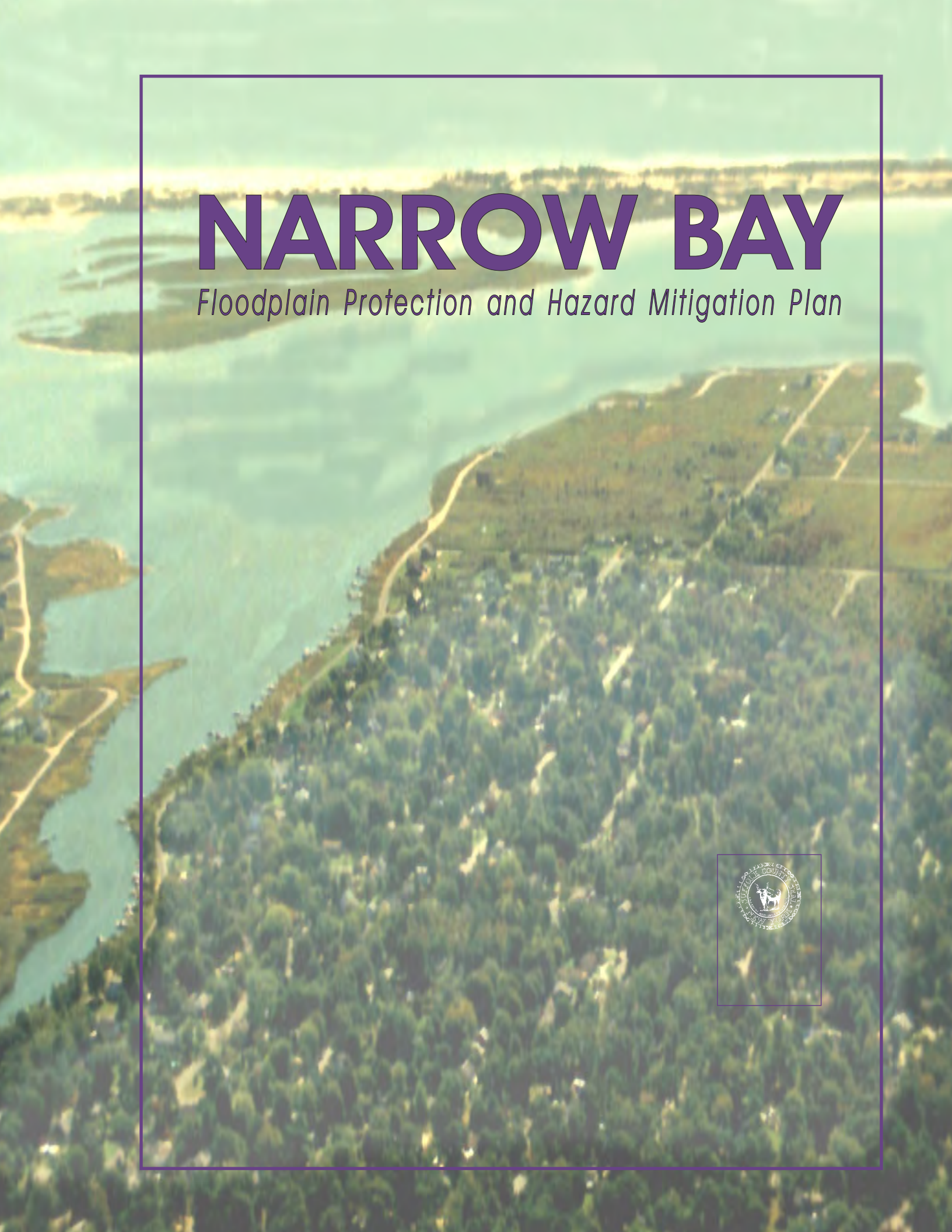

NARROW BAY

Floodplain Protection and Hazard Mitigation Plan

NARROW BAY FLOODPLAIN PROTECTION AND HAZARD MITIGATION PLAN

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April 1997

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Chapter 1. INTRODUCTION

Study Overview

The State Emergency Management Office (SEMO) provided a Hurricane Hazard Mitigation Grant to the Suffolk County Department of Planning to fund the preparation of a local pre- and post-hurricane property acquisition plan for both vacant and developed parcels in an area that is vulnerable to coastal flooding during severe storm events. Implementation of this plan rests primarily on two factors: 1. the decision of private property owners to participate in the plan; and 2. the availability of resources to fund and execute transactions involving privately owned, as well as publicly owned parcels. With respect to factor one above, participation in the plan is entirely **voluntary**, and hence, there are no recommendations made in this plan that involve the taking or condemnation of property against the wishes of the owner(s). The plan is local in scope, since it identifies individual parcels at tax map scale. Potential funding sources are identified in the plan in response to factor two above. Opportunities to implement plan recommendations may arise over the long term, as funds are made available to mitigate damage after occurrence of a hurricane or northeast storm.

Due to funding limitations, this plan was prepared for a portion of the coastal zone in Suffolk County that includes the Narrow Bay floodplain on the Mastic/Shirley peninsula. The prototypical approach used in this plan can be applied to other coastal areas in Suffolk County in the future.

The Narrow Bay floodplain and adjacent upland area was selected as the plan study area because of the following factors:

1. high vulnerability to flooding caused by hurricanes and northeast storms due to low elevation and proximity to the Fire Island barrier beach.

2. high potential for additional development/re-development and population at risk considering the large number of small, vacant parcels and older, seasonally used structures that do not meet current floodplain regulatory program standards.

3. opportunity to use parcels owned by Suffolk County in a land exchange program designed to prevent further development within flood-prone areas.

4. availability of a report that discusses four natural hazards to coastal occupancy along the shoreline of the Great South Bay-Moriches Bay complex (Long Island Regional Planning Board 1994).

5. desirability of constructing a Geographic Information System data base and demonstrating its utility in flood hazard mitigation planning in an area with complex land use and natural resource characteristics.

Chapter 2 of this report contains the results of the land use and population analysis conducted for the Narrow Bay study area. Four GIS maps - Existing Land Use; Land Under Public Ownership; Existing Zoning; and Land Available for Development - are described and interpreted. The existing population and projected population under saturation development conditions are discussed , as well as housing patterns in the area.

The analysis of coastal hazards is the focus of Chapter 3. Natural resource characteristics and tidal flooding vulnerability are discussed with reference to the following four GIS maps: 100-Year Tidal Floodplain; Area Flooded by Hurricanes Under Different Worst Case Scenarios; Tidal and

Freshwater Wetlands; and Area with Less than 5 Feet to Groundwater. The potential impacts of coastal hazards in the Narrow Bay area are described, given the current distribution of uses, as well as those that could occur at full build-out. Tabulations generated from GIS coverages are emphasized, as are factors that contribute to hazard potential, e.g., condition of the barrier beach. This chapter includes information on the extent of property owner participation in the National Flood Insurance Program (NFIP), and an overview of damage claims filed in the past.

Floodplain management concerns based on land use, population, natural resource and hazard analyses are summarized in Chapter 4. Furthermore, the details of the Narrow Bay floodplain protection and hazard mitigation acquisition plan are also reviewed in Chapter 4. Priorities for parcels located in the Conservation Area, Coastal Environmental Hazard Area, and Relocation Area are outlined with reference to the Recommendations map. Estimates of fair market value of vacant and developed parcels located in the floodplain are tabulated. The short-term and long-term implications of Suffolk County action are discussed, and applicable funding sources identified

.

Regional Setting

The Narrow Bay study area consists of the tidal floodplain and adjacent upland area located on the Mastic/Shirley peninsula, in the Town of Brookhaven, Suffolk County, New York. The map entitled Mastic/Shirley Vicinity shows the geographic and cultural features of the 6,724 acre study area. It is bordered on the north by the Montauk Branch of the Long Island Railroad, on the east by Forge River and Moriches Bay, on the south by Narrow Bay, and on the west by the Great South Bay and the Wertheim National Wildlife Refuge. The Fire Island barrier beach and Smith Point County Park are located about ½ mile to the south of the peninsula. A significant portion of the Narrow Bay coast is low lying with extensive tidal and freshwater wetlands. The natural drainage pattern in the wetlands and transitional upland environments has been altered. This, in conjunction with high water table elevations, has exacerbated flooding problems. The predominant land use in the study area is single family residential on small lots that range in size from 4,000 to 10,000 square feet. Many of the structures that have been built in the floodplain pre-date the enactment of environmental protection regulations. Along the shore of Narrow Bay, undeveloped wetland areas have been subdivided into small lots, almost all of which are substandard for residential development according to existing zoning.

Recreational boating is a popular activity in the area. Marina facilities are available primarily for local residents through membership in a property owners association. Navigation channel dredging and spoil disposal are issues of ongoing interest in this area. Federal, New York State, Suffolk County and Town of Brookhaven open space and parkland holdings also exist along the shoreline.

Opportunity to influence future land use decisions in the coastal portion of the study area is apparent. Suffolk County has acquired a number of small, vacant lots in the floodplain, as well as parcels north of the wetland/low lying area through non-payment of property taxes.

Overall, the Narrow Bay study area has both a development pattern that is representative of the densely developed areas found along the western portion of the Great South Bay shoreline, as well as undeveloped land characteristic of the more rural areas along the shoreline of Moriches Bay to the east. The extent of vacant and disturbed land in the immediate coastal area make it a target for

both new development and re-development in the future. However, this is the area where the hazards to coastal occupancy are the greatest.

Vulnerability to Severe Storms and Flooding

Both the position of Narrow Bay relative to Great South Bay and Fire Island Inlet to the west and Moriches Bay and Moriches Inlet to the east, and the proximity of the study area to the Fire Island barrier beach have ramifications with respect to conditions that impact tidal flooding hazards in the area. The processes that cause the tidal flooding hazard to occur, the extent and magnitude of the hazard as it pertains to the Narrow Bay study area, and the time frame associated with hazard occurrence are discussed in this section.

The range of the mean tide in the Atlantic Ocean at the entrance to Fire Island Inlet and Moriches Inlet is 4.0 ft., and 3.0 ft., respectively. Tidal ranges decrease as one proceeds through the inlets and into the back bay areas. In the throats of both Fire Island and Moriches Inlets, at the entrance to Great South and Moriches Bays, the mean tidal range is 1.0 ft. In Great South Bay, the range of mean tide is about 0.6 ft.; it increases to 0.8 ft. near Howells Point in Bellport, and decreases to 0.5 ft. in Narrow Bay (Nassau-Suffolk Regional Planning Board 1976).

Local and regional meteorological forces can dramatically increase water levels along the coast and cause tidal flooding of low-lying areas on the mainland. The tidal flooding hazard is therefore linked to the frequency and severity of severe storms that impact Long Island.

The vulnerability of Long Island to severe storm events has been well documented. Data from the National Hurricane Center in Coral Gables, Florida, show that during the period 1886 to 1989, 25 tropical cyclones passed within 75 nautical miles of Long Island; 8 of these storms were hurricanes and 17 were tropical storms. (The reference location for this determination is 41.ON, 73.6W.) In terms of frequency of occurrence, Long Island can expect to be hit by a tropical cyclone once in every 4.2 years. The recurrence interval for hurricanes alone is 13.0 years. Global warming may dramatically alter the frequency of severe storms in the North Atlantic region. Warmer ocean temperatures could shift the location of tropical cyclone genesis to higher latitudes. Over the long term, this could result in an increase of hurricane frequency and intensity in the Long Island area.

The probability of a certain number of hurricanes hitting Long Island over a given time interval can be calculated utilizing hurricane frequency data (Neumann and Pryslak 1981). (Probability values range from 0 to 1.0. A probability of 0 indicates that there is no chance of an event occurring; a probability of 1.0 indicates that the event is certain.) The probability that at least one hurricane will impact Long Island over the next 10 years is 0.54, indicating a fairly good chance that such an event will happen. While the probabilities associated with the occurrence of at least two or more hurricanes over the next decade are low, this is not the case when the time interval is increased to 50 years. By the year 2045, it is very likely that Long Island will have been hit by a least three hurricanes (probability value of 0.74); the probability for at least four hurricanes during this time interval is 0.54. The probabilities make it a virtual certainty that many hurricanes will hit the Island as the time interval is increased beyond 50 years.

The Saffir/Simpson Hurricane Scale is a five category scale that ranks hurricanes by intensity (maximum one-minute sustained winds) and gives some idea of the structural damage that can be caused by hurricanes at landfall. Damages caused by Category 1 through 5 hurricanes are

characterized as minimal, moderate, extensive, extreme and catastrophic, respectively. Hurricane Hugo, for example, made landfall near Charleston, South Carolina in 1989 as a Category 4 hurricane; and Hurricane Andrew, in 1992, made landfall in Florida also as a Category 4 hurricane. Hurricane Gilbert, in 1988, made landfall at Cozumel, Mexico, as a category 5 system (McAdie 1991). The mean return period for hurricanes within 75 nautical miles of Long Island classified as Category 1 is 20 years; Category 2 is 47 years; Category 3 is 83 years; Category 4 is 180 years; and Category 5 is 470 years.

The last hurricane to impact Long Island was Hurricane Bob. On August 19, 1991, Hurricane Bob had weakened from a Category 3 to a Category 2 hurricane as it accelerated and followed a north-northeast track over cooler waters off the mid-Atlantic states. The eye of Hurricane Bob passed over Block Island, Rhode Island. Since the center of the storm was to the east of Montauk, Suffolk County was not hit by the dangerous northeast quadrant of the storm. Hurricane force winds in Suffolk were generally from the north and, hence, were blowing off shore. Winds gusted to 88 mph at Montauk; over 7 inches of rain fell at Bridgehampton; and one confirmed tornado occurred on Long Island. Suffolk's ocean shoreline was spared from extraordinary tidal flooding and ocean wave damage because of the favorable wind direction, and the passage of the storm about four-and-a-half hours before the time of astronomical high tide. More damage occurred along Suffolk County's north facing shoreline areas, e.g., the Long Island Sound shore. Wind-related tree damage at inland locations was substantial. Total monetary damages in Suffolk County were estimated at $70 million.

Long Island was fortunate that it was not the victim of a direct hurricane hit in 1995 - the worst season for tropical cyclone genesis in the North Atlantic Ocean since 1933. Nineteen named tropical cyclones occurred in 1995; 11 of these storms were hurricanes, and 8 were tropical storms. Despite storm tracks that were distant from the Island, the south shore suffered a brutal attack from higher than normal, storm-generated waves during the summer. This situation is perhaps best illustrated by the impacts of Hurricane Felix in August 1995 as it followed a circuitous offshore route along the east coast of the U.S. causing severe beach erosion and damage to structures on Fire Island.

Extratropical cyclones, called "northeasters," can also cause flooding and related damages. On average, about 2.4 northeast storms impact Long Island each year; they typically occur in February (Gravens et al. 1991).

Even though hurricanes produce higher tides, northeasters occur much more often, and two or more of these storms can be just as devastating to beaches that have not achieved full post-storm beach buildup. Northeasters, unlike hurricanes that normally move rapidly across a shore, can remain in an area for several days, eroding more of the beach at each high tide. In a given year there is roughly an 80% chance that a northeast storm causing significant water-related damage will occur in New York (Long Island Regional Planning Board 1984).

In recent years, several severe northeast storms have raised havoc along the shore of Long Island. The October 30-31, 1991 "Halloween Storm" caused extensive damage to residential and commercial properties in low lying coastal bay areas on the mainland and the back side of the barrier beaches (U.S. Dept. of Commerce 1992). The 1992-93 winter storm season was also noteworthy.

An inventory of problems caused by the December 1992 northeaster and the lesser storms that followed, ending with the late winter blizzard of March 1993, includes significant damage, erosion, and coastal changes in Suffolk County. On Fire Island, severe beach erosion occurred from

Kismet to Davis Park, at Long Cove and at Old Inlet. Smith Point County Park also had severe beach erosion. Most of the Fire Island communities suffered widespread dune scarping, and many experienced washovers. The dunes were eroded back 80 feet in many places. As of June 1993, 44 houses were reported destroyed and another 42 seriously damaged. Washovers in Atlantique, within the Fire Island National Seashore Wilderness Area, and in Smith Point County Park rendered these locations susceptible to breaching.

At Westhampton Beach, the barrier island was breached in two locations. One of these breaches - Little Pikes Inlet - persisted and grew to over 2,200 feet in width and more than 20 feet in depth. Little Pikes Inlet was closed by the Army Corps of Engineers in September 1993. More than 85 residences were destroyed in this part of Westhampton Beach.

Probably the most dramatic aspect of both hurricanes and northeasters is the storm surge, or increase in the height of the water surface along the coast as compared to that predicted in tide tables. Shoreline configurations which favor an increase in the range of astronomical tide also will favor an increase of storm surge heights.

Hurricane surge elevations for various categories of hurricanes have been predicted under worst case meteorological conditions. For locations in the Great South Bay system, surge elevations above National Geodetic Vertical Datum (NGVD) increase as the distance to either Fire Island Inlet or Moriches Inlet decreases. At Smith Point, surge elevations range from 4.2 ft. for a Category 1 hurricane to 15.9 ft. for a Category 4 storm. At Fire Island Inlet, the respective surge elevations are 7.9 ft. and 23.8 ft. Hurricane Evacuation Study inundation maps prepared for the New York State Emergency Management Office show the extent to which coastal areas would be inundated in Category 1 through 4 hurricanes.

Preliminary stage frequency curves for flood water elevations at Long Island coastal locations have been developed as part of the Corps of Engineers' Fire Island to Montauk Point study. Historical flood data, as well as model projections, were used to prepare the curves. The return period and flood elevation data for combined northeaster and hurricane conditions shown in Table 1, for Smith Point near the entrance to Narrow Bay, and for Moriches Inlet near the entrance to Moriches Bay, are based on these curves (Praeter, Hardy and Butler in prep.). The return period, in the first column, is the average duration in years, or waiting time, between two flooding events where water levels equal or exceed the specified level. Flooding is due to the imposition of storm-induced water level changes on the astronomical tide. The second column in the table shows water levels resulting from storm surge and tide. The third column shows the added impact of wave induced changes, produced by breaking waves along the coast, on storm water levels. As can be seen in the table, storm tides at a specified frequency are much higher at Moriches Inlet than those at Smith Point on the bay mainland. For example, at Moriches Inlet, the 100-year flood, plus wave effects, is 16.2 ft. NGVD. This compares with +8.8 ft. at Smith Point. In general, flood levels will decrease at interior bay locations as distance from ocean inlets increases.

Inlet size and configuration also have an effect on tidal flooding in bay shoreline locations. For example, tide gage measurements show that there was an increase in the tidal range in Moriches Bay as a result of the creation of Little Pike's Inlet through the Westhampton barrier island by the December 1992 northeaster (Tanski 1993).

