OVERVIEW

The purpose of this report is to summarize some of the elements of our municipal solid waste program and present a site plan of the Waste Management Facility for endorsement by the Board. This is necessary because the Town cannot proceed with any repairs or improvements at the facility without first submitting a site plan proposal to MassDEP for approval.

A companion report was prepared earlier this year (June) by Gov Temps USA in consultation with the Department of Public Works. The report was authored by Mr. Wayne Melville, a former Town Manager of Manchester serving as an employee of Gov Temps USA. The report (copy attached), provides a brief history and discussion of various elements of solid waste along with recommendations, not all of which are being proposed for consideration at this time.

Falmouth’s solid waste program consists of the following major components:

- Municipal Solid Waste (MSW) disposal
- Curbside solid waste and recyclable collection
- Upper Cape Regional Transfer Station
- Waste Management Facility operations

A brief summary of each component is as follows.

MUNICIPAL SOLID WASTE (MSW) DISPOSAL

For the past 25 years, the Town has enjoyed artificially low disposal rates for MSW (trash) under an agreement with SEMASS. This arrangement was necessitated by the anticipated closing and capping of our landfill. Falmouth, in collaboration with other Upper Cape communities, also created the Upper Cape Regional Transfer Station (located on MMR property) whereby MSW from each community could be delivered for ultimate disposal at SEMASS via rail transport.

Falmouth’s contract with SEMASS was due to expire on December 31st of 2014. In 2008, SEMASS proposed a Memorandum of Understanding (MOU) whereby Falmouth would agree to voluntarily escalate the per ton rate during the current term of the contract from $37/ton to approximately $77/ton in exchange for a guarantee of another long term contract that would be below market rates.
Falmouth, in concert with other Cape communities, negotiated with SEMASS but also began to explore options other than SEMASS. In the end, Falmouth negotiated a 10-year disposal contract, with an optional 5-year extension, with the Town of Bourne at a favorable disposal rate of $58/ton. This contract will commence on 1/1/2015.

### CURBSIDE SOLID WASTE AND RECYCLABLE COLLECTION

The current curbside collection contract is a 5-year term (through April 2015) with (2) 1-year extensions. The FY-2014 cost of weekly trash collection was $1.121M and the FY-2014 cost of bi-weekly recyclable collection was correspondingly lower at $0.515M. In accordance with contract terms, these costs escalate approximately 3%/year, which is reasonable for this type of service.

### UPPER CAPE REGIONAL TRANSFER STATION (UCRTS)

The UCRTS is a consortium of the Upper Cape communities and Otis that was created in the late 1980's to facilitate rail transport of solid waste to SEMASS, thus reducing truck traffic. It is physically locatec on the Massachusetts Military Reservation and is accessed by refuse vehicles via Sandwich Road.

Each Upper Cape community has its own independent agreement with SEMASS for solid waste disposal and all of those contracts expire on 1/1/15. Since Falmouth, Mashpee and Sandwich have negotiated different disposal contracts, the UCRTS will no longer serve as an operating transfer station and will cease operations as of 12/31/14.

The Board of Managers, comprised of representatives from Falmouth, Mashpee, Sandwich, Bourne and Otis, are presently working with the Cape Cod Commission to obtain a grant and perform a study of the possible re-use options of the facility.

### COSTS AND PAY AS YOU THROW (PAYT)

Pay-As-You-Throw is a term used to describe a program whereby residents are charged a fee for MSW collection or disposal. It is generally considered a viable option as a means of combating higher MSW costs. The primary benefit of PAYT programs is to reduce the volume of solid waste being disposed of which, in turn, reduces the ultimate cost of disposal. A secondary benefit is the generation of revenue to offset remaining costs. Another benefit is usually an increase in recycling rates.
As can be seen from Table 1 below, Falmouth's costs increase annually, but the increases are not as dramatic as they would have been if Falmouth had continued with a SEMASS disposal contract. Please note the elimination of UCRTS Rail & Operating Share expenses under the Bourne option which served to reduce the overall cost impact.

<table>
<thead>
<tr>
<th>SOLID WASTE COSTS COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY-2010</td>
</tr>
<tr>
<td>CURB MSW</td>
</tr>
<tr>
<td>CURB RECYCLE</td>
</tr>
<tr>
<td>UCRTS RAIL</td>
</tr>
<tr>
<td>UCRTS SHARE</td>
</tr>
<tr>
<td>DISPOSAL</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>% INCREASE OVER 2010</th>
<th>% INCREASE OVER 2014</th>
<th>Disposal rate Per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34%</td>
<td>8%</td>
<td>$27 (net) $37</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$27 (net) $37</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$58</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$75*</td>
</tr>
</tbody>
</table>

*Based on projected rate prior to 2013

*Note: WMF Excluded*

User fee systems generally have a financial driver and require citizen support in order to gain community acceptance. Thus, an extensive public outreach / education campaign would be in order.

It is not recommended to consider a PAYT program at this time. The Town may wish to consider this option at a future date to reduce costs or as the result of a significant increase or escalation of costs.

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**WASTE MANAGEMENT FACILITY (WMF)**

The Waste Management Facility layout has remained essentially unchanged since its inception in 1993 and wear and tear on various components of the facility is evident.

A proposed site layout (attached) depicting improvements has been developed for review / endorsement by the Board. The goal of the new layout is to enhance safety, make the facility more user-friendly, and enhance operations. The layout was prepared by our Engineering
Division and developed in concert with our consultant, Weston & Sampson Inc., to ensure regulatory acceptability and constructability of the improvements.

As depicted, the layout serves the current needs and provides flexibility for any future changes that may be necessary or desired.

