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CHOICES FOR CHANGE

Alternatives for Stamford's Waterfront

STAMFORD PLANNING BOARD

RALPH M FIELD ASSOCIATES

westport, ct

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Alternatives for Stamford's Waterfront

Submitted To:

STAMFORD PLANNING BOARD

Prepared By:

RALPH M. FIELD ASSOCIATES, INC.

Westport, Connecticut

August 16, 1983

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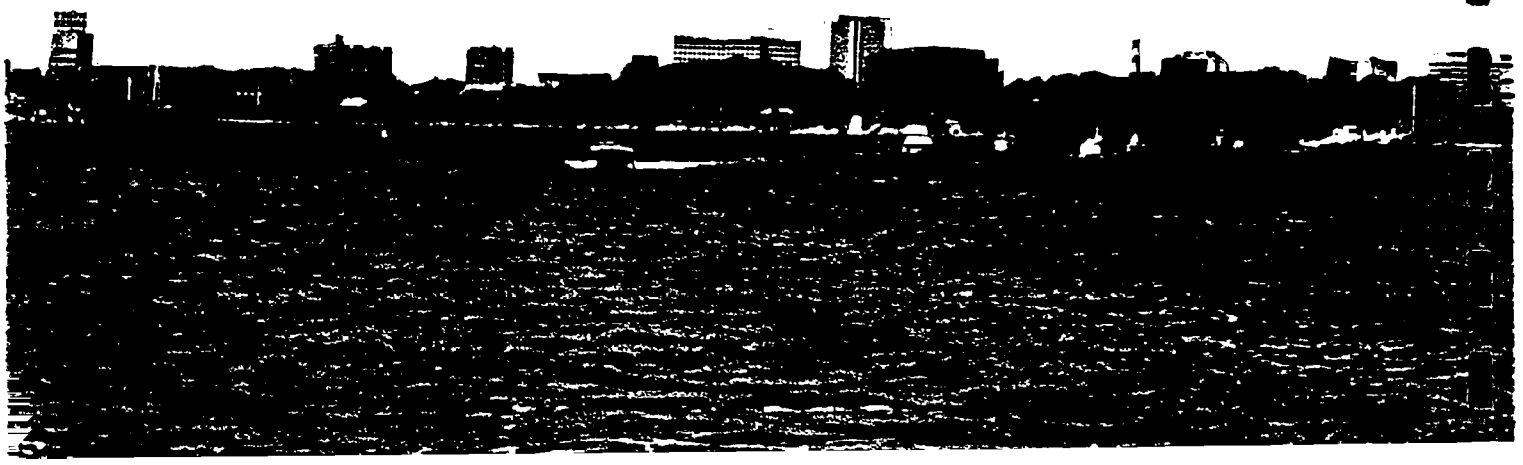

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Ralph M. Field
President, RMFA, Inc.

INTRODUCTION

This report explores land-use policy, planning, and zoning issues arising out of possible future development of waterfront property owned by Northeast Utilities (NU) in the South End of Stamford, Connecticut. The report has been prepared as part of the City of Stamford's ongoing efforts to develop — in accordance with the policies and standards established by the Connecticut Coastal Management Act (CCMA) of 1978 — a comprehensive management program and plan of development for its coastal area.

Northeast Utilities (NU) is the single largest property owner in the South End, owning 42.43 acres of property between Washington Boulevard-Dyke Lane and the West Branch of Stamford Harbor. NU's property comprises three distinct parcels (see Figure 1), each currently used for different purposes:

The Yacht Haven West Site. The southernmost parcel, containing 14.35 acres, is leased to Yacht Haven, Inc. and is the site of Yacht Haven West, one of the largest privately-operated boatyard/marina facilities on the East Coast. NU acquired the YHW Site in 1970 for future utility-related use.

The Utility Site. The central parcel of 25.91 acres is used by NU for utility-related activities, including liquefied petroleum gas (LPG)/liquefied natural gas (LNG) storage and transmission as well as for office, garage, and other storage uses.

The Pitney Bowes Parking Site. The northernmost parcel, containing 2.17 acres, is currently leased to Pitney Bowes for use as a parking lot.

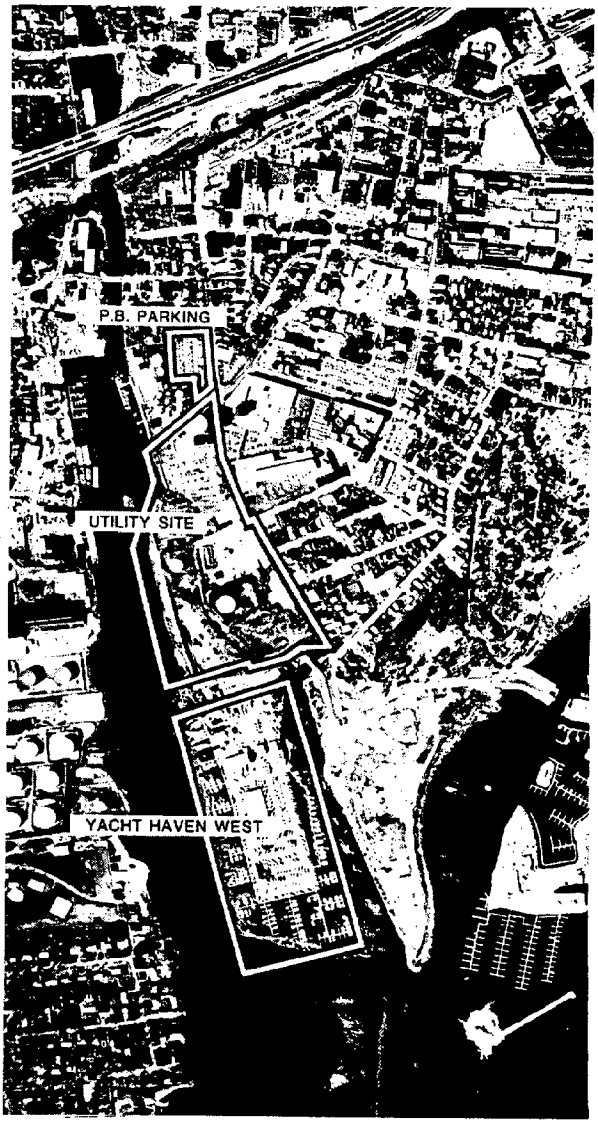


Figure 1: Northeast Utilities' Property in the South End

NU recently evaluated its need for South End land relative to utility needs, including a possible future power plant as well as present activities. Two powerplant options now being explored could generate up to 200 megawatts of electric energy on the Utility Site. Because of the relatively small size of the power plants now being considered and the type of generating technologies under consideration, NU no longer considers it necessary to retain the YHW Site for future utility-related use. As a result, NU has initiated preliminary planning activities for a major nonenergy, real estate development on the YHW Site. This suggested development, which would contain 800 luxury condominium units, has been presented by NU as the most viable use of this land now considered "excess" in terms of utility needs.

As indicated by NU, a major impetus in the Utility's study of redevelopment options for the YHW Site is the current valuation of the site for tax purposes. The City's most recent property revaluation (effective October 1, 1981) represents a thirteen-fold increase, in a period of four years, in the assessed value of the YHW Site.

As part of its efforts to develop a comprehensive municipal program to guide the use and management of the City's natural and man-made coastal resources in accordance with the CCMA (or "CAM" Act), the Stamford Planning Board has increasingly focused its attention on the NU property for the following reason: Due to the size, waterfront location, and relative underutilization of this property, the future disposition of this land could have a profound and lasting impact on the future of the entire South End and the Stamford waterfront.

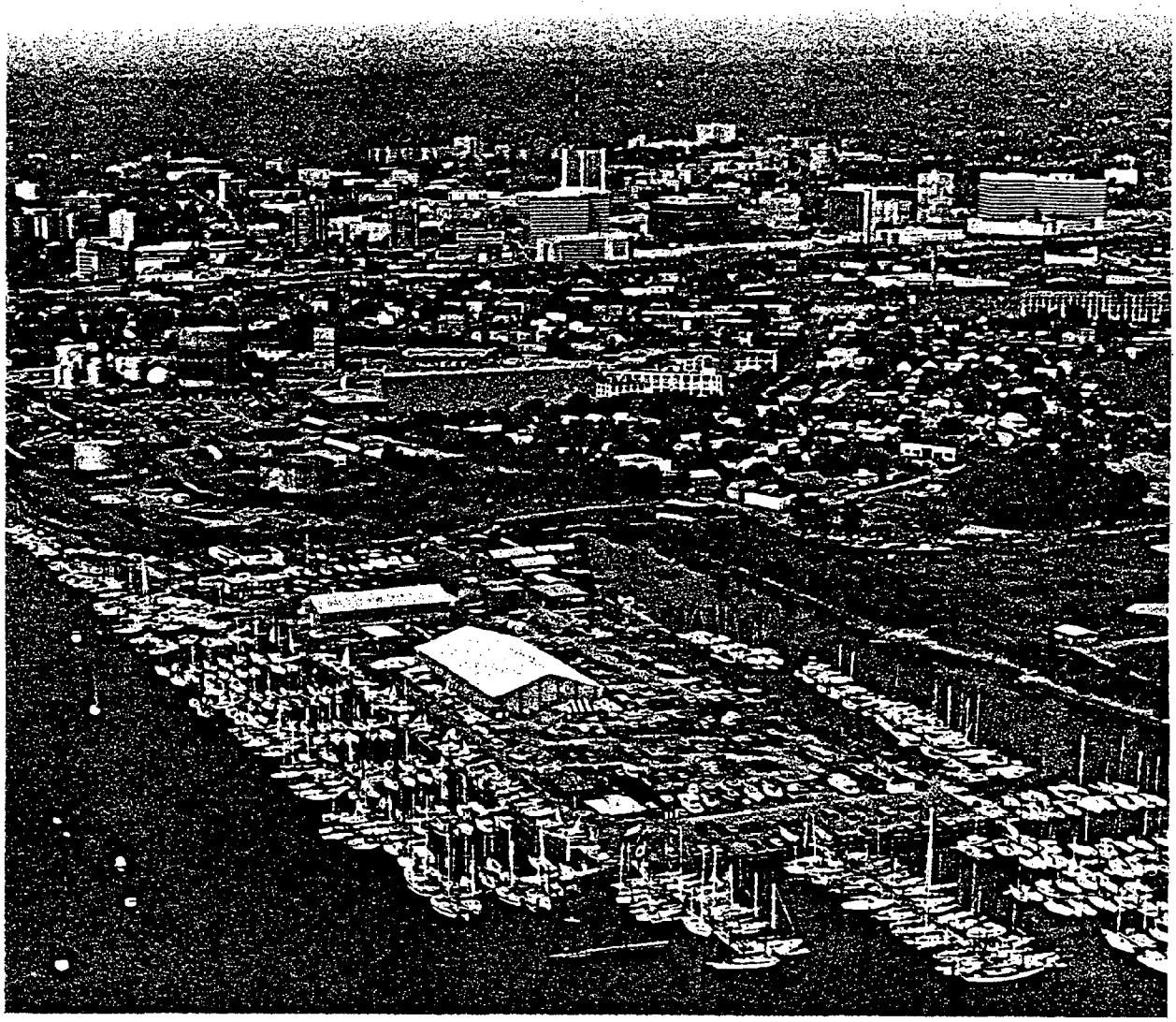
On March 7, 1983, NU's consultants — Raymond, Parish, Pine & Weiner, Inc. —presented to the Stamford Planning and Zoning Boards a preliminary concept plan for redevelopment of the YHW Site as well as a small portion of the Utility Site. The purpose of the presentation, as expressed by representatives of NU, was to solicit informal response from the two Boards prior to the preparation of a detailed development plan. (It was understood by all parties that the response of Board members at this meeting would not prejudice any decisions the Boards might later be called upon to make.)

Because of the importance of the NU property to the South End community as well as to the city and the larger region, the Planning Board has devoted special effort to the formulation of a development strategy for the property. This report and the study it summarizes have been part of this effort. The report is intended to:

- Evaluate the residential development plan presented by NU's consultant in terms of the pertinent land-use planning, policy, and zoning issues.
- Present several alternative development concepts representing project options worthy of further investigation and identify a preferred development concept.
- Recommend policy guidelines for municipal review and evaluation of subsequent development plans submitted by NU for this property.

PART I:

SITE AND SITUATION



CHAPTER 1: THE SOUTH END: PLANNING AND DEVELOPMENT CONTEXT

Future development of the Northeast Utilities (NU) property will profoundly affect the South End Community, and the Stamford waterfront. This chapter describes the planning and development context within which decisions about the development of this property must be made. The first of the chapter's two sections describes the conditions that are giving rise to pressures for change in the South End. The second section describes the present status of ongoing municipal planning and zoning activities affecting the NU property.

DEVELOPMENT OPPORTUNITIES AND CONSTRAINTS IN THE SOUTH END AND COASTAL TARGET AREA[1]

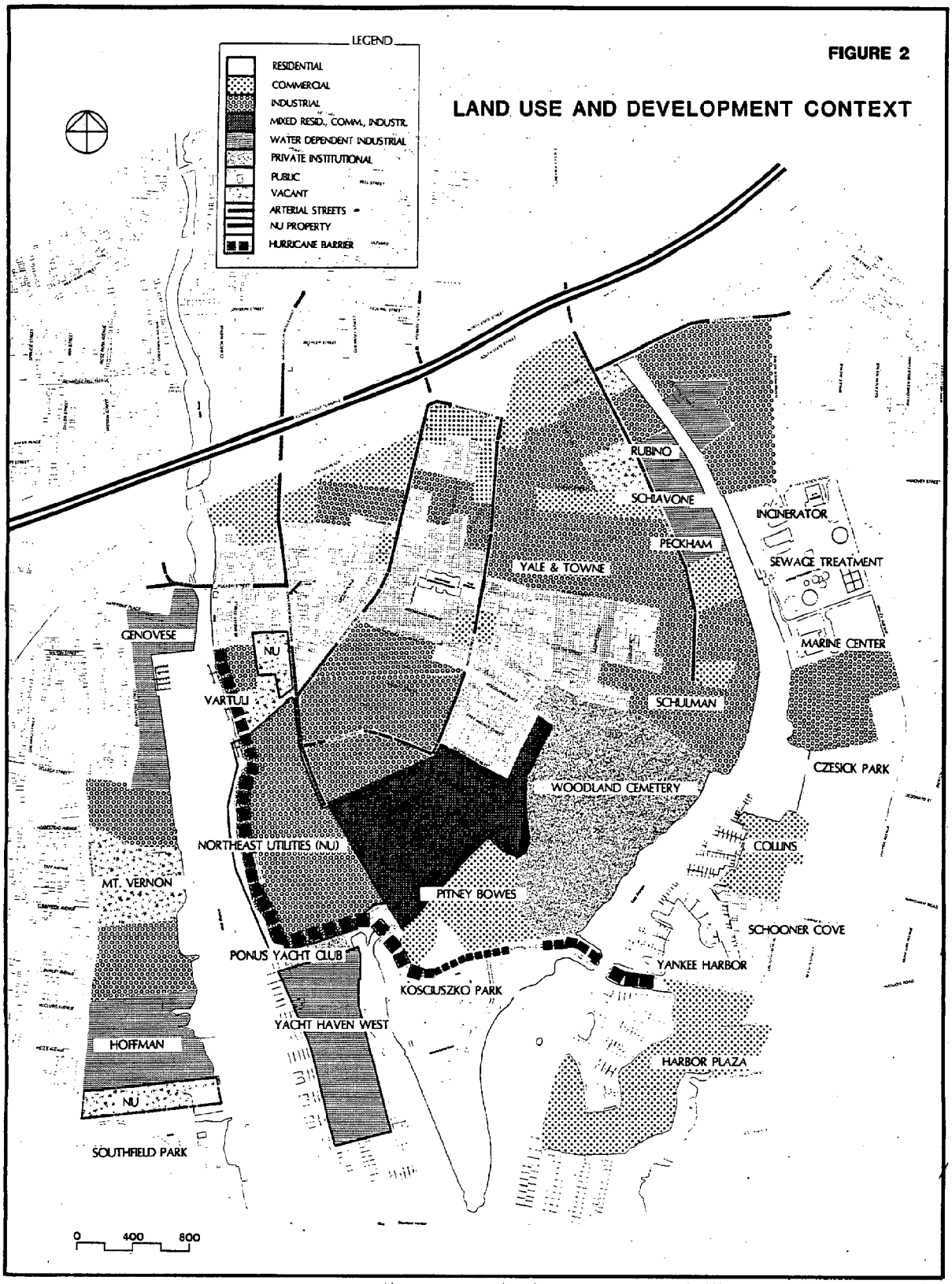
A combination of regional and local factors have contributed to Stamford's dramatic growth during the past decade. These factors have also given rise to more recent pressures for growth and change in the South End. Within the South End, the most intense pressures for change are currently focused on a group of waterfront properties including the NU property.[2]

1. Much of the material in this section is drawn from the report "Planning for Stamford's Coastal Target Area, Coastal Planning Document No. 4" prepared for the Stamford Planning Board by RMFA, October 27, 1982.

2. These waterfront properties , are included in the so-called "Coastal Target Area" generally defined as the land adjacent to the East and West Branches of Stamford Harbor. In the context of ongoing coastal planning efforts, the target area designation is used to identify that portion of Stamford's coastal area presently subject to the most intense pressures for change and which, in turn, offers the greatest opportunities for obtaining economic and social benefit from the rebuilding and redevelopment activities that can reasonably be expected.

FIGURE 2

LAND USE AND DEVELOPMENT CONTEXT



Waterfront Land Uses

As shown on Figure 2, the land adjacent to the East and West Branches of the harbor contains a wide variety of land uses including uses genuinely dependent on the waterfront location, uses enhanced by the waterfront location, and uses with little or no functional relationship to the waterfront.

Water dependent uses include the heavy industrial Telesco and Genovese fuel and building materials operations, the Rubino and Schiavone scrap metal yards, the Peckham bituminous products operation and the Hoffman Fuel petroleum storage and distribution facilities, as well as the Yacht Haven West boatyard and marina.

A large amount of publicly-owned land is also found on the waterfront, the most prominent parcel being the 22-acre Kosciuszko Park. Other public sites include Southfield and Czesick waterfront parks, and a 23.5 acre parcel that provides space for the Stamford Marine Center (containing the headquarters of the Oceanic Society) as well as municipal incinerators and a wastewater treatment plant.

In recent years, office and residential projects of a kind not previously seen in the area have been initiated on the waterfront and several other new developments have been proposed. Among these projects are Harbor Plaza containing the corporate headquarters of the Continental Group as well as other offices; the corporate headquarters of Pitney Bowes now under construction adjacent to Kosciuszko Park; the Collins office project approved for construction on Lindstrom Road; and the Schooner Cove and Yankee Harbor residential condominium developments. Proposals for two other waterfront office developments (on the Schulman and Vartuli sites) were rejected by the Stamford Zoning Board; both applicants have appealed the Board's decision.

The waterfront properties of the South End will also affect, and be affected by, development in the remainder of the city. For example, the future use of interior properties such as the 21-acre Yale & Towne

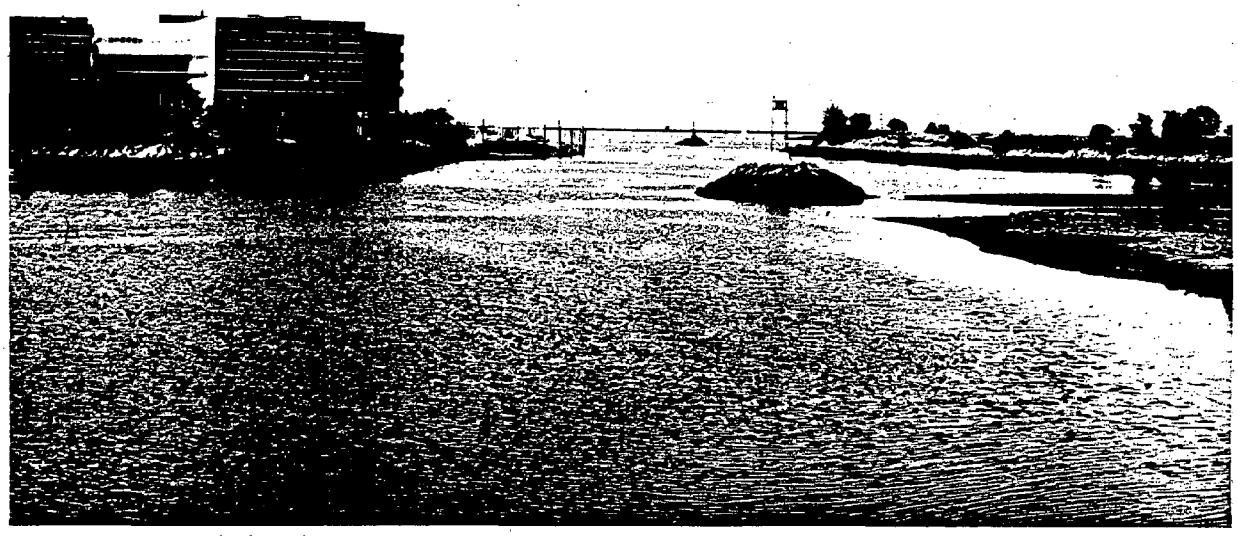


Figure 3: Harbor Plaza, Stamford Harbor & Kosciuszko Park from the East Branch

parcel are intimately tied to the development of sites on the waterfront. On a larger scale, there are important relationships between development of these waterfront sites and development of the nearby Central Business District.

Forces for Change

The pressures for new development on the waterfront are tied to the major regional factors which have contributed to the spectacular growth of the City's CBD — factors such as: Stamford's proximity to New York City; Connecticut's favorable tax climate; and the amenities offered by Fairfield County living (including proximity to the waters of Long Island Sound). Additional pressures for change are generated by such local conditions as: increased demand for housing as a result of new office and commercial development; the demand for new office space at less than prime rents.

Change and new development, while representing opportunity for economic expansion, result in some dislocation of existing uses and residents. The areas most vulnerable to these pressures are areas such as the South End — older areas having vacant or underutilized land or buildings that can accommodate new growth. When the forces of change clash with an established community structure, such as in the South End, some dislocation invariably results. Community tensions are also created which are generally resolved through a combination of planning, regulation, negotiation, and litigation. The challenge facing Stamford's political, business, and community leadership is to respond to this conflict with solutions that are creative and equitable and which take optimum advantage of positive market forces.

Development Constraints

Although pressures for development are intense in the South End, there are also important constraints limiting change. Municipal infrastructure imposes one type of constraint. Another type of constraint is imposed by public policies, including the expressed policy of focusing new office development in Stamford's designated Central Business District.

Limitation of streets and sewers impose the primary infrastructure constraint. Constricted access to and from the entire South End through the five main access points, as well as the congestion on I-95 and the I-95 access ramps, has been extensively documented. Traffic studies by the City show the heavily used Atlantic Street and Washington Boulevard underpasses to be functionally obsolete with inadequate capacity and vertical clearance. The physical barrier of I-95 and the railroad which necessitates these underpasses and separates the South End from the rest of the City also discourages pedestrian traffic to and from the South End. Furthermore, the capacity of the Pulaski Street bridge limits the flow of traffic at this access point.

The South End interior street network also causes problems. For example, there are no east-west arterial connections, and the offset intersection at Washington Boulevard and Dyke Lane impedes traffic flow.

The sanitary sewer system in the South End is generally in poor condition with many old and inadequately sized lines. With or without significant growth in the area, these lines must eventually be rebuilt and replaced and represent a constraint (in terms of extra development costs) to new development in the area. For example, the site of the new Pitney Bowes headquarters building is presently serviced by inadequately sized lines and the construction of a new sewer line is to be financed jointly by Pitney Bowes and the City. At the present time the existing problems with the sanitary sewer system in the South End are primarily related to the collection system rather than to the capacity of the wastewater treatment facility.

Another major factor influencing development options on the waterfront and in the larger South End area is municipal policy regarding the CBD. As adopted in the 1981 Master Plan amendment, it is the policy of the City is to focus new office development in the CBD. Two significant office

anchors have, however, been recently established on the waterfront: the Pitney Bowes headquarters in the South End and the Harbor Plaza complex across the East Branch. These two spillovers from the CBD increase the likelihood of continuing pressures for office development on the waterfront and in the South End. The extent to which the location of such additional office development will undermine the functional integrity and economic strength of the CBD has yet to be evaluated. If major new office structures are to be restricted to the designated CBD in the future, however, it is clear that strong, coherent and consistent public controls will be needed.

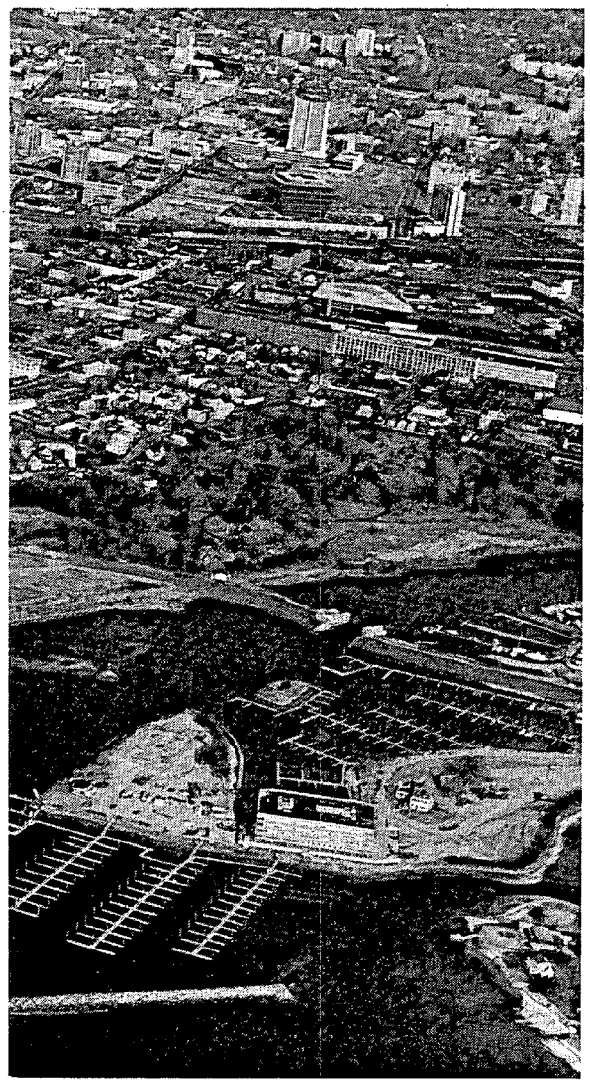


Figure 4: Harbor Plaza Under Construction; CBD in the Background

PRESENT STATUS OF PLANNING AND ZONING ACTIVITIES

Land Use Planning

Several major planning studies have addressed the South End in recent years and the Planning Board has been preparing and evaluating revisions to the City's Master Plan since 1980. The City's coastal planning effort, initiated in 1981 to carry out the policies of the Connecticut Coastal Management Act, has focused additional attention on the South End waterfront. A primary goal of this effort is a plan that will address the unique problems and opportunities facing the South End and guide long-term development in a manner that best serves the needs of the community. A commonality of all these planning efforts has been the special importance each has attached to the Northeast Utilities property, the largest piece of land held by any one property owner in the South End. Because of the size of the property, its present relative underutilization, and the special attributes of its waterfront location, its future disposition has been recognized as having the potential to influence the long-term course of future development throughout the entire South End.

Of the major plans and planning studies, the following provide particular insight into public and community thinking regarding the future of the South End and its waterfront:

- The 1977 Amendment to the City's Master Plan recognized a variety of land uses as appropriate for the interior and waterfront of the South End. A portion of the NU property, including the YHW Site was designated for "Shorefront Commercial" use, a category that sought to recognize the special attributes of the waterfront. The remainder of the NU property was designated for industrial use.

- To assist the city, the Stamford Economic Assistance Corporation (SEAC) commissioned Stamford's South End, a planning study carried out by I.M. Pei and Partners. Completed in 1980, this study presented a conceptual development plan for the future of the South End. The proposed land use plan and the specific community goals it was designed to achieve were developed through consultation with groups representing the full spectrum of interests in the South End Community.[3]

  Stamford's South End identifies the NU property as one of two key sites, the future disposition of which will have a profound impact on the entire South End. Residential use of the Utility Site would greatly contribute to restoring the neighborhood vitality of the South End, the plan concluded. In fact, the Utility Site represents "the most significant opportunity for new long-term residential development in the entire City of Stamford".

- In 1980 the Planning Board began to prepare major city-wide revisions to the 1977 Master Plan. Proposed plan amendments grew out of a series of community workshop sessions and went to public hearing in November 1981. Amendments subsequently adopted by the Planning Board place the NU property in three land-use categories: a "Shorefront Development" land use category "intended to preserve the waterfront for uses which are dependent upon marine access and not enhanced by it," as well as an entirely new land use category — "Commercial, Planned Mixed Use Development." The Shorefront Development category limits land so designated to the following principal uses: water dependent, such as recreational, industrial, and marine sales and service. The category also permits residential development at a maximum density of 29 dwelling units per acre. The revised Master Plan now applies the Shorefront Development category to the Yacht Haven West portion of the NU property and the Planned Mixed Use Development category to the Utility Site between the hurricane barrier and Pacific Street. The industrial category is applied to the northern portion of the Utility Site.

3. This study and accompanying recommendations, although accepted by SEAC, has never been officially adopted by SEAC or by any municipal government agency.

- In October of 1981 the City was awarded a grant by the Connecticut Coastal Management Program to begin developing a Municipal Coastal Program. The CAM Act specifies that a municipal coastal program must ultimately include necessary revisions to the Master Plan as well as revisions to the zoning regulations throughout the entire coastal area. To date, work on the municipal coastal program has focused on Master Plan revisions in that portion of Stamford's Coastal Area where development pressures are greatest and where the issues demand the most immediate attention — the so-called Coastal Target Area including the Northeast Utilities property.

  Implicit throughout this coastal planning effort has been the process of public involvement. This involvement is presently highlighted by the ongoing work of a 28-member Citizen Coastal Advisory Committee. Members of this committee, appointed by the Mayor in June 1982, represent the full spectrum of coastal area interests and are presently involved with land use planning for the Target Area. The Planning Board will evaluate this Committee's recommendations, together with the information and recommendations contained in previously submitted Coastal Planning Documents[4] and other sources. Following this evaluation, the Board will prepare for public hearing any further Master Plan amendments deemed necessary to promote sound management of the land and water resources in the coastal area in accordance with the CAM Act.

Zoning

Although work on the municipal coastal program has necessarily focused to date on revisions to the Master Plan, subsequent work will be directed towards revising zoning and other regulations so that these regulations will "conform to and effectuate the policies and land and water use strategies" of the revised Master Plan. Such zoning revisions in the coastal area will be carried out in the context of the comprehensive city-wide revisions to the zoning text and map that have been ongoing since 1979.

With regard to existing zoning of the South End waterfront and the NU property, there has been no fundamental change in zoning policy for the waterfront since the City's first zoning regulation was adopted in 1926. This regulation classified the entire waterfront — like most other center city land south of the railroad — as heavy industrial. The 1951 Zoning Regulation retained the original industrial zoning, designating the waterfront as M-G, General Industrial, a very permissive classification allowing stores, professional offices and numerous other uses in addition to heavy industry.

There have been only a few changes since 1951 in the zoning map as it applies to the South End. A significant map change that has occurred is the rezoning of some industrially zoned land to residential categories in response to neighborhood sponsored petitions for change. All of the NU property is currently zoned M-G, including YHW and the Utility Site. Since the mid-1960's, new residential development has been prohibited in the M-G district and since February, 1982, the permitted floor area ratio (FAR) in the M-G district has been significantly lowered to 0.5 for offices and 1.0 for other uses.

It is against this background of dynamic growth pressures, recent studies, ongoing planning and zoning activities and the statutory objectives of coastal area management that predevelopment planning studies addressing Northeast Utilities' South End property are being carried out. It is also against this planning and development context that the Planning Board has recently been asked to consider a conceptual plan by NU that would convert the YHW portion of the Utility's property into a major residential condominium project.

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4. "Stamford Coastal Planning Documents, Nos. 1, 2, 3, 4" prepared for the Stamford Planning Board by RMFA, 1982.

CHAPTER 2: THE NU PROPERTY

This chapter describes NU's property in the South End. The purpose of this description is to identify key factors that may affect the suitability of the property for new development. The chapter has three sections: the Stamford Hurricane Barrier, the Utility Site, and Yacht Haven West.

