Town of Shelter Island

Solid Waste Management Plan

February 2014

Prepared by the Town of Shelter Island

DRAFT

Executive Summary

In accordance with State of New York Environmental Conservation Law(ECL) Article 27-0107(1)(a), local planning units in Long Island must have an approved Solid Waste Management Plan (SWMP) that outlines management, handling, and disposal of refuse. The Town of Shelter Island (Town) SWMP was originally released in 1990 with iterations of revisions beginning in 1998 and 2012. This document is an update to the version revised in 1998. This 10 year plan continues many best practices while discussing possible modifications that reflect more current thinking, and NYSDEC recommendations from the 2010 New York State Beyond Waste Plan.

The population of Shelter Island is projected to increase approximately 7 percent in the next 10 years. In order to accommodate this, the SWMP includes reasonable goals for total waste reduction, continued increase in recycling participation, and public participation and initiative in both. Additionally, improved analytical and business management approaches will be increasingly incorporated in monitoring and bettering waste management methods.

Significant departures from the current solid waste management structure are not expected as the Town has considered a number of alternate plans and has concluded the present path is most appropriate, with enhancements.

It is expected that licensing of private waste haulers will be introduced under the new SWMP. This will allow the Town to gain a better understanding of Town wide waste generation, recycling rates, and will provide important data to evaluate overall waste reduction goals and improve education and outreach programs. Most important, it will help ensure compliance with current and future regulations and level the playing field for all private waste haulers.

A 30-day public comment period will commence following release of this report and will continue with the NYSDEC review is underway

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SECTION 1

SWMP BACKGROUND

1.1 Introduction

The Town of Shelter Island, New York, is an island located at the western boundary of Gardiners Bay, between the North and South Forks of Long Island's East End. The Town has had a Solid Waste Management Plan (SWMP) since 1990. This document is the third 10-year plan iteration and is part of the Town's comprehensive planning effort for solid waste, in compliance with 6 NYCRR Part 360-1.9(f) and 360-15.9, and Environmental Conservation Law 27-0107.1.

1.2 Objectives

This report presents the results of a solid waste management study and comprehensive recycling analysis for the Town of Shelter Island. The objective of this SWMP is to provide for the management of the Town's solid waste for ten years, in accordance with the objectives set forth in New York State's solid waste management policy.

This SWMP has been developed to reflect sound principles of solid waste management, natural resources conservation, energy production and (where practical) employment creating opportunities. The plan categorizes the Town's waste stream and identifies the existing solid waste management programs and facilities. The SWMP addresses comments posed by involved parties including concerned governmental, environmental, commercial and industrial interests and the public with respect to waste reduction, recycling, reuse and disposal alternatives, collected over a ten-year planning period. It also identifies the parties responsible for implementing the plan and a timetable for the plan's continuance and the institution of plan revisions.

In 1990, the Town submitted a SWMP and Draft Generic Environmental Impact Statement (1990 DGEIS) prepared by the firm of Dvirka and Bartilucci, Civil Engineers (Syosset, NY). The Town responded to two rounds of comments from the New York State Department of Environmental Conservation (DEC).

In February 1998, the Town hired the Waste Reduction and Management Institute, Marine Sciences Research Center, State University of New York at Stony Brook, to complete the second iteration of the SWMP. This SWMP included work by Dvirka and Bartilucci, as amended by the responses to DEC comments, and also addressed changes in Town waste management policies and practices since 1990.

In 2012 the Town commenced drafting this third SWMP to reflect the changes which have been made since the earlier plans, to document the successes achieved, and to set goals for new achievements during the next 10 years. With the work product of two consultant-prepared plans, more than 20 years of modern waste management experience, and better qualified in-house personnel, Shelter Island has prepared this most recent draft of its SWMP entirely through the work of Town officials and staff. As the total cost of the two previously prepared plans was in excess of $65,000, in-house plan preparation as part of the work of Town employees offered an opportunity to conserve tax payer funds.

1.3 Overview of New York Solid Waste Management Policies

The driving force behind New York State's solid waste management policies is a desire to foster effective integrated solid waste management programs. These policies have been shaped by the New York State Solid Waste Management Plan, the Solid Waste Management Act of 1988 (SWMA), and NYCRR Part 360 regulations. This section provides background on the legislation and policies relevant to solid waste management in New York State.

New York State Solid Waste Management Plan

In New York State, the role of recycling with respect to solid waste projects is described in Chapter 552 of the Laws of 1980 and in the New York State Solid Waste Management Plan (NYSSWMP). The Solid Waste Management Act (ECL 27-0106) established New York State's preferred hierarchy of solid waste management. In 2010, New York developed a Beyond Waste Plan updating past strategies and outlining future goals. This plan outlines a goal to shift from "end-of-the-pipe" waste management techniques to looking "upstream" at how materials that would otherwise become waste can be more sustainably managed. It encourages local solid waste management plans to evaluate and then propose methods to reduce waste and to increase reuse, recycling, and composting within the Town.

The NYSSWMP includes information on the status of solid waste management in the State. It defines problems associated with solid waste management, identifies the legislative, regulatory and program framework for environmentally sound solid waste management, and has established goals to develop integrated solid waste management over the current decade. Lastly, the NYSSWMP specified reduction and recycling goals on a statewide basis.

The Plan Update offers the concept of a solid waste management method hierarchy of alternatives:

- Waste Reduction: Reduce the amount of solid waste at the source, or point of generation by changes in manufacturing processes or materials used. Federal, State, County and local initiatives were expected to reach an 8% to 10% reduction goal by 1997.
- Recycling and Reuse: Reuse or recycle 50% (10% waste reduction, 40% recycling) of the solid waste generated in the State by 1997.
- Waste-to-Energy (WTE): Recover energy from residual solid wastes that could not be reused or recycled in an environmentally acceptable manner.
- Landfilling: Landfill only wastes that cannot be reduced, reused, recycled, or combusted in a WTE facility.

New York State Solid Waste Management Act of 1988

In April 1988, the New York State Legislature passed the Solid Waste Management Act (SWMA). The purpose of the SWMA was to encourage waste reduction, advance the recovery and reuse of secondary materials, advocate conservation of resources, foster public and private initiatives, and promulgate a new ethic of conservation and reuse rather than the then commonplace discarding of useful materials. These objectives were to be accomplished through the establishment of a state solid waste management policy, the creation of a state reduction and recycling bureau, the allocation of planning monies, and the development of governmental procurement and recycling policies on state and local levels.

Mandatory Source Separation

The most prominent feature of the SWMA is Section 23, which amended Section 120-aa of the General Municipal Law (GML 120-aa). The SWMA required municipalities to adopt mandatory source separation ordinances by September 1, 1992. All materials, for which economic markets for alternate uses exist, are expected to be handled in this manner.

Local Solid Waste Management Plans

According to the SWMA, all planning units must have a SWMP in order to obtain a facility permit after January 1, 1990. A planning unit is defined as: a county; two or more counties acting jointly; a local government agency or authority established for the purpose of managing solid wastes; a Town (for Long Island only); or two or more municipalities which the DEC deems capable of implementing a regional solid waste management program.

A plan must accomplish the following to be approved by the DEC:

- characterize the solid waste stream to be managed,
- assess the existing and alternative solid waste management facilities,
- identify the parties responsible for the implementation of the plan,
- prepare a timetable for the implementation of the plan,
- and describe public participation and address the comments and views of concerned parties.

The plan must provide for the management of all solid waste within the planning unit by enacting sound principles of solid waste management, natural resource conservation, energy production and employment creation opportunities. Plans must also take into account the objectives of the state solid waste management priorities.

Development and Promotion of Waste Reduction and Recycling

The SWMA created the Bureau of Waste Reduction and Recycling in the DEC. The Bureau's purpose is to develop and promote local waste reduction, source separation, and recycling through collection, intermediate processing, and marketing of source separated materials which are now being disposed. The Bureau accomplishes these objectives by:

- encouraging the development and improvement of municipal programs,
- serving as an information source,
- and identifying implementation problems and recommending solutions.

Procurement

The SWMA also encourages and promotes the purchase of recycled paper products by state, county, and local governments. Under this provision, these governmental bodies are allowed to purchase paper and other products containing recovered materials if the price is reasonably competitive (within 10% of products containing primary materials), and of adequate quality.

This practice differs from other procurement policies in that it is not based on the available lowest price. Since the price of recycled products is sometimes higher than products made from primary materials,

this provision helps assure a market for recycled materials and sets an example for business and industry.

Long Island Landfill Law, ECL 27-0704

Enacted in 1983, the Long Island Landfill Law imposed strict requirements on landfills in Nassau and Suffolk Counties, particularly those located in the deep flow groundwater recharge areas on which Long Island's drinking water supply depends. The law prohibits the landfilling of unprocessed MSW on Long Island. Landfills outside the deep flow recharge areas can be operated only if the material destined to be landfilled is the product of resource recovery, WTE incineration, or composting. Clean fill landfills are allowed to operate without general geographical restrictions.

New York State Electronic Equipment Recycling and Reuse Act

The New York State Electronic Equipment Recycling and Reuse Act was signed into law in 2010 to provide a convenient system for the collection, handling, recycling or reuse of electronic waste by consumers. It established basic management standards for recycling facilities of electronic waste.

1.4 History of Solid Waste Management Planning On Shelter Island

In the 1980s, Shelter Island was confronted with the need to plan for a transition away from reliance on landfilling and open burning because of the Long Island Landfill Law. As a result, a waste management study was performed.

The 1990 DGEIS called for a waste management system based on intensive recycling (source separation) coupled with the use of one of the many proposed off-Shelter Island disposal options. Many of the disposal options were very speculative or were based upon the construction of new facilities, which were never built, and are no longer feasible.

The 1990 DGEIS was not approved by the DEC. The Town chose to pursue other solid waste management alternatives.

The Town sued the DEC to keep its landfill open after December 17, 1990 but reconsidered, and decided to close the landfill in October 1991. In October 1991, the Town instituted a “Pay-per-Bag” system and began to transfer all MSW and source separated recyclables off Shelter Island. In 1994, the Town landfill was capped with DEC approval and supervision, ending the local MSW disposal era.

Shelter Island Town has pursued, and continues to do so, a number of beneficial practices concerning island generated waste:

- Subscribes to waste periodicals and attends seminars to keep updated on the laws, practices and technology.
- Continues to refine the program for marketing some source separated recyclables.
- Glass currently collected at the waste management complex is chipped, mixed with recycled concrete, and used for Town projects.
- The option of separating glass by color to improve the marketing of it is being considered.
- Markets cardboard, paper, tin, metal, and plastic through more recently acquired balers that permit self-hauling of these recyclables in order to obtain best pricing.

- Currently collects electronic waste and pays to have it hauled. In the long-term, in-house sorting and transport of electronic waste is planned, delivering it to a facility in Medford that is certified to break it down and recycle it.
- Tree stumps too large for processing at the Town facility are taken to Wainscott Sand and Gravel to be ground.

Shelter Island Town has been very successful in advancing a number of additional initiatives. These include:

- Developing a strong market for the compost produced onsite from vegetative yard waste delivered to the waste management complex, and advertising its sale in local publications. In 2011, the town sold $25,000 of compost. By mid-2012 the sales were $35,000.
- In the last ten years the town has had an aggressive program to collect Household Hazardous Waste (HHW). Staff has been trained to handle such materials. Furthermore, Shelter Island has a regular STOP (Stop Throwing Out Pollutants) program collection day to encourage the public to properly dispose of HHW.
- Shelter Island Town's thrifty New England roots are reflected in its "Goody Pile." Residents may dispose of items no longer wanted, but which can be re-used by others. This practice long predated New York's newly stated goals by encouraging residents to prevent materials from reaching the waste stream and encouraging re-use.

The purpose of this SWMP is to describe the successful system, focused around the waste management complex, and how it will meet the needs and goals of the Town and the State throughout the planning period. The waste management complex received a very favorable evaluation in its latest NYSDEC Solid Waste Management Facility Inspection (Appendix D.)

SECTION 2

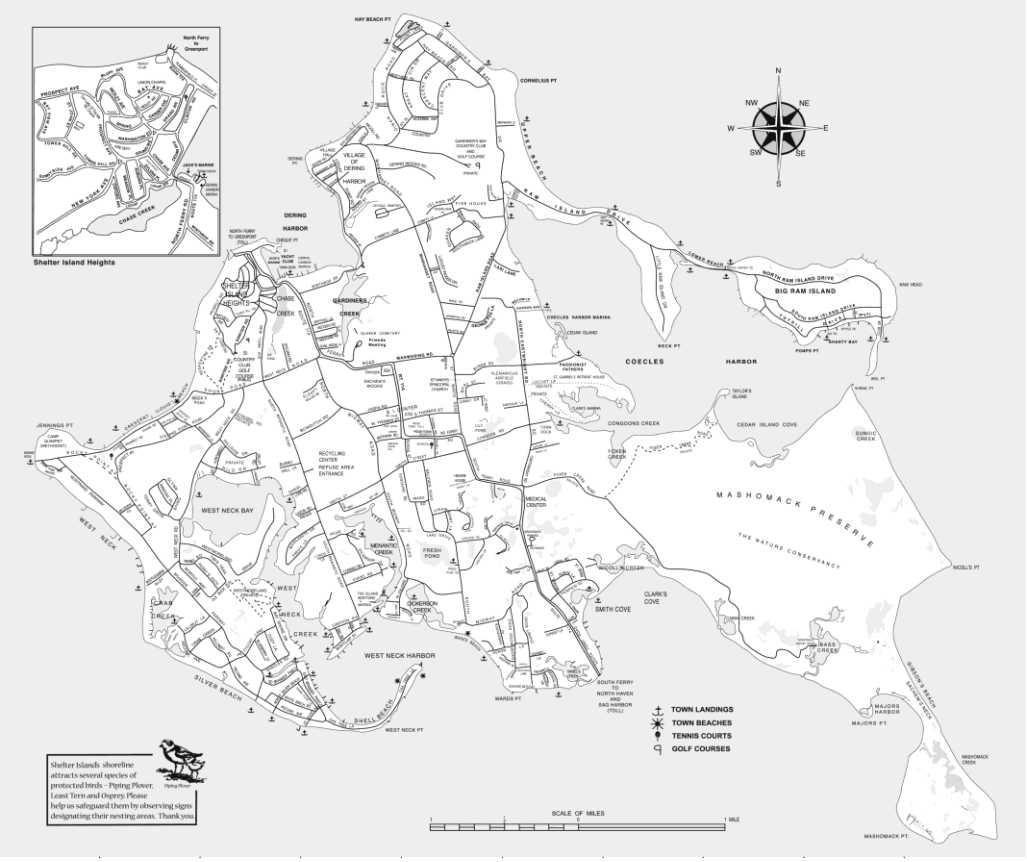
THE PLANNING UNIT

2.1 Planning Unit Description

Area Description

The Town of Shelter Island is located in the extreme eastern portion of Suffolk County, between the North and South Forks of Long Island. Encompassing approximately 12.1 square miles (7,300 acres), it is bordered by Peconic Bay on the west and Gardiners Bay on the east (Figure 2.1.1). Accessed exclusively by two ferry services, one company serves the island from the north out of Greenport Village (Town of Southold) connecting with Shelter Island Heights, while the other operates out of the south from North Haven (Town of Southampton) to the southern portion of the Town.

Figure 2.1.1 Map of Shelter Island



Nearly all of Shelter Island's residential area is low-density housing (less than one dwelling per acre.) Higher density housing is found in Shelter Island Heights, where the average dwelling is on less than 0.25 acres.

Over one quarter of Shelter Island is in The Nature Conservancy's 2,048 acre Mashomack Preserve (refer to Figure 2.1.1). The preserve is located in the southeast peninsula of the island, and has limited public access. The preserve includes tidal marshes, freshwater wetlands, surface waters, beaches, dunes, bluffs and a relatively undisturbed forest. The approximate 1,200 acre forested area is a rare example of a mature forest on Long Island, and is significant for its size alone. It is habitat for a wide array of native plants and wildlife.

The Town has an aggressive Open Space Conservation Program using funds from the Peconic Bay region community preservation tax established by Town Law 64-e. Under that program, over 230 acres of land have been preserved as Open Space.

Shelter Island comprises approximately 1.5% of Suffolk County's land area, but only 0.2% of the County's 1997 estimated population (Long Island Power Authority, 1997). The population of the Town increased 37.7% from 1,644 in 1970 to 2,263 in 1990 (1.9% per year). However, important to note is the recent decline in population growth rate. From 1990 to 1998 the Town population has increased only by 4.5% from 2,263 to 2,365 (0.6% per year). The population was 2,228 in 2000. According to the most recent US Census data, the 2010 population was 2,392, an increase of 7% from 2000 (0.7% per year). It is interesting to note that the Long Island Power Authority (LIPA) 2011 Population Survey reveals slightly

different data, with a January 1, 2010 population of 2,546 and a January 1, 2011 population of 2,396. What is most significant from that data is the decline in one year of 150, or 5.89%.

Table 2.1.1 shows population and density figures for Shelter Island drawn from the LIPA 2011 Population Survey.

Table 2.1.1 Shelter Island Density

Population	Land Area (miles)^2	Density (people/mile^2)
2,396	12.1	198

Topography

While much of Shelter Island is relatively flat, the northern end of the island ("The Heights") has some relatively steep grades, with the highest elevation estimated at 56 feet above mean sea level. The island's soils tend to be constituted largely of sandy materials with some clay and, in general, drain well.

Hydrogeology

All of Shelter Island's fresh water comes from rainfall. As the rainwater infiltrates the ground, it percolates down through sandy soils to layers of clay and pushes out to the edges of the island, coming to rest on top of salt water. Because of the clay barrier and the salt water, Shelter Island's aquifer is a relatively thin lens and therefore very sensitive and fragile to rainfall and human impacts. The island's potable water supply originates entirely from this sole source aquifer.

As water moves underground, it carries along many water-soluble substances, which plants and soils are capable of filtering out. What gets picked up and is not absorbed can ultimately compromise the quality of the island's drinking water.

The fresh water in the aquifer floats on top of salt water. And, the weight of the inland mound of water presses outward toward the shore. Typically, in the shore areas, the top of the fresh water table is less than 1.5 feet above sea level. In low rainfall periods, the "interface" of bay salt and fresh water tends to move inland, making shore area wells more sensitive to pumping. Normally, there is an adequate good water quality, if used wisely. However, shore area homeowners are more susceptible to salt water intrusion into their wells, and sometimes cause their own water quality problems. It is all too easy to ruin a shore area well with saltwater intrusion. Once a well is damaged, water quality is slow to be restored.

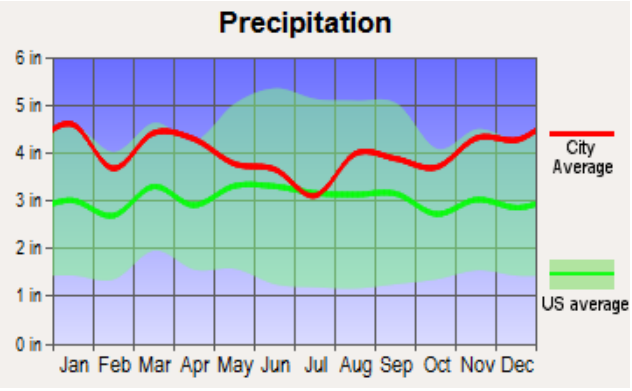
Surface Water

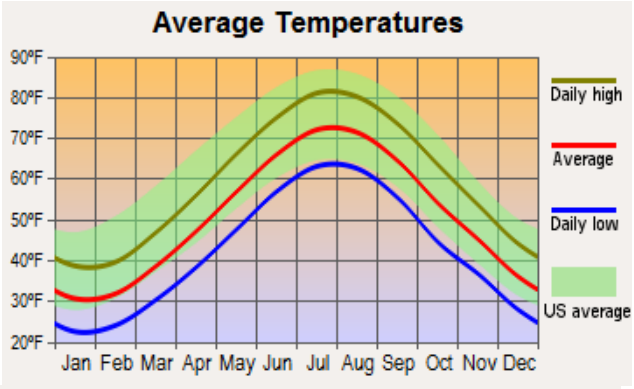
Shelter Island is surrounded by several bodies of water including Gardiner's Bay to the east, Shelter Island Sound and the channel between the island and North Haven to the southwest and south, and Southold Bay and the channel between the island and Greenport to the northwest and north. In general Shelter Island is typically considered to be positioned between the Peconic Bay system and Gardiner's Bay. In addition to providing habitat for a variety of species, the water resources of the island are a vital part of the local tourism-based economy.