Key components of the proposed layout are as follows:

- Reconstruction of the “MSW / C&D container” wall
  - The wall is failing and requires safety railings

PHOTO 1: CONATINER WALL

- Construction of a new gatehouse within the road layout.
  - Provides safety for the attendant by not crossing traffic lanes

- Demolition of the existing garage building and replacing it with a new, pre-fabricated metal building that would serve as garage space, office space and include a public restroom.
  - This would eliminate the existing trailer.

PHOTO 2: ATTENDANT TRAILER
- Installation of a truck scale for weighing containers or vehicles.
- Installation of security cameras so that operators can monitor all areas of the facility.
- Construction of a "shed" next to the SWAP Shop for large items.
- New concrete pads for container areas.
- Reorganization of the upper facility layout to improve operations.
- New signage facility-wide to improve communication & access

Table 2: Major Components, estimated Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>When</th>
<th>How</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container Wall</td>
<td>Winter / Spring</td>
<td>DPW</td>
<td>$50K-$60K</td>
</tr>
<tr>
<td>Gatehouse</td>
<td>Spring 2015</td>
<td>DPW - County</td>
<td>$30K</td>
</tr>
<tr>
<td>Scale</td>
<td>Spring 2015</td>
<td>Bid</td>
<td>$65K-$80K</td>
</tr>
<tr>
<td>Surveillance System</td>
<td>Spring / Summer 2015</td>
<td>IT</td>
<td>$15K</td>
</tr>
<tr>
<td>Demolish Garage</td>
<td>Spring 2015</td>
<td>DPW</td>
<td>$2K</td>
</tr>
<tr>
<td>New Garage / Office</td>
<td>Undetermined</td>
<td>Bid – DPW - County</td>
<td>$50-$80K</td>
</tr>
<tr>
<td>Shed</td>
<td>Spring/Summer 2015</td>
<td>DPW</td>
<td>$3K</td>
</tr>
</tbody>
</table>

Personnel of the various Public Works Divisions will lend their skills in performing as much of the improvements as possible which will result in substantial savings to the Town. We will also seek to enlist support for skilled tradespersons through the County Sherriff’s Department as we have done in the past.
CONCLUSION

Of the four major solid waste components, the Municipal Solid Waste Disposal element has been successfully and favorably resolved over the long-term with the Town of Bourne contract and the Upper Cape Transfer Station element will cease current operations at the end of 2014.

Moving forward, we will present other options and recommendations as identified in these reports, as well as previous presentations, for consideration by the Board as the need arises.
The State of Solid Waste Disposal in Falmouth, Massachusetts with Recommendations

June, 2014

Prepared by:
Gov Temps USA
650 Dundee Road, Suite 270
Northbrook, IL 60062
Introduction

Falmouth signed a 25-year contract for solid waste disposal with SEMASS, located in Rochester, Massachusetts, in 1989. The Town also joined with Sandwich, Mashpee, Bourne and the Otis Air National Guard to construct and operate the Upper Cape Regional Transfer Station, UCRTS, located on the Massachusetts Military Reservation in North Falmouth. For the past 25 years, Falmouth and its partners have been delivering residential solid waste to SEMASS via rail. That rail contract and the Town’s use of the SEMASS facility will end in December 2014, and the Upper cape Regional Transfer Station will close.

Falmouth has utilized curbside collection as its primary method of residential solid waste collection for many years. The majority of the Town’s residential solid waste (98%) is collected at the curbside by a private contractor hired by the Town and taken to the UCRTS where it is weighed and shipped to SEMASS. Similarly, 94% of the Town’s residential recyclable material is collected at the curb and trucked off Cape to be sorted and sold. Overall, 21% of the residential waste stream is recycled.

Falmouth operates a Waste Management Facility (WMF) off Thomas Landers Road at the site of the capped landfill. The solid waste is shipped to the UCRTS and the recyclable material is trucked off Cape to be sorted and sold by a different hauler than the one who collects at the curbside. The WMF also serves as a transfer station for numerous items that must be excluded from the waste stream by State mandate, including metals, white goods, mattresses, tires, CRTs, mattresses and construction & demolition debris.

The Town also operates a yard waste composting facility off Blacksmith Shop Road for residents. The facility accepts larger branches and stumps periodically as a part of storm cleanup. The Town does not have a specific budget for the facility or have a daily presence there.

There have to the Town’s solid waste disposal practices and associated cost structure over the past decade. These changes have not always been embraced and the Town faces additional changes to its solid waste disposal cost structure over the next several years to accommodate the change in disposal sites from SEMASS to the Bourne landfill, rapidly-rising overall solid waste disposal costs and the community’s continuing interest in maintain two methods of waste collection, at the curbside and at the Waste Management Facility.
History

SEMASS

SEMASS offered well-below-market tip fees in return for a guaranteed waste stream with minimum and maximum tonnage requirements which provided a below-market cost solid waste disposal method for the Town and was used by the SEMASS ownership as a future revenue stream for the purpose of securing construction financing. Tip fees have increased over the life of 25-yr contract from $21.24 to a current $37.51 per ton, however four grants from the Massachusetts Technology Park Corporation (MTPC) have reduced the effective tip fee to $28-$29 per ton (these are lump sum offsets and annual tonnages vary). These grants were designed to offset the cost of installing the maximum achievable control technology related to air quality and have been applied to monthly payments from the time they were received in 2001, 2002, 2003 and 2004, through the end of the contract in December 2014.

![Solid Waste Shipped to SEMASS](image)

The annual minimum tonnage to be delivered to SEMASS was initially set at 18,500 tons. Falmouth had difficulty meeting this minimum tonnage obligation under the contract, which was amended in 1999 to allow Falmouth to include commercial solid waste at the lower residential tipping fee rate only until the minimum tonnage was reached. SEMASS has always been willing to forgive any shortage, as it provided additional capacity for them to accept comparable tonnage at approximately twice the fee, depending upon market conditions.
Other commercial waste haulers also used the UCRTS, even though they had to pay the higher market rate tip fee, in an effort to save money by using rail instead of trucking to SEMASS. Total solid waste from residential and commercial sources peaked at over 27,000 tons per year from FY 2000-FY 2004.

