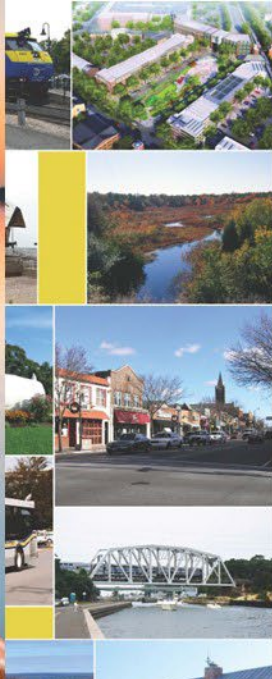




SUFFOLK COUNTY BLUEWAY TRAIL PLAN



Appendix

B

FRAMEWORK FOR THE FUTURE

SUFFOLK COUNTY Comprehensive Master Plan 2035

Suffolk County Executive
Hon. Steven Bellone

Suffolk County Department of Economic Development and Planning
100 Veterans Memorial Highway
P.O. Box 6100
Hauppauge, NY 11788-0099

2015

Adopted by Res. No. 659-2015

Prepared for:



SUFFOLK COUNTY HIKE AND BIKE MASTER PLAN

March 2020



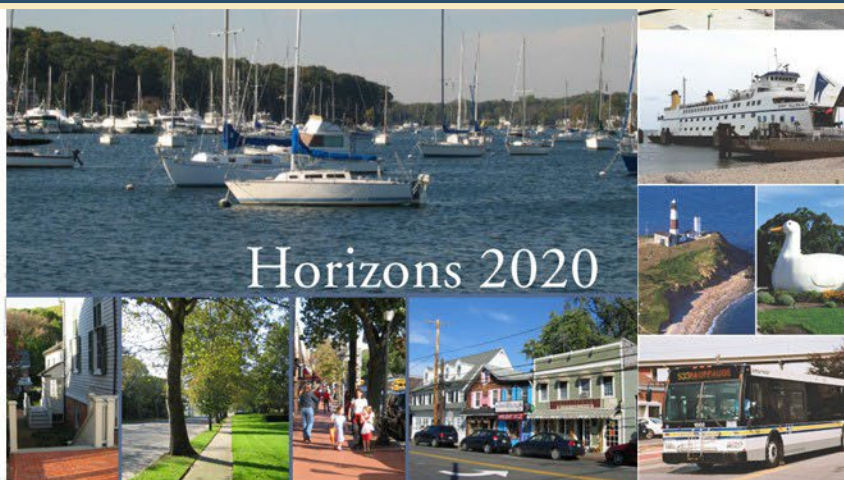
HIKE
BIKE
SUFFOLK

NPV

Previous Planning Studies



THE
COMPREHENSIVE
CONSERVATION AND
MANAGEMENT PLAN
March 1994



Horizons 2020

Comprehensive Plan Update
and Draft Generic Environmental Impact Statement
Town of Huntington, New York

July 2008 Draft



Reclaim Our Water

SUFFOLK COUNTY SUBWATERSHEDS WASTEWATER PLAN

"We are in a county that will no longer
allow our water quality crisis to go
unaddressed, but will come together
to Reclaim Our Water"

Suffolk County Executive Steve Bellone
2014 State of the County

Suffolk County
Department of Health Services
July 2020

This document was prepared with funding provided by the
New York State Department of Environmental Conservation as
part of the Long Island Nitrogen Action Plan and by New York State
Department of State under the Environmental Protection Fund.

CDM
Smith

Summaries of Existing Planning Studies

When creating a Comprehensive Plan, it is important to consider previous planning efforts by the Village, Town, and County. These earlier plans provide valuable insights into the community's historical context, existing infrastructure, and long-term goals. By building on past efforts, the Plan can ensure continuity and coherence in development strategies, avoid redundant work, and address any unresolved issues. Additionally, incorporating previous plans fosters collaboration and alignment among different levels of government, leading to more effective and sustainable outcomes for the community.

This Appendix provides a comprehensive overview of various planning efforts and studies that have been undertaken to enhance the infrastructure, environmental sustainability, and overall quality of life in Suffolk County, the Town of Huntington and the Village of Northport. The plans summarized in this document include:

- Suffolk County Blueway Trail Plan
- Long Island Sound Comprehensive Conservation and Management Plan
- Suffolk County Subwatersheds Wastewater Plan
- Suffolk County Hike and Bike Master Plan
- Framework for the Future - Suffolk County Comprehensive Master Plan 2035
- Town of Huntington Horizons 2020 Comprehensive Plan Update

- Dredging Assessment Report Lower Northport Harbor Channel
- Village of Northport Subwatershed Assessment