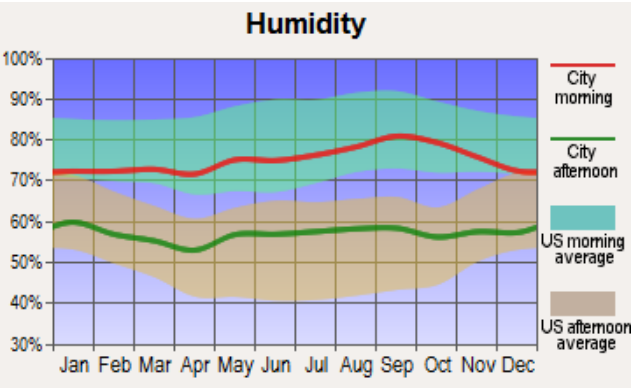
Climate

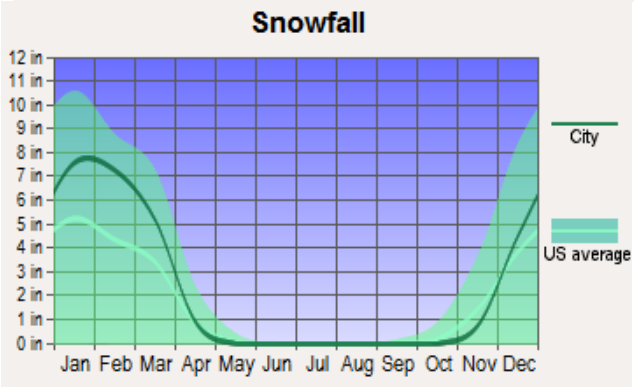
Shelter Island's climate is considered a coastal one. The surrounding waters, as well as effects from Block Island Sound and the Atlantic Ocean just beyond Gardiner's Bay, have considerable influence over climatic characteristics.

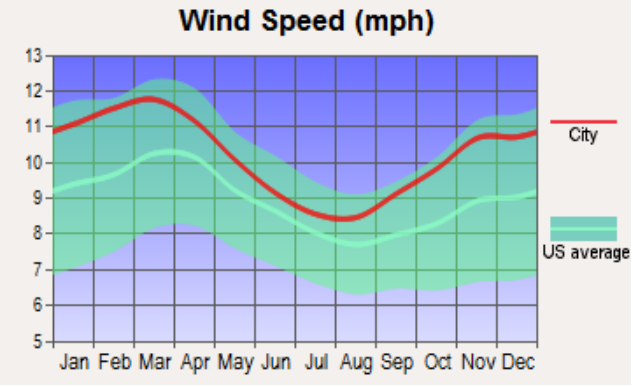
Typical weather for Shelter Island is depicted in the graphs below:











Cultural Resources

Now in its fourth century, Shelter Island has numerous cultural resources many of which date back to the island's founding. These traditions, and evolving new ones, are actively fostered by many island residents and institutions.

Because the Town of Shelter Island is one of two of Suffolk County's only island-based town entities, the local population embodies an independent, self-reliant ethic that distinguishes the location from most of the region. Geography has assuredly shaped many cultural and social activities and approaches to community needs. References to the centuries old Nicoll's Patent (a legal document that to this day provides much local control to the island) as well as more modern citations of "home rule" embody the self-sufficient island spirit found in many of the residents.

History and Historical Sites

Shelter Island was part of the original Plymouth Company land grant made by James I of England in 1620. On April 22, 1636, Charles I of England, told that the colony had not settled anywhere on Long Island, gave the island to William Alexander, the Earl of Stirling. Nathaniel Sylvester (1610–1680) was the island's first white settler. In 1673 Nathaniel Sylvester claimed ownership of Shelter Island, Fishers Island, and other parts of Long Island.

Over time these estates and parcels were split and divided by marriage and purchase so that by the early 18th century there were 20 families living on Shelter Island. By order of the Provincial Government, the Town of Shelter Island was established in 1730. The community developed from there.

Shelter Island Heights started in 1871 as a summer resort developed by the Shelter Island Grove and Camp Meeting Association of the Methodist Episcopal Church. By 1890 the district was well-defined; it has not changed much since then.

Following World War I, development slowly crept onto the island. After the Depression, some of the summer cottages were abandoned or left to rot. Recovery was slow, and it was not until after World War II that summer residents started returning in larger numbers. During the 1950s a farm cooperative grew lima beans on the island. This was the end of commercial farming on Shelter Island. In the 1960s and 1970s more families started to move to Shelter Island and become year-round residents. Some summer residents are fifth generation seasonal visitors.

Recreation and Points of Interest

Apart from activities connected to the island's history and preservation efforts, the island is home to a public golf course. A private country club also operates a golf course in the northeastern part of the island.

With considerable coastline and being an island, many recreational activities focus on coastal pursuits including boating, swimming, and fishing. There are a number of town-owned beaches, docks, and public landings, as well as private marinas, and a private yacht club.

Relatively short ferry rides from both the north and south ends of the island also permit convenient pursuit of other recreational opportunities available on the eastern Long Island mainland.

Population Trends

The Town of Shelter Island prepared a Comprehensive Plan in 1994. The objective of the Comprehensive Plan was "to give direction to the varied actions taken by the Town and those within it bearing on growth and change and to make connections between individual actions and longer-term goals"

(Comprehensive Plan Committee, 1994). Within the plan the following statistics and predictions were presented. Shelter Island's resident population increases from about 2,300 in the winter to nearly 10,300 persons in the summer, plus 1,000 or so daytime visitors. In the decade 1980-1990, the Town added more than 20% to its housing stock, the winter population increased by nearly 10% and the summer population increased by over 20%. The current number of Shelter Island housing units is 2,394.

The Comprehensive Plan made several points concerning the nature of growth in the Town. Demographics and life-style were considered very likely to put unprecedented growth pressures on areas such as Shelter Island. Members of the large "baby-boom" generation are reaching the age of leisure home purchasing, but often their children are grown so household sizes are smaller. Their time pressures mean more short vacations than long ones, putting a premium on leisure homes, which are close to their primary homes. Retirement population, another major source of demand for Shelter Island homes, is growing more rapidly than any other sector of the population of the United States.

According to 2010 US Census data, 54% of town residents are over the age of 50. The potential growth in demand for Shelter Island homes and land may be substantial, regardless of the desires of the Town as a whole or whether this growth can be accommodated. However, more recent trend examinations appear to indicate that growth may not be as robust as originally thought, affected by factors primarily related to the economy.

The Town's land resources available for development are rather small. One-third (7,300 acres) has already been developed, and another third has been preserved through public or non-profit open space commitment. Some of the remaining third may not be buildable because of wetlands or other environmental limitations.

The number of additional dwellings that could be built on the remaining land under current zoning is dependent upon several variables including the number of two-family units allowed. According to the Comprehensive Plan, as many as 1,700 dwellings may be added to the present inventory of 2,394 units. Based upon potential development of buildable land, projections of future population and the housing base were made (Table 2.1.2) as part of the Comprehensive Planning initiative.

Table 2.1.2 Projected Growth and Development from Comprehensive Plan v. Actual

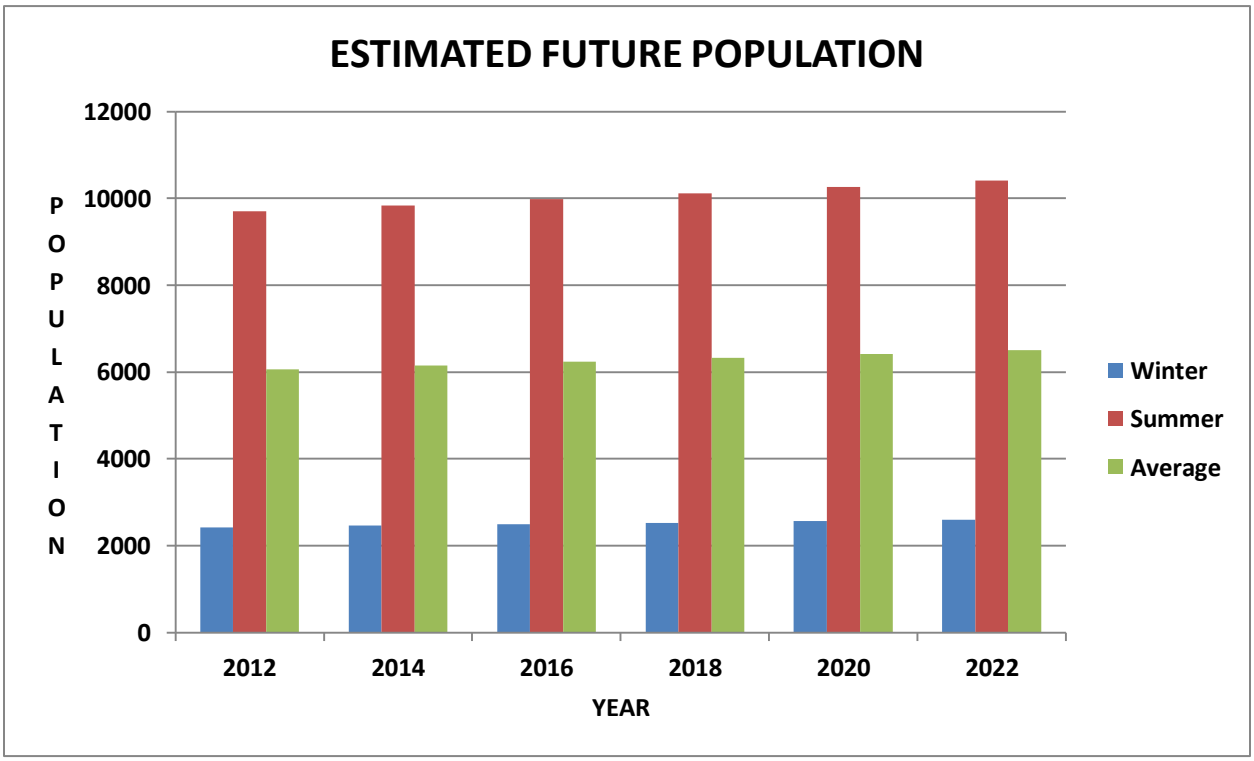
Year	1980	1990	2010	2011 actual	2060
Total Area (acres)	7,300	7,300	7,300	7,300	7,300
Buildable Area (acres)	2,200	1,900	900	550*	50
Housing Units	1,700	2,200	3,000	2,394	3,900
Commercial Properties	124	124	124	124***	124
Commercial Business in Residential Zoning	N/A		28	28***	28
Winter Population	2,100	2,300	3,100	2,381	4,100
Summer Population	7,600	9,600	13,000	9,584**	16,100

* Figure provided by Shelter Island Town Building Permit Examiner
** Figure estimated by former Shelter Island Property Assessor
***Figures provided by current Shelter Island Property Assessor

The most current US Census population data (2000 to 2010) show a 0.7% population increase rate per year rather than the original planning rate of 2% per year. This has caused a rethinking of future population growth and is reflected in the graph below. The annual increase of 0.7% has been used as a more reasonable winter population growth rate for the planning period. Further, it is assumed that an approximately fourfold increase in population consistently occurs from winter to summer.

The Commercial properties were established when the zoning districts were established in 1959. The assessor's office was able to go back to 1999 to confirm the commercial building stocks, which indicates there has been little to no fluctuation to the commercially zoned properties since its establishment. Many residential homes are located within the commercially zoned properties. The zoning corridor reaches back onto the properties 300'. Properties which were established before 1959 and had commercial operations beyond the 300' zone were grandfathered with a permissible use determination.

Chart 2.1.2 Estimated Future Population



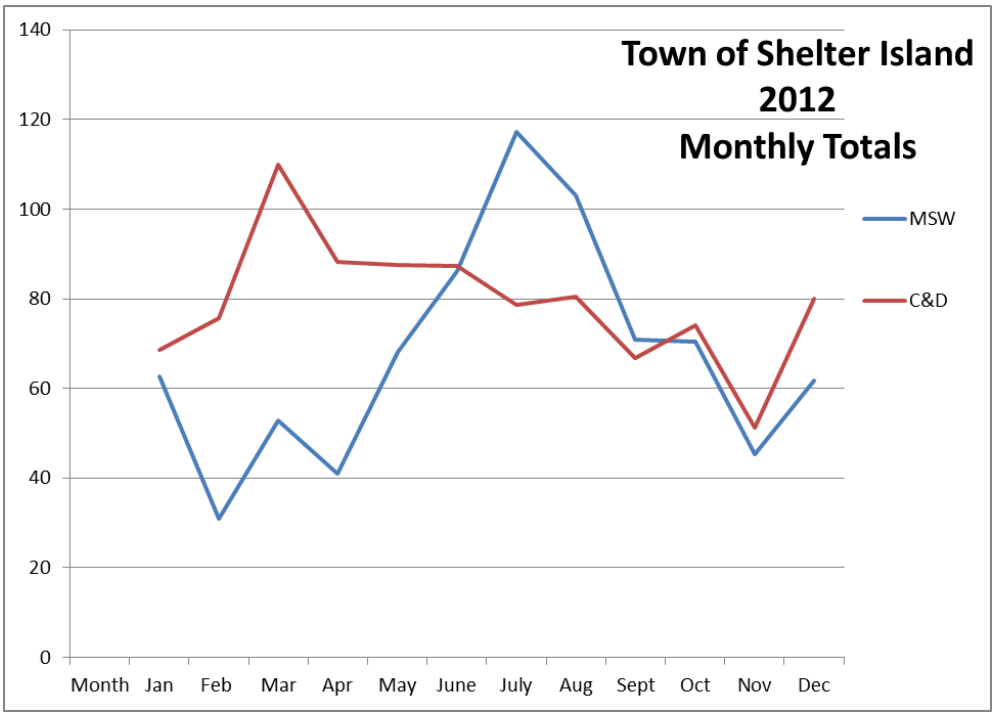
According to the 2010 US Census, the year-round population of Shelter Island is 2,392 persons. This is a substantial increase over the last four decades, from approximately 1,650 in 1970. The population reaches a peak in the summer season at approximately 10,000 persons. However, the population growth in the past ten years has been only 7%.

2011 assessment data shows that there are 2,394 housing units in the Town. The Comprehensive Plan projected that, under current zoning, a maximum of 1,700 additional homes could be constructed on Shelter Island. This total is unlikely to be met because most residents and landowners are not expected to promote maximum growth through sub-dividing their properties. To better estimate future population and waste generation, a population increase rate of 0.7% per year is used for the winter population. The summer population is assumed to consistently show a fourfold increase over the winter value. For use in projecting future population and waste quantities for the ten-year planning period,

because of the great month to month fluctuations, an average annual population was calculated, and is used for projections (Figure 2.1.2).

At the end of the planning period the winter population is projected to be approximately 2,602 persons and the summer population to be approximately 10,408 persons. The average population will grow from 6,065 persons to 6,505 persons by the end of the planning period. Chart 2.1.3 shows the fluctuation between each month. The C&D increase shows a spike in activity for the startup of the construction season and declining during the summer months when the summer season begins in June. The theory is the homeowners don't want construction while on vacation. Then another spike following the summer and again before winter. The MSW declines as people leave the island for winter vacation and climbs to the peak of august, when students and parents begin to leave for school and the tourist season ends.

Figure 2.1.3 Monthly C&D and MSW Totals



2.2 Significant factors affecting waste generation

Shelter Island has a significant fluctuation in its population owing to both a high percentage of second homes that are not occupied throughout the year, and a large influx of visitors and renters during the peak summer season. Heavy reliance on programs focused on education or outreach in an attempt to stem significant increases in waste generation are thought to have little impact because one of the dominant sources of such waste is a population that is not routinely reachable. This problem is common to many of eastern Long Island's coastal communities whose economies rely on both second home owners and visitors for revenue.

If we consider US EPA estimates, Americans produce approximately 4.43 pounds of municipal solid waste (MSW) per person per day. Thus in 2011 Shelter Island was projected to produce about 5.27 tons daily of MSW during the off season, and about 21.23 tons daily of MSW during the peak summer season.

The table below depicts some interesting data regarding the island's waste generation.

Table 2.2.1 Historical Residual Municipal Solid Waste Generation

Town of Shelter Island

YEAR	Tons per Day (TPD)	Tons per Year (TPY)
2002	3.38	1234
2003	3.48	1270
2004	3.24	1181
2005	3.30	1203
2006	3.18	1159
2007	3.27	1193
2008	3.02	1101
2009	2.83	1033
2010	2.69	981
2011	2.69	982
2012	2.24	810
2013	1.98	716

The quantities of municipal solid waste generated on Shelter Island were estimated and presented in the 1990 DGEIS. The historical estimates for 1986-1989 were based upon landfill records, which estimated total monthly tons of residential waste delivered to the landfill. These estimates were based solely on the total number and type of vehicles that delivered residential waste to the landfill.

Table 2.2.1 shows tons per day (TPD) and total tons per year (TPY) delivered to the landfill since 2002, and after the installation of a drive-on scale for weighing vehicles bringing waste for disposal. The large fluctuations in population from season to season suggest data in the form of average TPD may have little meaning, but are indicative of an overall trend.

While average TPD may not have great value in a locale where considerable fluctuations in MSW take place, it is important to note that Shelter Island has been experiencing a gradual diminishment. Equally important to note is the fact that Shelter Island's average daily tonnage is slightly more than half of the USEPA national average daily tonnage. Implicit in such data is evidence that programs implemented by Shelter Island are having an impact on waste generation. It may be difficult or impossible to differentiate between Island-based policies and cultural and societal trends regarding waste, but clearly the combination of both are working well for Shelter Island.

A number of factors may influence waste generation in the Town. They include:

- Older citizens, age 50 and over, account for 54% of the Town's population. Shelter Island is considered to have one of the oldest population concentrations in New York State. This figure is far greater than the U.S. average. This is an age group known to generate less waste than the average person.
- While upward trending in the island's population is expected to occur, it is at a very modest rate.
- A typical trend in some locations is displacement of the older population by a younger overall population. While such trending may take place within the second home owner segment of the

population, real estate pricing continues to be prohibitively costly for younger people to seek year-round homes.

- Yard waste is accepted throughout the year. Apart from property owners caring for their own real estate, an increasing trend is the use of landscape contractors for property maintenance. There is a perpetual source of such waste year-round, especially from commercial landscape service providers. This trend is based on both increasing affluence of second home owners as well as the aging population
- As an island community, disposal of waste locally is often a more convenient alternative than ferrying it off the island. Although interactions of local waste facility costs versus transportation and disposal costs to the mainland are part of the economics of such a factor, in many cases local disposal is favored.
- Continued emphasis on waste reduction practices, both as Town based services and as property owner based initiatives (e.g., composting).
- Seasonal influxes of population and visitors during the summer months. While more recent data would seem to imply that this phenomenon is not as strong as it might have been projected originally, it nonetheless can quadruple the winter population census.
- Possible implementation of a permit or license system for private waste haulers that would allow the Town to monitor and influence private disposal and recycling practices.

2.3 Significant Factors Affecting Waste Collection

Shelter Island does not provide curbside collection service, but a village within the Town does. Most residents use the recycling center to discard their waste. Some residents make daily visits to the recycling center on an almost social level. The private haulers are thought to account for about 25% of the collection on the island. Although it is not precisely known what percentage of the population contracts with private carters for curbside collection service, some residents, as well as a high percentage of commercial occupancies, do. In the absence of data about such services, little is known about this waste stream. However, with little commercial occupancy and most residents handling their own waste, the impact of private carters on waste collection is considered fair.

