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Findings:

- Shelter Island's Aquifer can supply the quantity of water needed, but  quality of that water varies, and depending on locations so does the quantity, It is also threatened by nitrate contamination from septic systems, saltwater intrusion, and other pollutants.
- The Island retains ecological resources of statewide importance in Mashomack Preserve and other areas.
- Resilience will demand attention to climate change and its impact on the Island. Low-lying areas of the island are subject to flooding, but over the near-term, impacts will remain focused on waterfront facilities, roads and natural areas along the coast.
-  proliferation of ticks and various tick-borne illnesses pose significant health risks to all residing on and visiting the island
- Proliferation of deer also pose a hazard to visitors and vehicles
- Widespread spraying for ticks and mosquitos poses a threat to the health of the island and its habitats

Challenges:

- The decentralized nature of both the Island's water supply and wastewater treatment make solutions challenging— protecting the town's water supply will require continual, diligent action at all levels.
- The recreational and developmental demand on natural areas needs to be balanced with protection of sensitive resources.
- Climate change will see rising temperatures and more frequent droughts, and an increase in the number and severity of storms and flooding.
- Sea level rise will increase coastal flooding that will impact waterfront facilities and properties and change the ecological function and visual character of coastal marshes and mudflats.
- Sea level rise will continue, and it will exacerbate saltwater intrusion into the aquifer in low-lying coastal areas of the island
- More stringent requirements set by NYS have made controlled burns to combat ticks and invasive plant species nearly impossible. Current methods have been costly and largely ineffective to date.

Goals & Objectives:



1. All wastewater from traditional septic systems effluent on Shelter Island will be upgraded to nitrogen reducing septic systems that discharge wastewater into the aquifer at a maximum of 19 mg/L of nitrates.
2. Ensure that all Shelter Island residents have ready access to drinking water that meets all applicable local state and federal standards.
3. Protect and monitor the upper glacial aquifers quality and quantity to support the drinking water needs of the Island residents without the need for “off island” water.
4. Protect surface waters surrounding Shelter Island from being negatively impacted by human activity

5. Reduce the population of ticks and other invasive species to the maximum extent possible in order to promote a safe and healthy environment. Promote habitat preservation and restoration so that Islanders and visitors can enjoy a healthy ecosystem as once existed on the Island.

Action Items:



Ground Water Action Items:

1. Continue to monitor water table levels and implement water use restrictions as indicated in the drought monitoring criteria established by the Water Advisory Committee
2. Revise the irrigation law to prohibit well drawn irrigation in the near shore overlay.
3. Develop policy or code to determine the appropriate regulations for irrigated tennis courts
4. Partner with the Shelter Island Heights Property Owners Corporation to upgrade the existing sewer plant in the Heights and explore alternative methods of disposing of the treated effluent.
5. Develop education, funding, and support for water conservation programs
6. Include Suffolk County Local Law No. 41-2007 “A Local Law to reduce Nitrogen pollution by Reducing Use of Fertilizer in Suffolk County” in our Town Code. Provide Town oversight/enforcement of Suffolk County ban on the application of fertilizer between November 1st and April 1st
7. Explore the fertilizer regulations of other coastal and island communities and adopt the most appropriate policy and practice for Shelter Island.
8. Educate on and encourage the proper use and disposal of lawn and other household chemicals