Suffolk County Blueway Trail Plan - The Suffolk County Blueway Trail Plan, completed in 2021, was developed by Suffolk County utilizing grant funding from NYSDOS under the State's Environmental Protection Fund program. The plan emphasizes the importance of Suffolk County's surface water bodies, which support ecosystems, recreational activities, and economic development. The Blueway Plan seeks to create a route for non-motorized boating along waterways throughout the County in order to combine recreation and environmental awareness with economic development, tourism, and land-based attractions. The plan outlines the basic requirements for a Blueway Trail, including shorefront locations for boat launching, scenic resources, and supporting infrastructure such as parking, restrooms, and signage. An inventory of over 250 potential launch sites was compiled with public input, and 20 priority sites were selected based on factors including public ownership, presence of restrooms, and proximity to commercial facilities. Project specific sheets were developed for each of the 20 sites based on ideas from the public, Blueway Planning Advisory Committee, and the County to model potential improvements. The Plan outlines the steps for implementing the recommended improvements, including final engineering design, environmental review and permitting, and construction. Additional elements like intermunicipal agreements, public education, and public outreach are also discussed.

The Plan identifies Northport Harbor as a recommended priority project, located in the heart of downtown at the terminus of Main

Village of Northport

2026 Draft Comprehensive Plan

Street. The site is currently improved with fixed docks, floats, and a boat mooring field, and is adjacent to an active Village Park equipped with bathrooms, a bandstand, a playground, and grass area. Public parking for the site is available on the street and in an adjacent parking lot. Proposed improvements to the site include Blueway signage, kayak storage racks, and an ADA accessible kayak launch to be connected to the existing floating docks.

The Northport Harbor site provides an opportunity to expand non-motorized boating and paddling activities at an existing site within walking distance of downtown while allowing for a means of recreation and a way to admire the scenic waterfront of Northport Harbor. Additionally, expanding the paddling participant base presents an opportunity for economic development in the Village, bringing more visitors to Northport. Paddlers can enjoy the restaurants, shopping, and theater which are all walking distance from the harbor.

Potential sources of funding for listed improvements include grants available through the NYS Consolidated Funding Application, as well as Federal, local, and private grants such as REI Environmental Grant. Funding through public-private partnerships, sponsorships, adopt-a-trail programs, and partnerships with volunteer groups can also be explored in order to aid in financial support for the project. Short-term improvements recommended in the plan include a directional sign, kiosk sign, and landing sign which all have a cost estimate of under \$1,000. Medium-term improvements which consist of kayak storage racks have a cost estimate of \$4,000 dollars, and the long-term improvement of an ADA kayak launch has a cost estimate of \$30,000 dollars.

Appendix B Summaries of Existing Planning Studies



Inserts from Suffolk County Blueway Trail
Plan

Long Island Sound Comprehensive Conservation and Management Plan

-The Long Island Sound Comprehensive Conservation and Management Plan was completed in 1994 with the purpose of protecting and improving the health of the Long Island Sound while ensuring compatible human uses within the Sound ecosystem. The plan identifies six problem areas that require specific attention which include: low dissolved oxygen (hypoxia), toxic substances, pathogen contamination, floatable debris, habitat degradation and loss of living resources, and land use and development resulting in the degradation of water quality.

The Long Island Sound is an estuary that provides habitat to a multitude of diverse plant and animal species and adds unique recreational and commercial value to the region. The Sound lies in the middle of the most densely populated area in the United States and is also a highly visited recreation area. Millions of dollars are generated annually for the regional economy from boating, fishing, beachgoing, swimming, as well as cargo shipping, ferry transportation, and power generation. The Long Island Sound is one of the most important estuaries in the nation and the ability of the Sound to support these various uses is dependent on the quality of its waters, living resources, and habitats.

One of the most significant threats the Sound faces is low levels of dissolved oxygen, also known as hypoxia, which has significant adverse ecological effects such as the disappearance of plant and animal species. Excessive discharge of nitrogen is the primary cause of hypoxia which fuels the growth of planktonic algae. Of the 93,000 tons of nitrogen/year found in the Sound, 40,800 are attributed to human activity; 32,400 tons are from point sources such as sewage

treatment plants and 8,400 tons come from nonpoint sources such as agricultural and stormwater runoff.

In order to raise oxygen levels, it is necessary to reduce nitrogen discharge from point and nonpoint sources. Recommendations include implementing the best available technology to reduce nitrogen loads from sewage treatment plants, coupled with aggressive reductions of nitrogen from nonpoint sources. Pathogen management should also be accomplished by directing attention to nonpoint source runoff, sewage treatment plants and combined sewer overflow. In addition, the Plan outlines the negative effects of land development on the Sound. In order to reduce effects from existing development it is recommended to target nonpoint source management, infrastructure upgrades, and flood and erosion control. In order to protect the Sound, new development should use progressive planning and management to protect wetlands and minimize land disturbances. Land use decisions should incorporate effective water quality and habitat protection as well as natural resource conservation and open space preservation.