In FY 2000, 48% of the solid waste minimum tonnage shipped to SEMASS by the UCRTS was commercial. The percentage steadily declined until it reached 3700 tons (23%) in FY 2011. Commercial tonnage shipped to SEMASS increased to 8,500 tons (41%) in FY 2012 and to 7300 tons (39%) in FY 2013 in response to Falmouth’s successful negotiation with SEMASS to extend the discounted municipal rate to commercial trash shipped through the UCRTS. The Town negotiated the discounted fee in an effort to meet minimum tonnage required by the contract with the Massachusetts Coastal Railroad.

Upper Cape Regional Transfer Station (UCRTS)

The UCRTS provided less expensive rail shipment to SEMASS for both residential and commercial accounts, and fee schedules were established for both. The four member municipalities had contracts with SEMASS that included minimum tonnage amounts, and commercial tonnage was always a part of that calculation. Additional commercial solid waste represented an additional revenue stream to the UCRTS.

In 2007, Massachusetts Coastal Railroad entered into a License and Operating Agreement with the Commonwealth of Massachusetts and became the new operator of the tracks serving SEMASS, and the Otis spur adjacent to the Regional Transfer Station. A new contract was executed between the Railroad and the UCRTS, which included a stipulation that the UCRTS would ship or pay for a minimum of 40,000 tons annually. Although trash tonnage being processed at the UCRTS had been declining over the past decade, UCRTS had always shipped more than 40,000 tons per year to SEMASS (42,000 tons in FY 2006), so they signed the contract and took advantage of a 20% rate cut from $10.71 to $8.50 per ton.

By 2008 the UCRTS could no longer ship the minimum 40,000 tons per year through the UCRTS to SEMASS. Unlike SEMASS, which had alternatives to make up the shortfall, the railroad expected the Towns of the UCRTS to honor the contract and to pay for trash not delivered, up to the 40,000 ton minimum.
Several events contributed to the decline in tonnage and some of those events contributed to the shortfall. Recession hit in 2008, which reduced the generation of solid waste in the UCRTS communities and nationally.

In 2004, Bourne increased use of their landfill for solid waste disposal instead of shipping it to SEMASS through the UCRTS. Bourne tonnage at the UCRTS fell from 6000 tons in 2003 to 3935 tons in 2004 and by 2007, prior to signing the new contract; Bourne was no longer delivering any residential solid waste to the UCRTS.

Sandwich initiated a Pay as you Throw program in January, 2011, but their tonnage delivered to the UCRTS had already fallen from 9270 tons in 2005 to 5611 tons in 2009, presumably finding its way into the Bourne landfill because of the lower disposal cost.

Most significantly, with the opening of the Bourne landfill, commercial trash haulers, who had previously shipped to SEMASS via UCRTS, had a less expensive disposal option and commercial tonnage delivered to UCRTS fell from 14,000 tons in 2004 to 6,000 tons in 2009.

In FY 2011, in an effort to make up the shortfall, the Board of Managers urged the four municipal Boards of Health to enforce their right of flow control. In Falmouth commercial waste haulers still had the option to dispose of their trash in Bourne, or elsewhere, but they were required to pay a “put or pay” tip fee. Trash tonnage rebounded slightly, but hovered between 30,000 and 35,000 tons between FY 2008 and FY 2013. Falmouth and the other members of the UCRTS are continuing to make supplemental payments to offset the shortfall through the life of the rail contract (December, 2014). The Board of Managers is developing a scope of services for study to evaluate alternative uses of the facility.
**Bourne Landfill**

Falmouth will begin to ship solid waste to the Bourne Landfill in January 2015. The tip fee will increase by $30 per ton from the subsidized rate of $28 per ton at SEMASS to the negotiated rate of $58 per ton in Bourne. This increase will be partially offset through closure of the UCRTS and elimination of the associated facility and rail costs of approximately $20 per ton, creating a net tip fee increase of $10 per ton. This net increase will add $130,000 annually to solid waste disposal costs. The Bourne landfill is located approximately 10 miles north of the UCRTS which will increase transportation expenses. The landfill has an estimated useful life of 15 years.

**Curbside Collection**

Curbside collection is the primary disposal method in Falmouth, accounting for 98% of the residential solid waste stream and 95% of residential recycled material.

![Curbside Collection Chart](chart.png)

In 1990, 11,100 tons were collected at the curb, and curbside collection has consistently totaled between 11,000 and 13,000 tons since. The current curbside collection contract expires in May 2015, but will require an amendment later this year to accommodate the greater transportation distance and cost to the Bourne landfill compared to the Upper Cape Regional Transfer Station.
Recycling

Recyclable material is collected both at the curb and at the WMF, but 94% of the Town's residential recyclable material is collected at the curb. Overall, 21% of the residential waste stream is recycled. Recycling increased with the closure of the landfill. In FY 1990, 67 tons of recycling was collected (.6% of residential waste stream). That increased to 923 tons in FY 1995 (6% of the residential waste stream, 2428 tons in 1996 (16% of residential waste stream), and 3220 tons in 2011 (16% of waste stream), and has remained at that level since. In FY 2013, the Town generated 11,303 tons of residential solid waste and 3038 tons of residential recyclable material.