- a. Reduce the discharge of volatile organic compounds and other regulated and unregulated contaminants to groundwater through education and Town Code modification.
 - b. **Develop a centralized inventory of environmental information..... (look up 2008 recommendation)(GIS?)** Initiate a study to list endangered, rare or Island unique plant and animal species on one Town list.
 - c. 2. Conduct basic environmental assessments of at least the more prominent habitats (e.g., Fresh Pond) to provide a scientific baseline for future reference; and monitor periodically. (Lily is this what you were referring to?)
 - d.
 - e. Advertise and make readily available the homeowners guide
9. Revisit the requirement of permeable surface driveways in the nearshore overlay because people are more likely to use pesticide and weed killer on them. Consider allowing hard surface driveways with mandatory water capture and recharge via, trench drains and drywells, redirection into rain gardens and swales or other forms of water collection and recharge.
- 10. Issue regulations requiring the abandonment or removal of underground fuel oil storage tanks upon property transfer, with a voluntary compliance period of 2 years for tanks in water protection zones and 5 years for all other areas from the date the requirement takes effect. (Ref: Town Code Chapter 43-10.3) 43-10.3 Underground oil tanks.**
11. [Added 8-31-2012 by L.L. No. 4-2012]
12. Prior to issuance of a building permit for reconstruction (as defined in Chapter [129](#)), the applicant shall remove or abandon any underground oil tanks on the property pursuant to New York Fire Code 3404.2.13 and 3404.2.14, and replace with an aboveground tank which meets current building and health codes.
13. Coordinate with CPF and local landscape and lawn care businesses to convert one of the Town owned properties to an “environmental education center” with areas showing best environmental practices for landscaping, yard care and a section promoting plantings for pollinators to include natural water recharge options such as rain gardens and swales. This similar concept is proposed by CPF for implementation at West neck preserve.

Drinking Water Action Items:

14. Characterize (through sampling and analysis) and model of aquifer quality (ex: Nitrates, Chlorides, PFOA/PFOS) to identify and prioritize the need for remediation of contaminants.
15. Develop an incentive program for residents to test their well water and share the data with the Town for the purpose of establishing groundwater quality mapping.
16. Begin discussion with public water suppliers to understand the engineering and financial aspects of developing limited scope public water supply and distribution system(s) to provide drinking water to areas currently unable to reliably source potable water from residential wells (“currently challenged areas”).
17. Upon public request investigate installing public water supply and distribution system(s) to supply the challenged area
18. Develop wellhead protection zoning for the area of recharge for the wells of each of the public water systems. (The SCDoH require public supply wells (for Dering Harbor, West Neck Water and SI Heights) to have a 200' sanitary radius of property owned by the water supplier. Due to the high density of houses and development in those areas, it is increasingly more difficult to maintain that minimum sanitary radius.)
 - a. Enter the location of existing supply wells into the Town's GIS data base.
 - b. An inventory of existing well sites and pumping capacity should be maintained (also on GIS) to determine the adequacy of current supply and forecast future needs.
 - c. Properties that have the ability to maintain the minimum sanitary radius should be cataloged and, if not, given priority for grant funding to upgrade their sanitary system to a nitrogen reducing system or given priority status for purchase if undeveloped.

Surface Water Action Items:

19. Develop a monitoring program (or participate in existing programs) for surface waters contained within and surrounding Shelter Island in conjunction with local agencies. With the purpose of developing a database of local surface water quality information that can be used to trend pollutant levels, assist in the groundwater modeling and management efforts, and assist with shellfish management and aquaculture activities.

20. Collect annual data from the commercial bay men about the quality and quantity of their catch to help monitor the health of our waterways, shellfish, and marine life.

21. Continue to improve control of storm water runoff to reduce contamination of ground and surface waters by providing upland storm water catchment, detention and recharge prior to storm water reaching surface water bodies.

- a. CPF should target kettle holes and catchment areas for recharge and water filtration.

22. Town Wetlands z31 & Z32 (from 2008 Comp Plan)

- a. **Identify** of all SI wetlands and the 75 and 100 setback lines on GIS maps. A Town Wetland map should be produced as not all Town wetlands are included on the DEC wetlands maps.
- b. MS4 should provide for continued run off protection of wetlands.
- c. 3. Consideration should be given to establishing a policy which encourages the removal of inland water bulkheads to allow for the reestablishment of beach and wetlands in circumstances where no structures are endangered.
- d. 4. **(Town has no jurisdiction over pesticide use, that is strictly regulated by NYS DEC)**
- e. 5. The criteria for and process of granting variances on small lots where road and wetland setbacks are requested needs to be reviewed, as the continued granting will of such variances will erode the wetlands code as the Island approaches full build-out.
6. In cases where both a lot line set back and a wetland variance/permit is required the current sequence of application needs to be reviewed, as the decision on such cases should involve all setback issues and not be separated into two processes. As there are over 100 parcels where these issues could arise, the criteria for variance granting /permitting and cross relationships needs to be reviewed and determined. Ultimately, the impacts of any such development arising from a variance/permit on the immediate neighborhood and the entire community be it direct or by means of precedence should be considered against the

goals of the Comprehensive Plan versus to rights of the individual property owner be 24 granted variance due to hardship not of his own making. eg. If one purchases a property lot knowing it will require variances/special permits to build the house of one's choice with significant negative impacts, the assumption should be made that the hardship is self-imposed.