The Village of Northport, as part of the Long Island Sound Watershed, is important in preserving this valuable ecosystem. Management actions listed in the Plan include building community awareness and appreciation of the sound, promoting understanding, facilitating public policy, increasing cooperation, developing educational opportunities, and securing funding. In addition, the Village should implement measures aimed at decreasing nitrogen loads into the Sound, reducing pathogen contamination, and implementing best management practices in land use and development.

Suffolk County Subwatersheds Wastewater Plan - The Suffolk County Subwatersheds Wastewater Plan (“SC SWP”), updated July 2020, provides a recommended Countywide wastewater management road map targeting the reduction of nitrogen loading from wastewater sources and includes both aquifer restoration and protection objectives. Approximately 74% of Suffolk County homes are unsewered which contributes to sanitary wastewater discharge containing elevated nitrogen levels to the underlying groundwater, which provides the sole source of potable water for the County, and groundwater baseflow to the County’s surface water features. Nitrogen found in coastal receiving waters produces undesirable consequences including decreased water clarity, hypoxic episodes, harmful algal blooms (“HABs”), and the loss of aquatic and coastal vegetation. These HABs have also been a primary contributor to the destruction of the shell fishing industry and a reduction in harvest of clams and scallops. A targeted reduction in nitrogen loading will aid in the restoration of damaged ecosystems, increase biodiversity, protect human health, as well as produce economic benefits.

The Plan examines the sources of nitrogen loads in groundwater sources in all 191 subwatersheds and determined that on-site wastewater discharge accounts for the greatest amount of nitrogen load at 63.6% with the second largest contributor being fertilizer at 26.9%. Nitrogen loads calculated as lbs/day for Northport Bay and Northport Harbor are listed below. The Plan also looks at build-out nitrogen loads of each watershed with Northport Bay increasing from a total of 171.8lbs/day to 172.2lbs/day and Northport Harbor increasing from a total of 459.9lbs/day to 466.7lbs/day.

PWL ID	Subwatershed	On Site Sanitary Wastewater (lbs/day)	Fertilizer (lbs/day)	Pets (lbs/day)	Atmospheric Deposition to Subwatershed (lbs/day)	STP Discharge to GW (lbs/day)	Total Nitrogen Load from GW (lbs/day)	STP Discharge to Surface Water (lbs/day)	Atmospheric Deposition to Surface Water (lbs/day)	Total Nitrogen Load (lbs/day)
1702-0256	Northport Bay	115.3	24.1	5.7	3.7	0.0	148.8	0.0	22.98	171.8
1702-0230	Northport Harbor	345.7	63.1	17.4	12.4	1.1	439.8	10.1	4.97	454.9

Insert from SC SWP

Both Northport Harbor and Northport Bay were included in the SC SWP as Priority Rank 1 subwatersheds as seen in Figure 2-34. These areas are high priority for nitrogen reduction via wastewater management. Goals for reduction of Nitrogen loads in each subwatershed are included in the Plan. For Northport Harbor there is an overall water quality improvement goal of 72% and HAB/DP improvement goal of 44%. There is an estimated 49% achievable reduction in nitrogen load through on-site wastewater management alone.

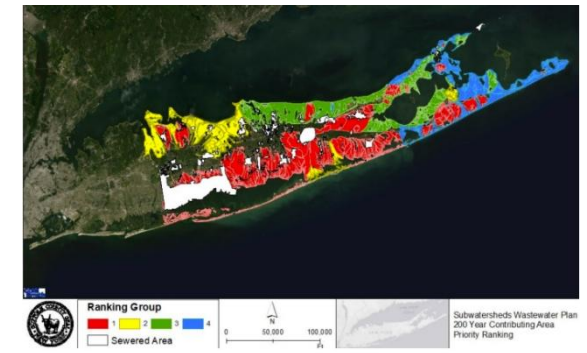


Figure 2-34 Subwatershed Priorities for Nitrogen Load Reduction

Insert from SC SWP

Two community supply wells on Church St. (Northport Village) were found to have nitrogen concentrations that exceeded 10mg/L. Drinking water criteria or MCL for nitrate is 10 mg/L and the Long Island Comprehensive Waste Treatment Management Plan (208 Study, 1978) concluded that average nitrate concentrations in groundwater would have to be less than 6 mg/L to result in compliance with the 10 mg/L MCL 90 percent of the time. Similarly,

average nitrate concentrations in groundwater would have to be less than 4 mg/L to result in 99 percent compliance with the 10 mg/L MCL. As seen in the figure, Northport has a simulated total nitrogen load of 6-10mg/L under full build out conditions.