Table 1. Frequency and Elevation of Flood Waters for Combined Hurricane and Northeaster Conditions.

Smith Point near entrance to Narrow Bay		
Return Period (yrs.)	**Surge + Tide (ft. above NGVD)***	**Surge + Tide + Setup + Wave Crest (ft. above NGVD)***
2	3.9	4.4
5	4.3	4.8
10	4.5	5.3
50	6.6	7.5
100	7.8	8.8

Moriches Inlet near entrance to Moriches Bay		
Return Period (yrs.)	**Surge + Tide (ft. above NGVD)***	**Surge + Tide + Setup + Wave Crest (ft. above NGVD)***
2	4.4	8.4
5	5.0	9.4
10	5.4	10.3
50	7.3	14.3
100	8.4	16.2

*Local mean sea level is about 0.5 ft. above NGVD.

In a study of the complex relationships involved in how breaches could impact storm tide levels along the shoreline of Moriches Bay, it was found that breaches would allow the transmission of more tide and storm surge waters into the bay, as compared to that expected under existing inlet conditions. The larger the breach, the greater the fraction of the tide and storm surge transmitted (Pritchard and DiLorenzo 1985). This impact of breaches is most pronounced during the extreme tidal surges associated with fast-moving hurricanes.

Chapter 2. LAND USE AND POPULATION ANALYSIS

Existing Land Use

The existing land use and development pattern for the Narrow Bay study area, 6,724 acres in size, is depicted in the map entitled, Existing Land Use. With no regard to natural features, standard gridiron subdivision maps were filed, developed and promoted as summer home communities during the 1920s, '30s and '40s.This map reflects land use field work conducted in 1995.

Virtually all of the privately owned land within the study area has already been subdivided, with the notable exceptions of approximately 220 acres of privately owned property east of William Floyd Parkway and 30 acres of privately held shorefront property situated between Pattersquash Creek and the Mastic Beach Yacht Club canal. Within the study area, there are approximately 15,700 parcels of land, nearly 4,500 of which are still vacant. Table 2 shows the frequency and acreage distribution of land uses within the study area. The nearly 1,250 vacant lots located in the 100-year floodplain between Johns Neck Creek and the William Floyd Estate represent the greatest concentration of vacant parcels. According to the 1990 Census, the study area contained a total of 10,613 housing units, of which 9,242 were occupied year-round, 691 were occupied on a seasonal basis, and 680 were unoccupied.

Table 2. Existing Land Use in the Narrow Bay Study Area.

Category	Number of Parcels	Acreage	% of Acreage
Residential	10,757	2,824	42.0%
Multi-family	1	4	0.1%
Commercial	237	99	1.5%
Industrial	1	1	0.005%
Institutional	42	281	4.2%
Open Space & Recreational	75	1,066	15.9%
Transportation	20	1,091	16.2%
Utilities	10	10	0.1%
Recharge Basins	79	31	0.5%
Vacant	4,485	1,317	19.6%
Total	15,707	6,724	100.0%

The predominant land use found within the study area is single-family residential development situated on small lots, most of which range in size from 4,000 square feet to 10,000 square feet. Housing built on lots one acre or greater can only be found in the following two locations within this study area: the Old Mastic area located on the Forge River between Lons Creek and Poospatuck Creek, and the Smith's Point Estates located between William Floyd Parkway and the Wertheim National Wildlife Refuge. The only condominium complex in the study area is the 22 unit Waters Edge at Smith Point situated on a 4.5 acre waterfront parcel adjacent to William Floyd Parkway. The Smith Point Motel is the only motel in the area and is also located on William Floyd Parkway.

Commercial development accounts for less than 100 acres and is confined primarily to the following three areas: strip-commercial along both Mastic Road and the northern portion of William Floyd Parkway, and the Mastic Beach Central Business District (CBD) along Neighborhood Road. Most of the neighborhood shopping centers and strip-commercial development servicing residents of Mastic/Shirley is found just north of the study area along Montauk Highway. There is no industrial land use within the study area.

Most of the institutional acreage is owned by the William Floyd Union Free School District, Town of Brookhaven or the Poospatuck Indian Reservation. A high school, a junior high school, four elementary schools and a kindergarten are clustered together on property located in the center of the study area. Future expansion can be accommodated on an adjacent 44 acre parcel acquired by the William Floyd Union Free School District in 1990 (Bolz 1993). Approximately 8 acres of this parcel have been developed for athletic fields. Altogether, the school district owns approximately 160 acres within the study area.Immediately north of the William Floyd Union Free School District complex is a 45 acre, town-owned parcel that contains a Town of Brookhaven Department of Public Works storage yard, YMCA facility, and public school .The Poospatuck Indian Reservation contains an estimated 46 dwelling units on a 55 acre parcel of land bordering the northern shoreline of Poospatuck Creek.

Nearly 900 acres of shorefront parks and open space are owned by government jurisdictions ranging from the federal to the town level within the study area. The largest parcel - the 616 acre William Floyd Estate - is federally owned and has public access. New York State Department of Environmental Conservation (NYSDEC) administers a 90 acre State-owned tidal wetland area at Johns Neck Creek. The County of Suffolk owns the undeveloped 167 acre Shirley Marina property, which contains extensive tidal wetlands, dredged spoil deposits, and a 1,500 ft. long canal. The Town of Brookhaven has recently designated a vacant, 20 acre town-owned site situated at the head of Lons Creek as a nature preserve. Immediately to the west of the study area lies the 2,300 acre Wertheim National Wildlife Refuge managed by the U. S. Fish and Wildlife Service. The Manor of St. George is a privately owned 113 acre parcel that was bequeathed by Eugenie A.T. Smith to a charitable trust to be used as a museum and park for the public.

Recreational boating is a popular activity in the study area and many of the waterfront property owners, particularly east of William Floyd Parkway, have small docks. The Mastic Beach Property Owners Association owns an almost unbroken ribbon of approximately 30 acres of shoreline property from the eastern boundary of the NYSDEC tidal wetlands property at Johns Neck Creek to the western boundary of the William Floyd Estate, and it provides dockage for local residents at Sheep Pen Creek, Pattersquash Creek and Mastic Beach Yacht Club canal, as well as

floating docks along the remainder of its shoreline. The Town of Brookhaven has public docking facilities and boat ramps on Forge River just north of Wills Creek. Several small private marina facilities exist at Sheep Pen Creek and Home Creek.

Public Ownership

Public ownership was identified within the Narrow Bay study area for the following jurisdictions: Federal, New York State, Suffolk County, Town of Brookhaven, Suffolk County Water Authority and the William Floyd Union Free School District #32. This information is depicted on the Land Under Public Ownership map. The publicly owned properties were ascertained from the 1995 Suffolk County Real Property Tax Service Agency tax maps and from correspondence with the Suffolk County Division of Real Estate and the Town of Brookhaven Department of Planning, Environment and Development.

Nearly 1,200 acres within the Narrow Bay study area is publicly owned, which represents 18% of the entire study area. The largest public land owner in the study area is the Federal government with approximately 620 acres (Fire Island National Seashore's William Floyd Estate plus a few smaller holdings). New York State owns approximately 90 acres, Suffolk County owns approximately 200 acres, Town of Brookhaven owns approximately 112 acres, Union Free School District #32 owns approximately 160 acres, and the Suffolk County Water Authority owns 7 acres.

Existing Zoning

The overwhelming majority of the study area, as illustrated on the Existing Zoning map, is used and zoned for residential use. The A-1 Residence zoning category, which requires a minimum area of 40,000 square feet for residential building lots, is the predominant residential zoning category. Almost all of those areas zoned A-1 Residence within the study area had already been subdivided and partially developed prior to the enactment of one acre zoning. Thus, most existing dwelling units are situated on substandard-sized parcels, and most future infill development will occur on substandard size parcels.

The Old Mastic area, as well as predominantly vacant land on either side of Pattersquash Creek, are zoned A-2 Residence. A minimum of 80,000 square feet is required for residential building lots zoned A-2 Residence. The Old Mastic area and the property east of Pattersquash Creek conform to the minimum lot size required in A-2 Residence, but the area west of Pattersquash Creek consists of substandard-sized lots.

The A-10 Residence zoning category requires a minimum lot size of 10 acres and is limited to the Manor of St. George and the William Floyd Estate. The Wertheim National Wildlife Refuge, located immediately west of the study area, is also zoned A-10 Residence.

Two small strips of old filed lots - one located east of the school district property near Mastic Road and the other bordering Neighborhood Road and William Floyd Parkway - are zoned B Residence. The minimum lot size for this zoning category is 15,000 square feet. Almost all of the building lots zoned B Residence are substandard-sized lots.

Only one small parcel, adjacent to William Floyd Parkway and fronting on Narrow Bay, is zoned MF-1 Residence (multi-family). The MF-1 Residence zoning category allows a density of seven dwelling units per acre.

Most of the commercially zoned property is situated along the William Floyd Parkway, Neighborhood Road, Mastic Road and Mastic Beach Road. Almost all of the commercially zoned property is designated J-2 Business (general business), which requires a minimum lot area of only 4,000 square feet. A small portion of the waterfront along Sheep Pen Creek and Home Creek is zoned for commercial use and currently accommodates several small marina facilities. There are several small, scattered parcels zoned J-1 Business (neighborhood business — minimum lot size 15,000 square feet), J-4 Business (professional and business offices — minimum lot size 9,000 square feet), and J-5 Business (gasoline filling station — minimum lot size 20,000 square feet). There appears to be more than ample vacant, commercially zoned lots within the study area. Approximately 450 vacant building lots are in the J-2 Business category.

Three areas are zoned L-1 Industry, which requires a minimum lot area of 20,000 square feet. The first and largest piece, approximately 45 acres in size, is owned by the Town of Brookhaven and located immediately north of the William Floyd School District complex. Although zoned L-1 Industry, the site is occupied by an elementary school, YMCA facility, and Town of Brookhaven DPW storage yard. The second site, triangular in shape and approximately 13 acres in size, is located east of the school complex and is completely vacant. The third area, a very small site adjacent to the railroad tracks east of Mastic Road, is currently used as an automobile junk yard.

Population and Housing Analysis

As of the 1990 Census, the Narrow Bay study area contained 10,613 total housing units, 9,242 of which were occupied. Almost half (49%) of all the housing units in the study area were built between 1970 and 1990. Only 8% of the housing units within the study area were built before 1940.

The 1990 population in the study area was 30,822. This represents a 24.0% increase over the 1980 population of 24,851. This growth rate is much larger than that of the Town of Brookhaven in general (11.8% increase) or Suffolk County (2.9% increase).

Additional seasonal population is a factor in the study area. The number of seasonal homes totaled 691 in 1990, and this figure was multiplied by an estimate of persons per household in seasonal homes, to arrive at an estimate of seasonal population in seasonal homes. Motel capacity of one motel in the study area was then added to the population in seasonal homes, yielding a total additional peak seasonal population figure. For the study area, the additional peak seasonal population is estimated to be 2,725, which increases the total population in the area by 8.8% in peak season to an estimated 33,547 in 1990.

The Land Available for Development map was used to determine the potential for future housing and population. At saturation, which assumes all available land is developed, there is the potential for another 2,975 dwelling units (d.u.) in the study area. The 2,975 dwelling units can be accommodated on vacant, residentially zoned building lots containing at least 6,000 square feet as well as on subdividable property zoned for residential use. The total number of year-round housing units at saturation is calculated to equal 12,617 (9,242 d.u. as of 1990 plus an additional 2,975 d.u.

to saturation plus approximately 400 d.u. from seasonal conversions). When the number of year-round dwelling units at saturation is multiplied by the estimated number of persons per occupied housing unit at saturation (3.2 persons/d.u.), a total saturation population in households of 40,374 results. An additional 30 persons housed in group quarters should be added to the above figure, resulting in a total year-round saturation population of 40,404. The additional peak seasonal population at saturation is estimated to be 1,198, which increases the total study area population by 3% in peak season to an estimated 41,602.

The study area has some interesting housing and population characteristics. Based on the 1990 Census data, the study area contains a preponderance of one-family detached dwelling units that are serviced mainly by public water, heated by fuel oil, and reliant on septic tanks/cesspools for sewage disposal. Most of the dwelling units are of relatively low value with large household sizes. The median family income is very low by Long Island standards, and the study area population contains a relatively small proportion of minorities.

The analysis of housing units by the number of units per structure shows that the vast majority of housing units in the study area are one-family detached units (94.1%). In Brookhaven Town and the rest of Long Island overall, that percentage is only approximately 80%.

Although most housing units in the study area receive water from a public system (75%), this proportion is lower than in Brookhaven Town (85%) or Suffolk County (87%). A full 96% of the housing units in the study area use septic tanks/cesspools for sewage disposal, compared to 74% in all of Brookhaven Town and 71% in all of Suffolk County.

Most occupied homes in Suffolk County area are heated by fuel oil (68%), but in the study area, the incidence of oil heating systems is even higher (90%). According to the 1990 Census data, no occupied housing units in the study area use utility gas for heat, compared to 18% in Brookhaven Town and 23% in Suffolk County.

Housing values are quite low in the study area. The median value of owner-occupied housing units in the Mastic/Shirley study area was $116,000 in 1990. This value is 21% lower than the town-wide median of $147,200 for Brookhaven Town, and 30% below the Suffolk County median of $165,900.

An inspection of data on persons per household reveals that the study area had a household size that was quite large in 1990, even by Long Island standards. The study area's 3.33 persons per household was somewhat larger than either Brookhaven Town's (3.08), Suffolk County's (3.04), or Nassau/Suffolk's (2.99) figure. A large persons per household figure may indicate that the study area is home to many young families with children. The study area's low housing values reinforce this possibility.

A full 30% of households in the study area had incomes below $25,000 in 1989, compared to 23% in Brookhaven Town and 20% in Suffolk County. Only 8% of the study area households had incomes of $50,000 or over, compared to 19% in Brookhaven Town and 23% in all of Suffolk County. Accordingly, median household incomes were $38,700 in the study area, $46,339 in Brookhaven Town, and $49,128 in Suffolk County. In 1990, 10.2% of study area residents had incomes below poverty, compared to just 5.2% in Brookhaven Town and 4.7% in Suffolk County.

Data on race and Spanish origin reveals that the study area is not a minority area. With only a 10.0% minority population, the study area has a lower percentage of minorities than either Brookhaven Town (11.1%) or Suffolk County (14.5%).

Land Available for Development

The amount of land available for development is derived from the existing land use data and is graphically displayed on the Land Available for Development map. With the exception of several residentially used parcels that can be further subdivided, the land available for development is comprised of vacant buildable lots and vacant parcels that can be further subdivided. The amount of available land, zoning classification, and potential lot yield for residentially zoned property within the study area is shown in Table 3. The table also shows the number of vacant building lots that are either less than 6,000 square feet or greater than 6,000 square feet in size. Through sanitary code regulation, the Suffolk County Department of Health Services generally requires that a building lot proposed for residential development in an area served by public water contain a minimum lot size of 6,000 square feet for the issuance of a permit to construct an on-site subsurface sewage disposal system. Therefore, since the study area is not sewered and the Department of Health Services will not issue permits for new residential construction on lots that are less than 6,000 square feet, vacant lots of less than 6,000 square feet were not included in the saturation population figures. Approximately 30% of the over 4,000 vacant, residentially zoned building lots in the study area are less than 6,000 square feet in size.

Table 3. Land Available for Residential Development.

Zoning Category	Vacant Land					Developed Subdividable Lots		
	Number of Building Lots		Subdividable Lots					
	Less Than 6000 sq ft	Greater Than 6000 sq ft	Number of Lots	Acreage	Potential Additional Lots	Number of Lots	Acreage	Potential Additional Lots
B	52	16	0	0	0	0	0	0
A-1	1130	2600	6	231	178	1	6	6
A-2	90	140	8	46	13	4	42	14
A-10	0	0	0	0	0	1	113	8
Total	1272	2756	14	277	191	6	161	28

Two small strips of old filed lots that are zoned B Residence contain 68 substandard-sized building lots, of which only 16 are greater than 6,000 square feet in size. There are no subdividable parcels within the B Residence zoning category, which requires a minimum lot size of 15,000 square feet.

Although most of the study area is zoned A-1 Residence, which requires a minimum lot area of 40,000 square feet, nearly all of the privately owned land within the study area has already been subdivided into lots usually ranging in size from 4,000 square feet to 10,000 square feet. There are 3,730 of these vacant, substandard building parcels within the study area that are zoned A-1 Residence. Nearly 70% of these substandard parcels are greater than 6,000 square feet in size.

Another 184 building lots can be created from the 237 acres of subdividable property zoned A-1 Residence.

The A-2 Residence zoning category is limited to three areas within the study area and requires a minimum lot size of 80,000 square feet. There are 230 vacant building lots zoned A-2 Residence, of which 140 are greater than 6,000 square feet in size. Another 27 building lots can be created through the subdivision of approximately 88 acres of subdividable property zoned A-2 Residence.

Land available for development within the A-10 Residence category is limited to the 113 acre Manor of St. George property. Eight additional building lots could be created if the property were to be subdivided sometime in the future. The Manor of St. George is a privately run museum and park administered by trustees named in the Last Will and Testament of Eugenie A.T. Smith, last lineal descendent of Col. William Tangier Smith, who was granted the Manor of St. George by King William and Queen Mary in 1693. Paragraph 27 of the Will gives the trustees "full power and authority, in their discretion, to sell portions of my real property, if need be, ..." (Smith 1952).

There is an abundance of vacant, commercially zoned building lots within the study area. Although almost all of the 450 vacant building lots zoned J-2 Business are small old filed lots, they are not substandard since the J-2 Business zoning category only requires a minimum lot size of 4,000 square feet. Eight vacant lots of varying size totaling 13 acres are zoned L-1 Industry.

Chapter 3. COASTAL HAZARD ANALYSIS

Wetlands

Tidal wetlands are natural habitats that provide high primary productivity; fish and shellfish nursery grounds; and breeding/feeding grounds for waterfowl and other wildlife, including rare and endangered species. They also perform valuable functions, such as wave/erosion protection; flood control; and pollution reduction.

Freshwater wetlands include streams, lakes, ponds, marshes and bogs, as well as wet woods and areas that are intermittently wet and sustain freshwater wetland vegetation. Their values and functions are similar to tidal wetland habitats, noted above.

Both tidal and freshwater wetlands were identified within the Narrow Bay study area and have been delineated on the Tidal and Freshwater Wetlands map. The tidal wetlands boundaries have been identified according to the Tidal Wetlands Act (Article 25 of the New York State Environmental Conservation Law) in addition to recent updated information from New York State Department of Environmental Conservation (NYSDEC), Region I Office as of August 1995. Included within the tidal wetland boundary are four types of wetland habitats: intertidal marsh, high marsh, formerly connected wetlands and coastal freshwater marshes.

