

**Board of Supervisors**

Jack R. Cavalier, Chairman  
 Gary F. Snellings, Vice  
 Chairman  
 Meg Bohmke  
 Paul V. Milde, III  
 Laura A. Sellers  
 Cord A. Sterling  
 Robert "Bob" Thomas, Jr.

Anthony J. Romanello, ICMA-CM  
 County Administrator

**STAFFORD COUNTY ADMINISTRATION  
 MEMORANDUM**

To: Board of Supervisors  
 From: Keith C. Dayton  
 Deputy County Administrator  
 Subject: Rappahannock Regional Landfill  
 Date: June 12, 2014

Staff was requested by the Rappahannock Regional Landfill Management Board (R-Board) to provide the Board of Supervisors with information related to the operation and financial status of the regional landfill. This facility, which provides landfill services for the residents and businesses of Fredericksburg and Stafford, has undergone considerable changes in the past 25 years, and is currently facing financial challenges that require immediate action.

The R-Board information provided herein is somewhat extensive and has been summarized in the Executive Summary below.

**EXECUTIVE SUMMARY**

<p>Issues</p>	<ul style="list-style-type: none"> <li>• A variety of policy decisions, market pressures, and operational considerations over the past twelve years have left R-Board in a financially unsustainable position.</li> <li>• The landfill must initiate an expansion estimated to cost about \$4 million early next year, with slightly over \$13,000 in unrestricted assets to fund the work.</li> </ul>
<p>R-Board Background</p>	<ul style="list-style-type: none"> <li>• The landfill is operated under a joint agreement between the City of Fredericksburg and Stafford County.</li> <li>• Funding is provided primarily from user fees, with the private services collecting solid waste in the County being the largest single source of revenue</li> <li>• Approximately 25% of the waste material received by the landfill is unbilled. The majority of this material comes from the free residential drop off at the two convenience centers</li> </ul>



Financial Status	<ul style="list-style-type: none"> <li>• The City and County subsidized R-Board operations beginning in 1989 until 2002</li> <li>• R-Board has assumed responsibility for litter control and operation of the City convenience center on Belman Road, costing approximately \$0.5 million each year</li> <li>• Revenue and reserve fund are currently inadequate to support operational and capital expenses.</li> </ul>
Expense Reductions/Revenue Enhancement Measures	<ul style="list-style-type: none"> <li>• Expense Reductions of 11.2% in past four years <ul style="list-style-type: none"> <li>• Reduced staffing levels by 15%</li> <li>• Cut operating hours on weekends, and scaled back unproductive recycle collection locations</li> <li>• Reduced discretionary spending, and improved operational efficiency</li> </ul> </li> <li>• Revenue Enhancement Measures <ul style="list-style-type: none"> <li>• Adjusted tipping fee schedule to stabilize commercial customer revenues</li> <li>• Implemented select commercial fee increases to raise revenue without losing commercial customer volumes</li> </ul> </li> </ul>
Market Factors	<ul style="list-style-type: none"> <li>• Competition from recently opened landfills</li> <li>• Recession, higher recycling rates, and better waste management strategies also contribute to declining waste streams</li> </ul>
Options	<ul style="list-style-type: none"> <li>• Expense Reductions <ul style="list-style-type: none"> <li>• Further staffing and operations cuts</li> <li>• Service reductions (litter control &amp; convenience center cuts)</li> </ul> </li> <li>• Revenue Enhancements <ul style="list-style-type: none"> <li>• Charging all residents for landfill services</li> <li>• Increase tipping fees</li> <li>• Reinstate local government subsidy</li> </ul> </li> </ul>

Background

The Rappahannock Regional Landfill is operated under a joint agreement between Stafford County (County) and the City of Fredericksburg (City). Although jointly owned, the agreement designates Stafford as the entity responsible for management of the landfill; consequently, the County provides all operational and administrative support. The R-Board serves as management oversight, establishing policies for landfill operation, and consists of two Board members, two City Council members, the County Administrator and the City Manager.