Potential for new water mains for the Northport areas from the Pine Barrens was evaluated by the SCWA for the Comprehensive Water Resources Management Plan. For the Northport area, drilling a well into the Lloyd Aquifer would be the most cost-effective remedy to reduce nitrogen concentrations. However, as that option has been explored and rejected by

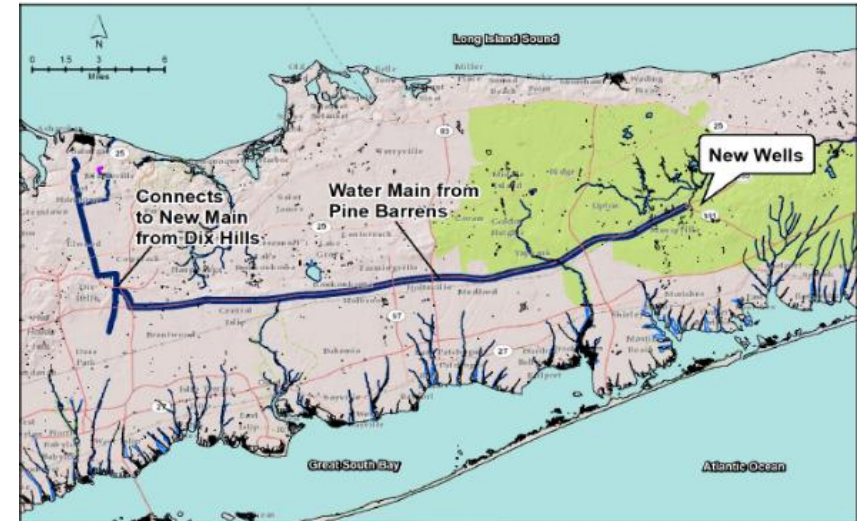


Figure 3-20 Potential New Water Mains for the Northport Area from the Pine Barrens Evaluated by SCWA for the Comprehensive Water Resources Management Plan (SCDHS, 2015).

Inserts from SC SWP

the NYSDEC, it remains infeasible at this time. In the meantime, the transmission main from the Wayne Court wellfield is recommended, assuming that the water quality from Wayne Court is suitable. Should that not be an option, the Dix Hills main should be further evaluated. While construction of the Pine Barrens main is technically feasible, it is the most costly and should be implemented as a last resort.

In addition, there is a proposed sewer expansion project in Northport as it is a high priority area within the SWP. The proposed Northport Expansion (Village of Northport; 0-2-year groundwater contributing area) would have an estimated cost of \$11 million dollars and is depicted in the image below.

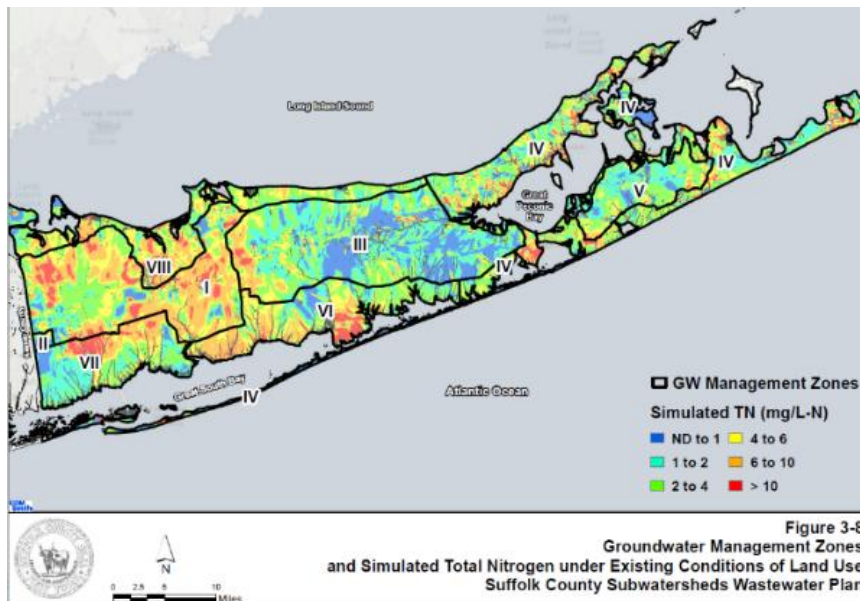
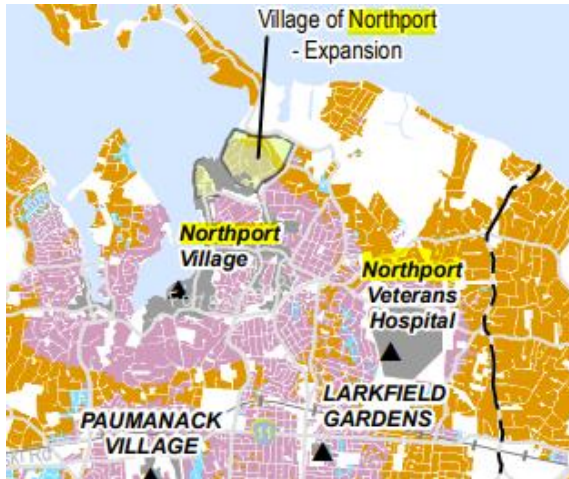