With the exception of 1996, the volatility of total residential solid waste has not had a proportional impact upon total recycling. In particular, the 4500 ton/year decline in residential solid waste between FY 2005 and FY 2011, which appears to be directly related to the establishment of Construction & Demolition fees and MSW fees at the Waste Management Facility, did not transfer to any significant change in recycling tonnage. That solid waste was disposed of in other ways, most likely related to out of Town sites and alternative disposal of C&D. (See C&D Section).
Waste Management Facility (WMF)

The facility is located on Thomas B. Landers Rd., on the site of the Town's former landfill which was closed in the early 1990s. The site has a lengthy social history which including campaigning for public office and fundraising events. While curbside collection is the primary solid waste collection method in Falmouth, the WMF remains open to Falmouth residents to dispose of solid waste and recyclable items as a public convenience, as well as providing a disposal point for state-mandated waste ban items and difficult to dispose of wastes such as metals, bulky items and yard waste. In FY 2013, the WMF handled 228 tons of residential solid waste and 414 tons of recyclable material.

![Use of Waste Management Facility](image)

During FY 2013 there were 22,680 trips to the Waste Management Facility for 40,629 purposes, or 1.8 purposes per trip. 81% of those trip purposes were to drop off trash, recycling or to visit the Swap Shop.

The firm of Weston & Sampson evaluated the facility in a 2006 report which included an evaluation of facility practices, operations, and layout and recommendations and alternatives for continued use of the facility.
A review of facility practices identified the following:

- The facility is adequately staffed, however if improvements are made staffing needs may be less.
- Equipment is adequate for the operation.
- Tracking software is not utilized to its full potential and may be outdated.
- Vehicle trips appear to be too high based upon population and curbside collection.
- The MSW and C&D drop-off area needs a suitable railing for public safety purposes.

A review of facility operations identified the following:

- Falmouth offers a higher level of service for waste collection and disposal than neighboring communities.
- Following the January 2006 increase, tipping fees for hard to manage wastes are now comparable to neighboring communities.
- The volume of recyclables collected by source and overall volume indicates recycling at the facility is underutilized.
- The seasonal population does not recycle at the same level as the year-round population.
- The rate structure for municipal solid waste and for C&D should be evaluated. It is suspected that C&D is being shipped as solid waste due to the lower cost.

The facility layout evaluation yielded the following:

- The facility is spread out to three collection areas and should be consolidated.
- Traffic patterns are not well-defined.
- Swap shop is remote and difficult to monitor.

Privatization of the facility is not financially advantageous at the time (2006) and might actually increase costs.

Weston & Sampson recommended that municipal solid waste and recycling be eliminated at the facility and that a revised layout with adequate pavement markings, signage, traffic flow patterns and consolidated operations be constructed. They proposed a specific design, and a prioritized construction schedule, as follows:
Priority 1 (Estimated Cost = $74,800)
  - Additional staff training.
  - Safety railing at residential drop-off area.
  - Modify / update tracking software.
  - Relocate access road to upper facility.
  - Install additional pavement markings and signs.

Priority 2 (Estimated Cost = $208,900)
  - Revise waste collection area layout
  - Install gate attendant shed.
  - Relocate household hazardous materials.

Priority 3 (Estimated Cost = $74,100)
  - Install scale.
  - Relocate swap shop.

Priority 4 (Estimated Cost = $39,800)
  - Revise facility access road

The total estimated cost of the proposal was $397,600 in 2006. In 2008, in response to a request submitted by the DPW Director, Town Meeting appropriated $200,000 for facility improvements. Tracking software was upgraded and hand-held scanners are now used to track billable items and fees, as well as other trip purposes such as recycling and the swap shop.

The more significant changes presented greater challenges. As reported by Weston and Sampson, vehicle trips to the WMF were higher than expected for the population. This observation manifested as an effort by supporters of the WMF to retain and expand use of the facility for drop of residential solid waste and recycling, rather than eliminate those services altogether as proposed by Weston & Sampson. $185,000 of the original appropriation remains unspent 6 years later.
Residential Solid Waste

In January, 2010 a $2.50 per bag fee was established for residential trash delivered to the WMF. Residential solid waste tonnage at the facility dropped from 2832 tons in 2009 to 1576 tons in 2010, and to 281 tons in 2011. Tonnage declined further to 262 tons in 2012 and 228 tons in 2013.

The fee and the reduced use of the WMF as a transfer station of residential solid waste has not been well-received by some residents of the community. Efforts have been initiated to keep the WMF open as a transfer station, to increase its use for transfer of residential solid waste, C&D and metals, and to hire a solid waste manager, which was approved by Town Meeting in November, 2012.
Construction & Demolition Debris (C&D)

Annual C&D tonnage records are available from 2003.

C&D tonnage peaked at just over 2000 tons per year in FY 2005.

In January 2006 C&D fees were adopted as follows:

- $5.00 per barrel;
- pickup or utility trailer $220.00 per load;
- large utility trailer $280.00 per load;
- single axle, 6 wheel truck $400.00 per load,

and tonnage fell to approximately 1000 tons per year.

In January 2008 the C&D price per barrel was raised from $5.00 to $10.00 and tonnage fell again to approximately 700 tons per year.

In January 2010, a $2.50 per bag residential solid waste fee became effective. While C&D fees remained unchanged, C&D tonnage fell yet again to less than 150 tons per year, and continues to decline.
In FY 2013, 105 tons of C&D were transferred from the WMF to the Bourne landfill. This required only 13 trips. C&D is weighed at the Bourne landfill and the Town is billed directly.

A graphical representation of the decline in both residential solid waste and construction and demolition debris disposed of at the Waste Management Facility illustrates a strong correlation between disposal of residential solid waste and construction & demolition debris at the Falmouth Waste Management Facility (WMF). The establishment of C&D fees appears to have been a factor in the reduction of residential solid waste deposited at the WMF, and similarly, it appears that the establishment of solid waste fees also was a factor in the reduction of C&D deposited at the facility.
Proponents of lowering the price of C&D at the WMF have examined records of C&D shipped from Falmouth to Bourne during FY 2013 and argue there is a significant local demand for a small load C&D transfer station in Falmouth (See below).