Table 2.3.1 Haul Cost Compared to Bag Price

	2004	2009-2013	2014-15	2016-17	2018* Projected
Haul Cost		114.34-120.00	132.00	140.00	148.00
Large	3.50	3.75	4.50	4.50	4.50
Medium	2.25	2.50	3.00	3.00	3.00
Small	1.00	1.25	1.75	1.75	1.75

The Town developed and imposed a Pay-per-Bag system in 1991. This system was instituted to pay for the change in MSW management from land filling to long-hauling off Long Island, and to encourage waste reduction, reuse, and recycling. Residents must package MSW for disposal in special bags sold by the Town. The Town allows recyclables to be dropped off at the waste management complex at no cost.

One of the goals of the Pay-per-Bag system is to fund the cost of disposal. With increases in the cost of disposal of waste the prices of the bags have been periodically adjusted. These adjustments have set precedents: if the cost of MSW disposal and recycling handling changes substantially, adjustments to the current pricing may be made. The bags currently come in three sizes, with associated prices:

The intent of this program is:

1) Assess the cost of disposal on those generating the wastes; and
2) Encourage recycling through financial incentives.

Table 2.3.2 Haul Rates Showing Percentage Increase

MSW Increases	2009	2010-11	2012-13	2014-15	2016-17	2018* Projected
Per Ton	$114.34	$116.90	$120.00	$132.00	$140.00	$148.00*
From Previous	0	2.2%	2.7%	10%	6%	5.7%
Total From 2009	0	2.2%	4.95%	15.45%	22.4%	29.44%

There is no cost for dropping off separated recyclables. The more residents reduce the amount of disposed waste by removing items for reuse or recycling, the fewer bags are used, and the less the residents pay for waste management. Since 1991, the Town has competitively bid hauling services to transfer MSW and certain recyclables collected at the waste management complex off Shelter Island. Whenever possible, the Town markets materials from the separated recyclables to offset operational costs, and is increasing its capacity to bale and haul these materials in-house.

Table 2.3.3 Waste haul cost analysis

Winter Bros Contract Price vs. Actual Revenues via In-house Services for Year 2012	Totals	Tires	Plastic	Glass	Mixed Paper	C&D	MSW
2011 Projected Expense	($224,541)	$ (3,333)	$ 10,050	$ (12,533)	$ -	$(113,100)	$(105,625)
2012 Projected Expense	($360,490)	$ (1,843)	$ -	$ (10,873)	$(116,600)	$(133,920)	$ (97,254)
Change		Town pays to have them hauled.	Town bales and sells it. 2011 value is positive as it represents revenue that year. Revenues can be increased by better sorting.	Town now processes this in house by grinding and then uses it for projects.	What it would have cost the Town to haul with the contract.	What it would have cost the Town to haul with the contract. The 2012 actual expense was the Town's cost for in-house hauling and tipping fees. There is an opportunity for an approximately $34,000 further savings through improved compaction of the material.	Based on $120 per ton with no change. In the past the per ton charge had escalated $4, from $116.
2012 Revenue This income derives from Town-based charges and/or sale of the material.	$ 371,480	$ 1,684	$ 5,000	$ -	$ 10,000	$ 229,600	$ 125,196
2012 Actual Expense	($188,537)	$ (1,843)	$ -	$ -	$ -	$ (89,440)	$ (97,254)
2012 Net Income	**$ 182,943**	$ (159)	$ 5,000	$ -	$ 10,000	$ 140,160	$ 27,942
Net Savings Over Projected Budget Expense Amounts	**$ 178,955**	$ 2,002	$ (5,000)	$ 10,873	$ 126,600	$ 44,480	$ -

Currently, source separated materials are brought to bins or other areas of the waste management complex accessed from the main entrance to the site. The Town handles and/or requires separation of:

- **plastics (recyclable types 1 – 7)**
- **mixed paper**
- **corrugated cardboard**
- **cans and commingled and bulk metals,**
- **clothing and textiles**
- **green/brown/clear glass bottles**
- **e-waste**
- **vehicles**
- **construction and demolition (C&D) debris**
- **rubber (e.g., tires)**
- **household hazardous waste (HHW)**
- **Vehicle Batteries**
- **yard debris**
- **Freon appliances**
- **concrete**
- **waste oil**

All MSW (household waste) is delivered to a compactor beyond the recycling bins at the waste management complex, refer to Figure 3.1.1 *Waste Management Complex Layout*. This is the disposal point for MSW contained in Town sold bags (i.e., the Pay-per-Bag system).

Table 2.3.4 MSW Chart of Expenses and Revenue

MSW Chart								
	2009	2010	2011	2012	2013	2014*	2016*	2018*
Revenue Pay to Throw Bags	139,367	140,974	138,498	115,141	116,376	116,000	116,000	116,000
Pay by weight in over scales	9,086	8,196	7,872	9,050	9,500	9,500	9,500	9,500
Total Revenue	148,453	149,170	146,370	124,191	125,876	125,500	125,500	125,500
Weight out	995	929	903	810	700	700*	700*	700*
Number of Loads	69	65	61	61	57	57	57	57
Contract Cost to dispose and haul	113,769	107,461	99,211	98,087	84,000	96,600	99,400	103,600
Rate per ton	114.34	116.90	116.90	120.00	120.00	132.00	140.00	148.00
Net Revenue	$34,684	$41,709	$47,159	$26,104	$41,876	$28,900	$26,100	$21,900

* Projected figures

The participation of the residents and business owners is one of the key elements in the Town's waste management system. Residents and business owners minimize disposal cost by providing the free labor involved in source separating recyclables and delivering non-recyclable wastes to the waste management complex. The small size of Shelter Island is another factor which contributes to the Town's successful waste management system. It is not a chore for residents to deliver recyclables and wastes to the waste management complex. It is also an indelible part of community life on the island. This intimate system has resulted in a recycling rate calculated at 63%. Other materials, which are also source separated for management, include construction and demolition (C&D) debris, bulky wastes, and yard wastes. The Town has an extensive yard waste management program including a yard waste composting operation and a chipping operation for woody materials. Bulky wastes and residual C&D are managed by having them hauled after removal of asphalt and concrete, which is recycled by the Town. As a means of reducing bulky waste, the Town sets aside reusable items in the area designated as the Goody Pile.

The Town's waste management system is one that is successful: it has exceeded the State goals. It is expected to continue to improve over the planning period with minimal changes to the base system.

2.4 Waste generation and collection issues specific to Shelter Island

Certain site-specific conditions on Shelter Island, as described below, must be given special consideration in the development of a SWMP.

- Due to the surrounding marine environment consisting of large bodies of salt water, atmospheric conditions can be corrosive to metals. Special protection and maintenance of exposed surfaces and components in and on waste handling equipment is required for durability and life extension.
- Sewage disposal on the Island is primarily performed by on-site septic systems and cesspools. Part of the Town (approximately 145 households) is served by a privately owned and operated wastewater treatment plant in Shelter Island Heights. This sewage treatment facility (with an estimated peak capacity of approximately .072 million gallons/day) is not designed or sized to process landfill leachate, incinerator waste waters, or other waste waters produced by a major solid waste management facility. Summer time sewage flows in the plant are approaching its capacity limit as well. Sludge from the plant is trucked off island via arrangements made by the plant owner.
- Water supply for the Island is from a sole source groundwater aquifer, and any SWMP must ensure complete protection of the ground and surface water resources from HHW, drugs, pesticides and other water contaminating materials.
- The Island contains a substantial amount of low lying land, and the associated shallow groundwater table and flood hazard potential limits the land available for construction of waste disposal facilities.
- Because there is limited access to the Island, transportation and construction costs on the Island are higher than on the mainland. This impairs the ability of the Town to share resources with nearby towns and adds travel time limitations as well.
- Island waste management practices must account for the large fluctuations in waste load caused by seasonal population variations.
- The small land area and population limit Town government's ability to participate in and fund capital-intensive public works. This limits planning considerations of waste management

technologies such as landfilling, WTE incineration, or in-vessel composting. Limits posed by budget caps also inhibit the use of more costly approaches to waste management.

- Landfilling, which is the most flexible disposal technology in terms of fluctuating waste loads, cannot be considered as a primary waste disposal option, due to the provisions of the Long Island Landfill Law and the obvious need to ensure protection of groundwater resources.

2.5 Objective of the plan

This plan has been prepared in accordance with 6 NYCRR Part 360 which identifies the regulations and procedures that must be followed in developing an approvable solid waste management plan and comprehensive recycling analysis. By evaluating the Shelter Island integrated waste management experience and efforts in the context of the State goals for waste minimization, a comprehensive strategy for enhancing reduction, reuse, and recycling in Shelter Island is provided. This also gives us an opportunity to identify trends and make plans to deal with them. The ultimate goal of the plan is to achieve the most cost-effective and efficient solid waste management operation feasible.

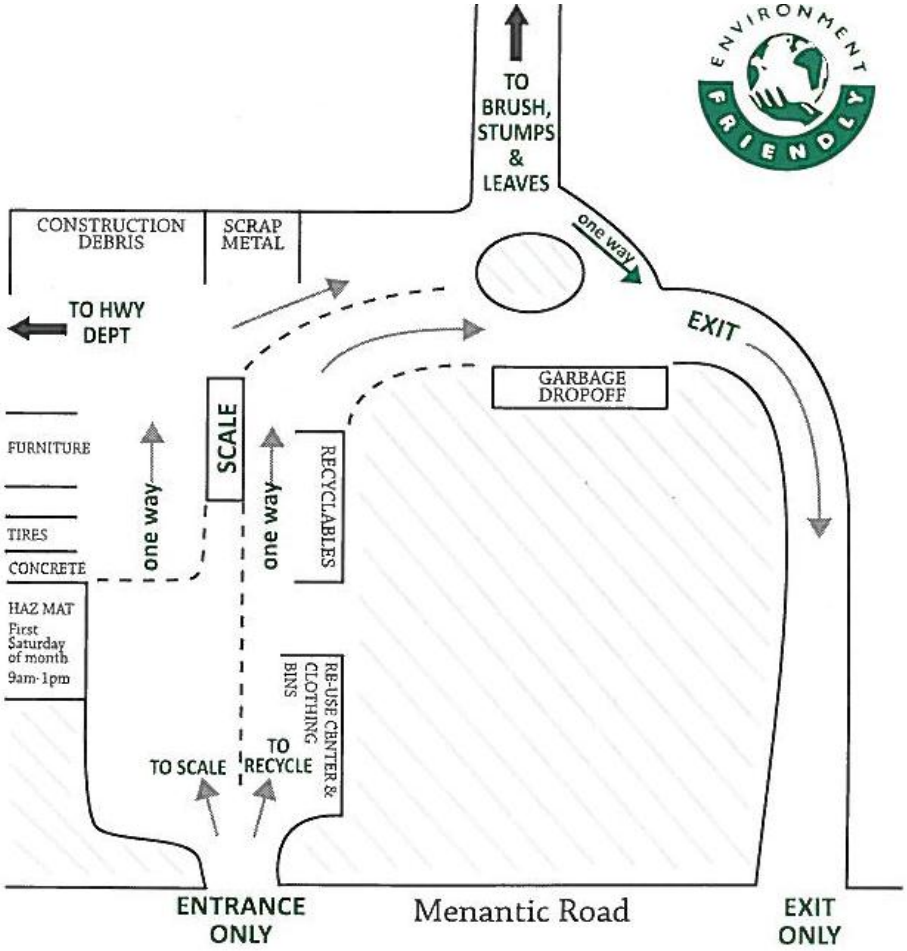
SECTION 3

PRESENT SOLID WASTE MANAGEMENT CHARACTERISTICS

3.1 Solid waste management facilities

Municipal solid waste on Shelter Island is primarily residential. The waste generated by a mix of permanent and seasonal residents, as well as visitors, historically has been managed at one location. Solid waste on Shelter Island is and was processed or disposed of at the waste management complex located to the east of Menantic Road (C.R. 29), and adjacent to the south side of Bowditch Road. The facility is arranged as shown in the diagram below:

Figure 3.1.1 Waste management complex layout

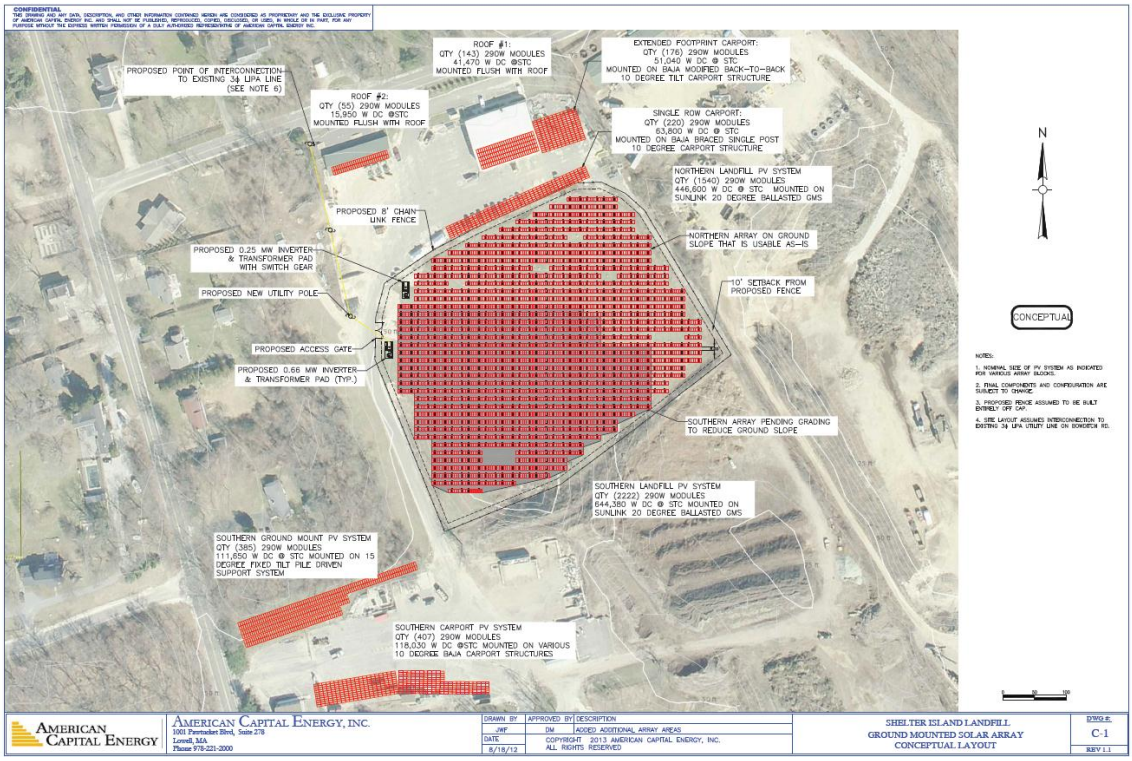


3.2 Solid waste practices prior to 1991

Land filling occurred on approximately 11 acres of the 26.5 acres of the site owned by the Town. The Town has expanded the original site over the years to its current size of 26.5 acres by converting Town property or through the purchase of additional land as needed.

The DEC found no evidence that hazardous wastes had been disposed at this site. It was therefore deleted from the Registry of Inactive Hazardous Waste Disposal Sites in New York State. The DEC has also concluded in its assessment that no pu E-Waste ng water supply is likely to be impacted by this site. A portion of the landfill was capped as part of the State approved closure of the landfill and the Town continues to maintain the cap and routinely test the water quality. The Town is currently considering using the cap and parking areas for the use of solar power generation.

Figure 3.2.1 Future Solar Array Plan



Earlier in the Town's history, many farms processed their own wastes, and organic material was reworked into the soil as a conditioner and to replace nutrients. It was also common practice to maintain small composting piles for agricultural uses. Open burning and land burial of wastes also occurred. These practices declined in use, or were eventually prohibited, as waste facilities became available and waste regulation increased.

Figure 3.2.2 Example of Car Port Style Solar Array

3.3 Current solid waste practices

Most all municipal solid waste and recyclables generated in the Town are brought to the waste management complex. The Town's mandatory recycling program has been in effect for over twenty years. Roll-off compactors and boxes are in place at the drop-off area at the solid waste management complex to allow disposal of various materials.

Recyclables include those earlier discussed.

Winter Brothers currently transfers the Town's municipal solid waste and tires off Shelter Island with limited involvement of the Town. Town employees utilizing Town owned trucks transport most recyclables off the island and deliver them to processing and disposal facilities.

Household batteries are placed in designated seven-gallon buckets and vehicle batteries are deposited on a designated pallet. Household hazardous wastes (HHW) are accepted at an on-site Stop Throwing Out Pollutants (S.T.O.P.) facility, staffed by a private contractor and assisted by trained Town employees. Training has been provided by Miller Environmental Group, and currently Care Environmental Corp. transports the hazardous waste off the Island. The Town contracts with a vendor selected by competitive bidding to remove HHW. In addition, waste oil and antifreeze are accepted and stored at the waste management facility and removed and recycled by a certified waste oil recycler.

Yard wastes are directed to the woody yard waste and composting areas in the rear of the waste management complex. Stumps too large to be handled by the Town are removed to a facility in Bridgehampton (south of Shelter Island, on the mainland) with the equipment to grind them. Such materials that can be processed locally are subject to composting/chipping operations that eventually yield top soil and mulch products which the Town markets as a source of revenue.

The Town has designated areas to collect and store rugs and furniture, tires, C&D, vehicles, and other bulky wastes for hauling.

The Town removes items from such disposal that are in good condition. They are set aside for reuse in an established “Goody Pile" in the recycling area through which residents may sort. The Goody Pile program is carefully managed by the Town for enhanced safety to participants.

The Shelter Island School system recycles paper, plastics, glass, and cans, and the Town offices recycle white office paper (this program will be expanded to comply with GML 120-aa). The Town plans to expand this effort to implement recycling programs with other businesses. Although the Town offices have no cafeterias, bins for plastics, glass, and cans have been put in place to capture recyclables brought in by employees.

In addition, a small private baler is located at the IGA Supermarket and is used to compact corrugated cardboard from IGA shipment packing materials. The cardboard is sold privately to offset the expense of the baler.

Residents and business owners bring most of the solid waste generated on Shelter Island directly to the waste management complex. Several of the businesses in the Town deliver their own waste to the solid waste complex regularly. The limited amount of sewage sludge and regulated medical waste generated in the Town are handled by private services and do not enter the municipal waste stream.

There are several private waste hauling companies operating in the Town of Shelter Island. They are currently not subject to local regulation.

Curbside collection in Dering Harbor is provided by the Village of Dering Harbor (a separate governmental entity within the Town of Shelter Island) for its residents (2% of the Shelter Island households). Dering Harbor also provides for the curbside pickup of recyclables generated in households. Plastic, newspapers, cans and glass are separated by the residents for collection. This municipally provided Village service collects waste from approximately 35 households in the summer and 15 households in the winter. Collections occur three times weekly (once for recyclables and twice for MSW) regardless of season, and all waste is delivered to the Town's Waste Management Complex.

MSW is delivered to the Town's recycling center in either Town waste bags or by the pound. Any items not placed in a bag must come in over a scale and are charged the appropriate tipping fee based on weight. The current fee schedule for all other items delivered to the solid waste management complex is shown below. Private carters and the Village of Dering Harbor pay a tipping fee of $0.10 per pound for MSW brought in based on weight.