STAMFORD HURRICANE BARRIER

The Stamford Hurricane Barrier bisects NU's property, separating the Yacht Haven West Site (seaward of the barrier) from the remainder of the property.[1] The top elevation of the barrier is 17 feet above mean sea level along the West Branch and across NU's property. Figure 5 shows the barrier's location.

For the most of its approximately 12,000 foot length, the hurricane barrier is a compacted earth embankment with rock facing. Along the upper West Branch, however, and a portion of the west property line of the Utility Site, the barrier takes the form of a reinforced concrete wall. The barrier contains a 90-foot wide navigation opening across the East Branch channel; the opening is closed when a hurricane or other severe storm is imminent.

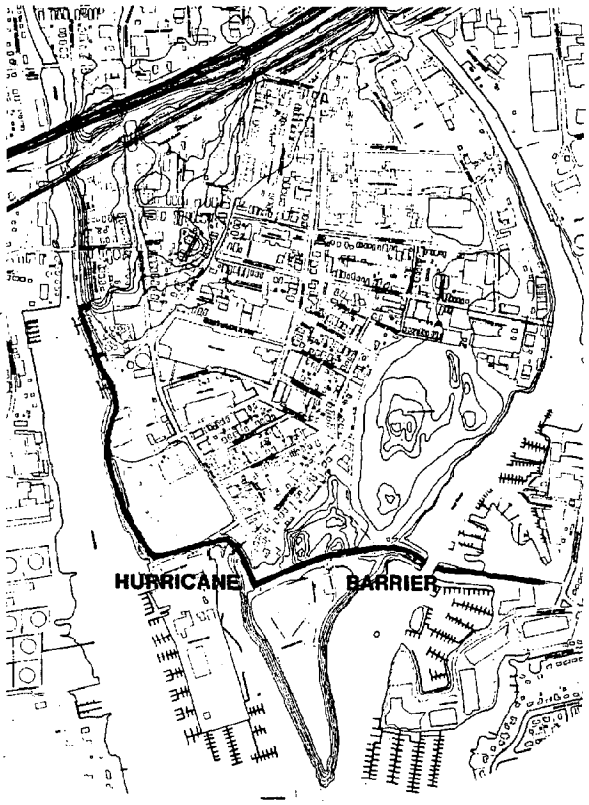


Figure 5: The Stamford Hurricane Barrier

The hurricane barrier, designed and built by the U.S. Army Corps of Engineers, is one of the most prominent physical features of the City's waterfront. Since its completion in 1969 the barrier has had a major effect on land use in the South End by reducing potential damage from coastal flooding.

1. Also positioned seaward of the barrier and between the YHW Site and the remainder of NU's property, is the 1.5-acre parcel owned and occupied by the Ponus Yacht Club.

Design and construction of the hurricane barrier followed a lengthy study of hurricane and other storm induced tidal flooding in the City of Stamford by the Corps of Engineers.[2] This study, part of a larger survey of the entire New England coast with respect to hurricanes and with particular reference to areas where severe flood damage had occurred in the past was authorized by Congress in 1955.

The final report concluded that "the City of Stamford, Connecticut, has sustained heavy damages in the past due to the flooding caused by hurricanes and other great storms and faces the continuing threat of similar damages in the future."

The report also noted that:

> "The cities and towns along the Connecticut coast, including Stamford, although not situated on the open ocean, are subject to flooding from hurricane surges that travel up Long Island Sound from its eastern entrance off Montauk, Long Island. Future storms, other than hurricanes, equal in severity to those experienced in November 1950 and November 1953 would cause damages equivalent to or slightly greater than those that would be experienced in a recurring 1944 hurricane. The need for protection has become urgent, particularly in the South End, a low-lying area between the East and West Branches at the head of Stamford Harbor, which experienced damages of nearly $2,500,000, or 75 percent of the total in Stamford, during the 1954 hurricane. A design hurricane, representative of future potential attacks, derived by transposing the 1944 hurricane, a storm of unusual energy off Cape Hatteras, to a track over water and timed to cause the surge to strike Stamford coincident with a spring tide, is capable of causing over three times the tidal flood damages that would be sustained in a recurring 1938 hurricane. It is obvious that protective measures are needed to safeguard the major damage areas of the city from flooding caused by future hurricanes and other storms."

The report included an assessment of the historical occurrences of hurricanes and other severe storms and associated flood damages; and, following a cost-benefit analysis, presented a description of a recommended plan of improvement—the hurricane barrier—that would provide protection against tidal flooding in the City of Stamford.

Prior to the construction of the hurricane barrier the extent of flooding and flood damage in Stamford was quite substantial following numerous storms. Two of the most notable storms were the hurricanes of September 1938 and August 1954 which inundated the entire South End with up to 5 feet of water.

The following descriptions of these two storm events are taken from the Stamford Advocate:

> 16-22 September 1938 (From: "Stamford Advocate", September 22, 1938)
>
> "Caught in the path of a 50 to 90-mile-an-hour tropical hurricane, Stamford experienced one of the most devastating storms in its history as the terrific wind and tidal wave...brought death to one man, drove families from flooded homes and caused a loss through property damage estimated at several hundred thousands dollars."
>
> "...families (were) removed from sections of the South End last night and early this morning after being marooned for hours by water that lapped treacherously against buildings in its eight-foot rise in many streets...

2. See U.S. Army Engineer Division, New England, Corps of Engineers, Hurricane Survey, Interim Report, Stamford, CT, Boston, MA, April 8, 1958, and Hurricane Protection Project, Stamford Hurricane Barrier, Design Memorandum No. 3., Waltham, MA, October 1962.

"The Stamford Division of the Connecticut Power Company issued a statement saying: At 7 p.m. the tide in the west branch channel rose with unusual rapidity until it reached its maximum height about one hour before the scheduled high tide. This height was over two feet above the bulkhouse of the Connecticut Power Company's electric plant at its docks on South Street. This tremendous tide poured over the dikes and bulkheads and flooded the South End...Sandbags were in use and pumps were adequate to take care of any reasonably unusual condition, but when the tide came up underneath all of the equipment and broke into and flooded the electric station, operation could only be continued until serious difficulty was encountered on one of the generating units..."

"Thousands of dollars damage was reported along the waterfront as the tidal wave lifted valuable yachts and other craft and hurled them against each other at their moorings and against docks and rock-covered shores...

"The dock and pier at Stamford Yacht Club were washed away, leaving only the piles standing..."

25-31 August 1954 (From: "Stamford Advocate", September 1,1954)

"The expected northwest wind that would have kept back some of the force of the water borne in on the high tide on Tuesday failed to materialize and the Sound moved in and took over large portions of the land.

"The South End of Stamford continued to resemble a scene in Venice, Italy today with streets flooded by two to three feet of water. (In Dyke Lane. the depth of water was sufficient to permit transportation by outboard motor although the flood level had receded two feet from the high-water mark of yesterday recorded on the walls of most of the buildings.

"Most of the residents in the low areas, apparently confident that the worst had passed, stayed in their homes. Suddenly, the rising waters swept over the retaining walls and shot over the streets, yards and sidewalks. Cellars were soon filled..."

Flood damages to industrial, commercial, residential and public properties associated with the 1954 event in Stamford amounted to $3,430,000 and approximately 75 percent of this total occurred in the South End according to damage surveys carried out by the Corps of Engineers.

"Industrial concerns with plants located on low ground along the waterfront in the South End area were particularly hard hit. The highly-industrialized area between the West and East Branches suffered a loss of nearly $2,500,000 which represents approximately 73 percent of the total 1954 flood loss in Stamford. Losses to some 280 residential properties and 70 commercial establishments in this area totaled about $670,000."

"In addition to extensive residential, commercial, and industrial losses in Stamford, damages sustained by craft afloat and by automobiles in the flooded area accounted for considerable losses which were not included in the tabulations of damages, or were included only in part, since information on these losses was meager or unavailable. Available evidence indicates, however, that losses of this nature were substantial in both the 1938 and 1954 hurricanes."

The Corps' study also indicated that a recurrence of August 1954 flood heights under 1962 economic conditions would cause losses estimated at $3,250,000 without the hurricane barrier protection.[3] It was estimated that the barrier would eliminate $2,940,000 of those projected losses. In addition to the "damages-prevented" benefits, the barrier would also eliminate certain emergency preparedness costs (evacuation, disruption of normal economic activities, temporary removal of goods and equipment, hauling small craft ashore, etc.) following the issuance of hurricane warnings even if such warnings resulted in only a "scare" or "near miss".

The Corps' Stamford Hurricane Survey and proposed hurricane barrier plan for protection was reviewed by Congress in 1959. Total project cost for the barrier was estimated at $6.58 million, of which $3.74 million would be provided through Federal funding sources and $2.84 would be provided by the City of Stamford and the State of Connecticut. Following state authorization for the issuance of bonds in the amount of $1.3 million and the City's expressed willingness to provide the remainder of the non-Federal funds, the hurricane barrier protection plan was authorized by the Flood Control Act dated 14 July 1960 (Public Law 86.645, 86th Congress).

Construction of the barrier started in May 1965 and was completed in January 1969. It is interesting to note that the existing alignment of the barrier along the waterfront edge and southern perimeter of the NU Utility Site was strongly urged by the Hartford Electric Light Company at the time. HELCO felt that this alignment was necessary to protect its then-operating generating plant (referred to in the above-mentioned Stamford Advocate account of the 1938 hurricane as well as in the following description of NU's Utility Site) and also to maximize protection of the entire parcel in the event of future plant expansion.

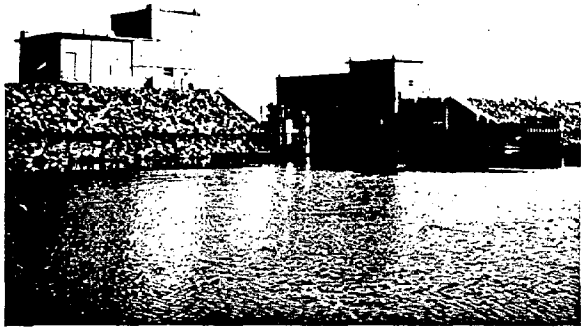


Figure 6: Hurricane Barrier: East Branch Flood Control and Navigation Gate

The City of Stamford administers, operates, and maintains all features of the hurricane barrier (including the pumping stations landward of the barrier) with the exception of the navigation and flood control gate across the East Branch which is operated and maintained by the Corps of Engineers. For maintenance purposes the City holds a ten-foot easement extending outward from the toe of the dike on both sides of the barrier and strictly regulates uses or activities that would impinge on this easement.

3. A more recent study by the Corps (U.S. Army Corps of Engineers, New England Division, Connecticut Coastline Study: Effects of Coastal Storms, Waltham, Mass. 1976) estimated that without the hurricane barrier a recurrence of the hurricanes of 1938 and 1954 would result in estimated damages of $13.5 and $7.2 million respectively (at 1975 price levels) in the City of Stamford. These estimates represent only damages to property present at the time of the '38 and '54 events and do not include estimates of damages to new development that has since occurred.

The Stamford hurricane barrier was authorized and built primarily to protect manufacturing and waterborne commercial activities in the South End as it was those industrial activities that suffered the greatest economic damages as a result of past floods. Although such industrial activities in the South End have declined since the hurricane barrier was built, the barrier has essentially eliminated the potential for coastal flooding to damage the approximately 1,000 residential units and the various commercial and industrial activities on its landward side in the South End. In addition, for flood insurance purposes the South End land area landward of the barrier, including NU's Utility Site, is now classified as an area not subject to major flooding. As such, new construction in this area is not affected by the requirements of the National Flood Insurance Program and by local floodplain management regulations.

THE UTILITY SITE

Although the Utility Site (see Figure 7) totals 25.91 acres, 4.26 acres are occupied by the hurricane barrier, and another 1.5 acres consist of submerged land between the barrier and the West Branch harbor line. The remaining 20.15 acres serve as the principal location for NU's gas storage and transmission facilities in Stamford.

The assessed value of the Utility Site (excluding improvements) is $11,057,210 — corresponding to an estimated market value of $15,796,157. Prior to October 1, 1981, the assessed value was $5,187,210. NU has filed an appeal seeking reduction of the present assessment to $5,556,057 based on NU's opinion that fair market value of the property is $7,937,220.

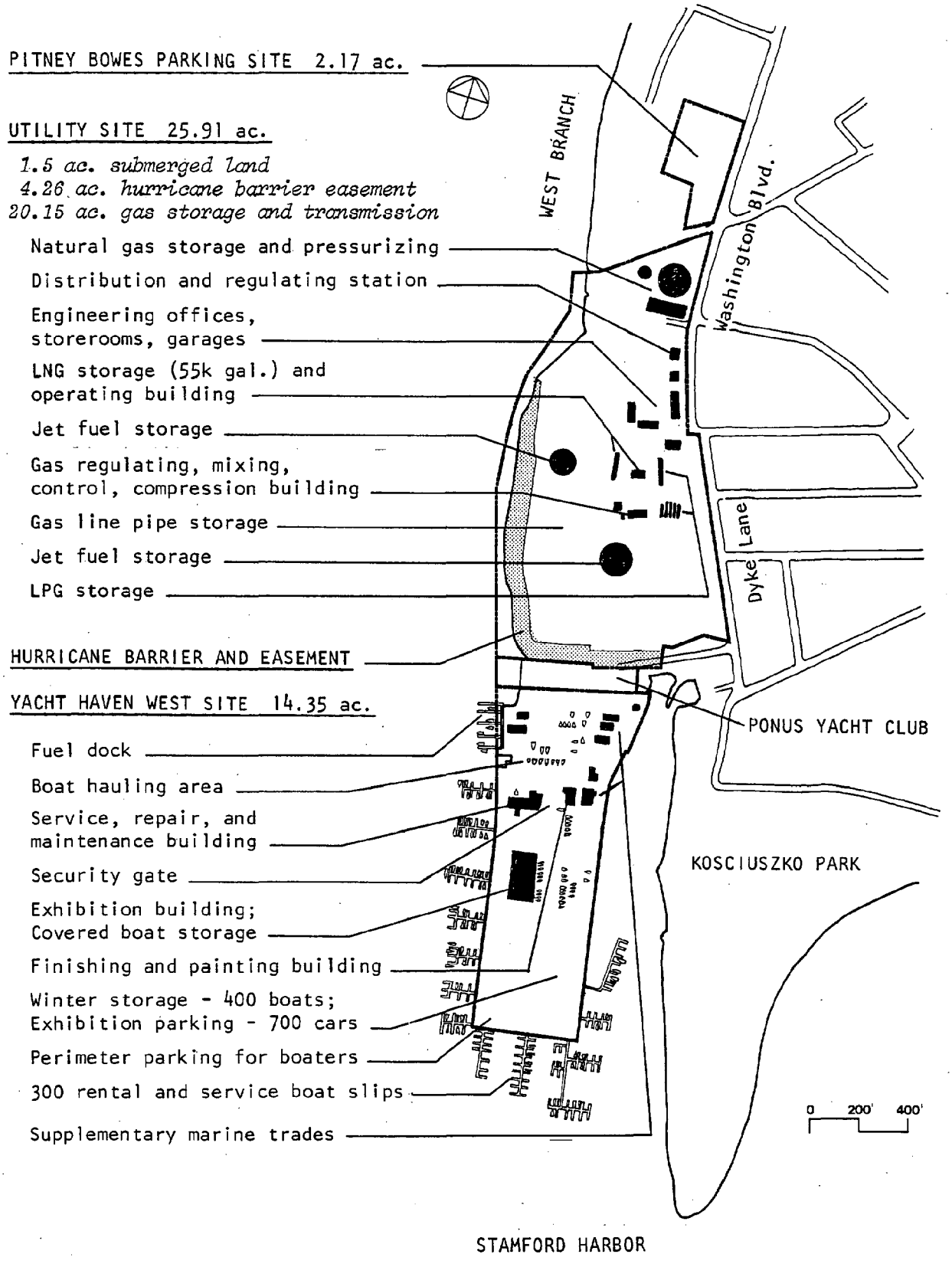
The Utility Site was formerly the site of a 64,000 kilowatt (64 megawatt) thermal generating station operated by the Hartford Electric Light Company. Water from the West Branch was utilized by the plant for cooling purposes and coal was delivered by barge and stockpiled on the site. This plant was dismantled in the early 1970's and was to have been replaced by a new 800 megawatt (MW) oil-fueled generating plant to be built on the same site. The new plant (to be 225 feet high with a 500-foot stack, 18-foot diameter tunnels for cooling water discharge, and an offshore fueling facility) was being planned at the time NU purchased the YHW Site in 1970. NU has since replaced such large-scale generating plans, with preliminary concepts that currently call for the construction of a 200 MW power plant (see Chapter 3) in the same general area as the old plant.

Figure 7 shows the gas storage and transmission facilities that currently exist on the site. A pipeline crossing under the West Branch brings natural gas onto the site; distribution from the site is achieved through an underground pipeline network. On site, different types of gases are mixed and pressurized prior to distribution.

The large cylindrical tank and the spherical tank on the northernmost part of the site have been used for natural gas storage with the building adjacent to these tanks containing a compressor for pressurizing the gas. As indicated by NU the need for these structures will be obviated by new compressor and mixing facilities now under construction in the interior of the site (identified on Figure 7 as "gas regulation, mixing, control and compression building").

FIGURE 7

EXISTING FACILITIES ON THE NORTHEAST UTILITIES PROPERTY



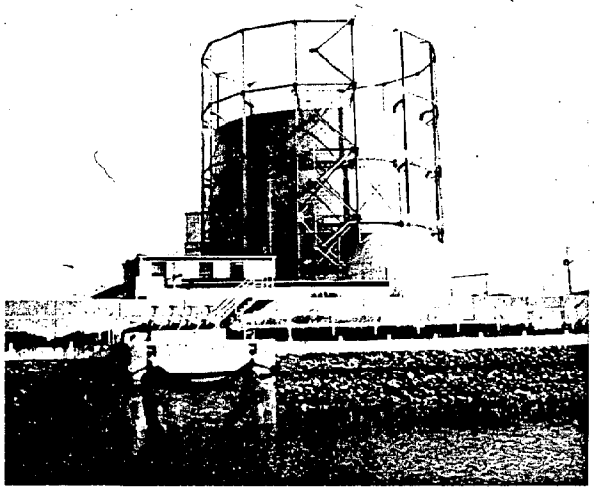


Figure 8: Gas Storage Facilities: Northern Portion of the Utility Site

The new facilities will increase gas distribution pressure to provide greater peaking capacity for commercial and industrial loads, and are located close by the six liquefied petroleum gas (LPG) storage tanks and the 55,000 gallon liquefied natural gas (LNG) storage tank in the central portion of the site. NU currently stores LNG in five locations throughout the state and the storage of LNG in the South End has raised several public health and safety issues of some concern to municipal officials.[4] NU reports that the existing LNG facilities comply with Federal standards adopted in 1980 and any replacement facilities will likewise meet Federal standards.

Between the LNG and LPG facilities and the natural gas storage facilities on the northernmost part of the site are found several buildings used as offices, garages, and storerooms. The offices house the primary engineering, clerical, recordkeeping, and mapping support system for NU's Stamford and Norwalk operations. Also on the site are two large tanks that contain jet fuel for use at NU's Cos Cob generating station. In addition, a portion of the site between the jet fuel tanks serves as a distribution center and open air storage area for the gas line pipes used in construction and maintenance of NU's Stamford gas distribution system.

As shown in Figure 7, the above mentioned facilities are scattered throughout the site, interspersed with open land, and as such cannot be described as intensive utility-related development. The low intensity of site use allows for additional buffer space between the LNG storage area and surrounding land uses in the South End — a most desirable LNG storage situation from the perspective of public safety.

Although the generating facilities that once existed on the site were dependent on access to Stamford Harbor because of cooling water needs and the waterborne delivery of fuel, the present gas storage and transmission uses are not dependent on water access for their operation. The gas storage and distribution facilities are "tied" into the regional gas transmission network, and additional supporting infrastructure (e.g., underground supply and distribution lines) has been developed on the site to serve the Stamford area. The feasibility of developing an alternative site along the regional network to provide similar gas storage and distribution facilities has not been addressed in this study. The other utility-related uses — engineering offices, storerooms, garages, pipe storage areas, etc. — are not tied to the present site because of unique locational requirements.

4. See "An Investigation of the Safety Issues and Permitting Processes of Liquefied Natural Gas", MRE, 1978, and "Addendum to the Draft Report: Evaluation of the Potential Impacts from Expansion of Power Generating Activities", RMFA, 1982.

YACHT HAVEN WEST

Maritime History and Land Values

The Yacht Haven West Site (see Figure 7) has a long and interesting history of maritime use. The site was occupied for many years by the Luders Marine Construction Company, a Stamford shipbuilding industry of national renown. In addition to many well known pleasure yachts and racing sailboats, Luders constructed Navy vessels here (including patrol boats, tugboats, and minesweepers) that saw service in both World Wars. In 1967 Marina America, Inc. bought the six acres of land on which the Luders Shipyard operated as well as Luder's legislatively granted rights to create additional land by filling approximately eight acres of adjacent submerged land. The purchase price was $650,000.

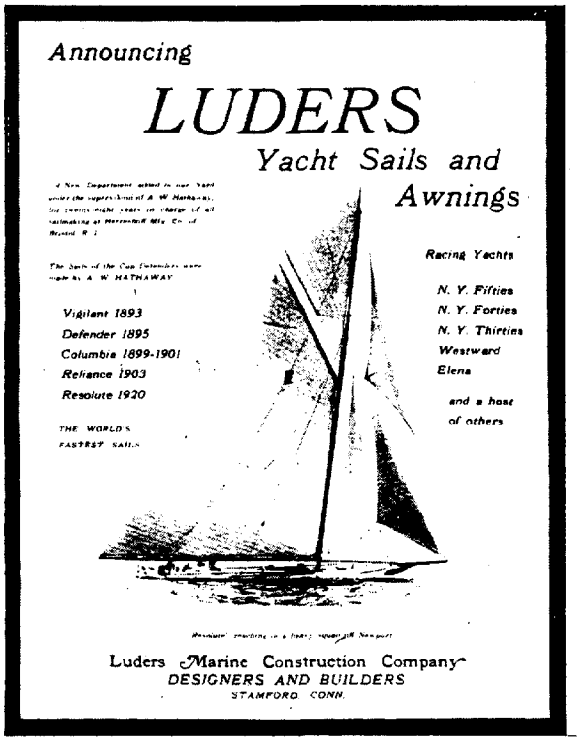


Figure 9: Advertisement of Marine Services: Luders Shipyard (From 1925 *Rudder Magazine*)

Marina America planned to build a full service marina as well as a motel, shops, and offices on the expanded site. Filling and bulkheading activities designed to expand the site to its present 14.35 acre size and configuration were begun late in 1969. At this time, however, NU felt that the proposed concentration of marina, motel and office facilities would be incompatible (e.g., interfere with needed cooling water conduits) with the Utility's own plans for the construction of an 800 megawatt generating plant on its property just to the north.

Although Marina America was reluctant to sell its property, the Utility issued letters indicating its intent to acquire the property through condemnation for public service utility purposes if necessary. The sale followed on October 30, 1970. The total purchase price was approximately $5.3 million.[5]

The City of Stamford subsequently appraised the Marina America property at the sales price and taxed it accordingly. The Utility appealed this appraisal on the grounds that the sales price — which had not been the result of a "willing seller-buyer transaction" — exceeded the fair market value. The Court decided in favor of the Utility in 1977 and reduced the appraised value to slightly over $1 million ($1.96 per square foot) for the land, retroactive for the period 1971-1976.

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5. Also considered incompatible with future generating plans was the Ponus Yacht Club on 1.5 acres adjacent to the Marina America property. For the purpose of possibly relocating the Ponus Yacht Club and/or acquiring additional fuel storage space, the Utility purchased an additional 3.5 acres of waterfront property across the West Branch in December 1970 at a cost of $520,000. This parcel, now vacant, adjoins Southfield Park.

In the most recent (effective October 1, 1981) revaluation of real property, the City of Stamford raised the assessment of the Yacht Haven West Site to $9,845,110 — this new assessment representing 70 percent of an estimated current fair market value of $14,064,440 ($22.50 per square foot). NU is now, once again, in the process of appealing for a lower appraisal citing among its arguments the following factors: the "filled" nature of the site and the resultant need for substantial and costly foundation modifications to support any new construction; the fact that the "land is subject to all restrictions of "Coastal Area Management" (CAM) Program." Citing the assigned fair market value of other properties in the area, NU is requesting a fair market value reduction to $10.00 per square foot, or $6,250,860 and a resulting assessment for the YHW Site of $4,375,602.

Following the purchase of the Marina America land in 1970, the Utility leased the property back to Yacht Haven, Inc. (a subsidiary of Marina America) for continuation of marine business operations pending implementation of the Utility's power generating plans. The major generating station was never constructed, however, and Yacht Haven West continues to operate under a lease now valid until October 31, 1986. Under the terms of this lease, the lessee pays taxes, insurance, maintenance, management, and security costs.

Yacht Haven West Facilities and Services

The Yacht Haven West facilities now operating on the 14.35 acres leased from Northeast Utilities are best described as serving both marina and boatyard functions. According to the definitions of the standard marine business categories, a marina's main function is to provide boat dockage and related services while a boatyard's function is the repair of boats and related services. It is the boatyard services which distinguish Yacht Haven West from all other marine businesses currently operating in Stamford. In addition, the quality and extent of both services — boatyard and marina — as currently provided by Yacht Haven West are such that Yacht Haven has attained a singular importance in terms of not only the local recreational boating community but the regional boating industry as well. In deed, throughout the Connecticut recreational boating community and beyond, Stamford is commonly known as a "boating center" primarily because of the services provided by Yacht Haven.

Although Yacht Haven West is now the only boatyard operation in Stamford, it was not long ago (in the mid 1970's) that six such facilities operated on the City's shoreline, including Yacht Haven East and the Doan, Schofield, & Lindstrom boatyards on the East Branch of the harbor, Muzzio's boatyard on the Westcott Cove Embayment, as well as Yacht Haven West. All except Yacht Haven West have now been replaced by commercial office uses or waterfront condominiums although marina facilities at Yacht Haven East have been retained as part of the Harbor Plaza development.[6]

As a result of the loss of the other five Stamford boatyards, Yacht Haven West has, in recent years, been able to expand and intensify its operation and the services provided on its 14 acre site. This expansion and intensification have been to such a degree that Yacht Haven's shipyard operation is generally considered one of the largest on Long Island Sound. Such a ranking is not "officially" published by the boating industry, and industry representatives have recently identified the need for greater in-depth economic analysis of the recreational boating industry prior to definitive regional comparisons. Nevertheless, industry representatives and marine economics specialists

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6. Yacht Haven, Inc., the operator of Yacht Haven West, also operates Yacht Haven East as part of the Harbor Plaza development. Yacht Haven, Inc. was granted a permanent easement for pier head access, parking, and other marina support facilities on the Harbor Plaza site.

consulted in the course of this study have indicated that cumulative consideration of the following criteria: (1) number of berthing spaces provided; (2) winter boat storage capacity; and (3) annual number of boats serviced and major repairs carried out — could show Yacht Haven to be the largest privately-operated boatyard/marina facility (for the service of pleasure boats)not only in New England but on the entire East Coast.

Figure 7 identifies some of the key facilities and service areas located on the Yacht Haven West site. These facilities and services are highlighted below.

Maintenance and Repair

On the average, major repairs/services are performed on 1,500 boats per year at Yacht Haven West. Maintenance and repair services are performed primarily by skilled craftsmen. A skilled labor force of 60 full-time employees is retained year round and supplemented by 25 seasonal employees during the summer. It should be noted that the skilled labor force has been built up over an extended period to time dating back to the Luders shipyard operation.

The boat hauling "pits" and main landside service area are located on the northern portion of the site. Mobile hydraulic lifts (travel lifts) move vessels from the water and slowly transport them either short distances to where needed maintenance and repair services (e.g., cleaning, painting, fiberglass repair, carpentry, rigging, mechanical and electronic work, etc.) are carried out, or to winter storage positions in the central and southern portion of the property. The boat hauling pits contain structures built out into the water on which the travel lifts move to raise boats from the water as well as return boats to the water.

Yacht Haven West operates four travel lifts of 15, 25, 40 and 60 ton maximum capacities. On a good working day an average of 12 boats can be hauled for maintenance/repair work and in preparation for the winter season 25 to 30 for storage purposes. The 50 and 60 ton lifts are key factors contributing to Yacht Haven's capability for servicing boats 35 feet long and larger. The only other boatyard in southwestern Connecticut with this capability is the Norwalk Cove Marina which is primarily a boat sales and power boating facility now operating at close to full capacity.

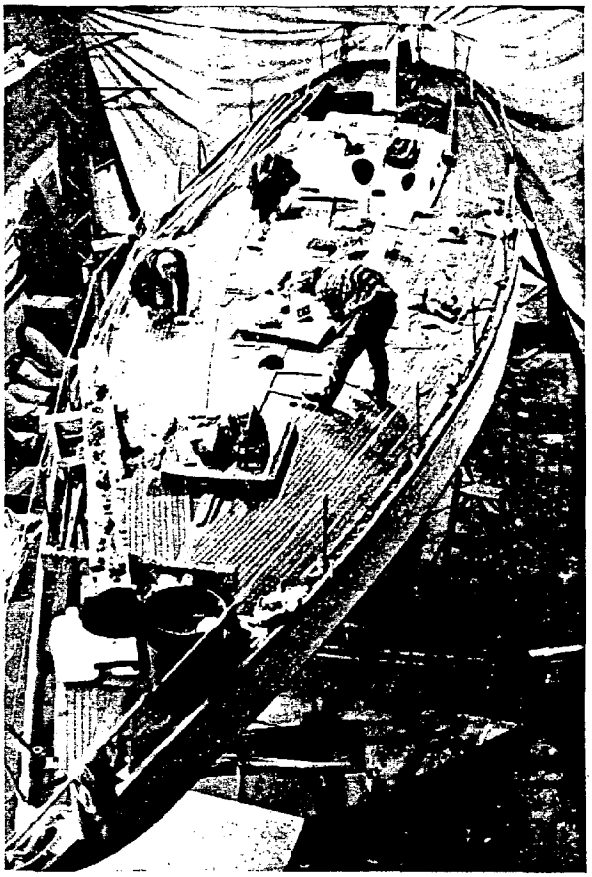


Figure 10: Ship Carpentry

At least 70 percent of the boats currently serviced at Yacht Haven are sail boats, mostly of the ocean cruising and racing classes. Indeed, Yacht Haven West's reputation is based upon sailboat services provided not only to boat owners in the southwestern Connecticut and Western Long Island Sound region but to major ocean racing boats from all parts of the country en route to sailing events in the Northeast.