The initial agreement between the municipalities was for a period of 25 years, but was extended to 2024 in 2000. Unless amended further, the City would not participate in the regional landfill after that date. The land at the Eskimo Hill landfill site is jointly owned by the City and County, and encompasses approximately 800 acres, as shown on the attached map, includes about 150 acres designated for previously filled landfill cells, current operations, and future permitted landfill cells, along with 41 acres reserved for the Stafford Civil War Park. The R-Board also operates a convenience center located on Belman Road within the City limits, and several recyclable material collection centers at various locations

in Stafford and Fredericksburg. The R-Board also provides litter control services in both localities, although the primary service area is in Stafford County.

Landfills operate by the excavation of lined depressions, or cells, which are filled with solid waste in a prescribed manner to ensure optimum efficiency and compliance with permit requirements. Cell liners are typically an impermeable membrane of thick high density polyethylene which prevents the intrusion of groundwater, or the escape of waste contaminated water (leachate) into the groundwater table. The cells planned for the Eskimo Hill landfill range from seven to eleven acres, and are expected to last between three and nine years. The landfill is currently filling Cell F-1, and there are six additional cells permitted that are estimated to provide sufficient capacity for our solid waste requirements until 2067.

Landfill operations are regulated by the Department of Environmental Quality (DEQ) through the issuance of solid waste, air quality, and stormwater management permits. Landfill staff, with the assistance of our professional consultants, are required to monitor and report to DEQ on a broad range of operational data to ensure compliance with these permits. The cost of permit compliance increases over time with more stringent regulations, and the added area of the landfill subject to regulation.

Funding for the \$4.3 million FY2015 budget comes primarily from user fees associated with landfill activities, along with additional funds generated by recycling initiatives, and grant awards for our litter control efforts. The majority of our user (tipping) fees are provided by the two commercial solid waste companies, County Waste and Waste Management, Inc., operating in Stafford County. The City's Department of Public Works provides waste services for those residents of the City wishing to subscribe.

Approximately 75% of the waste delivered to the landfill is charged a tipping fee. Municipal waste delivered by residents of the City and County to either the Eskimo Hill Road or Belman Road convenience centers is accepted without charge, as is municipal waste delivered to the landfill by the City's Department of Public Works. This unbilled waste represents approximately 25% of the waste materials accepted by the landfill.

The landfill operation prides itself on environmentally friendly operation, having achieved Exemplary Environmental Enterprise (E3) status from DEQ, along with only two other landfills in Virginia. We recently received a certified recycling rate of 49.2% from DEQ.

### Operational Considerations

R-Board staffing levels are authorized at 34 employees, but have operated for the last two years with 29 employees.

The Eskimo Hill landfill accepts a variety of municipal waste, recyclable materials, construction debris, lawn and tree waste, scrap tires, and other materials. Collections for FY 2012 & 2013 are noted in the table below.

CATEGORY	FY2013 Weight (in Tons)	FY2012 Weight (in Tons)	% Difference
<b>BILLABLE</b>			
Commercial Waste	23,925	20,279	18%
Residential Waste	36,923	37,419	-1%
Mixed Load-\$71/T	21	2	742%
Debris Waste	18,581	18,839	-1%
Dirt	1,695	1,260	35%
Tires/White Goods	358	552	-35%
Compost Sludge	8,830	9,640	-8%
SEW Sludge	195	65	198%
<b>BILLABLE TONNAGE</b>	<b>90,528</b>	<b>88,057</b>	<b>3%</b>
<b>NON-BILLABLE</b>			
Eskimo Hill Convenience Center	12,152	10,727	13%
Fredericksburg City Public Works	8,059	8,242	-2%
Belman Road Convenience Center	3,594	3,513	2%
Tires-Residential	1,227	1,352	-9%
Recycling	6,990	7,762	-10%
Cleanups	95	204	-53%
<b>NON-BILLABLE TONNAGE</b>	<b>32117</b>	<b>31,800</b>	<b>1%</b>
<b>TOTAL TONNAGE</b>	<b>122,645</b>	<b>119,856</b>	<b>2%</b>
<b>% Non-Billable</b>	<b>26%</b>	<b>27%</b>	

Of the non-billable volumes, the greatest quantities are received from residential drop-off at the Eskimo Hill and Belman Road convenience centers, along with the City collections by their Public Works Department. Recycling quantities, while not billable in the sense of tipping fees, are a significant source of revenue for the R-Board.