## Falmouth Commercial C&D Shipped to Bourne in FY 2013

<table>
<thead>
<tr>
<th></th>
<th>TRIPS</th>
<th>TONS</th>
<th>TONS PER TRIP</th>
<th>PER CENT OF TRIPS</th>
<th>TRIPS PER WEEK</th>
<th>TRIPS PER DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVER 1 TON</td>
<td>3,363</td>
<td>6,925</td>
<td>2.1</td>
<td>0.2</td>
<td>65</td>
<td>13</td>
</tr>
<tr>
<td>LESS THAN 1 TON</td>
<td>13,051</td>
<td>3,905</td>
<td>0.3</td>
<td>0.8</td>
<td>251</td>
<td>50</td>
</tr>
<tr>
<td>LESS THAN .5 TON</td>
<td>10,528</td>
<td>2,142</td>
<td>0.2</td>
<td>0.6</td>
<td>202</td>
<td>40</td>
</tr>
<tr>
<td>TOTAL FALMOUTH</td>
<td>16,414</td>
<td>10,830</td>
<td>0.7</td>
<td>1.0</td>
<td>316</td>
<td>63</td>
</tr>
<tr>
<td>CASH CUSTOMERS</td>
<td>14,599</td>
<td>7,595</td>
<td>0.5</td>
<td>0.9</td>
<td>281</td>
<td>56</td>
</tr>
</tbody>
</table>

Specifically, 10,528 trips were made from Falmouth to Bourne, each carrying less than .5 ton of C&D. A total of 2,142 tons were delivered and the average weight per trip was 400 lbs.

The Solid Waste Committee is presently debating a proposal from one of its members to reduce C&D fees at the Waste Management Facility in an effort to attract Falmouth-based small contractors to the facility, both as a service to residents and businesses, and as a way to generate additional revenue to support overall Waste Management Facility costs.
Metal Recycling

Excluded Items Taken to WMF

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mattresses</td>
<td>7%</td>
</tr>
<tr>
<td>Tires</td>
<td>5%</td>
</tr>
<tr>
<td>White Goods</td>
<td>5%</td>
</tr>
<tr>
<td>CRTs</td>
<td>10%</td>
</tr>
<tr>
<td>Propane Tank</td>
<td>1%</td>
</tr>
<tr>
<td>Metal</td>
<td>72%</td>
</tr>
</tbody>
</table>

There were 3997 trips to the metal pile recorded by the WMF gate attendant in FY 2013. Disposal of metal items was the purpose of 72% of trips to dispose of excluded items, and 10% of all trip purposes to the WMF. Metal is the primary excluded material deposited at the WMF. Disposal of metal at the WMF is free for residents and it makes money for the Town.

<table>
<thead>
<tr>
<th>Metal Deposited at WMF</th>
<th>FY 2011</th>
<th>FY 2012</th>
<th>FY 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>139.48</td>
<td>99.4</td>
<td>89.65</td>
</tr>
<tr>
<td>Runs</td>
<td>25</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Revenue</td>
<td>$11,906.24</td>
<td>$11,695.97</td>
<td>$8,544.89</td>
</tr>
<tr>
<td>Rev/ton</td>
<td>$85.36</td>
<td>$117.67</td>
<td>$95.31</td>
</tr>
</tbody>
</table>

Metal recycling records are available since FY 2011. In FY 2013, 89.65 tons of metal from the WMF were transported and sold for $8,544.89, an average of $95.31 per ton. The amount of metal handled at the WMF is declining, from 139 tons in FY 2011, to 99 tons in FY 2012 to 89 tons in FY 2013. The market price of metal has varied from $85 to $120 per ton over that period.
The present location of the scrap metal pile requires that metal be left in a pile on the ground at the WMF, and the Town is currently responsible for loading it into roll-off boxes for transport.

![Scrap Metal Loads Hauled per Year](chart.png)

While data is limited, the staff at the Waste Management Facility keeps track of the number of trips exiting the facility. The number of trips has steadily declined from 50 per year in FY 2008 to 13 trips in FY 2013.

**Compost Area**

The Town of Falmouth Compost Area is located on Blacksmith Shop Road in North Falmouth. The facility accepts yard waste from residents only, and brush and stumps are prohibited. The Compost Area is open to the public Tuesday through Saturday. The compostable material is placed in wind rows and turned regularly by DPW staff.

The facility is not regularly staffed and control of access is a concern. There is considerable anecdotal information and a complaint history concerning non-resident contractors dumping yard waste at the facility.

The final product of composting should be a usable product, and in demand by residents and contractors who theoretically transport loam from the site for their own use. However, the loam produced at the site has so many weed seeds that it has proven to be a problem for those who use it and there is consequently little demand for the material.
The Massachusetts Department of Environmental Protection (DEP) issues General Permits with annual reporting requirements for composting operations pursuant to the provisions of 310 CMR 16.04, which establishes the following material limits:

1) Receives no more than 105 tons per week or 30 tons per day of group 2 organic materials (includes grass clippings, green plant material and vegetative waste, food material, fish waste and manure, etc., but not shrub trimmings, straw, or leaves), AND
2) Contains less than 5,000 cubic yards of organic material per acre AND
3) Has less than 50,000 cubic yards of organic material on site at one time.

The amount of material coming into the site is not monitored, measured or weighed, but it is obvious that the facility is not accepting 30 tons per day, or 105 tons per week of material.

The engineering department has calculated the area of the two adjacent lots where the composting facility is located. The upper lot is approximately 36 acres and the lower lot is approximately 55 acres. The approximately 91 acre site establishes the 50,000 cubic yard maximum material limit the relevant standard.

