



ISLAND SUSTAINABILITY - Update

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10 Year Financial Plan



ISLAND SUSTAINABILITY

- ***“Four Legs” of the Stool***
 - Water Supply/Conservation
 - Beach Maintenance and Restoration
 - Bay Dredging
 - Flood Management
- All of the legs rest on a foundation of a strategic and long term financial plan – 10 years





ISLAND SUSTAINABILITY

- In 2015 SHPOA prepared a work plan for working in partnership with Borough to develop plans for each of the four legs
- Plan called for a strategic approach for each of the “four legs” based on:
 - Monitoring what was happening/identify the problem
 - Developing operation and maintenance activities for annual actions
 - Identifying capital assets that are required – new facilities
 - Set aside the necessary funding for O&M and capital improvements in a 10 year financial plan





CHALLENGES TO ISLAND SUSTAINABILITY

- Stone Harbor is a barrier island
 - Purpose was to protect the coast, not intended to be a permanent land mass
- Seven Mile Island now has \$12.5B in assets
 1. Oceans Rising
 2. Beach Erosion
 3. Volatile Weather Patterns
 4. Land Subsidence (Island is sinking)
 - > Occurs when large amounts of groundwater have been excessively withdrawn from an aquifer.





CHALLENGES TO SUSTAINABILITY

- **Beaches:**
 - Oceans Rising – rate of rising 3-4 times higher on northeastern coast
 - Loss of Sand
 - > 200,000 – 500,000 cubic yards/year
 - > Sandy took 600,000 cubic yards/away/storm
- **Volatile Weather Patterns**
 - 3 of most severe storms in last 25 years occurred in last 5 years
 - Winds, tides, Nor-Easters, hurricanes
- **Stone Harbor's Main Defense from External Flooding are the Dunes and Beach Profile Maintenance and Bulkhead raising.**
 - Requires Annual Beach Sand Relocation
 - > 60,000 – 100,000 cubic yards
 - Beach Rebuilding Every 2-3 Years
 - > 500,000 – 700,000 cubic yards
 - Annual Funding of \$750,000 - \$1.0 million





BEACH PLAN

- Stone Harbor has Stockton U/CRC monitor beach profile and report regularly on sand loss.
- Work with Corps and NJ DEP to schedule beach rebuilding every 3 years.
 - \$6 – 8 million in outside funding.
- Annual maintenance program to reallocate sand as needed.
- Establish reserve
 - Deposit \$750,000- \$1 million/year for beach maintenance and re-nourishment of sand.
- Work to re-open Hereford Inlet as a source of sand under federal actions.





BAY AND BASIN DREDGING

- Stone Harbor has Stockton U/CRC monitor bay channels and report regularly on sediment infill.
- Bay channels provide critical function for SH tidal draining, storm drainage, marsh ecosystem, recreation.
- Keeping channels dredged on a regular cycle – every 3 to 5 years
 - Keeps basins from filling and channels functioning properly.
- Removal of 30,000 cubic yard of dredged material every 3 – 5 years allows use of regional disposal facilities
 - May reduce frequency of dredging for basins and reduce costs.





BAY AND BASIN DREDGING PLAN

- Stone Harbor has Stockton U/CRC monitoring channels and basins for rate of sediment infilling.
- Use the data to develop a regular routine dredging program.
- Goal of program is to keep dredged quantities manageable
 - Hopefully reduce quantities of sediment that flow into basins, reduce costs.
- Establish financial reserve that SH deposits \$500,000 - \$750,000/year to accumulate funds for regular scheduled dredging.





FLOOD MANAGEMENT PROGRAM

- As Stone Harbor has continued to redevelop, more storm runoff is contributed to streets and storm drain system.
- Volatile weather patterns create more severe storms
 - Rising sea levels limit draining the Island by gravity under certain tidal conditions.
- Bayside bulkheads have ***not*** been raised to 1988 standard of 6.2 feet to meet current bay water levels and tidal elevations, private and public.
- Storm drain systems have ***not*** been upgraded to meet increased runoff flows..
- Gravity drainage of Stone Harbor may ***not*** be a reality for future.
- SHPOA/Borough have jointly funded installation of flow monitors which record causes of flooding in most affected areas.
 - SHPOA POY 2017 program needs to continue after first 14 month funding ends.