The convenience centers are heavily used by residents of the City and County. To determine the distribution of this activity, staff recently completed a week long survey of residential convenience center use. The survey tallied trip generation, rather than weight, as there is no convenient way to run this amount of traffic across the scales. The results are provided in the table below.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTALS	% Distribution
<b>BELMAN ROAD</b>									<b>31%</b>
Fredericksburg	204	156	164	164	180	238	180	<b>1286</b>	56%
Stafford	<u>149</u>	<u>123</u>	<u>103</u>	<u>127</u>	<u>160</u>	<u>166</u>	<u>165</u>	<b>993</b>	44%
Subtotal	353	279	267	291	340	404	345	<b>2279</b>	
<b>ESKIMO HILL ROAD</b>									<b>69%</b>
Fredericksburg	30	27	13	39	46	28	18	<b>201</b>	4%
Stafford	<u>714</u>	<u>480</u>	<u>532</u>	<u>515</u>	<u>644</u>	<u>1009</u>	<u>1027</u>	<b>4921</b>	96%
Subtotal	744	507	545	554	690	1037	1045	<b>5122</b>	
<b>TOTALS</b>	<b>1097</b>	<b>786</b>	<b>812</b>	<b>845</b>	<b>1030</b>	<b>1441</b>	<b>1390</b>	<b>7401</b>	
Stafford Totals	<b>5,914</b>		Stafford Percentage			<b>80%</b>			
Fredericksburg Totals	<b>1,487</b>		Fredericksburg Percentage			<b>20%</b>			

Applying the distribution of residents noted in the survey above, to the quantities of unbillable waste brought to our convenience centers, residents of Stafford are responsible for 53% of the non-billable quantities, while the City contributes 47%.

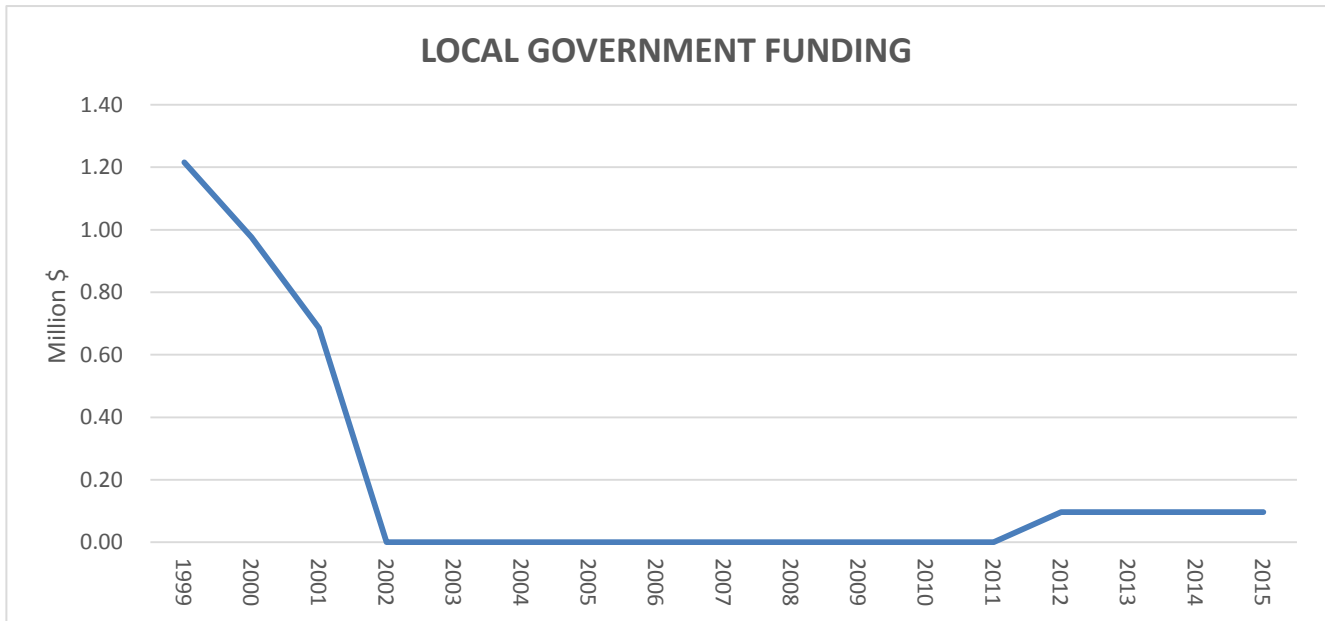
As noted above, the landfill is currently filling Cell F-1, which was opened for operation in July of 2013. We expect capacity in this cell to be exhausted by December of 2015. Staff has made a number of operational changes designed to optimize the life of the current cell; however, our recent aerial survey, along with ongoing monitoring of waste intake, have confirmed the December 2015 date.