The intertidal marsh lies between the range of the daily tides. Its dominant vegetation is salt marsh cord grass (*Spartina alterniflora*), which is the most biologically productive plant of the wetland habitat. Just inland of the intertidal marsh is the high marsh, which is generally above the daily tidal flow and is regularly flooded only about 10 days per month. It is also flooded by storm tides. This area consists primarily of salt marsh hay (*Spartina patens*); as well as spike grass (*Distichlis spicata*); sedges (*Carex* spp.); with scattered bushes of marsh elder (*Iva frutescens*), groundsel tree (*Baccharis halimifolia*) and northern bayberry (*Myrica pensylvanica*). The NYSDEC tidal wetlands inventory also identified formerly connected tidal wetlands. These are areas that have been partially or entirely shut off by a roadway or impoundment from the normal tidal flow. These wetlands usually retain their marine plant community, although common reed (*Phragmites communis*) does infiltrate the area to some degree. Other vegetation species that have also been identified with the tidal wetland environment include:

Glasswort	*Salicornia* spp.
Black Grass	*Juncus gerardi*
Switch Grass	*Panium virgatum*
Sea Lavender	*Limonium carolinianum*
Salt Marsh Aster	*Aster tenuifolius*
Salt Marsh Gerardia	*Gerardia maritima*

Coastal freshwater marshes represent a type of transition zone where tidal wetland species are interspersed among the freshwater wetland vegetation. This type of wetland is highly productive. Vegetation species that are typically associated with this brackish/freshwater environment include:

Freshwater Cordgrass	*Spartina pectinata*

Cattails	*Typha* spp.
Sedges	*Carex* spp.
Marsh Fern	*Thelypteris palustris*
Marsh-pink	*Sabatia stellaris*
Canadian Burnett	*Sanguisorba canadensis*
Arrowhead	*Sagittaria latifolia*
Pickerelweed	*Pontederia cordata*
Groundsel Tree	*Baccharis halimifolia*
Marsh Elder	*Iva ferustescens*
Salt Marsh Aster	*Aster tennifolius*
Salt Marsh Geraria	*Gerardia maritima*
Button Bush	*Cephanianthus occidentales*

Areas that were identified both as coastal freshwater marsh under the Tidal Wetlands Act and the Freshwater Wetlands Act (see below), were identified on the Tidal and Freshwater Wetlands map. NYSDEC personnel have stated that where these boundaries overlap, the regulations under the Tidal Wetlands Act would supersede the regulations under the Freshwater Wetlands Act (Muschacke 1993).

Dredged spoil sites were also identified by information obtained from the New York State Tidal Wetlands maps and aerial photographic interpretation of 1990 aerials of the Town of Brookhaven at a scale of 1" = 1000'. This information, however, does not provide all dredged spoil sites that are located in the study area.

The freshwater wetlands boundaries were identified through the use of the New York State Freshwater Wetlands Act map series (Article 24 of the New York State Environmental Conservation Law) finalized as of May 26, 1993.

Freshwater wetlands within the study area can generally be divided into three categories: coastal freshwater marsh (discussed above), emergent freshwater marsh and flooded deciduous marsh. The emergent freshwater marsh includes herbaceous plants that grow in standing water or waterlogged soils, particularly near the edges of freshwater bodies. The rich diversity of species found in these emergent freshwater wetland areas provides luxuriant foliage during the growing season setting it apart from its tidal counterparts. Various species of emergent vegetation include:

Cattails	*Typha* spp.
Common Reed	*Phragmites communis*
Joe Pye Weed	*Eupatorium purpureum*
Boneset	*Eupatorium perfoliatum*
Pond Lily	*Nymphaea odorata*
Swamp Loosestrife (Water Willow)	*Decodon verticillatus*
Sweet Pepperbush	*Clethra alnifolia*
Marsh St. Johnswart	*Hypericum virginica*
Bladderworts	*Ultricolaria* spp.
Sedges	*Carex* spp.
Marsh Hibiscus (Swamp Rose)	*Hibiscus moscheutos*

Sundews	*Drosera* spp.
Arrowheads	*Sagittaria* spp.
Bulrushes	*Scirpus* spp.

Emergent wetlands can be found in small pond areas in the Fire Island National Seashore William Floyd Estate property in the southeastern portion of the study area.

The flooded deciduous marshes are areas characterized by deciduous trees and shrubs growing in flooded or saturated soils or open water. This is the predominant freshwater wetland habitat found landward of the coastal freshwater marshes in the southern portion of the Narrow Bay study area. Typical vegetation species include:

Red Maple	*Acer rubrum*
Tupelo (Black Gum)	*Nyssa sylvatica*
Swamp Azalea	*Rhododendron viscosum*
Highbush Blueberry	*Vaccinium corymbosum*
Grey Birch	*Betula populifolia*
Black Willow	*Salix nigra*
Swamp Loosestrife (Water Willow)	*Decodon verticillarus*
Northern Bayberry	*Myrica pensylvanica*
Pitch Pine	*Pinus rigida*
White Pine	*Pinus strobus*
Sweet Pepperbush	*Cletha alnifolia*
Low Gallberry Holly (Ink Berry)	*Ilex glabia*
Cinnamon Fern	*Osmunda cinnamonea*
Spike Rushes	*Elochoris* spp.
Marsh Fern	*Thelypteris palustris*
Skunk Cabbage	*Spathyema foetida*
Sphagnum moss	*Sphagnum* spp.
Speckled Adler	*Alnus rigosa*
Poison Ivy	*Rhus radicans*
Rushes	*Scirpus* spp.

The acreage for the tidal wetlands as delineated on the Tidal and Freshwater Wetlands map totals 621.5 acres. The freshwater wetlands total 273.0 acres. Altogether, there is 894.5 acres in the Narrow Bay study area.

This information, on tidal and freshwater wetlands, was compared with the U. S. Fish and Wildlife Service, Department of the Interior National Wetland Inventory Maps (1980). The maps indicated that the NYSDEC boundaries were inclusive of the boundaries delineated by the U. S. Fish and Wildlife Service.

Anyone wishing to build on a lot that contains tidal or freshwater wetlands must obtain a wetland permit from the Town of Brookhaven or NYSDEC, depending upon lead agency status, prior to obtaining a building permit from the Town. If a positive declaration of significance is made, a draft environmental impact statement is required, usually by the lead agency, where the loss of

wetlands must be addressed. If the wetland permit process proceeds to the final environmental impact statement stage, then the Town Board would either issue or deny the wetland permit to the applicant.

In order to obtain a building permit from the Town of Brookhaven, the applicant is required to meet both Town wetland regulations and NYSDEC wetland regulations where either or both apply. If, however, either the Town wetland permit or NYSDEC wetland permit is denied, then a building permit *will not* be granted by the Town.

Tidal Floodplain

The 100-year tidal floodplain boundary delineates the area which would be inundated by a 100-year flood; a flood which is likely to occur on the average of once every 100 years (base flood). Flood Insurance Rate Maps (FIRMs) prepared by the Federal Emergency Management Agency provided the 100-year floodplain boundary that includes both a V and A Zone. This information is delineated on the 100-Year Tidal Floodplain map. The V Zone is that area immediately adjacent to the bay which extends landward to the point where the 100-year flood depth is insufficient to support a 3 foot breaking wave. The A zone is located landward of the V Zone to the inland boundary of the 100-year flood. In the V Zone, new construction must be elevated by piles or piers above the base flood level. Basements and first floors of new construction in the A Zone must be elevated above the level of the base flood.

Base flood elevations in the Narrow Bay study area are higher than most south shore mainland bay locations and range from +8 to +10 ft. NGVD near Smith Point, and from +9 to +12 ft. at Masury Point (Forge River). These high elevations reflect the influence of Moriches Inlet, as well as the short distance from the mainland to the Fire Island barrier island. In this area, the V Zone extends from 200 to 4,000 ft. inland along the mainland shore. Depending on local land elevations, the A Zone extends up to an additional 3,000 ft. inland. Stream corridors are also susceptible to flooding, with the extent of such flooding dissipating as ground elevations rise.

The study area is particularly vulnerable to tidal flooding due to storm events because of the area's topography and proximity to the barrier island. At Smith Point, hurricane surge elevations range from 4.2 ft. for a Category 1 hurricane to 15.9 ft. for a Category 4 storm. At Masury Point, just to the east of the study area, hurricane surge elevations range from 5.5 ft. for a Category 1 storm to 19.7 ft. for a Category 4 storm.

As shown on the Areas Flooded by Hurricanes Under Different Worst Case Scenarios map, the width of the flood zones associated with hurricanes of different intensity in the Narrow Bay area is greatest in the area from Smith Point to the William Floyd Estate. Here, flooding can extend up to one mile inland under extreme conditions; this reflects low, gently sloping topography. The width of the flood zone along eastern Great South Bay and the western bank of the Forge River is generally up to 1,000 ft. wide. This reflects the greater rise in land elevations near the shore in these two areas. (The flood water elevations associated with worst case Category 3 or Category 4 hurricanes are much higher than those associated with predicted 100-year flood levels. Hence, the floodplains associated with storms of this intensity extend farther inland than the 100-year floodplain utilized for regulatory purposes.)

Depth to Groundwater

The five foot depth to groundwater contour was plotted on the Areas With Less Than 5 Feet Depth to Groundwater map by interpreting its position using groundwater contour lines, which delineate water table altitude (Suffolk County Department of Health Services 1991) and surface topographic lines (Bowe, Albertson & Associates 1966). Areas with less than five foot depth to groundwater occupy a significant portion of the southern part of the study area.

Potential Coastal Hazard Impacts

The potential impacts associated with the tidal flooding hazard in the Narrow Bay area are described and quantified to the extent possible in this section. The interplay of existing land use and local environmental conditions is emphasized.

Although the semi-diurnal and lunar tides are not normally designated as environmental hazards, the development history and characteristics of the Narrow Bay study area are such that even these short-term cycles can cause flooding problems. The tidal range measured at Smith Point bridge for normal tides is 0.7 ft. with a high of +0.9 ft. mean sea level (msl) and a low of +0.2 ft. msl. The spring tide range is 1.5 ft. with a high of +1.9 ft. mean sea level (msl) and a low of +0.4 ft. (Coastal Zone Resources Corp. 1976). A previous analysis of the elevations of road intersections in the immediate coastal area has shown that at least three road intersections are below the normal high tide of +0.9 ft. msl and therefore can be expected to flood twice daily. There are at least 22 more road intersections that are below the spring high tide elevations of +1.9 ft. msl; these will be inundated, at the very least, twice every month (Long Island Regional Planning Board 1994).

As previously mentioned, the area is vulnerable to flooding during storms. Table 1 shows the frequency and elevation of flood waters for combined hurricane and northeaster conditions at Smith Point near the entrance to Narrow Bay, and at Moriches Inlet near the entrance to Moriches Bay. At Smith Point, the 50-year flood (plus wave effects) is +7.5 ft. NGVD, and the 100-year flood is +8.8 ft. Low-lying areas with elevations of about +7 ft. and +8 ft. msl would be flooded in this area about once every 50 and 100 years, respectively. The influence of Moriches Inlet on projected flood levels in Moriches Bay is clear. Here, the 100-year flood (plus wave effects) is projected at +16.2 ft. NGVD, which is 7.4 ft. higher than at Smith Point. Areas along the Forge River shoreline at elevations less than +11 ft. msl would be flooded, on average, about once in 100 years.

The 100-year FIRM floodplain in the study area is 1,630 acres in size. There are 514 acres in the V Zone, and 1,116 acres in the A Zone. Lot counts were made within the V and A Zones. There are 188 residentially developed lots in the V Zone; and 2,284 lots of this same category in the A Zone (total of 2,472 residentially developed lots in the 100-year floodplain). In addition, it is estimated that 13 housing units are located on a 55 acre parcel of the Poospatuck Indian Reservation and are located in the A Zone. The estimated population at risk in the 100-year floodplain is 8,275. There are 644 and 1,325 residentially zoned, vacant lots in the V Zone and A Zone, respectively (total of 1,969 vacant lots). Approximately 50% of the residentially zoned, vacant lots in the V Zone are less than 6,000 square feet in size. For the A Zone, about 40% of the residentially zoned vacant lots are less than 6,000 square feet.

In general, for interior bay locations, flood levels will increase as distance from ocean inlets decreases. Therefore, the study area is particularly vulnerable, because of its proximity to the Fire Island barrier island, to greatly increased flood levels should a new inlet form in the Narrow Bay area. The creation of a new inlet near the study area should not be considered a remote possibility, especially over the long term. Indeed, Wolff (1989) shows that an inlet existed in 1888 through the Fire Island barrier at the location where the Smith Point County Park beach pavilion/parking lot facility now exists. Potential inlet creation was evident at high tide on the morning of September 1, 1993, when two washovers were reported near the Smith Point bridge as a result of high surf conditions caused by Hurricane Emily, a Category 3 storm, which passed about 200 miles south of Long Island.

More recently, the Blizzard of '96 caused extensive beach loss at the Park, resulting in damages to the ocean boardwalk and other facilities near the bathing beach pavilion. To forestall additional damage, an emergency project was undertaken by Suffolk County, in which 54,000 cubic yards of sand were trucked in and placed along the eroded beach in front of the bathhouse pavilion. The source of this material was the berm of the dredged spoil disposal site located on the Shirley Marina County Park property west of the Smith Point bridge (Lifford 1996).

The effects of Hurricane Hugo on the community of McClellanville, S.C. provide a picture of the types and extent of damage that could be expected to occur if a Category 3 or 4 hurricane were to hit the south shore bay mainland of Long Island following a coast-normal track (Coch and Wolff 1990; Coch and Wolff 1991; Coch 1994). This community, located on the intracoastal waterway behind a barrier island system and 6 miles of salt marsh suffered extreme damage as a result of the 18 ft. storm surge caused by Hugo and its 135 mph winds. Floodwaters swept across the barrier island, over the marshes, through tidal creeks and covered mainland areas that were 2 miles inland from the marsh edge. Docks, homes, vehicles, factories and commercial fishing boats along the intracoastal waterway were obliterated. High winds and floating debris destroyed trees. Estuarine organic mud was deposited on the landscape and in flooded homes and vehicles as the floodwater receded, causing additional loss of personal property.

The types and magnitude of the damages experienced at McClellanville would also be expected to occur should a Category 3 storm hit the Narrow Bay area, given its geologic and topographic similarities. According to Coch and Wolff (1991), the McClellanville experience shows that "barrier beaches and salt marshes are of little protection to a community on the right side of a coast-normal hurricane no matter how high the dunes are or how wide the intervening wetlands." This does not bode well for the structures that are located in or near the wetlands and floodplain in the study area. Indeed, those living in these locations should not feel secure, should a severe hurricane hit the south shore.

What would likely occur should a Category 3 hurricane hit the Narrow Bay area? The answer depends on the location and elevation of structures in the floodplain and the extent to which the structures have been built to withstand wind, wave and flooding forces associated with major storms.

A major storm would devastate development along the coast. It is believed that few of the existing 2,472 structures in the 100-year tidal floodplain would survive unscathed. Indeed, history shows that on the order of 250 bungalows were "wrecked or swept away" in the central portion of the study area as a result of the September 1938 hurricane (Schaefer 1994). Most of the structures that exist in the area today were built prior to the enactment of floodplain regulatory programs, and

therefore would be subject to structural failure and foundation collapse as a result of wind and flooding forces. This finding is based on the observed functional relationship between construction practices and type/extent of damages caused by Hurricane Hugo (Wang 1990). The potential loss vulnerability could also be greatly increased, should many of the 1,969 vacant lots in the floodplain be developed in the future.

The tidal flooding risk in the Narrow Bay floodplain would be dramatically increased should a breach in the Fire Island barrier island occur. The potential for breaches to develop in the Fire Island barrier island was recently discussed in U.S. Army Corps of Engineers, N.Y. District (1995). Three locations on the barrier that are near to the Narrow Bay study area are of concern because of their characteristics (limited barrier island width, low dune elevation and relatively deep water in the adjacent bay bottom) which are favorable for the occurrence of overwash and breaching, which could lead to inlet formation. The Old Inlet area has a high breach vulnerability rating; the area to the south of Pattersquash Island and the location of the old Forge River Coast Guard Station have a moderate rating.

In general, the shoreline of Smith Point County Park is prone to breach creation. The annual probability of a breach occurring here is 0.2. It is expected that storms that occur with the frequency of once in every five years could result in the creation of a breach in this location. Given hydraulic characteristics of the bay environment in this area, it is believed that a breach forming along the beach here would likely remain open.

If and when a new inlet will be cut through Fire Island near the study area cannot be precisely predicted. Yet, conditions are such now that the cumulative effects of several storms of moderate intensity over a short time period, or the occurrence of a single severe storm, could cause such a breach to occur. A permanent breach would result in a significant increase in the frequency and extent of flooding along the Narrow Bay coastline. Damages along the mainland would increase 3 to 4 times as compared to those that would be expected without a breach, given the occurrence of the same storm event (U.S. Army Corps of Engineers, N.Y. District 1995). The stability of the Narrow Bay coastline could also be adversely impacted.

Charts prepared in the late 1800s indicate that the shoreline from Smith Point to Floyd Point consisted entirely of wetlands. The existing wetlands today are remnants of this formerly contiguous system. Comparison of sequential aerial photographs shows that the natural shoreline is very stable in areas where wetland edges abut Narrow Bay, and wetland island configurations (e.g., Pattersquash Island) found on charts dating back to 1838 appear nearly identical to those of today (Leatherman and Joneja 1980). However, the shoreline has been altered extensively in several locations by dredging, filling and bulkheading.

The formation of a new inlet may create conditions that would change the relative stability of the study area shore, which is mostly less than 4,000 feet and as close as 900 feet to the Fire Island barrier island. An increase in tidal range and increased exposure to current and wave energy could lead to changes in erosion and accretion patterns, and ultimately, the position of the shoreline.

The major freshwater flooding and drainage problem in the study area is caused by shallow depth to groundwater. The area where the depth to groundwater is less than or equal to five feet, is for the most part similar to the 100-year tidal floodplain. Shallow depth to groundwater is often associated with basement flooding. There are also severe constraints on construction and septic system design in such areas.

The problem of stream flooding is not as serious a problem in the Narrow Bay area as compared with that of the more urbanized stream corridors located in the western portion of the Great South Bay watershed. Drainage systems and swales in the study area are of limited length and breadth. Consequently, the freshwater steams that do exist are small. Those with some degree of surface water flow include Johns Neck Creek, Pattersquash Creek, Lawrence Creek and Poospatuck Creek. The watersheds of these streams have also been subject to less alteration than others along the south shore mainland with respect to the extent of impervious surfaces and the construction of storm sewers that collect urban runoff and convey it directly to streams.