Figure 3-8 Groundwater Management Zones and Simulated Total Nitrogen under Existing Conditions of Land Use Suffolk County Subwatersheds Wastewater Plan

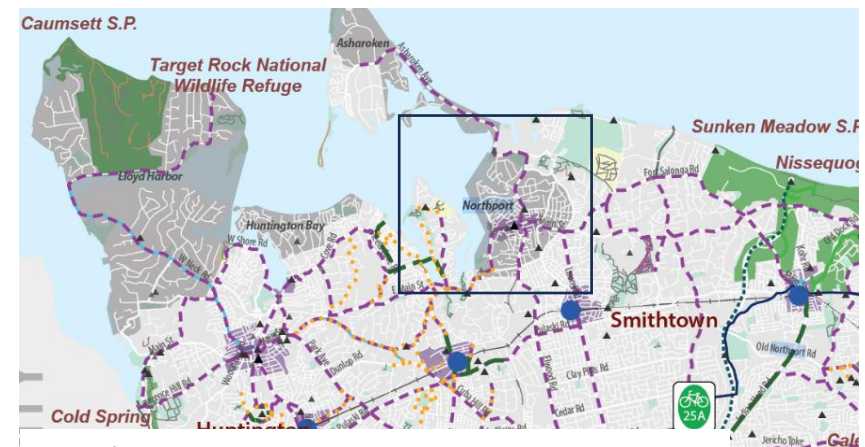


Inserts from SC SWP

Suffolk County Hike and Bike Master Plan - Suffolk County developed a comprehensive Suffolk County Hike + Bike Plan in 2022 to facilitate the development of a safe, integrated, and well-designed network of pedestrian and bicycle facilities throughout the County. The goal of this integrated Hike + Bike network is to improve the quality of life for County residents, reduce the reliance on automobiles, promote public health and boost economic activity. The Plan is intended to guide County and Town leaders and staff on how to develop and

enhance the environment for walking and cycling in order to create a safe and connected active transportation network throughout Suffolk County linking popular destinations, employment hubs, schools, transit stops and residential areas.

Suffolk County has a below average proportion of residents who walk or bike to work compared to the national average. A robust walking and biking network will encourage people to limit the number of short automobile trips as well as support healthy living and recreation.



The Plan includes provisions for signed bike routes, bike boulevards, sidewalks, buffered bike lanes, shared-use paths, and signed bike lanes with a total of about 1,200 miles of proposed walk, hike and bike facilities throughout Suffolk County.

There is currently limited existing pedestrian and bike infrastructure in the Village of Northport. The Plan recommends new bike paths through the Village as represented by the dashed purple lines in the

image below. Northport's scenic shoreline and quaint downtown provide an opportune setting for bike paths to allow residents and visitors to enjoy the Village to its fullest potential. In addition, these paths will allow bikers to access nearby downtowns and scenic areas without having to use an automobile.

Framework for the Future - Suffolk County Comprehensive Master Plan 2035 - The Suffolk County Planning Commission drafted the "Suffolk County Comprehensive Master Plan 2035" in 2015 in order to create a blueprint for the future of Suffolk County. Long-term planning goals are intended to guide activities related to growth in Suffolk County. Suffolk County's land use is largely comprised of low-density residential development with scattered single use commercial areas. This pattern of development can no longer be sustained by the network of transportation, water, and wastewater infrastructure and cannot easily accommodate further residential growth or economic development. Current development patterns are also not resilient to large scale disruptions and natural disasters such as Superstorm Sandy in 2012. Future planning in the region will require special attention to the relationship between land use, the overall economy, traffic and transportation systems, as well as natural and built resources.

Long term planning goals outlined in the Plan include (1) to provide the foundation for sustainable growth and resiliency of Suffolk County and (2) to encourage economic development that will help to retain and attract business and create jobs for Suffolk County residents. In order to attain these long-term aspirational goals, the Plan identifies six key objectives:

1. Build a 21st century transit network to provide more transportation choices to improve mobility, access, and safety.
 - Creating a fully integrated public transit system within the County is of high priority as not only would it help alleviate traffic congestion but would also help foster economic development initiatives. This initiative would be most effective if paired with a development approach that revitalizes or establishes high-density downtown areas around transit hubs and stations. Priority actions include but are not limited to, supporting LIRR improvements, creating new north-south connections to the LIRR, expanding public awareness of existing bus routes, and improving bus transit. Fostering walkable and bikeable communities is another priority action area. In order to accomplish this, the County recommends expanding bicycle and pedestrian networks and developing model design standards for Complete Streets. Suffolk County Hike Bike Master Plan lays out the County's plan to help facilitate this network of transportation.
2. Provide equitable, affordable, and fair housing.
 - The County believes there is a need for increased affordable, fair housing as the majority of available housing stock in the County consists of single-family homes. Lack of affordable housing options means some existing as well as potential residents are priced out of the market. This lack of affordable housing poses a threat to Suffolk County's continued success as a community's success relies on the availability of a diverse workforce that includes younger workers and workers with a range of skills. Changes in demographic profiles in the County have also shifted

demand away from single family homes and towards smaller, multifamily and rental units. Priority action to increase affordable housing in Suffolk County include but are not limited to coordinating efforts to provide wastewater treatment in locations suitable for a range of housing types, update zoning codes that support higher density residential uses, create expedited approval processes for affordable and accessible housing, link County infrastructure grants and incentives to local projects, and revise policies to further fair housing opportunities.

3. Enhance economic competitiveness and capacity to build an innovation economy.

- The County seeks to enhance economic competitiveness through improving access to employment centers, educational opportunities, services, and other basic worker needs, as well as expand business access to local, regional, national, and international markets. The Plan highlights the impact that tourism has on Long Island and Suffolk County specifically. Tourism on the island is a 5.1-billion-dollar industry and has fed the continued success of Suffolk County's agricultural and fishing industries. A key strategy for economic growth in this region is to produce a new generation of sustainable, well-paying jobs in these legacy sectors. Suffolk County's rural beauty attracts thousands of visitors who enjoy the beaches, fishing, boating, hiking, biking, and other recreational activities in the County. The importance of the water features within the County highlights the significance of protecting this water related natural resources from degradation. The plan lists

developing incentives to grow the tourism industry as a priority action.

- Another priority action area is building an innovation economy. However, some target industries such as agricultural, high tech/green tech, innovation, and advanced manufacturing are having difficulty in attracting and retaining employees with the needed skill set. Some contributing factors include (1) young adults leaving the county, (2) local trade schools are not producing enough graduates that can satisfy the employment demand in these job sectors, (3) lack of housing for young people needed to fill these jobs at the salaries offered. Producing an environment that will encourage young people to live in the County will increase the work pool available. One way to accomplish this goal is to revitalize the County's downtowns, increase multifamily housing, connect regional job centers, and invest in transit to link employment areas suitable for residential growth and TOD.
4. Support vibrant communities.
- Promoting a responsible and sustainable community revitalization is essential to the economic, cultural, and environmental health of Suffolk County. The Plan recommends targeted funding towards existing communities, for transit-oriented development, expanded wastewater infrastructure, and land recycling – to promote community revitalization, resiliency, and to
5. Streamline government, coordinate policies, and leverage investments.
- Coordinated planning initiatives across municipal boundaries are essential to foster a more efficient use of

resources and to mitigate the potential adverse effects of development and growth in Suffolk County. The Plan recommends the alignment of policies and funding to remove barriers to collaboration and to better enable leveraging of investment of public and private funds. A regional planning alliance would allow for different entities to effectively communicate and promote planning initiatives.

6. Protect the environment and enhance our human capital.

- Suffolk County is a region with a federally designated sole source aquifer which means the County's sole source of drinking water is from groundwater. This region also primarily relies on on-site wastewater disposal systems that discharge to groundwater. Septic and cesspool systems are especially problematic when located in areas with high water tables and in close proximity to surface water. Excess nitrogen from this sewage threatens valuable natural resources, coastal defense, and human health. When flooded or submerged in groundwater, septic systems do not function as designed and they fail to adequately treat pathogens.
- The 2015 Suffolk County Comprehensive Water Resources Management (CWRM) Plan discusses the pollution of our ground and surface waters which has led to degradation of these vital resources. The health and success of a community depends upon the quality of their water. The CWRM discusses the pollution of both our drinking water and coastal waters in Suffolk County. Not only does the degradation of our water resource have negative health

effects but also leaves our shores more vulnerable to future storms.

- Nitrogen primarily from on-site disposal systems is the primary contributor to the degradation of our drinking and coastal waters. Nitrogen creates harmful algal blooms, spurs hypoxia, and damages native species and wetlands. Other factors contributing to groundwater quality include volatile organic chemicals (VOCs), pesticides, pharmaceuticals, and personal care products. Many Suffolk County community wells are vulnerable to nitrate contamination and nearly 70% of the wells are rated as high or very high for contamination by VOCs.
- Priority actions include creating and or expanding sewer districts for existing communities and upgrading current wastewater infrastructure to improve coastal resiliency, water quality, and targeted economic development. Nitrogen and other contaminants reduction goals should be established and develop new standards for innovative alternative septic systems with a corresponding incentive program to encourage the replacement of old cesspools and septic systems.