In anticipation of exhausting current capacity by the end of 2015, staff has initiated design efforts for Cell F-2, and is planning to complete the design and solicit bids for Cell F-2 early in 2015. Construction cost for Cell F-2 is estimated at \$4 million, with an expected service life of seven years.

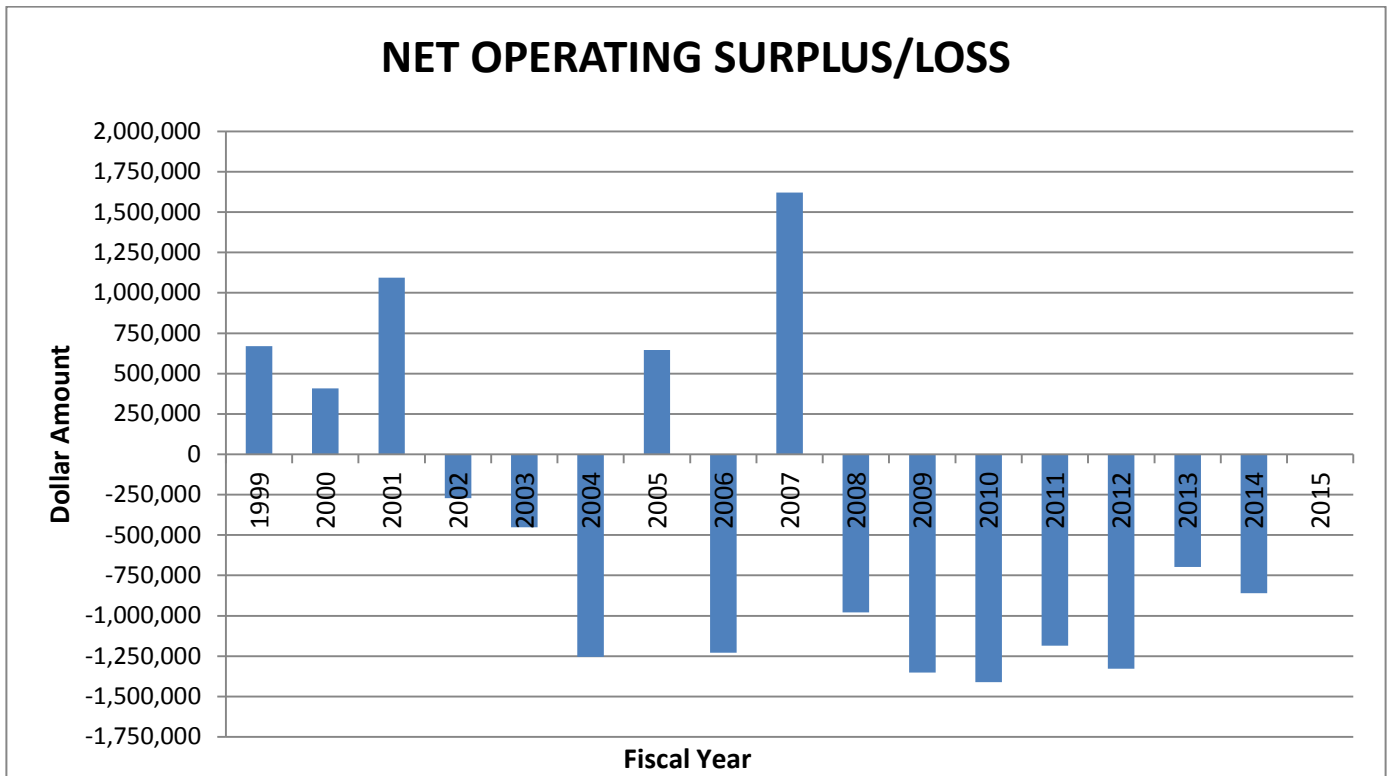
The operational permit for the landfill places a requirement to monitor closed cells and maintain a reserve fund for environmental remediation for a period of 25 years after closing the last cell. This liability, identified as closure/post closure costs, is currently valued at around \$6.3 million.