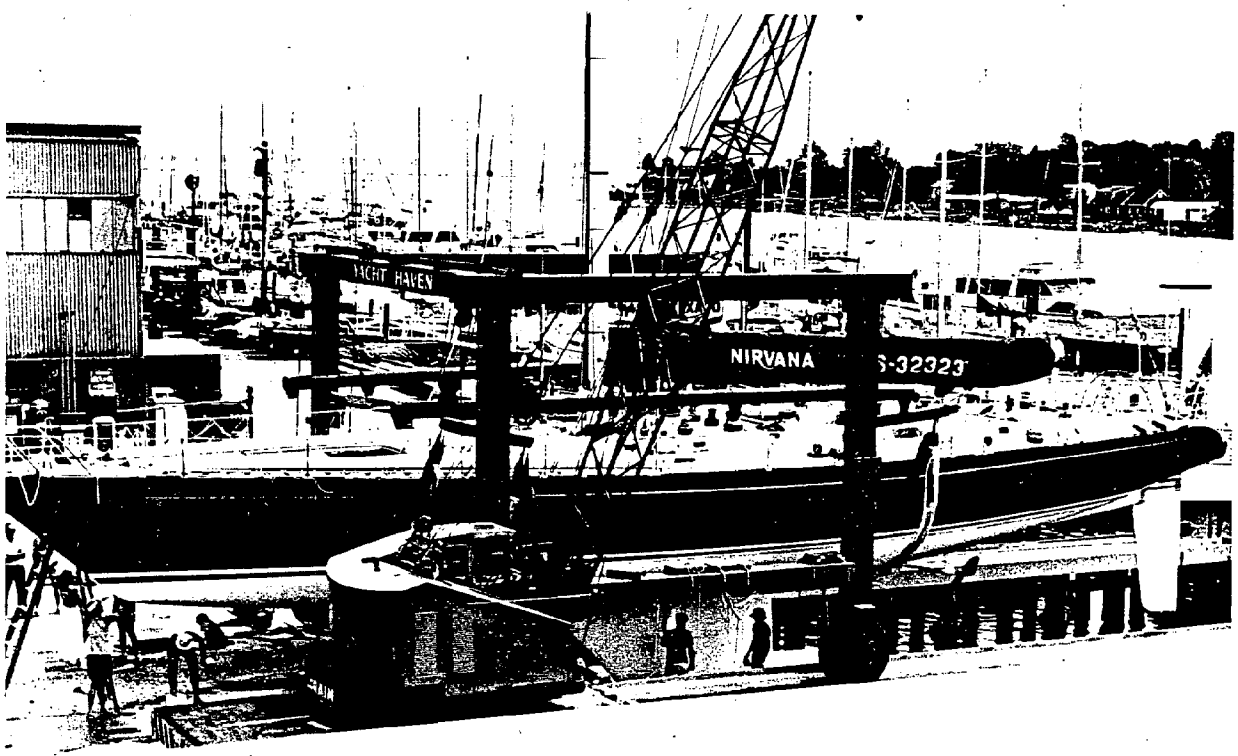


Figure 11: Boat Hauling Area and the 83 Foot "World Class" *Nirvana*

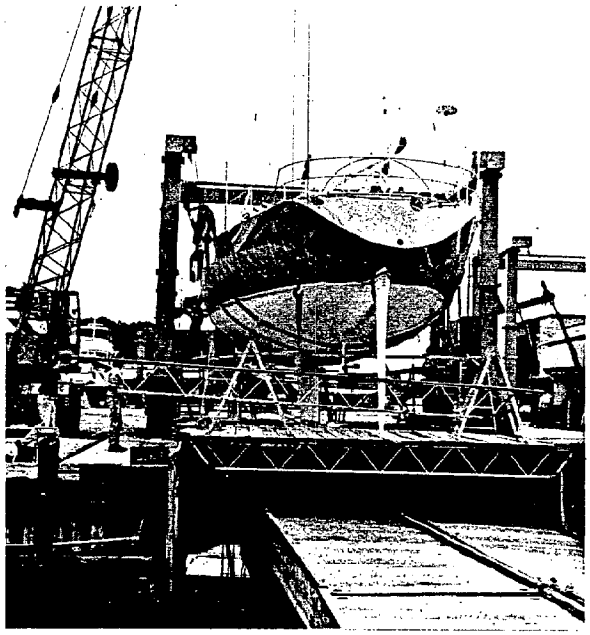


Figure 12: Boat Hauling Area: 60 Ton Travel Lift and Boat Crane

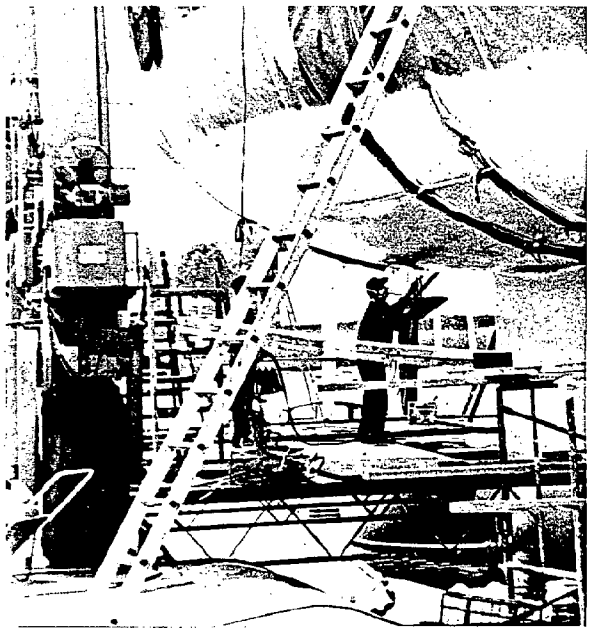


Figure 13: Ship Service Work

Boat Storage

The intensity of use of the Yacht Haven West Site is highly seasonal in nature. During the summer when boats are in the water much of the land area is open and available for parking, special events, and other uses. During the winter stored boats occupy much of the space on the central and southern portions of the site although some limited covered storage space is provided in the large building that is also used for summer exhibitions. Approximately 400 boats of 25 to 65 feet in length are stored during the winter season with the spacing and total number of boats determined primarily by: (1) fire prevention requirements (the Stamford Fire Department regularly drives its fire fighting vehicles through the storage area to inspect the adequacy of access space between rows of boats); and (2) the maneuverability requirements of the travel lifts hauling the boats. While in these storage positions, various service and maintenance activities (e.g., sanding, painting, varnishing, etc.) are performed on most of the boats by either the owners or Yacht Haven personnel. In addition, approximately 100 to 150 berthing slips are used for in-water winter storage.

Special Events

Whereas the open area provides for winter storage of some 400 boats, the same land is also used for parking of up to 700 cars for various public exhibitions and special events that are periodically held on the site during the summer season. Such events also make use of the large (30,000 sq. ft.) indoor storage building in the center of the property which is available to the public from June 1 to October 15 of each year for shows, exhibits, and meetings. The most prominent of the special events is the annual North Atlantic Sailboat Show which runs for a week in September and attracts an estimated 18,000 to 20,000 visitors. Antique shows, the Southwestern Area Commerce and Industry Association (SACIA) Business Exposition and the Fairfield County Homebuilders show are among the other exhibitions held on the Yacht Haven West Site.

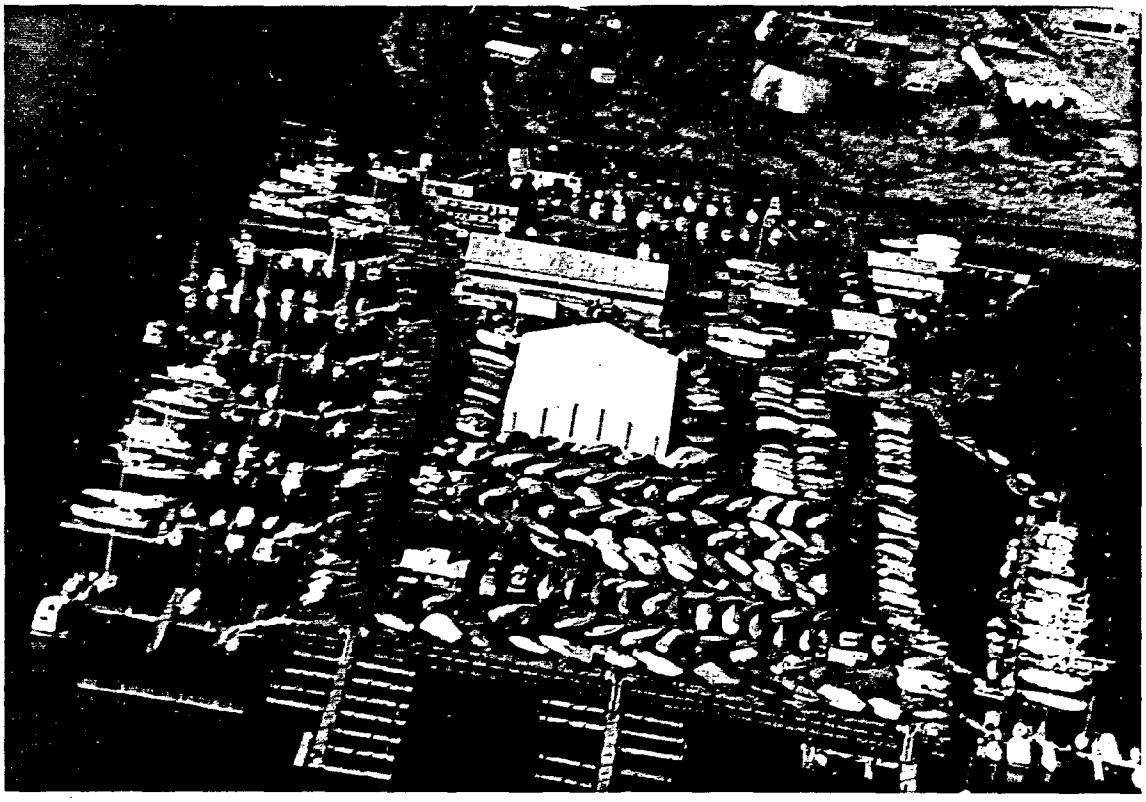


Figure 14: Winter Boat Storage at Yacht Haven West; Jet Fuel and LNG/LPG Storage on the Utility Site

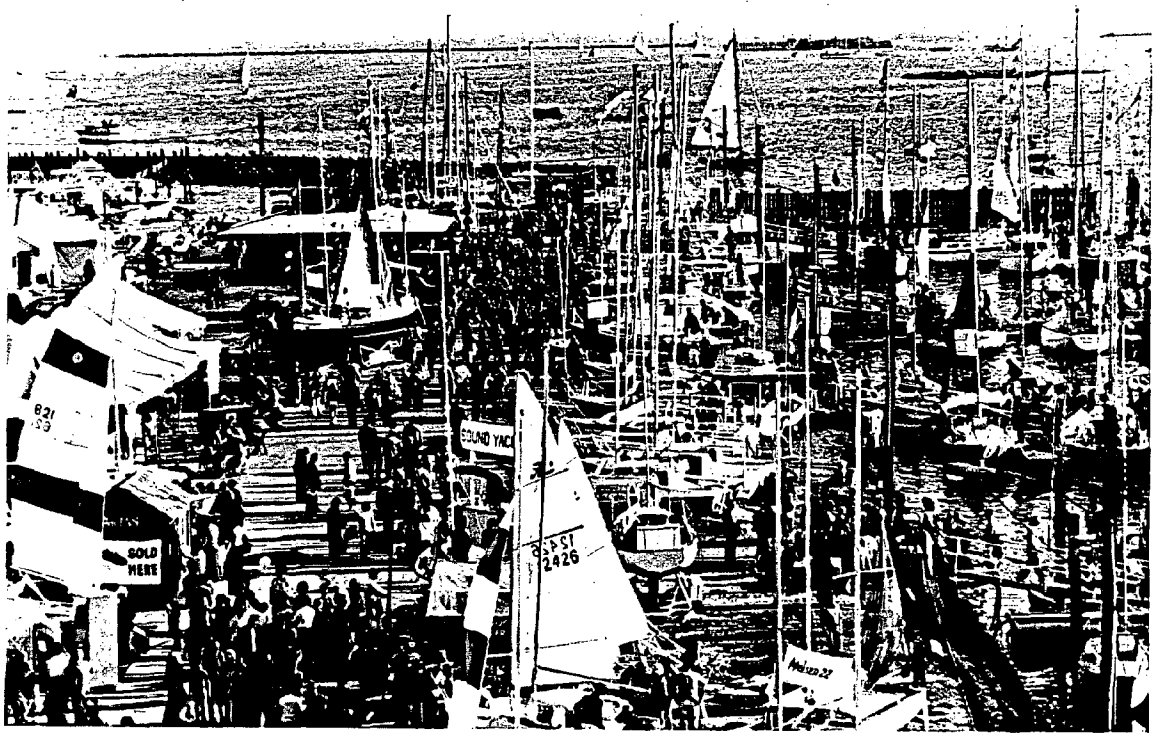


Figure 15: The North Atlantic Sailboat Show

Marina Activities

Surrounding the Yacht Haven West land area are approximately 300 berthing spaces, 250 for rental use plus an additional 50 or so used for service operations. Although the majority of the boats utilizing the berthing facilities are in the 35 to 45 foot range, the marina facilities are used by boats ranging from 30' to upwards of 100'. Marina support facilities include showers, restrooms, the Yacht Haven Ships' Store and parking space for approximately 300 cars around the perimeter of the property.

It should also be noted that due to the severity of the saltwater environment, four carpenters are required to work year-round to maintain and repair the berthing and docking facilities.

In addition, any center of recreational boating activity requires a major fueling facility. The one major fueling facility in Stamford Harbor is at Yacht Haven West where the existing fuel dock can service four boats at a time with gasoline and diesel fuel. This facility —drawing on underground tanks with a storage capacity of 30,000 gallons — is operated primarily during the summer boating season.

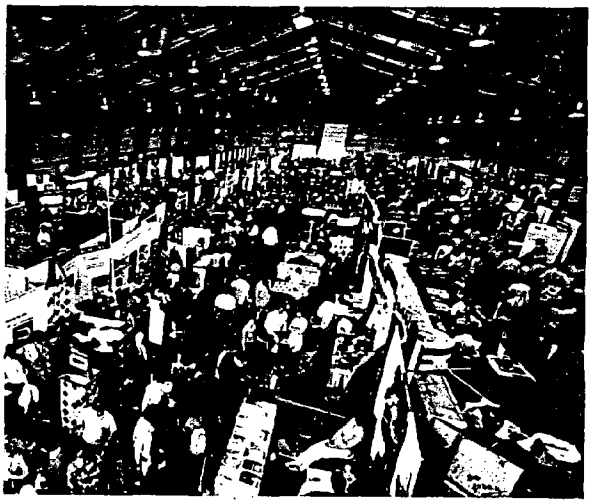


Figure 16: Public Exhibition in the Indoor Storage Building

Supplementary Marine Trades

Located on the northern part of the YHW Site are various independent marine businesses which rent space from Yacht Haven and supply supplementary services, including marine electronics service, diesel sales and repair, and boat sales and brokerage. These businesses — Alden Yacht Brokers, Electra Yacht, Marine Diesel of New England, MacDonald Yacht Rigging, and Lion Yachts — are enhanced by their location in the midst of a full service shipyard and several moved to their present location from other Stamford boatyards as those yards have been replaced by new development in recent years.

Security Facilities

A security gate separates the marine businesses and boat hauling and service area from the central and southern portion of the site and guards provide twenty-four hour security. Access to boat storage and docking areas is carefully supervised and monitored because of the inherent safety problems associated with the boatyard's industrial activities; vandalism problems; and the threat of theft (particularly of high value, easily portable electronic equipment contained in berthed vessels).

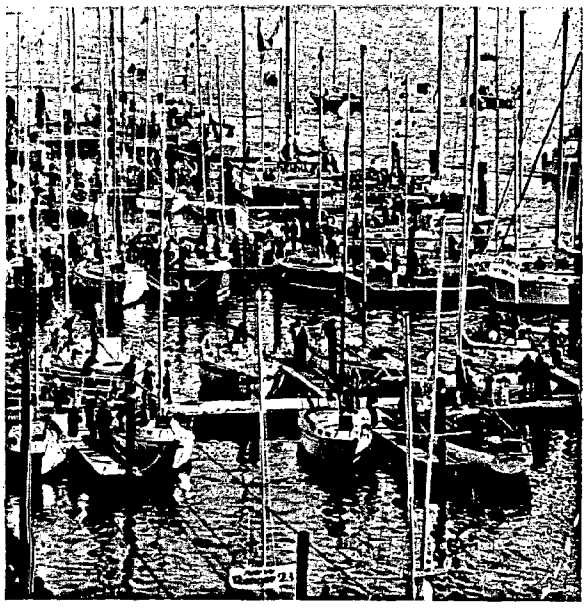
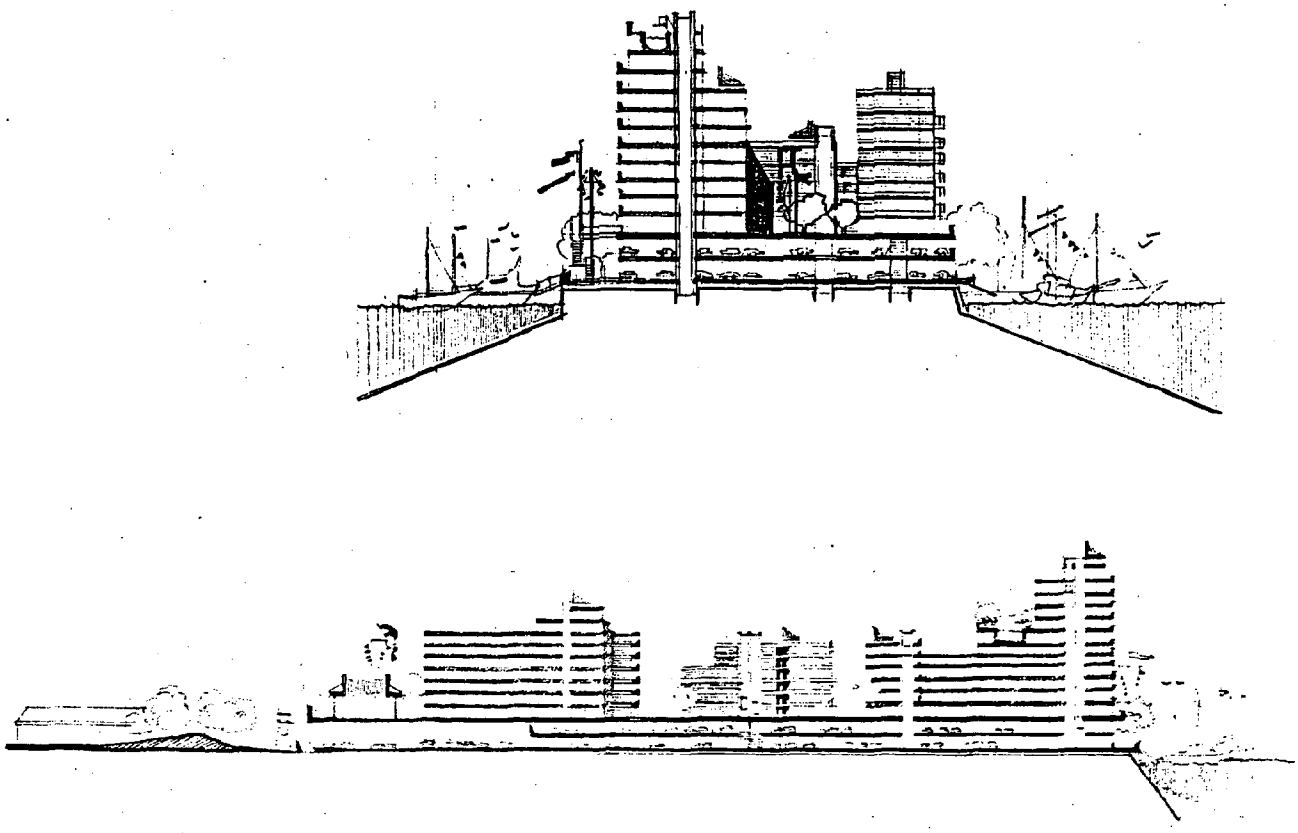


Figure 17: Marina Facilities at Yacht Haven West

PART II:

CONCEPTUAL PLANS FROM NORTHEAST UTILITIES



Northeast Utilities Site Study South Stamford - Stamford, Connecticut

Raymond, Parish, Pine & Weiner, Inc. Development Consultants

CHAPTER 3: NU'S DEVELOPMENT PLANS

This chapter describes the main components of two plans initiated by Northeast Utilities. The first plan is for utility use, the second for non-utility development. It should be kept in mind that both plans are preliminary in nature and have been presented by NU in conceptual terms only.

THE PLAN FOR UTILITY USE

Future utility use of NU's South End property is currently being planned to include possible power generation facilities as well as gas storage and transmission activities. These utility functions would be accommodated on the 25.91 acre Utility Site and the 2.17-acre Pitney Bowes parking site.

Possible future power generation on the site is being considered because of current high electrical demand in the Stamford area and NU's need — for reliability and cost purposes — to generate power as close to the end use as possible.

Plans for power generation on the site, however, are still very tentative and, as stated by NU, any electric generating facilities constructed on the site would probably not be in service until the mid to late 1990's. NU is now considering the following two generating alternatives for use on the site:

- A stacked fuel cell generating plant
- A gas turbine, combined cycle generating plant.

Both of these alternatives will be evaluated more extensively by NU over the coming years but preliminary studies by the Utility indicate that each technology could generate up to 200 MW of electric power on the site. According to NU, construction of either type of power plant would need to commence approximately four years prior to commercial operation and additional lead time could also be necessary for engineering and licensing/permitting activities.

Future generating use would not preclude the continuation of the gas storage and transmission operations that now exist on the site. Preliminary plans prepared by the Utility to illustrate the location and magnitude of future energy facilities which might be constructed on the site indicate that the existing gas facilities would be retained through:

- Relocation of the 55,000 gallon LNG tank from its present location to approximately 2 acres on the northern tip of the present Utility Site.
- Consolidation and relocation of all other existing gas storage facilities from the Utility Site to the 2.17 acre site now leased to Pitney Bowes.
- Offsite relocation of all other utility-related uses presently occupying the site.

In other words, NU has apparently determined that: 1) it is not essential in terms of utility needs that such existing uses as the engineering offices, storerooms, garages, pipe storage area, etc. remain on the South End site and such uses can, in fact, be relocated elsewhere; and 2) the present layout of gas storage and transmission facilities on the site can be greatly consolidated. In fact, based on NU's preliminary designs, the various utility-related uses that now occupy the company's South End land could be effectively consolidated or relocated to leave free approximately 18 of the 20.15 net acres[1] currently used for utility-related activities on the Utility Site.

NU's planning for its South End property is based on a goal of providing maximum flexibility for future utility options. At present, this planning is proceeding on the premise that it will sometime be necessary to use a portion of those approximately 18 acres to build an electric generating facility. For planning purposes, therefore, NU now finds it necessary to retain enough of those 18 acres to allow safe and efficient operation of either of the two types of powerplant facilities now under consideration. In the event that a stacked fuel cell operation is constructed, preliminary designs prepared by NU indicate that adding the land area allotted for powerplant use to the area reserved for relocation of the LNG facilities, leaves approximately 4.2 acres[2] free for non-utility development. If the combined cycle powerplant alternative should be chosen, preliminary designs indicate that 7.7 acres[2] would be free for non-utility development.

Since it is too early for NU to choose among these alternatives, the company states that it must retain enough land to ensure that either type of powerplant can be built. Therefore, for the Utility's planning purposes, the amount of land available for non-utility development is limited by the amount of land seen as necessary for the larger alternative — the stacked fuel cell in which the actual power station might occupy approximately 10 acres (exclusive of fuel storage), leaving only 4.2 acres of the Utility Site available for non-utility development.

A considerable portion of the power facility land area in both generating alternatives would be occupied by above-ground liquid fuel storage tanks. Preliminary site designs prepared by NU indicate that the fuel storage facilities, as currently planned for both alternatives, would likely include four storage tanks (typical size 48 feet high, 112 feet in diameter) to contain a 45-day supply of fuel. These liquid fuels are, at present, the early primary fuel choices for both generating plant alternatives and would be shipped to the site by barge. The consolidated onsite gas facilities could provide fueling flexibility since natural gas could be used as a supplemental fuel for either type of power plant depending on seasonal availability. In addition, NU indicates that as fuel technologies develop, later fuel choices for both generating plant alternatives could include gaseous fuels that would be piped to the site.

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1. The total acreage of the Utility Site is 25.91 acres; however, the hurricane barrier easement and submerged acreage occupy 5.76 acres of this total.

2. Again, this acreage is a net figure, exclusive of the hurricane barrier easement and submerged land.

THE PLAN FOR THE YACHT HAVEN WEST SITE

Based on the previously described utility-development plans, NU has designated approximately 19.4 acres out of its 42.43 total acres as "excess" in terms of utility needs. Of this "excess" acreage, 14.35 acres are seaward of the hurricane barrier — the YHW Site — and approximately 5.1[3] acres is landward of the barrier adjacent to the proposed utility development.

On March 7, 1983 the Stamford Planning and Zoning Boards met jointly to hear a presentation of a conceptual development plan for the Utility's "excess" property. The plan, as presented by NU's consultants and described in this section, has not been formally endorsed by the Utility company. The purpose of the presentation, as described by NU, was to solicit informal comments from the Boards and from other interested parties that could then be used by the Utility's consultants to subsequently modify or revise the conceptual plan as necessary. Therefore, the preliminary nature of the plan was stressed. In addition, Northeast pointed out that Federal regulations appear to preclude the Utility's extended involvement in any future non-energy development project and require selection of a partner to actually develop such a project.

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3. 5.1 acres is a gross total including the acreage of the hurricane barrier and submerged land. According to NU, the net acreage for non-utility development after excluding the easement and submerged land would be approximately 4.2 acres.

The form and content of the development plan were described by NU's consultant in the context of several major planning objectives for the site, primarily:

- To ensure that new development is economically feasible given the present assessed value of the land.
- To comply with the policies of the CAM Act through retention of the existing boatyard/marina activities and provision of public access to the waterfront.
- To minimize traffic impacts associated with new development.

In an attempt to meet those objectives, NU's consultants prepared a conceptual plan with several key components:

- Residential development as the primary use of the YHW Site.
- A multi-level public walkway providing public access to the waterfront around the perimeter of the site.
- Limited commercial space at the entrance to the residential community.
- Relocation of the Yacht Haven West boatyard operation to approximately 4.4 acres (excess in terms of utility needs) located landward of the hurricane barrier and adjacent to the proposed power generating site.
- Retention of the existing berthing slips around the perimeter of the YHW Site.

The preliminary development proposal and conceptual plan presented by NU's consultant further describes these main components as follows:

The Residential Component

The choice of residential use as the main component of the proposed plan was based primarily on an assessment by NU's consultants of projected traffic flow and access conditions in the South End and the relatively light traffic generation associated with residential use as compared with an

alternative use such as office development. NU's consultants judged that approximately 800 luxury condominium units would be necessary to make the project economically feasible. This judgement was based on the present assessed value of the YHW land and on "extra" costs associated with the development of this parcel. These "extra" costs, as estimated by NU's consultants, include:

	Cost Range
1. Bulkhead	$ 3,000,000 - $10,000,000
2. Structural Parking (Incremental cost of structured parking vs at-grade parking for 1,200 cars)	6,000,000 - 8,400,000
3. Waterfront Promenade	8,000,000
4. Decked Residential street level, including elevation 30' deck to support landscaping and building entrance driveways and parking	6,000,000 - 11,000,000
5. Extra foundation costs attributable to poor sub-soil	1,500,000 - 2,500,000
6. Off-site sewer and water	500,000 - 1,000,000
7. Linear park along Washington Boulevard and Dyke Lane	400,000 - 600,000
8. Waterfront park north of Ponus Yacht Club	600,000
9. Reconstruction of widened Dyke Lane	300,000 - 500,000
TOTAL	$19,100,000 - $35,400,000
Per Dwelling Unit Cost	$23,875 - $44,250

Table 1: "Extra" Development Costs

All 800 units would be built on the YHW Site and, as presented by NU's consultants could include upwards of 900,000 square feet of residential space and conceivably sell for a price as high as $300,000 per unit. Approximately 1,800 people would occupy the project.

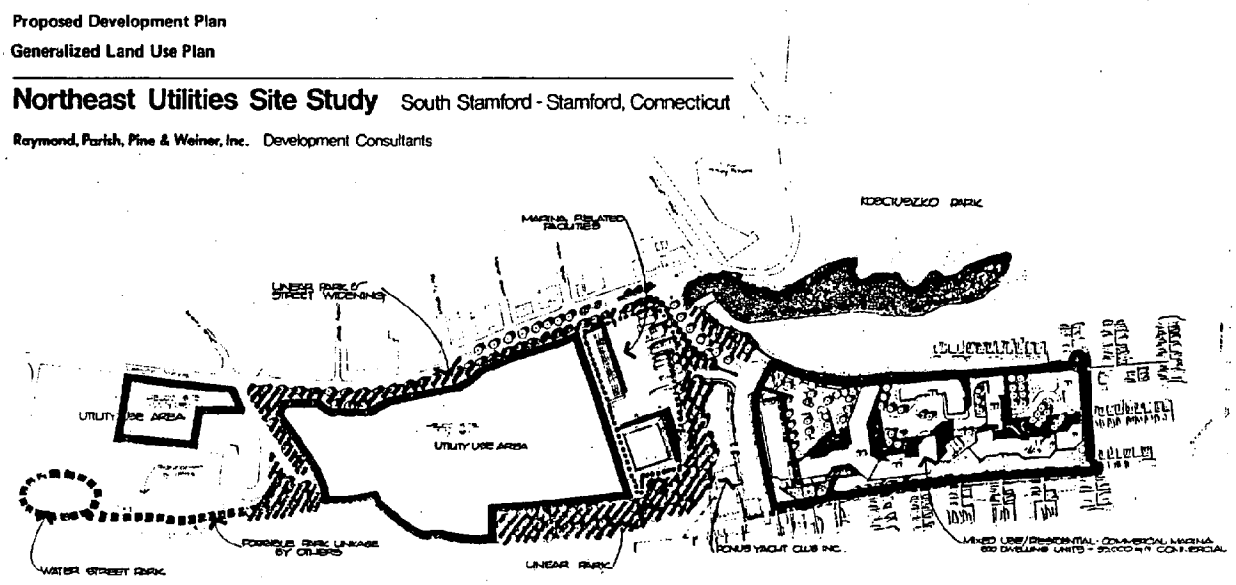

Figure 18: Proposed Land Use Plan (Prepared by RPPW)

The current M-G zoning of the entire Northeast Utilities South End property (including the portion planned for utility use as well as the YHW Site for which the conceptual residential development plan has been presented) prohibits new residential development. As a result, the development plan presented would require a zoning change to permit both the suggested residential use and the proposed density, which would be approximately 56 dwelling units per acre.

Consultants for NU suggested that the residential density of their proposed project be thought of in terms of the "transfer of development rights" (TDR) concept. They suggested that the Utility Site (landward of the hurricane barrier) as well as the YHW Site (seaward of the barrier) could be rezoned for residential use at a relatively low density (e.g., 20 du/acre). Development rights could then be transferred from the Utility Site to the YHW Site to accommodate residential development of the density proposed. In other words, residential density on the 14.35 acre YHW Site would be calculated based on the land area of the YHW Site and the Utility Site — a total of some 40 acres.

As presented, the new residential community would be contained in structures 4 to 12 stories in height and 50 to 60 feet wide so that all units could be provided with a water view. A three-tiered design would be used to provide for 2 levels of parking beneath the first residential level and to ensure that the first residential level is above coastal flood elevations. The first tier — approximate ground level of the existing YHW Site at an average elevation of 10 feet above mean sea level — would be used for parking as well as pedestrian access and certain limited commercial uses. The second tier at elevation 20 feet would be used for parking. The third tier at elevation 30 feet would become the upper ground level of the site. The structured parking would provide 1,840 spaces; 1,200 spaces for the condominium units; 100 spaces for new commercial uses; and 540 spaces for marina activities.

The Boatyard/Marina Component

The existing Yacht Haven West boatyard and marina activities were described, by NU's consultants, as an uneconomic use of the site, requiring subsidization from new residential development if they are to continue. The development plan proposes that the existing boatyard activities be relocated and consolidated on 4.4 acres of the Utility Site. A total of 70,000 square feet of new covered space would be provided on these 4.4 acres to replace the same total square footage of buildings now on the YHW Site. The feasibility of creating a maritime center/museum at this location and utilizing the new marina buildings for exhibitions, shows and major events would be studied.

In order to allow the transport of boats from the existing hauling pits to the proposed new maintenance and repair site, the plan calls for the construction of an expanded roadway with a grade no greater than 5 percent over the 17-foot hurricane barrier. The 5 percent grade is the maximum slope on which the YHW travel boatlifts can operate. Winter storage space would be provided for approximately 200 boats in a section of the first residential parking level. An open space area through the second parking level would allow 20 feet of vertical boat storage space. The approximately 300 berthing slips around the perimeter of the YHW Site would be retained with marina-related parking provided in the structural parking facility.

The Public Access/Commercial Component

Approximately 40,000 square feet of new commercial development (including restaurants, boutiques, shops and incidental offices) is proposed in the plan for the entrance/gateway area to the residential enclave. In addition, public access to the waterfront would be provided in the form of a pedestrian walkway around the perimeter of the residential site. A specially designed dockside pedestrian promenade along the West Branch would be the site of a vendors' market/bazaar that would enhance a waterfront pedestrian setting.

Additional public space would be provided in the form of a linear park along Washington Boulevard and Dyke Lane and continuing to the water's edge along the northern property line of the Utility Site. Also, a linear waterfront park would be developed in the area of the hurricane barrier and adjacent to the relocated boatyard facilities. This park would contain the embankment portion of the hurricane barrier.

Off-site Contributions

Another component of the non-utility development plan would take the form of various offsite contributions. NU has indicated a willingness to explore such measures including: monetary contributions to improve existing housing stock in the South End and straighten the offset intersection between Washington Boulevard and Dyke Lane.