Table 3.3.1 Fee Schedule for the Shelter Island Waste Management Complex

Material Disposed Of	Disposal Fee
Batteries (Car/Mower)	$5.00 each
Brush (Land Clearing Debris)	$50.00/ton
Stumps	$60.00/ton
C&D	$200.00/ton
Demo Concrete/Asphalt	$40.00/ton
Freon Appliances	$15.00 each
Furniture	$200.00/ton
MSW (not in Town Bags)	$200.00/ton
Propane Tanks	$5.00 each
Tires	$300.00/ton
Wood Chips	$50.00/ton

Town initiatives provide a waste related revenue stream in addition to the schedule of tipping fees. Shelter Island direct markets recyclables such as glass, soft mixed paper, cardboard, and cans. The Town also collects yard waste and actively treats and processes it by composting and grinding for conversion to marketable products for sale, including top soil and mulch. Table 3.3.2 evaluates the cost to produce mulch from brush. The Town charges a tipping fee to offset the expense to convert and handle the

material. The town realizes the profit for each yard of material sold over the expense to produce it. The net income numbers project the sales income from the operation. Table 3.3.3 provides detail of how the incoming leaves and clippings are turned into revenue for the town. The important concept to keep in mind is that the material must be marketed at a level which will allow it to be purchased and leave the facility to make room for new incoming material.

Table 3.3.2 Brush to Mulch Cost Evaluation

Brush to Mulch Process					
Income	Expenses				
$50,000.00		$50	1,000	Tons	Revenue Collected at Scale House
	$7,100.00	$0.50	14,200	Yards brush piled	
	$31,950.00	$2.25	14200	First grind	
	$3,000.00	$0.50	6000	handle first grind	
	$25,500.00	$4.25	6000	Double Ground product made for sale	
	$9,000.00	$1.50	6000	Screen and Stack and pile double grindings	
	$76,550.00	Sub Total of expenses			
Profit	Loss				
	($26,550.00)	($6.64)	4000	Net Cost (Expense to make product) Per yard	
$80,000.00		20	4000	Sale of mulch per yard @ $20	
$60,000.00		15	4000	Sale of Mulch Per Yard @ $15	
33,450.00		Net sales income for 6000 yards of ground mulch @$15.00			
53,450.00		Net sales income from 6000 yards of ground mulch @$20.00			

Table 3.3.3 Leaves and Clippings to Soil Cost Evaluation

Leaves & Clippings to Composted Top soil			
Income	Expenses		
$0		10,000	Cubic yards of Leaves and clippings - In at no charge
	$22,000		Grind and Turn Leaves 5 x's 60 man & machine hours
	$2,880	0.96	Screen Plant Operational costs for 3000 cubic yards
	$0		Rental Cost (Screening plant purchase 2013)
	$24,880		
$52,500		$17.50	Sale of 3,000 Soil
$27,620			Net

SECTION 4

QUALITATIVE AND QUANTITATIVE ASPECTS OF SHELTER ISLAND WASTE

This section discusses the quantity and character of waste generated on Shelter Island. Solid waste quantity is a result of several factors including population, lifestyle, access to recycling or repurposing facilities, waste handling standard practices, and social means and norms. Shelter Island has a long history of recycling through the Goody Pile practice started years ago. That thinking has long been extended to solid waste practices, reducing the overall volume of final waste refuse that must be disposed of elsewhere. Solid waste management for the community remains a challenging undertaking due to large population swings from seasonality.

4.1 Solid waste quantity influences

Population size, personal preferences and shopping habits, and demographics all play a role in affecting solid waste generation in any community. This section discusses some of the more prominent contributors to solid waste generation quantity and types for Shelter Island. Such factors include:

- Population
- Economic considerations
- Seasonality
- Cultural and household considerations
- Solid waste services

Population

Census data from 2010 places Shelter Island's population at 2,392 (a number very slightly below the estimate of the Long Island Power Authority). That number reflects a very modest upward trend of .7% annually since the previous census. Considering the community's land area, density is approximately 198 people per square mile.

Original growth predictions derived from Shelter Island's Comprehensive Plan anticipated a 1.6% per year population growth rate for a 30 year time window, commencing in 1980. As a planning factor, that rate of growth has nowhere near been achieved. Various societal events have likely contributed to a diminished rate of growth, including the more recent economic downturn and an increasing global economy.

Seasonal population increases occur, but also not at the rate originally predicted. In the same planning window described previously, summer ("seasonal") population was expected to grow from 7,600 to 13,000. Had such a rate been achieved it would have represented a 2.4% increase annually. For some time electric utility data could be used to estimate the seasonal population but such information is no longer available. Today such estimates derive from present or past Town Officials familiar with such trends.

The summer 2011 estimate of 9,584 persons represents approximately a fourfold increase over that year's winter population, as shown in Table 2.1.2. While that summer population figure is reasonably consistent with the 30 year planning average of four as the factor for winter to summer increase, it is no match for the prediction made for the 2010 summer population of 13,000. Hence, while both winter

and summer populations have grown, they have done so at a rate diminished from original planning thinking. However, the basic relationship between summer and winter values has remained fairly consistent at four.

Managing solid waste from a population that quadruples from winter to summer as an annual occurrence requires a unique and flexible solid waste management program.

Economic Considerations

Census Bureau data can only provide insights about the year-round population. Hence a significant part of the summer population possesses demographic characteristics that are measured at those persons official domicile. Better information about such measures may be of use in future solid waste management planning efforts, but the challenge of obtaining such data has yet to be resolved.

Key economic indicators for Shelter Island include:

- Approximately 58% of the population is in the labor force
- Mean travel time to work is 21.5 minutes. If we factor in ferry queue and transit time at about 15 minutes, the travel time infers that once off the island most have a very short commute to locations on the North or South Fork. There is no location on the island in which a 21.5 minute commutation would be deemed likely.
- The top industries employing Shelter Islanders are what would be considered "professional"; arts, entertainment, recreation, accommodation, and food services; and other services, not including public administration. Significant segments of the population are also involved in educational services, health care, and social assistance as well as construction.
- Median household and median family income are $74,125 and $79,345 respectively
- Approximately 56% of the population has Social Security income
- Approximately 27% of the population has retirement income
- Approximately 2% of individuals are below the poverty line
- Approximately 2% of all families are below the poverty line

Seasonality

It has previously been discussed that population quadrupling from winter to summer is a documented phenomenon. As a result the volume of municipal solid waste collected throughout the year feels the impact of such population transients during the seasonal swings.

Seasonal populations also change consumption and waste production behaviors. Increased purchasing of products in larger quantities which have more packaging is common. Short term visitors are less likely to consume the volume of product purchased, resulting in greater waste production.

The production of other waste forms, including yard waste, increase in proportion to population increases as well. Seasonal swings are experienced as landscape maintenance debris volume escalates from grass clippings and tree and shrub pruning during vegetation growth periods, along with leaf debris in the autumn. These swings occur as many seasonal occupants out-source the care of their properties to landscape maintenance contractors. Even owner-based property maintenance affects such waste production seasonally.

Cultural and Household Considerations

Cultural considerations include several demographic data points of interest.

- The median age of Shelter Islanders is 59.7 years. With the U.S. average at 36.5, the typical Shelter Islander is quite a bit older than most other Americans. Approximately 14% of the island population is under 18 years of age, and 6% of the population is under 5.
- Average household size is 2.12 persons.
- Average family size is 2.68 persons.
- Total housing units as reported by the Census stands at 3,037. Please note that this includes all forms of housing, beyond simply single family homes. Of that number, 1,880 are considered "vacant" – nearly 62%. This is a very important statistic as it emphasizes, along with seasonal population transients, the nature of trying to deal with waste generation in a community of largely seasonal occupancies.
- Based on the most recent Census, median home value is $830,300, with 55% of the housing units having no mortgage. For those who rent year-round, median monthly rent is $1,308. Such statistics imply that Shelter Island is a community of some affluence, especially when one considers that median home value is approximately 4.4 times the national value.
- Ninety six percent of the population has a high school diploma, with 49% holding a 4 year college degree or higher. Such educational attainment is consistent with apparent greater affluence.
- Sixty percent of the population is married.
- Sixteen percent of the population is veterans.
- Ninety one percent of the population is native born in the United States, and 77% are native New Yorkers.

We may infer some such data that Shelter Island's year-round population includes a high percentage of older, well educated, relatively affluent citizens from whom good compliance with a reasonable approach to waste management can be anticipated. The Town's experience with solid waste management over the life of the past two solid waste management plans is consistent with this expectation.

It can also be inferred that with an older population, a relatively small segment of the population under 18 years of age, costly housing options, and average household/family member counts at fewer than three, significant upward changes in population is unlikely. Shelter Island's Comprehensive Plan projected that, under current zoning, a maximum of 1,700 additional homes could be constructed on Shelter Island. This total is unlikely to be met because most residents and landowners are not expected to promote maximum growth through sub-dividing their properties. In more recent years a robust effort has been undertaken through the Community Preservation Advisory Board to conserve and protect open and undeveloped areas on Shelter Island, with more than 300 acres of land being preserved as Open Space.

Accessibility of Solid Waste Services

Solid waste services in the Town of Shelter Island are managed through two primary avenues: a Town operated facility to which solid waste may be brought, and private haulers. Of the two, most residents handle their own waste materials and deliver them to the Town facility.
There is only one relatively large-scale private hauler based entirely on Shelter Island, Shelter Island Sanitation, Inc. (DBA Dan's Carting and Recycling). Another relatively large-scale private hauler also offers services on the island: Shelter Island Environmental. Although maintaining a mailing address and local phone number, this private hauler is based off the island. These two firms represent the only concerted, professional effort to private haul waste in the town. It is estimated that they haul for about 600 residents or businesses and represent about 25% of the solid waste removed from the island.

Reportedly, one or more private citizens may be engaged in some very limited efforts to privately haul waste for some residences as well.

The Town waste complex facility is open from 7:30 AM until 6:00 PM daily, seven days per week. Only three holidays annually will find the facility closed: Thanksgiving, Christmas, and New Year's Days. Conditions for disposal at the facility include the following:

- Final refuse must be placed in Town bags, purchased at a number of island based locations
- Recyclables are collected free of charge and source-separated by residents during drop off
- Other materials are subject to inspection, weighing, fee collection, and disposal by the Town

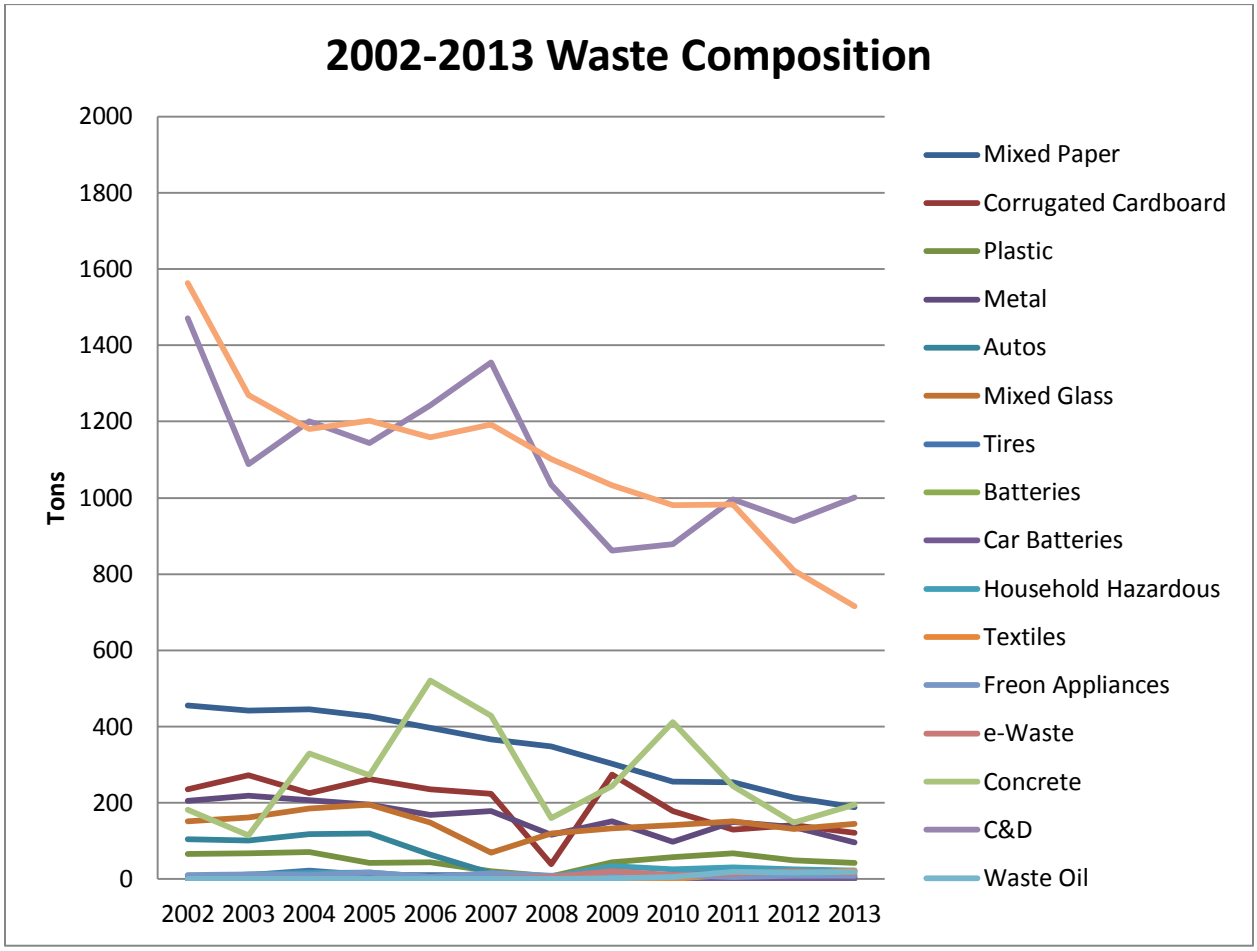
4.2 Waste types

Historical data of solid waste generation, recycling, and composition were shown in Table 2.2.1, and in the following table and chart:

Table 4.2.1 Comparison of Recent Waste Generation and Recycling (All numbers are expressed in tons)

Year	MSW Disposed	Recyclables	Total
2002	1234	1140	2374
2003	1270	1156	2426
2004	1181	1132	2313
2005	1203	1134	2337
2006	1159	993	2152
2007	1193	865	2058
2008	1101	633	1734
2009	1033	874	1907
2010	981	725	1706
2011	982	751	1733
2012	810	662	1472
2013	716	589	1306

Chart 4.2.3 2002-2013 Waste Composition



The quantities of municipal solid waste generated on Shelter Island were estimated and presented in the 1990 DGEIS. The historical estimates for 1986-1989 were based upon landfill records, which estimated total monthly tons of residential waste delivered to the landfill. These estimates were based solely on the total number and type of vehicles that delivered residential waste to the landfill. Table 2.2.1 shows tons per day (TPD) and total tons per year (TPY) delivered to the landfill since 2002. The large fluctuations in population from season to season suggest data in the form of average TPD have little meaning.

Table 4.2.1 presents new data for MSW and recyclables in the years 2002 - 2013. With acquisition of a scale to weigh incoming materials and with the export of waste off-island, records of both recyclables and MSW have been kept by the Town Highway Department since 1992.

Dvirka and Bartilucci used a weighted average monthly population of 5,167 persons in 1990 to account for seasonal fluctuations in Shelter Island's population. A per capita waste generation rate of 3.58 lbs./person/day was also used. The Town's waste stream was thus calculated to be 9.25 TPD, or 3,375 TPY, excluding C&D and land clearing debris. This estimate does not compare well with the value in Table 4.2.1 due to the potential inaccuracy in making landfill volume to mass conversions. In 2013, the Town disposed of 716 tons of MSW.

Chart 4.2.4 2011 Waste Stream

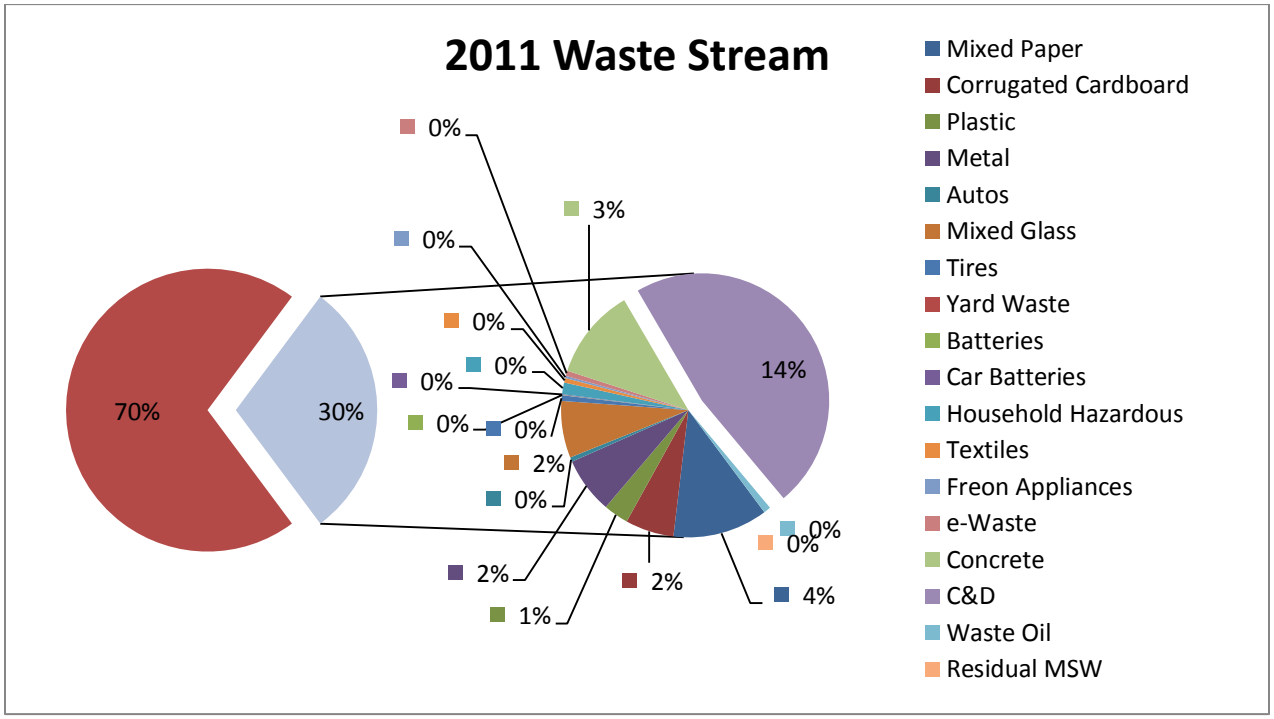
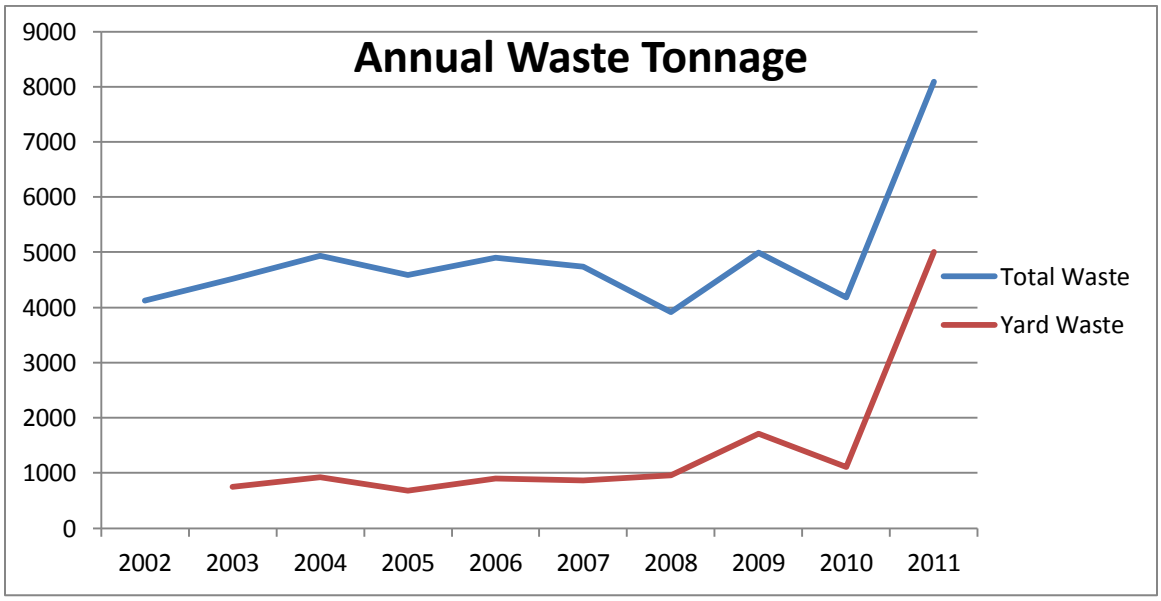


Chart 4.2.4 shows an analysis of the composition of the waste stream in 2011. The justification for the use of this collection data as waste composition data is that no other disposal or processing facilities exist on Shelter Island.