National Flood Insurance Program

A total of 1,630 acres lie within the 100-year floodplain of the Narrow Bay study area - approximately 1,116 acres in the A Zone and 514 acres in the V Zone. The 100-year floodplain covers approximately 25% of the 6,750 acres comprising the study area. With the exception of several marina facilities and one small condominium complex, development in the floodplain consists solely of single family residences. There are 2,284 and 188 residentially developed lots in the A Zone and V Zone, respectively. Vacant parcels account for 1,325 and 644 lots in the A Zone and V Zone, respectively. Thus, approximately 63% of the lots in the A Zone are residentially developed, while over 77% of the lots in the V Zone are still vacant.

Information on flood insurance policies and claims was obtained from the National Flood Insurance Program (NFIP) for the communities of Mastic, Mastic Beach, and Shirley (Waters 1995). The zip code boundaries of the three communities coincide with the southerly, easterly and westerly boundaries of the Narrow Bay study area. Although the zip code boundaries for Mastic and Shirley extend beyond the northerly border of the study area, all of the A Zone and V Zone properties within these communities are captured within the study area boundary. NFIP policies and claims information for the three communities is summarized in Table 4.

Approximately one third of the residential structures (866 out of 2,472) in the 100-year floodplain are covered by flood insurance through the NFIP as of July 1995. More than 75% of the NFIP policies written are for structures built prior to the enactment of NFIP mandated regulations for floodplain management. These structures are known as pre-FIRM construction. Flood damage to pre-FIRM construction accounts for nearly 98% of the dollar value of the flood insurance claims paid to residents of the study area by the NFIP since 1978. Repetitive loss claims amount to more than 75% of the value of the flood loss claims paid to area residents by the NFIP since 1978. Flood insurance claims paid to study area residents by the NFIP since 1991 represent over 75% of all the flood insurance claims paid within the study area since 1978. Thus, the typical study area flood insurance claim paid by NFIP was to an owner of a pre-FIRM constructed residence suffering from repetitive loss flood damage within the last 5 years.

Table 4. NFIP Policies Issued and Claims Paid to Residents of Mastic, Mastic Beach and Shirley.

Community and Zip Code	11950 Mastic	11951 Mastic Beach	11967 Shirley	TOTAL
Number of NFIP Policies as of 7-31-95	47	510	309	866
Number of Pre-FIRM Construction Policies as of 7-31-95	36	443	198	677
Number of Post-FIRM Construction Policies as of 7-31-95	11	67	111	189
Building Coverage as of 7-31-95	$3,545,700	$38,832,000	$28,584,000	$70,961,700
Contents Coverage as of 7-31-95	$340,900	$3,421,700	$2,340,000	$6,102,600
Annual Policy Premiums as of 7-31-95	$13,924	$206,346	$125,801	$346,071
Number of Claims Paid from 1978-1993	5	205	49	259
Value of Claims Paid from 1978-1993	$25,216	$1,077,305	$233,769	$1,336,290
Number of Claims Paid on Pre-FIRM Policies from 1978-1993	5	192	48	245
Value of Claims Paid on Pre-FIRM Policies from 1978-1993	$25,216	$1,047,703	$233,769	$1,306,688
Number of Repetitive Loss Claims from 1978-1993	2 claims on 1 policy	135 claims on 59 policies	37 claims on 11 policies	174 claims on 71 policies
Value of Repetitive Loss Claims from 1978-1993	$9,444	$805,302	$199,010	$1,013,756
Number of Claims Paid from 1991-1993	3	154	30	187
Value of Claims Paid from 1991-1993	$18,280	$861,336	$136,159	$1,015,775

CHAPTER 4. RECOMMENDATIONS

Floodplain Management Concerns

The following floodplain management concerns have been identified as a result of the inventory and analysis of conditions in the Narrow Bay study area:

- There are almost 4,000 vacant substandard residential building lots in the study area, most of which vary in size from 4,000 square feet to 10,000 square feet. These lots are subject to future infill development.

- The Narrow Bay area is particularly vulnerable to tidal flooding due to storm events because of the area's low elevation and close proximity to the barrier island.

- Base flood elevations are higher in the Narrow Bay area than in most south shore mainland bay locations.

- Many of the existing dwelling units are situated on substandard-sized parcels, despite the fact that much of the study area is currently zoned A-1 Residence (minimum lot size 40,000 square feet).

- There are 188 developed residential lots in the V Zone, and 2,284 developed residential lots in the A Zone of the 100-year floodplain. Hence, there are 2,472 residential structures in the 100-year floodplain that are susceptible to potential flood-related damage. The population at risk in the floodplain is estimated at 8,275 people, which includes occupancy in the Poospatuck Indian Reservation.

- Much of the housing stock in the 100-year floodplain was built prior to the enactment of the NFIP or existing environmental regulations and is neither flood-proofed nor elevated.

- Flood damage to pre-FIRM construction accounts for nearly 98% of the dollar value of the flood insurance claims paid to residents of the study area by the NFIP since 1978.

- Repetitive loss claims amount to more than 75% of the dollar value of the flood loss claims paid to study area residents by the NFIP since 1978.

- There are 644 vacant lots in the V Zone and 1,325 in the A Zone.

- There is development in areas that are subject to flooding during normal semi-diurnal and lunar tide cycles.

- Virtually all of the housing units in the floodplain and high water table area use septic tanks/cesspools for sewage disposal.

- Moderate to severe soil constraints exist for sewage disposal fields and homesites for a large portion of the coastal area.

- A significant portion of the vacant land in the coastal area contains either maritime flora or tidal wetlands.

- There are 621.5 acres of tidal wetlands and 273 acres of freshwater wetlands in the study area.

- Old filed subdivisions in grid street patterns cover much of the vacant area. The large number of small parcels and private landowners is a constraint to any effort that would change the status quo in the area.

- Many streets and roadways located along the canals, creeks and bay shoreline were originally built below the base flood level and are not only subject to flooding, but act as conduits for flood waters.

- Pressure to develop the vacant shorefront areas will probably increase in the future. There is a high potential for future development of low-lying flood-prone areas, since there are 1,969 vacant lots in the 100-year floodplain.

- There has been degradation of tidal and freshwater wetlands in the study area.

- There are areas with inadequate water circulation/drainage patterns due to road beds, placement of dredged spoil, and other activities.

- The Shirley Marina properties (approx. 167 acres) were acquired in 1974 by Suffolk County for park purposes and remain unimproved for public access.

- Incremental storm damage to development will occur relatively frequently in the study area due to storm flooding events. Widespread destruction would likely occur in the coastal area should a severe, coast-normal hurricane impact the south shore of Suffolk County.

- Inland sites exist in the study area that are more suitable for future development or post-storm redevelopment than are the sites in the coastal area.

- Changes in the barrier island may cause changes in the frequency and nature of tidal flooding and the stability of the shoreline along the Narrow Bay coast. Active overwash areas currently exist in the barrier island just south of the study area.

Recommendations for the Disposition of Properties Owned by Suffolk County within the Narrow Bay Area

Since 1985 the Suffolk County Planning Department has recommended that properties the County of Suffolk obtained through tax lien procedures, within the Narrow Bay area, be held until a floodplain management plan for the area was developed. This action was in accord with floodplain management strategies contained in Long Island Regional Planning Board (1984). As of June 9, 1993, the County had acquired 196 sites totalling 37.40 acres through tax lien procedures within the Narrow Bay area. It is recommended that Suffolk County take a proactive role in assuring that these parcels are used to curtail floodplain development. To this end, recommendations have been made for each parcel owned by Suffolk County, as shown on the Recommendations map, and as listed in Appendix A according to tax map number. The following discussion outlines the rationale for each type of recommendation and how it would be implemented.

The first step in developing recommendations to support the strategy of curtailing development in the low-lying, flood-prone areas along Narrow Bay was to identify the environmentally sensitive area called the Coastal Environmental Hazard Zone, which is delineated on the Recommendations map. This boundary includes: all tidal and freshwater wetlands; the area within the 100-year tidal floodplain; and where the depth to groundwater is less than 5 feet. The Coastal Environmental Hazard Zone boundary was drawn to include a 100 foot setback from the most landward boundary of these three areas. For ease of clarification, the nearest roadway or parcel line to the setback was utilized, as appropriate, to map the Coastal Environmental Hazard Zone boundary.

Comparing the Coastal Environmental Hazard Zone with the location of vacant lands led to the identification of a Conservation Area. This area is located along the southern low-lying portion of the study area on Narrow Bay, and includes extensive tidal and freshwater wetlands where numerous vacant substandard-sized lots exist. The boundary of the Conservation Area is also shown on the Recommendations map.

The following discussion categorizes the recommendations made for County-owned properties within the Narrow Bay study area.

Parks - County-owned properties that are located within the Conservation Area (noted in green) are recommended to be designated to the Suffolk County Parks system for park purposes; they are listed in Appendix A under the category "PARKS (SC)." Ninety-two lots with a combined area of approximately 15 acres were owned by the County as of June 9, 1993. On March 1, 1996, 67 parcels with clear title within the Conservation Area were reviewed by the Suffolk County Planning Department, and were recommended to be transferred to the Suffolk County Parks, Recreation and Conservation Department. (See Appendix B.) Continued recommendations to parks will be made for all properties in the Conservation Area that are acquired by the County through tax lien procedures.

In addition, it is recommended that any vacant lots adjacent to existing parkland holdings in the study area that are acquired by the County in the future, through tax lien procedures or other means, be designated to the County Parks system as well.

Relocation Sites - County-owned properties located landward of the Coastal Environmental Hazard Zone and greater than or equal to 6,000 square feet in size (generally 60' x 100' lot) are recommended as relocation sites (noted in red); corresponding Appendix A categories are "RELO" and "RELOC(C)." Although the majority of the study area is zoned A-1 Residence (minimum lot area of 40,000 square feet), a significant portion of the study area is presently subdivided into old filed lots of approximately 6,000 square feet in size. Considering the existing residential development pattern, the Town of Brookhaven through its variance process, would be generally in favor of accepting development in lots this size or greater (Cole and Kassner 1993). This lot size also approximates the Suffolk County Department of Health Services minimum lot size guidelines for individual subsurface sewage disposal systems in areas with public water supply in the study area (Reynolds 1993). In light of this, all County-owned properties of 6,000 square feet or greater, in area, outside the Coastal Environmental Hazard Zone are recommended as relocation sites. Where possible, County-owned properties that are adjacent to other County-owned properties are recommended to be combined into one developable lot in order to create a larger relocation site closer in size to the zoning categories of A-1 (40,000 square feet.) or A-2 (80,000 square feet), where appropriate.

Relocation sites would be made available to anyone who owns property within the Coastal Environmental Hazard Zone that is either improved or not improved (vacant). The privately owned, environmentally sensitive site(s) would be exchanged for a County-owned upland relocation site(s). The County would acquire the environmentally sensitive properties and the private landowners would acquire a relocation site from the County to be utilized for future private development.

Existing residents with homes or owners of vacant property located within the Conservation Area would be given the opportunity to relocate upland to a County-owned relocation site. Vacant land owners, as well as owners of residences within the Coastal Environmental Hazard Area boundary, but landward of the Conservation Area, would also be given an opportunity to move to a County-owned relocation site. It should be noted that interest in the relocation of existing residences will most likely be highest after a major storm event where destructive flooding conditions preclude habitation or re-development..

As of June 9,1993, there were 46 relocation sites equal to or greater than 6,000 square feet. Six additional building lots could be created by combining adjacent County-owned lots. This would bring the total to 52 relocation sites available for development.

Sale To Adjacent Owner - In order to limit the future development of substandard lots, properties less than 6,000 square feet are recommended to be sold to an adjacent owner with a restrictive covenant, not allowing the property to be developed. These parcels are identified in Appendix A by the category "STAO." In addition, the property would be required to be merged with the privately owned lot to form one single lot with the following statements added to the deed:

> The premises described herein shall not be independently improved by the erection of any structure, and must be merged with grantee's adjoining parcel, tax map No._____ so as to form one single building lot. There can be no further subdivision of the merged parcel unless it is consistent with local town and/or village zoning codes and standards of the Suffolk County Department of Health

Services, applicable at the time application is made.

This restrictive covenant shall be enforceable by the County of Suffolk by injunctive relief or by any other remedy, in equity, or at law. The failure of the County of Suffolk or any agency thereof to enforce this covenant, shall not be deemed to impose any liability whatsoever upon the County of Suffolk or any officer, employee or agent thereof.

This covenant and restriction shall run with the land and shall be binding upon the grantee, its successors and assigns, and upon all persons claiming under them.

County-owned lots within the Coastal Environmental Hazard Zone, but landward of the Conservation Area, regardless of size (noted in purple), are also recommended to be sold to an adjacent owner with a restrictive covenant as described above. These recommendations have been made in order to discourage any further development in the floodplain.

Thirty-two County-owned sites, with a combined area of 3.81 acres, are recommended to be sold to an adjacent owner with a restrictive covenant rather than be sold at auction as potential buildable lots.

Hold - Certain County-owned properties that are adjacent to other privately owned vacant lots are recommended to be held by the County until the future status of the adjacent vacant lot(s) is determined. These parcels are shown in the Appendix A category "HOLD." If, in the future, the adjacent privately owned vacant lot is obtained by the County through tax lien procedures, there would be a possibility to create another relocation site. If, however, the adjacent lot(s) is to be developed, it is recommended that the owner buy the County-owned vacant lot in order to increase the privately owned lot acreage to adhere more closely to the A-1 or A-2 zoning acreage requirements of 40,000 square feet or 80,000 square feet, respectively, for single lot development within this study area.

Altogether, 12 vacant County-owned properties, totalling less than 1 acre, are recommended to be held by the County until the future status of the adjacent lot(s) is determined.

Transfer - Along Bellport Bay, north of the Town of Brookhaven beach facility on Grand View Drive, is a small County-owned property (0.57 acres) that is recommended to be transferred to the Town for park purposes. The property is important to expansion of the Town's public access to the shoreline and should be integrated with the Town's adjacent beach facility.

Market Value of Vacant Property in the 100-Year Floodplain

Information on the sale price of residential structures sold between July 1, 1994 and June 1, 1995 for Shirley, Mastic and Mastic Beach was obtained from Multiple Listing Service (MLS)

statistics sheets (Given 1995). The mean residential selling price for the three communities is as follows:

Shirley	$91,500
Mastic	$81,338
Mastic Beach	$69,362

Based on recent sales of vacant lots, the following price ranges are estimates of the market value of vacant lots within the three communities:

Shirley	$30,000 - $40,000
Mastic	$20,000 - $25,000
Mastic Beach	$15,000 - $20,000

The Coastal Environmental Hazard Zone between Johns Neck Creek and the William Floyd Estate contains over 1,250 vacant lots. All of the vacant lots are located in Mastic Beach. Approximately 50% of the vacant lots are in the V Zone and 50% in the A Zone. Nearly half of the vacant lots in the V Zone are greater than 6,000 square feet in size, while nearly 60% of the vacant lots in the A Zone are greater than 6,000 square feet in size. The true market value of the vacant, buildable lots in the 100-year floodplain, particularly those located in the V Zone, may be considerably less than $15,000 - $20,000 per vacant lot within Mastic Beach because of wetland permit requirements, site construction difficulties and infrastructure limitations. Vacant, County tax lien acquired parcels located within the Conservation Area that were listed for County auction have upset prices of only several thousand dollars. Parcels that sold recently at auction within the Conservation Area usually sold at or near the upset price. An appraisal would be required before any land exchange could be executed.

Plan Adoption and Funding Sources for Implementation

Over the last few years, many individuals have contacted the Suffolk County Planning Department to express interest in exchanging their privately owned, wetland properties along the Narrow Bay coast for County relocation sites. The draft version of this report was released in March 1996. After extensive deliberations on this draft report, Suffolk County enacted Resolution No. 1011-1996 entitled, "Accepting and Appropriating a Grant from NYS Authorizing a Land Exchange Program and Adopting a 'Narrow Bay Floodplain' Protection & Hazard Mitigation Plan in the Mastic/Shirley Area," which is reproduced in Appendix C. The adoption of this resolution in December 1996 was a necessary and significant step in achieving the overall goal of this study, namely to make available to interested property owners an alternative that will reduce development pressure in the Conservation Area.

This resolution formalizes Suffolk County's adoption of the **voluntary** land exchange program described in this plan, and prevents County-owned, tax lien parcels within the study area from being sold at auction. In addition, this resolution accepts a $34,997 grant from FEMA via SEMO to assist the County in the conduct of property appraisals which are required before the County can complete any land exchanges with interested property owners. The mechanism to be used by Suffolk County to acquire land which is environmentally sensitive through exchange of

County-owned, non-environmentally sensitive land is specified in Chapter 102 - Land Exchanges of the Suffolk County Code. (See Appendix D.)

With a relatively small investment, the County of Suffolk, with assistance from FEMA and SEMO, is attempting to combine acquisition of floodplain properties through land exchange with other objectives, such as open space preservation and wetlands restoration. Multi-objective management and multi-level government participation is an economical means of solving floodplain land use problems.

The County of Suffolk has established and funded land acquisition programs for open space, pine barrens and drinking water preservation purposes, and it has also created a farmland preservation program that is based on the acquisition of property development rights. According to program site selection criteria and limited remaining funding, none of the above County programs appears to be viable funding mechanisms for the voluntary acquisition of parcels in the Narrow Bay Conservation Area.

Hazard mitigation funding from FEMA and SEMO is another potential mechanism to implement the recommendations of this report. The 1993 reorganization of FEMA placed hazard mitigation as the cornerstone of emergency management. For more than 25 years, FEMA's NFIP has made federal flood insurance available in communities that adopt and enforce floodplain management ordinances to reduce future flood losses.

The National Flood Insurance Reform Act (Act) of 1994 affects every part of the NFIP and marks the first major change in the program in more than 20 years. One of the stated purposes of the Act is to reduce the federal expenditures for federal disaster assistance to flood damaged properties. This will be accomplished through:

- Mitigation assistance grants, which will provide assistance for states and communities to protect homes and businesses before a flood damages or destroys them, rather than after a flood has already caused damage.

- Mitigation insurance, which will give people the additional financial resources to rebuild their repetitively flooded or substantially damaged homes and businesses to local floodplain management ordinances, therefore reducing the cost and amount of future flood damage.

The Mitigation Assistance Program (Section 553) of the Act authorizes FEMA to provide grants to states and communities based on a 75 percent/25 percent cost share for mitigation plans and projects. Eligible project activities include: acquisition and relocation; elevation; floodproofing; demolition; small structural works that do not duplicate other agencies' programs (e.g. no major levees); beach nourishment; and technical assistance. States and communities must have an approved flood mitigation plan before they can be eligible to receive project grants.