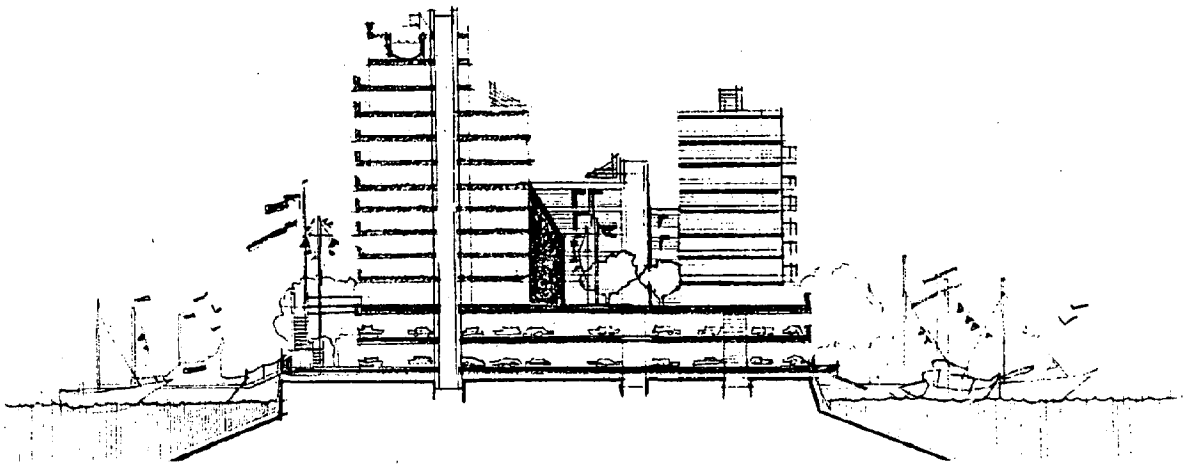

Figure 19: Cross Section of Proposed Residential Development Plan Along East/West Axis (Prepared by RPPW)

CHAPTER 4: EVALUATION OF NU'S PLANS

As described in the previous chapter, Northeast Utilities has presented distinct development plans — one for utility service and one for residential development — for the future use of the company's waterfront property in the South End. Both plans, however, are preliminary in nature and have been presented by NU only in conceptual terms. The purpose of this chapter is to evaluate the major components of the two plans from the standpoint of pertinent land use planning, policy and zoning issues.

EVALUATION OF THE PLAN FOR UTILITY USE (GAS AND ELECTRIC SERVICE)

As already described, Northeast Utilities is considering two generating alternatives for its South End Utility Site: fuel cell and combined cycle gas turbine.[1] The fuel cell powerplant concept appears promising to NU and offers many environmental and siting advantages, but the technology is still in the R&D stage. While the fuel cell appears to offer major advantages due to compact size, modular construction, superior operational characteristics (e.g., fast power response), multi-fuel ability, and potentially high overall efficiency with excellent cogeneration potential, the availability of a fuel cell powerplant in the 1990-1995 time frame is uncertain. Due to uncertainties in manufacturing costs and availability, the alternate choice of a gas turbine combined cycle powerplant appears to be sound. The combined cycle plant is based on available technology, and offers excellent operational and environmental characteristics.

Air quality, water quality, and noise impacts are expected to be acceptable, based on the utilization of either a fuel cell powerplant or gas turbine combined cycle powerplant. In terms of the impact of future generating facilities on land use and esthetics, the actual visual impact on nearby land uses cannot be assessed until a specific site plan is presented. The important factors to be considered in assessing this impact are the orientation of the facility with respect to the nearby residential and industrial community and the size (land area and height of visible structures) of the facility relative to other structures in the immediate vicinity.

Both powerplant options would be subject to requirements intended to minimize potential risks to public safety and to codes and regulations governing the storage and handling of flammable fuels. The presence of liquefied natural gas (LNG) on this site, however, adjacent to both the proposed power facility and to nearby residential areas, may bear further study because of the potential hazards from accidental LNG release.

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1. Potential environmental impacts and other information on these alternatives have been evaluated in an earlier report: "Evaluation of the Potential Impacts from Expansion of Power Generating Facilities at the Northeast Utility Property, Stamford, CT", RMFA, December 16, 1982, and "Addendum to the Draft Report", RMFA, February 3, 1983.

In considering the long-range gas supply and power generation plans that have been put forth by NU, particularly with regard to the manner in which such plans bear on future development plans for the Yacht Haven West Site, the following considerations are important:

1. NU's planning for future power generating facilities is still very tentative;

2. Relocation or consolidation of NU's existing gas supply and transmission facilities might prove feasible; the possibility is at least worth considering.

Preliminary Status of NU's Power Generating Planning

As previously noted, future use of NU's Utility Site for power generation is now being explored because of the high electrical demand in Southwestern Connecticut and the Utility's need — for reliability and cost purposes — to generate required power as close to the load center as possible. Future design and construction of a powerplant will depend, however, on a variety of considerations including:

- Future demand.
- Technological advances and economic conditions in the next decade.
- Alternative methods and sites for meeting projected demands.

A full study of alternatives will be required to obtain the necessary approvals, permits and licenses required at the Federal, State, and local level.

At this time no official notification of intent to construct a powerplant in the South End has been made by NU to either State or local authorities. Sec. 16-50r of the Public Utilities Environmental Standards Act (C.G.S. Sec. 16-50g to 16-50y) requires NU to submit an annual report containing a ten-year forecast of loads and resources, and covering, where applicable, the twenty-year period beginning with the year of the report. This annual report — submitted to the Connecticut Siting Council — is also required to include a list of NU's "planned generating units at plant locations for which property has been acquired, or at plant locations not yet acquired, that will be needed to provide estimated additional electrical requirements, and the location of such facilities".

According to the Executive Director of the Connecticut Siting Council, the South End site is not mentioned in NU's 1983 Forecast of Loads and Resources as a site proposed for powerplant development in the ten year forecast period. Also, the South End site was not mentioned as proposed for power generation development in NU's last 20 year forecast submitted by the Utility in 1982.

Any site in Connecticut proposed as the location for a power facility is subject to regulation under the Public Utilities Environmental Standards Act. The siting of generating facilities on NU's property would be regulated by the Connecticut Siting Council within the State Department of Public Utility Control.

The Siting Council consists of one representative each from the Department of Environmental Protection, Public Utilities Control Authority, House of Representatives, and Senate as well as five members of the general public appointed by the Governor. No construction of the generating facilities currently being considered by NU for its South End site may take place without a "certificate of environmental compatibility and public need" issued by the Siting Council.

Some important points with regard to possible future review by the Siting Council of an application by NU for a "certificate" (such as would be required for the Utility's South End property) are as follows:

- The application must include justification for site selection, including comparison with alternative sites and methods for meeting projected demand.
- The application shall contain information on the extent to which the proposed facility has been identified in annual forecast reports and other advance planning has been carried out.
- In making a decision whether or not to issue a certificate, the Siting Council shall in no way be limited by the fact that NU has already acquired this site for the purpose of constructing the facility which is subject to the application.
- State "land-banking" of sites for future utility use does not occur in Connecticut and the State cannot require that a specific site be used for a specific technology (e.g., fuel cells) in the future.
- Technology advances and economic conditions in the next decade may or may not obviate a future need for power generation on the South End site.
- According to the Executive Director of the Siting Council, NU may claim the South End site is the only site suitable for its needs in the Southwest Connecticut region; the Council may or may not agree.

The Siting Council will review an application for a certificate in accordance with statutory criteria and render a decision either granting or denying an application as filed or granting it with attached conditions. Siting Council authority must also be consistent with the policies established by the CAM Act. The criteria established by the Public Utilities Environmental Standards Act require that prior to granting a certificate the Council shall find and determine the "nature of the probable environmental impact, including a specification of every significant adverse effect, whether alone or cumulatively with other effects, on, and conflict with the policies of the state concerning the natural environment, ecological balance, public health and safety, scenic historic and recreational values, forests and parks, air and water purity and fish and wildlife" and "why the adverse effects or conflicts referred to ...are not sufficient reason to deny the application."

The City of Stamford is not in a position to assess the accuracy of NU's forecasts of public service utility needs and how these projected needs should best be planned for. The City does, however, have an important input into the energy facility siting process. Sec. 16-50x(d) of the Public Utilities Environmental Standards Act states that municipal zoning commissions may regulate and restrict the proposed location of an energy facility although a municipal decision may be revoked by a vote of six members of the Siting Council. Specific standards for municipal review of proposed power facilities are not, however included in the Public Utilities Environmental Standards Act. It is assumed by the Connecticut CAM program that such municipal review would be based on the proposed facility's consistency with the statutory criteria for Siting Council review, local planning and zoning policies, and the policies established by the CAM Act.

As to the relationship of powerplant construction to the CAM Act, the various land and water resource and coastal use policies established by the Act are intended to "serve as a guide to energy facility planning and siting by all levels of government in the coastal area." Especially relevant to powerplant planning and siting are the specific CAM Act policies relative to: energy facilities; national interest facilities and resources; fuel, chemicals and hazardous materials; and water dependent uses.

According to the state CAM Office, the generating facilities now being considered for development by NU on Stamford Harbor are subject to the municipal process of coastal site plan review (CSPR) as well as Siting Council review. Although a final decision has not been rendered by the state, it is the opinion of the CAM Office that this double review should be sequential, with the municipal CSPR occurring first. A decision of the Stamford Zoning Board to deny or regulate the proposed generating facility could then be appealed by NU to the Siting Council. As specified in the Public Utility Environmental Standards Act, any municipal decision to regulate or restrict the proposed location of a generating facility "shall be made within 30 days following the receipt of any application." Therefore, the Zoning Board would have 30 days to act following the receipt of a CSPR application for a proposed energy facility on NU's South End property. (The Zoning Board has 65 days to act on all other CSPR applications.)

The Public Utility Environmental Standards Act provides for the incorporation of all relevant public and private interests into the facility siting process. The municipal CSPR process, by preceding the Siting Council's review, is seen by the CAM Office as an additional mechanism for ensuring the incorporation of local interests into the State's facility siting process. It must be remembered, however, that the Siting Council's authority ultimately "preempts all other state and local land and water use regulations".

Feasibility of Relocation or Consolidation of Existing Gas Facilities

As noted earlier, NU's tentative plans for future power generation in the South End would not preclude the continuation of the gas storage and transmission operations that presently exist on the site. A review of information provided by Northeast Utilities with regard to conceptual powerplant plans and the existing gas storage and transmission uses indicates that NU has apparently made two findings of special importance relative to the future use of the Utility Site:

1. It is not essential for utility needs that such existing uses as the engineering offices, storerooms, garages, pipe storage area, etc., remain on the South End site. Such uses can, in fact, be relocated elsewhere.

2. The present layout of gas storage and transmission facilities that now occupy the Utility Site can be greatly consolidated and/or relocated (e.g., to the Pitney Bowes parking site) to leave approximately 18 of the Utility Site's 20.15 net acres free for other development.

At the present time NU's planning for its South End property is based on the Utility's need to retain maximum flexibility for future utility options. This planning is now proceeding on the premise that it will be necessary to use a portion of the 18 "freed-up" acres to build a powerplant at some time in the future. Due to the preliminary status and tentative nature of NU's power

plant planning activities at this time, however, the apparent feasibility of reducing the land area of the existing utility related activities, now spread over 20 acres, by approximately 90 percent, opens up for discussion several possibilities regarding the future use of the "freed-up" portion of the Utility Site.

- Redevelop most of the site for power generation and other utility uses with approximately 25 percent of the site available for non-utility use (e.g., relocation of YHW boatyard activities landward of the hurricane barrier).

- Redevelop a smaller portion of the site (a smaller portion than currently planned by NU) for utility uses and redevelop at least half of the site for non-utility uses such as housing and other uses directly related to the South End Community.

- Redevelop the entire 18 "freed-up" acres for non-utility land uses such as housing and other uses directly elated to the South End Community.

The purpose of this discussion is not to suggest that powerplant development will not and should not occur on Northeast Utilities' South End property. NU's public service obligation, and the possible lack of other suitable sites or means to meet future electric demands may very well result in the construction of a 200 megawatt plant on this site at sometime in the future. As noted in our earlier report, expansion of existing energy-related facilities on NU's South End Utility Site to include a 200 MW plant would appear to be a logical siting choice since many of the necessary support facilities for the plant are already in place on the site. Also, the earlier report noted that the expansion of existing utility facilities on-site to include power generation would have a smaller incremental impact when compared to the environmental impact and costs associated with developing a new site.

At such time as NU does submit an application to build a powerplant on this site, however, an evaluation of alternatives will be a key component of review by the Connecticut Siting Council. According to the Executive Director of the Siting Council, whether or not there are other suitable sites for the Utility's future power generation needs in Southwestern Connecticut is yet to be determined.

The purpose of the preceding discussion has been to emphasize: (1) the long-range horizon of NU's powerplant planning activities in the South End; (2) the point that conditions affecting the technology and economics of the electric power industry are subject to rapid and unpredictable change (note that NU's acquisition of the YHW parcel 13 years ago was based on plans for a powerplant that never materialized); and (3) an extensive regulatory review process involving the detailed evaluation of alternatives remains to be satisfied before NU can construct a powerplant on its South End property.

In other words, by no means should the future use of this site for generating electric power be considered firmly established at this time. This point is of particular importance with regard to the fact that NU is presently asking for near term commitments by municipal agencies with regard to non-utility development plans on NU's YHW Site. NU is asking the City to make these commitments now — commitments that would result in the irretrievable allocation of an existing resource — on the basis that the YHW Site (and approximately 4 acres immediately landward of the hurricane barrier)is the only portion of NU's South End property that will be available for non-utility development.

However, the long-range nature of NU's power generation planning and the apparent feasibility of consolidating and/or relocating the existing gas facilities on NU's Utility Site is of potentially great benefit to the City and to the South End community in that it opens up for discussion and further exploration the possibility of non-utility-related development on almost 20 acres landward of the hurricane barrier.

EVALUATION OF THE PLAN FOR THE YACHT HAVEN WEST SITE

Residential use — 800 luxury condominium units on the YHW Site — is the primary component of the conceptual development plan presented for NU's "excess" South End property. Other elements of the plan include a boatyard/marina component, public access, and commercial components giving a mixed-use characterization to the development.

As indicated by the proponents of the plan, the mixed-use concept necessarily leads to certain conflicts between such competing users of the water's edge as the condominium residents, recreational boaters, the general public, boat repair and marine maintenance crews, and members of or visitors to the intervening Ponus Yacht Club.

Among the key issues raised by the form and character of the planned development are:

1. Location in the Floodplain
2. High Intensity of Planned Development
3. Perceived Lack of Direct Benefits to the Larger Community
4. Capital Costs to the City
5. Congested and Limited Site Access
6. CAM Act Emphasis on Preserving Water Dependent Uses

These development issues are not separate and isolated. There are strong interrelationships between them. Each of the issues listed above has been addressed by the proponent in terms of various mitigating tradeoffs. The following sections will: (1) further describe the public concerns and development problems that have arisen as a result of NU's plan for residential development; (2) identify the tradeoffs or benefits proposed by NU as a response to those concerns and problems; and (3) evaluate the extent to which those tradeoffs respond to the specific concerns and development problems that have been identified.

- **Issue 1: Location of New Residential Development in the Floodplain**

Chapter 2 included a description of some historic incidences of coastal flooding in the South End and of the flood protection now provided by the publicly-funded hurricane barrier constructed by the U.S. Army Corps of Engineers to protect the City of Stamford. The YHW Site is seaward of the hurricane barrier and is identified on the most recent maps prepared by the Federal Emergency Management Agency for flood insurance purposes as located in a coastal high hazard area. As such, this area is determined to be subject to coastal flooding with high velocity waters created by wave action. The siting of 800 residential units on the YHW Site, therefore, raises a significant public safety issue relative to the exposure of the site to coastal flooding and storm surge.

Tradeoff: Elevation of Residential Use

According to the proponents the project would be designed to meet the requirements of the City's Floodprone Area Regulations. In order to receive the necessary permit from the City of Stamford for construction within a floodprone area and to ensure that Federally-subsidized flood insurance is available to condominium owners, an elevated three tiered project design would be employed. This design (containing parking and boat storage on the first two levels) would elevate the first residential level above the flood water heights indicated on the current Flood Insurance Rate Map.

- Response to Issue 1: Location in the Floodplain

This issue raises important questions concerning public health and safety during a hurricane or other severe coastal storm. Historic flood occurrences, the extent of flood protection afforded by the hurricane barrier, and the fact that the alignment of the barrier leaves the Yacht Haven West

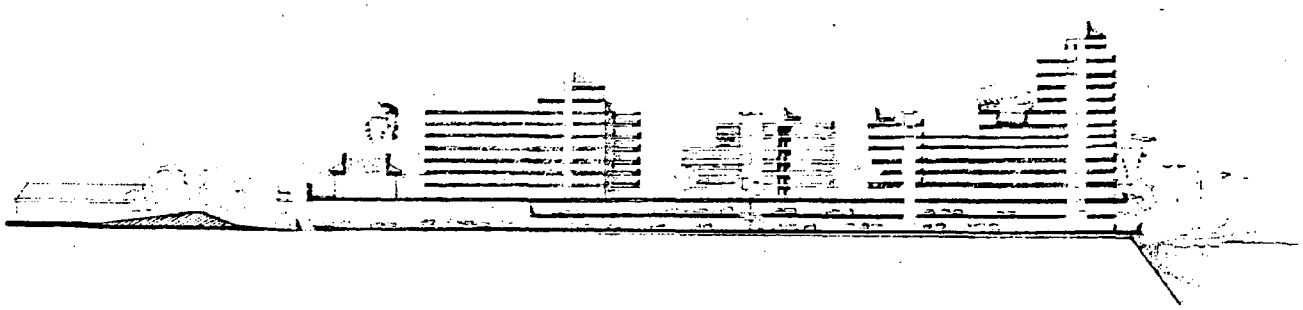

Figure 20: The Residential Development Plan: Cross Section Along North/South Axis Looking East (Prepared byRPPW)

Site exposed to coastal flooding are considerations that have been discussed at length in preceding chapters. The construction of high density residential development in a coastal high hazard area must be evaluated relative to at least three major considerations: (1) the regulations and requirements of the National Flood Insurance Program; (2) general public policy issues related to flood hazard (including policies established by the CAM Act and other State policies); and (3) increased development costs associated with building in the floodplain.

(1) The National Flood Insurance Program

In response to coastal flooding and damages that have occurred in the Stamford coastal area over the years, various actions have been taken in an attempt to reduce the frequency and extent of coastal flooding and erosion. These measures can be categorized as structural and nonstructural. The most notable structural measure to protect developed areas is the hurricane barrier constructed by the Federal government through the Army Corps of Engineers. Privately financed structural measures have been constructed by individual property owners in the form of seawalls, groins, and the placement of rip-rap in front of individual properties.

Nonstructural regulatory measures to minimize the impacts of flooding and erosion by limiting the amount and type of new development in flood prone areas have also been undertaken. Most prominent have been those related to the passage of the National Flood Insurance Act of 1968. As part of the National Flood Insurance Program, the Federal government has mapped the flood hazard areas in all coastal communities. In order to make Federally subsidized flood insurance available to property owners in the community, Stamford has adopted Flood Prone Area Regulations in accordance with the requirements of the National Flood Insurance Program to govern development in the floodplain. These regulations are imposed according to the different flood hazard zones and calculated flood water heights shown on the Flood Insurance Rate Map (FIRM).

Of particular importance with regard to development considerations on the NU property are the A-Zone and V-Zone flood hazard area designations on the FIRM. The A-Zone is the portion of the coastal floodplain that is likely to be inundated by the 100 year (1% chance of occurring each year) flood. The V-Zone, also called the coastal high hazard zone, is the portion of the coastal floodplain likely to be inundated by the 100 year flood and simultaneously subject to high velocity water from wave action.

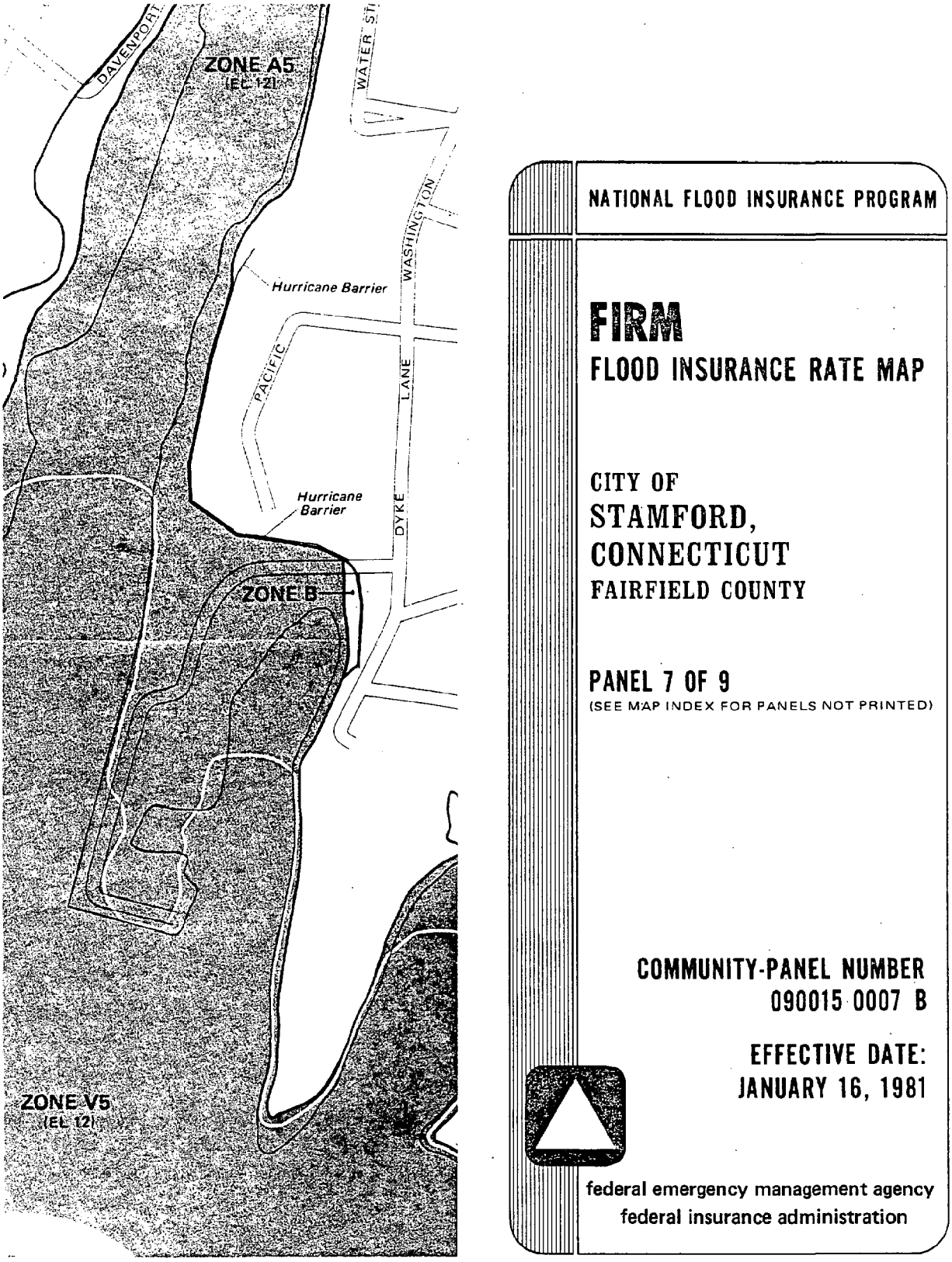

Figure 21: Flood Insurance Rate Map (The current FIRM designates most of the YHW Site as Zone A5.)

As wave impact is the most destructive element of coastal storms, flood insurance premium rates are significantly higher in the V-Zone than in the A-Zone and, similarly, the building standards and regulations contained in the municipal Flood Prone Area Regulations are much more restrictive relative to new construction in the V-Zone.

The Flood Insurance Rate Map that currently has "official" status in the City of Stamford (has gone through the public hearing process, has been adopted by the City, and determines flood insurance availability and rates) is dated January 16, 1981. As shown on this map, most of the YHW property is designated as A-Zone with a base flood elevation of +12 feet NGVD.[2] Only a very small portion of the southernmost periphery of the site is shown as subject to high velocity wave action.

In assessing the flood hazard potential on the YHW Site and the implication for site planning and new development, consultants for Northeast Utilities, OLKO Engineering, note that most of the area is designated as A-Zone on a preliminary revision to the January 16, 1981 FIRM with the remainder (mainly at the southern tip) designated as V-Zone. OLKO Engineering Consultants state in their April 1982 report for RPPW that "In practical terms it is expected that the extremely severe restrictions for V-Zones... will prohibit any new building construction in this zone. Fortunately, the V-Zone area on the property is relatively small, and avoidance of new construction in this area is not expected to be a major restraint..." The report further notes that "restrictions are extremely severe with V-Zones, so that construction within this area, in accordance with regulations, may be prohibitive, unless free standing pile construction is used."

The key provisions of Stamford's Flood Prone Area Regulations with respect to new construction in the Coastal High Hazard Area or V-Zone are as follows:[3]

> "All new construction and substantial improvements within Zone V1-30 on Stamford's FIRM shall be:
>
> (a) elevated on adequately anchored pilings and columns and securely anchored to such piles and columns so that the lowest portion of the structural members of the lowest floor (excluding the pilings or columns) is elevated to or above the base floor level.
>
> (b) a Connecticut registered professional engineer or architect shall certify that the structure is securely anchored to pilings or columns in order to withstand velocity waters and hurricane wave wash.
>
> (c) the space below the lowest floor shall be free of obstructions or be constructed with breakaway walls and shall not be used for human habitation.
>
> Use of fill for structural support of buildings within Zones V1-30 is prohibited."

2. National Geodetic Vertical Datum (NGVD) is a fixed reference adopted as a standard geodetic datum for elevation in the U.S. Formerly referred to as mean sea level datum but not to be confused with local mean sea level.

3. It should be noted that these regulations represent minimum floodplain management regulations consistent with Federal guidelines to ensure local eligibility for Federally subsidized flood insurance. The National Flood Insurance Program,however, also provides the opportunity for municipalities to exceed the minimum requirements (e.g., to reserve all undeveloped V-zones for open space and public recreation) and communities are encouraged to exceed the minimum standards.

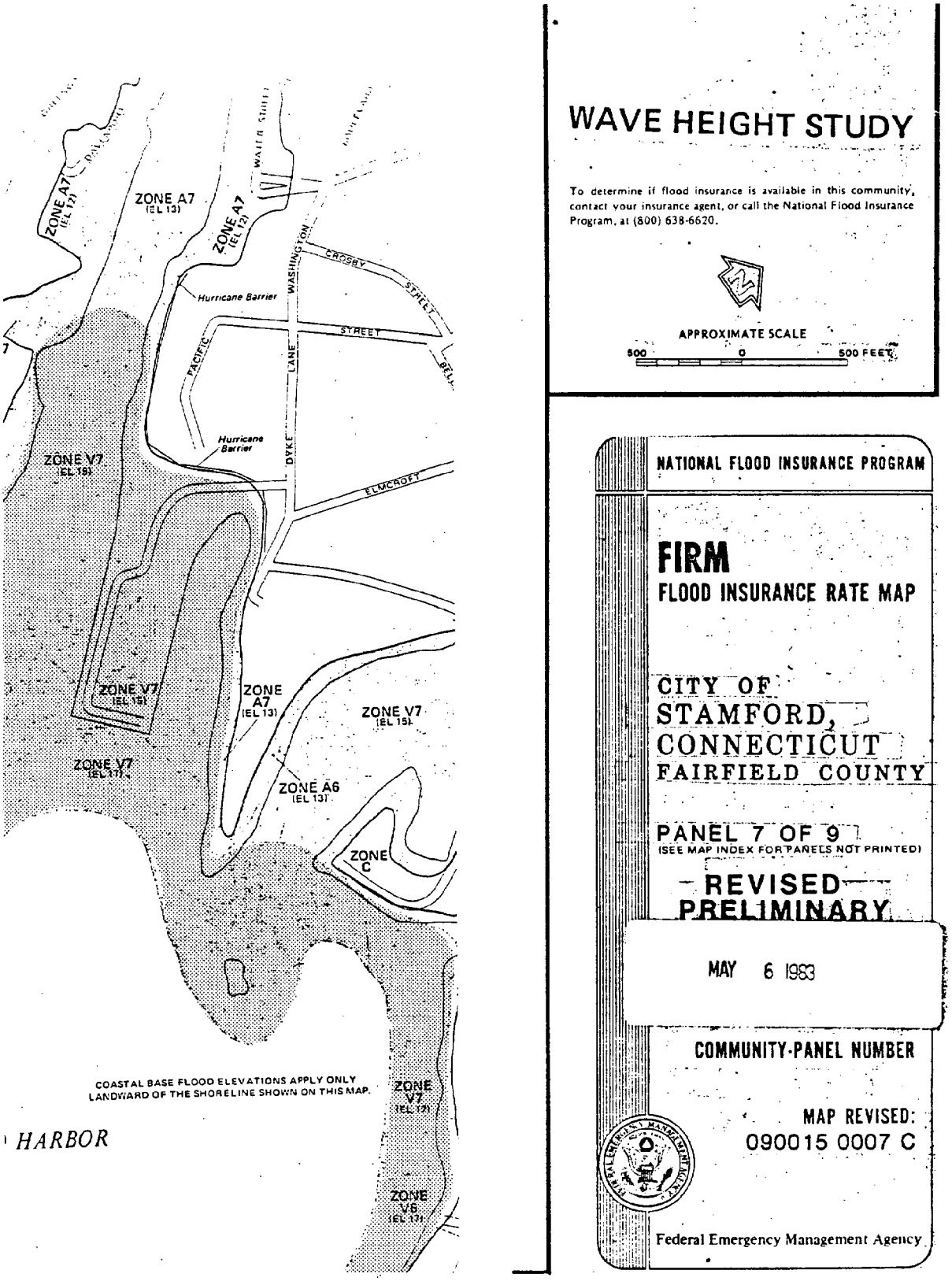

Figure 22: Flood Insurance Rate Map (The recent Federal wave height study shows the entire YHW Site as a coastal high hazard area. The revised FIRM would place the site in Zone V7.)

Due to improved local technical information (e.g., topographic data) and recent changes and methodological advances in the Federally-established criteria for preparing Flood Insurance Rate Maps, the Flood Insurance Study and associated FIRM for the City of Stamford is currently being revised.

Following the assessment of flood hazard potential on the YHW Site by NU's consultants a Revised Preliminary Wave Height Study and FIRM dated May 6, 1983 has been prepared by the Federal Emergency Management Agency. As shown on this map the entire Yacht Haven West Site is designated as a V-Zone with a base flood elevation of +15 feet NGVD. (See Figure 22.) In discussions with the Federal Emergency Management Agency (FEMA) — the agency charged with administering and implementing the National Flood Insurance Program — the agency has indicated that it is currently considering whether to initiate at this time the municipal adoption process (involving a 90 day appeal and 6 month compliance period) relative to the May 6 Wave Height Study and FIRM.

FEMA has indicated that, given the importance of the wave height and coastal flooding information contained in the new FIRM, the agency will most likely go forward with the adoption process of the May 6 map at this time, even though revisions to the City-wide Flood Study are still in progress.

The recent May 6 FIRM (placing YHW in the V-Zone) now represents the best technical flood hazard information currently available and, as such, should be used by municipal agencies in the review of proposed development plans in the coastal area.[4]

To date the City of Stamford has never received nor has it reviewed, a development proposal in a V-Zone area. Nevertheless, the residential development plan presented by Northeast Utilities could be designed and engineered to meet the V-Zone requirements contained in the municipal Flood Prone Area Regulations. As such, Federally subsidized flood insurance would be available to homeowners in the new project. In this case, the development plan for the YHW Site would meet all regulations of the Flood Insurance Program. Therefore, from the point of view of the agency charged with administering and implementing the National Flood Insurance Program, FEMA would have no comment on the appropriateness of the proposed development in the coastal floodplain.

The Flood Insurance Program, however, deals only with "insurable structures" (i.e., dwelling units). There are no regulations in the Federal Flood Insurance program dealing with access to development in the floodplain.

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4. Flood insurance rates for new homeowners, however, would be determined by the FIRM "officially" in place (i.e., the January 16, 1981 map). This would be a significant consideration in the case of new residential development constructed on the YHW Site prior to city adoption of the recently prepared FIRM that changes the hazard designation of the site from A-Zone to V-Zone. As noted earlier, insurance premiums are significantly higher in the V-Zone area. FEMA has also indicated, however, that initial insurance premiums based on an A-Zone designation might be increased to V-Zone rates at such time as the revised FIRM is adopted. Such an increase might be warranted if wave height information and potential V-Zone designation was public knowledge at the time of construction.

From the point of view of emergency preparedness, this is a critical issue and one which the City of Stamford and its municipal boards should be especially sensitive to from the standpoint of potential liability for flood damage to future residential development on the YHW Site.

