							
		P		2634	1992	1	SURVEILLANCE CAMERA TOWER	64							
		P		2635	1992	1	SURVEILLANCE CAMERA TOWER	64							
		S		2636	1992		FUEL TANK								
		P		2637	1992	1	SURVEILLANCE CAMERA TOWER	100							
		S		2638	1992		METEOROLOGY EQUIPMENT SITE								
		P		2645	2003		RVR EQUIP RWY 07/25								
		P		2648	2003	1	PUBLIC TELEPHONE FACILITY	16							
		P		2649	1991		VEHICLE WASH RACK	1,500							
		P		2650	1991		VEHICLE LUBE RACK	1,584							
		P		2651	1993	1	TRANSFORMER SHED	49							
		P		2652	1993	1	STORAGE SHED	88							
		P		2654	1982	1	SWITCHING SUBSTATION	99							
		S		2655	1972	1	ENLISTED BEACH SHELTER	80							
		S		2656	1972	1	ENLISTED BEACH SHELTER	80							
		S		2657	1972	1	ENLISTED BEACH SHELTER	80							
		S		2658	1972	1	ENLISTED BEACH SHELTER	80							
		S		2659	1972	1	OFFICER BEACH SHELTER	100							
		S		2660	1972	1	OFFICER BEACH SHELTER	100							
		S		2661	1972	1	OFFICER BEACH SHELTER	100							
		S		2662	1972	1	OFFICER BEACH SHELTER	100							
		S		2663	1972	1	OFFICER BEACH SHELTER	100							
		S		2664	1972	1	OFFICER BEACH SHELTER	100							
		S		2665	1972	1	OFFICER BEACH SHELTER	100							
		S		2666	1972	1	OFFICER BEACH SHELTER	100							
		P		2667	2003	1	PUBLIC TELEPHONE FACILITY	16							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		P		2668	2003	1	RECREATION PAVILLION	315							
		P		2669	2003	1	RECREATION PAVILLION	315							
		P		2670	2003		FILTRATION PLANT CAUSTIC TAN								
		P		2671	2003		FILT. PLANT ALUM SULF TANK								
		P		2672	2003		WATER TREATMENT WASTE STOR								
		P		2673	1982	1	PUMPING STATION AT WTF	108							
		P		2674	1982	1	LATRINE FACILITY AT WTF	49							
		P		2675	1982	1	WATER TREATMENT FAC OFFICE	483							
		P		2676	2003	1	COMPRESSOR SHELTER WTF	210							
		P		2677	2003		WATER TREATMENT TANK								
		P		2678	2003		HOCKY PARK	11,560							
		P		2680	1996	1	GENERATOR SHELTER AT 1796	200							
		P		2681	1996		DIESEL TANK AT BLDG 2303								
		P		2682	1996		DIESEL TANK AT BLDG 1796								
		P		2683	1996		DIESEL TANK AT BLDG 1796								
		P		2684	1996	1	WATER PUMP STATION AT 1796	165							
		S		2801	1975	1	NEW GENERATOR BLDG	960							
		S		2802	1977	1	DRONE TARGET CONTROL FACILIT	527							
		S		2803	1978	1	CAPRI RADAR BLDG	861							
		P		2804	1982	2	RANGE OPTS CONTROL FACILITY	9,432							
		P		2818	1987	1	COMP DEHYDRATOR B#2803	16							
		S		2821	1980	1	OPERATIONAL STORAGE	480							
		P		3001	1963	3	RATCC BLDG 67B	5,890							
		P		3002	1963	3	RATCC BLDG 67A	5,890							
		S		3006	1969	1	POLICE STATION	1,248							
		P		3008	1970	1	GENERATOR BLDG	330							
		P		3009	1970	0	DIESEL FUEL STDBY AG								
		P		3011	1963	1	QTRS AND MESS BLDG.	2,352							
		P		3012	1963	1	EMERGENCY GEN BLDG.	722							
		T		3018	1966	1	GENR BLDG W/AG DSL TNK	315							Duplicate Bldg #
		P		3019	1966	1	VHF UHF COMM FAC	1,287							Duplicate Bldg #
		P		3036	1978	1	STAND-BY GENR/AG DSL TNK	1,215							
		P		3047	1969	1	CAMP LAUNDRY/BOILER ROOM	3,720							
		T		3070	1969	1	1ST CLASS LOUNGE	960							
		S		3071	1969	1	NAVY EXCHANGE FACILITY	2,400							
		S		3079	1969	1	CLASSROOM	960							
		S		3080	1969	1	RECREATION CENTER	960							
		S		3081	1969	1	E.M. BERTHING	960							
		S		3082	1969	1	E.M. BERTHING	960							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		S		3083	1969	1	CPO GALLEY	960							
		S		3084	1969	1	CPO LOUNGE	960							
		S		3119	1982	1	WEATHER SHELTER	112							
		P		3121	2003	1	FIRE PROTECTION PUMP/VALVE	240							
		S		3121	1969	0	BASKETBALL COURT	4,700							
		S		3123	1969	0	SOFTBALL FIELD (LIGHTED)	6,944							
		P		3124	1969	0	FLAGPOLE								
		T		3125	1969	1	SEWER LIFT STATION	126							
		S		3127	1969	0	GATE ENTRANCE STRUCTURES								
		T		3128	1969	1	BUS STOP SHELTER	168							
		S		3129	1969	1	MLO OPEN STORAGE	90,360							
		S		3130	1969	0	A CO VEHICLE WASH RACK	1,700							
		T		3134	1980	1	EMBARK WAREHOUSE	8,000							
		P		3157	1983	1	ARMORY	3,165							
		P		3165	1985	0	BRAVO CO. OPEN STORAGE	37,620							
		P		3167	1986	1	SZ TRAINING FACILITY	800							
		P		3189	1989	0	VEHICLE WASH PLTFRM CO. "A"	200							
		T		3192	2001	1	SEA BEES SUPPLIES WHSE	11,200							
		S		3193	2003	1	PAVILLION BY BLDG 3019	432							
		S		3194	2003	1	PAVILION BY BLDG 3168	49							
		S		3195	2003	1	WEAPONS CLEANING SHELTER	960							
		S		4104	1964	1	PW MAINTENANCE STGE	840							
		S		4108	1960	0	OTHER PAVED AREAS/HELO PAD	5,931							
		P		4113	1966	1	SERVICE BLDG	285							
		P		4115	1966	0	WATER CISTERN	289							
		P		4118	1966	0	TOWER FOR ACQ	196							
		S		4119	1972	1	WEAPONS RANGE OPS TOWER	100							
		P		4121	1971	1	STORAGE BLDG FOR RANGE SUPPO	960							
		P		4122	1971	1	OPERATIONAL STGE	960							
		P		4125	1988	1	PAINT LOCKER	56							
		P		4126	1987	0	COLLIMATOR TOWER (70 H)								
		P		4128	1988	1	COMP DEHYDRATOR SHLTR	64							
		P		4132	1986	0	POT WTR TANK ABV GRND								
		P		4135	1988	2	ROC BLDG	18,500							
		P		4136	1988	0	ANTENNA COMMUNICATION								
		P		4137	1993	2	RANGE OPNS CTR (ROC)	4,800							
		P		4138	1993	1	ROC UTILITY BLDG	1,890							
		P		4510	1975	1	TRANSP/DSPTCH OFF BY B302	512							
		S		4512	1984	1	WEATHER SHLTR BY HELO-FIELD	150							
		P		4523	1987	1	MICRO-WAVE BLDG	143							
		S		4524	1989	1	DINING FACILITY	1,152							
		S		4525	1989	1	GALLEY/DINING FACILITY	1,152							