The County of Suffolk would not be eligible to receive funding under Section 553. The Town of Brookhaven, which administers floodplain regulations pursuant to the NFIP, would be the local level of government eligible to receive funding under Section 553. The Mitigation Assistance Program will replace both the Upton-Jones program, which provided relocation or demolition benefits under the standard flood insurance policy for properties in imminent danger of collapse from

erosion; and Section 1362- Property Purchase Program, which provided funding for acquisition of substantially or repeatedly flood-damaged structures.

Section 555 - Additional Coverage for Compliance with Land Use and Control Measures of the Act provides insurance coverage to cover the cost to repair and reconstruct substantially damaged or repeatedly flooded structures that are covered with flood insurance to comply with floodplain management regulations. This coverage is referred to as mitigation insurance and FEMA plans to have mitigation insurance effective in October 1996. This mitigation insurance could be of great interest to study area residents since repetitive loss claims amount to more than 75% of the value of the flood loss claims paid to area residents by the NFIP from 1978 through 1993.

FEMA's Hazard Mitigation Grant Program (HMGP) assists states and local communities in implementing long-term hazard mitigation measures following a major disaster declaration. In December 1993, the President signed the Hazard Mitigation and Relocation Assistance Act which amends Section 404 of the Robert T. Stafford Disaster Relief & Emergency Assistance Act to increase Federal funding of HMGP projects to 75 percent federal funding of the project's total eligible costs. The local match does not need to be cash; in-kind services or materials may be used. Federal funding under the HMGP is now based on 15% of the federal funds spent on the Public and Individual Assistance programs for each disaster.

The objectives of the HMGP are:

- To prevent future losses of lives and property due to disasters;
- To implement State or local Hazard Mitigation plans;
- To enable mitigation measures to be implemented during immediate recovery from a disaster; and
- To provide funding for previously identified mitigation measures that benefit the disaster area.

The HMGP can be used to fund projects to protect either public or private property. Examples of projects include:

- Structural hazard control, such as debris basins or floodwalls;
- Retrofitting, such as floodproofing to protect structures from future damage;
- Acquisition and relocation of structures from hazard-prone areas; and
- Development of State or local standards to protect new and substantially improved structures from disaster damage.

On the local level, both the County of Suffolk and the Town of Brookhaven would be eligible to submit project proposals under HMGP. The major drawback to the HMGP as a source of funding to implement the study recommendations is that HMGP funding is triggered only by a major disaster declaration. Funding under Section 553 - The Mitigation Assistance Program of the National Flood Insurance Reform Act of 1994 is not tied to the occurrence and declaration of a major disaster.

Project Blue Sky is a national, incentive-driven program funded by FEMA and private industry that demonstrates the use of hazard-resistant designs, materials and methods to keep houses habitable after hurricanes and major storms. Project Blue Sky recommendations are aimed at

strengthening both new and existing houses, and are supported by information, training, and research and development. Although Project Blue Sky addresses flood and fire hazards, its priority is building the single-family home to better withstand wind forces.

It has been proposed that 30 homes in the New York City/Long Island area be selected for modified retrofitting under the auspices of Project Blue Sky. Local government participation in Project Blue Sky first requires the dedication of local funds for construction models and a training delivery system. Funding from Operation Blue Sky for retrofitting residential structures located in flood prone areas within the study area may be a possibility if New York State and local governments are willing to sponsor and fund local start-up costs for Operation Blue Sky.

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APPENDIX A: Recommendations for the Disposition of Suffolk County-owned Properties within the Narrow Bay Study Area

Appendix A - Recommendations for the Disposition of Suffolk County-owned Properties within the Narrow Bay Study Area.

KEY:

S.C. Tax Map #: Suffolk County Real Property Tax Map #
Dimensions: Length and width of lot in feet
Acreage: Acreage of lot
R/C/W:
R = Lot is located within the Relocation Area
C = Lot is located within the Coastal Environmental Hazard Zone
W = Lot is located within a NYSDEC designated tidal or freshwater wetland
W* = Lot is located within a Town of Brookhaven designated tidal or freshwater wetland only
Recommendation:
PARKS = Lot is recommended to be designated to the Suffolk County Parks System
RELO = Lot is recommended as a relocation site
RELO(C) = Lot is recommended as a relocation site once combined with the adjacent County-owned lot
STAO = Lot is recommended to be sold to an adjacent owner with a restrictive covenant
HOLD = Lot is recommended to be held by the County until the future status of the adjacent private vacant lot(s) is determined
TRANSFER = County-owned lot is recommended to be transferred to the Town of Brookhaven for park purposes

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 85300 0300 049002	100 x 80	.18	R	RELO
0200 85300 0500 028000	100 x 60	.14	R	RELO
0200 85300 0600 037000	40 x 100	.09	R	STAO
0200 85300 0800 027000	40 x 100	.09	R	HOLD
0200 85300 0800 060000	60 x 100	.14	R	RELO
0200 85300 0900 028000	40 x 100	.09	R	HOLD
0200 85400 0100 026000	20 x 100	.05	R	STAO
0200 85400 0200 006000	60 x 100	.14	R	RELO
0200 87900 0600 029000	182 x var	.40	R	RELO(C)
0200 87900 0600 030000	20 x var	.60	R	RELO(C)
0200 88000 0100 013000	50 x 150	.17	R	RELO
0200 88000 0300 045000	80 x var	.19	R	RELO
0200 88000 0300 052000	50 x var	.11	R	HOLD
0200 88100 0400 028000	60 x 100	.14	R	RELO(C)
0200 88100 0400 029000	60 x 100	.14	R	RELO(C)
0200 88100 0500 015000	40 x 100	.09	R	HOLD
0200 88100 0500 018000	220 x var	.50	R	RELO
0200 88100 0600 004000	100 x 100	.23	R	RELO

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 88200 0100 032001	75 x 100	.17	R	RELO(C)
0200 88200 0100 032002	75 x 100	.17	R	RELO(C)
0200 88200 0200 018000	100 x 100	.23	R	RELO
0200 88200 0200 030000	100 x 40	.09	R	HOLD
0200 88200 0200 034000	100 x 40	.09	R	RELO(C)
0200 88200 0200 035000	20 x 100	.05	R	RELO(C)
0200 88200 0200 075000	60 x 100	.14	R	RELO(C)
0200 88200 0200 082000	60 x 100	.14	R	RELO(C)
0200 88200 0300 006000	80 x 100	.18	R	RELO
0200 88200 0700 014000	60 x 100	.14	R	RELO
0200 88200 0700 034002	30 x 100	.07	C	STAO
0200 88200 0700 047000	40 x 100	.09	R	HOLD
0200 88300 0100 007000	40 x 100	.09	R	STAO
0200 88300 0300 023000	40 x 100	.09	C	STAO
0200 88300 0400 010000	60 x 100	.14	R	RELO
0200 90700 0300 033001	75 x 110	.19	R	RELO
0200 90700 0400 015000	50 x 110	.13	R	STAO
0200 90700 0700 058000	25 x 100	.06	R	STAO
0200 90700 0700 066000	25 x 100	.06	R	STAO
0200 90800 0100 025000	35 x 163	.13	R	STAO
0200 90900 0800 012000	50 x 125	.14	R	RELO
0200 91000 0300 048000	50 x 218	.25	R	RELO
0200 93600 0600 017000	100 x 100	.23	R	RELO
0200 93900 0100 013001	95 x var	.30	R	RELO
0200 93900 0100 021000	100 x var	.55	C/W	PARKS
0200 93900 0400 038000	563 x var	1.80	R	RELO
0200 96700 0600 014002	104 x 75	.18	R	RELO
0200 96900 0700 029000	100 x 218	.50	R	RELO
0200 97470 0400 029000	138 x var	.25	R	RELO
0200 97480 0100 002000	20 x 150	.07	R	HOLD
0200 97480 0100 031000	80 x 150	.28	R	RELO
0200 97490 0500 015000	50 x 200	.23	C/W	PARKS
0200 97500 0100 037000	50 x 125	.14	C	STAO
0200 97500 0400 014000	51 x var	.17	C	STAO
0200 97500 0400 020000	51 x var	.14	C	STAO
0200 97500 0400 022001	35 x var	.09	C	STAO
0200 97500 0400 044000	50 x var	.18	C	STAO
0200 97500 0500 011000	50 x 125	.15	C	STAO
0200 97500 0500 021000	50 x 125	.15	C	STAO
0200 97680 0100 004000	100 x 100	.23	R	RELO
0200 97690 0100 052000	100 x var	.20	R	RELO
0200 97690 0400 010000	60 x 100	.14	R	RELO

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 97690 0400 042000	25 x var	.06	R	HOLD
0200 97690 0500 026000	100 x 100	.23	R	RELO
0200 97690 0700 018000	116 x var	.18	R	RELO
0200 97700 0100 020000	80 x var	.16	C	PARKS
0200 97700 0200 031000	40 x 100	.09	C	STAO
0200 97700 0300 035000	57 x var	.03	C	STAO
0200 97700 0300 047000	15 x var	.02	C/W	PARKS
0200 97890 0300 010000	70 x var	.22	R	RELO
0200 97890 0400 033000	80 x 100	.18	R	RELO
0200 97890 0400 037000	40 x 100	.09	R	RELO(C)
0200 97890 0400 038000	56 x var	.13	R	RELO(C)
0200 97900 0500 055000	60 x 100	.14	R	RELO
0200 97900 0500 057000	40 x 100	.09	R	STAO
0200 97900 0500 060000	100 x 100	.23	R	RELO
0200 97900 0500 064000	40 x 100	.09	R	STAO
0200 97900 0600 031000	60 x 100	.14	R	RELO
0200 97900 0600 074000	40 x 100	.09	R	HOLD
0200 97900 0800 011000	30 x 100	.07	R	STAO
0200 97910 0200 060000	10 x 110	.03	R	HOLD
0200 97910 0300 042000	30 x var	.12	C/W	PARKS
0200 97910 0300 044000	30 x var	.12	C/W	PARKS
0200 97910 0300 045000	30 x var	.12	C/W	PARKS
0200 97910 0300 060000	75 x var	.26	C/W	PARKS
0200 97910 0400 008000	40 x 100	.09	C/W	PARKS
0200 98030 0400 004000	22 x var	.05	R	HOLD
0200 98030 0400 005000	22 x var	.06	R	HOLD
0200 98030 0400 023000	20 x 150	.07	R	RELO(C)
0200 98030 0400 024000	20 x 150	.07	R	RELO(C)
0200 98030 0400 025000	150 x var	.09	R	RELO(C)
0200 98040 0300 034000	40 x var	.21	R	RELO
0200 98040 0300 035000	40 x var	.44	R	RELO
0200 98040 0300 036000	179 x var	.17	R	RELO
0200 98040 0500 009000	50 x 134	.15	R	RELO
0200 98050 0100 053000	100 x 100	.23	R	RELO
0200 98050 0300 023000	75 x var	.16	R	RELO
0200 98050 0300 055000	42 x var	.09	R	STAO
0200 98050 0600 070000	40 x 100	.09	C	STAO
0200 98060 0100 024000	60 x 100	.14	R	RELO
0200 98060 0800 041000	120 x var	.27	C/W	PARKS
0200 98070 0100 003000	60 x 100	.14	C/W	PARKS
0200 98070 0100 034000	20 x 100	.05	C/W	PARKS
0200 98070 0200 002000	60 x 100	.14	C/W	PARKS

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 98070 0300 006000	40 x 100	.09	C/W	PARKS
0200 98070 0300 007000	40 x 100	.09	C/W	PARKS
0200 98070 0300 017000	60 x 100	.14	C/W	PARKS
0200 98070 0400 010000	60 x 100	.14	C/W	PARKS
0200 98070 0500 023000	60 x 100	.14	C/W	PARKS
0200 98070 0500 038000	100 x 100	.23	C/W	PARKS
0200 98070 0500 039000	40 x 100	.09	C/W	PARKS
0200 98070 0600 046000	100 x 100	.23	C/W	PARKS
0200 98070 0700 042000	40 x 100	.09	C/W	PARKS
0200 98070 0700 063000	60 x 100	.14	C/W	PARKS
0200 98070 0800 012000	20 x 100	.05	C/W	PARKS
0200 98070 0800 016000	120 x 100	.28	C/W	PARKS
0200 98170 0100 002000	174 x var	.57	C	EXCHANGE
0200 98190 0200 004000	40 x var	.14	R	RELO
0200 98190 0200 009000	60 x var	.18	R	RELO
0200 98190 0200 033000	60 x 125	.17	R	RELO
0200 98190 0200 039000	—	4.10	R	RELO
0200 98200 0300 022000	60 x 100	.14	R	RELO
0200 98200 0400 004000	70 x var	.19	C	STAO
0200 98200 0400 058000	80 x var	.19	C	STAO
0200 98210 0200 025000	40 x 100	.09	C/W	PARKS
0200 98210 0200 028000	80 x 100	.18	C/W	PARKS
0200 98210 0200 031000	40 x 100	.09	C/W	PARKS
0200 98210 0200 035000	240 x 100	.55	C/W	PARKS
0200 98210 0200 036000	120 x 100	.28	C/W	PARKS
0200 98210 0300 018000	40 x 100	.09	C/W	PARKS
0200 98210 0300 020000	40 x 100	.09	C/W	PARKS
0200 98210 0300 021000	100 x 100	.23	C/W	PARKS
0200 98210 0300 023000	80 x 100	.18	C/W	PARKS
0200 98210 0300 024000	40 x 100	.09	C/W	PARKS
0200 98210 0300 030000	40 x 100	.09	C/W	PARKS
0200 98210 0400 008000	40 x 102	.09	C/W	PARKS
0200 98210 0400 010000	40 x 103	.09	C/W	PARKS
0200 98210 0400 013000	60 x 103	.14	C/W	PARKS
0200 98210 0400 016000	79 x 110	.20	C/W	PARKS
0200 98210 0400 017000	90 x var	.05	C/W	PARKS
0200 98210 0400 019002	200 x var	.46	C/W	PARKS
0200 98210 0400 044000	100 x var	.32	C/W	PARKS
0200 98210 0500 015000	80 x 100	.18	C/W	PARKS
0200 98210 0600 021000	100 x var	.06	C/W	PARKS
0200 98210 0600 033000	40 x 100	.09	C/W	PARKS
0200 98210 0600 037000	143 x var	.20	C/W	PARKS

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 98220 0100 029000	40 x 100	.09	C/W	PARKS
0200 98220 0100 031000	120 x 100	.28	C/W	PARKS
0200 98220 0100 032000	40 x 100	.09	C/W	PARKS
0200 98220 0100 033000	40 x 100	.09	C/W	PARKS
0200 98220 0100 035000	60 x 100	.14	C/W	PARKS
0200 98220 0200 003000	60 x 100	.14	C/W	PARKS
0200 98220 0200 036000	127 x var	.15	C/W	PARKS
0200 98320 0500 061000	50 x 125	.14	C	STAO
0200 98320 0700 004000	50 x 125	.14	C	STAO
0200 98330 0300 015000	50 x 100	.11	C	STAO
0200 98330 0500 018000	75 x 100	.17	C	PARKS
0200 98330 0500 024000	50 x 100	.11	C	PARKS
0200 98340 0200 011000	40 x 100	.09	C	STAO
0200 98340 0300 008003	200 x 100	.46	C/W*	PARKS
0200 98340 0300 010000	240 x 100	.55	C/W*	PARKS
0200 98340 0300 022000	20 x 80	.04	C/W*	PARKS
0200 98340 0300 024000	20 x 80	.04	C/W*	PARKS
0200 98340 0300 056000	80 x 100	.18	C	STAO
0200 98340 0400 021000	40 x 100	.09	C	PARKS
0200 98340 0500 007000	40 x 100	.09	C/W*	PARKS
0200 98340 0500 051000	180 x var	.48	C/W*	PARKS
0200 98340 0500 069000	60 x 100	.14	C/W*	PARKS
0200 98340 0600 028000	120 x var	.21	C/W*	PARKS
0200 98340 0600 039000	140 x 100	.32	C/W*	PARKS
0200 98340 0600 046000	60 x 100	.14	C/W	PARKS
0200 98340 0700 006000	60 x 100	.14	C/W*	PARKS
0200 98340 0900 039000	40 x 100	.09	C/W	PARKS
0200 98350 0100 025000	100 x 100	.23	C/W*	PARKS
0200 98350 0100 042000	60 x 100	.14	C/W*	PARKS
0200 98350 0100 046000	100 x 100	.23	C/W*	PARKS
0200 98350 0100 049000	40 x 100	.09	C/W*	PARKS
0200 98350 0200 003000	40 x 100	.09	C/W	PARKS
0200 98350 0200 006000	80 x 100	.18	C/W	PARKS
0200 98350 0200 017000	40 x 100	.09	C/W	PARKS
0200 98350 0200 030000	20 x 100	.05	C/W*	PARKS
0200 98350 0200 032000	60 x 100	.14	C/W	PARKS
0200 98350 0200 038000	106 x var	.23	C/W	PARKS
0200 98350 0200 041000	40 x 100	.09	C/W	PARKS
0200 98350 0200 046000	100 x 100	.23	C/W	PARKS
0200 98430 0200 002000	50 x 150	.17	C	STAO
0200 98430 0200 011000	150 x 75	.26	C	STAO
0200 98460 0100 006000	40 x 95	.09	C/W	PARKS

S.C. Tax Map #	Dimensions (ft.)	Acreage	R/C/W	Recommendations
0200 98460 0100 024000	22 x var	.03	C/W*	PARKS
0200 98460 0200 019000	59 x var	.11	C/W	PARKS
0200 98460 0200 020000	74 x var	.12	C/W	PARKS
0200 98460 0300 019000	110 x var	.22	C/W	PARKS
0200 98460 0300 023000	40 x 100	.09	C/W	PARKS
0200 98460 0300 031000	82 x var	.11	C/W	PARKS
0200 98460 0300 040000	190 x var	.26	C/W	PARKS
0200 98460 0300 043000	62 x var	.11	C/W	PARKS
0200 98470 0100 002000	60 x 100	.14	C/W	PARKS
0200 98470 0100 023000	20 x 100	.05	C/W	PARKS

APPENDIX B: Letter Dated 1 March 1996 from Suffolk County Planning Department to the Suffolk County Division of Real Estate Regarding Tax Lien Properties within the Conservation Area

COUNTY OF SUFFOLK

ROBERT J. GAFFNEY
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF PLANNING

STEPHEN M. JONES, A.I.C.P.
DIRECTOR OF PLANNING

March 1, 1996
File #96-5.10

Wayne Thompson, Rental Inventory Supervisor
Suffolk County Division of Real Estate
Department of Law
Building 158 - North County Complex
Veterans Memorial Highway
Hauppauge, New York 11788