It is apparent the 50,000 cubic yard limit will be a DEP concern as the amount of material on the site continues to grow.
Issues & Recommendations

Rising Solid Waste Costs

Solid waste disposal costs have been increasing at an annual rate of 4.5% since FY 2010, and can be projected to continue increasing by at least 4.5% annually going forward. The driving forces behind these increases are rising fuel costs and time. This increase is not indefinitely sustainable by the Town of Falmouth, where new funds available to the Town (funds to be Raised & Appropriated) have been increasing by only 2.5% annually (see below). Stated another way, in FY 2014 the Town raised $1.857 million in new revenue, while solid waste expenses increased by $333,000, consuming $18% of the new revenue.
Ultimately, the Town will be confronted with a decision to either cut costs or raise additional revenue to support its solid waste disposal program. There are short-term and long term options that will help with one or the other, or both.

**Cost Cutting Measures**

Ninety-eight per cent of the residential solid waste and ninety-four percent of the residential recyclable material in Falmouth is picked up at the curbside by a private contractor. Less frequent collection would save money but is not a realistic option. However, the Waste Management Facility does present some opportunities for cost savings.

- **Reassignment of Staff**

There are currently three persons working full-time at the facility; a supervisor, a machine operator and a laborer. Ideally one person should be based at the gatehouse and one up above to oversee dumping of trash, metal, C&D, and recyclable material. A staff presence near the metal pile would also help deter removal of valuable metal by individuals. There is occasional need for a machine to move containers or material around the site, but insufficient work to assign a permanent, full-time machine and operator to the facility, who should be reassigned.

There are better uses for a machine and operator. The Town presently sends a machine operator to the regional transfer station (UCRTS). There is also a need for better supervision of the compost area to reduce the amount of material coming to the facility from out of Town since there is an absolute cap of 50,000 yards of material that may be on the site at any time, and there is a need to turn the wind rows regularly with a machine. The highway department could also use a machine operator to support their operations. The machine operator should have a schedule of work, overseen by the Highway Superintendent and be dispatched to the Waste Management Facility as necessary.

Traffic at the WMF varies significantly over the course of the year. Should it be necessary to assign a third person temporarily to the facility during peak periods (Memorial Day through Labor Day), the machine operator would be available.
A second benefit of reassigning the machine operator would be the enhanced communication between the WMF Supervisor and the highway department, since the WMF Supervisor would need to call highway to request the machine operator to perform work at the WMF. While the Town would not save any money through this reassignment immediately, there might ultimately be a savings through attrition, and the Town would immediately reduce solid waste costs and better utilize its resources.

- Close the WMF one additional day per week.

Employees at the WMF currently work a Tuesday through Saturday work week. If further cost saving measures are deemed necessary, the facility could be closed one day per week (Wednesday and Thursday are the lightest traffic days), and employees reassigned during that day.
The Town would not save costs immediately, but would save over time through attrition. Resources would be better utilized and the cost of solid waste disposal would be reduced. This might result in a change to the current work week and payment of overtime for Saturday work, but even if overtime became necessary, payment for 4.5 days per week (time and one half for Saturday) will reduce solid waste costs and overall costs in the long term.

**Sources of Additional Revenue**

New revenue sources almost always include proposals for overrides and user fees and both should be evaluated. There is interest in the community in keeping the cost of solid waste disposal on the tax rate, and a segment of the community is actively opposed to a graduated user fee structure to pay for solid waste disposal. Four years after establishment of a $2.50 per bag fee for disposal of solid waste at the WMF, efforts to repeal the fee continue.

This interest in supporting solid waste disposal solely through taxation may be the best argument to consider an override rather than a user fee should additional revenue become the chosen alternative. However, user fees not only raise additional revenue, they reduce the waste stream, creating additional savings, and making a user fee approach more advantageous.

<table>
<thead>
<tr>
<th>Impact of $2.50 per Bag Fee</th>
<th>Difference FY 09-FY 11</th>
<th>Waste Stream Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curbside Recycle Tonnage</td>
<td>FY 2009: 2,418</td>
<td>FY 2010: 3,147</td>
</tr>
<tr>
<td>Total Recycle Tonnage</td>
<td>FY 2009: 2,880</td>
<td>FY 2010: 3,492</td>
</tr>
</tbody>
</table>

The $2.50 per bag fee at the WMF was established in January, 2010. In 2009, the WMF accepted 2,832 tons of trash. In FY 2011, the facility accepted only 281 tons of trash, a reduction of 2,551 tons. Over the same period curbside trash collection increased by only 802 tons. Total trash collection was reduced by 1,749 tons.
Total recycling increased by 332 tons over this period, leaving a net reduction in the solid waste stream of 1417 tons. During this period of time, the SEMASS tip fee was approximately $28 per ton and the rail shipping cost from the Upper Cape Regional Transfer Station to SEMASS was approximately $20 per ton. In FY 2011, the Town avoided paying $48 per ton to dispose of 1,417 tons of trash, for a cost savings of $68,016. User fees not only generate revenue, they reduce cost by reducing the total solid waste stream.

Pay as You Throw

One of the most commonly recognized solid waste user fee is Pay as You Throw. This program was recently rejected by the Town of Falmouth, and the following summary is included here solely to provide a benchmark against which to evaluate other user fee proposals that may be considered to address the growing gap between rising solid waste disposal costs and more modest growth of new revenue in the Town of Falmouth.