Zone	Subzone	Const. Type	Bldg. Type	Facility No.	Year Built	No. of Stories	Facility Name	Area in s.f.	Gen. Condition	View	Bldg Value	Oper. Sign	Recent Renov.	Adapt. Re-use	Comments
		S		4526	1989	1	BEQ	1,152							
		S		4527	1989	1	BEQ	1,152							
		S		4528	1989	1	BEQ	1,152							
		S		4529	1989	1	BEQ	1,152							
		S		4530	1989	1	BEQ (CB'S)	1,152							
		P		4531	1996	1	EOD BOQ	2,789							
		P		4532	1999	1	PW VEHICLE MAINT SHOP	4,000							
		P		4701	1985	0	WATER TANK BY BOATHOUSE C.M.								
		P		4702	1982	1	BOATHOUSE CERRO MATIAS	1,400							
		P		4703	1986	1	FILLING STA @ OP-1	225							
		P		4707	1986	0	LUBRICAND STGE (DIESEL)								
		P		4710	1988	0	BOMB DISPOSAL MAG	68							
		P		4711	1988	4	RANGE OPNS CTR OP-1	10,058							
		P		4713	1993	1	ROC STGE BLDG	1,000							
		P		4715	1988	0	SMOKE-SOUND ROCKET SMLTR MAG	68							
		P		4903	1983	0	POTABLE WATER TANK								
		P		3126B	2003		MOGAS FUEL TANK								
		P		3126C	1996		DIESEL FUEL TANK								
		P		56A	1996	0	DBLE/WALL FIBERGLASS DFM TNK								
		P		56B	1996	0	DBLE WALL FIBERGLAS DFM TNK								
		P		88A	1944	1	BACKFLUSH TNK WTR FLTRS	378							
		P		88B	1944	0	BACKWASH POT WAT STO TANK 88								
		P		DN2-3A	2003	1	AC SHELTER AT DN2-3	100							
		S			1963	0	GCA HARDSTAND	4,203							