The problem of maintaining adequate access to floodplain development is important in terms of : (1) emergency vehicle access (police, ambulance, and fire fighting equipment) and (2) evacuation. For example, FEMA notes that a great deal of property damage occurs during storm and flood conditions as a result of fires. FEMA also notes that the access issue is especially important with regard to residential floodplain development and is less critical in a commercial situation. In a nonresidential situation people are much less likely to be in the floodplain when a severe storm is imminent. Residents, however, are normally reluctant to leave their homes, and attempt to "weather" any storm. When it does become critical to leave, however, parked vehicles and accessways may be underwater.

Even though a residential development project can be designed and engineered so that the first habitable space level is above the base flood elevation, it is normally much more difficult to ensure that access and egress facilities are similarly above flood levels. In its role as the Federal emergency preparedness agency , FEMA is likely (if asked by a local government) to regard with disfavor residential development in a coastal high hazard area in which access and egress facilities could be underwater during flood occurrences. As noted by FEMA, elevated residential development in the floodplain can often result in a situation where units are "marooned" during common flood occurrences.

(2) Public Policy Relative to Natural Hazards

In addition to the requirements of the Flood Insurance Program and the Municipal Flood Prone Area regulations, there are also more general public policy flood hazard issues relative to proposed new development on the YHW Site. Issues of access to flood prone areas and of municipal responsibilities and costs relative to evacuation and emergency response fall within the realm of such public policy issues.

Furthermore, as noted by the Connecticut CAM office, "given the substantial public investment already made in the hurricane barrier, the advisability of allowing high-density residential development in the flood hazard area immediately outside of the flood barrier should be considered and factored into the land use plans for the site".

Also, the following CAM Act policies will be especially pertinent at such time as a plan for new development on the YHW Site may be submitted for municipal coastal site plan review:

"To manage coastal hazard areas so as to insure that development proceeds in such a manner that hazards to life and property are minimized. (P.A. 79-535, sec. 2(b)(2)(F)).

"To consider in the planning process the potential impact of coastal flooding and erosion patterns on coastal development so as to minimize damage to and destruction of life and property and reduce the necessity of public expenditures to protect future development from such hazards." (P.A. 79-535, sec. 2(a)(5))

Additional State policies pertinent to planning and new development on the Yacht Haven West Site are contained in the State of Connecticut's Conservation and Development Policies Plan 1982-1987. This plan enunciates broad goals and strategies for those policy and investment decisions of State Government which concern the future growth and development of the State and the conservation of its natural and man-made resources. The Plan has been adopted by the General Assembly and is intended to serve as an advisory document to state government. On the Plan's Locational Guide Map, the YHW Site is included in a designated Conservation Area due to its location in the 100 year floodplain. Adoption of the V-Zone designation on the YHW Site, however, would likely result in the site being designated as a Preservation Area in the State Conservation and Development Policies Plan. The following State Action Strategy would then apply:

> "Foster the identification of significant resource, heritage, recreation and hazard areas of statewide significance and advocate their protection by public and quasi-public agencies in their planning and investment decisions; avoid support of structural development except as directly consistent with the preservation values."

(3) Increased Development Costs

As previously noted, state-of-the-art engineering techniques allow new development to be designed and built in coastal floodplains to withstand high velocity waters and hurricane wave wash and to elevate residential units above predicted flood levels.

While technology is not a constraint to such development, the cost of implementing such technology often times is. In the case of NU's residential development plan, the high construction costs associated with building in the coastal high hazard area will necessitate: (1) the construction of high priced, luxury units, thus satisfying housing needs only at the upper end of the market, and (2) high density development to concentrate the maximum number of units on the site necessary to yield an acceptable return on the developer's investment.

- **Issue 2. High Intensity of Planned Residential Development**

The existing MG zoning of NU's YHW and utility parcels prohibits new residential development on this property at any density. As a result, the development plan presented would require a zoning change to permit both the suggested residential use and proposed density of 56 dwelling units per acre on the Yacht Haven West Site (800 units on 14.35 acres). The recently adopted Master Plan land use designation for the YHW Site would permit residential use (following appropriate zoning revisions) at a density not to exceed 29 units per acre.

Since the initiation of the City's coastal planning efforts, the appropriate density of new development on waterfront sites has been a key local issue. Similarly sized and priced waterfront condominium units to those described in the NU plan have recently been constructed in Stamford and Greenwich. For the purpose of density comparisons, the Yankee Harbor/Schooner Cove project on the East Branch of Stamford Harbor includes 198 units at a density of 24 units per acre and the Palmer Point project contains 74 units at a density of approximately 25 units per net acre.

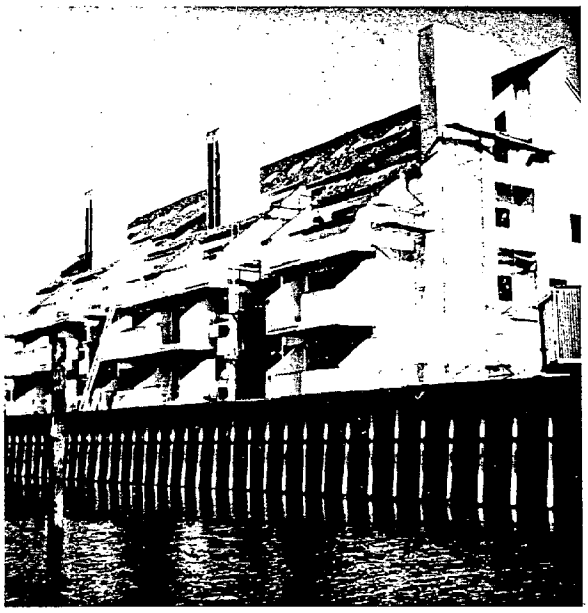


Figure 23: Schooner Cove Condominiums

Tradeoff: Application of the Transfer of Development Rights Concept

As noted in Chapter 3, NU's consultants have suggested that the "transfer of development rights" concept be incorporated into the development of a new zoning regulation that would allow the construction of 800 residential units (described as the minimum number of units needed to meet the threshold of economic feasibility) on the YHW Site. It is argued by NU's consultants that the TDR concept could be tailored into the zoning regulation — following the residential rezoning of the Utility Site landward of the hurricane barrier as well as the YHW Site — to allow for the transfer of development rights from the Utility Site to the YHW parcel. The proponents reason that residential density on the YHW Site would then be thought of in relation to the total land area of the YHW and Utility Sites — some 40 acres.

- Response to Issue 2: High Intensity of Planned Development

The arguments presented in favor of the proposed density stem from the high costs of development associated with the specific and unique characteristics of the YHW Site, the costs of relocating the boatyard and marine trades activities to the 4 acre site landward of the hurricane barrier, and the subsidization of boatyard/marina activities (currently judged by the proponents as an uneconomical use of the site). No other justification has been offered for the proposed density level. Although economic considerations are of obvious importance, they are only one of many factors that need to be considered in formulating a municipal zoning regulation. The basic rationale for a zoning regulation is the overall public good based on considerations of public health, safety, and welfare.

Furthermore, we regard the "transfer of development rights" concept as inapplicable to development on NU's South End properties. Neither the Utility Site nor the YHW Site is now zoned for residential use. Hence, at the moment there are no residential development rights to transfer.

There are other problems with this concept. As the utility (gas and electric) and non-utility (residential) development concepts now stand, both of NU's parcels would be intensively developed to the limits of their respective uses. Therefore, the residential development plan proposed represents a request for an increase in density, not a transfer of development rights.

The issue of density should be approached in a straightforward manner of rezoning to an appropriate use and density rather than transferring nonexistent residential development rights among the two parcels.

- **Issue 3: Perceived Lack of Direct Benefits to the Larger Community**

In the past several years major planning efforts have been directed towards the South End with a primary goal of restoring the vitality of the community's residential neighborhoods. During the public review of recently proposed waterfront development projects in the South End, concern has been expressed that new development may not provide direct benefits to the community. Some residents are also concerned that the residential plan of development for the YHW Site will not directly benefit the community and that it could ultimately displace them as a result of rising property values and speculative land sales.

Tradeoff: Off-site Housing and Enhancement Projects

To offset community perceptions that the construction of 800 luxury condominium units on the YHW peninsula will not provide direct and significant benefits to South End residents, NU has expressed a willingness to provide a yet to be determined level of offsite housing assistance to the community. The development plan also provides for a public accessway around both the Utility Site and the residential peninsula and a linear public park adjacent to Washington Boulevard and Dyke Lane. There may be additional offsite contributions that NU would be willing to provide in exchange for the necessary changes in existing land use and zoning regulations needed to implement the residential development plan.

- Response to Issue 3: Perceived Lack of Direct Benefits to the Larger Community

The development plan would almost double the existing housing stock of the South End. From an area of Stamford in which population has been declining, the plan creates a major infusion of new population and dwelling space. It also preserves and enhances (through the public walkway) a section of the South End waterfront for use by the general public.

All of the housing created on the YHW Site, however, would be luxury units, thus satisfying housing needs only at the upper end of the market and therefore providing no direct housing benefits to the predominantly low and moderate income residents of the South End. In addition to the income level of new residents, the isolation of the YHW parcel (caused by the single access point, the hurricane barrier and the peninsular site) from the remainder of the South End creates a strong physical separation between the planned development and the existing South End Community.

It is our understanding that, in informal discussions, NU has indicated a willingness to consider providing assistance to the community relative to "affordable housing" offsite in the South End neighborhood. However, not enough is known about the matter to further comment.

In approaching such potential benefits, however, it may be advisable to examine whether or not government regulations of the sort that have been interpreted as precluding a public utility's involvement in non-energy related projects would also affect the type of off-site contributions a utility is legally able to provide. One specific question to be addressed is whether or not the State Department of Public Utility Control would allow a public utility to include the costs of street improvements and housing assistance in the rate base.

- **Issue 4: Capital Costs to the City**

As noted in Chapter 1 there are several severe infrastructure constraints to new development in the South End, most notably constricted vehicle access to the area, traffic congestion, and the inadequacy of existing sewerage facilities. Currently, the money for major new public investment in capital projects is either scarce or nonexistent.

Tradeoff: Cost Sharing by the Developer

Northeast Utilities has indicated a willingness to provide funds for street improvements along Washington Boulevard and Dyke Lane and to reconstruct a widened Dyke Lane. NU is also amenable to allocating funds for necessary offsite sewer and water extensions.

- Response to Issue 4: Capital Costs to the City

Northeast Utilities has indicated a willingness to contribute towards improvements in the physical infrastructure serving the site. There is a reasonable basis for negotiating a public/private allocation of costs for road improvements and for needed sewer and water extensions. Additional capital costs to the City, however, remain to be addressed. For example, in order that the planned waterfront walkway is continually accessible and attractive to pedestrians there are significant capital cost implications. Will the accessways be maintained by the developer or by the City? Who will have title? Will an easement dedication be necessary? Who is responsible for security and for insurance against injuries to users? Furthermore, if flood damage did occur, who would be responsible for the costs of reconstruction and repair of accessways open to the public?

- **Issue 5: Congested and Limited Site Access**

Present access to the Yacht Haven West Site is by means of a single road over the hurricane barrier and a 25-foot right of way through the Ponus Yacht Club property. The single point of access raises fundamental questions of public safety in the event of an emergency evacuation or response necessitated by a natural or manmade disaster. In the development plan presented by Northeast Utilities, this one access road would be used by condominium owners, nonresidents using the waterfront public accessway, and members of the recreational boating community seeking access to the marina facilities.

Tradeoff: Widening of Current Accessway; Negotiation with Ponus Yacht Club

In NU's conceptual development plan, access to the residential enclave is designed to pass around the Ponus Yacht Club property. It was indicated, however, that NU would attempt to negotiate a relocation of the Yacht Club, possibly to NU's vacant property north of Southfield Park. In addition, the current access road over the hurricane barrier would be widened and a new right-of-way over the hurricane barrier created in order to allow travel lifts to carry boats to and from the relocated shipyard facilities north of the hurricane barriers.

- Response to Issue 5: Congested and Limited Access

The issue of access was previously raised in the context of flood hazard potential and the possibility of residential units being "marooned" during a flood event. Intensive residential development in a coastal high hazard area with one point of access and egress raises some fundamental questions of public safety in the event of an emergency situation.

Damage to a single point of access, blocking vehicular movement would impede the movement of emergency vehicles onto the peninsula. In addition, the competition for this single access point between various users of a mixed use project — including condominium owners, boat hauling and repair activities, the general public, and the recreational boating community — would seem to present some inherent conflicts in a non-emergency situation.

Given the specific geography of the site, the only possible design solution to these conflicts involves widening of the current accessway over the hurricane barrier to accommodate increased vehicular traffic and creation of a new accessway over the barrier to allow travel lifts hauling expensive sailboats upwards of 40' in length to reach the new boatyard area landward of the barrier.

Such modification of the hurricane barrier raises federal and local permitting issues that may pose significant constraints to new development and, in any case, have not been addressed to date. As indicated by the Corps of Engineers, any proposed modification of the barrier that might affect the integrity of the dike would involve a joint review by the Corps and the City of Stamford. In the past, the City of Stamford has been especially reluctant to permit any sort of activity (including the placement of fill within the 10' maintenance easement extending from the toe of the dike) that would affect the barrier and the City's maintenance responsibilities.

Acquisition of the Ponus Yacht Club property would improve access conditions relative to both a new roadway and a relocated boatyard area as well as to vehicle access to the residential enclave. The existing easement across the Yacht Club's property held by Northeast Utilities for access to and from YHW is only 25 feet in width.

Only a small amount of apparently city-owned land (on the eastern edge of the Yacht Club's property) is available to construct a new roadway to the YHW parcel that would not cross the Ponus Yacht Club parcel or require the filling of submerged land between YHW and Kosciuszko Park. Acquisition of the Ponus property would therefore greatly enhance the potential width of roadway serving new development on the YHW Site and the opportunity to elevate this roadway for its entire length above anticipated flood levels. Such acquisition would not, however, respond to the more fundamental question involving the single point of access to the Yacht Haven peninsula over the hurricane barrier.

- **Issue 6: CAM Act Emphasis on Preserving and Promoting Water Dependent Uses**

It is clearly recognized that among the foremost objectives that must be satisfied in any redevelopment plan for the YHW property are the objectives of the Connecticut Coastal Management Act. Among the goals and policies contained in the Act that are especially applicable to the redevelopment of this property are the water dependent use policies requiring that "a high priority and preference be given in all government planning, regulatory, and development programs to the siting of water dependent uses in shorefront areas".

The central issue with regard to the CAM Act's water dependent use policies — an issue with City-wide and regional ramifications — is the impact of the residential development plan on Yacht Haven West. Yacht Haven is not only a genuinely water dependent use (the only other genuinely water dependent uses in Stamford Harbor are related to fuel storage, construction materials and scrap metal yards), it may be the largest privately-operated boatyard marina facility serving pleasure boats on the East Coast.

Tradeoff A: Providing Public Access

One of the noteworthy features of the CAM Act definition of "water dependent uses" is that any activity becomes water dependent if it provides "general public access to marine or tidal waters". As a result, the designers of NU's development plan have emphasized public access to the waterfront in their development scheme. Such access takes the form of a pedestrian walkway along the full perimeter of the YHW peninsula and a pedestrian promenade along the West Branch that would be the site of a vendors' market/bazaar. Also, a linear waterfront park containing the embankment portion of the hurricane barrier would be developed along the perimeter of the proposed power generating site.

Tradeoff B: Integrating and/or Relocating Existing Water Dependent Uses in the Development Project

Aware of the importance of the recreational boating services presently provided by Yacht Haven West, NU's consultants have designed a development plan for the YHW Site that contains a marina/boatyard component. Marina facilities would be developed as an adjunct to the residential use and include the existing berthing slips around the perimeter of the site. Marina parking would be incorporated, along with winter boat storage, into the parking levels beneath the residential development. New marina sales, repair and storage facilities would be developed on an approximately 4 acre site north of the Ponus Yacht Club and landward of the hurricane barrier.

To allow feasible operation of the boat lifts, a ramp of no greater than 5 percent grade would be provided from the existing boat hauling area, through a new access point in the hurricane barrier, to the new ship service area behind the barrier. Buildings containing a total floor area of some 70,000 square feet would be developed on the 4 acres behind the barrier to replace the buildings now located on the YHW Site. The feasibility of creating a maritime center/museum at this location would be studied, as well as utilizing the new marina buildings for exhibitions, shows, and major events.

Response to Issue 6: CAM Act Emphasis on Preserving Water Dependent Uses

Perhaps foremost among the CAM Act policies pertinent to the municipal review of all redevelopment plans affecting the YHW Site are the Act's water dependent use policies — policies that clearly require all government planning, regulatory and development programs to give high priority and preference to the siting of water dependent uses in shorefront areas. Along with other pertinent CAM policies, (e.g., Coastal Hazard Areas, Recreational Boating) the Water Dependent Use policies are intended to provide direction for public planning and regulatory actions affecting the YHW Site.

One notable feature of the CAM Act definition of uses that are water dependent is that any activity becomes water dependent if it provides "general public access to marine or tidal waters". In considering how the Act's water dependent use policies apply to redevelopment on the YHW Site it is useful to distinguish (1) between uses genuinely dependent on a waterfront location from (2) other uses, such as residences and offices, that become "water dependent" under the CAM Act definition if they provide public access. The existing YHW operation is a genuinely water dependent use, in fact, a facility of almost singular importance to the local and regional recreational boating industry.

The integration of genuinely water dependent services of the type currently provided by YHW and the incorporation of waterfront public access into the development concept proposed by Northeast Utilities illustrates NU's recognition of the water dependency issue and other CAM concerns. The final regulatory decision, however, on the development plan's consistency with the standards and policies of the CAM Act will be a responsibility of local land use authorities.

Adverse impact on future water dependent development as defined in Section 22a-93(17) of the CAM Act include:

"(A) locating a non-water dependent use at a site that (i) is physically suited for a water dependent use for which there is a reasonable demand or (ii) has been identified for a water dependent use in the plan of development of the municipality or the zoning regulations; (B) replacement of a water dependent use with a non-water dependent use, and (C) siting of a non-water dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters."

It is important to note that the YHW Site was originally created by landfill for use by boating industries and has been continually used for the operation of such industries. In addition, as noted by the State CAM Office, the site has extensive frontage on and direct access to the Federally dredged and maintained navigation channel in the West Branch.

Given the unique physical characteristics of the YHW Site and the nature of the current water dependent use, it is clear that new development on the site may potentially impact both existing water dependent activities and future water dependent development opportunities. Evaluation of the extent of such impact will be a critical consideration relative to:

(1) Current municipal efforts to formulate recommendations for the future use of this property from the broad perspective of land use planning for Stamford's entire coastal area.

(2) Future coastal site plan review and subsequent regulatory decisions by municipal agencies on the consistency of a submitted development plan with the standards of the CAM Act.

An assessment of the impacts of NU's proposed development concept on the existing water dependent uses that currently occupy the YHW Site therefore appears to be particularly valuable at this time.

The Connecticut Coastal Area Management Program has stated that for consistency with the CAM Act, Stamford's land use boards should not encourage any new development plan for the YHW Site "that does not clearly incorporate viable functioning water dependent uses with at least the same capacity, capability and integrity as the existing use." As a result of this clearly articulated State position, the following assessment of NU's proposed concept plan focuses on those components of the plan that would integrate and/or relocate the existing water dependent uses in the new development project and on the impacts of this integration/relocation on the quality and quantity of recreational boating services currently provided on the YHW Site.

The impacts on quality and quantity of services can be discussed both in terms of: (1) physical reductions in the space and equipment necessary to provide the existing level of services; and (2) increases in the operating costs for maintaining the existing level of service as caused by the design of the new development scheme.

The following evaluation of NU's development plan that would relocate the shipyard and marine trades on a new site inside the hurricane barrier, provide for boat storage and marina parking in the residential parking facility, and retain existing berthing spaces as part of a new marina facility is based on:

1. An onsite technical examination of the existing Yacht Haven West boatyard and marina operation in terms of services provided, equipment used, space utilized, etc.

2. Analysis of information on existing statewide conditions in the Connecticut recreational boating industry, including existing marina and boatyard operations; such information collected and reviewed with the aid of representatives of such agencies as the Connecticut CAM Program and the Marine Advisory Service.

Figure 24: Marina Facilities at Yacht Haven West

IMPACT OF THE DEVELOPMENT CONCEPT ON EXISTING MARINA FACILITIES

As noted in Chapter 2, the main function of a marina is to provide boat dockage and related services. Marina facilities do not need significant amounts of land and as shown by successful waterfront redevelopment projects throughout North America, such facilities can, therefore, be operated viably as an adjunct of another primary site use that is non-water dependent. As long as proper control of access to piers is maintained and adequate support facilities provided, such marina facilities are normally an enhancement factor in mixed use waterfront development projects.

The presence of boats in their slips is generally regarded as an attraction compatible with retail, residential, and office uses. For example, the Yacht Haven East marina facilities successfully operate as an adjunct to Harbor Plaza on the East Branch. On the other hand, however, successful marina operation as a part of an otherwise non-water dependent development activity is not always assured. The experience and management capabilities required to successfully operate a marina are not quickly acquired nor do they seem to be in especially wide supply on the Connecticut coast. As an example, the developer of the Yankee Harbor/Schooner Cove condominium project (which replaced ship service yards on the East Branch) found it difficult to locate acceptable management for the adjunct marina facilities until Yacht Haven, Inc. recently agreed to assume full management responsibilities beginning in October 1983.

As shown in other waterfront development projects, parking for marina facilities can usually be incorporated into the parking provided for the primary land use since the marina parking serves a primarily offpeak (e.g., weekend) load. In the case of the residential parking facility contained in NU's concept plan, 540 parking spaces are allocated for marina use.

There are approximately 250 rental boat slips currently provided at Yacht Haven West and the Yacht Haven experience shows that a maximum of one parking space per boat slip is adequate for marina operations at the highest period of usage. Therefore, NU's concept plan appears adequate for meeting the parking needs of a marina operation on this site based on the current number of boat slips.

An important issue with regard to future use of the boat slips retained in the NU plan, however, remains to be addressed. This issue centers on whether the slips would be rented on an annual basis as they are now or whether for marketing purposes it would be desirable to sell the slips along with the housing units. The existing marina operations on the YHW Site could likely continue as part of NU's concept plan with the dedication of the same sort of pierhead access easements as on the Harbor Plaza site.

A key consideration relative to the successful operation of any marina facility, and especially such a facility developed as an adjunct to a larger development project, centers on the issue of security. As noted in Chapter 2, access to existing YHW facilities must be carefully supervised and monitored to guard against vandalism and theft (especially of high value, easily portable electronic equipment from docked vessels). In addition to the 24-hour security currently necessary on the YHW Site, Yacht Haven management has found it necessary to place particular security emphasis on the Yacht Haven East marina operation because of the mixed use activities that take place adjacent to the docks on that site.

NU's consultants have indicated that the development plan for the YHW Site necessarily incorporates a less than ideal response to the marina security issue. This tradeoff is necessary they say, because of the plan's emphasis on public access around the perimeter of this site — an emphasis they have described as necessary relative to the requirements of the CAM Act. This interpretation of the CAM Act illustrates NU's recognition of the water dependent use policies, and places particular emphasis on that portion of the water dependent use definition under which uses such as residences or offices become water dependent if they provide general public access to the waterfront.

Another consideration with regard to continuation of the existing level of marina services now provided at Yacht Haven is the fueling facility. As noted in Chapter 2, this is the major fueling facility for recreational boaters in Stamford Harbor and includes an underground storage capacity of 30,000 gallons. Because the storage tanks are located in a tidal area, they must be specially installed. The tanks themselves are fiberglass to resist corrosion and are mounted on concrete pads to avoid lifting by water action. In addition, special explosion proof wiring is required as well as special piping arrangements to avoid leaks and spillage into the water of the Harbor. These facilities are expensive to construct and maintain and since they are operated primarily during the "summer" boating season, they may prove to be a uneconomical investment without the existing shipyard repair, maintenance and service facilities.

Despite several problems of the sort normally encountered in mixed use waterfront development projects of the type proposed by NU, however, continuation of the marina activities on the YHW Site would seem to be a viable component of the concept plan proposed by NU. This conclusion is supported by the successful operation of such activities as adjuncts to large waterfront development projects in Stamford and elsewhere.

IMPACT ON BOATYARD AND SHIP SERVICE ACTIVITIES

The distinctions between marina and boatyard services in terms of the recreational boating industry were noted in Chapter 2. While YHW currently provides important marina services to the recreational boating community, it is the boatyard services — the

repair, maintenance and service of ocean cruising and racing sailboats — which distinguish Yacht Haven West from all other marine businesses operating in southwestern Connecticut. In fact, as pointed out earlier, the quality and extent of the combined services — boatyard and marina — as currently provided by Yacht Haven West are such that Yacht Haven has attained singular importance in terms of not only the local recreational boating community but the regional boating industry as well. To rephrase a statement contained in Chapter 2, throughout the Connecticut recreational boating community and beyond, Stamford is commonly known as a "boating center" primarily because of the combined marina and shipyard services provided by Yacht Haven.

Whereas examples of the successful integration of marina services with larger mixed use development projects are common, the successful integration of shipyard activities with such waterfront development is not commonplace. This is because the operation of a boatyard is an industrial activity presenting a potentially hazardous environment when combined with other non-shipyard activities. These risks and conflicts are primarily related to:

1. The movement and operation of heavy equipment for the hauling and transport of boats.

2. Potential for fire hazards due to the fuel in the tanks of boats, fiberglass resins, dense on-land storage of wooden vessels, etc.

3. Noxious odors, dust, fumes and debris inherent in painting, varnishing, sanding, fiberglass repairs and other work performed.

Unlike marina activities which do not need significant amounts of land, shipyard activities — the marine trades — require larger areas for on-land boat storage and maintenance repair and service work.

Although regional demand for boating facilities is increasing and the total number of berthing slips in the region appears to have increased in recent years, non-marine uses have been replacing traditional boat service, maintenance and repair yards in Southwestern Connecticut and elsewhere on the Connecticut coast. The longer term impact of this loss of traditional boatyards on the State's recreational boating industry is not yet clear.

In addition to the CAM Act's water dependent use policies, specific recreational boating policies established by the Act are especially pertinent to the review of all new development proposals for the YHW Site.

The CAM Act Boating policies include:

"To encourage increased recreational boating use of coastal waters, where feasible, by (i) providing additional berthing space in existing harbors, (ii) limiting nonwater dependent land uses that preclude boating support facilities... (P.A. 79-535, sec. 2(b)(f)(g)).

"To protect and where feasible, upgrade facilities serving...the recreational boating industries". (P.A. 79-535, sec. 2(b)(1)(I).

The existing YHW boat repair, maintenance and storage activities are both labor and service intensive. These activities include painting, fiberglass repair, carpentry, mechanical work, rigging, and electronic repair and installation and provide a sufficient volume of work to support the 60 full-time employees as well as 25 seasonal employees during the summer months. As noted in Chapter 2, those 60 employees represent a highly skilled labor force that has been built up over an extended period of time.

A significant issue posed by NU's development plan is the interruption that would result during the construction phase of the project. If the YHW boatyard operations are halted/interrupted for one boating season during construction, it is not likely that the present workers could be retained until such time as the operation might resume. As indicated by the Marine Advisory Service, there is a general statewide

problem in obtaining and retaining skilled marine craftsmen. To date Yacht Haven has been an exception to this condition, but a year of interruption of existing services would most likely require the development of an entirely new labor force to serve the new boatyard activities envisioned in NU's development concept.

Impact on Winter Boat Storage

In order to economically sustain the full-service YHW shipyard, it has proven necessary to provide winter on-land storage for approximately 400 boats of 25 to 65 feet in length. The present storage criteria indicated by the YHW experience is that approximately 40 boats can be stored on an acre of land. This assumes an average vessel length of 35 feet, an area under each boat of 700 square feet and associated fire lanes, access space, etc. of 400 square feet for each boat. This land storage, of course, requires access to the water for hauling and launching boats which is accomplished by the travel lifts described in Chapter 2.

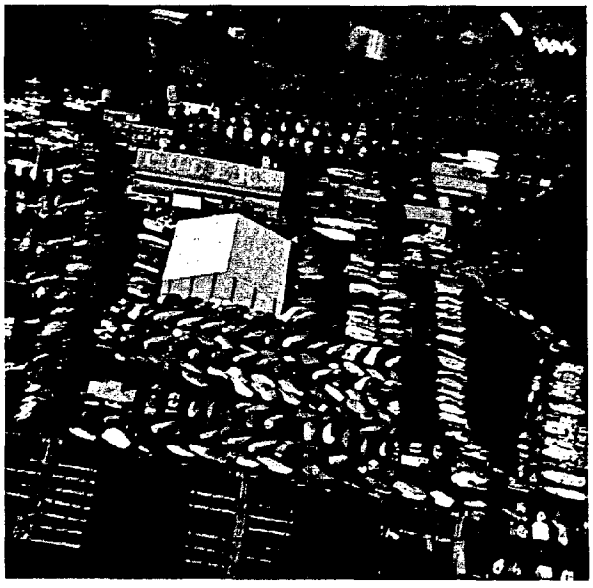


Figure 25: Current Method of On-Land Winter Boat Storage

The development plan presented by NU would provide for the winter storage of approximately 200 boats in the residential parking structure. Besides halving the existing storage capacity, this method of storage raises serious issues relative to fire hazard, compatibility with auto parking, and maneuverability of the travel lifts to place the boats.

For example, boats now stored during the winter on the Yacht Haven yard are not just "stored". Various maintenance and service activities are performed on these vessels by the owners and/or Yacht Haven personnel. Such activities and the attendant noise, vapors, and odors may lead to problems of compatibility with the owners of luxury condominium units.

Fire hazard issues associated with waterfront development in Stamford have recently been raised by municipal fire officials with regard to the Harbor Plaza office and marina development. In addition, the Stamford Fire Chief has indicated that he would feel very uncomfortable about the storage of boats in a structural residential parking facility. He has identified some additional fire hazard concerns (additional to those concerns currently associated with the existing outdoor storage) that must be addressed by NU's proposed method of boat storage. For instance, boats are currently stored on the Yacht Haven yard with the fuel tanks filled, in order to avoid the potential explosive situation caused by fuel tank vapors. As indicated by the Stamford Fire Chief, the regulations concerning the storage of fuel in an occupied building would require, in the case of NU's development plan, that the boat fuel tanks be drained and scrubbed to avoid the vapor problem. This would represent a significant cost factor in terms of boatyard operation.

Impact on Boat Hauling for Repairs

As noted earlier, a key factor in terms of services provided on the YHW Site is Yacht Haven's ability to handle 40 foot and larger sailboats with the high capacity lifts that presently operate on the site. In the region there is only one other boatyard with this lift capacity — the Cove Marina in Norwalk which is predominantly a boat sales facility

and power boatyard. The nearest Connecticut boatyard with Yacht Haven's ability to handle the same size of sailboats is east of New Haven —the Pilot's Point boatyard in Westbrook.

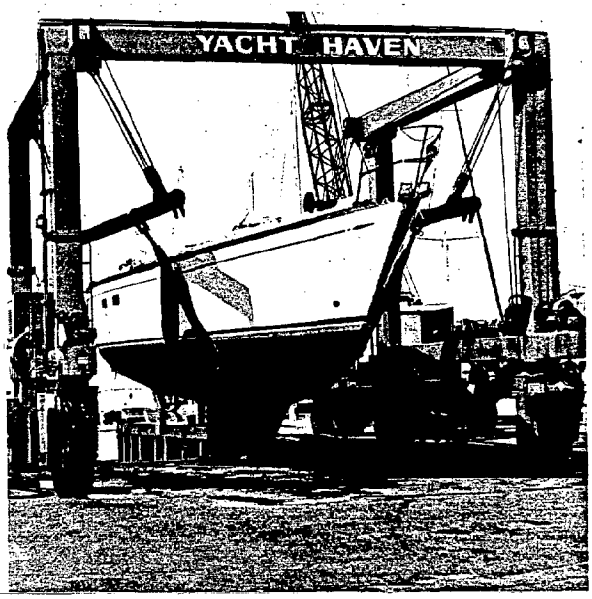


Figure 26: Boat Hauling Area; High Capacity Travel Lift

The component of NU's plan that would relocate Yacht Haven's existing boatyard activities on a new site behind the hurricane barrier is based on the capability of the travel lifts to operate on a maximum grade of 5 percent. NU's consultants have indicated that such a grade can be accommodated over a ramp leading from the existing boat hauling pits over the 17 foot (above M.S.L.) hurricane barrier and down into the new yard (see Figure 28). An important consideration relative to this proposed ramp and relocation of boatyard activities is tied to the extremely slow speed at which the travel lifts move. Whereas boats weighing upwards of 40 tons are now hauled approximately 30 yards and less for typical service operations, in the NU development plan the lifts would be transporting vessels a considerably greater distance. Travel lift time would be much more than doubled and the number of boats currently hauled likely cut in half — adding to increased operating expense (in terms of fuel and man hours) for a lower level of service.