Town of Huntington Horizons 2020 Comprehensive Plan Update- In July 2008, the Town of Huntington prepared an updated Comprehensive Plan in order to address challenges faced in the Town and define a vision for the years beyond 2020. The plan emphasizes the importance of maintaining the high quality of life and community character in Huntington. It outlines the challenges of preserving open space, managing growth, and enhancing community facilities. The vision statement reflects the values and aspirations of Huntington's

citizens. It emphasizes community character, quality of life, sustainable community structure, and responsive town government. Key initiatives include traffic circulation, open space preservation, housing, development quality, commercial corridors, and sustainable Huntington.

Environmental Resources and Open Space - This chapter focuses on protecting Huntington's environmental resources and natural systems, preserving open space and greenways, and providing excellent parks and recreation facilities. It includes strategies for improving regulatory protection, managing stormwater, and promoting sustainable practices.

Community Character - The plan aims to maintain and promote Huntington's historic resources, heritage, and cultural arts. It also seeks to preserve and enhance the town's visual character and community appearance through design standards, public improvements, and community beautification efforts.

Community Facilities - This section addresses the need for cost-effective community facilities and services, including schools, libraries, fire protection, police protection, health care, and municipal facilities. It emphasizes the importance of planning for future needs and promoting cooperation among service providers.

Land Use - The land use chapter outlines strategies for managing development and redevelopment to protect valued land use patterns and maintain or improve the character of areas experiencing change. It includes recommendations for updating zoning regulations, promoting mixed-use development, and preserving industrial land.

Economic Development - The plan promotes a healthy, diversified, and sustainable economy that provides a strong tax base, needed goods and services, and employment opportunities. It includes strategies for maintaining a strong office and industrial employment base, supporting retail development, and addressing cost of living factors.

Transportation - This chapter focuses on providing a safe, efficient, multi-modal transportation system that offers residents convenient choices for accessing destinations. It includes strategies for improving roadway efficiency, enhancing public transportation, and promoting walking and bicycling.

Housing - The housing section aims to provide a variety of housing choices that are suitable and affordable for Huntington's diverse households. It includes strategies for eliminating substandard housing, promoting workforce housing, and addressing the needs of low-income and special needs populations.

Geographic Focal Areas - The plan identifies specific areas within Huntington that have the greatest potential for change, including hamlet centers, commercial corridors, and the Melville Employment Center. It provides detailed recommendations for managing growth and improving these areas.

Implementation - The final chapter outlines a program for implementing the plan's policies and strategies. It includes principles for ensuring consistency with the comprehensive plan, an action plan with short-term, mid-term, long-term, and ongoing actions, and a protocol for monitoring progress and updating the plan.

Dredging Assessment Report Lower Northport Harbor Channel – The Town of Huntington conducted a dredging assessment report for the lower/south channel of Northport Harbor. The study aims at assessing the feasibility and methods for dredging the lower/south channel of Northport Harbor. The report outlines the need for dredging the lower Northport Harbor channel to maintain navigational access. It includes a hydrographic survey to determine existing water depths and the volume of dredged material at varying depths below mean low water (MLW). The report also involves sediment sampling to determine the chemical and physical properties of bottom sediments and examines methods and feasibility of dredging, dewatering, and disposal of dredged material.

Northport Harbor is an important recreational boating area and an environmental resource. The harbor features recreational boating facilities including marinas, mooring areas, yacht clubs and docking facilities. Maintaining a navigational channel is important to the economic health and recreational value of Northport Harbor. The south channel specifically is important for access to Scudder Park and boat launch facilities at this location. Britannia Marina, located in the southeast corner of the harbor, maintains over 300 boat slips as well as boat fueling, hauling, storage, repair and related marine services in their yachting center. Navigational access for use of this facility is critically important for the economic vitality of the area and support of maritime recreational opportunities. There are also private docks throughout the south part of Northport Harbor as well as Bird Island moorings. As a result, maintaining the south channel is important for multiple users that rely on navigational access to Northport Harbor.

Northport Harbor was last dredged in 1963 and dredged material was used to create Bird Island with some material deposited south of the harbor in an area owned by the Town of Huntington identified as Phragmites Park. Given the constrained depths in the south channel, there has been extensive interest in determining the quality and quantity of sediments in order to work toward a project to dredge this channel to allow for boat navigation in lower Northport Harbor.