Appendix B:
Container Terminal Possibilities at Naval Station Roosevelt Roads

MOFFATT & NICHOL

Appendix B: Container Terminal Possibilities at Naval Station Roosevelt Roads

MEMORANDUM:
TO: Daniel Malachuk, Elliot Stein / C.B. Richard Ellis
FROM: Patricia McNeal
cc: Files 5275-01, J. Headland, T. Purvis
Date: June 9, 2004
P/N: 5275 Naval Station Roosevelt Roads
Re: Container Terminal Possibilities at Naval Station Roosevelt Roads

A container terminal was considered as part of the base reuse plan for Naval Station Roosevelt Roads. Such a facility would accommodate Post-Panamax vessels, include a total berth length of 5,000 feet, and a backlands area of approximately 172 Acres for container storage. Using high density storage estimates, the resulting port would have a capacity of one million teu/year. This preliminary investigation includes the major issues associated with constructing a container terminal at NSRR. It should be noted that other issues likely exist, such as permitting, environmental impacts and constructability for example, that are considered beyond the scope of this general overview. One major factor to consider is cost of developing a container terminal at NSRR. The two alternatives considered in this study would cost on the order of US$1 billion and US$850 million, respectively, for land development, dredging, paving utilities and terminal equipment. These costs do not take into account soil stabilization, building demolition, and many other considerable factors that could increase the above listed costs substantially. Significant issues with terminal development are described below:

Dredging and Navigation

The existing channel at Roosevelt Roads is dredged to a depth of 40 feet at a width of 1,000 feet. Several areas close to the bulkhead currently have depths between 32 and 38 feet below low water. A container terminal for Post-Panamax ships would eventually need a low water depth of 50 feet. In order for vessels to navigate safely into and out of Roosevelt Roads, dredging would be required seaward of the harbor. The navigation charts for this area also show that there are high spots in areas seaward of the harbor into Pasaje de Vieques and Pasaje Radas Roosevelt. To approximate the dredging required, a channel of approximately 250 meters was assumed and projected out to deep (-60 feet) water (see attached Sk 1). Dredging is required over a length of approximately 12 miles, but only in isolated locations where water is shallower than 50 feet. It is important to note that there are coral beds within this 12 mile channel and that coral removal would raise environmental issues.