Financial History

R-Board revenue is derived primarily from tipping fees associated with landfill activities. The R-Board is also budgeting for slightly less than 10% of the overall budget from recycling proceeds, grants, and the sale of landfill generated methane gas to a firm generating electricity for sale to Dominion Virginia Power. In prior years, the R-Board also received substantial funding from the City and County. This practice was followed to ensure the R-Board fund balance was sufficient to meet regulatory obligations for closure/post closure of landfill cells, and to provide adequate funding for continuing landfill cell construction. This source of revenue was discontinued in 2002, when landfill operations were deemed financially sustainable without subsidy from participating jurisdictions. The Governmental Funding chart below identifies the level of local government support of R-Board operations over the last fifteen years. Excluded from this are user fees for landfill services provided to various agencies transporting waste to the landfill.

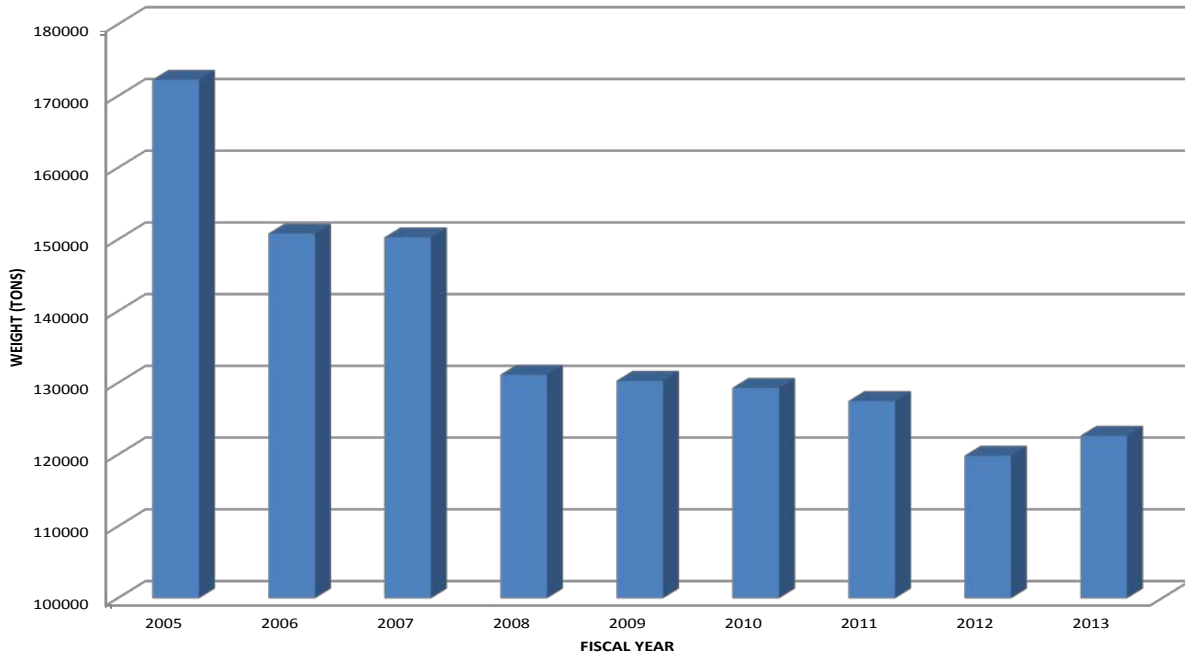


Funding initially was provided by the participating localities at a rate equivalent to the use of free disposal service by their residents at a rate equal to the prevailing tipping fee. This practice was discontinued in 2002, and is reflected by the graph above. Since 2012, the combined funding of just under \$100,000 annually has been provided as payment for landfill services for disposing of debris from government facilities.