Chart 4.2.5 Waste Stream Total



No figures are available for e-waste between the years 2002-2007 because the town began to recycle e-waste in 2008. The town began tracking textiles (which are deposited by residents into collection bins for the Society of Saint Vincent de Paul) in 2012.

Yard waste generation, especially wood wastes, can be sporadic (driven by storms and construction or seasons, for example). The total tonnage of yard waste in 2011 was unusually high because of the amount of storm debris due to Tropical Storm Irene.

Although the population has not significantly increased since 2000, it appears that disposal tonnages decreased due to increased recycling, and consumer choices in purchasing decisions influenced by the institution of the Pay-per-Bag system. Rates of overall waste generation, as reflected in increasing amounts of tonnages managed by the Town, do appear to have increased over the past decade. The Pay-per-Bag system encourages residents to reduce, reuse, or recycle what they dispose. The less that is thrown out, the lower the cost is to the individual resident.

Another possible factor in the changes in waste composition numbers could be the behavior of summer visitors. The many weekend or weekday visitors may transport the garbage they generate off Shelter Island and dispose of it by other means. This avoids all costs of the Town Pay-per-Bag system.

Other factors at work include changes in technology (the internet has reduced the amount of newsprint), and changes in the market (for a period, there was a private firm processing some of the yard debris.)

SECTION 5

FUTURE QUALITATIVE AND QUANTITATIVE CONSIDERATIONS OF SHELTER ISLAND WASTE

FUTURE POPULATION AND WASTE GENERATION PROJECTIONS

5.1 Population and total waste predictions

Population trends were discussed in Section 2. To summarize in tabular form the results depicted in the Estimated Future Population Graph shown in that section we have:

Table 5.1.1 Future Population estimates for the Planning Period

Year	Winter*	Summer**	Average
2012	2426	9704	6065
2014	2460	9840	6150
2016	2495	9980	6238
2018	2530	10120	6325
2020	2566	10264	6415
2022	2602	10408	6505

* Assumes .7% growth annually

** Assumes summer population is four times winter

From population growth estimates, forecasted growth in future total waste is shown below:

Table 5.1.2 Future total waste quantity estimates for the Planning Period

Year	Total Waste in Tons Annually*
2012	8188
2014	8303
2016	8421
2018	8539
2020	8660
2022	8782

*Assumes 1.35 tons per person per year based on most recent data available

5.2 Comprehensive recycling analysis (cra) and current waste quantities

Any consideration of future waste generation must also include an examination of recycling and the most recently observed waste trends. An analysis of reduction and recycling practices has been performed for the Town and has been formulated into an overall strategy to maximize reduction, recycling, and reuse. The purpose of this section is to discuss a plan of action through which the Town can maximize the reduction of solid waste requiring disposal as cost efficiently as possible. To minimize the impact of more expensive processing options and long-haul disposal off Shelter Island comprehensive material recovery and waste reduction programs have been designed and implemented as part of the Town's SWMP.

Addressed in the this section are estimates of the materials recovery levels necessary to maximize recycling, materials collection, storage and processing, systems recommendations, implementation schedules, public information and education programs, and recommended legal and institutional policies which establish the infrastructure for the program. This discussion also considers geographic and demographic characteristics, existing solid waste and recycling practices, and financial obligations for implementation.

Table 5.2.1 presents the annual quantities of solid waste produced on Shelter Island in 2013 (a total of 5,426 tons) according to the Town's annual recycling report. The justification for the use of these collection data as waste composition data is that no other disposal or processing facilities exist on Shelter Island.

Table 5.2.1 2013 Waste Composition

Separated Materials	Percentage	TPY
Mixed Paper	3%	189
Corrugated Cardboard	2%	121
Plastic	<1%	42
Metal	2%	97
Autos	<1%	1
Mixed Glass	3%	145
Tires	<1%	7
Yard Waste	52%	2822
Batteries	<1%	1
Household Hazardous	<1%	22
Textiles	<1%	22
Freon Appliances	<1%	9
e-Waste	<1%	15
Concrete	4%	195
Car Batteries	<1%	2
C&D	18%	1001
Oil	<1%	19
Residual MSW	13%	716
TOTAL	**~100%***	**5426**

*Total percentage does not equal 100 due to rounding

The Pay-per-Bag system has had a profound impact on residual municipal solid waste generation rates. Recycling rates in 2013 appear to be lower than in 1999, even with the small increases in both winter and summer populations.

MSW Exported: In 2013, 716 tons of MSW were transferred off Shelter Island by the Town. The cost of transfer includes any tipping fees incurred by the hauler at processing and disposal facilities. All costs are offset by the fees collected by the Town from residents for garbage bags, and the associated fees for disposal of certain materials such as C&D and yard wastes.

Source Separated Recyclables: Separate containers are maintained at the Town waste management complex for source separated materials (metal, mixed glass, mixed plastics, soft mixed paper, and corrugated cardboard). Each material is transferred off Shelter Island by Town personnel and accepted at respective processing facilities. Table 5.2.2 shows the tonnage of each recyclable material collected from 2002 to 2013.

Table 5.2.2 Source Separated Recyclables Collected 2002-2013 (in Tons)

Separated Materials	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Newspaper & Mixed Paper	456	442	446	427	396	367	348	303	256	254	213	184
Corrugated Cardboard	235	272	226	263	235	224	40	274	179	130	142	121
Mixed Plastic	66	68	71	43	45	20	8	45	58	67	49	43
Metal	205	219	207	195	169	179	116	151	98	150	136	97
Mixed Glass	151	162	186	195	148	69	120	134	142	152	131	145

Yard waste

The Town accepts woody yard waste at the waste management complex. There is a weight dependent fee (refer to Table 3.3.3). This waste is ground for local re-use. Little yard waste is believed to be mixed with household trash due to educational program initiatives. In 2013 the Town also instituted a contamination fee for contaminants being dumped with the brush or leaves. Additionally a contamination fee was put in place for the disposal of contaminants in the MSW and C&D. Leaves and grass clippings are accepted and composted at no cost to the residents at the waste management complex. This waste is treated and ground to become wood chips and topsoil. In 2011, the Town sold 967 cubic yards of topsoil and 1,856 cubic yards of wood chips. 2011 composted material revenues were $25,000.

C&D Waste

The amount of C&D waste received at the waste management complex in 2013 was 1,001 tons. This amount was delivered by local contractors as well as residents. Separate bunkered areas exist at the waste management complex for asphalt, concrete, and metals. There is a fee schedule for disposal of such waste dependent upon the weight of material delivered (see Table 3.3.1). Fees are assessed on a weight basis using the scale at the waste management complex. Currently concrete and asphalt and ground glass are used by the Town in road projects within the waste management complex.

Medical Waste

No medical waste enters the Town's waste stream. The small quantities that are produced in the Town are disposed through private contracts. No data is available to estimate quantities generated.

White Goods and Autos

The waste management complex has separate designated areas for white goods and automobiles. The town stock piles and self-hauls autos to sell, and they are accepted at no cost

to the resident. In 2013, 1 ton of whole autos and parts were received at the waste management complex for recycling. The amount of autos brought to the waste management complex has dramatically decreased, reflecting the more attractive private sector market for disposal of autos, and other scrap metals.

Municipal Sewage Sludge

Most households on Shelter Island have on-site septic systems or cesspools. Any solids pumped from individual on-site septic systems are disposed off-island and do not enter the Town's waste stream. A small portion of the Town (145 households) is served by the Shelter Island Heights Waste Water Treatment Plant. Sewage sludge produced by this private treatment plant is trucked off island.

Tires

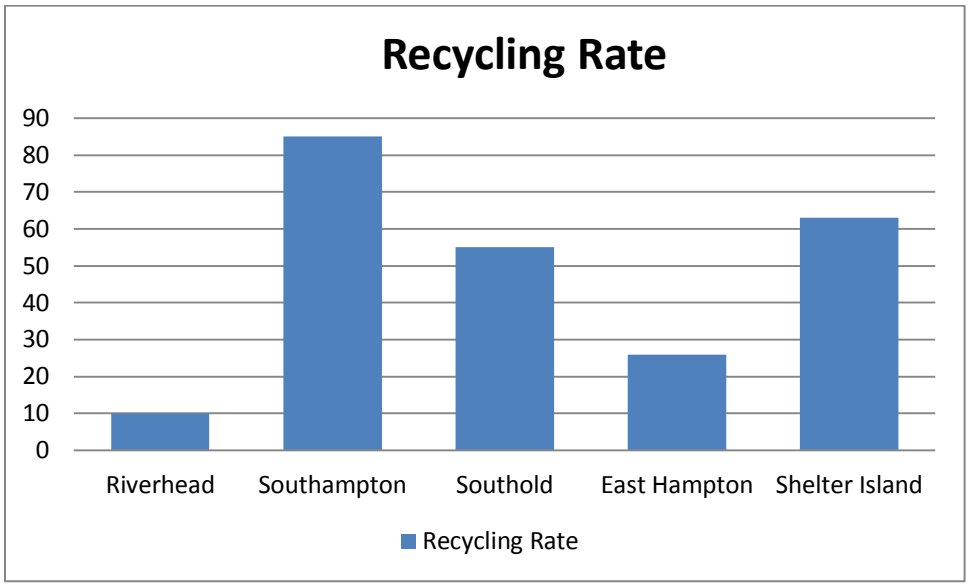
The Island generated about 7 tons of automobile tires in 2013. Tires are loaded into a container provided by Winter Brothers, who then hauls them off the Island.

Bulky Wastes

Oversized items such as household contents (furniture, rugs, tools, etc.) are placed in a designated area at the waste management complex. Those items which appear in good condition or appear to have potential reuse are removed and placed in an established Goody Pile for residents to sort through and reuse.

The Shelter Island Recycling effort has been very successful and is one of the leaders even among the 5 East End towns (which themselves lead the rest of Suffolk County). Figure 5.2.1 illustrates the success of Shelter Island compared to the other towns, using figures from 2009. These figures are drawn from the report on Recycling on Long Island in 2009 by Waste Reduction and Management Institute (2011).

Figure 5.2.1 Comparison of 2009 East End Recycling Rates



5.3 Future considerations

Although Table 5.1.2 offers estimates about the expected quantities of total waste generated out through 2022, a more careful look at elements contributing to those totals as well as possibly mitigating them is now in order.

Waste is classified as residential, commercial, industrial and institutional.

Residential waste defines the waste generated at homes and apartments. Residential waste also includes yard waste (leaves, grass, and brush) and bulky waste (C&D) such as furniture, lumber and carpet.

Commercial waste is generated by businesses such as offices, restaurants and stores. This waste is often collected from dumpsters or compactors, in parking lots and behind shopping centers. Construction and demolition (C&D) debris is sometimes considered a commercial waste. This is the result of renovation, demolition and/or construction activities. C&D is composed of building materials, bricks, concrete, wood and metals.

Despite the rural nature of Shelter Island, commercial wastes can be a significant portion of the waste stream generated in the Town. C&D and yard waste has accounted for 74% of the tonnage delivered to the waste management complex in 2011.

Many businesses in the Town are seasonal. They add to the fluctuations in composition and character of the waste stream between summer and other times of the year.

Industrial waste is usually generated by manufacturing industries from their operations and processes. There are no true industrial waste sources in the Town, although the assembly of powerboats at a marine facility on the island has an industrial quality. The work at this facility, however, involves the completion of hulls manufactured elsewhere. Thus the most “industrialized” aspect of fiberglass boat construction (the forming of the hull from plastic resins and fiberglass materials) takes place off the island.

The limited amount of sludge generated from the Shelter Island Heights Waste Water Treatment Plant is shipped to the mainland for processing. Solids from septic systems and cesspools are also treated off-Island.

Institutional waste is generated by government agencies, offices, and facilities including schools, unregulated wastes from hospitals, and Town offices. The category of institutional waste often contains higher percentages of office paper, computer paper, and colored ledger paper. Food wastes and packaging materials associated with meals are other lesser components of this category. Waste generated by the Shelter Island Medical Center, Town Hall, and the Shelter Island School System constitutes institutional waste generated in the Town. Paper recycling programs have been developed to reduce the waste transferred for disposal from these institutions. The limited amount of medical wastes generated in the Town does not enter the Town's waste stream.

When the Town Landfill was closed in 1991, the Town reviewed several options for dealing with its waste and recyclables. These were:

1) No action, where the Town would renounce all responsibility for solid waste management;

2) Privatization, where private enterprise would be afforded the opportunity to replace the Town as the manager of the waste stream;

3) Construction of one or more new facilities on Shelter Island to process and dispose of the waste stream, either by the municipality itself or through private concerns, or in a public-private partnership;

4) Continuation of the current collection process, but relying on off island facilities for processing and disposal.

The Town elected choice number 4. This solution avoided the potential loss of control associated with privatization, and the cost associated with the permitting and construction of a new waste processing or disposal facility. In re-evaluating these options as part of updating this plan, choice number 4 continues to be the most viable alternative and has worked out very effectively.

Choice number 1 was not a feasible alternative. Because this is an island, it is impractical to expect its thousands of citizens to individually haul their waste to an adjacent town via ferry.

Choice number 2 is not viable. There is insufficient waste stream to make privatization of waste disposal an effective option. To some extent waste disposal is reliant on the support of taxpayers.

Neither was choice number 3 a viable option. The quantity of non-recyclable waste produced in the Town (1,196 TPY) is still insufficient to fuel a WTE incinerator. The cost of transporting additional WTE incinerator waste via ferry onto Shelter Island makes construction of such facilities here impractical. In-vessel MSW composting in the U.S. is still experimental. There are no examples of unalloyed successes despite many attempts and hundreds of millions of dollars in investments. In addition, neither WTE incineration nor in-vessel composting technology is especially appropriate for a waste stream with such large seasonal size fluctuations. Landfilling is not allowed under the Landfill Law (except as a receptacle for residues from a system that "presumably" includes composting and/or incineration as a primary waste management tool.)

The Town, after making the decision to transfer its waste off Shelter Island, considered providing curbside collection of refuse and recyclables with direct haul off the Island as an alternative to residents

delivering waste to the waste management complex. The decision to use the waste management complex as a transfer station was based on the following conclusions:

1) Collection vehicles may have encountered difficulties scheduling pick up activities with the ferry system,
2) Collection routing is complicated by the fluctuating seasonal population,
3) Organized collection services are only cost effective with predictable routes, and
4) Residents were already well accustomed to bringing wastes to the waste management complex as it is the site of the closed landfill.

For these reasons the self-delivery of MSW and recyclables to the waste management complex has been continued. Residents are still provided the opportunity to hire a private collector.

Current recycling and solid waste collection services, based on decisions made in 1991, provide the basis for a comprehensive material recovery program that exceeds current State objectives. The preferred approach to maximize materials recovery would be to expand upon the existing recycling collection and disposal practices. This approach is preferred because residents and haulers are already accustomed and educated in the use of the Town's existing waste management complex, and because of the demonstrated success of the current system.

5.4 Resource recovery system

The continued use of the current system along with a few new proposals should allow Shelter Island to reduce/recycle/reuse up to 77% of the total waste stream over the life of the planning period, a moderate increase from the 1999 54% recovery rate and the current rate of 75%. The current and proposed resource recovery system includes waste reduction, intensive residential recycling, commercial and institutional recycling, major household appliance recycling, tire recycling, HHW removal, land clearing and C&D recycling, and composting of yard waste. The specific materials addressed in the current and proposed resource recovery system include: plastics, soft paper, clear/brown/green glass bottles, cans, bulk metals, tires, clothing, textiles, yard wastes, waste oil, household hazardous waste, concrete/brick/asphalt and batteries. The current program has been in effect for twenty years, is mandatory, and its efficacy is well established.

5.4.1 Residential recycling program

A major component of the proposed resource recovery system is the continued operation of the Town's comprehensive recycling program, which provides for the recovery and utilization of reusable waste resources. The Town-wide mandatory source separation program for recyclable materials has been successful in removing many recyclable materials from waste generated in all sectors of the Town. Recyclable materials are source separated and collected or privately dropped off at the waste management complex in a segregated manner. By all indicators the idea of recycling has largely been adopted and complied with by the vast majority of the island's population.

5.4.2 Potential reduction, reuse, and recycling

Yard Waste

This category of waste is highly seasonal, consisting of leaves, grass clippings, brush, and other vegetative materials. Chipped and composted yard wastes account for 50% of the wastes managed by the Town. Wood and yard waste were only 7.5% of the total waste stream sorted by Dvirka & Bartilucci

in 1990 and had increased to 25.5% in 2000. As cited previously, this figure is currently higher than it would be normally due to the excess storm debris from Tropical Storm Irene.

Yard waste can be source separated, and then composted or chipped. The Town currently has no difficulty using or selling all compost it creates. Alternatively, backyard composting, currently used by a number of Town residents, provides a waste reduction option that could include some vegetable food wastes as well as compostable low grade paper waste. Backyard composting could reduce the size of the Town's waste handling process system.

The Town currently does not have a formal "Don't Bag It" program for yard wastes. Town recycling information and public education information does suggest backyard composting as a means for residents to manage their own yard wastes. The Town will continue implementing such voluntary composting activities as a means of reducing the wastes actively managed by the Town. On the other hand it must be remembered that Town based composting of such material ultimately offers a product that can supplement Town revenues and help offset the cost of handling and processing island wastes.

Bulky Wood Wastes

These are typically generated by land clearing, major landscaping efforts, and storm damage. Minimization of these wastes is difficult because it is space and labor intensive. The Town manages these wastes by chipping and composting them to produce valuable topsoil and wood chips. The Town will optimize the chipping operations as finances allow by purchasing its own grinder (it currently rents one) and exploring static composting. In 1997, the Town purchased a wood chipper to reuse more of its waste and with the expectation of receiving a 50% cost sharing grant from the State Environmental Quality Bond Act. The DEC had required that the Town complete its SWMP in order to receive the grant monies. The chipper was not effective at grinding the brush and has been dedicated to grinding the glass.

Paper

This was 40% of the waste stream sorted in 1990. Recycled paper (newspaper, corrugated cardboard, brown paper bags, low-grade papers, books and office paper) constituted 18% of the 1997 waste stream. The 22% unaccounted for in 1997 was most likely soiled paper, which was discarded as MSW. Currently, paper accounts for 6% of the waste stream. This decrease is probably due to more periodicals being available online in digital format, which results in less paper in the waste stream.

Most paper waste is relatively easy to collect and process. Markets are available for many of these grades including newspaper, corrugated cardboard, and high quality office paper. Markets for paper are strong, and the Town has been able to recycle all paper the residents separate.

Corrugated cardboard is the only paper baled by the Town. The Town captures a high percentage of paper through the Pay-per-Bag financial incentive (which motivates residents to keep paper out of the household garbage waste stream), encouragement from employees at the waste management complex, and annual mailings which inform residents about recyclable materials.

Most disposed paper is likely soiled paper of various kinds. The Town will counsel interested residents regarding the waste reduction of soiled paper through backyard compost piles. Not all home composting projects are suitable for such wastes. Only the more vigorous of them should consider such expansions.

The Town has been offering paper shredding twice per year to its residents to help prevent identity theft. The paper is taken by the contractor as part of the agreement and is not captured as part of the recycling program.

Glass

The Town uses all glass collected at the waste management complex. Glass is crushed by the Town and used for roadbed aggregate within the waste management complex. This use may be expanded to other Town projects. Recovered glass comprised 9.2% of the sorted waste stream in 1990 and 5.6% of the total waste stream in 1997. Glass is currently 2% of the total waste stream.