Alternatives for Container Terminal

There is not currently sufficient area to locate a container terminal at Roosevelt Roads. In order to create a site of sufficient size, either filling a portion of the harbor or extensively excavating the hillside adjacent to the existing piers would be necessary, as indicated in the outline below.

- The land area north of the existing bulkhead is limited. In order to create a backland area of sufficient size, the existing hills would have to be excavated (Alternative A) or land area fronting the existing bulkhead will have to be reclaimed (Alternative B) (see attached Sk 2 and Sk 3). The cost associated with excavation or reclamation would be significant depending on geotechnical characteristics of the material to be excavated or to be used as fill. Both options would require construction of a new bulkhead at the wharf face. Reclamation could be an environmental issue as it would cover existing bay bottom. In Alternative A, the proximity of the existing hospital may be problematic. The foundations for the hospital would likely require analysis and/or monitoring during construction to assure the foundation is not compromised by cutting into the hill it is currently built upon. In order to provide a stable plane at the face of the excavated hill, it is likely that a retaining wall of significant dimensions would need to be installed.
- The existing site may require some degree of environmental clean up (e.g. fuel storage tanks in the area and other potential sources of soil contamination.) Clean up cost is difficult to estimate without environmental sampling and testing.
- The existing fuel pier bisects the harbor and would have to be demolished to create berthing space. The fuel pier is likely to be critical to the operation of the airport, although airport operations are outside the scope of this study and are included in a Master Plan being developed by the Puerto Rico Ports Authority.

Demolition

With a berth length of 5,000 linear feet parallel to the bulkhead, the existing marina would need to be demolished. The fuel tank farm would need to be demolished under Alternative A. Substation India is also affected by the container terminal size and would need to be relocated, at a minimum, for each option. Other structures and utilities may need to be demolished for either alternative. These were not considered in this exercise and it should be noted that other issues likely exist.

Landside Transportation Infrastructure and Off-terminal Land Area

Base roads are in fair condition and the port would be easily accessible to the existing highways. An analysis of truck traffic on the roads within the base would have to be completed to determine impacts on adjacent properties. At a minimum, it is likely that a dedicated port road would be required within the port area to separate port traffic from non-port traffic to and from Zones 6 & 7.

Available Areas for Value Added Warehousing

There are buildings in the area which could conceivably be converted to warehousing for performing value added functions.

Permits

Dredging, filling and construction permits, among others, would be required for either the excavation or reclamation. It could take several years to procure the necessary permits.

Cut and Fill Volumes

Alternative A would require dredging of approximately 20.4 million cubic meters of material (this does not include side slopes and pay overdepth which could add up to 20% additional material), excavation of approximately 5.8 million cubic meters of material from land and fill of approximately 243,000 cubic meters of material. Assuming site material is reusable as fill, this would result in total off site disposal of approximately 26 million cubic meters of material.

Alternative B would require dredging of approximately 17.4 million cubic meters of material (this does not include side slopes and pay overdepth which could add up to 20% additional material), excavation of approximately 580,000 cubic meters of material from land and fill at wharf face of approximately 10 million cubic meters of material. Assuming site material is reusable as fill, this would result in total off site disposal of approximately 8.2 million cubic meters of material.

Construction Schedule

Landside construction could occur simultaneously with dredging, and consequently, this alternative could be completed in less time than Alternative B. For Alternative B, if dredge material was used to fill in the terminal storage yard, the site would have to be dewatered and possibly surcharged to stabilize it before constructing bulkhead and dredging berths.