- f. 7. Reconsider the sequence of application with the Town/NYS DEC and others, giving the Town the first review, which approval can be contingent on approvals from other required authorities. In our view, following this sequence encourages home rule, reduces the probability of applicants being confused about Town code versus the DEC/ ACoE process and using DEC/ ACoE approval as a wedge to overcome Town positions. .
- g. 8. The Town adopt a policy of using an outside consultant to mark wetland boundaries or check if a question arises of the boundaries shown by the applicant, the cost being for the applicant. The criteria for location, size, materials, and possibility of docks/bulkheads should be part of the wetlands review process. 3. An appointment of a part-time Environmental enforcement officer should be considered.

(Z-32- (2008)) Geothermal- Mechanisms need to be established for the collection of well construction data on existing geothermal systems, including but not limited to: total depth and estimated range of thickness, yield, drawdown, soil strata, salt water interface.

2. Depending of the analysis of data collected on existing systems, a sunset provision should be considered to phase out some or all of the systems over a period of time.

23. Encourage coastal residents to create vegetative buffer zones on their properties to lessen runoff into the bays.

24. Continue to implement the Shelter Island Watershed Management Plan. May want to consider updating the plan it was completed in 2014 (posted to comp plan page as discussion document for people to review)

Wastewater Action Items:

25. All wastewater entering our aquifer should be at a max of 19mg/L of nitrates with a goal of less.

26. Continue investigating methods to treat effluents from municipal buildings in Town Center.

27. Expand the Town grant program for I/A System installation and develop a low/no interest loan program.



28. Designate “Water Protection Zones” (WPZs) where estimated effluent travel to surface water (fresh or salt) is less than 2 years (Based on 1 ft/day movement) and areas that are currently experiencing groundwater at or above 7mg/L of nitrates. (see appendix C of ground and surface water management plan)

29. Develop a regulation that requires upgrading cesspool-only waste systems to add an I/A system upon property transfer (unless determined not to be feasible by a Professional Engineer). Suggest a “Voluntary Compliance Period” of 3 years for properties in WPZs (based on the permitting and grant application process duration) and 5 years for all other areas, prior to the requirement taking effect. [See Appendix C of Ground and Surface Water Management Plan] (monitor County referendum)

30. Revisit the Towns I/A OWTS code and clarify the conditions for requiring an I/A system and develop a long-term plan that upgrades all sanitary systems over the next 10 years.

31. Action point 31 S6- capacity analysis-

Action Point 31 (S-6): Capacity analysis Rating: 3 A

Complete an analysis of the sustainable capacity of the Island and of each of its major sub-areas, taking into consideration such things as impacts upon water resources and infrastructure capacity (5. Land Use)

Observations:

1. To date, no study or analysis has been undertaken to determine sub-area capacities.

2.The studies that have been undertaken by the Suffolk County Department of Health and available data do indicate those areas where the aquifer is thin and would be at risk during periods of prolonged drought, primarily along the outlying flat areas of Silver Beach, South Menantic and Montclair, Shorewood, and the Rams. These areas include a good number of smaller lots and older smaller homes, which are potential knock-down candidates, which encourages denser development as we move closer to full build out

3.Greater development in these areas could reduce the 'greenery' of these localities increasing a 'suburban' look, counter to the goals of the Comprehensive Plan.

Recommendations:

1.Under the direction of the Water Management Committee, develop a program to expand the data base of our aquifer by:

- a.Increasing the number of test wells and/ or rotating readings to increase coverage in the sensitive areas.
- b.Subject to the disclosure policy of the SCDoH, request the SCDoH to deliver well readings from its files for Shelter Island locations in a format that assists the Town in developing aquifer data over time.
- c.If SCDoH cannot accede to this request, ask property owners to copy the WMC on any historical well core samples available from new drillings.
- d.Maintain a data base on well samples by tax map number and area(s)
- e.Check for research papers and/ or surveys in the East End towns, ex Riverhead and especially Southold, for areas with the same characteristics as our outlying areas, which might be used to support findings on Shelter Island.