Curbside Pay as You Throw

<table>
<thead>
<tr>
<th></th>
<th>Current System</th>
<th>Pay as You Throw</th>
<th>Revenue Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bag Revenue</td>
<td>$0</td>
<td>$1,098,625</td>
<td>$1,098,625</td>
</tr>
<tr>
<td>Tip Fees</td>
<td>$698,538</td>
<td>$384,196</td>
<td>-$306,646</td>
</tr>
<tr>
<td>MSW Tonnage</td>
<td>11,750</td>
<td>6,463</td>
<td>-5,287</td>
</tr>
<tr>
<td>Recycling Tonnage</td>
<td>2,950</td>
<td>4,750</td>
<td>1,800</td>
</tr>
<tr>
<td>Recycling Percentage</td>
<td>20.1%</td>
<td>42.4%</td>
<td></td>
</tr>
</tbody>
</table>

The above analysis was provided by Waste Zero, the market leader in Pay as You Throw programs in the Northeast. Pay as You Throw would provide a new revenue stream from bag sales of $1,098,625, assuming a price of $2.00 per bag, and reduce the residential solid waste stream by 5,287 tons saving an additional $306,646 in avoided tip fees at the Bourne landfill. The combined positive revenue impact to the Town of Falmouth would be $1,405,271 per year.

As noted earlier, user fee solid waste programs not only generate revenue, they reduce the overall waste stream. The same is true in this case. Waste Zero estimates a solid waste
reduction of 5,287 tons with a PAYT program, and projects curbside recycling to increase by only 1,800 tons. The remainder of the waste reduction will leave the waste stream in various ways including, removal of excluded items, composting, purchase of less packaging, reuse of material and cultural changes to handling and disposal of household municipal solid waste.

The most frequent criticism from people opposed to PAYT is the impact upon low income or fixed income people living in Falmouth for whom another municipal fee would be a financial hardship. A first bag free program where Pay as You Throw would apply only to the second and subsequent bags of trash left at the curbside each week might be a more acceptable alternative. This would generate some new revenue, and more importantly exert similar downward pressure on solid waste tonnage resulting in avoided tipping fees and savings for the Town.

A first bag free program would involve distribution of 52, fifteen-gallon bags to every household in Falmouth, (one for each week) and possibly 13 bags to every seasonal household, free of charge. A master list would be required, based upon a street list, but alternative documentation could be provided to establish seasonal or permanent residency. A distribution program similar to holding an election is one way to distribute most of the bags, which could also be picked up at a later date at the DPW, or perhaps the Town Clerk office, where the master list could be kept.

A typical Pay as you Throw program would be available for those who generate trash in excess of the single bag per week. Waste Zero estimates this program would save the Town of Falmouth $500,000 per year, after expenses, through a combination of revenue from bag sales and avoided tipping fee costs, since the waste stream will be reduced.

Waste Management Facility Best Practices

- Supervision / Reporting / Communication

The Waste Management Facility is located in a remote location of the Town, some 4 miles from the DPW building. Waste Management Facility operations would benefit from a more frequent and structured interaction between the employees at the Waste Management Facility and management in the DPW building. The Assistant Highway Superintendent visits the facility weekly for payroll purposes, but there is no other scheduled opportunity for workers and supervisors to discuss operations, problems or opportunities.
The WMF staff should punch in and out at the beginning and end of each day at the DPW garage, as other DPW employees do. The WMF supervisor should have a scheduled weekly meeting at the DPW building with the Highway Superintendent or the Assistant Superintendent, and he must take the initiative to arrange additional meetings as necessary to address matters that arise between the weekly meetings. The purpose of the weekly meetings is to deliver reports, weigh slips and any other documents, to go over the events of the week, to schedule work at the WMF and to identify and discuss operational problems and alternative solutions. Ultimately these meetings should become forums, to set goals and to conduct performance appraisal, neither of which presently exists.

Similarly communication between WMF staff and workers at the Swap Shop would benefit from additional structure. Operational practices including disposal of trash from the Swap Shop, and closing of doors on the paper recycling container at the end of the day to prevent the paper from becoming wet are examples. Identification of a spokesperson / manager of the swap shop and establishment of a process for getting certain work at that facility accomplished in a timely manner should be sufficient to correct this deficiency. This will be expanded upon in a later section of the report.

Communication is also a key to better enforcement of regulations concerning removal of valuable metal from the metal pile, vandalism, and disposal of banned items at the Swap Shop in an effort to avoid paying a disposal fee. In this case, posting of the rules at the facility and providing a copy to sticker holders at point of sale is a first step. An enforcement procedure, jointly developed between management and the WMF supervisor, approved by the Board of Selectmen and supported by management will provide a solution. This will be expanded upon in a later section of the report.

- Appointment of Swap Shop Personnel

Swap Shop personnel should be appointed by either the Board of Selectmen or the Town Manager to fully vet volunteers before he or she begins service, to provide them with the same indemnification and insurance coverage afforded municipal employees and volunteers and to provide better managerial control over Swap Shop operations.

Appointment allows prospective volunteers to be vetted. The process brings transparency produces the best employees and volunteers available.

Chapter 258 of the General Laws provides significant indemnification and limited liability for municipal employees and volunteers. Similarly, the Town of Falmouth likely carries Public Officials Liability insurance that covers the acts of employees and volunteers serving the Town. A Swap Shop volunteer, who has not been appointed to serve the Town, and who becomes
involved in an incident at the facility that gives rise to a claim, might find himself or herself exposed personally and without any Town insurance coverage. In contrast, an employee or volunteer of the Town working alongside the volunteer and involved in the same incident might be fully indemnified or at least covered by Town insurance.

The third reason to appoint swap Shop employees is to improve and maintain managerial control at the facility. Appointed volunteers can be trained in the operation of the facility, conflict of interest, chain of command, and other related matters. The appointment reminds the volunteers that they are there to serve, that they have a set term, and that each is accountable to the appointing authority. It also provides a mechanism for management intervention should it become necessary.

A group of appointed Swap Shop volunteers would be better able to arrange coverage of the facility, facilitate the selection of one person to be the spokesperson for the group and ultimately to establish a standard communication process with WMF to schedule necessary work such as moving trash from the Swap Shop to the trash boxes and making sure the cover is closed on the paper recycling box in the event of rain and at the end of the day to keep the paper dry.