	ALTERNATIVE A Cut Option				ALTERNATIVE B Fill Option			
	Quantity	**Unit**	**Unit Price**	**Total Price**	**Quantity**	**Unit**	**Unit Price**	**Total Price**
1a. Demolition [1]				***$200,000***				***$200,000***
Fuel Pier and Pier 1	*5,600*	*M^2*	*$270*	*$1,600,00*	*5,600*	*M^2*	*$270*	*$1,600,00*
Pier 2	*1,400*	*M^2*	*$270*	*400,000*	*1,400*	*M^2*	*$270*	*400,000*
1b. Dredging				***$416,200,000***				***$416,200,000***
Dredging and Disposal [2]	*20,400,000*	*M^3*	*$17*	*$346,800,000*	*17,400,000*	*M^3*	*$17*	
Overdepth and Side Slope	*1*	*LS*	*$69,360,000*	*$69,400,000*	*1*	*LS*	*$59,160,000*	*$59,200,00*
2. Fill								
Fill [3]	–	*M^3*	–	–	–	*M^3*	–	–
2. Excavation and Hauling				***$126,300,000***				***$13,900,000***
Cut [4]	*5,800,000*	*M^3*	*$20*	*$116,000,000*	*6,000,000*	*M^3*	*$6*	*$360,000*
Grading and Compacting	*641,025*	*M^3*	*$16*	*$10,300,000*	*641,025*	*M^3*	*$16*	*$10,300,000*
3. Pavement, Utilities and Drainage				***$91,700,000***				***$91,700,000***
Pavement, Utilities and Drainage	*694,444*	*M^2*	*$132*	*$91,700,000*	*694,444*	*M^2*	*$132*	*$91,700,000*
4. Marine Structures				***$100,100,000***				***$100,100,000***
Container Wharf	*1,525*	*LM*	*$65,600*	*$100,100,000*	*1,525*	*LM*	*$65,600*	*$100,100,000*
5. Buildings				***$15,400,000***				***$15,400,000***
Gate	*1*	*LS*	*$3,400,000*	*$3,400,000*	*1*	*LS*	*$3,400,000*	*$3,400,000*
Administration Building	*1*	*LS*	*$4,000,000*	*$4,000,000*	*1*	*LS*	*$4,000,000*	*$4,000,000*
Maintenance Building	*1*	*LS*	*$6,000,000*	*$6,000,000*	*1*	*LS*	*$6,000,000*	*$6,000,000*
Misc. Building	*1*	*LS*	*$2,000,000*	*$2,000,000*	*1*	*LS*	*$2,000,000*	*$2,000,000*
6. Electrical Supply				***$15,000,000***				***$15,000,000***
Sub-Station Allowance	*1*	*LS*	*$15,000,000*	*$15,000,000*	*1*	*LS*	*$15,000,000*	*$15,000,000*
Subtotal				***$766,700,000***				***$593,100,000***
Contingency			*25%*	*$191,700,000*			*25%*	*$148,300,000*
Subtotal Construction				***$958,400,000***				***$741,400,000***
Container Handling Equipment Allowance				***$115,000,000***				***$115,000,000***
Cranes / RTGs/Hostlers				*$115,000,000*				*$115,000,000*
TOTAL				**$1,073,400,000**				**$856,400,000**

Notes: Assumptions and Exclusions:

1 Demolition costs include pier demolition only. The proposed port is located in previously developed area. As such, a significant amount of demolition is required to construct the port, including buildings, fuel tanks, etc. *Cost of that demolition is not included here.*

2 It is assumed that all dredge waste materials are disposed of at sea.

3 Fill is included under dredge cost. Surcharging and/or wick drains to consolidate dredged materials used as fill may be required—the need for soil consolidation *will significantly increase project cost* and schedule. *Cost of soil stabilization is not included here*.

4 For Alternative A, cut includes hauling offsite. For Alternative B, cut includes hauling onsite for use as fill. It is assumed that all materials are excavated with hydraulic excavators—no provisions made for drilling and blasting. It is assumed that a retaining wall would be required at the face of the excavated hill to stabilize the hill. *Cost of wall is not included here.*

5 It is assumed that road improvements would be required outside of the port's limits. *Cost of road improvements not included here.*

6 *Cost of relocating Substation India is not included.*

7 Environmental concerns have not been accounted for. This includes land reclamation (Alternative B) and permitting for both alternatives. *Costs for environmental remediation and mitigation are not included here.*