The large swings in operating results between 2002 and 2007 can be attributed in large part to the timing of new landfill cell construction. Since 2008, financial performance is reflective of the impacts from the loss of governmental funding support, the severe recession, and evolving market conditions. There was a precipitous drop in waste volumes received by the landfill after 2007, with annual totals dropping slightly each year, with the exception of a slight rise in quantities in 2013.

**MATERIAL ANALYSIS REPORT**

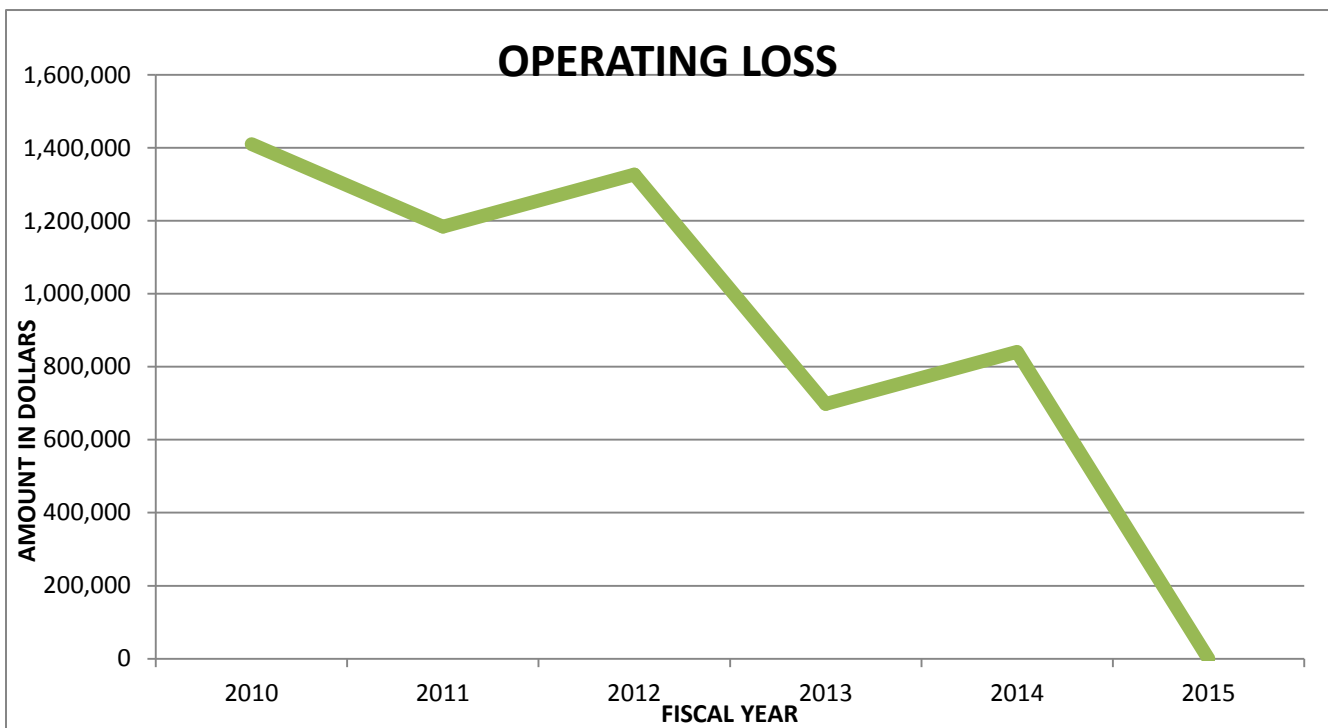
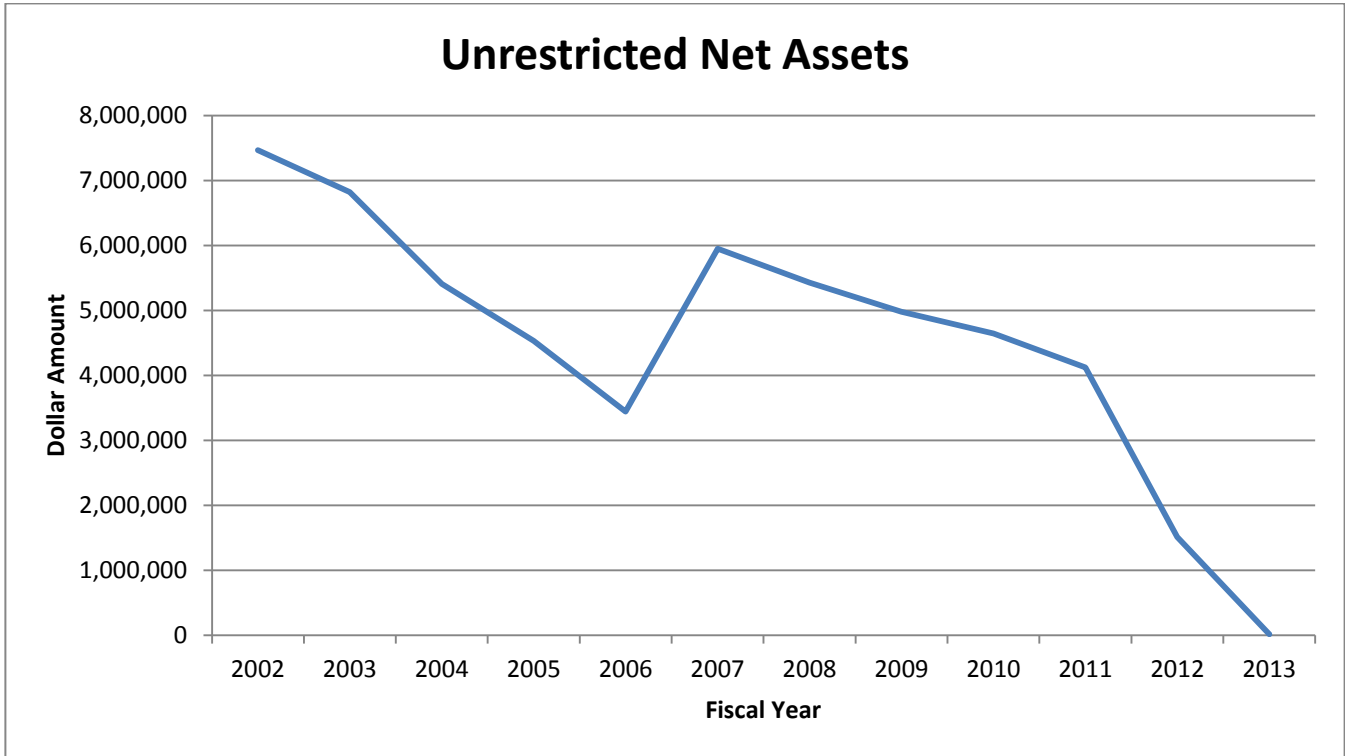