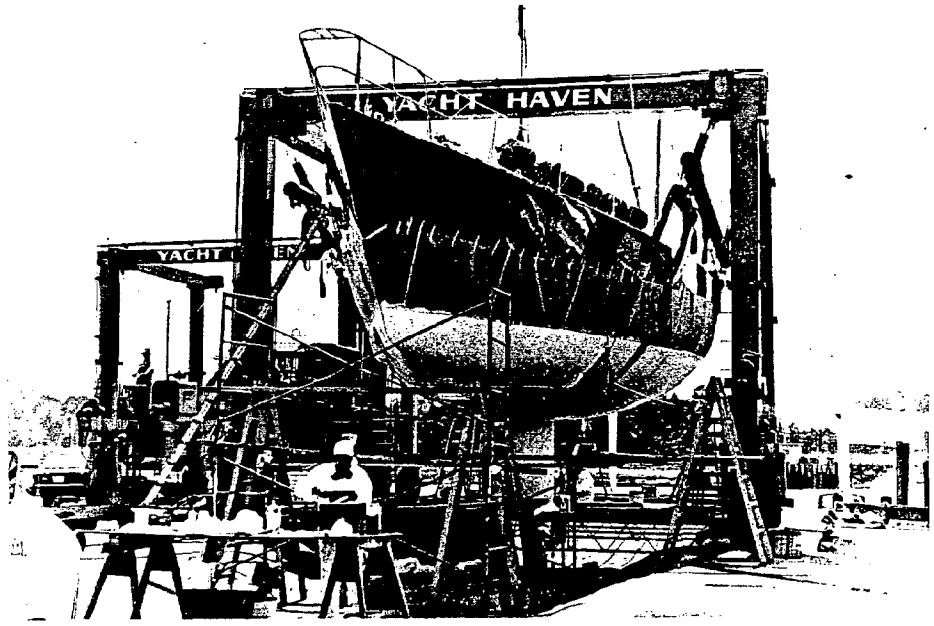


Figure 27: Ship Service Activities Close to the Water's Edge

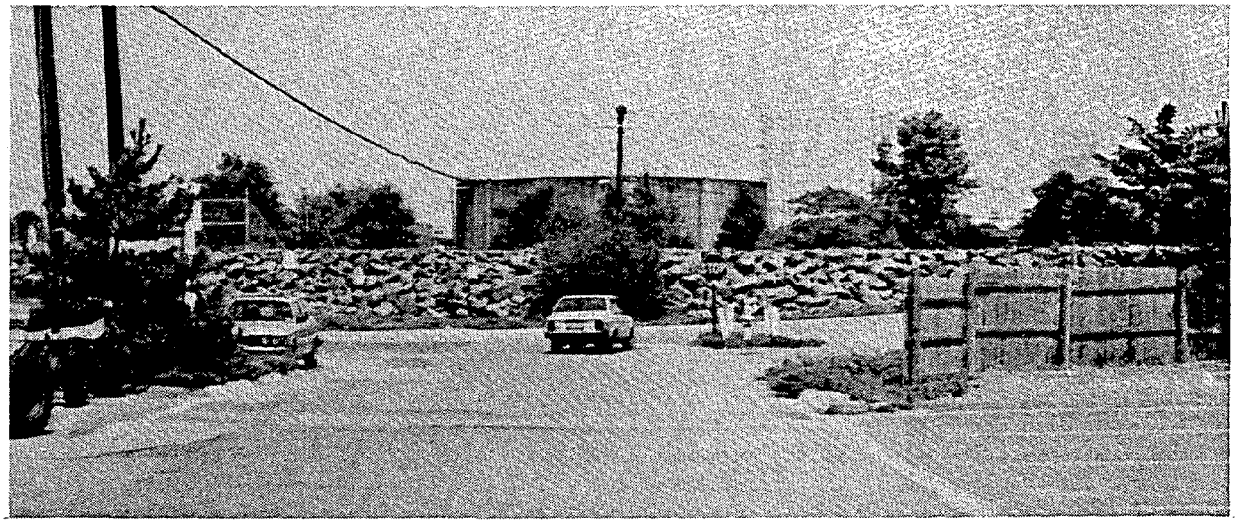


Figure 28: The Stamford Hurricane Barrier Marking the Southern Boundary of the Utility Site; Looking North Through the Ponus Yacht Club Property (The proposed relocation of ship service activities would require travel lifts to carry boats from existing hauling area over barrier.)

Impact on Special Events and Exhibitions

As indicated in Chapter 2, the use of open land on the YHW Site is currently seasonal in intensity. This seasonal intensity allows for special events such as the North Atlantic Sailboat Show to take place in the summer season when boats are not being stored in the yard. The attractiveness of the site for such exhibitions is, of course, tied to its proximity to the water's edge and also to the onsite availability of parking space for 700 vehicles. Although NU has indicated its intention to retain such special events and attempt to attract similar activities to the relocated boatyard site behind the hurricane barrier, the more "remote" location of this site relative to the water's edge, the unavailability of a large scale parking facility to accommodate visitors, and the lack of open space for exhibition use would seem to mitigate against such intention.

SUMMARY

In conclusion, it is apparent that NU's proposed development of the YHW Site would significantly impact (reduce) the quality and quantity of the recreational boating services currently provided at YHW. Such impact can be viewed in terms of simple reductions in existing space requirements and also in increased operating expenses for a lower level of services provided. Such a decrease in services would also result in a concurrent reduction (if not elimination) of the existing importance of the YHW Site in terms of the local and regional recreational boating industry and the recreational boating public in Southwestern Connecticut and beyond.

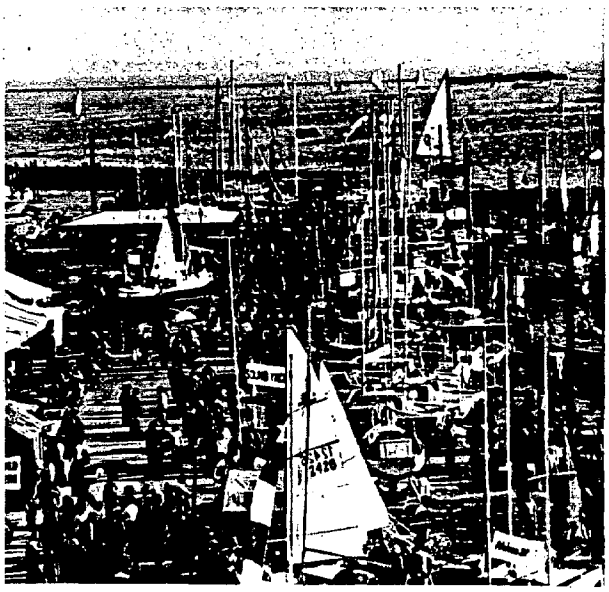
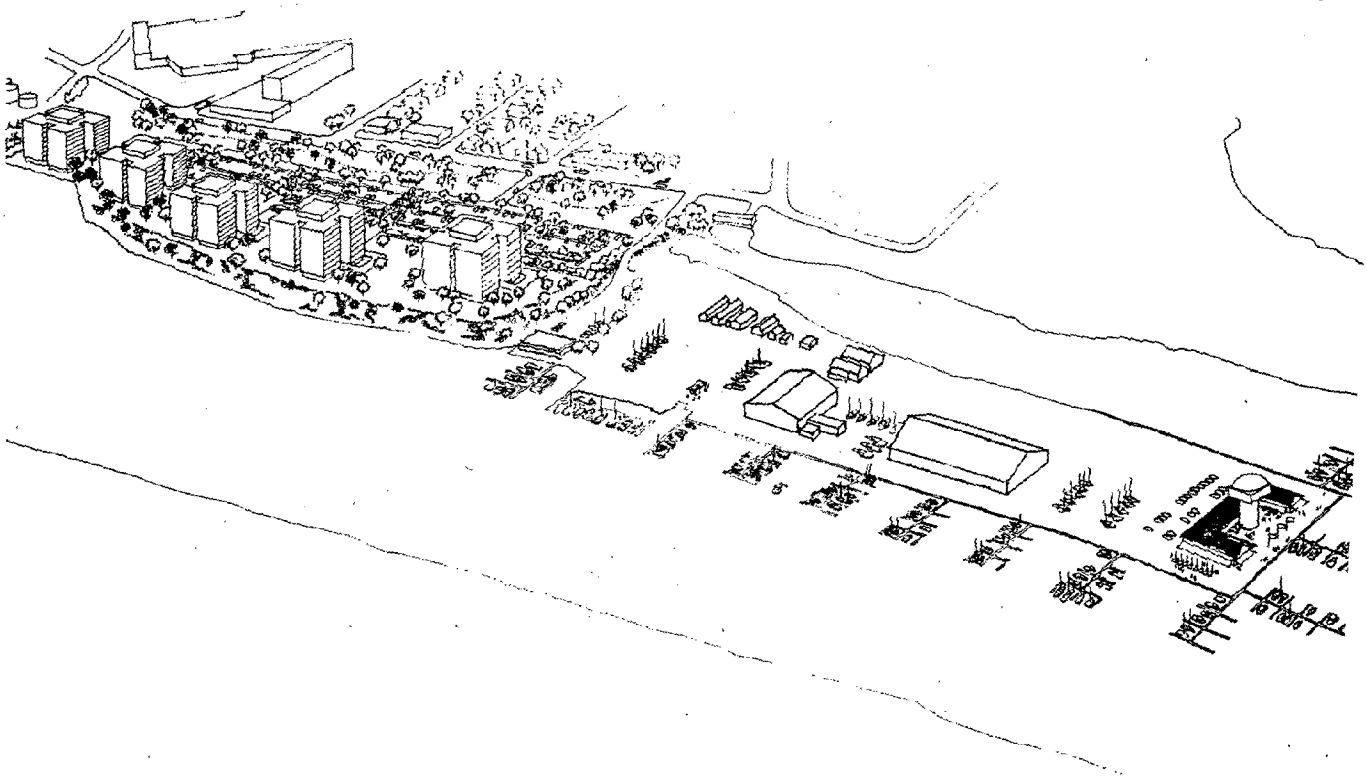


Figure 29: The North Atlantic Sailboat Show

PART

ALTERNATIVE PLANS
STAMFORD'S CHOICES FOR CHANGE



CHAPTER 5: ALTERNATIVE FUTURES

When faced with planning issues and decisions that are both complex and difficult because of their far-reaching significance, there are several inherent dangers:

1. Becoming lost in a mass of detail and extraneous information.

2. "Piecemealing" a solution, with the resultant danger of losing sight of overall objectives and larger opportunities.

3. Making premature decisions and becoming locked into a position before all the pertinent facts are in.

4. Becoming reluctant to participate in conflict resolution through a mediation/negotiation process.

There is no question that the residential and utility development plans put forth by Northeast Utilities would result in a major transformation of the existing character of the Stamford waterfront and of the South End. This transformation would occur both through the replacement of existing on-site uses with new and more intensive uses as well as through the primary and secondary impacts of the new development on the adjacent South End Community.

The development concepts described and reviewed in the preceding chapters have been justified by Northeast Utilities primarily in terms of: (1) possible future public service utility demands; and (2) economic feasibility based on land and development costs, marketability, and considerations of equity in return on investment. Previous chapters of this report have pointed out the importance of evaluating those concepts in terms of a variety of public interest and community objectives that might be served by new development on Northeast Utilities' South End property.

It is appropriate at this point to get one's bearing — where are we in this process — and what are the alternatives?

The Urban Land Institute identifies three basic stages in the typical land development process:

1. Predevelopment planning involving project planning and initiation; feasibility analysis and preliminary design; packaging; evaluation of economic, environmental, financial, social, political and regulatory factors.

2. Development/implementation involving project financing, leasing, design, construction.

3. Postdevelopment involving project management and maintenance.

The waterfront development project which is the focus of this study is presently in the early predevelopment planning stage. NU has, in effect, asked the Planning Board to respond to a conceptual residential site plan prepared by the Utility's consultants and to a power plant development proposal that may or may not be implemented in the next decade. Nevertheless, regardless of timing and the tentativeness of the proposals, the issues have been joined. Through the

process initiated by this study, NU and the City of Stamford are participants in the predevelopment planning stage — a stage which entails a continual reevaluation and refinement of various development concepts in light of changing circumstances, new information, and clearer projections. The common and shared objectives of all participants should be to come up with solutions to the identified problems that are creative and equitable and that:

1. Maximize site specific waterfront opportunities.

2. Maximize community (South End) benefits.

3. Maximize City-wide and regional benefits.

The issues raised by the development plans presented by NU have, in fact, served to stimulate the creative capabilities of all parties involved in the predevelopment planning process. These capabilities are directed towards the identification and design of alternative development concepts that respond to the issues generated by the proposed development concepts, meet the expressed needs of the proponent and are therefore worthy of further study and consideration.

What has been the progression of steps in this study? Where is the municipality in the planning process?

1. An assessment of the potential generating impacts of NU's fuel cell and combined cycle power plant alternatives has been prepared by RMFA and accepted by the Planning Board.

2. A conceptual plan for residential development on the YHW Site has been prepared by the Utility's consultants and presented to the Stamford Planning and Zoning Boards, to the State CAM Office and to various public and quasi-public organizations in the City.

3. An evaluation of NU's conceptual plan for residential development has been prepared by RMFA and a series of meetings held with the Planning Board, municipal officials and staff, and with representatives of the CAM Office and other State agencies to clarify issues and concerns raised by NU's development plans, and to identify alternatives for further study.

4. Alternatives for further study have been presented by RMFA to the Planning and Zoning Boards and other interested parties and discussed with the Planning Board and with NU and its consultants.

This chapter presents a brief overview of the major alternative development concepts that have emerged as worthy of further study as well as some major obstacles for design and implementation of those alternatives. The alternatives so identified and discussed in this study will require more detailed investigation as the planning process continues in order to adequately assess the obstacles and opportunities for implementation and the associated costs and benefits to the community.

THE ALTERNATIVES

A: Use of the entire Utility Site landward of the hurricane barrier for residential development; retention of existing YHW facilities with limited new water-enhanced and maritime commercial activity on the tip of the YHW Site.

B: Use of the Utility Site for both residential development and utility service activities; retention of existing YHW facilities with limited new water-enhanced and maritime commercial activity on the tip of the YHW Site.

C: Utility development as proposed by NU on the Utility Site; relocation of Yacht Haven West landward of the hurricane barrier; residential development seaward of the hurricane barrier at a density of 29 units per acre.

D: The status quo or "no action" alternative.

ALTERNATIVE A

Land Use Features

As illustrated in Figure 32, the Yacht Haven West Site would remain in genuinely water dependent use. The boatyard activities would be somewhat consolidated in order to provide approximately 4 acres of space for other public and commercial uses on the tip of the peninsula. The objective of this consolidation would be to expand the variety of maritime activities, maximizing site specific waterfront opportunities and solidifying Yacht Haven's position as one of the principal pleasure boating centers on the East Coast.

An accessway (see Figure 39)would extend down the eastern edge of the peninsula (effectively and safely separating new public uses from the industrial boatyard activities) to its southern tip, which would be developed for a combination of stores, restaurants, and display areas with a direct maritime orientation. The boatyard operation would continue to draw sailing craft to Stamford from the Long Island Sound region and beyond, giving the area the vitality and interest of an active waterfront. Special events, such as the North Atlantic Sailboat Show would also continue.

The Ponus Yacht Club would remain in its present location.

Figure 32 also illustrates five ten-story buildings containing 400 dwelling units on the Utility Site. This residential development would be constructed north of YHW and landward of the hurricane barrier. The depicted bulk and density is based on various development assumptions, cost analyses, and design considerations described in Appendix A. The gross residential density illustrated is approximately 15 dwelling units per acre on the Utility Site and the net density (exclusive of the hurricane barrier easement and submerged land acreage) is approximately 20 units per acre.

The buildings illustrated have a point-block or medium height tower form with limited ground coverage; ample separation to maximize open space around them; and a reduced foundation area for economy in the use of piles to support construction. Parking would be at grade.

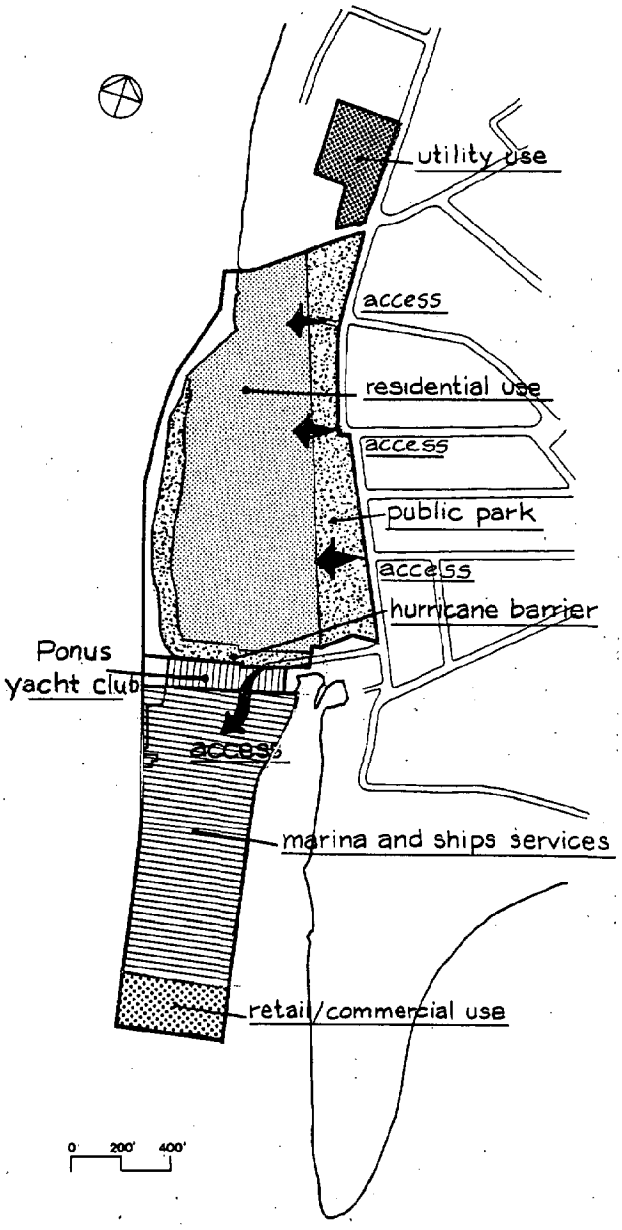


Figure 30: Alternative A: Land Use Plan

By placing the residential structures on the western part of the site, closer to the West Branch than to Washington Boulevard, a public open space parallel to Washington Boulevard is provided. This passive park would be densely planted with trees and would act as a forecourt for the residential area as well as an attractive border for the commercial buildings across the street. The park would be one element of this alternative linking the new development with the adjacent South End neighborhood.

Based on information provided by Northeast Utilities' consultants, extra land development costs associated with building on the Utility Site landward of the hurricane barrier appear to be substantially lower than development costs associated with building on the YHW Site. This estimate is based on the opportunity to eliminate some of the extra costs associated with building on the YHW Site including bulkheading, structural parking, waterfront promenade, decked street, etc., (as listed in Chapter 3)as well as the fact that new construction on the Utility Site would not be located in the coastal floodplain.

It should be noted that the extra development cost associated with the generally limited load-bearing capacities of coastal landfills is a common constraint affecting waterfront development projects. Figure 31 shows the recent landfilling activities that expanded the YHW Site to its present size and indicates the nature of one physical constraint affecting the development of new uses on this site.

Gas storage and transmission uses and other utility activities now on this site would be relocated (e.g., to the Pitney Bowes parking site)and the Utility Site would not be used for future power plant construction.

Figure 31: Filling of Submerged Land to Expand the YHW Site in the Early 1970's

A

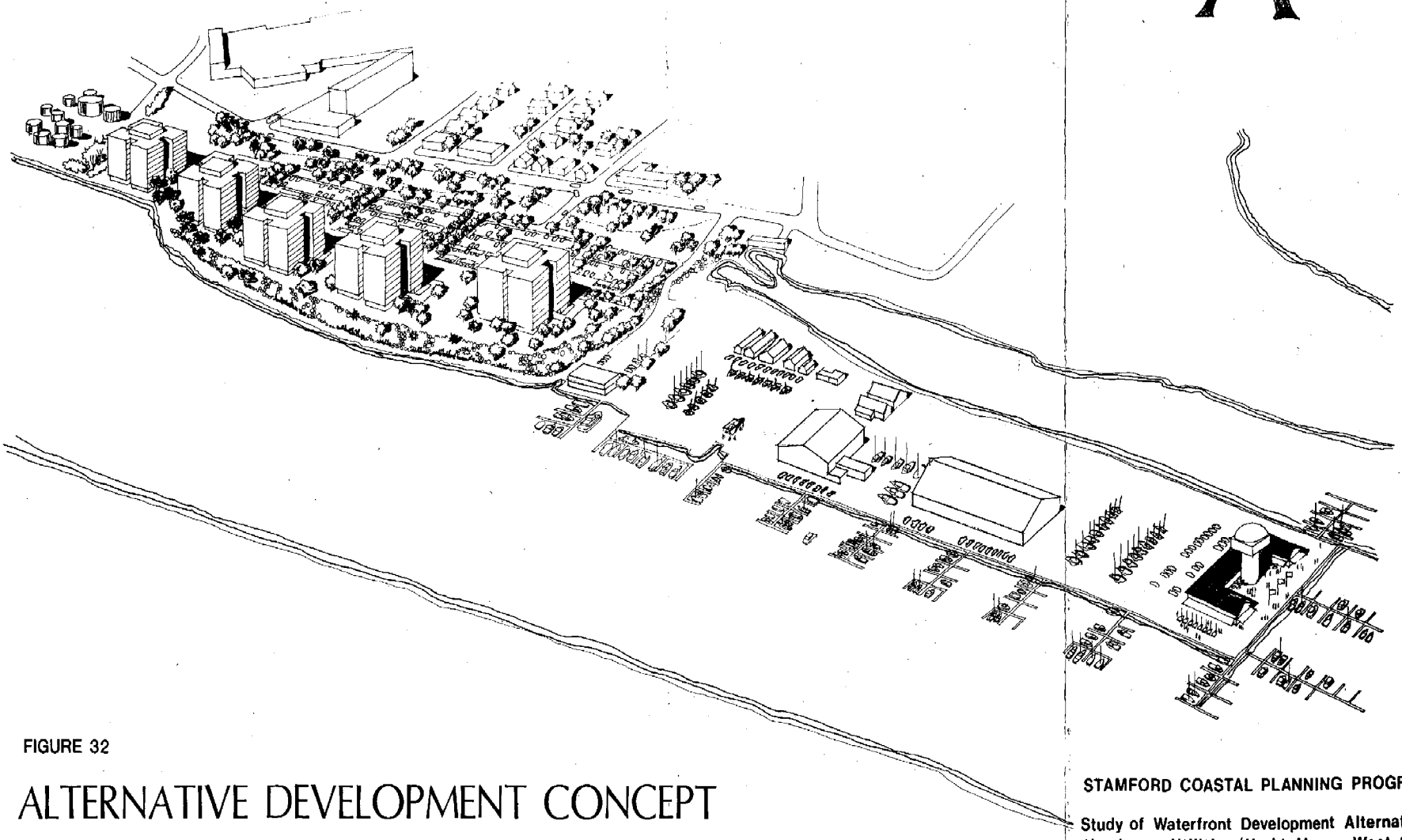


FIGURE 32

ALTERNATIVE DEVELOPMENT CONCEPT

STAMFORD COASTAL PLANNING PROGRAM

Study of Waterfront Development Alternatives
Northeast Utilities/Yacht Haven West Site

RALPH M FIELD ASSOCIATES **Westport Connecticut**

Obstacles and Conditions

In order for Alternative A to be realized:

(1) Northeast Utilities must agree to participate and negotiate with the City in searching for an alternative site for its contemplated 200 MW power plant and such joint efforts must prove successful; or (2) an alternative method for meeting NU's projected energy demand and utility needs in Southwestern Connecticut must be found. In addition, the relocation and consolidation of existing gas and utility facilities as now planned in conjunction with possible future power plant development, would take place to allow residential development.

Alternative A also presupposes that the liquefied natural gas (LNG) tank that can be relocated on the northernmost portion of the Utility Site (as indicated in preliminary designs prepared by NU relative to power plant construction) can be relocated elsewhere and that all gas storage and transmission activities that would be relocated on the present Pitney Bowes parking site pose no public safety problems.

It is entirely possible, of course, that NU would decline to participate and negotiate with the City and that a joint effort to locate an alternative site would prove unsuccessful if initiated. Even though there are various case histories of utility companies and municipalities engaging in mutually beneficial land exchanges, NU, for technical or other reasons, may prefer to retain the entire Utility Site for future utility service uses.

This report does not represent an attempt to evaluate NU's energy demand projections or the facility needs to adequately meet those projections. Various potential alternatives for meeting NU's projected generating needs, however, do appear to exist and should be explored, including the opportunity for power plant development on a site adjacent to the City's solid waste incineration facilities on the East Branch.

The City of Stamford is currently studying the feasibility of generating power through solid waste incineration. Interviewed during the course of this study, the Stamford Commissioner of Public Works indicated a willingness to participate in exploratory discussions with NU. The purpose of such discussions would be to determine whether or not opportunities exist for coordinating NU's future generating needs with the City's power generation goals on or adjacent to the municipal incineration site.

When informed of the City's solid waste study and the expressed willingness of the DPW to participate in exploratory discussions with Northeast Utilities, the Executive Director of the Connecticut Siting Council indicated that the Stamford solid waste situation appears to represent an opportunity that would warrant a thorough investigation by NU.

Alternative A might also go forward, if at some future time NU decides that a new generating plant is no longer needed. There is, of course, ample precedent for the Utility to modify or change its plans and priorities. Technology and economic factors change rapidly in the electric utility industry. As noted earlier, NU acquired the YHW Site from Marina America because, 13 years ago, the Utility foresaw the need for a major

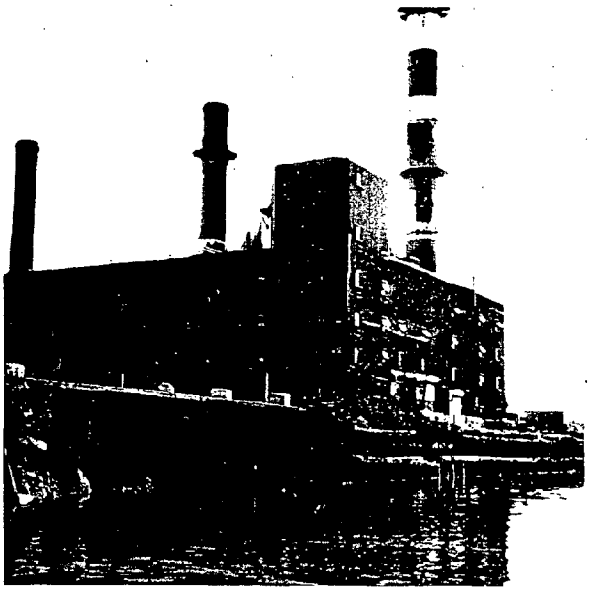


Figure 33: The Municipal Incinerators on the East Branch

new power plant. Based on past experience, therefore, there is no reason for the City to assume that NU will, as it professes today, actually construct a 200 megawatt generating plant on the Stamford Harbor site sometime in the decade of the 1990's.

Indeed, there is every reason to believe that NU will attempt to keep its options open until such time as there is a positive benefit/cost ratio resulting from satisfying energy needs with appropriate technology at least cost. This combination of considerations does not yield a positive b/c result today. It may, or may not, a decade hence.

The City, therefore, should act with as much forethought and as prudently as NU in trying to maximize its options until such time as the consequences of various decisions can be fully assessed.

Summary

Alternative A leaves YHW in place, slightly intensifying maritime related use of the site by adding marine commercial development on 4 acres at the southern tip. Rezoning of Yacht Haven West would be accomplished to: protect the existing marine support facilities; encourage limited commercial, marine-related use at the tip of the parcel; and prohibit residential use and other forms of intensive non-residential development. Such rezoning would influence the fair market value of the property and associated real estate tax assessment.

The area to the north of YHW — the Utility Site — would be used primarily for new residential development and public open space.

Possible options to investigate for the purpose of compensating NU for the loss of the site to housing include: (1) a land swap involving either existing City-owned or acquired land for power plant use, (2) joint NU/City planning and development to provide opportunity for NU's power needs to be met in conjunction with municipal plans to generate power from solid waste. Should either of these options prove feasible, terms and conditions would be worked out by the City and NU through a negotiating group representing both parties.

In the event NU decides that a power plant is not needed, the excess land would be rezoned for residential use. Until such time as NU agrees to the land swap or decides that a power plant is not needed, the land should remain in its present industrial zoning category.

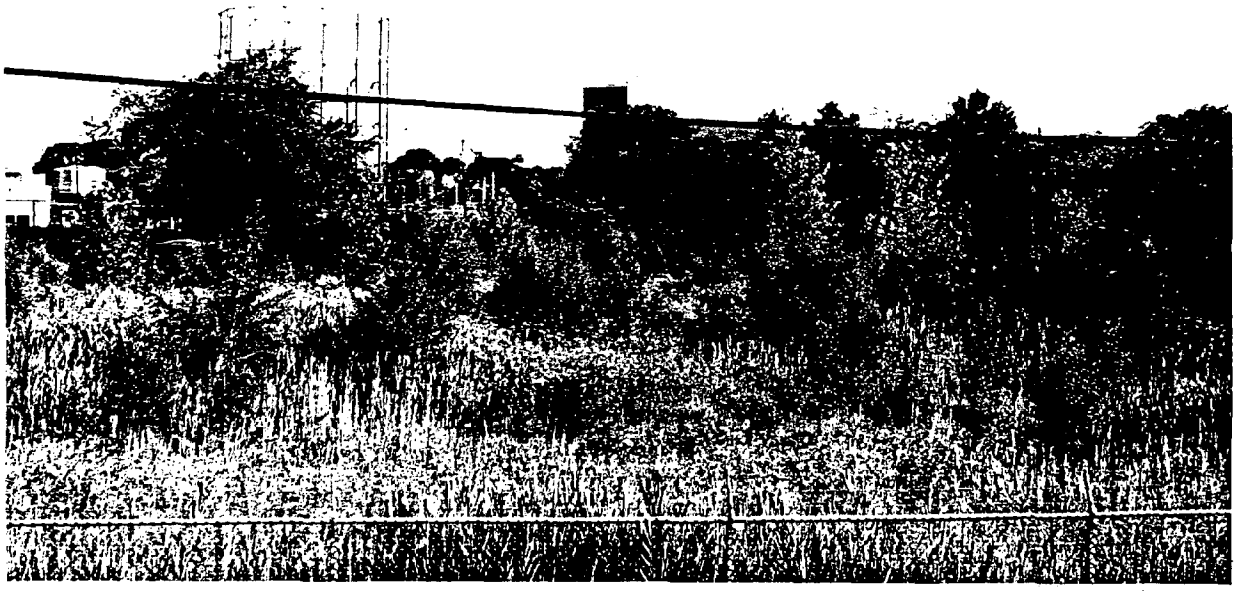


Figure 34: The Southern Portion of the Utility Site Immediately North of the Hurricane Barrier

ALTERNATIVE B

Land Use Features

This alternative, as illustrated in Figure 37, would includes both residential and utility development on the Utility Site.

As shown in Figure 37:

1. The YHW Site would be treated as in Alternative A.

2. Three buildings of 80 units each (240 total units) or approximately half the number of residential units as in Alternative A would be built on the southerly part of the Utility Site. The depicted bulk and density is based on development assumptions, cost analyses, and design considerations described in Appendix A. The gross residential density illustrated is approximately 15 dwelling units per acre.

3. A park similar but shorter in length to that included in Alternative A would be provided.

4. NU would construct a power plant on the site or other utility service activities would function on the site, but the acreage that NU currently indicates is needed for future utility use would be reduced.

5. The Ponus Yacht Club would remain in its present location.

Obstacles and Conditions

As with Alternative A the major obstacle to this concept is NU's currently stated utility service needs. Implementation of Alternative B would therefore require the identification and implementation of alternatives to meet NU's future utility needs. As with Alternative A, this option might also require that NU and the City of Stamford work out a cooperative arrangement following the establishment of a joint negotiating team.