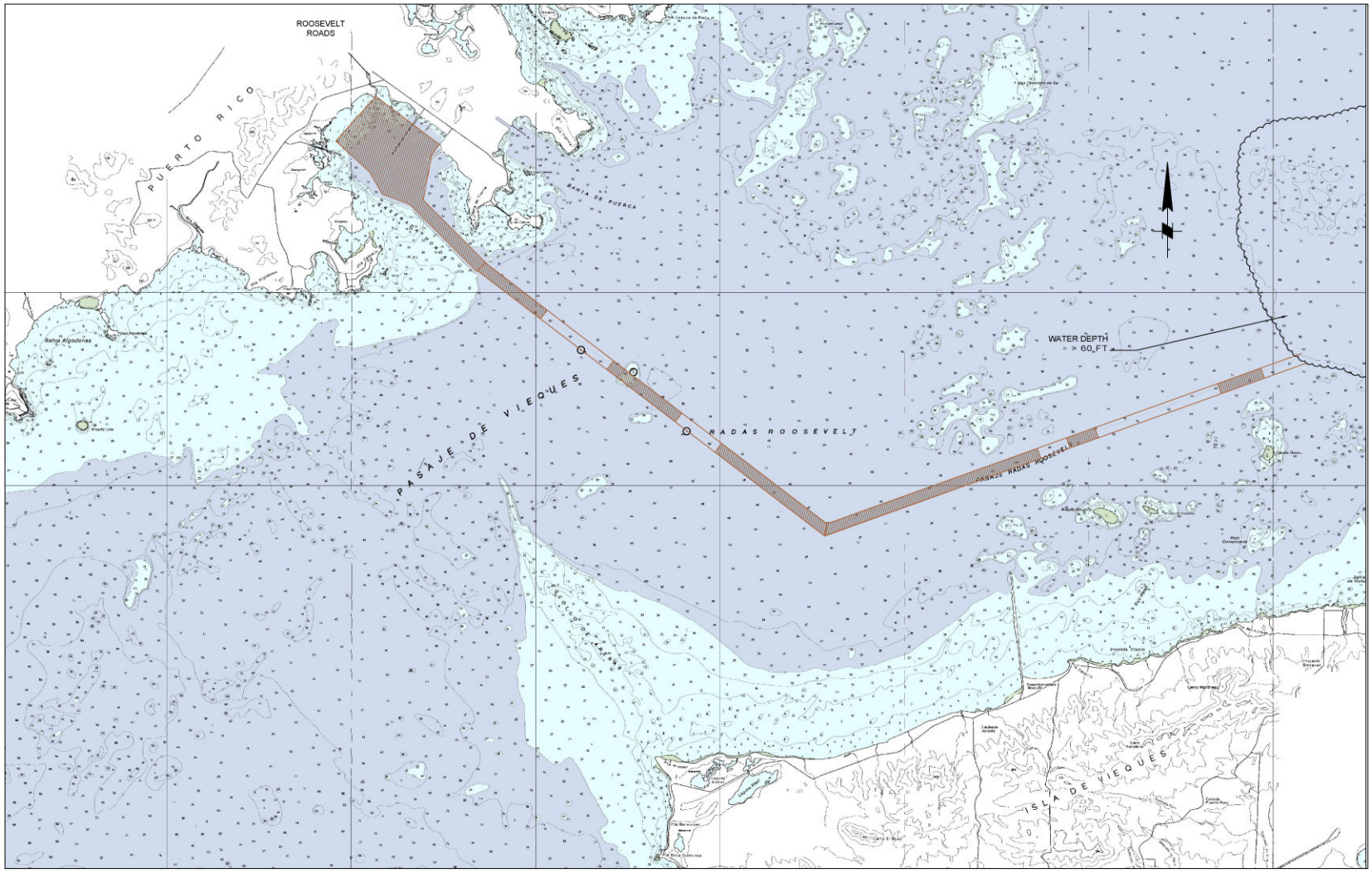

Figure B.1
Required Dredging at Naval Station Roosevelt Roads