2.Develop a program to limit the development of pre-existing non conforming small lots in sensitive shoreline areas via a mix of initiatives:

- a.Encouragement 'connected family' persons to merge lots using a conservation easement and income and property tax incentives
- b.Encouragement unconnected neighbors to purchase the adjacent vacant small lot, perhaps establishing a lot line change and using a conservation easement and income and property tax incentives
- c.Establish a program where the CPF can use leveraged 2% funds to purchase development rights/ conservation easements with connected families and/ or neighbors in a. and b. above.
- d.Consider a Transfer of Development Rights system with the Housing Committee to transfer development rights from small lots in the shoreline area to Hamlet areas in the center of the Island.

32.

Environment Action Items:

1. Engage NY DEC and local resources to explore establishing a controlled burning program.

Below are the consolidated comprehensive plan goals and objectives for Southold, We may want to adopt some of their ideas and format.

Water Resources

Goals

Goal 1: Conserve Water Quantity

Goal 2: Protect Groundwater Quality

Goal 3: Protect Surface Water Quality

Goal 4: Improve Watershed Management

Goal 5: Protect Freshwater and Marine Habitats

Land Resources

Goals

Goal 1: Protect Soils and Geologic Features

Goal 2: Protect Upland Habitats and Trees

Goal 3: Protect Fish and Wildlife Resources

Goal 4: Monitor and Control Nuisance Species

Goal 5: Monitor and Control Invasive Species

Goal 6: Take Action Against Climate Change by Reducing Energy Consumption

Goal 7: Adapt to the Effects of Climate Change and Rising Sea Levels

Goal 8: Protect and Improve Air Quality

Goal 9: Continue to Manage Solid Waste and Hazardous Waste

Goal 10: Reduce Light Pollution

*Each set of Goals/Objectives identifies:

➤ **Responsible Parties:**

➤ **Possible Partnerships:**

Water Resources

Goals and Objectives

Goal 1: Conserve Water Quantity

1. Consider mandatory water conservation measures for residential irrigation. (our #2)
2. Work with SCWA to implement water conservation practices and programs in their Shelter Island water districts.
3. Develop water conservation and educational demonstration sites. (our #14)
4. Support the Peconic Estuary Program initiatives for water conservation practices.
 - a. Peconic Estuary Program has initiated a Homeowner Rewards Program to provide water conservation opportunities to homeowners within the Peconic Estuary boundaries that surround the impaired water body
 - b. Suffolk County Water Authority has a similar program for people on their water systems
5. Limit the use of the sole source aquifer for filling pools.

Goal 2: Protect Groundwater Quality

1. Support the work of the Town of Shelter Island Water Advisory Committee and Conservation Advisory Committee, which focuses on and promotes the implementation of the water quality and water conservation goals and objectives of the Town.
2. Work with SCWA, SCDHS, in developing mandatory groundwater and surface water quality protection measures.
3. Develop Aquifer Protection Overlay Districts Town-wide.
 - a. Aquifer Protection Overlay Districts (APOD) approach, which would provide guidance to landowners and user groups on how to better protect groundwater. Effective management within an APOD ranges from voluntary changes in homeowner choice to application and disposal of pesticides, herbicides, or fertilizers, and use of land use controls in areas located within sensitive
 - b. groundwater recharge areas.
4. Achieve consistency in Town land use and water source protection through the re-evaluation of zoning including permitted uses in capture zones, wellheads, and surface water (Fishers Island) reservoir contributing areas.