The projects as envisioned utilizes the channel width and alignment that is currently in use. The existing channel is marked with buoys and has a width of 100 feet and a straighter alignment than the historic surveys. As a result, the project descriptions outlined in this report all consider a dredging project of approximately 22,000 CY to a depth of -7 feet mlw, for a 100-foot width. The “natural” channel alignment that exists currently which connects the Britannia spur to the south with the Federal channel to the north. A dredged material screening report was prepared in order to characterize the physical properties of channel bottom sediments. A sieve analysis found that the material generally consists of gravel, very coarse to medium sand with fine sand to silt/clay. Chemical analysis was completed since the material did not meet the 90% sand threshold and the Total Organic Carbon (TOC) content exceeded the 0.5% threshold per NYSDEC as reported in the Dredged Material Sampling Report. This sampling and analysis program was focused on chemical quality of sediments for potential removal/disposal and was designed as a screening study to initially determine the composition of the material. Further sampling pursuant to a NYSDEC approved work plan will be needed for permitting and material disposal.

Three types of dredging projects were analyzed and appear to have a high level of feasibility: 1) Mechanical Dredging; 2) Traditional Hydraulic Dredging/Dewatering; and, 3) Hydraulic Dredging with Belt Press Dewatering. Each project was evaluated for implementation and potential impacts were identified as well as anticipated SEQRA processing and permitting. More specifically, preliminary listing and assessment of environmental impacts for each form of dredging project were provided and steps in the permitting and implementation process were outlined in this report.

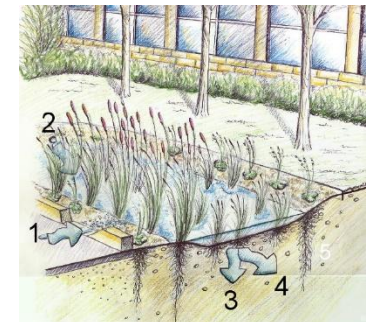
Dredging the channel to -7 feet at mlw to a width of 100-feet will improve navigation dramatically over current conditions, will allow vessels with drafts up to 6 feet to navigate the channel at low water, and will provide a great benefit for the recreational use of lower Northport Harbor as compared to current conditions and the conditions that have persisted for many years due to the inability to implement a dredging project. Anticipated cost ranges for each type of dredging project are provided. Costs are based on the recommended channel depth and width and include connection to the Federal channel to the north and dredging of the Britannia spur to allow access to the Britannia marina.

Village of Northport Subwatershed Assessment – In 2017, Nelson Pope and Voorhis conducted a subwatershed assessment for the Village of Northport to identify areas contributing the highest volumes of stormwater and significant pollutant levels to the Harbor. The study also aimed to propose feasible drainage improvements across the Village. Both water quality and quantity are pressing concerns for the Village, with particular emphasis on Main Street, which experiences substantial flooding during rain events.

Implementing measures to collect and redirect water before it reaches Main Street would greatly mitigate flooding issues.

The study examined potential sites for stormwater infrastructure, focusing on Village property or rights of way (ROW) to identify opportunities for water quality improvement projects that could also reduce stormwater volume.

Raingardens are a method used to manage rainwater runoff. They are typically shallow, low-lying areas in the landscape that collect rainwater from roofs, driveways, and streets, allowing it to soak into the ground. These gardens are planted with native grasses, shrubs, and flowering perennials, which help to filter and clean the water as it moves through the soil.



Native plants possess deep root systems that play a crucial role in filtering and purifying rainwater runoff. This process effectively removes pollutants, such as oils, heavy metals, and fertilizers, which might otherwise contaminate water sources. Furthermore, the deep roots of native plants contribute to soil stabilization, thereby preventing erosion. By absorbing and directing water deeper into the ground, native plants help reduce surface runoff and mitigate flooding, which also benefits local groundwater systems. Additionally, native plants provide essential habitat and food for local wildlife, including birds, bees, butterflies, and other insects, thus supporting and enhancing biodiversity in the region. Because native plants are adapted to the local climate and soil conditions, native plants are

more resilient and require less maintenance compared to non-native species.

A watershed is an area of land that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean. Subwatersheds are smaller areas within this larger watershed that drain into smaller streams or tributaries, which then flow into the main water body. In the Village of Northport, subwatersheds 1 and 2 (highlighted in purple in the image to the right) drain into Northport Bay. Subwatershed 4 (highlighted in blue) drains to crab meadow, and all other subwatersheds drain into Northport Harbor. Subwatershed 6 and 10 collect stormwater that drains down Main Street. The study focused on potential raingarden locations primarily in subwatershed 10 and 6 as flooding on Main Street is a primary concern for the Village.

The Village has already taken action in implementing proposed raingardens throughout the Village. A conceptual design has been

developed for the grassy island located in front of the Brosnan School building. Rain garden designs have also been developed along Valley Avenue as well as behind the First Presbyterian Church at the intersection of Church Street and Main Street. Additionally, the Village has already installed rain gardens at the James Street Island. The Village is continuing to pursue additional opportunities for design and installation of rain gardens throughout the Village.