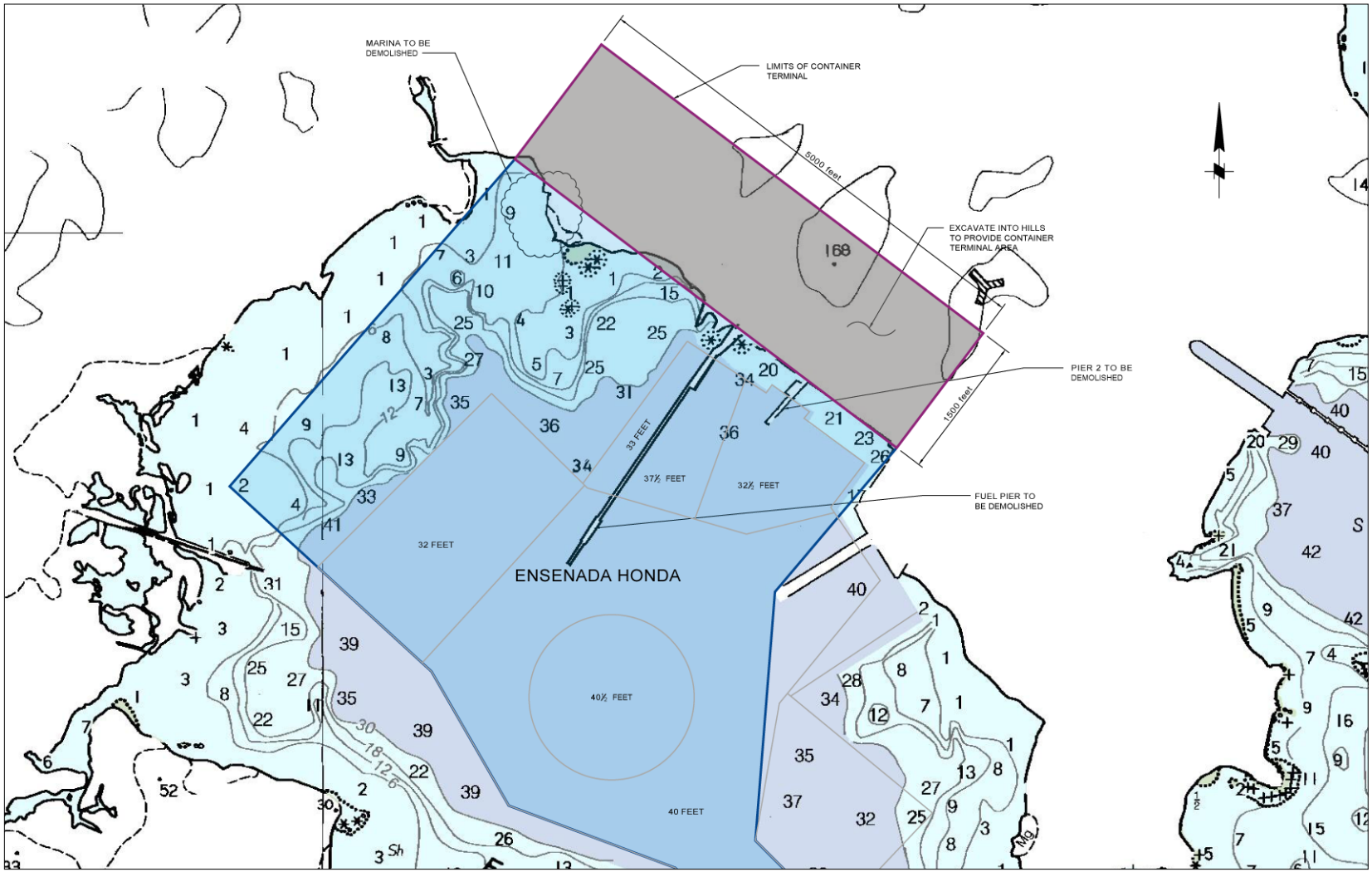

Figure B.2
Alternative A
Harbor Dredge Limits at Naval Station Roosevelt Roads