Ferrous Metals

This category includes magnetic materials such as tin and bi-metal containers, iron, and steel products. Ferrous metals are marketable, but sometimes are difficult to collect from residential sources. A substantial amount of bulky ferrous products is recovered at the waste management complex through the drop-off of automobiles and major household appliances. The small amount of source separated non-ferrous metals in the form of aluminum food and beverage containers, foil, and housewares has been included with the ferrous metals in the Town's recycling program. A large portion of non-ferrous metal is readily and independently recycled through deposit can recovery. The combination of ferrous and non-ferrous metal recycling tremendously reduces the amount of metals in the Town waste stream. All metals were estimated to be 4.3% of the sorted waste stream in 1990. In 1997, recovered ferrous metals constituted approximately 11 % of the total waste stream. These metals constituted 2% of the total waste stream in 2011.

Plastics

The generation of plastic waste is expected to increase from its current volume. Most plastics are not difficult to separate from the waste stream. They are often difficult to transport and market. The Town recycles plastics (#1-7) and in 2012 began recycling #2 rigid plastics. Markets and processing strategies are evolving in response to an increased demand. Plastics were 7% of the waste stream in 1990. Recovered plastics comprised only about 1.4% (by weight) of the Town's 1997 waste stream. Currently, recovered plastics comprise <1% of the waste stream.

Block polystyrene may be a good candidate material for mandatory recycling. Its high volume to weight ratio presents a problem if included in MSW or if source separated. A high participation rate could be expected, since residents would experience big savings in the Pay-per-Bag system. The Town will continue to monitor the availability of a market for this material.

Some film plastics are generated in predictable large batches, especially in the spring. They come from marinas, where they are used to protect boats over the winter, and greenhouses and nurseries. The Town collects and recycles such materials on a weekly basis.

Textiles

This category includes clothing, rags, upholstery and other household fabrics. Clothing has long been recycled through secondhand stores and charitable agencies. The Town currently has several collection boxes in place at the waste management complex. The amount of clothing recovered in 1997 was not

quantified, and since it is handled as donations to a charitable organization, it will continue as is for the foreseeable future. Non-clothing textiles were 4% of the waste stream in 1990. The Town has started to track the weight taken from the island in 2012.

Food Waste

It can be difficult to collect or recycle food waste through a centralized system. Some reduction in the volume of residential food waste requiring handling/processing is possible through the encouragement of backyard composting. Centralized composting systems may also be used for sorted highly concentrated pure commercial/industrial sources such as cafeterias and restaurants. In addition food may be processed through solid waste composting programs. There are, however, strong arguments for decentralized composting, most of which focus on the technological and financial efficacy of such efforts when done on a larger scale. Composting on site avoids the expensive steps of processing, potentially transporting, and unnecessarily disposing of compostable material. Currently, reduction in food waste is being managed by the encouragement of backyard composting and the effects of the Pay-per-Bag system. If the Town were to institute an organized home composting program residents may be able to achieve a considerable reduction in the amount of wastes managed through the Town facilities.

The Town of East Hampton implemented a centralized food waste composting program. Its ambitious plans have been drastically scaled back. Factors influencing this decision included: (1) high costs, (2) continuing technical problems with the composting machinery, (3) difficulty in producing a marketable compost, and (4) difficulty in receiving contaminant-free organic wastes. East Hampton's experiences also make it very unlikely that Shelter Island will attempt to build a similar facility. However, de-centralized backyard composting will continue to be encouraged along with the backyard composting of vegetable wastes and low grade paper.

Batteries and Household Hazardous Waste

These wastes require special treatment. While recovered batteries and HHW made up less than 1% of the Town's waste stream in 2013, their disposal may have a relatively greater environmental impact than other portions of the waste stream. The Town will continue to provide a Stop Throwing Out Pollutants (STOP) collection service to have these materials safely disposed of. Town waste system publications suggest future trends involving the use of less toxic products, the purchase of smaller and more readily depleted containers of cleansers and other HHW, and the use of rechargeable batteries.

The percentage of the waste stream that can be recycled is strongly dependent upon the participation of the waste generators. Participation rates cannot be expected to reach 100% and similarly, it is not possible to recover 100% of a particular recyclable material. While total compliance is not truly achievable, ever greater participation remains the ultimate goal.

The key parameters influencing projected recovery rates through recycling are:

- available quantity to be removed from the waste stream,
- percentage of the total population of waste generators participating in a recycling program,
- percentage of material which is actually kept separate from refuse by the program participants and,
- percentage of material remaining after processing.

The main reason for the continued use of the current system is its success. The capture rates and processing efficiencies for each of the recyclable materials in the waste stream are taken from 1997 projections. The amounts recovered are calculated from actual data from 2013. As shown in this table, the residents of the Town have achieved high levels of recovery for each source separated recyclable by taking advantage of the facilities available, and through the incentive of no charge recycling.

The State set forth a 50% reduction/recycling goal for 1997. The Town has surpassed this goal.

These excellent rates have been achieved because:

- Residents of Shelter Island are particularly aware of environmental issues and the need for good practices. This awareness translates to higher-than-normal capture rates.
- Residents have been participating in the Town's mandatory recycling program for twenty years.
- The Pay-per-Bag system itself is largely responsible for high capture rates, giving residents a financial incentive not to discard recyclables along with household waste.

5.4.3 Recycling goals

The Town goal is an overall waste reduction/recycling rate of 40 for the total waste stream in 2022. The Town is well on its way to achieving this goal. In the absence of an approved SWMP the Town has still increased is recycling rate with each passing year.

The Town currently source separates and recycles most of the major recyclable material components of its waste stream. The small overall tonnages generated on Shelter Island create difficulties for the Town to do the following:

- Add new materials to the current list of source-separated recyclables.
- Store sufficient amount of materials to viably market.
- Develop new markets for additional material components of the waste stream and marketing existing recyclables.

The Town anticipates achieving its waste reduction/recycling goals through the following measures:

- Increase the overall capture rate for soft paper and corrugated cardboard. This will be accomplished by increased public education and particularly targeting junk mail and the summer season population.

- Increase the overall capture rates of plastics and mixed glass. This will be accomplished through public education and particularly targeting the summer seasonal population and the expansion of the recycling program at Town offices. The Town plans to improve the market for plastics and mixed glass by better managing existing space to improve material sorting.

- Add new materials to the recycling mix as processing services become available. Polystyrene is a particularly attractive candidate. A high participation rate could be expected, since residents would experience savings in the Pay-per-Bag system.

- Continue to recycle film plastics from marinas and greenhouses.

- Encourage continued backyard composting of yard waste and vegetable food waste.

- Increase textile recovery rates. Clothing textiles are currently recycled but there is insufficient storage to allow quantities of bulk textiles to be sorted for market.
- Continue the successful yard waste grinding and composting system which transforms these materials into highly sought, useful materials from which is derived a revenue stream for the Town.
- Continue operation of the Pay-per-Bag system, which reinforces and encourages residents to reduce, reuse, and recycle.
- Continue promotion, reinforcement, and encouragement of the need to reduce and recycle. This will be accomplished formally through mailings and public meetings, and informally through worker-public contact at the waste management complex. The Town Highway/ Public Works Department also has a new website with detailed information on recycling rules, fees, tips, news, and more.

SECTION 6

IMPLEMENTATION AND PLAN SCHEDULE

6.1 Responsible parties

At this time the Town does not anticipate any significant changes to the assignment of responsibility for waste management and recycling activities. However, an evolution has been initiated that will improve overall accountability and responsibility.

Present areas of responsibility are summarized below:

- **Residents**

  Are the key stakeholders in the plan. Their tax dollars largely fund the operation, so their needs must be addressed. They source-separate materials designated by the Town, deliver recyclables and household waste to the waste management complex, and or engage a private collector to perform this service. Their continued and increased on-site backyard composting of food and yard waste will be a further help to themselves.

- **Town of Shelter Island local government**

  Ultimately drives and manages the solid waste program and operates the Town waste management complex where MSW and recyclables are received for subsequent transfer off Shelter Island. The waste management complex is also the site of the Town's yard waste composting activity. The Town processes and composts yard waste brought to the waste management complex by residents. The Town markets the resulting compost for local use. The Town processes vegetative plant material into saleable mulch products. The Town bails and hauls soft paper, glass and plastics. The Town also delivers useable compost, topsoil, and wood chips for sale to the public.

- **Town Highway/Public Works Department**

Has all waste management authority and responsibility. Waste management is a separate budget category for the Town under the control of the Superintendent of Highways/Commissioner of Public Works. During 2012 significant strides were made in management structure for this department including re-emphasizing the role of the department Superintendent, reinforcing the role of the waste management complex crew leader personnel as the first line supervisors in day to day operations, and adding the part-time position of Town Engineer. As a New York State licensed professional engineer, the Town Engineer now affords cost effective engineering expertise to waste management decision making.

- **MSW Hauler** (currently Winter Brothers)

  Transfers residual MSW off Shelter Island. They provide roll-off compactors and roll-off boxes for the storage of source separated recyclables and household waste, and remove compactors and boxes on a will-call basis for disposal of MSW and tires.

6.2 Funding and costs

Table 6.2.1 demonstrates how recycling receipts and pay-per-bag receipts offset the cost of off-Island transfer of MSW and recyclables in 2013.

Table 6.2.2 provides a summary of the projected cost the Town expects to incur in operating the waste management complex, as well as in contracting the transfer of the Town's MSW and recyclables off Shelter Island over the next 10 years. Estimates are in 2012 dollars with an annual inflation escalation factor of 2 percent applied to personnel expenses.

Table 6.2.1 2013 Offsetting Costs by Recycling Receipts and Pay-per-Bag System

Material/Service	Disbursement/Receipt
Receipts for Plastic	$3,788
Receipts for Bags	108,311
Receipts for Metal	16,958
Receipts for Mixed Paper	6,222
Receipts for C&D	151,110
Receipts for Cardboard	8,142
Receipts for Inbound Vegetative Waste	104,915
Receipts for Processed Vegetative Waste Sales	47,700
Receipt Subtotal	**$447,146**
Disbursement for MSW	$98,300
Disbursement for Grinding Vegetative Waste	48,215
Disbursement for Purchase of Bags	8,410
Disbursement for C&D	68,977
Cost for HazMat Hauling	26,252
Disbursement for Electricity	7,512
Disbursement Subtotal	**$257,666**
Balance	**$189,480**

Costs are not expected to be significantly affected by the projected increased recycling in the Town. Most of the expected gains are in the reduction of total tons of MSW to be disposed through such measures as food waste and low grade paper composting.

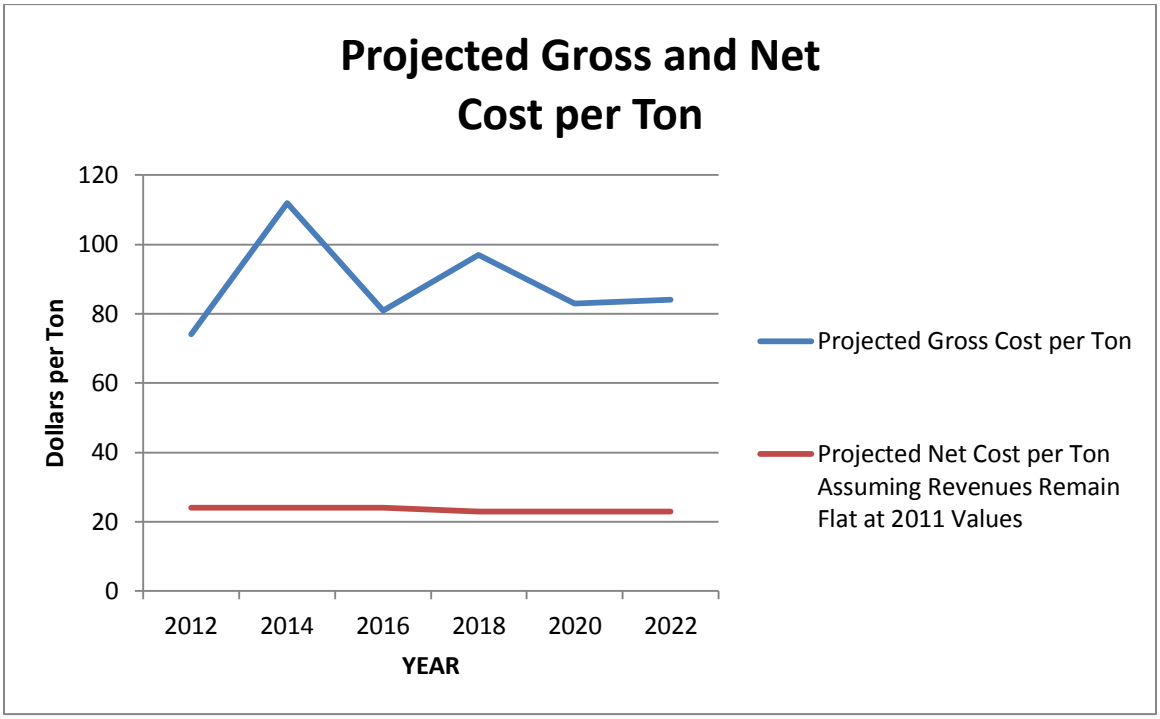
Table 6.2.1-Projected Cost of Waste Management

Budget Cost Category	2012	2014	2016	2018	2020	2022
Personnel	$286,541	$298,117	$310,161	$322,692	$335,728	$349,292
Equipment	70,000	334,000	70,000	200,000	70,000	70,000
Processed Concrete	20,000	20,000	20,000	20,000	20,000	20,000
Test Wells	1,000	1,200	1,400	1,600	1,800	2,000
Office & Misc.	3,500	3,500	4,000	4,000	4,500	4,500
Uniforms	3,000	4,500	4,500	5,500	5,500	6,000
Engineering Fees	500	5,000	5,000	5,000	5,000	5,000
Advertising	750	2,000	2,000	2,000	2,000	2,000
Environmental Monitoring	7,500	9,500	9,500	10,000	10,000	10,500
Legal Fees	500	500	500	1000	1000	1000
Recycling Area Maintenance	20,000	20,000	20,000	20,500	21,000	21,000
Hazardous Waste Facility Management	1,000	18,238	18,603	18,975	19,355	19,742
Electricity	8,000	8,000	8,500	8,500	9,000	9,000
Bag Purchase	15,000	15,000	15,500	15,500	16,000	16,000
Landfill Contingency	4,500	4,500	5,000	5,000	5,500	5,500
Solid Waste Carting Fees	100,000	120,000	122,400	124,848	127,345	129,892
Hazardous Waste Carting Fees	65,000	65,000	66,300	67,626	68,979	70,359
Hazardous Waste Training	1,000	1,558	1,589	1,621	1,653	1,686
TOTAL	**$607,791**	**$930,613**	**$684,953**	**$834,362**	**$724,360**	**$743,336**

During 2012, and under the new Superintendent of Highways/Public Works, a greater emphasis on seeing the solid waste management function of the Town as appropriate for application of business models has taken place. Two of the strongest emphases have been on management of the function and attention to possible revenues available from processed waste. Consistent attention to these two areas during the life of the current plan will reap both revenue and expense benefits for the Town, and ultimately contribute to achieving improved returns for the taxpayers.

Figure 6.2.2 illustrates the projected trends for gross and net costs over the next 10 years per ton of waste handled at the waste management complex. A very conservative approach has been taken in presenting these projections because while the sale of processed vegetative waste is expected to increase with enhanced processing capabilities, the projection assumes sales receipts in that area remain flat at 2011 values. Nonetheless the net cost will decline slightly over time and may actually experience deeper savings with better processing of yard and woody wastes.

Figure 6.2.2 Projected Overall Costs for Handling Shelter Island Waste



6.3 Enforcement

The Town of Shelter Island Code contains rules and regulations, penalties, and fines concerning solid waste management and disposal (Appendix C.) However, tickets and fines have rarely been needed. Due to the intimate nature of the small community, the Town finds education, encouragement, and direct personal intervention far more successful and positive than tickets and legal action.

One area of potential enforcement includes private commercial waste collection and haulers. Although only two such entities currently provide private collection and disposal of waste on the island, no licensing or regulation of such providers exists. Ensuring that all private concerns involved in the collection, handling, processing, and disposal of wastes are doing so within the context of local, county, state, and federal regulations will be increasingly important if full compliance with waste management goals and objectives is to be achieved.

Within the life of this plan the Town will investigate and, if deemed appropriate, attempt to institute local licensing of private waste collection and hauling providers.

The Town has added two contamination fees that can be charged to a customer who places contaminants in the recycling center in either the brush or leaf pile or the C&D or MSW area. The associated fees are to be a deterrent from dumping illegally.

6.4 Schedule

Table 6.4.1 (set forth on the following page) contains the steps the Town will take throughout the ten-year planning period to ensure the continued success of our recycling program. These steps will also improve waste management practices to help attain the goals of over 56% reduction/recycling of total waste stream.

Table 6.4.1 Planning Period Schedule

Item	Schedule
Improve storage area for goody pile	2012
Modify waste management complex layout for efficiency and traffic safety	2012
Reach out to businesses to improve recycling	2012
Research static composting for cost-savings	2012- 14
Bid out MSW haul contract	2013 – 2-5 years after
Place recycling cans for visitor use	2013
Construct roof over recycling equipment	2014
Greater source separation of plastics, glass and cans	2014
Purchase screening plant for composting	2013
Annual Recycling Report	Annually
SWMP Compliance Report	Every two years
New SWMP/CRA	Ten years
Education and enforcement	Continual
Require Private Haulers to become licensed	2014
Investigate the usage of a solar array to generate revenue from un-used space	2013-2014
Install a mini MRF for efficient separation and baling of material to generate maximum revenue	2015-2016

6.5 Barriers to Plan Implementation

Shelter Island is geographically isolated. The year-round population of approximately 2,400 may not be able to support any unforeseen costs associated with the processing of yard waste or the transfer of its residual MSW off-island (after extensive source separation recycling).

Due to the relatively small quantities of recyclables generated in the Town, the Town is in a difficult position to add new materials to the current list of source separated recyclables or to develop new markets for additional material components of the waste stream. This may be a barrier to the proposed increased recycling rates.

The actual footprint of available space will not allow the current plan to operate when we reach build-out, without the purchase of equipment to process the material as it comes in for disposal. The storage space for brush will require more frequent grinding to reduce volume. Static composting of leaves will be a must in order to accommodate the large volume that comes to the center. Static composting reduces processing area and handling costs.

Available funding for the purchase of equipment will continue to be a barrier to improvement and efficient operation of the plan. Equipment costs money and the 2% tax cap prevents the Town from purchasing expensive equipment.

The figures presented in this SWMP are goals established by the Town, and are based upon assumed public participation and capture efficiencies. These goals do not represent theoretical maximums, but rather, potentially feasible levels. Actual quantities of recovered materials will vary from these goals to the extent the assumptions made do not reflect actual conditions. The Town offers no guarantee that any of these goals will be achieved, and under no circumstances are the presented figures to be considered a commitment by the Town to obtain these goals. These figures are subject to change as addition information becomes available.

SECTION 7

EVALUATION OF ALTERNATIVE SOLID WASTE METHODOLOGIES FOR SHELTER ISLAND

7.1 Introduction

A wide variety of alternatives were reviewed for suitability as components for the SWMP for Shelter Island. This evaluation included a review of the analysis of solid waste alternatives and technologies performed by Dvirka & Bartilucci in the 1990 DGEIS for Shelter Island and the Waste Reduction and Management Institute in 2000. This section provides an overview of various alternatives which the town could employ utilizing solid waste technologies.

7.2 Current Conditions of Solid Waste Methodologies

In evaluating possible alternative solid waste methodologies for Shelter Island, a proper analysis requires a review of existing conditions in the Town. The feasibility and desirability of various solid waste technologies must take into account the following factors:

1) Collection of household garbage: arrangements for such collection can be made with private contractors, although residents may bring their own garbage to the waste management complex. Approximately 30% are using commercial haulers though there is no statistical information being collected on this issue.