Dear Mr. Thompson: Wayne

I am writing in response to correspondence dated 1 December 1995 regarding the disposition of tax lien parcels. I have reviewed the following parcels. They should be retained by the County and transferred to Parks. They are situated within our Mastic/Shirley Conservation Area as identified in the 1994 study entitled the South Shore Mainland Hazard Management Program. This study recommended that the County retain these environmentally sensitive, wetland and floodplain properties in order to reduce future development in this hazardous bay shoreline area:

PDC	DIS.	SECT.	BLK	LOT	DATE ACQ.	LIBER	PAGE	TAX ITEM NO.	PR	ACREAGE	SQ-FT
309	200	98070	300	6000	12/31/74	7774	579		4	0	4000
309	200	98070	300	7000	4/17/84	9546	288		4	0	4000
309	200	98070	300	17000	5/2/83	9351	412		4	0	6000
309	200	98070	400	10000	6/15/92	11483	90	4303940	4	0.14	0
309	200	98070	500	23000	4/17/84	9546	288		4	0	6000
309	200	98070	500	38000	5/15/85	9791	46		4	0	10000
309	200	98070	500	39000	4/17/84	9546	288		4	0	4000
309	200	98070	600	46000	5/2/83	9351	413		4	0	10000
309	200	98070	700	63000	2/17/78	8390	186		4	0	6000
309	200	98070	800	12000	4/17/84	9546	288		4	0	2000
309	200	98210	300	18000	5/15/85	9791	46		4	0	4000
309	200	98210	300	20000	5/15/85	9791	46		4	0	4000
309	200	98210	300	21000	5/2/83	9351	413		4	0	10000
309	200	98210	300	23000	6/15/92	11483	90	4319970	4	0.18	0
5309	200	98210	300	24000	2/17/78	8390	186		4	0	4000
309	200	98210	300	30000	5/15/85	9791	46		4	0	4000
309	200	98210	400	8000	5/15/85	9791	46		4	0	4000
309	200	98210	400	10000	4/17/84	9546	289		4	0	4080
309	200	98210	400	13000	5/2/83	9351	413		4	0	6180

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Suffolk County Planning Department
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5309	200	98210	400	16000	3/23/81	8977	422		4	0	8690
309	200	98210	400	17000	5/17/88	10605	480		4	0	2000
309	200	98210	400	19002	5/2/83	9351	415		4	0	20000
5309	200	98210	400	44000	5/17/88	10605	480		4	0	10000
309	200	98210	500	15000	4/17/84	9546	287		4	0	8000
309	200	98210	600	33000	4/17/84	9546	289		4	0	4000
5309	200	98210	600	37000	4/17/84	9546	289		4	0.2	0
5309	200	98220	100	29000	4/17/84	9546	287		4	0	4000
5309	200	98220	100	31000	4/17/84	9546	287		4	0	12000
5309	200	98220	100	32000	5/2/83	9351	412		4	0	4000
5309	200	98220	100	33000	5/2/83	9351	412		4	0	4000
309	200	98220	100	34000	5/3/91	11268	520		4	0	4000
309	200	98220	100	35000	6/15/92	11483	90	4302820	4	0.14	0
5309	200	98220	200	3000	2/17/78	8390	186		4	0	6000
309	200	98220	200	36000	4/10/86	10014	160		4	0	6600
5309	200	98340	300	8001	3/23/81	8977	422		4	0	10000
5309	200	98340	300	8002	3/23/81	8977	422		4	0	10000
5309	200	98340	300	10000	2/17/78	8390	186		4	0	24000
5309	200	98340	300	22000	5/17/88	10605	480		4	0	1600
5309	200	98340	300	24000	5/2/83	9351	414		4	0	1600
309	200	98340	600	28000	6/15/92	11483	90	4410950	4	0.23	0
5309	200	98340	600	39000	3/23/81	8977	422		4	0	14000
5309	200	98340	600	46000	4/17/84	9546	290		4	0	6000
5309	200	98340	700	6000	5/2/83	9351	414		4	0	6000
5309	200	98340	900	39000	5/2/83	9351	414		4	0	4000
5309	200	98350	100	25000	6/9/89	10872	454		4	0	10000
5309	200	98350	100	42000	5/2/83	9351	414		4	0	6000
5309	200	98350	100	46000	5/17/88	10605	480		4	0	10000
5309	200	98350	100	47000	5/17/88	10605	480	4	4	0	6000
5309	200	98350	100	49000	5/2/83	9351	414		4	0	4000
5309	200	98350	200	3000	5/2/83	9351	414		4	0	4000
5309	200	98350	200	6000	5/2/83	9351	414		4	0	8000
5309	200	98350	200	17000	4/17/84	9546	290		4	0	4000
309	200	98350	200	32000	6/15/92	11483	90	4406940	4	0.14	0
309	200	98350	200	38000	6/15/92	11483	90	4406890	4	0.23	0
5309	200	98350	200	41000	4/17/84	9546	290		4	0	4000
5309	200	98350	200	46000	5/2/83	9351	414		4	0	10000
309	200	98350	200	52000	5/3/91	11268	520		4	0	5000
5309	200	98460	100	6000	4/21/82	9171	298		4	0	3800
5309	200	98460	100	24000	4/21/82	9171	298		4	0	1100
5309	200	98460	200	19000	6/9/89	10872	454		4	0	4690
5309	200	98460	200	20000	6/9/89	10872	454		4	0	5250
5309	200	98460	300	19000	6/9/89	10872	454		4	0	2900
5309	200	98460	300	23000	5/2/83	9351	415		4	0	4000
5309	200	98460	300	31000	3/1/88	10551	541		4	0	4980
5309	200	98460	300	40000	4/21/82	9171	298		4	0.26	0
5309	200	98460	300	43000	3/23/81	8977	422		4	0.11	0
5309	200	98470	100	2000	4/17/84	9546	290		4	0	6000

Suffolk County Planning Department
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File #96-5.10

The following vacant parcel is located adjacent to Pine Lake/West Lake and contains freshwater wetlands. It should be retained by the County and transferred to Parks:

0204-008.00-01.00-003.000
as well as 0204-008.00-01.00-002.002

The following parcel is substandard and should not be independently developed. It should be offered for sale to an adjacent owner and the following restrictive covenant should be included in the deed when sold:

0500-386.00-06.00-005.000

The premises described herein shall not be independently improved by the erection of any structure, and must be merged with grantee's adjoining parcel, tax map No._____ so as to form one single building lot. There can be no further subdivision of the merged parcel unless it is consistent with local town and/or village zoning codes and standards of the Suffolk County Department of Health Services, applicable at the time application is made.

This restrictive covenant shall be enforceable by the County of Suffolk by injunctive relief or by any other remedy, in equity, or at law. The failure of the County of Suffolk or any agency thereof to enforce this covenant, shall not be deemed to impose any liability whatsoever upon the County of Suffolk or any officer, employee or agent thereof.

This covenant and restriction shall run with the land and shall be binding upon the grantee, its successors and assigns, and upon all persons claiming under them.

Sincerely,

Lauretta R. Fischer
Principal Planner

LRF:sm
File #96-5.10

cc: Stephen Jones, Director

APPENDIX C: Suffolk County Legislative Resolution No.1101-1996. Accepting and Appropriating a Grant from NYS Authorizing a Land Exchange Program and Adopting a "Narrow Bay Floodplain " Protection & Hazard Mitigation Plan in the Mastic/Shirley Area.

Intro. Res. No. 1427-96 Laid on Table 4/2/96
Introduced by the Presiding Officer at the request of the County Executive

RESOLUTION NO. 1101 - 1996, ACCEPTING AND APPROPRIATING A GRANT FROM NYS AUTHORIZING A LAND EXCHANGE PROGRAM AND ADOPTING A "NARROW BAY FLOODPLAIN" PROTECTION & HAZARD MITIGATION PLAN IN THE MASTIC/SHIRLEY AREA

WHEREAS, the Suffolk County Planning Department has completed a study entitled "Narrow Bay Floodplain Protection and Hazard Mitigation Plan" (the Plan) funded in part by the Federal Emergency Management Office (FEMA) and the State Emergency Management Office (SEMO) under Resolution No. 197-1995; and

WHEREAS, this Plan focuses on the Mastic/Shirley area and properties in the area subject to tidal flooding and high groundwater table conditions; and

WHEREAS, the Suffolk County Planning Commission at its regular meeting of 5 October 1994 unanimously approved Resolution No. 4 which endorsed the Plan recommendation regarding the permanent retention of environmentally sensitive, County-owned properties and the temporary retention of County-owned "Relocation Sites" in the upland area of the Mastic/Shirley area for land exchange purposes; and

WHEREAS, such Resolution No. 4 further recommended that the County Legislature rescind that portion of County Resolution #786-1992 identified as Resolved clause 16th (lines 2546 through 2556 on Schedule A) for the Mastic/Shirley area in order to best implement the Plan; and

WHEREAS, the Suffolk County Planning Department has secured a grant in the amount of $34,977 from the aforementioned FEMA and SEMO to effectuate the Plan recommendations of voluntary land exchanges with private property owners in environmentally sensitive areas; and

WHEREAS, these grant funds are not included in the 1996 adopted County budget; now, therefore, be it

RESOLVED, the Resolved clause 16th (lines 2546 through 2556 on Schedule A) of County Resolution #786-1992 be and is hereby rescinded; and be it further

RESOLVED, that the aforementioned Plan is hereby adopted as policy for county land disposition with respect to the establishment of a voluntary land exchange program; and be it further

RESOLVED, that voluntary land exchanges are hereby authorized with private property owners in environmentally sensitive areas in accordance with Chapter 102 of the Suffolk County Code; and be it further

RESOLVED, that these grant funds be and they hereby are appropriated as follows:

REVENUE:

01-3089 - State Aid: Other	$34,977

APPROPRIATIONS:

Suffolk County Planning Department
01-8020

200-Equipment	$ 2,750
202-Office Machines	750
201-Furniture & Furnishings	500
205-Other Equipment	1,500

Intro. Res. No. 1427-96 Page 2

300-Supplies, Materials and Other	4,500
301-Office Supplies	2,000
316-Computer Software	1,000
350-Other Unclassified	1,500
430-Travel	1,500
433-Travel, Employee Contracts	500
434-Travel, Other	1,000

Department of Law
Division of Real Estate
01-1421

450-Fees for Service	26,227
456-Fees for Services, Non-Employees	26,227

and be it further

RESOLVED, that the County Executive be and he hereby is authorized to execute any agreements related to the terms and conditions of this grant; and be it further

RESOLVED, that this Legislature, being the State Environmental Quality Review Act (SEQRA) lead agency, hereby finds and determines that this resolution constitutes a Type II action pursuant to Section 617.13(d)(15) and (21) of the New York Code of Rules and Regulations since such actions are simply legislative decisions implementing land exchanges as part of the aforementioned Plan which is a mitigation plan to address potential environmental hazards in the area, which will mainly result in a beneficial impact.

DATED: November 21, 1996

APPROVED BY:

County Executive of Suffolk County

Date of Approval: 12/2/96

SUFFOLK COUNTY
County Legislature
RIVERHEAD, N.Y.

This is to Certify That I, HENRY L. BARTON, JR., Clerk of the County Legislature of the County of Suffolk, have compared the foregoing copy of resolution with the original resolution now on file in this office, and which was duly adopted by the County Legislature of said County on NOV 21 1996 and that the same is a true and correct transcript of said resolution and of the whole thereof.

In Witness Whereof, I have hereunto set my hand and the official seal of the County Legislature of the County of Suffolk.

Henry L. Barton, Jr.
Clerk of the County Legislature

APPENDIX D: Suffolk County Local Law: Chapter 102 - Land Exchanges.

Chapter 102

LAND EXCHANGES

[HISTORY: Adopted by the Suffolk County Legislature 12-13-88 as L.L. No. 5-1989.[1] Amendments noted where applicable.]

GENERAL REFERENCES

Suffolk County Drinking Water Protection Program — See Charter, Art. XII.
Development rights to agricultural land — See Ch. 8.
Conveyance of real property — See Ch. 27.
Environmental quality review — See Ch. 279.
Land acquisition disclosure — See Ch. 342.
Freshwater wetlands — See Ch. 488.

§ 102-1. Legislative intent.

A. This Legislature hereby finds and determines that it is in the best interests of the people of Suffolk County to acquire environmentally sensitive lands to protect and preserve the environment and quality of life in Suffolk County.

B. This Legislature further finds that the County of Suffolk possesses non-environmentally sensitive lands, surplus to the needs of the county, which could be traded for the acquisition of environmentally sensitive lands of equal value without the expenditure of county funds.

[1] Editor's Note: This local law also provided that it apply to exchanges of land proposed, consummated or occurring on or after its effective date.

C. Therefore, the purpose of this chapter is to establish a mechanism for the County of Suffolk to acquire land which is environmentally sensitive by exchanging county-owned, non-environmentally sensitive land of equal value.

§ 102-2. Review process for acquisition of environmentally sensitive lands.

A. Upon adoption of a resolution by the Parks, Recreation and Cultural Affairs Committee ("Committee") of the County Legislature, or any successor committee thereto, directing the commencement of an appropriate review process or by direction of the County Executive any potential acquisitions of environmentally sensitive land parcels, other than those covered by the county's Open Space Preservation Program or by Local Law No. 40-1987,[2] shall be reviewed by the following county departments to recommend whether the land in question is environmentally sensitive or otherwise desirable for acquisition by the County of Suffolk:

(1) The Department of Planning.

(2) The Department of Parks, Recreation and Conservation.

(3) The Department of Health Services, Division of Environmental Quality.

(4) The Department of Real Estate.

B. Such recommendations under Subsection A of this section shall be submitted in writing to the Committee by each department within forty-five (45) days subsequent to enactment of the Committee resolution. The Committee shall then review such recommendations and determine whether or not such land is environmentally sensitive or otherwise desirable for acquisition by the county via resolution adopted by a majority of the entire membership of said Committee.

C. County-owned land being considered for potential land exchanges pursuant to this chapter shall be reviewed by the following county offices or departments, which shall recom-

[2] Editor's Note: See Art. XII of the Charter, § C12-1 et seq.

mend to the Committee whether such county-owned land is surplus and non-environmentally sensitive:

(1) The Department of Planning.

(2) The Department of Parks, Recreation and Conservation.

(3) The Department of Health Services, Division of Environmental Quality.

(4) The Department of Real Estate.

D. Such recommendations under Subsection C of this section shall be submitted in writing to the Committee by each department within forty-five (45) days subsequent to the completion of such review. The Committee shall then review such recommendations and determine whether or not such land is surplus and non-environmentally sensitive via resolution adopted by a majority of the entire membership of said Committee.

E. The offices or departments authorized to conduct reviews in accordance with this section shall jointly adopt uniform standard forms for qualitative and/or quantitative evaluations of said land parcels.

F. The Committee may direct, upon adoption of a resolution, that any county-owned surplus parcel of real estate determined under Subsection B of this section to be environmentally sensitive not be sold at a county auction and that such parcel be dedicated to the Suffolk County Nature Preserve or be dedicated for parks, recreation, conservation or education purposes.

G. Any parcel reviewed and determined by the Committee to be non-environmentally sensitive, under Subsection B of this section, shall be deemed eligible for the following uses:

(1) For exchange for environmentally sensitive lands not owned by the County of Suffolk;

(2) For governmental purposes including but not limited to affordable housing; or

(3) Disposal at county auction to highest bidder.

10203 9-25-89

§ 102-3. Appraisals.

All appraisals of potential land acquisitions pursuant to this chapter shall be performed by independent, outside appraisers selected by the County Department of Real Estate in accordance with departmental procedures or, with prior written approval of the presiding officer of the County Legislature and Chairman of the Committee, or any successor committee thereto, the Suffolk County Department of Real Estate may use its own in-house appraisers and appraisals. Funds for these outside appraisals shall be provided for by budgetary actions and appropriations consistent with the provisions of Article IV of the Suffolk County Charter.

§ 102-4. Acquisition of land.

A. Environmentally sensitive lands or lands otherwise desirable for park or open space purposes, as determined pursuant to § 102-2A and B above, may be acquired for such purposes in exchange for county-owned non-environmentally sensitive surplus land, as determined pursuant to § 102-2C and D, of equal value, as determined by a fair market appraisal.

B. The Department of Real Estate alone shall negotiate such land exchanges, in accordance with the provisions of this chapter, as it may be directed to negotiate via a duly enacted resolution of the County Legislature. The actual exchange of lands shall require authorization and approval of the County Legislature via a duly enacted resolution.[3]

C. In the event that county-owned non-environmentally sensitive surplus land cannot be found which equals the value of any land being sought for acquisition under this chapter or if the county-owned land is less in value than the value of the land being sought for acquisition, and if the owner or owners of the land being sought for acquisition is or are not willing to accept the exchange of county-owned land of lesser value, then the Legislature may authorize the appropriation of funds, in

[3] Editor's Note: Resolution No. 409-1989, adopted 5-10-89, provided that final authorization for any resolution introduced in the County Legislature for the purpose of acquisition of land by the county under the Open Space Preservation Program and/or the Drinking Water Protection Program must include certain information in order to detect and discourage speculative sales and purchases of land in such areas. A copy of Res. No. 409-1989 is on file in the office of the Clerk to the Legislature. See also Ch. 342, Land Acquisition Disclosure.