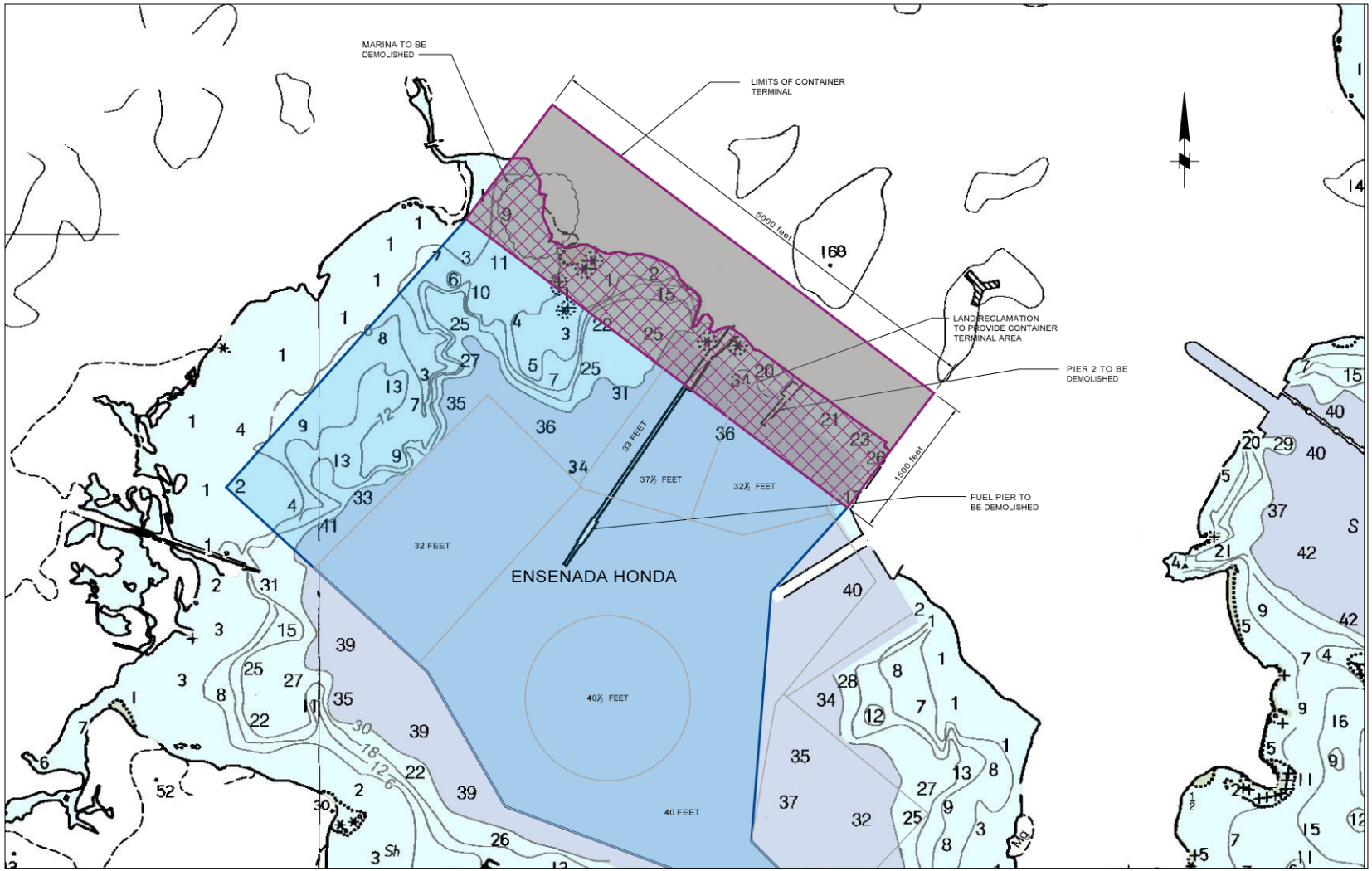

Figure B.3
Alternative B
Harbor Dredge Limits at Naval Station Roosevelt Roads