2) Most municipal solid waste that is hauled by the residents themselves is deposited at the waste management complex. The waste and recyclables are temporarily stored within compactors and roll-off boxes until reaching capacity, and are then transported off of Shelter Island to various processing and disposal facilities by the MSW hauler (currently Winter Brothers.)

3) The waste being collected by commercial haulers usually does not come to the waste management complex and is being hauled off-island to another disposal area.

4) A mandatory recycling program has been in effect since September 20, 1991. All residents are required to separate their own recyclable materials. Glass, plastics, soft mixed paper, cans and corrugated cardboard are all transported off of Shelter Island. It is unclear whether the materials collected by commercial haulers are being separated and recycled.

5) The generation of solid waste on Shelter Island undergoes large fluctuations because of the large influx summer seasonal population. Typically, monthly waste tonnages received at the waste management complex vary by as much as 150 tons from off-season to peak-season in any year.

6) Shelter Island consists primarily of residential areas and open spaces. There are no large industrial operations in the Town. Yard waste associated with residential uses has become a huge (2/3) component of the waste management center operation.

7) Shelter Island is relatively isolated and transportation to the island limited by two ferry systems. No other public transportation to Shelter Island is available.

8) No potential for new landfilling on the island exists. Due to the presence of marine and freshwater wetlands and because much of the island is low lying, suitable sites for new landfills do not exist. In addition, the Long Island Landfill Law and site approval considerations suggest that gaining approval of a landfill site is not possible.

9) The apparent failure of the East Hampton MSW Composting Plant makes it unlikely that the Town would either send source separated organic waste to the facility or construct a similar facility.

10) The need for transportation of all waste by ferry means that it is not cost effective for Shelter Island to jointly manage MSW with neighboring towns such as Southold, Riverhead and Brookhaven.

11) Lastly, the small tax base along with state-mandated budget caps limit the ability of the Town to borrow money for capital projects.

Evaluation of Alternatives

After recognizing the current situation, it is useful to consider other alternatives for management of the waste stream on Shelter Island. The alternatives analysis is split amongst the three largest portions of the waste stream--MSW/Recyclables, C&D and Yard Waste.

7.3 MSW/Recyclables Management Alternatives

MSW/Recyclables comprise 15% of the waste stream at this time, but poses the greatest risk to health unless properly managed.

Alternative 1: Maintain current system.

The current system means that the town maintains a Recycling Center that charges to accept disposal of waste, either by weight or in town garbage bags.

Pros:

- By requiring users to pay per town bag or by weight, there is a direct financial incentive for them to separate recyclables from the MSW stream
- By providing users with an easily accessible MSW collection area at a reasonable price, people are encouraged to properly dispose of MSW
- The cost of the MSW fees collected by the town can be offset against the cost of paying for a commercial hauler
- The MSW hauler is required to provide assurances that the MSW ends up at an approved disposal facility

Cons:

- The system allows commercial waste haulers to bypass the town Recycling Center
- The system requires people to purchase town bags (town has to order bags, sell them, account for them, etc.)
- The system requires constant monitoring of the MSW hauler, with a loss of control in certain areas
- Maintaining the waste stream would require the town to continue its investment in staff and facilities at the Recycling Center

Alternative 2: Maintain current system but have town employees haul **MSW** *to appropriate facility.*

Pros:

- The town would be able to control the removal of all wastes from the Recycling Facility (the town currently removes only the plastic, glass, paper and C&D). This gives the town greater control of the timing and there may be increased efficiencies that would make it more cost effective than the current private hauler.
- The town would have control of where the materials go to minimize cost and maximize revenue.

Cons:

- This would require an investment in equipment (trucks, roll offs) as well as a need for more manpower to drive the trucks.

Alternative 3: Maintain current system but license commercial waste haulers.

At this point an estimated 30% of the waste stream is being taken off-island by private haulers. This is reducing the amount of recyclables and MSW entering the Recycling Center. A reported trend is waste not being source-separated for recycling at all, or if it is being done, the revenue is going to another facility and or the MSW is combined with the recyclables to reduce the number of trips they have to make to service their customers.

Pros:

- The town has no firm control or accounts of the quantities of waste which is now bypassing the Recycling Center. A license could be set up two ways:
    - All commercial waste by licensed haulers must come to the Recycling Center, or
    - The license would require haulers to report the quantities of waste and recyclables being removed
- Ease of recognition and recordkeeping for commercial trucks by Scale house
- Greater control of behavior of commercial waste haulers. For example, they could be required to have customers use town bags, which encourages recycling. Or there could be appropriate penalties in place if MSW loads are contaminated

Cons:

- Commercial hauler would have to get town licenses and town would have more recordkeeping
- Maintaining or increasing the waste stream would require the town to continue its investment in staff and facilities at the Recycling Center
- No recycling is occurring.

Alternative 4: Maintain current system but lower rates or create Recycling opportunities f**or** commercial haulers.

Commercial haulers appear to be finding it financially advantageous to haul waste to Southold, which accepts mixed waste. Prices could be adjusted to incentivize them to haul to Shelter Island Recycling Center.

Pros:

- More waste would come to the Recycling Center. The increased amounts of Recyclables coming in can generate additional revenue for the town. This could be increased if the town offered improved access to Recycling systems at the town.

Cons:

- The MSW coming to Shelter Island would have to be hauled off
- Maintaining or increasing the waste stream would require the town to continue its investment in staff and facilities at the Recycling Center

Alternative 5: Encourage the trend regarding use of Commercial Haulers.

There appears to be a trend towards use of commercial haulers, as evidenced by the decreasing quantity of MSW and recyclables coming into the Recycling Center. If this trend continues, the Town could establish a mandatory waste collection district in which everyone is required to use a commercial hauler and it is paid for through taxes. The town would bid areas out to commercial haulers who would then serve everybody in that area.

Pros:

- The town would have control of the waste stream and there may be some economies of scale if haulers served everybody in a particular area.
- Only commercial haulers would be using the Recycling Center for MSW/recyclable disposal so it could be substantially reconfigured

Cons:

- The community aspect of the Recycling Center would be lost
- The choice of using a commercial hauler or self-hauling would be lost
- There would be additional work to bid out areas, select haulers, monitor performance and dividing cost amongst taxpayers

Currently the 2,394 homes would represent a tax increase of 1.5 million dollars annually to the budget, or an increase of about $600 annually. Collection would occur three times a week for MSW, paper, cardboard, plastic, tin and aluminum in order to keep the recyclables separate. This increase will prove to be too costly. The curb appeal of Shelter Island will also be diminished by unsightly garbage cans in front of homes. Our large animal population will cause garbage to be spread around the roads by invading animals.

7.4 Yard Waste Management Alternatives

Yard waste comprises approximately 70% of the current waste stream, which reflects a sharp increase. In the past, much of it was dealt with on-site through composting or burning. The DEC prohibition on burning effective 10/09, together with the closing of another island yard-waste processing center, coincides with a sharp increase in yard waste coming to the Recycling Center. At the same time, there have been several large storms that may have caused the increase. The passage of time may better indicate the cause and future trend.

Alternative 1: Maintain current system.

The current system involves the town accepting wood chips and bulky yard waste at a fee, while accepting leaves at no cost. The materials are stockpiled in windrows. Periodically the town hires a grinder for the materials, which are then run through a screener to create compost, topsoil and other materials which the town markets.

Pros:

- The system allows the town to process these wastes in a way that generates income (see figures in Chart 6.2.1)

Cons:

- The town has a limited amount of space for stockpiling and windrows. A bad storm can create waste that exceeds the site capacity for storage. The current bottleneck in processing it is the presence of a grinder.
- The system is labor and equipment intensive.

Alternative 2: Expand current system.

Add a grinder and a windrow turner or static composting to expand the town's capacity to generate marketable topsoil and compost.

Pros:

- The town would have control over material process which will eliminate the site storage issues associated with every day use and the overloads from storms.
- The DEC grant program will pay for 50% of all machinery purchased for recycling.

Cons:

- The equipment would require a significant outlay of initial funds, although it can be expected to be recouped over a 5-10 year period.

Alternative 3: Contract current system.

Adjust prices for these materials in a manner that would encourage landscape contractors to remove the materials from Shelter Island or to leave them on the original property.

Pros:

- The amount of manpower and investment by the town in yard waste processing would be reduced.

Cons:

- The income the town is currently generating from yard waste would disappear.
- Debris would start to appear in areas that are not frequently traveled due to illicit dumping by those unwilling to take yard waste off-island.

Alternative 4: Continue current system, but license landscapers.

Pros:

- This would improve Scale house ability to monitor landscapers using Recycling Center. It may increase the efficiency of billing for use of the Recycling Center.
- This would allow the town to target educational efforts on landscapers working on Shelter Island by compiling a list and contact info.
- This would increase town's leverage over landscapers who dump inappropriate materials.

Cons:

- Contractors would have to register to get a license from the Town.
- Minor additional record-keeping to keep licenses current.

7.5 C&D Management Alternatives

This waste comprises 14% of the town's waste stream.

Alternative 1: Maintain current system.

Efficient Truck Loading Savings							
Truck Tare Weight 46,000		1148	Tons per Year				
Current C&D Hauling Truck capacity 100,000 RGVW		27	Ton Load Capacity				
82	Loads per year	13.61	Average Load Tons	Loaded with payloader			
		13.39	Tons Short of full load				
Efficient Loading of C&D Material		27	Ton Load Capacity				
42	Projected Loads per year	27	Loaded to capacity				
		0	Tons Short of Full Load				
40	Loads per Year Saved		**Savings**				
		$4,000	160 hours of man power saved				
		$4,800	2400 Miles saved on truck				
		$1,600	480 Gal of fuel saved				
		$4,480	25 Ferry Fees				
		$14,880					

Table 7.5.1 Efficient Truck Loading Evaluation

The current system involves the town accepting the C&D at the facility and loading a 100 yard walking floor trailer with a pay loader. The Town Loads and hauls the materials (when enough has accumulated) to sell for revenue. Material is delivered to a Permitted recycler. The truck leaves the facility with on average with 13.9 tons, while the capacity is 27 tons. A savings can be generated by loading the trailer with an excavator and maximizing its use while saving on expenses. Over the life of the excavator it can be projected the Town could stand to save about 300,000 dollars.

Pros:

- Control of hauling costs
- Getting best price for sale of materials

Cons:

- Cost of obtaining and maintaining sufficient equipment and manpower.
- The town has to stockpile C&D until there is enough for a load. Currently, large-scale private haulers are hauling the materials to a recycler to sell for revenue themselves, so those materials bypass the town.
- The storage area is not enclosed and gets wet, adding extra cost to the tipping fee.

Alternative 2: Expand current system.

Encourage private haulers to use the Recycling Center.

Pros:

- Town would collect more material for resale and increase revenues.

Cons:

- Town would probably have to lower price to accept large-scale C&D in order to encourage hauler to use town facility.
- Expansion would result in increased costs for the town to haul the increased C&D.

7.6 Legal and Institutional Analysis

Currently there are no laws, rules, regulations, or ordinances, which could cause potential constraints to the selected recyclables recovery program. The program highlighted throughout the plan has been in place for twenty years and little change is proposed to its successful operation. The Town code has already been amended and requires the source separation of all materials for which an economic market exists for all generators. Therefore, no new local law or ordinance needs to be adopted to facilitate the operation of the recyclables recovery program. However, depending on the alternatives selected the following changes may be in order:

- Licensing landscapers;
- Licensing private waste collectors and haulers;
- Establishing special waste collection district.

7.7. Conclusion

By obtaining disposal services through the bid process, coupled with recyclables marketing by the Town itself, and the imposition of the Pay-per-Bag collection system with aggressive recyclables source separation, the Town has achieved a reliable and administratively simple means of waste management.

However, this report seeks to analyze the past to discern trends, and outlines options to deal with the impacts of those trends. These trends include a huge increase in yard waste, an increase in commercial hauling of waste, a decrease in materials being brought to the Recycling Center and an increase in town hauling of materials. This report outlines some alternatives that the Town Board could consider to address these trends.

APPENDIX A

MSW Charts

Table 1: MSW Payback Evaluation

5 Year Payback	Total	Annual	Total 5 year Cost
Projected Costs @ 4%	$225,000	$50,097	$250,485
Projected Savings 2014-18	$64,400	$12,880	$64,400
Projected Revenue 2014-18	$222,620	$44,524	$222,620
Total 5 year P/L		$7,307	$36,535
NYS DEC Grant		$17,500	$87,500
Total		$24,807	$124,035

Table 2: Projected Savings Over Contract Hauling

Projected Savings Over Contract Hauling	2014-15	2016-17	2018	Total
Projected Self Haul Costs	$116	$121	$126	
Actual Bid Price per ton	$132	$140	$148	
Projected Savings over Bid per ton	$16	$19	$22	
Tons per year	700	700	700	
Annual Savings	$11,200	$13,300	$15,400	$64,400

Table 3: Cost to Haul to Short vs. Long

Projected Haul Expenses	Southohld $90 per Ton	Yearly	Medford $75 per Ton	Yearly
Loads	1	60	1	60
Ferry $7.76 per ton	$95	$5,700	$95	$5,700
Distance Round Trip	*26*	1,560	*90*	5,400
Labor Cost	$90	$5,400	$120	$7,200
Travel & Unload Time	*2.75 hrs.*	*20 days*	*4 hrs.*	*30 days*
Fuel	$19	$1,140	$63	$3,780
Annual Equipment Cost 100%- No DEC Grant	$278.32	$16,699	$278.32	$16,699
Total per load	$482.32	$28,939	$556.32	$33,379
Transportation Costs per Ton per average load 12.25t	$39.37		$45.41	

APPENDIX B

2012 NYS DEC Annual Planning Unit Recycling Report

COPY COPY

Print Form

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT
ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT

(Use additional sheets if necessary)

REPORT YEAR:	PLANNING UNIT NAME:
2012	Town of Shelter Island Recycling and Transfer Station

ADDRESS:	COUNTY:
34North Manantic Road Shelter Island,NY 11064-1000	52 - SUFFOLK

CONTACT PERSON:	EMAIL:	TELEPHONE NUMBER:
Jay L Card Jr	jcard@sshelterislandtown.us	631-749-1090

SOURCES OF DISPOSAL AND RECYCLING DATA (check all appropriate boxes):

☑ Scale Weights ☐ Hauler Surveys ☐ Estimates
☐ Truck Counts ☐ Facility Surveys ☐ Other

LIST FACILITIES IN YOUR PLANNING UNIT WHICH ARE INCLUDED IN THIS REPORT

	FACILITY NAMES	REGISTRATION / PERMIT NUMBER
1.	Town of Shelter Island Recycling and Transfer Station	#52TOR#360
2.		
3.		
4.		

WASTE DISPOSED

WASTE STREAMS		LANDFILLED Name & Address	LANDFILLED Tons	COMBUSTED Name & Address	COMBUSTED Tons
Municipal Solid Waste (MSW)	1.	Winters Brothers,107 Mahan St. West Babylon,NY11704	810.45		
	2.				
	3.				
C & D Debris (C&D)	1.	Town of Brookhaven,350 Horseblock Rd,Brookhaven ,NY 11719	158.9		
	2.	Crown Recycling,Youngs Ave Riverhead,NY 11901	839.82		
	3.	Town of Brookhaven,Hurricane Sandy C&D debris	117.41		
Non – Hazardous Industrial Waste	1.				
	2.				
Biosolids	1.				
	2.				

Revised 02/2010

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ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT

(continued)

(Use additional sheets if necessary)

RECYCLABLES RECOVERED

Do not report recyclables that result from the Returnable Container Act or are part of a Beneficial Use Determination

PAPER::		END USE OR DESTINATION FACILITY (Name and Complete Address)	TONS (to each facility)
Newspaper	1.		
	2.		
	3.		
Corrugated Cardboard	1.	Westbury paper,Dickens St,Westbury NY11590	141.61
	2.		
	3.		
Paperboard / Boxboard (e.g. cereal, shoe, gift boxes & light cardboard)	1.		
	2.		
	3.		
Office Paper	1.		
	2.		
	3.		
Magazines	1.		
	2.		
	3.		
Junk Mail	1.		
	2.		
	3.		
Other Paper (specify): mixed paper-news-mags-junk	1.	Westbury Paper,Dickens St, Westbury,NY 11590	212.95
	2.		
	3.		
GLASS:		**END USE OR DESTINATION FACILITY (Name and Complete Address)**	**TONS (to each facility)**
Glass Containers (all colors)	1.	Town of Shelter Island (stays at facility)	131.36
	2.		
Glass Non - Containers (e.g. vases, windows)	1.		
	2.		
Industrial Scrap Glass	1.		
	2.		
Other Glass (specify):	1.		
	2.		

(Page 2 of 6)

ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT

(continued)

(Use additional sheets if necessary)

RECYCLABLES RECOVERED Do not report recyclables that result from the Returnable Container Act or are part of a Beneficial Use Determination			
METAL:		**END USE OR DESTINATION FACILITY** (Name and Complete Address)	**TONS** (to each facility)
Tin / Aluminum Containers	1.		
	2.		
Aluminum Foil / Trays	1.		
	2.		
Enameled Appliances / White Goods	1.	Gershow Recycling,71 Peconic Ave MedfordNY11763	8.81
	2.	(freon units)	
Bulk Metal (from residents)	1.	P&K Metals Rt 112 Coram,NY 11727	127.14
	2.		
Metal Reported By (automobile dismantlers, junkyards, scrap metal processing)	1.		
	2.		
Metal Recovery from Municipal Waste Combustor	1.		
	2.		
Industrial Scrap Metal	1.		
	2.		
Other Metal (specify): _____	1.		
	2.		
PLASTICS:		**END USE OR DESTINATION FACILITY** (Name and Complete Address)	**TONS** (to each facility)
PET (Plastic #1)	1.		
	2.		
HDPE (Plastic #2)	1.		
	2.		
Other Rigid Plastics (#3 - #7) (identify quantity & type if available)	1.		
	2.		
Plastic Containers (#1 - #7) (if collected & marketed commingled)	1.	Omni Recycling,Grand Ave Westbury,NY 11590	48.65
	2.		
Plastic Film & Bags	1.		
	2.		
Industrial Scrap Plastic	1.		
	2.		
Other Plastic (specify): _____	1.		
	2.		

(Page 3 of 6)

ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT
(continued)

(Use additional sheets if necessary)

RECYCLABLES RECOVERED Do not report recyclables that result from the Returnable Container Act or are part of a Beneficial Use Determination			
COMMINGLED:		**END USE OR DESTINATION FACILITY** (Name and Complete Address)	**TONS** (to each facility)
Commingled (paper & containers)	1.		
	2.		
Commingled (containers only)	1.		
	2.		
ORGANICS:		**END USE OR DESTINATION FACILITY** (Name and Complete Address)	**TONS** (to each facility) Do NOT use CUBIC YARDS
Leaves & Grass	1.	Town of Shelter Island(stays at facility-composted for topsoil)	937.5
	2.		
Brush / Branches / Trees / Stumps	1.	Town of Shelter Island(stays at facility-ground for mulch)	2,365.65
	2.		
Food Scraps (e.g. kitchen scraps, grocery & restaurant food waste)	1.		
	2.		
Food Processing Waste (e.g. brewery waste, fish, fruit, vegetable & dairy processing waste)	1.		
	2.		
Biosolids	1.		
	2.		
Other Organics (specify): hurricane debris- trees etc.	1.	Town of Shelter Island (stays at facility-ground for mulch)	2,039.64
	2.		
MISCELLANEOUS:		**END USE OR DESTINATION FACILITY** (Name and Complete Address)	**TONS** (to each facility)
Textiles	1.	St Vincent De Paul,Mill Rd, Coram,NY 11727	14.6
	2.		
Electronics	1.	SAMR ,1950 Rutgers University Blvd,Lakewood,NJ 08701	20.93
	2.		
Tires	1.	Winters Brothers,Mahan St,West Babylon,NY 11704	7.09
	2.		
Wood Pallets	1.		
	2.		
Other Miscellaneous (specify):	1.		
	2.		