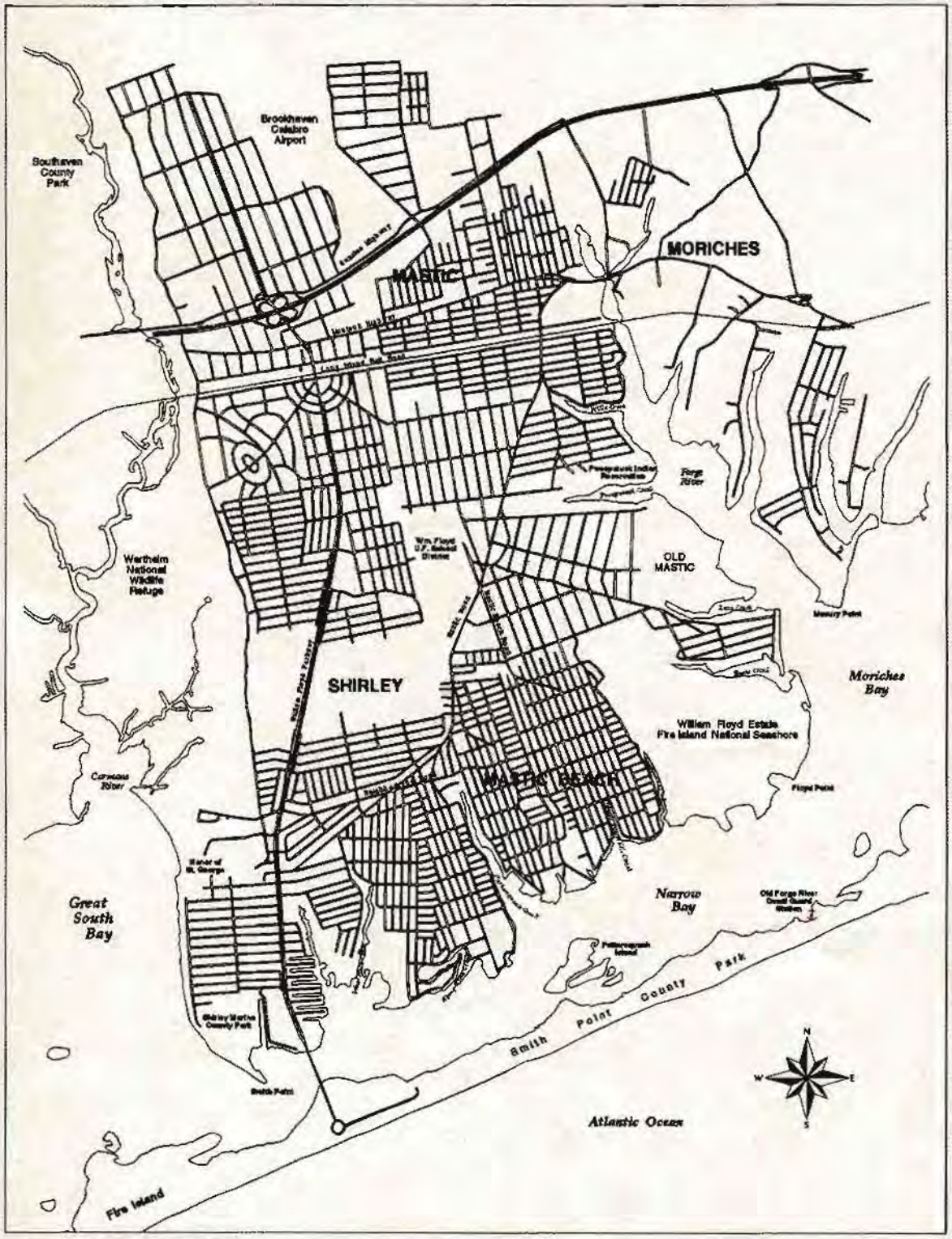
accordance with the provisions of Article IV and/or Article XII of the Suffolk County Charter, to make up the difference in value. In no event may the county exchange county-owned land of greater value than the land being sought for acquisition unless a cash payment by the owner or owners of land being sought for acquisition is made to the general fund of Suffolk County for the difference in value or if the land qualifies as a special groundwater protection area, in accordance with Article XII of the Suffolk County Charter, to make up for any difference in value.

D. Any agreement for the actual exchange of land under the terms of this chapter shall be subject to the approval, authorization and ratification of the County Legislature via a duly enacted resolution.

E. The Commissioner of the County Department of Real Estate, or her designee, may negotiate with the owner or owners of land being sought for acquisition and/or with the town or village board of any town or village in Suffolk County within which county-owned lands designated under this section may be located to attach covenants or restrictions of record to the deeds of any county-owned properties that may be exchanged subject to the provisions of this chapter, which covenants or restrictions of record would allow and provide for the construction of affordable housing within the County of Suffolk. Any such covenants or restrictions of record shall require authorization, approval and ratification of the County Legislature via a duly enacted resolution.

10205 9-28-89

NARROW BAY FLOODPLAIN PROTECTION AND HAZARD MITIGATION PLAN



MASTIC / SHIRLEY VICINITY

Town of Brookhaven
Suffolk County, New York

Scale: 1 inch = 4,760 feet

Draft map prepared by the Suffolk County Planning Department with financial support from the NYS Emergency Management Office and the Federal Emergency Management Agency, Region II.

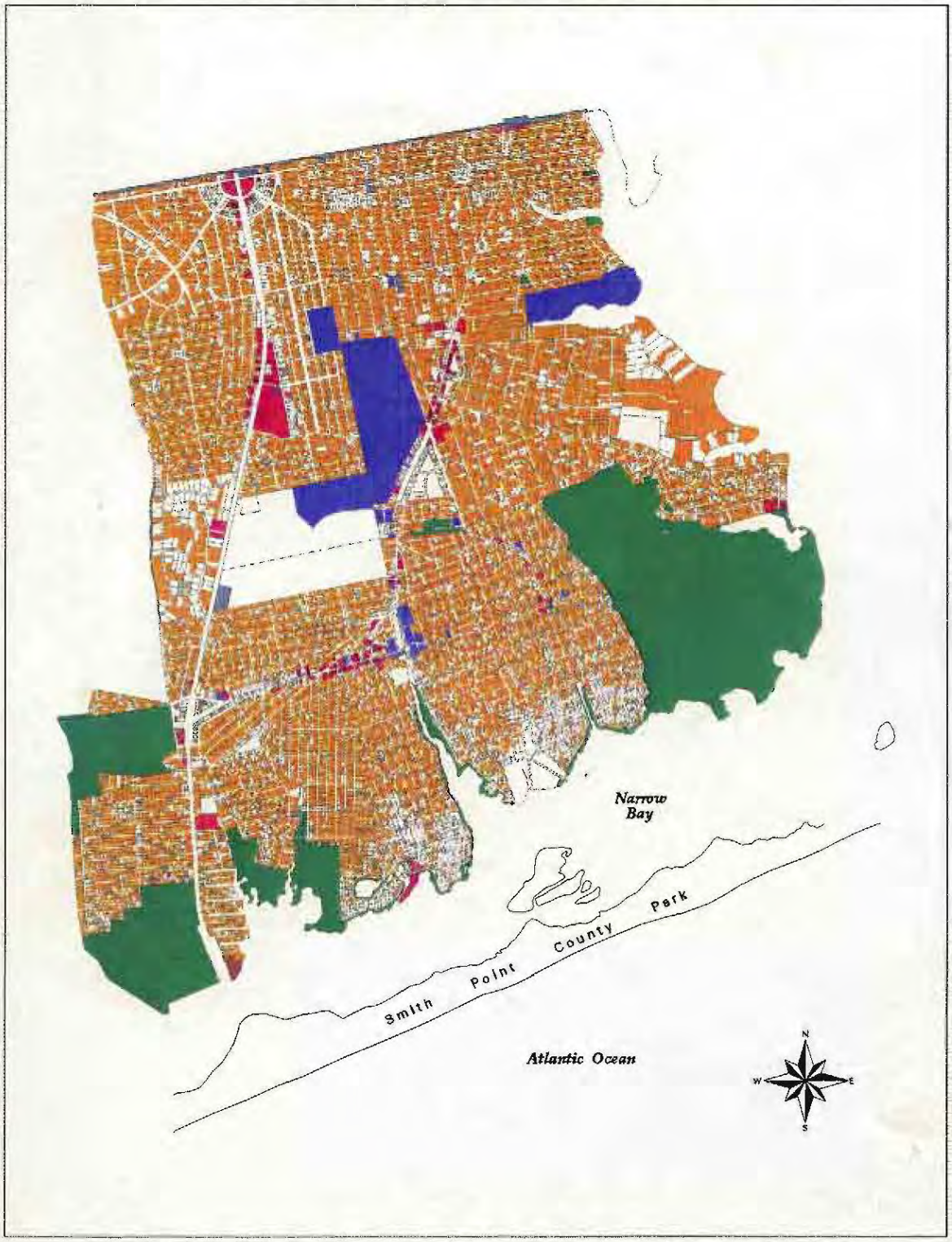
LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

NARROW BAY FLOODPLAIN PROTECTION AND HAZARD MITIGATION PLAN



EXISTING LAND USE

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- Residential
- Multi-Family
- Commercial
- Industrial
- Institutional
- Open Space & Recreational
- Transportation & Utilities
- Recharge Basin

Scale: 1 inch = 4,303 feet

Draft map prepared by the Suffolk County Planning Department with financial support from the NYS Emergency Management Office and the Federal Emergency Management Agency, Region II.

LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

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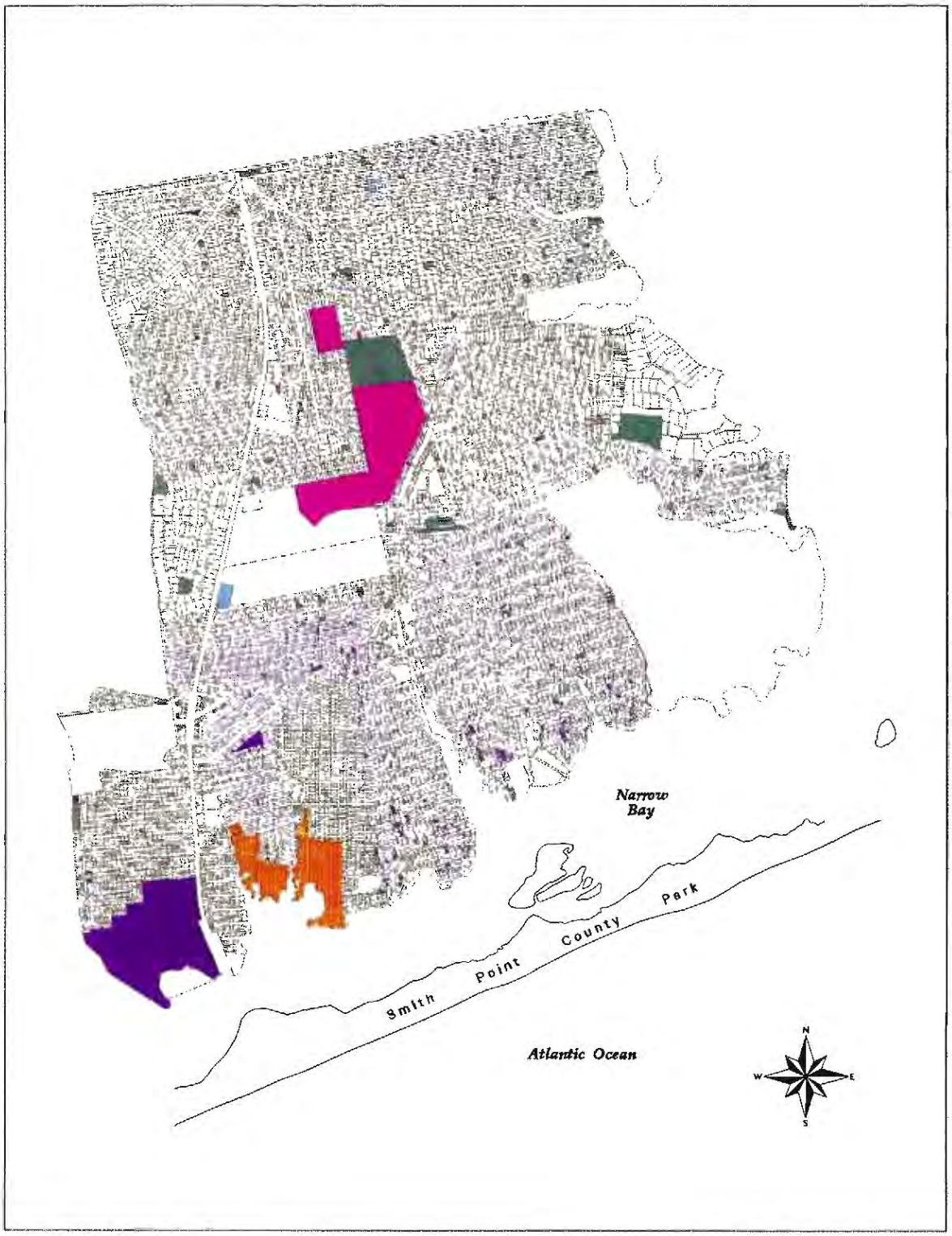

LAND UNDER PUBLIC OWNERSHIP

Town of Brookhaven
Suffolk County, New York

... LEGEND ...

- Federal
- New York State
- Suffolk County
- Suffolk County Water Authority
- School District #32
- Town of Brookhaven

Scale: 1 inch = 4,303 feet

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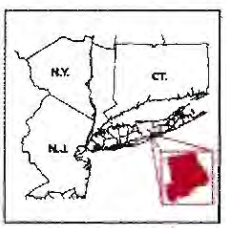

LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

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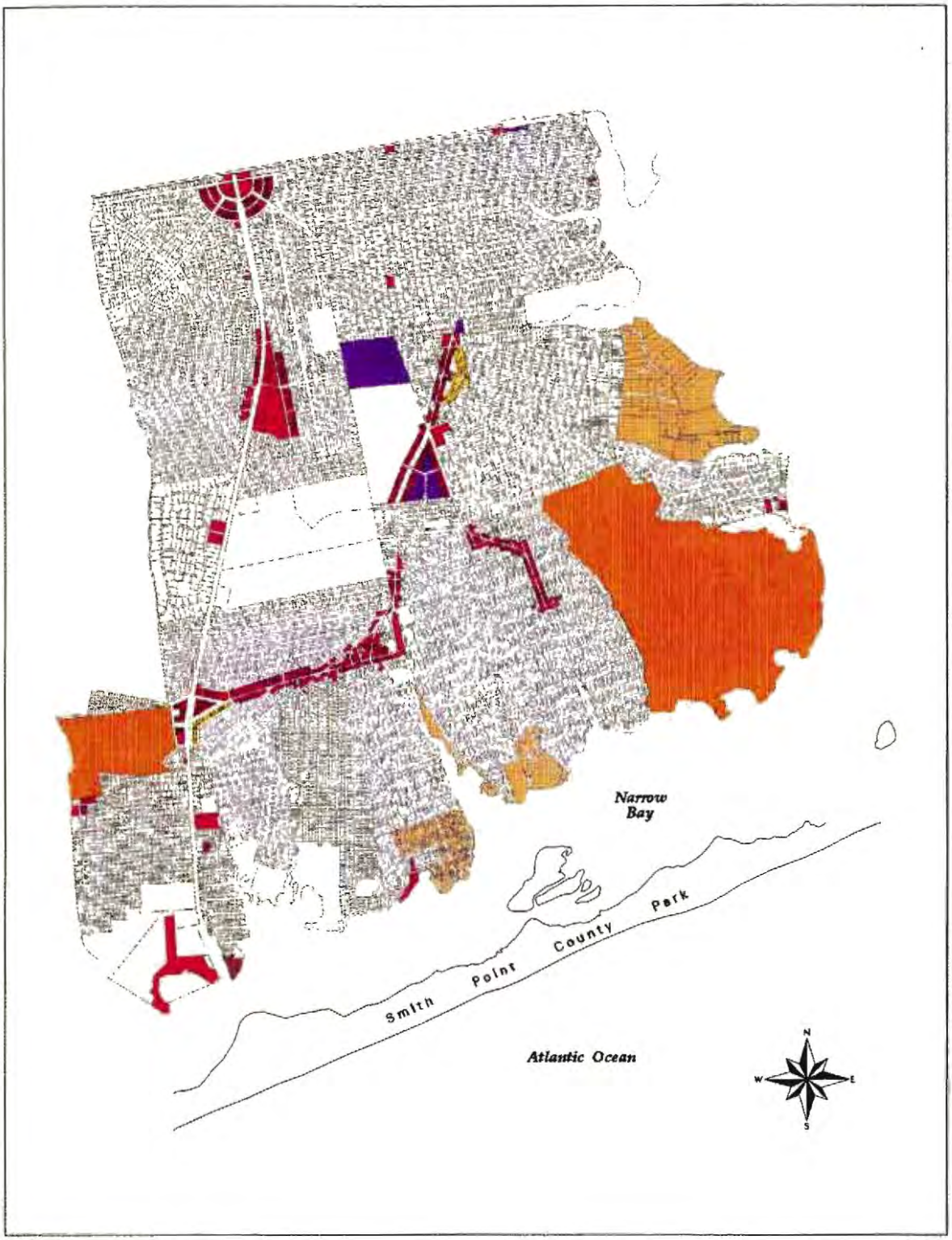

EXISTING ZONING

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- A-10 Residential
- A-2 Residential
- A-1 Residential
- B Residential
- Multi-Family
- Commercial
- Industrial

Scale: 1 inch = 4,303 feet

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Planning Department

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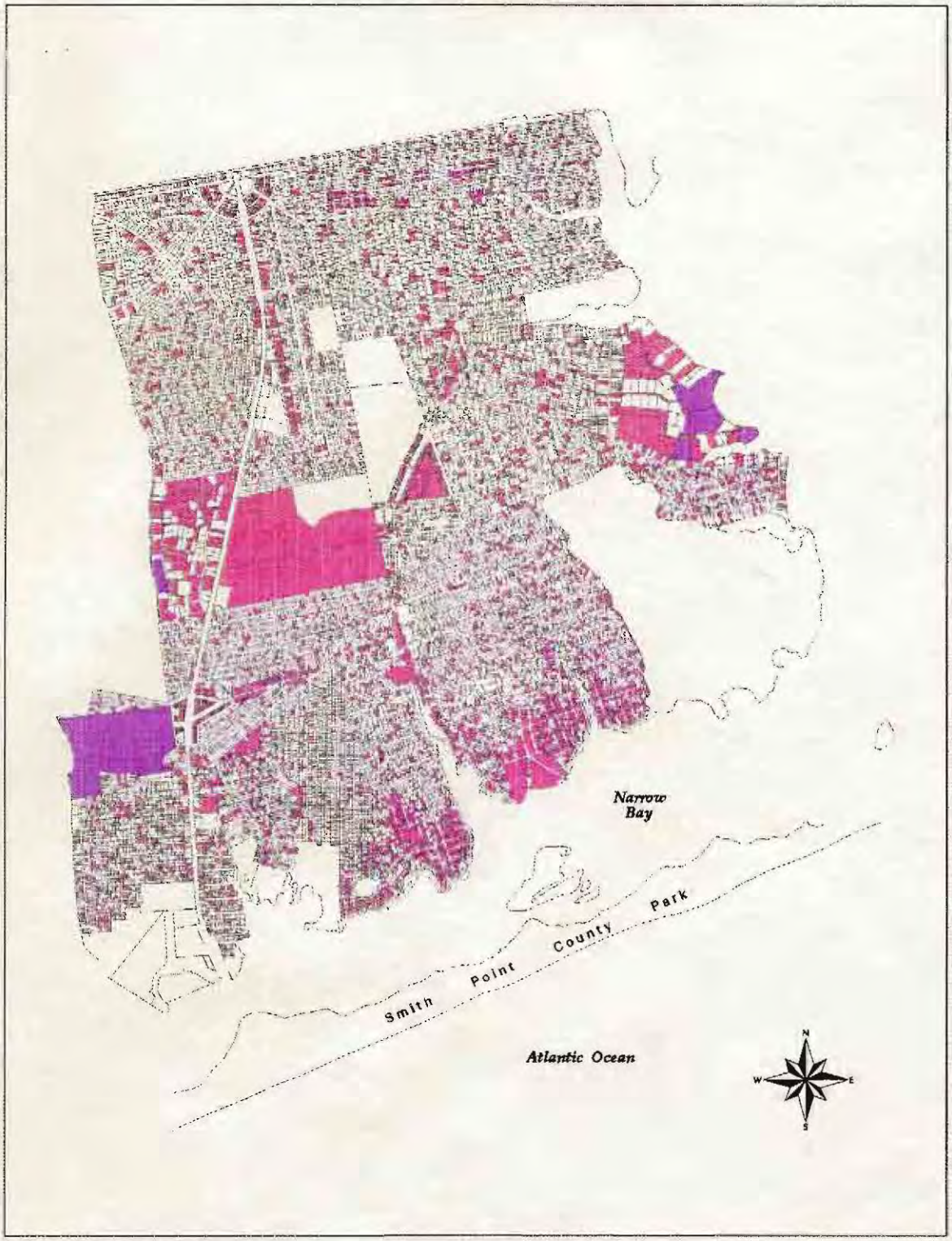