As with Alternative A, public safety concerns associated with LNG/LPG storage would be satisfactorily addressed to allow new residential development on the Utility Site.

Master Plan and Zoning changes would also be required as indicated in Plan A.

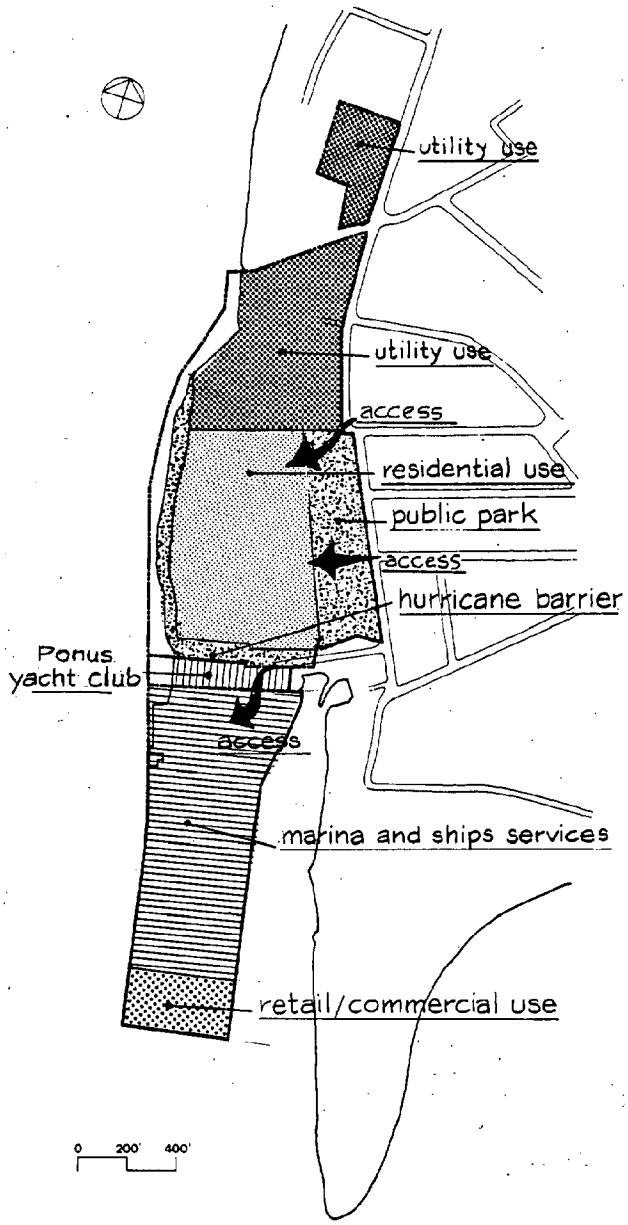


Figure 35: Alternative B: Land Use Plan

ALTERNATIVE C

Land Use Features

This alternative is identical to the NU plan described in Chapter 3, except that the number of residential units has been reduced from 800 to 400. The density of approximately 29 units per acre (illustrated in Figure 38) is consistent with the existing provisions of the 10D Shorefront Development land use category that is currently applied to the site. The extra costs of construction at this location, as necessitated by soil conditions, flood plain location, the need for new bulkheading, relocation of YHW facilities, etc., may raise the price per square foot beyond the threshold of marketability. At any rate, closer examination of costs and feasibility would be required prior to implementation of this alternative. Figure 38 illustrates the bulk associated with the reduced residential density and Appendix A includes a discussion of the cost and density assumptions used in depicting this bulk and density.

As also shown in Figure 38:

1. The YHW Site would be used primarily for residential development. Yacht Haven West would continue to use the boat slips, although special provisions would have to be made to ensure security. YHW would also use part of the residential parking structure for marina parking and winter boat storage. A small commercial facility to serve project residents would be included at the northern entrance to the residential enclave.

2. Approximately four acres of the Utility Site landward of the hurricane barrier would be used to relocate the existing boatyard. The quality and quantity of maritime services presently supplied by the existing YHW operation would be seriously impacted if not eliminated.

3. A linear park along Washington Boulevard and public access to the water along the hurricane barrier would be provided. Washington Boulevard would be widened and realigned.

4. As in Alternatives A and B, NU would at some unspecified future time consolidate its gas storage and transmission facilities that currently occupy the Utility Site. The remainder of the Utility Site would be reserved for the development of either a fuel cell or combined cycle gas turbine generating plant.

5. The Ponus Yacht Club would remain in its present location.

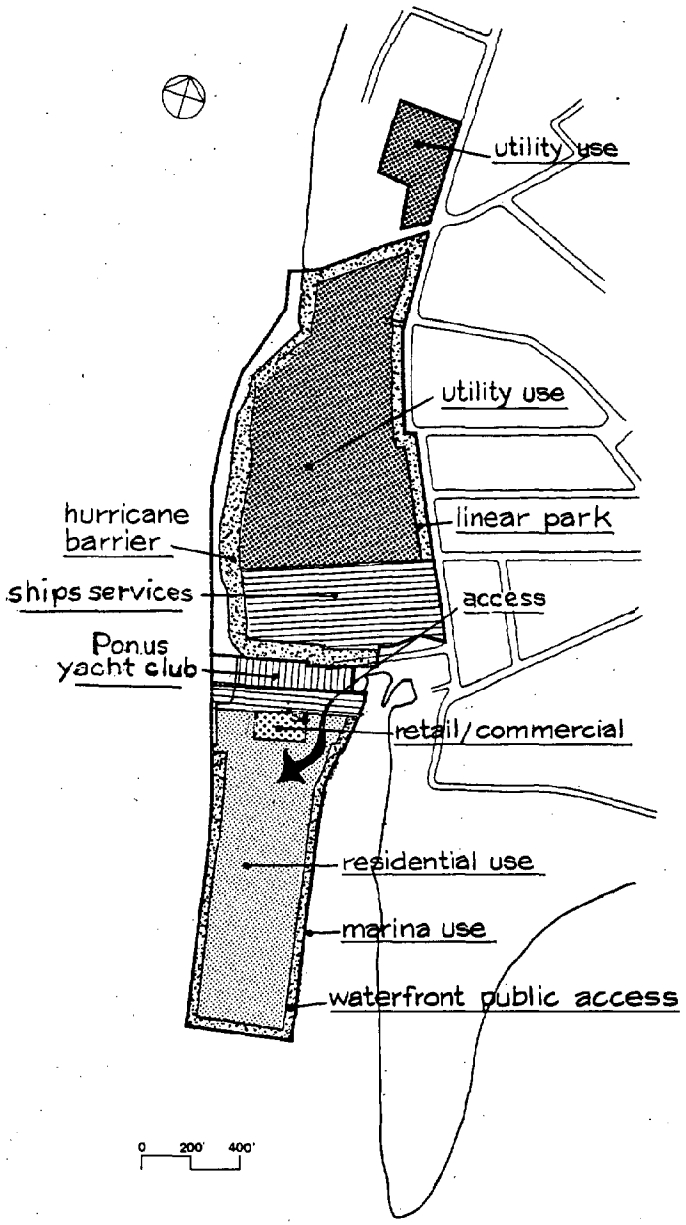


Figure 36: Alternative C: Land Use Plan

Obstacles and Conditions

Were this plan to be pursued, the City would have to rezone the YHW Site to permit residential use. Given the isolated position of the property, its exposure to flood hazard, and the single point of entry and egress, such rezoning would be an undesirable option from the standpoint of public policy and planning.

Nonetheless, there are numerous examples of this type of development, particularly in coastal locations where developers build at the water's edge to capitalize on the public's desire for waterfront views and access to the water's edge.

This option assumes that NU will construct a generating plant on the Utility Site at some future date. In the event, however, that NU should determine that a generating plant is not needed, it is entirely conceivable that NU could market the Utility Site for an alternative use, either residential, commercial or a mix. Before any use or zoning change is made, therefore, on NU's South End properties, NU should commit itself to proceeding with its plans for the Utility Site — consolidating gas storage and transmission on the northern portion of the site and constructing a 200 megawatt power plant. To date, the Utility Site is not mentioned as a site proposed for power plant development in the time frame of NU's most recent Forecasts of Loads and Resources submitted to the Connecticut Siting Council.

These issues are raised here to reemphasize a point stated earlier — that conditions affecting the technology and economics of the electric power industry are subject to rapid and unpredictable change. For the City to go ahead and rezone YHW for residential use in the very near term, based on NU's unofficial statement of intentions for the long term, is unwarranted.

ALTERNATIVE D

This alternative — the status quo alternative — does not represent a development plan but rather a negotiating position for the City.

1. Nothing would be done relative to rezoning until the assessment issue has been settled by the courts.

2. Following a decision on the market value, the whole question of financial feasibility would be reexamined.

3. In the interim, intensive efforts would be made to investigate relocation and land swap possibilities.

4. At the same time more detailed site studies would be made particularly with regard to subsoil and ground water conditions, and the feasibility of modifying the hurricane barrier.

5. The various public safety issues would be examined in more detail including the degree of hazard associated with LNG storage, flooding, winter boat storage in the proposed parking facility, and the single point of access and egress to the site.

6. Legal assistance would be sought to determine potential City liability in rezoning land in the floodplain, seaward of a hurricane barrier, to permit residential use.

B

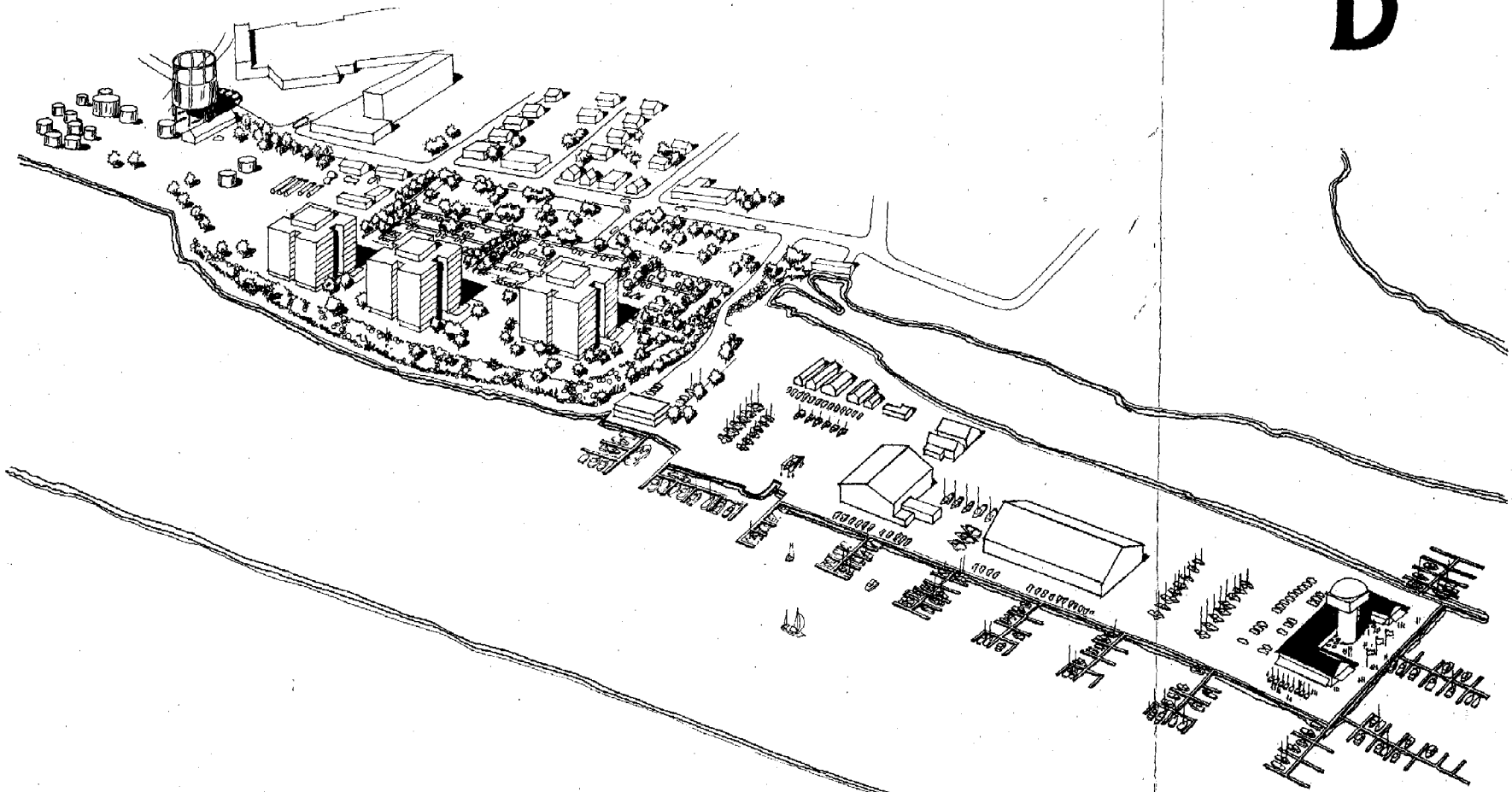


FIGURE 37

ALTERNATIVE DEVELOPMENT CONCEPT

STAMFORD COASTAL PLANNING PROGRAM

Study of Waterfront Development Alternatives
Northeast Utilities/Yacht Haven West Site

RALPH M FIELD ASSOCIATES Westport Connecticut

C

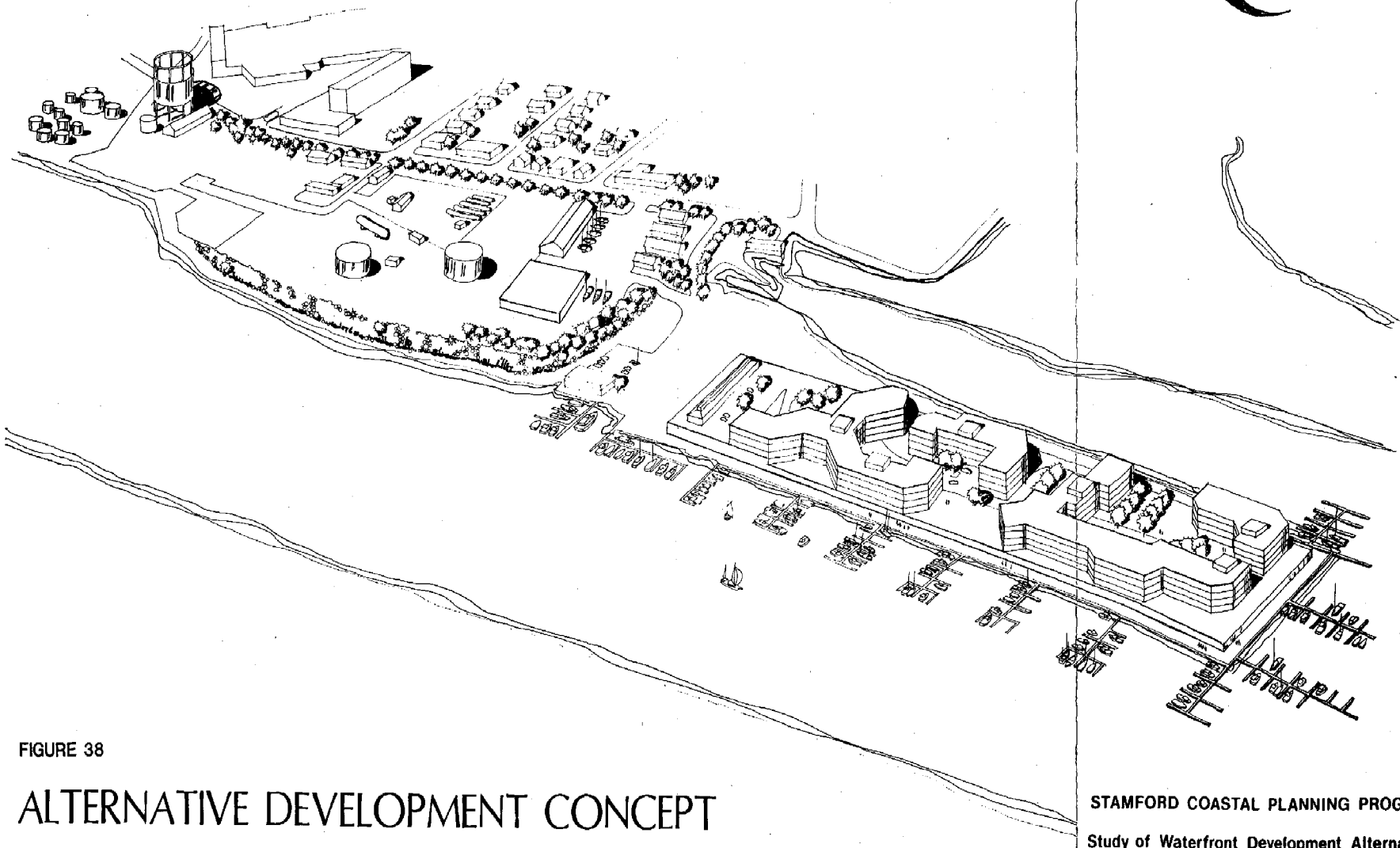


FIGURE 38

ALTERNATIVE DEVELOPMENT CONCEPT

STAMFORD COASTAL PLANNING PROGRAM

Study of Waterfront Development Alternatives
Northeast Utilities/Yacht Haven West Site

RALPH M FIELD ASSOCIATES Westport Connecticut

CHAPTER 6: FINDINGS AND RECOMMENDATIONS

FINDINGS AND RECOMMENDATIONS FOR FUTURE USE OF THE YACHT HAVEN WEST SITE

1. Continued operation of Yacht Haven West deserves high priority among all public objectives for the Stamford waterfront.

   Yacht Haven West is one of Stamford's major waterfront assets. Providing a full-range of maritime services, it is the last remaining ship service facility in the City. Continued operation of Yacht Haven West is consistent with both State and City policies governing the protection of water dependent uses. Indeed, in a letter addressed to the Stamford Planning Board dated July 18, 1983, the Connecticut Coastal Area Management Program has made clear that for consistency with the CAM Act, the Planning Board should not encourage any plan for redevelopment of the YHW Site "that does not incorporate viable functioning water dependent uses with at least the same capacity, capability and integrity of the existing use."

   RECOMMENDATION: To assist the continued operation of Yacht Haven West, Stamford should facilitate the addition of water enhanced retail and commercial development on a limited portion of the YHW Site. We believe that Yacht Haven's status as a regional recreational boating center as well as its revenue producing potential could be increased by the addition of water-enhanced retail and commercial development on the southern tip of the site. This intensification of use would draw people to the peninsula for activities such as outdoor dining overlooking the harbor, and limited convenience shopping — catering primarily to boaters and visitors.

   In keeping with CAM Act policies, the recommended water enhanced uses should not be allowed to reduce or replace any of the water dependent services and activities currently undertaken at YHW.

   Also, for safety and security purposes, the new water enhanced public uses should be effectively separated from the industrial boatyard activities. We believe that some four acres of the YHW Site could be devoted to water enhanced activities without interfering with either the quantity or quality of present water dependent activities on the site.

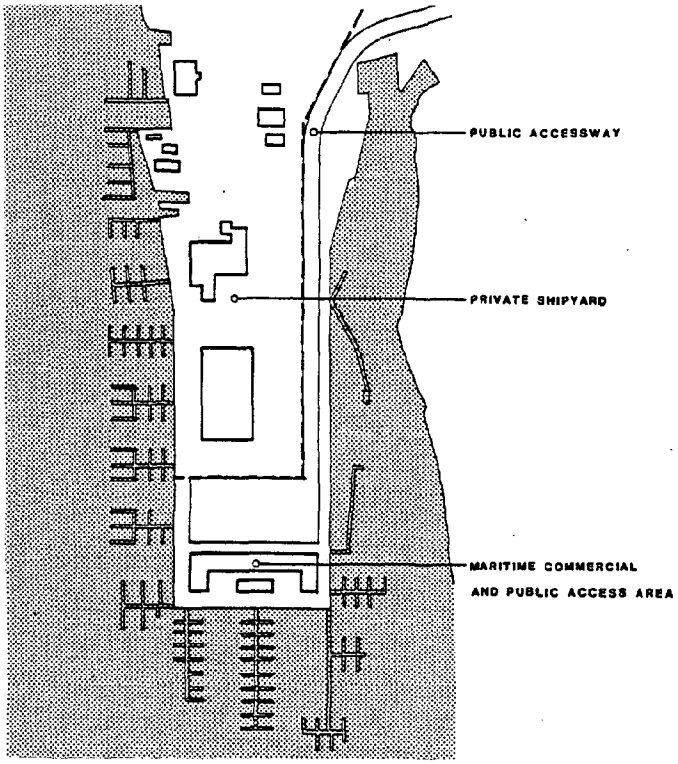


Figure 39: Recommended Separation of Industrial Boatyard Activities from New Public Uses

2. The Yacht Haven West Site is unsuitable for residential development.

The Yacht Haven West Site is unsuitable for residential development because of its exposure to natural hazards:

- The YHW Site is on the seaward side of the Stamford Hurricane Barrier which, as detailed in Chapter 2, was erected in the late 1960's at a public cost of over $6 million to protect against the kinds of damage inflicted by hurricanes in 1938 and 1954. The YHW Site thus lacks the protection that the Hurricane Barrier provides to adjoining properties in the South End including the remainder of the NU property.
- There is some question, as explained in Chapter 4, as to whether the YHW Site will soon become subject to the "V" (coastal high hazard) Zone requirements of the National Flood Insurance Program. At present, the site is in the A-Zone, but the most recent FEMA study of local wave heights during storms has resulted in a preliminary map and recommendation that the area be reclassified to the V-Zone, where development regulations and requirements are far more restrictive. FEMA staff have not yet decided whether to implement the recommendation at this time or to await the completion of a City-wide study of flood hazard potential in Stamford currently being conducted by the Corps of Engineers. If the YHW Site does become subject to V-Zone requirements, the feasibility of residential development on the site is likely to be significantly reduced, as has been indicated by NU's consultants in a recent report.

- Even if residential development should prove to be feasible without running afoul of the property-damage concerns of the National Flood Insurance Program, serious public health and safety concerns remain because of the site's isolated position with respect to the South End and its location in a coastal high hazard area. As envisaged by NU's consultants, access to the YHW Site from the remainder of the South End would be provided by a single accessway over the Hurricane Barrier and into the coastal floodplain, raising significant emergency preparedness and response issues not only in a flood situation but in other emergency situations as well.

RECOMMENDATION: The present zoning of the YHW Site correctly prohibits residential development of the site. Any revised zoning of the site should retain the present prohibition of residential development.

RECOMMENDATION: The present 10D land-use classification, which the Master Plan applies to the YHW Site, contemplated residential use as part of "shorefront development." To indicate Planning Board support for recommended rezoning of the YHW Site, the Master Plan should be amended to remove reference to residential development as appropriate on the YHW Site. Rather than create a new Master Plan category, the text of the plan could be amended to state that residential development is permitted in the 10D category except on those sites that are inappropriate for residential use because of public safety reasons related to unusual flood hazard (e.g., location in the coastal high hazard area). In addition, a specific coastal policy added to the Master Plan should indicate that residential development is inappropriate on the YHW Site for those reasons.

3. The YHW Site is also unsuitable for offices and other intensive development.

In proposing residential development of the YHW Site, NU's consultants reasoned that offices and other forms of intensive nonresidential development were inconsistent with circulation and other overall planning needs of the South End. We strongly concur with this conclusion. Intensive nonresidential use is inappropriate on the site.

4. Given the unsuitability of the YHW Site for residential use as well as for offices and other intensive development, the assessed value of the site should reflect that fact.

If the recent reassessment of the YHW Site was based in part on an erroneous judgement that the site is suitable for intensive development, Stamford officials should take immediate steps to prevent this judgement from interfering with the economic viability of the water dependent activities of Yacht Haven West.

Perhaps the most effective way to establish the City's judgement about the unsuitability of the site for residential use, offices and other intensive development is through revised regulations and plans. If the Federal Emergency Management Agency initiates steps to apply its "V" (coastal high hazard) Zone to the property, adoption by the City of the V-Zone designation seems likely to go quite far toward precluding intensive development of the property. Stamford's current Flood Prone Area regulations, however, do not prohibit development in V-Zones.

The State Department of Environmental Protection in a publication by the Connecticut CAM Program (Coastal Policies and Use Guidelines, Planning Report No. 30, December 1979) has recommended that in addition to applying the minimum floodplain management requirements of the National Flood

Insurance Program, municipal flood prone area regulations should include additional constraints such as: "site all new or substantially improved buildings, dwellings, and non-water dependent structures out of the designated coastal high hazard zone (V-Zone)."

RECOMMENDATION: Regulations applicable to the YHW Site should reflect the site's unique limitations. Perhaps the simplest regulatory option, when FEMA does initiate steps to put the YHW Site in the V-Zone, is for Stamford to adopt the V-Zone designation and also strengthen its present V Zone regulations. In addition, Stamford should rezone the YHW Site to a classification that prohibits not only residential development but also intensive office and commercial development. Only low intensity, water dependent activities should be permitted, together with a limited amount of related, water enhanced activities of the kind already recommended.

FINDINGS AND RECOMMENDATIONS FOR FUTURE USE OF THE UTILITY SITE

1. The Utility Site has great potential as a site for new residential development.

   As I.M. Pei's South End study recognized, residential development of this property could greatly benefit the South End and the City as a whole. Although the water views from all portions of this site are not as attractive as the views from YHW, the Utility Site can apparently be developed for residential use at lower cost than the Yacht Haven Site; it is protected from flooding by the hurricane barrier; it is easily accessible from Washington Boulevard; and it presents no problem of safety of access. In addition, new development on this site can be more closely integrated with the South End Community.

2. There is, however, an obvious obstacle to realization of this residential potential at this time: the site is held by a major Utility, NU, which has concluded that most of the site must be reserved for possible utility use.

   All but approximately four acres of the Utility Site must, according to NU's judgement, be reserved for these utility purposes.

   In reality, the site may —or may not — ever be used for power generation. As pointed out in an earlier report and in Chapter 4, NU's public service obligation and the apparent absence of other suitable sites or means to meet future electricity demands may very well result in the construction of a 200 MW plant on this site at some, as yet undetermined, time in the future. As also pointed out, however, NU has not yet reached a firm decision to proceed with plant construction. It may never decide to do so, and if it ever does decide to proceed, it will face a thorough review by regulatory authorities, including review of alternative sites for the proposed plant.

   From the standpoint of Stamford's policy, however, NU's judgement that most of the Utility Site must reserved for a possible future generating plant creates the context within which the City must make decisions.

3. Given NU's decision that most of the Utility Site must be reserved for a possible future generating plant, one possible response by the City of Stamford would be to work with NU in locating a suitable alternative site.

   It is conceivable, even if unlikely, that NU's public service obligation could be satisfied by securing an alternative site for a future generating plant. The potential importance of the Utility Site for residential development makes it worthwhile for the City to explore this admittedly remote possibility.

The City of Stamford's ongoing analysis of the solid waste disposal situation has led to the identification of opportunities to generate power through incineration of solid waste on the East Branch incinerator site, possibly within a six-year time frame. The Stamford DPW has indicated a willingness to initiate exploratory discussions with NU regarding these City power generation plans, for the purpose of identifying whether there is an opportunity to coordinate these plans with NU's needs. In addition, as indicated by the Commissioner of Public Works, the potential use — for power generating purposes — of city-owned land across Magee Avenue from the incinerators and sewage treatment plan might also be discussed with NU in an exploratory manner and in terms of NU's future generating needs.

RECOMMENDATION: The City should cooperate with NU in exploring possible alternative sites at which a future generating plant might be built.

4. So long as NU believes it necessary to reserve most of the Utility Site for a possible future generating plant, however, the City should be extremely cautious in providing for alternative uses — on the "excess" portion of the site — that would be adversely affected by a future generating plant.

As pointed out in Chapter 4, the City faces unavoidable uncertainty in providing for the development of the "excess" portion of the Utility Site. Not only is it unclear whether or not a power plant will ever in fact be built on the site, but the amount of "excess" land could change from time to time in the future as a result of changing power plant technology. Permitting residential or other non-utility development of only a small part of the site could foreclose opportunities for more imaginative designs that are only possible in larger projects.

RECOMMENDATION: In addition to exploring with NU the possibility of locating an alternative site for a future generating plant, Stamford should work with NU in an effort to reduce the portion of the Utility Site that NU is reserving for possible future utility use. The City's objective throughout any such cooperative effort should be (while recognizing the possible need for future power generation facilities) to secure for the South End Community as many as possible of the benefits that residential development can provide.

5. At such time as the City concludes that all or part of the Utility Site should be developed for residential use, it should apply carefully wrought review standards in order not only to assure quality development but also to assure that the development benefits the surrounding community.

The preparation of such standards is now premature. Although such standards need not be adopted until residential development of the Utility Site becomes timely, some possible guidelines for the City's consideration in the future preparation of such standards are included in Appendix A.

APPENDIX A:

SUGGESTED DEVELOPMENT GUIDELINES

APPENDIX ON DEVELOPMENT GUIDELINES

Context for Consideration of Development Guidelines

New development on NU's Utility Site is, at best, some years in the future. The power plant proposal has not been officially broached by NU to the State Siting Council or to the City of Stamford. Furthermore, the favored fuel cell technology is currently in the R&D stage of development; nothing remotely close to a 200 MW plant has been constructed anywhere in the country.

If it should be determined in the future that a power plant need not be constructed on this site, we are convinced that residential use of the site would provide significant community benefits. The absence of immediate development pressure on the present Utility Site provides an opportunity for informal, exploratory talks between the City and NU on the future of this key 20-acre parcel, including the joint exploration of alternative locations for utility use on City-owned property. No matter how remote the possibility of finding an alternative generating site may now appear, the City should at least investigate all feasible options. The costs of providing an alternative utility site must then be weighed against the community benefits that would be associated with residential development on the present Utility Site.

We are equally convinced that the location of a major residential development in the coastal high hazard area with one point of access and egress is inappropriate from both a planning and a public policy standpoint. Furthermore, we feel that the substitution of a large residential condominium project in the place of the existing water dependent recreational boating facility on the Yacht Haven West Site runs counter to the intent if not the letter of the Connecticut Coastal Management Act. In our judgement the YHW peninsula is inappropriate for residential development as well as high intensity, non-residential uses. It should be maintained as a major shipyard and marina with some intensification of marine-related commercial uses at its extreme southern tip.

Given the present uncertainty over future use of both the YHW and the Utility Site, and the need for ongoing negotiation between NU and the City, guidelines for future residential development that might be applied to the Utility Site are obviously premature. The adoption of hard and fast standards tends to be counterproductive in large site development. Such standards have the affect of limiting imaginative design. While development objectives, such as providing for public access to the water, and ensuring views of the water can be incorporated into the purpose of regulations, those objectives can be realized through any number of design approaches. Detailed standards may be appropriate for small lot development but are inappropriate to the planning of large scale development where a great many variables and unforeseen factors come into play.

Nevertheless, this Appendix includes some development guidelines and criteria that may prove useful to the Planning Board and its staff in considering options for future residential development on the Utility Site, at such time as that development may prove feasible.

The discussion of project design and development components relative to the preparation of residential zoning standards will focus on the preparation of density and bulk controls, and on considerations of "openness".

DENSITY

Density standards are commonly discussed in the context of (1) marketability factors and (2) community impact considerations.

Marketability: The Developers' Perspective

Once a decision on future land use is made, a key concern from the developer's perspective is marketability — what type and size of project is necessary to meet the threshold of economic feasibility? In the case of a residential project, for example, this boils down to a decision over how many dwelling units should be constructed and at what price? Density, from the developer's point of view, is a function of the relationship of development cost to selling price. Given high land values and land development costs, high density may be needed in order to offer residential units at a marketable price.

The following discussion of the marketability and economic feasibility issue is based on a very preliminary cost/density analysis relative to residential development on NU's South End property. The key components of this analysis are presented in Table A-1. The analysis was carried out following the March 7th presentation by NU's consultants of the residential development plan for the YHW Site — a presentation which emphasized the high land values and the extra development costs associated with building on the site. The 800 luxury condominium units contained in the development plan represented the minimum number — according to NU's consultants — needed to meet the threshold of economic feasibility for residential development on this particular site (given the high land value and extra development costs).