5. Apply the most stringent pollution control measures practicable within 50-year capture zones to community supply wells (SCDHS).
6. Re-evaluate Chapter 215 Sewers and Sewage Disposal of the Southold Town Code.(Our code has been recently updated to require I/A their code hasn't been updated since 1983)
7. Evaluate and recommend Best Management Practices for proactive reduction of VOCs capable of entering groundwater and surface waters.
 - a. [VOCs are associated with myriad products such as plastics, adhesives, paints, gasoline, fumigants, refrigerants, and dry-cleaning fluids. Although only one VOC \(gasoline\) was found in Southold sampling of private wells, in 2010 SCWA testing revealed that almost 65 percent of the community supply wells in Suffolk County have susceptibility ratings of medium high, high, or very high for VOCs, while over 35 percent of the wells are rated medium or low. The most effective method for preventing VOC contamination is to prevent their use or disposal in locations where they have the ability to enter groundwater or surface waters. The reduction of use of such](#) products is voluntary, albeit necessary, to reduce the introduction of these compounds in groundwater. In surface waters, the reduction of the introduction of the compounds could result in a change of practices at marinas and waterfront uses
8. Evaluate and recommend Best Management Practices for the proactive reduction of pharmaceuticals and personal care products in groundwater and surface waters.
9. Work with regulatory agencies to reduce pesticide and herbicide use on residential properties.
10. Work with regulatory agencies and the golf course industry to reduce fertilizer, pesticide, and herbicide use in property management.
11. Continue to purchase open space to achieve groundwater and surface water resource protection.
12. Support SCWA's Groundwater Guardian Program.(we can look into this)
13. Work with regulatory agencies and institutions to reduce nitrogen and phosphorous loads to groundwater due to residential fertilizer.

14. Continue to support education programs that achieve agricultural nitrogen load reductions, to include promoting agricultural Best Management Practices, expanding Agricultural Environmental Management (AEM) strategies, and promoting organic farming, among other initiatives.

Goal 3: Protect Surface Water Quality

1. Continue to implement the goals and objectives of the LWRP, Peconic Estuary Program (PEP) CCMP and LISS to address target issues on surface water quality.
2. Continue to participate and support the Peconic Estuary Protection Committee to implement the Municipal Separate Stormwater System (MS4) Program. (we have our own MS4)
3. Increase understanding and awareness of the potential impacts of stormwater pollution and activities that contribute to water quality impairments through public education efforts
4. Minimize illicit discharges into surface waters.
5. Avoid and minimize non-point pollution of coastal waters.

Goal 4: Improve Watershed Management

1. Update and conduct a needs analysis on the recommendations made in the Mattituck Watershed Study (2009).
2. Continue to implement the Goldsmith Inlet, Hashamomuck Pond, and Jockey, Town, Goose and Richmond Creeks Watershed and Subwatershed Management Plans.
3. Develop Watershed Management Plans for all remaining watersheds.
4. Limit the potential for adverse cumulative impacts of watershed development on water quality and quantity.

- a. **Protect water quality by ensuring that proposed** expansion or intensification of existing watershed development results in: Protection of areas that provide important water quality benefits; Maintenance of natural characteristics of drainage systems, and Protection of areas particularly susceptible to erosion and sediment loss

Goal 5: Protect Freshwater and Marine Habitats

1. Identify, protect and enhance the quality of coastal habitats.
2. Protect tidal and freshwater wetland habitats.
3. Restore tidal and freshwater wetlands habitats to foster their continued existence as natural systems.
4. Promote sustainable use of marine habitats and resources in Shelter Island Town

Land Resources

Goals and Objectives

Goal 1: Protect Soils and Geologic Features

1. Protect Agricultural Soils from Conversion to Other Land Uses (doesn't really apply to us)
2. Avoid environmentally sensitive soils in the development design process. (we don't have the same frame of reference regarding soil identification on Shelter Island)
3. Continue to work with the Natural Resource Conservation Service in soil conservation practices.
4. Preserve the unique geologic features of the Town through avoidance and/or minimization of impacts from development and natural disasters.