LAND AVAILABLE FOR DEVELOPMENT

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- Vacant Land Available for Development
- Developed Subdividable Property

Scale: 1 inch = 4,303 feet

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LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

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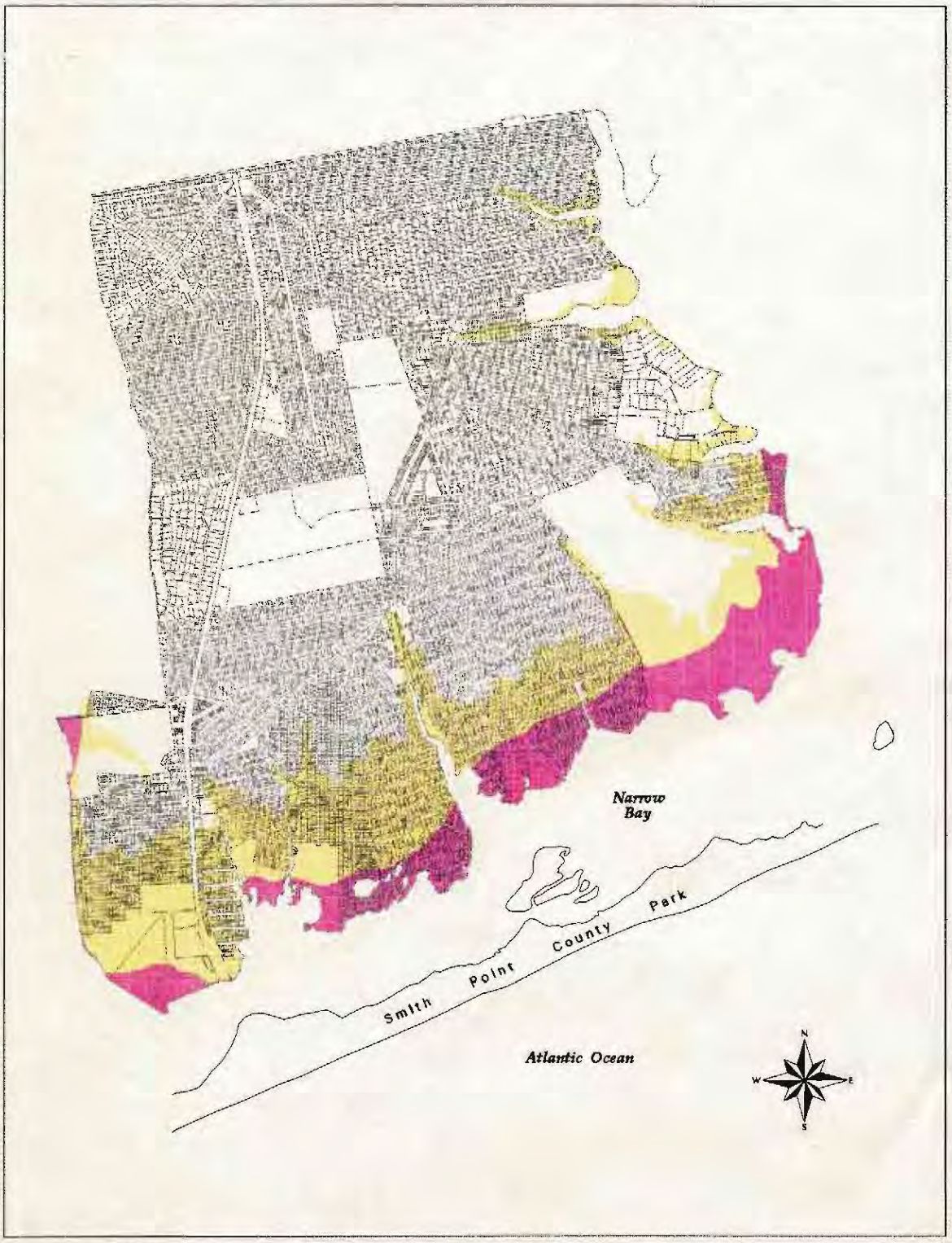

100-YEAR TIDAL FLOODPLAIN

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- 100-Year Floodplain - A Zone
- 100-Year Floodplain - V Zone

Scale: 1 inch = 4,303 feet

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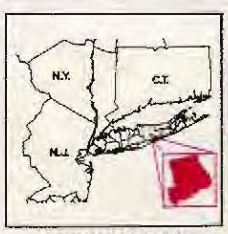


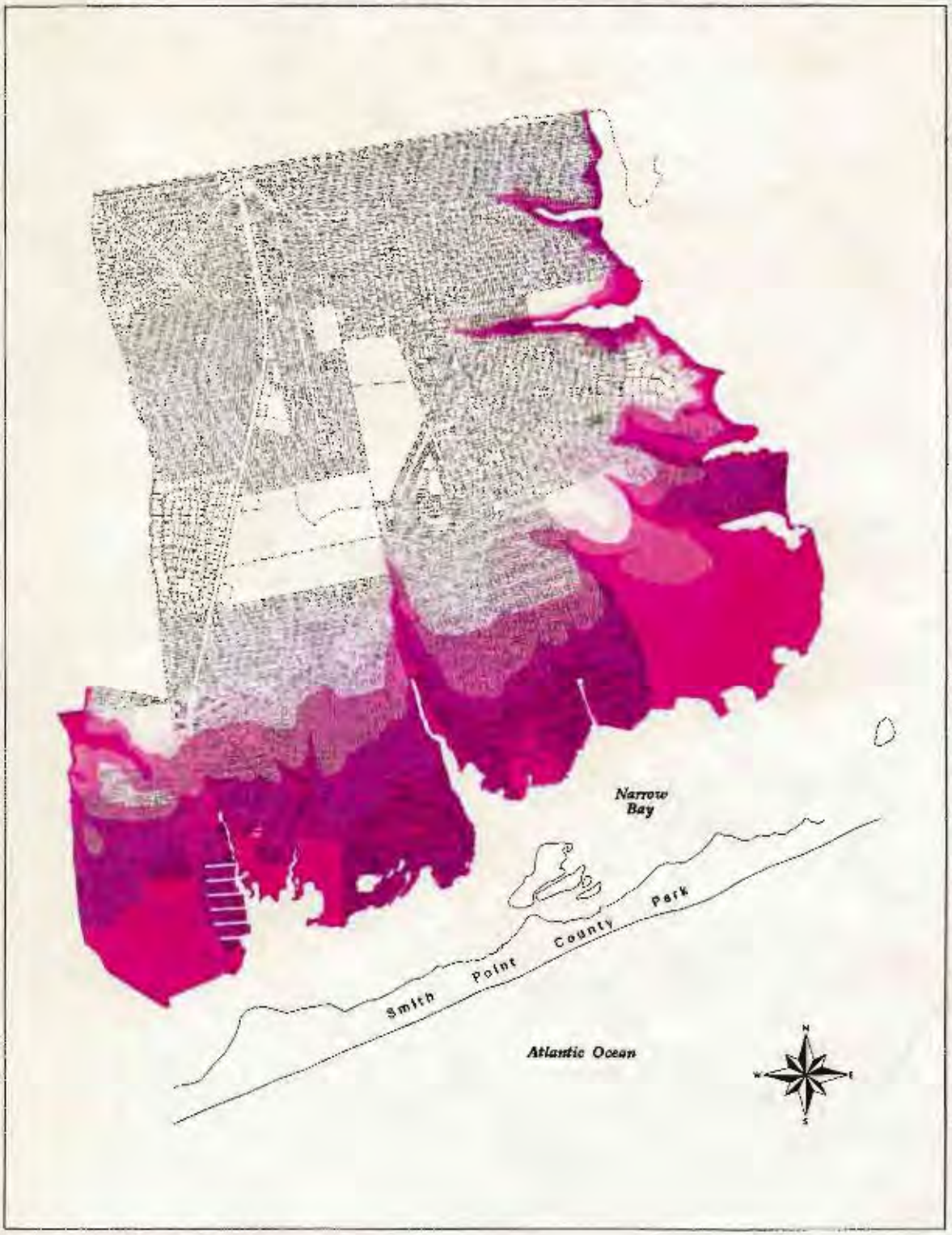
LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

NARROW BAY FLOODPLAIN PROTECTION AND HAZARD MITIGATION PLAN



AREA FLOODED BY HURRICANES UNDER DIFFERENT WORST CASE SCENARIOS

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- Category 1 Hurricane
- Category 2 Hurricane
- Category 3 Hurricane
- Category 4 Hurricane

Scale: 1 inch = 4,303 feet

Draft map prepared by the Suffolk County Planning Department with financial support from the NYS Emergency Management Office and the Federal Emergency Management Agency, Region II.

LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1996

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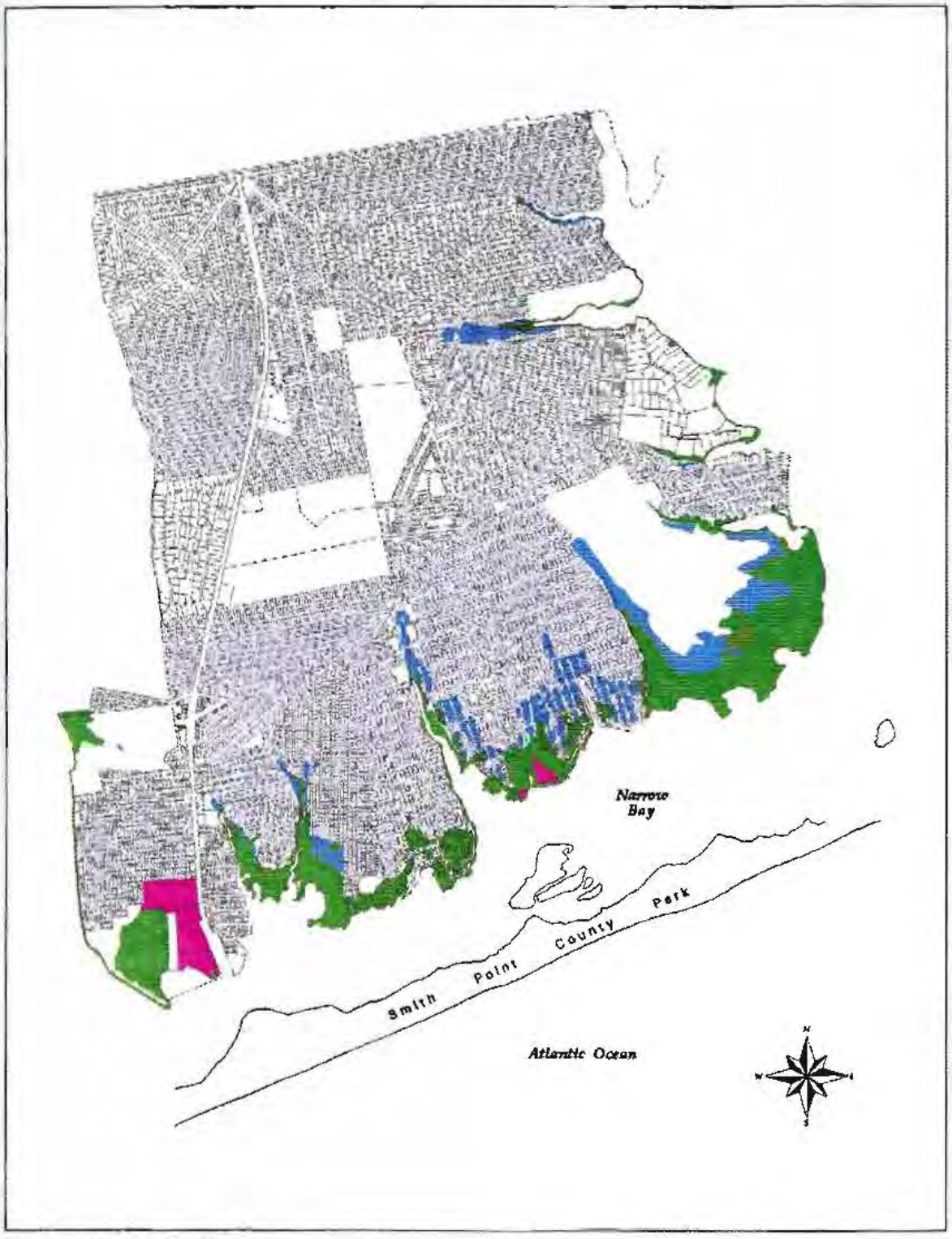

TIDAL AND FRESHWATER WETLANDS

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- Freshwater Wetlands
- Tidal Wetlands
- Tidal / Freshwater Wetland Overlap Area
- Dredged Spoil Sites

Scale: 1 inch = 4,300 feet

Draft map prepared by the Suffolk County Planning Department with financial support from the NYS Emergency Management Office and the Federal Emergency Management Agency, Region II.

LOCATION MAP

SUFFOLK COUNTY
Planning Department

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Cartographic & GIS Division

November, 1995

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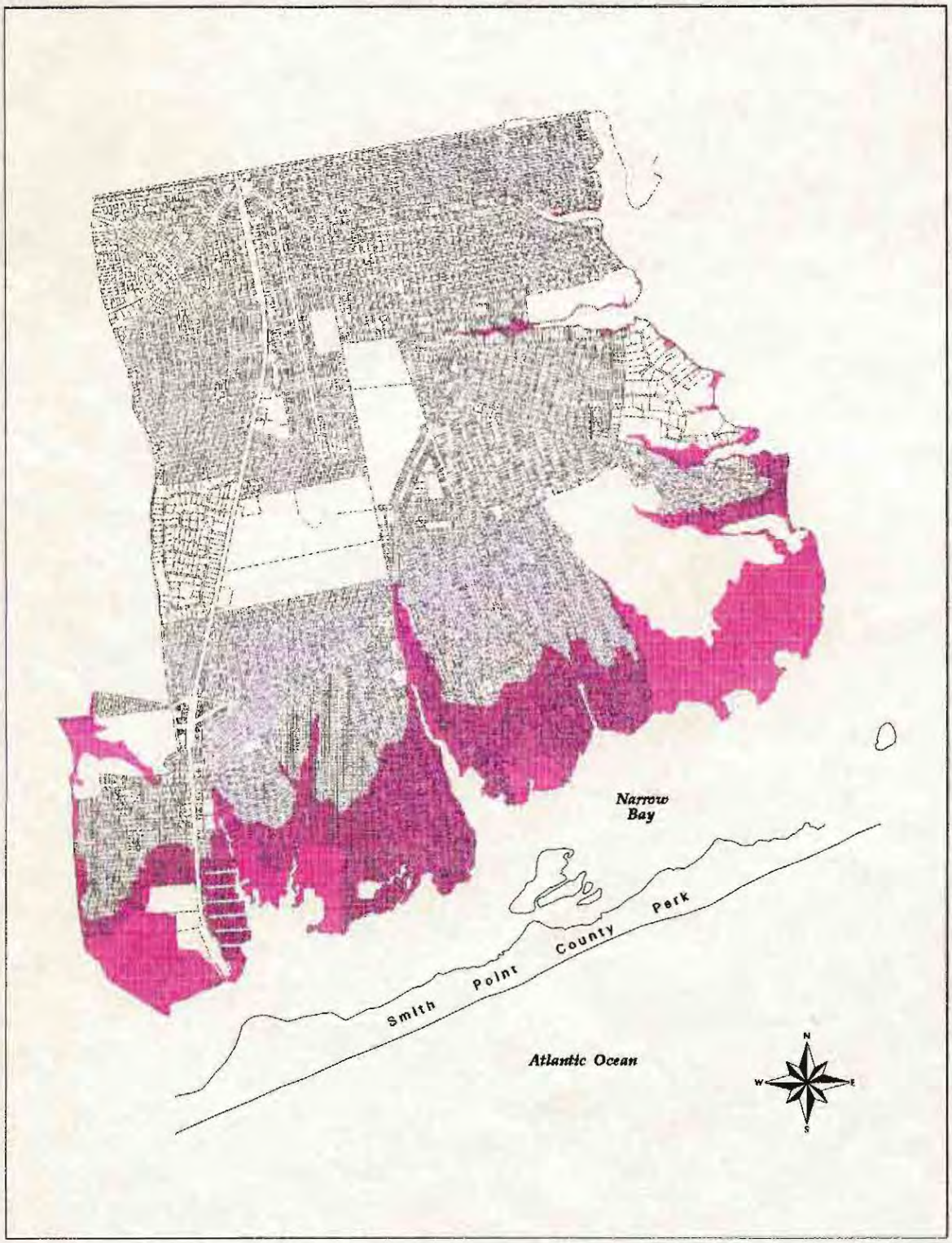

AREA WITH LESS THAN 5 FEET DEPTH TO GROUNDWATER

Town of Brookhaven
Suffolk County, New York

...LEGEND...

Less than 5 feet Depth to Groundwater

Scale: 1 inch = 4,303 feet

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LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
Cartographic & GIS Division

November, 1995

NARROW BAY FLOODPLAIN PROTECTION AND HAZARD MITIGATION PLAN

RECOMMENDATIONS

Town of Brookhaven
Suffolk County, New York

...LEGEND...

- Conservation Area Boundary
- Coastal Environmental Hazard Area Boundary
- Suffolk County Properties within the Conservation Area
- Suffolk County Properties within the Coastal Environmental Hazard Area, Outside of the Conservation Area
- Suffolk County Properties within the Relocation Area

Scale: 1 inch = 4,303 feet

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LOCATION MAP

SUFFOLK COUNTY
Planning Department

Stephen Jones Director
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November, 1995