As noted in Chapter 4, the residential development plan presented by NU's consultants for the YHW Site would require a zoning change to permit both the proposed residential use and the proposed density of 56 dwelling units (du) per acre on the YHW Site. NU's arguments presented in favor of this density are based on the high costs of development associated with the specific and unique characteristics of the YHW Site, the costs of relocating the boatyard activities to a new site landward of the hurricane barrier, and the subsidization of boatyard/marina activities (judged by the proponents as an uneconomical use of the site). No other justification has been offered for the proposed density level other than the claim that the proposed density is necessary to ensure that new development on the site is economically feasible. The cost rationale for determining the proposed density was not entirely convincing to some municipal officials who heard the presentation of NU's residential development plan and resulted in some confusion in the minds of others.

As a result, in an attempt to clarify the relationships between land value, development costs, sales price, and feasible densities, the cost and density analysis contained in Table A-1 was prepared. This analysis was also intended to test, in a very preliminary way (based in part on development assumptions provided by NU and its consultants), the "threshold" density conclusions contained in the residential development plan presented for the YHW Site by NU.

For purposes of simplicity, a development project can be reduced to three types of action. The developer (1) buys the land for the project; (2) makes the land suitable for the intended use (prepares the site); and (3) builds the project. Keeping those three components in mind, one preliminary method of estimating project feasibility and "threshold" density begins with a range of project sizes and associated densities for the development site (e.g., 300, 400, 500, 600 dwelling units on the 14.35-acre YHW Site and associated densities of 21, 28, 35, 42 du/acre respectively). A target selling price per dwelling unit that appears marketable in the project area is also identified. Then,

based on (1) land costs and on rough estimates of (2) land development costs and (3) construction costs (the three main development components noted above), a total project cost is estimated for each project size. The developer's profit margin is then added to this cost estimate to get a markup cost that may be covered by the sale of the dwelling units. The greater the total number of units to absorb the mark up cost, the lower the average price per dwelling unit for the project must be to meet development costs. Calculated in this manner, if the price per dwelling unit of, for example, the 400 unit project size represents the target selling price identified as marketable in the area, then the density associated with the 400 unit project would be considered as meeting the threshold of economic feasibility.

To carry out this analysis in the predevelopment planning phase of a project — prior to detailed financial and market analysis and in-depth engineering studies of existing site conditions — one must necessarily start with certain cost and development assumptions that appear reasonable in terms of local experience.

The assumptions used in the analysis summarized in Table A-1 are as follows:

a. Land Cost
Since NU currently owns the land for which the development proposal is presented, land costs indicated in Table A-1 do not represent the price paid by NU to purchase the property, but rather the current fair market value of the land as estimated by the City of Stamford for tax assessment purposes. The acreage used to calculate the density of different project sizes and the current fair market value of NU's waterfront property in the South End are as follows:

Yacht Haven West Site	14.35 acres	$14,064,440
Utility Site	25.91 acres[1]	$15,796,187

b. Construction Cost
Construction costs vary with project quality and include such items as foundations, floor covering, carpentry, insulation, painting, roofing, windows and glass, appliances, plumbing, electrical, miscellaneous metals, masonry, etc. The assumptions used here (and subsequently verified by NU's consultants as appropriate) were based on (1) construction costs of $80 per square foot of residential space and (2) an average dwelling unit area of 1,500 square feet — resulting in a $120,000 cost of construction per dwelling unit.

c. Land Development Costs
Such costs include all site preparation costs, utility, paving and landscaping costs, etc. A typical percentage of construction costs per dwelling unit (in this case 20 percent of construction costs, subsequently verified by NU's consultants as appropriate) was used to estimate a "normal" land development cost per unit (based on normal site conditions) of $24,000.

d. Extra Costs
In addition to normal land development costs, however, there are a number of extraordinary costs associated with the proposed residential development plan on the YHW Site. These costs, noted in Chapter 3, were identified by NU's consultant as arising from the specific and unique characteristics of the site. They include

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1. As noted in Chapter 2, 25.91 acres is a gross total, including submerged land and the hurricane barrier easement.

the need for new bulkheading, structural parking, extra foundation work necessitated by poor bearing capacity and the flood plain location, etc. The average of the potential range of such extra costs, as identified by NU's consultants, was used to estimate the extra developments costs for Alternative C (residential development on the YHW Site) in Table A-1.

For Alternatives A and B which address the potential for residential development on NU's Utility Site landward of the hurricane barrier, extra development costs noted in Table A-1 were estimated as substantially lower than on the YHW Site due to the opportunity to eliminate those costs associated with new bulkheading, structural parking, waterfront promenade, decked street, etc.

e. Margin

A figure of 20 percent of total project cost (subsequently verified by NU's consultants as appropriate) was used to estimate the developer's profit margin, certain soft costs, and construction financing.

f. Target Selling Price

In presenting the residential development plan for the YHW Site NU's consultants indicated that the dwelling units envisioned could conceivably be priced to sell for as much as $300,000 per unit. Therefore, for the purposes of the cost/density analysis contained in Table A-1, unit prices of $300,000 and less were considered marketable.

The cost and development assumptions noted above are applied in Table A-1 to a range of project sizes for residential development alternatives A, B, and C.

A: Residential development on the entire NU Utility Site (25.9 acres gross).
B: Residential development on a portion of the Utility Site large enough to enable imaginative project design (e.g., 15.5 acres gross).
C: Residential development on the entire YHW Site (14.35 acres gross).

Applying the above noted cost and development assumptions to residential project sizes of 300, 400, 500, and 600 units, Alternative C results in dwelling unit prices of $338,000, $297,000, $272,000, and $255,000 respectively. Since the $297,000 price per unit was within the realm of condominium marketability as initially indicated in NU's presentation of the residential development plan for the YHW Site, the associated 400 unit project size and density of 28 du/acre was used to depict Alternative Development Concept C in Chapter 5. The density of 28 du/acre also approximates the recently adopted Master Plan land use designation for the YHW Site which would permit residential use (following appropriate zoning revisions) at a density not to exceed 29 units per acre.

Following NU's review of this cost/density analysis the Utility's consultants prepared a modified cost/density analysis for residential development on the YHW Site using the same format and basic cost figures contained in Table A-1. The modified analysis prepared by NU's consultants included: (1) an 800 unit project size; (2) a range of extra development costs (from low to high); and (3) a calculation of land costs and overall density for residential development on the YHW Site based on 22.79 acres rather than 14.35 acres. (This 22.79 acres includes the 14.35 acre YHW Site; 4.22 acres landward of the hurricane barrier and proposed by NU as a relocation site for the YHW boatyard; and 4.22 acres of hurricane barrier easement and submerged land identified as public access/linear park area in NU's development plan.)

Also, NU's consultants introduced an additional index in determining marketing feasibility — the price per square foot of residential space. For the various unit prices shown in Table A-1 for Alternative C, NU's consultants calculated a price per square foot. For the $297,000 Unit Price shown in Table A-1 for the 400 unit project size, the associated price per square foot would be $198 (based on an average unit size of 1500 square feet). The consultants presented the price per square foot as the critical indicator of marketability. Based on assembled marketing data for residential projects in the region, NU's consultants claim that the threshold of marketability for residential development on the YHW Site should be considered as approximately $150 per square foot. Hence, it is argued that a 400 unit residential development would not be viable on the YHW Site. Expanding the cost/density analysis presented in Table A-1 to include an 800 unit project size, NU's consultants note that a price per square foot of $157 is obtained (based on a Unit Price of $235,000) for the 800 unit project. Such a price per square foot is close to their identified threshold level of economic feasibility ($150 per sq. ft.) and, they argue, supports their cost rationale for the 800 unit residential development plan on the YHW Site.

It is important to note that additional modification to the cost/density assumptions on which Table A-1 is based may also be appropriate at this early stage in the predevelopment planning process. Table A-2 illustrates the effect on unit prices that result from modifying only the Land Cost component of the Table. The Land Cost value used in Table A-2 is based on NU's estimate (as indicated in current tax appeal proceedings) of the land's fair market value rather than on the City's current estimate. All other cost and development assumptions used in the preparation of Table A-1 are included in Table A-2. As shown in Table A-2, lowering the Land Cost for Alternative C results in a lower Unit Price. In the case of the 400 unit project size, the price per unit is lowered to $273,000 and the corresponding price per square foot would be $182. This price per square foot remains above the threshold level of economic feasibility identified by NU's consultants. It should be pointed out, however, that project data published by the Urban Land Institute indicates that as of 1981, 1250 square foot, 2 bedroom units in the Palmer Point waterfront condominium project in Greenwich were priced from $179,000 to $259,000, representing a square foot price range of $143 to $207.

TABLE A-1: COST AND DENSITY ANALYSIS I
(costs in $1000)

	Project Size (dwelling units)			
ALTERNATIVE A	300	400	500	600
Land Cost	15,796	15,796	15,796	15,796
Construction Cost	36,000	48,000	60,000	72,800
Land Development Cost	7,200	9,600	12,000	14,400
Extra Costs	6,250	6,250	6,250	6,250
Total Cost	65,246	29,646	94,046	108,446
Mark-up (Total cost + 20%)	78,295	95,575	112,855	130,135
Unit Price	261	239	266	217
Density (du/acre)	12	15	19	23
ALTERNATIVE B	180	240	300	360
Land Cost	9,478	9,478	9,478	9,478
Construction Cost	21,600	28,800	36,000	43,200
Land Development Cost	4,320	5,760	7,200	8,640
Extra Costs	3,750	3,750	3,750	3,750
Total Cost	39,148	27,788	56,428	65,068
Mark-up (Total cost + 20%)	46,978	57,346	67,715	78,082
Unit Price	261	239	266	217
Density (du/acre)	12	15	19	23
ALTERNATIVE C	300	400	500	600
Land Cost	14,064	14,064	14,064	14,064
Construction Cost	36,000	48,000	60,000	72,000
Land Development Cost	7,200	9,600	12,000	14,400
Extra Costs	27,250	27,250	27,250	27,250
Total Cost	84,514	98,914	113,314	127,314
Mark-up (Total Cost + 20%)	101,417	118,697	135,977	152,777
Unit Price	338	297	272	255
Density (du/acre)	21	28	35	42

TABLE A-2: COST AND DENSITY ANALYSIS II
(costs in $1000)

	Project Size (dwelling units)			
ALTERNATIVE A	300	400	500	600
Land Cost[2]	7,936	7,936	7,936	7,936
Construction Cost	36,000	48,000	60,000	72,000
Land Development Cost	7,200	9,600	12,000	14,000
Extra Costs	6,250	6,250	6,250	6,250
Total Cost	57,386	71,786	86,186	100,586
Mark-up (Total Cost + 20%)	68,863	86,143	103,423	120,703
Unit Price	229	215	207	201
Price/square foot	.153	.143	.138	.134
Density (du/acre)	12	15	19	23
ALTERNATIVE B	180	240	300	360
Land Cost[2]	4,748	4,748	4,748	4,748
Construction Cost	21,600	28,800	36,000	43,200
Land Development Cost	4,320	5,760	7,200	8,640
Extra Costs	3,750	3,750	3,750	3,750
Total Cost	34,418	43,058	51,698	60,338
Mark-up (Total Cost + 20%)	41,301	51,669	62,037	72,405
Unit Price	229	215	207	201
Price/square foot	.153	.143	.138	.134
Density (du/acre)	12	15	19	23
ALTERNATIVE C	300	400	500	600
Land Cost[2]	6,251	6,251	6,251	6,251
Construction Cost	36,000	48,000	60,000	72,000
Land Development Cost	7,200	9,600	12,000	14,400
Extra Costs	27,250	27,250	27,250	27,250
Total Cost	76,701	91,101	105,501	119,901
Mark-up (Total Cost + 20%)	92,041	109,321	126,601	143,881
Unit Price	307	273	253	240
Price/square foot	.205	.182	.169	.160
Density (du/acre)	21	28	35	42

2. Fair market value as estimated by Northeast Utilities and indicated in current tax appeal proceedings.

Community Impacts: The City's Perspective

As noted in Chapter Four, economic considerations, although of obvious importance, are only one of many factors that must be considered in the formulation of a municipal zoning regulation. The basic rationale for a zoning regulation should be viewed as the overall public good based on considerations of public health, safety, and welfare.

This report has identified various planning problems resulting from the interaction of the specific and unique characteristics of the YHW Site and NU's proposed residential development of the site. These problems have been identified and discussed because of their obvious significance to the primary and immediate issue of determining the appropriate use of the site and, subsequently, an acceptable development density. In addition to the criteria of economic feasibility as presented by the proponents of the residential development plan this report has identified and evaluated various impact considerations and public policy issues pertinent to new development on the YHW Site and, based on this evaluation, presented various recommendations regarding the future use of the site.

In the course of this study the following impact considerations were identified as being of particular importance in the formulation of general guidelines for new development on the YHW Site:

1. Flood hazard seaward of the hurricane barrier
2. Limited site access
3. Limited access to the South End
4. Proximity to the CBD
5. Relationship of new development on the YHW Site to the South End Community.

In considering these issues this report has concluded that both residential and large scale commercial use is inappropriate on the YHW Site; and, that the City and NU should explore and pursue the potential for residential development on the Utility Site landward of the hurricane barrier. Should the current major obstacles to residential development on this site be resolved at some time in the future, however, various impact considerations relative to residential development would need to be assessed in detail. A typical impact evaluation would focus on the potential need to expand the existing capacity of roads, water supply, sewer lines, electric power utilities, solid waste disposal facilities, schools, parks, and police, fire and emergency medical services. The following variables are among those that should be evaluated at such time as residential development on the Utility Site may prove feasible and detailed designs for such development are prepared. New residential development on the Utility Site will produce a demand for expanded public services and capital improvements. Further study, however, will be required to quantify this demand relative to the increased tax revenues also provided by such development.

Roads and Traffic

Traffic impact from residential use is measured in average trips per day per dwelling unit. For example, local traffic generation studies will indicate the number of vehicle trips per day per residential unit. (A "trip" is defined as a one-way drive to a particular destination. Thus, a round-trip excursion to the store would be counted as two trips when estimating traffic generation). Average daily trips would be converted to peak hour figures to evaluate the capacity of the road networks to absorb a particular loading.

Traffic generation assumptions for commercial activities would follow a similar rationale. Studies of the number of automobile trips made by shoppers have led to generally

accepted estimates for different types of businesses. With such estimates, the demand for parking can be calculated as well as the added traffic loading on approach streets. As with residential traffic, this figure must be modified to reflect peak hour traffic.

Water and Sewer

Water and sewer demands, typically considered equal in residential and commercial uses, are based on population size. A unit figure representing typical daily water consumption per person would be used. Again, this figure would be modified to reflect peak hour demand. The size of supply and waste lines must be such that they will accommodate maximum requirements at any point in time. Furthermore, the size of the water supply source, as well as sewage treatment and effluent disposal facilities must be considered.

Water is also needed for fire fighting. As development occurs, separate lines to fire hydrants would have to be installed. Water pressure to serve the fire fighting equipment may have to be augmented to offset the extension of the supply network.

Electrical Power

Presumably, the power demands of new residential development would not be so great as to impose added costs on the public beyond the present rate structure. Responsibility for the installation of primary service lines would be a matter decided between the developer and the power company.

Should the development proposal contain public park facilities as illustrated in Chapter 5, these parks and public spaces would include night lighting. The cost of electrical power for this lighting would be a small addition to the City's costs but the first costs of installing the lighting, however, should be borne by the developer.

Solid Waste

Demand on solid waste disposal facilities would be calculated based on assumption of the average volume of waste generated per residential unit relative to the capacity of the planned method of collection and disposal.

Schools

Assumption of the number of school-age children who might live in a proposed residential development would be largely determined by the type of buyer. The construction of luxury units would reduce the number of young families and the average family size per unit. A profile of the number of school-age children contained in the development would be compared with the existing capacity of public school facilities serving the area.

Police, Fire and Emergency Medical Services

Emergency services, are measured by (1) the availability of police, fire or emergency medical service units and (2) the response time of such units. Additional growth imposes demands on both aspects of emergency service. Therefore, there is not a straight-line relationship between numbers of new residential units or square feet of commercial space and required numbers of new emergency service units. The impact of growth is specific to site location, to the presence, size and distance of police, fire and EMS stations and to the nature of the path and access to the new development.

BULK CONTROL

Floor Area Ratio (FAR)

Establishing a Floor Area Ratio (ratio of the floor area to the lot area) is a regulatory measure of controlling the square footage of building area allowed in new development on a particular site; FAR is a standard intended to control the volume of new development.

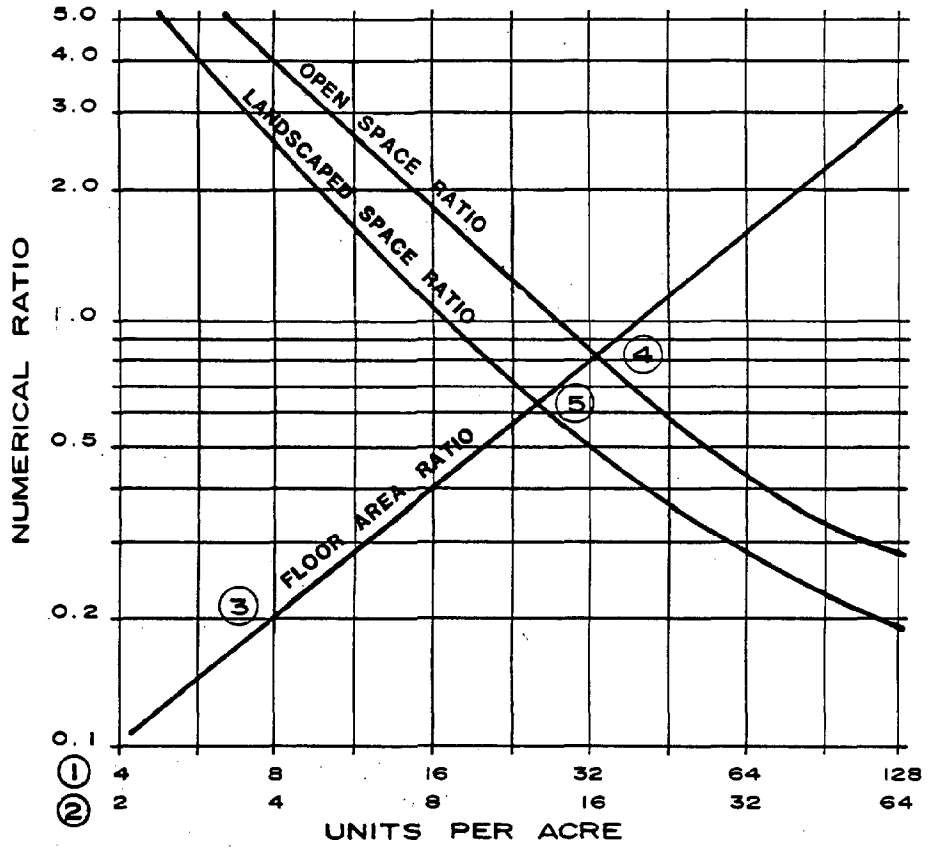
An FAR of 1.0 would mean that 43,560 square feet of space would be permitted on a one-acre site (43,560 sq. ft.); an FAR of .5 would permit a 22,780 square foot building on an acre. Whereas a FAR standard might be a controlling restriction with commercial or office uses, it does not usually control the size of residential structures unless it is set abnormally low.

If Stamford wishes to incorporate a residential FAR standard in its zoning regulation, density (number of units per acre) and residential unit size become the controlling variables. The common practice is to establish an FAR that provides residential developers the opportunity to build large units. For example, an average maximum unit size of 2,500 square feet at a density of 17 units per acre (42,500 sq. ft. per acre) would be permitted in accordance with an FAR of approximately 1.0. Lowering the FAR to 0.75 at 17 units per acre would limit the maximum average unit size to 1,875 square feet.

The designers of an FAR standard must begin with a maximum size unit that can be anticipated. The FAR can then be established following the determination of an acceptable density. This determination should be based on a combination of economic feasibility considerations, community impact assessment and public policy.

A recommended relationship between density, average unit size and FAR is shown in Figure A-1. The horizontal axis contains densities for low average unit sizes ((1)) and high acreage sizes ((2)). For example, given an acceptable density of 16 high average sized units per acre, an appropriate FAR would be approximately .8. An acceptable density of 16 low average sized units per acre would yield an appropriate FAR of .4.

It is important to note, however, that the sort of development control achieved by the application of a mandatory FAR standard to residential development can be effectively accomplished by basic coverage and density regulations. As such, a residential FAR standard should not be viewed as critical to the development of effective residential development standards.



① LOW AVERAGE APARTMENT SIZE (LESS THAN 1,200 S.F.)
② HIGH AVERAGE APARTMENT SIZE (MORE THAN 2,300 S.F.)
③ MAXIMUM S.F. OF FLOOR AREA PER S.F. OF LAND AREA
④ MINIMUM S.F. OF OPEN SPACE PER S.F. OF FLOOR AREA
⑤ MINIMUM S.F. OF LANDSCAPED SPACE PER S.F. OF FLOOR AREA

FIGURE A-1: LAND USE INTENSITY SCHEDULE

Apparent Bulk

Whereas FAR regulations attempt to control the volume of a structure and, when applied to residential development restricted by density regulations, essentially limit bulk, bulk must also be addressed in terms of viewpoint and appearance. (See Figure A-2). The closer one is to a building, the "bulkier" it appears. As one approaches a large building there is a point at which the building is no longer seen as a form in the space one is moving through, but appears instead to "wall off" or enclose that space. For most people that point is reached when the horizontal distance between one's viewpoint and the building is equal to about two times the height of the building. This dimension is derived from the boundary of focused vision defined as a 60 degree cone extending outward from the eye. When the structure being viewed exceeds this cone and the eye must move to encompass it, the building can be said to have exceeded an optimum threshold. (See Figure A-3.)

With regard to possible future residential development on the NU Utility Site, the issue of bulk is particularly important in terms of visual impact on the adjacent South End Community. If the surrounding area is not to be overwhelmed by new residential development, bulk control is imperative. If the cone of vision concept is followed, it would be reasonable to require a building setback from Washington Boulevard, a main vantage point from which these structures will be seen, of two times the height of the residential buildings. Such a setback is illustrated by the residential towers depicted in Figures 32 and 37 in Chapter 5. Design standards based on the cone of vision concept can exist coincidentally with an FAR standard since FAR is intended to control volume while the cone of vision concept controls the appearance of volume.

Height Controls

Height restrictions, also a form of bulk control, are usually intended to preserve neighborhood character by prohibiting a building from overreaching its neighbors. In the case of possible future residential development on the Utility Site and given a height-to-setback ratio such as the recommended cone of vision concept, an absolute height restriction would serve no further purpose. Without a height-to-setback ratio, however, a maximum height of 10 stories or 120 feet would be recommended. (In the case of future residential development on the Utility Site such a height limitation would fit within the cone of vision setback and is illustrated in Figures 32 and 37 in Chapter 5.)

OPENNESS

Distance Between Buildings

Light and air are the primary objectives of building separation, of course, but visual access to the water as well as shoreline appearance when viewed from the water are also important considerations in coastal projects. The appearance of a structural wall at the water's edge, creating a physical and psychological barrier should be avoided. There is, however, little existing view of the West Branch through the Utility Site from Washington Boulevard. Nevertheless, a sensible design standard would ensure that, in plane view parallel to the waterline, no more than 50 percent of the site length be occupied by structures and the space between buildings not be less than half the sum of their heights. (See Figure A-4.)

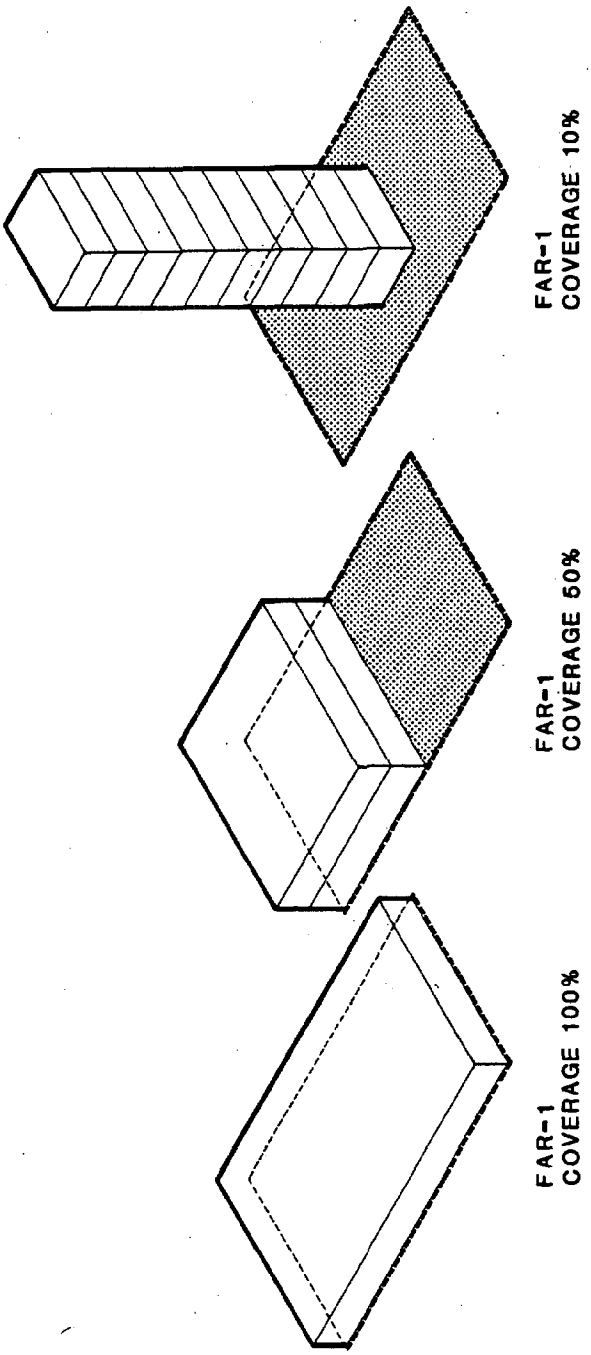


FIGURE A-2: VARIATIONS IN LOT COVERAGE AND THE APPEARANCE OF BULK

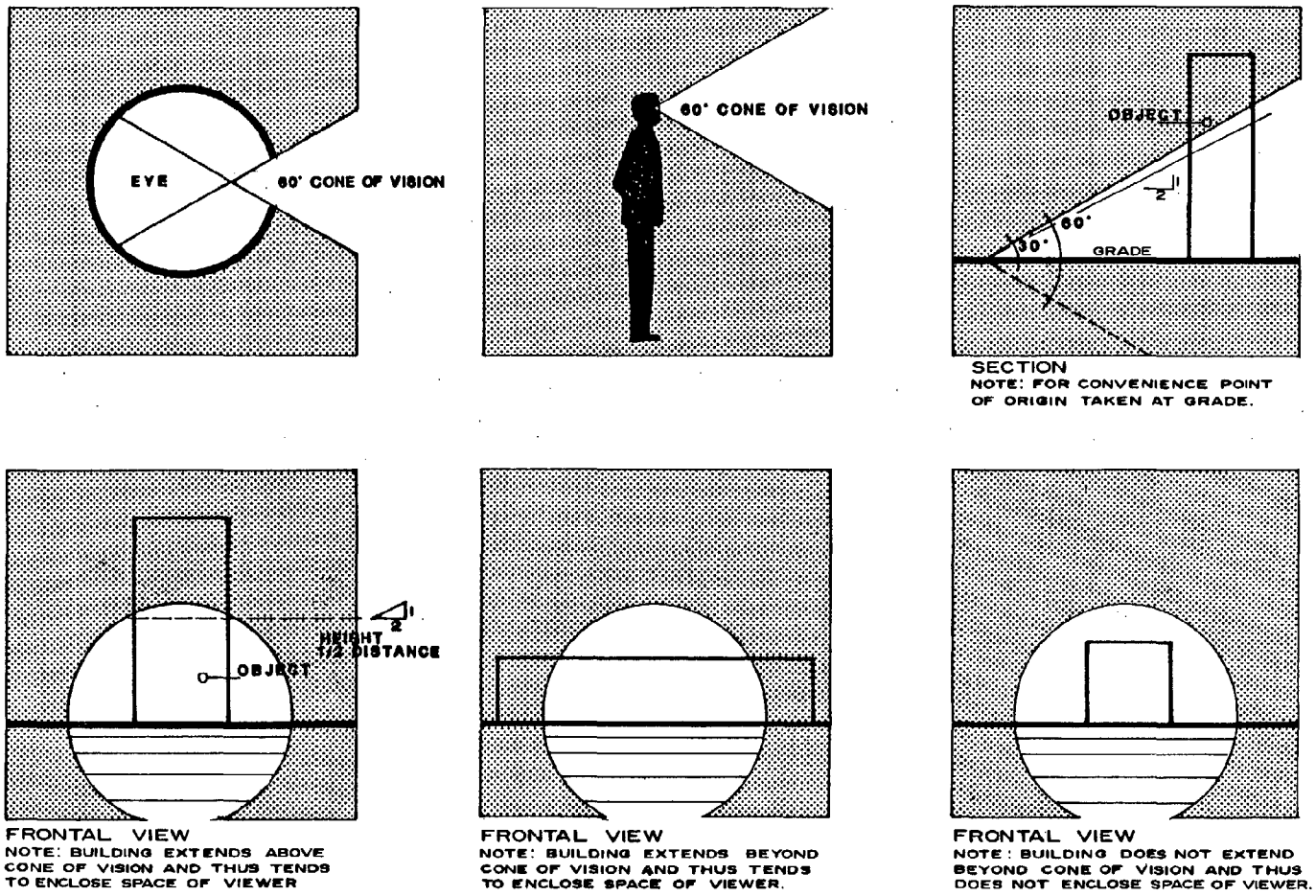


FIGURE A-3: THE CONE OF VISION CONCEPT AS A TOOL TO CONTROL APPARENT BULK

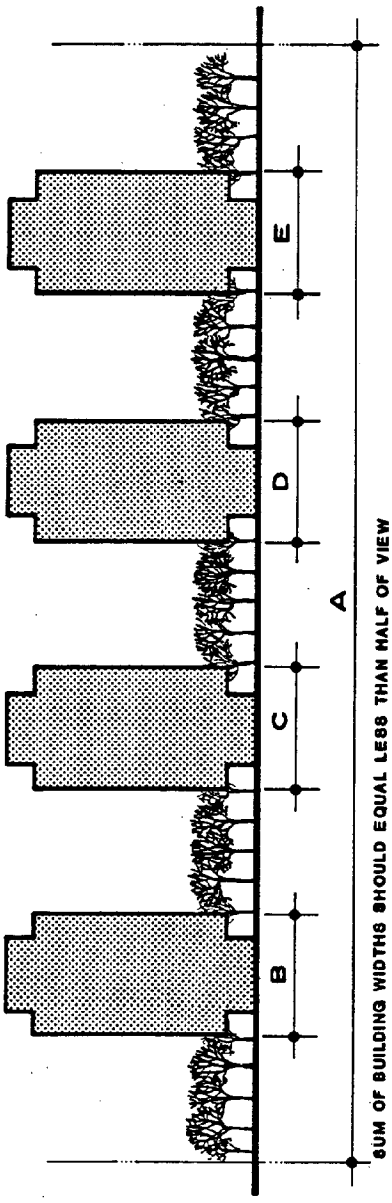


FIGURE A-4: BUILDING SEPARATION AND OPENNESS

Open Space

Coverage restrictions, which set a maximum on the percentage of a site that may be covered with buildings, are the traditional zoning device to insure that adequate open space is provided. However, much or all of that open land can be occupied by paving and cars unless a landscaped open space ratio is used. Figure A-1 shows a recommended ratio between total open space and landscaped open space for residential projects. The difference between total open space and landscaped open space is used primarily for parking facilities.

For example, with a density of 16 low average sized residential units per acre, the minimum amount of open space required would be slightly less than 2.0 times the residential square footage (as read off the vertical axis of Table A-1). In other words, for every square foot of residential space at least 2 square feet of open space would be required. Also, with a density of 16 low average sized residential units per acre, the minimum amount of landscaped space (exclusive of parking) would be determined by a ratio of landscaped open space to residential square footage of approximately 1.0 to 1 as shown by ((5)) on Figure A-1.

One open space objective relative to possible residential development on the Utility Site should be obtaining the maximum of landscaped area with parking at grade. As illustrated in Figure 32, at approximately 15 units per acre, and 1.5 cars per unit, about 20 percent of the Utility Site would be needed for on-ground parking and driveways. If 50 percent of the remainder of the site were required as landscaped open space, 30 percent of the site would be available for building coverage. Thirty percent would be sufficient to build 17 units per acre at an FAR of 1.0. Four story buildings are possible at this ratio and 50 percent of the site could be retained as landscaped open space.

These open space requirements, however, are exclusive of any waterfront public access provisions that might be added.

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