Goal 2: Protect Upland Habitats and Trees

1. Preserve and manage the Town's grasslands, old field, and woodlands habitats to achieve the highest ecological quality and species diversity.
2. Protect and restore upland habitat ecological quality by adhering to the following measures:
 - a. Retain and add indigenous plants to maintain and restore values of upland ecological communities.
 - b. Protect existing indigenous plants from loss or disturbance to the extent practical (see Southold plan for more examples)
3. Preserve and manage trees by adopting a Tree Preservation Local Law for the purposes of protecting woodlands and individual historic, significant, and scenic trees important to the community.
4. Update the tree list in the Town Code to include native, drought-tolerant species.(CAC just updated our native plant list)

Goal 3: Protect Fish and Wildlife Resources

1. Protect and manage sustainable fisheries habitats.
2. Protect vulnerable fish, wildlife, and plant species, and rare ecological communities.
3. Protect and restore Significant Coastal Fish and Wildlife Habitats.
4. Protect and restore NYSDEC Critical Environmental Areas.

Goal 4: Monitor and Control Nuisance Species

1. Manage Whitetail Deer (*Odocoileus virginianus*) populations and work with wildlife management agencies to educate the public on the advantages and disadvantages of deer populations.
2. Work with organizations and property owners to help assess and control ticks and prevent tick-borne diseases.

Goal 5: Monitor and Control Invasive Species

1. Develop an education program prohibiting the introduction, throwing, dumping, depositing, or placing invasive species on/in Town land and waters.
2. Target the removal of invasive species from Town-owned lands to facilitate the reestablishment of indigenous community types when a known population of endangered, threatened, species of special concern, locally rare or unique native species, or ecological community is directly jeopardized.
3. Encourage Landscaping Best Management Practices to eliminate the use of invasive species.
4. Continue to educate the public about the benefits of using native species in landscaping.
5. Work with Cornell Cooperative Extension of Suffolk County and NYSDEC to provide information on how to control invasive species including Integrated Pest Management (IPM).
6. Support the Cleaner Greener New York Fighting Invasive Species initiative.
7. Educate the public and tree service companies about preventing the spread of diseases that affect native trees.

Goal 6: Take Action Against Climate Change by Reducing Energy Consumption

1. Continue to improve the energy efficiency of Town facilities and fleets.
2. Continue to improve the energy efficiency of new construction and remodeling projects.
3. Minimize reliance upon energy through design and new technologies.
4. Reduce energy consumption through improved communication and collaboration regarding energy issues.

5. Expand renewable energy opportunities that provide direct benefit to citizens, while ensuring quality of life.
6. Protect scenic, natural, and cultural resources while planning for the provision of adequate energy for the future.
7. Ensure maximum efficiency when siting major energy generating facilities.
8. Work to foster collaborative relationships with energy providers.
9. Provide information to the community regarding future energy facilities.
10. Participate in regional energy planning initiatives and programs.
11. Improve the efficiency of natural gas in new construction and remodeling projects through education on National Grid programs and incentives.

Goal 7: Adapt to the Effects of Climate Change and Rising Sea Levels

1. Develop a Coastal Resilience Plan.

Goal 8: Protect and Improve Air Quality

1. Reduce the production of greenhouse gases.
2. Control or abate existing air pollution and prevent new air pollution.

Goal 9: Continue to Manage Solid Waste and Hazardous Waste

1. Continue to manage solid waste to protect public health and control pollution. (Towns Solid Waste Management Plan)

2. Consider appointing a Town Recycling Coordinator to further increase recycling opportunities in Town.
3. Continue to implement diversified recycling programs.
4. Plan for proper and effective construction debris disposal prior to undertaking major development or activities generating solid waste.
5. Develop an Emergency Waste Disposal Plan to plan for the collection, storage, and disposal of debris and materials from natural disasters.
6. Continue to operate solid waste management facilities to prevent or reduce water, air, and noise pollution and other conditions harmful to the public health.
7. Ensure maximum public safety through continued management of household and industrial hazardous waste collection, storage, and disposal.
8. Remediate inactive hazardous waste disposal sites. (We did this with capping the Landfill)
9. Prevent and remediate discharge of petroleum products (waste oil) by following methods approved for handling and storage of petroleum products and using approved design and maintenance principles for storage facilities.
10. Transport solid waste and hazardous substances and waste in a manner that protects the safety, well-being, and general welfare of the public, the environmental resources of the state, and the continued use of transportation facilities.
11. Site solid and hazardous waste facilities to avoid potential degradation of coastal resources.

Goal 10: Reduce Light Pollution

1. Revise Town Code to address LED technology.

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