(Page 4 of 6)

ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT

(continued)

(Use additional sheets if necessary)

RECYCLABLES RECOVERED

Do not report recyclables that result from the Returnable Container Act or are part of a Beneficial Use Determination

C & D DEBRIS:		END USE OR DESTINATION FACILITY (Name and Complete Address)	TONS (to each facility)
Asphalt / Pavement	1.		
	2.		
Brick	1.		
	2.		
Concrete	1.	Wainscott Sand and Gravel,Millstone Rd,Bridgehamton,NY 11975	149.32
	2.	recycled for RCA	
Drywall	1.		
	2.		
Other Masonry Materials	1.		
	2.		
Petroleum Contaminated Soil (PCS)	1.		
	2.		
Rock	1.		
	2.		
Soil (Clean)	1.		
	2.		
Roofing Shingles	1.		
	2.		
Wood	1.		
	2.		
Land Clearing Debris (including brush, branches, trees, & stumps NOT included in Organics Section)	1.		
	2.		
Other (specify):	1.		
	2.		

NAME: Jay L Card Jr

DATE: 1/25/13

SIGNATURE:

TITLE & ORGANIZATION:

ANNUAL REPORT FORM – PLANNING UNIT RECYCLING REPORT

(continued)

APPENDIX A – NYS DEC REGIONAL AND CENTAL OFFICE ADDRESSES

PLEASE SEND A COPY OF THIS REPORT TO YOUR REGIONAL OFFICE AND A COPY TO THE DEC CENTRAL OFFICE

REGIONAL OFFICE ADDRESSES	COUNTY	TELEPHONE	CENTRAL OFFICE ADDRESS
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 1 50 CIRCLE ROAD STONY BROOK, NY 11790-3409	Nassau, Suffolk	(631) 444-0375	NYS Department of Environmental Conservation Division of Materials Management Attn: Bureau of Permitting & Planning 625 Broadway, 9th Floor Albany, NY 12233-7253 (518) 402-8678 (518) 402-9041 Fax Email: planning@gw.dec.state.ny.us
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 2 1 HUNTERS POINT PLAZA 47-40 21ST STREET LONG ISLAND CITY, NY 11101-5407	New York City (Bronx, Kings, New York, Queens, Richmond)	(718) 482-4894	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC - REGION 3 21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester	(845) 256-3136	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 4 1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady, Schoharie	(518) 357-2346	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 5 1115 ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren, Washington	(518) 897-1241	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 6 317 WASHINGTON STREET WATERTOWN, NY 13601-3787	Herkimer, Jefferson, Lewis, Oneida, St. Lawrence	(315) 785-2513	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 7 615 ERIE BOULEVARD WEST SYRACUSE, NY 13204-2400	Broome, Cayuga, Chenango, Cortland, Madison, Onondaga, Oswego, Tioga, Tompkins	(315) 426-7419	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 8 6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Yates	(585) 226-5408	
REGIONAL MATERIALS MANAGEMENT ENGINEER NYS DEC – REGION 9 270 MICHIGAN AVENUE BUFFALO, NY 14203-2999	Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming	(716) 851-7220	

Town Code of Shelter Island

Chapter 73. GARBAGE, RUBBISH AND REFUSE

[HISTORY: Adopted by the Town Board of the Town of Shelter Island 9-20-1991 by L.L. No. 8-1991. *Editor's Note: This local law supersedes Ch. **73**, Garbage, Rubbish and Refuse, adopted 7-13-1955, as amended.* **Amendments noted where applicable.]**

§ 73-1. Legislative intent.

A. The Town Board of the Town of Shelter Island finds that the management of garbage, rubbish and refuse within the Town of Shelter Island, including the conservation of recyclable materials, is necessary both to protect the natural resources of the Town and to minimize the cost of solid waste disposal.

B. It is the intent of this chapter to establish a program for the management and regulation of garbage, rubbish and refuse, including the mandatory separation of recyclables from such garbage, rubbish and refuse. Such a program will reduce the amount of solid waste disposed of, remove toxic materials from the waste stream and minimize the overall costs associated with solid waste disposal.

§ 73-2. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

AUTHORIZED AGENT

Any person operating a place of business within the Town who has agreed to issue Town garbage bags on behalf of the Town and to pay the necessary fees therefore.

[Amended 6-11-1992 by L.L. No. 3-1992]

CONSTRUCTION AND DEMOLITION DEBRIS

Materials, including but not limited to dock piles, planks, concrete products, siding, roofing, flooring, bricks, masonry material and other waste resulting from the construction, remodeling, repair and demolition of structures.

HOUSEHOLD HAZARDOUS WASTE

Hazardous chemical wastes found in homes, including but not limited to adhesives, alcohol, antifreeze, brake fluid, charcoal lighter fluid, cleaning solvents, degreasers, fertilizers, gasoline, herbicides, kerosene, paints, paint removers, paint thinners, pesticides, petroleum-based solvents, photographic chemicals and supplies, plant and insect spray, pool chemicals, solvents, spot removers, stains and varnishes, wood preservatives and unknown/unlabeled containers.

ILLEGAL DUMPING

The deposit by any person of garbage, rubbish, refuse or waste in any public place within the Town of Shelter Island, including its inland waters, other than in containers designated for that purpose.

LAND-CLEARING DEBRIS

Materials, including but not limited to tree limbs, tree and brush stumps, and other waste resulting from land clearing.

NONRECYCLABLE HOUSEHOLD WASTE

The end product of solid waste remaining after the extraction of recyclable materials, household hazardous waste, construction and demolition debris and land-clearing debris. "Nonrecyclable household waste" results primarily from the handling, preparation and storage of food and includes but is not limited to putrescible solid waste such as animal and vegetable waste.

PERSON

An individual, association, partnership or corporation.

RECYCLABLES

Discarded materials which may be reclaimed from the solid waste stream and which are defined as follows:

A. Batteries, including household and automotive.

B. Cans consisting of rinsed-clean containers, with or without labels, comprised of aluminum, tin, steel or a combination thereof, which contain or formerly contained only food and/or beverage substances. "Cans" shall not mean oil, paint, pesticide or aerosol cans.

C. Clothing which is reusable.

D. Corrugated cardboard which is free of contaminants such as garbage, plastic and other foreign matter.

E. Glass consisting of clear, amber and green glass food and/or beverage containers, rinsed clean with no caps. "Glass" shall not mean wired glass, crystal, ceramics, plate, window, laminated or mirrored glass or light bulbs.

F. Motor oil from vehicles, lawn mowers and the like that is not contaminated with antifreeze.

G. Newspapers consisting of unsoiled newsprint.

H. Plastics consisting of all food, beverage or household containers, such as soda, detergent, bleach, milk, juice, shampoo and cooking-oil bottles, rinsed clean. "Plastics" shall not mean caps, appliances, plastic with metal parts, six-pack rings, biodegradable

bags, disposable diapers, medical supplies, pens, razors, flower pots or bags, fiberglass, waxed cardboard containers, vinyl or Styrofoam.

I. Scrap metals consisting of:

(1) White goods, including but not limited to discarded household appliances, such as stoves, refrigerators, washing machines and all other similar types of materials that are of recyclable value.

(2) Metal items other than as defined above.

J. Tires.

SOLID WASTE

Discarded solid, liquid, semisolid or contained gaseous material which is considered the end product of an extraction, production or consumption process and for which there is no perceived further use.

TOWN GARBAGE BAG

A distinctively labeled, transparent plastic bag of such size and design as shall be determined by the Town Board, to be used for the disposal of nonrecyclable household waste.

VEGETATIVE YARD WASTE

Organic yard and garden waste, leaves, grass clippings and wood chips.

§ 73-3. Regulations.

A. All recyclable and reusable materials generated within the Town of Shelter Island for which an economic market exists shall be source separated from all other materials and shall not be mixed with other forms of solid waste.

[Amended 4-28-2000 by L.L. No. 1-2000]

B. Recyclables shall be placed only at designated areas within the Town disposal area or other designated sites within the Town.

C. Household hazardous waste, as defined herein, shall be accepted at the household hazardous waste containment facility at times to be determined by resolution of the Town Board.

D. Vegetative yard waste, as defined herein, shall be accepted only at the area of the Town disposal area designated for such material.

E. No person shall deposit garbage, rubbish, refuse or waste outside the gates of the disposal area or in any streets, highways, sidewalks, inland waters or public places within the Town of Shelter Island, unless containers for that purpose have been provided and designated.

F. No garbage, brush, lawn clippings, trash, rubbish, debris or other material that does not have its origin within the Town of Shelter Island shall be deposited or disposed of in the Town disposal area.

G. The Town Board shall from time to time promulgate such other rules or regulations as may be deemed necessary to effectuate the intent of this chapter.

§ 73-4. Nonrecyclable household.

A. Nonrecyclable household waste shall be deposited only at designated areas within the Town disposal area.

B. No person shall:

[Amended 8-7-1992 by L.L. No. 5-1992; 8-28-1992 by L.L. No. 6-1992; 1-31-2003 by L.L. No. 2-2003]

(1) Dispose of nonrecyclable household waste except in a Town garbage bag as defined herein, except for:

(a) Users bringing in large or unbaggable waste, who shall pay a fee based on weight as established by resolution of the Town Board; and

(b) Customers of a commercial hauling business having a contract with the Town of Shelter Island, in which case the hauler shall pay the Town a designated fee per ton brought to the disposal area, as set forth in the contract; and

(c) Not-for-profit organizations who have signed an agreement with the Town to pay the designated bag fee, or its equivalent, for nonrecyclable waste deposited in the disposal area.

(2) Duplicate or imitate a Town garbage bag.

(3) Give, sell or issue in any manner a duplicated or imitated Town garbage bag.

C. Town garbage bags shall be available at designated areas in the Town or through an authorized agent.

D. An authorized agent:

(1) Shall pay the designated fee to the Town for the Town garbage bags.

[Amended 6-11-1992 by L.L. No. 3-1992]

(2) (Reserved) *Editor's Note: Former Subsection D(2), which allowed for the addition of a service charge, was repealed 6-11-1992 by L.L. No. 3-1992.*

(3) Shall be responsible for the collection of any applicable state and local sales tax.

E. The size and design of the Town garbage bag shall be determined by resolution of the Town Board.

§ 73-5. Fees.

A. The fee for the disposal of construction and demolition debris, as defined in this chapter, shall be determined by resolution of the Town Board.

B. The fee for the disposal of land-clearing debris, as defined in this chapter, shall be determined by resolution of the Town Board.

C. The fee for each Town garbage bag shall be determined by resolution of the Town Board.

D. The Town Board may from time to time establish, by resolution, the fees for disposal of materials in the landfill area, other than nonrecyclable household waste.

[Added 4-24-1992 by L.L. No. 2-1992 *Editor's Note: This local law also redesignated former Subsections D and E as Subsections **E** and **F**, respectively.]*

E. Fees collected pursuant to this chapter shall be placed in a fund dedicated to covering costs of solid waste disposal.

F. Notwithstanding any of the provisions hereof, the Town Board may, by resolution, change, modify or repeal any of the fees set forth herein.

§ 73-6. Penalties for offenses.

A. A person convicted of illegal dumping shall be guilty of a violation, which is punishable as follows:

(1) For a first conviction, a fine of no less than $50 and no more than $250 and/or a civil penalty of $500 or community service up to 40 hours.

(2) For a subsequent conviction, a fine of $250 and/or a civil penalty of $1,000 or community service of 40 hours.

B. A person convicted of a recycling offense or any other offense against this chapter other than an offense of illegal dumping shall be subject to a civil penalty of up to $250 and/or community service of 10 hours. Such civil penalty shall be collectible by and in the name of the Town for each day that such offense shall continue.

§ 73-7. Severability.

The invalidity of any section or provision of this chapter shall not invalidate any other section or provision thereof.

§ 73-8. Effective date.

The regulations contained in this chapter shall become effective on October 15, 1991.

APPENDIX D

2012 NYS DEC Solid Waste Management Facility Inspection Report

On following page

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS
6 NYCRR SUBPART 360-11 Transfer Stations & 16 C&D Processing Facilities
SOLID WASTE MANAGEMENT FACILITY INSPECTION REPORT

FACILITY NAME	LOCATION	FACILITY NUMBER	DATE	TIME
Shelter Island Transfer Station	Bowditch Road, Shelter Island	52T20R	8/23/12	11 15

INSPECTOR'S NAME	CODE	PERSONS INTERVIEWED AND TITLES
Ernest Lampro	S	Jay Card, Brian Sherman

REGION	WEATHER CONDITION	DEC PERMIT NUMBER
1	Dry, Windy light, 80°	Registered

SHEET	CONTINUATION SHEET ATTACHED	PART(S) 360-
1 OF 1	NO YES	11 Attached

Violations of Part 360 are Subject to Applicable Civil, Administrative and Criminal Sections Set Forth in ECL Article 71, and as Appropriate, the Clean Water and Clean Air Act s
Additional and/or Multiple Violations May Be Described on the Attached sheet
This form is a record of conditions which are observed in the field at the time of inspection.
Items marked NI indicate no inspection and do not mean no violation has occurred.

C	NI	V	
			FACILITY MANAGEMENT
X			1. Solid waste management facility is authorized and management occurs with in approved area. 360-1.7(a), 360-1.8(h)(1),(5),360-16.1
X			2. Incoming solid waste is monitored by a control program for unauthorized waste, and solid wastes materials accepted are those authorized and approved for management at the facility.360-1.14(e),(r); 360-11.4(a),(c),(m); 360-16.1(a),(d), 360-16.3(h)(4); 360-16.4(b).
X			3. Operator maintains facility components and equipment in accordance with the permit and their intended use. 360-1.14(f); 360-16.4(a)
X			4. Operational records are available where required.360-1.14(e)(2),(i),(u)(1); 360-1.4(c); 360-1.8(h)(8); 360-11.4(i); 360-16.4(a),(b)(2),(l),(l)
			OPERATION CONTROL
X			5. Solid waste is sufficiently confined or controlled. 360-1.14(j); 360-11 4(e);360-16.3(h)(4); 360-16.4(b)(5)
X			6. Dust is effectively controlled. 360-1.14(k); 360-16.3(g)(5),(h)(5); 360-16 4(b)(5).
X			7. On-site vector populations are prevented or controlled, and vector breeding areas are prevented. 360-1.14(l); 36011.4(e); 360-16.3(h)(5); 360-16.4(b)(5)
X			8. Odors are effectively controlled so that they do not constitute a nuisance. 360-1.14(m); 360-11 4(e); 360-16.3(h)(5); 360-16.4(b)(5).
X			9. Noise levels are controlled to prevent transmission of sound levels above the allowable levels off-site. 360-1.14(p), 360-16.3(h)(5); 360-16 4(b)(5)
			WATER
X			10. Solid waste is prevented from entering surface waters and/or groundwaters. 360-1.14(b)(1).
X			11. Leachate is minimized and discharged to waters is prevented/controlled. 360-1.14(b)(2); 362-16.3(f)(2); 360-16.4(g)
X			12. The site and facility have adequate drainage, and are drained and free of standing water. 360-16.4(g)
			ACCESS
X			13. Access to the facility is strictly and continuously controlled by fencing, gates, signs, natural barriers or the other suitable means. 360-1.14(d), 360-16.4(h)
X			14. On-site roads are passable. 360-1.14(n).
X			15. Attendant is present during all operational hours to control access and receive solid waste, where permanent operating equipment exists. 360-1.14(c)
			WASTE HANDLING (FOR USE AT TRANSFER STATIONS)
X			16. Adequate storage of incoming solid waste is available. 360-11.4(g).
X			17. Putrescible solid waste is removed when transfer containers are full, or with seven days of receipt. 360-11.4(l)
X			18. Processing, tipping, sorting, storage, compaction, and related activities are in an enclosed or covered area. 360-11 4(n)(1)
X			19. Incoming waste is weighed or measured before unloading. 360-11.4(n)(2).
X			20. Station is cleaned or washed down each day to prevent odors or other nuisance conditions. 360-11.4(n)(3)
			WASTE HANDLING (FOR USE AT C&D DEBRIS PROCESSING FACILITY)
X			21. Incoming waste is inspected before acceptance and the C&D debris accepted is weighed or measured before unloading. 360-16.4(b)(2)
X			22. Proper separation of materials and adequate supervision is provided to ensure that waste wood is unadulterated and not contaminated if it is provided to be pulverized or processed separately from the other C&D. 360-16.4(c)(3).
X			23. Adequate storage for incoming C&D debris is available. 360-16.4(f)(1).
X			24. Unauthorized solid waste material received at the facility is removed within 24 hrs. 360-16.4(f)(1).
X			25. Processed and unprocessed C&D debris is not stored uncovered at the facility for a period exceeding 30 days. 360-16.4(f)(2)
X			26. Processed and unprocessed C&D debris is not stored in enclosed or covered storage for a period exceeding 90 days. 360-16.4(f)(2)
X			27. Processed and unprocessed C&D debris storage piles do not exceed 20 feet in height and the area at the base of the pile does not exceed 5,000 square feet. 360-16.4(f)(3).
X			28. C&D debris storage piles are not located in excavation or below normal grade. 360-16.4(f)(3),(5).
X			29. A minimum separation distance of 25 feet is maintained between C&D debris storage piles and 50 feet between C&D storage piles and property boundaries. 360-16.4(f)(3).
X			30. Recyclables recovered from the C&D debris are not stored at the facility for a period of 60 calendar days. 360-16.4(f)(4).
X			31. Screenings which meet all the requirements for an alternative daily cover material and screenings which received an approval of a petition for a beneficial use determination are not stored uncovered at the facility for a period of 15 calendar days. 360-16.4(d)(1); 360-16.4(f)(6).
			OTHER
X			32. Telephone numbers to emergency response agencies are conspicuously posted in all areas at facility where telephones are available. 360-1 14(s).
X			33. Fire protection and detection equipment is available. 360-11.4(k); 360-16.4(b)(4)

I hereby acknowledge receipt of
the Facility Copy of this Inspection Report sheet.

Ernest Lampro
Inspector's Signature

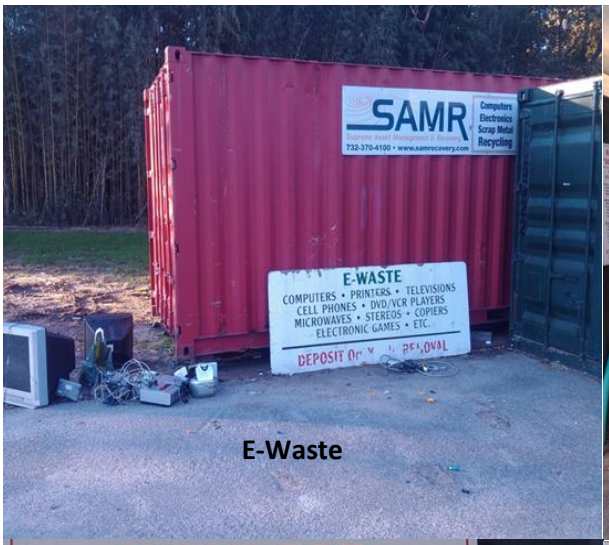
Individual in Responsible charge (Please print)

8/23/12
Signature Date

APPENDIX E

Photo Tour of the Shelter Island Recycling Center

Clothing Bins



E-Waste

Goody Pile

Mixed Paper Baler

Cardboard

Batteries &
Florescent Bulbs

House Hold Hazardous Waste

Recycling Compactors

Storage Bins
Recycled Cement Aggregate
Stone
Waste Cement
Tires

Self Help Material Bins

Auto Disposal

Metal Bin

Construction Debris Bin

Appliance Disposal

Baled Tin and Aluminum

Baled Plastic

MSW Compactor


Glass Bin


Glass Grinder


Ground Glass


Vegetative Composting

Top Soil Screening

Vegetative Waste

Contracted Grinding Service

Double Ground Mulch

Single Ground Waste

Sand Pit


Invasive Weeds