FLOOD MANAGEMENT PROGRAM

- A 25 year look at:
 - Storm drain system – Age 50 – 60 years old capacity of pipe
 - > New design and construction- \$15 million expense.
 - Bulkheads
 - > SH has a new elevation standard and a new ordinance aimed at fixing critical low bulkheads causing most flooding and long term raising of all bulkheads from the current 6 foot standard to 8 feet. \$20 million public/private expense.
 - Pumping the storm water off the Island
 - > first new pump station \$4.0 million will be under construction this year.
 - > How many more are needed will be in plan. \$10 – 15 million expense annual O&M expense \$500,000/year.
 - Ordinance changes to limit storm water discharged from property
 - > Need for percolation basins, storm water holding sumps, drainage swells and rain gardens
 - > Goal is to reduce and change timing for storm runoff. Higher standard for permeable areas – ***ISLAND IS 17% PERMEABLE***





WATER SUPPLY AND CONSERVATION

- SHPOA prepared a “white paper” to educate the homeowners and Borough officials
 - Where our water supply comes from,
 - What are potential issues/problems
 - How is conservation working
 - What are future actions we all need to take.
- Northeast part of U.S. is sinking – called “land subsidence”
 - Cause is twofold
 - > Prehistoric glaciers impact on land
 - > Mining of groundwater.

NJ gets 70% of its water supply from groundwater

Stone Harbor 100%.





WATER SUPPLY AND CONSERVATION

- Majority of water used is for outside lawn and plant irrigation and other non-native landscaping
 - ***Not*** consistent with water conservation.
- Groundwater level in AC 800, Stone Harbors water supply, is depressed and gets further depressed in summer.
 - 8 – 15 feet of drawdown.
- Depressed groundwater levels contribute to
 - Land subsidence
 - Sea water intrusion into the groundwater.





WATER SUPPLY AND CONSERVATION

- 2016 SHPOA Project of the Year
 - Replaced and planted native plants and an improved irrigation system at the Borough water tower pump station site at 96th and 2nd Avenue.
 - Separated the metering so SH can monitor water used outside the buildings versus inside including public restrooms.
- SHPOA working with SH Garden Club and Wetlands Institute to use native plantings to reduce water usage in various public gardens on the Island.
RAIN GARDENS
- ***This is everyone's responsibility and we can get a handle on this.***
- SH needs to work with all users of AC 800 to control pumping and insure water quality is not deteriorating.





WHAT DOES THIS MEAN?

- Annual O&M costs for new pump stations, beach and bay maintenance, sand replacement, dredging, and storm drain maintenance will go up \$3 - 5 million over next 5 years.
 - This relies on SH getting \$6 – 8 million every 3 years from Federal and State.
- Capital expenditures by private homeowners and the Borough will equal \$50 to \$75 million over next 15 years.
 - Landscape and irrigation changes,
 - Bulkhead improvements,
 - Storm drain replacement,
 - New pump stations, storm water on site improvements.
- State and Federal grants may be available for some of the capital costs.
 - The use of bonds needs to be prioritized for these type of investments.
- **10 year financial plan is critical** to planning this work with moderate and uniform tax increases that are transparent to the homeowners
- **STOP USING BONDS FOR MAINTENANCE ACTIVITIES!**





WHY DO IT?

- State and Federal studies show the area from Brigantine down to Cape May *is one of the 10 most affected* 15 areas impacted by rising oceans on the east coast from Maine to Florida.
- A recent study identified the area from Ocean City, NJ south has seen over \$500 million in reduced property value due to flooding and future risks.
- SH has over \$4 billion in property assets
 - The amount needed to harden our island and maintain our lifestyle and this community is very minor relative to the value of our homes.





ISLAND SUSTAINABILITY

- SHPOA is committed to working with our *Partners*
- ***We Must Continue to Make Progress on this Plan***
 - Borough 10 Year Financial Plan
 - Borough must undertake the required capital Facilities
- **We Must All Do our Part**
 - Conserve Water
 - Manage Runoff... Rain Gardens





ISLAND SUSTAINABILITY

We Are All Responsible



10 Year Financial Plan