- **Enforcement of WMF Regulations**

Enforcement concerning inappropriate behavior such as removal of valuable metal from the metal pile, or disposal of waste ban items by dropping them at the swap Shop to avoid the disposal fee should be improved.

Current Waste Management Facility Regulations should be reviewed to ensure they are current and comprehensive, adopted by the Board of Selectmen and posted in appropriate throughout the Waste Management Facility. The regulations should also be distributed to sticker holders at the time of purchase. An enforcement policy and procedure should also be adopted by the Board of Selectmen to provide documented support for those who are responsible for enforcement of the rules.

While employees of the WMF are in the front lines, their enforcement responsibility should be limited to verbal notice of the violation to the offender, documentation of the violation and notice to another party for enforcement action. WMF employees are not trained in enforcement and confrontation of an offender by an untrained person may lead to larger, more immediate problems.
The best choice for enforcement is the Falmouth Police Department. Police are trained to take enforcement action in a number of civil matters including parking violations, domestic disputes, noise complaints and dog issues. They know how to take control of emotional situations, de-escalate tensions, and issue citations where appropriate. In this instance, the WMF supervisor might first notify an offender of a rule violation, and further warn the offender that if the behavior continues or is repeated, the police will be notified for possible enforcement action. If necessary, the supervisor would provide a written notice of violation, on a standard form that includes name, address, vehicle registration and sticker number of the person involved, the nature of the violation, the date and time and the signature of the employee who witnessed the violation to the Highway Superintendent, who would notify police. The police would issue a citation and possible fine with a warning that future violations would result in revocation of the WMF sticker.

Alternatively, the notice could be sent by the Highway Superintendent, or another party designated in the regulations to have that authority.

The process may appear cumbersome, but it provides support for WMF employees, notice and a warning to offenders, documentation of the violation, professionalism and it will not have to be repeated very often.

- Data Collection and Reporting

Each vehicle entering the facility has its sticker scanned and each trip purpose and relevant fee scanned from a template held by an employee at the gatehouse.

The present system generates bills, and collects data concerning all trip purposes, quantities of material brought to the facility, and the fee charged.

A database is maintained that can be accessed from a remote location and manipulated into a number of useful reports. The DPW Business System Manager produces several monthly reports currently. The reports can be generated for any period, trip purpose or revenue stream. However, most vehicle trips to the facility include more than a single trip purpose; recycling and the swap shop for example, and reports cannot be produced indicating the number of vehicle trips over a specified period of time. The information would be useful for anyone interested in measuring activity at the facility and hopefully easily added to the report-generating menu.
• Changing the Locks

There is an abundance of anecdotal information from residents and complaints from employees of after-hours dumping at the facility and a belief that some unauthorized persons may have keys. Changing the locks and controlling access to the new keys will solve the problem.

Waste Management Facility Operations

In 2006, Weston & Sampson recommended closing the WMF to drop off of residential solid waste and recycling. This was a logical recommendation from a purely economic perspective. Curbside collection of solid waste and recycling was capable of handling 100% of the residential waste solid waste and recycling, and at first glance, continued use of the facility for those purposes appeared to be inefficient and an unnecessary cost.

Public opinion continued to support keeping the facility open to those uses. In 2008, voters once again supported the facility open with their pocketbooks by voting a $200,000 appropriation for improvements to the facility. In 2010, a $2.50 per bag user fee for all solid waste brought to the facility was established, and solid waste delivered to the facility dropped by 90%, but it did not stop altogether. The facility still handles over 200 tons of trash per year, at a cost of $2.50 per bag, despite the opportunity to dispose of it for free at the curbside. Similarly, the willingness to purchase a WMF sticker for the privilege of dropping off recycling at the facility instead of at the curbside demonstrates that public interest in recycling is based upon social needs as well as economic and environmental interests.

A reasonable person would conclude that Falmouth residents want to retain their ability to deposit solid waste and recycling at the WMF, and they are willing to pay for the privilege.

The 2006 Weston & Sampson report identified WMF projects totaling $397,000. That number was reduced to a $200,000 request for appropriation, and was based upon 2006 prices. Scanning technology was purchased and approximately $185,000 remains available.

• Scale and Gatehouse

The WMF needs a scale. While there is an agreement with Cape Cod Aggregates to weigh each metal truck leaving the facility, the process is cumbersome and the arrangement only applies to containers of scrap metal leaving the site.
• Waste Management Facility Layout

The WMF layout should separate pedestrian traffic areas (Swap Shop and recycling area) from high vehicle and truck traffic areas (metal, C&D and solid waste). The Town has stipulated to abutters, as part of an application for setback variance, that the metal recycling, C&D and solid waste functions will be moved further away from the property line and there is a plan to do so that also separates the pedestrian areas from the vehicle and truck areas.

There still exists some disagreement concerning the final layout of the WMF, including development of separate access and reduced sticker prices for recycling and the Swap Shop, but the present layout should not be altered until consensus is reached, the plan is voted by the Board of Selectmen and approved by the Massachusetts Department of Environmental Protection.

• Compost Area

As stated earlier, the compost area operates under a general permit issued by DEP, by the terms of which Falmouth is allowed to hold no more than 50,000 cubic yards of material on the total site. Over the long term, Falmouth needs to find a use for the composted material whether it is sold or given away to stay in compliance with the provisions of our general permit.

In the interim, there are some short term measures that should be taken to prolong our use of the site as a composting area, as follows:

1) The mount of compost material on the site should be measured to document compliance and to project long term use of the site.
2) The hours of the facility should be further limited to consolidate public use.
3) Use should be monitored and restricted to Falmouth residents and businesses only.