There are a number of reasons for this, with the opening of competing commercial landfills in the region believed to be the single biggest cause. Improvement in recycling performance and reduced overall waste stream generation are believed to be significant contributing factors as well. In addition to the reduction in revenue generating waste streams, beginning around 2005, financial responsibility for the litter control program and staffing for the Belman Road collection center were transferred to the R-Board. These actions shifted approximately \$500,000 in net yearly expenses to the R-Board. The combination of reduced local funding and tipping fees, coupled with increased unfunded program costs and continuing capital expenses for new landfill cells, resulted in a marked decline in the unrestricted R-Board fund balance since 2002. As indicated by the data below from the last twelve years, and the Unrestricted Net Assets graph below, this key measure of financial condition has dropped precipitously; with the R-Board currently retaining just over \$13,000 in unrestricted net assets.

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Unrestricted Net Assets (Million \$)	7.468	6.819	5.405	4.528	3.440	5.949	5.425	4.977	4.642	4.122	1.510	0.013

Responding to this trend, the R-Board implemented practices designed to maintain commercial hauler volumes and cut operating costs. We initiated a scaled tipping fee structure to offer a competitive rate to our largest customers. Currently our tipping fee reduces from \$41 per ton to \$34 as monthly quantities

reach 1,500 tons per month. The landfill also cut hours on Sunday to reduce non-revenue generating operational periods, and has cut operational costs wherever possible.





As shown above, the impact of these actions have reduced the operating loss markedly; however, we are not in a position to replace depleted reserves, or fund new landfill cells required for continuing operation.

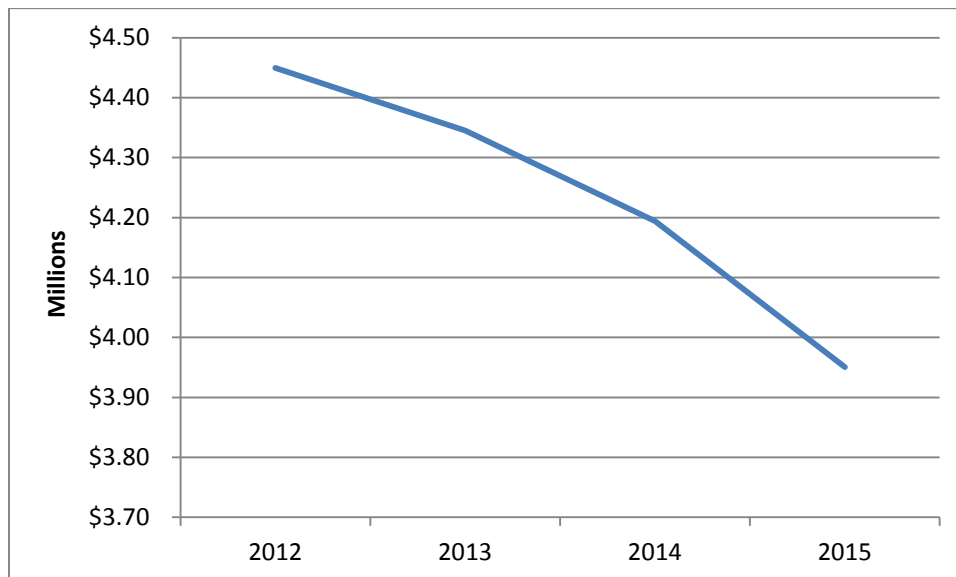
Current Financial Status

Although actions taken by the R-Board have slowed the continuing operational losses of recent years, the current revenue strategy is inadequate to fund capital requirements, particularly the cost of new landfill cell construction. As noted previously, Cell F-2, with an estimated \$4 million cost, must be operational by December 2015 to avoid a halt in landfill operations, requiring initiation of construction in early 2015. In addition, immediate action should be taken to replenish the depleted reserve fund.

Staff has previously calculated that additional revenue of \$650,000 per year is required to fund new landfill space, and about \$225,000 more to fund operational deficits. The R-Board budgeted \$228,000 in additional revenues from the two participating localities; however, while the City budgeted their portion, the County did not, leaving a deficit of about \$900,000 in FY2015. Staff has also provided a number of options to address this shortfall. These options are summarized below.

Expense Reductions

The R-Board has reduced staffing levels by 15% through attrition in the last few years, and severely reduced discretionary spending wherever possible. As shown below, this effort has resulted in an 11.2% reduction in the adopted personnel and operational expenditure budget over the last four fiscal years. This excludes capital spending, which varies significantly depending on the timing of new cell construction.



Staff does not believe further operational expenditure reductions are advisable, particularly those related to landfill management as this would directly impact the operation and maintenance of an equipment intensive activity and jeopardize our regulatory compliance record.

**Service Reductions**

Staff has investigated the possibility of eliminating the unfunded costs of providing litter control service to the City and County. This would save approximately \$300,000 in personnel and operational costs, which currently have only \$25,000 from a state grant for offsetting revenue. Unless this service was returned to the localities, efforts that have resulted in collecting approximately 450 tons of litter each year, as well as the illegal sign removal program would be eliminated.

Elimination of the Belman Road convenience location, or its return to City management, would result in approximately \$225,000 in savings. The traffic associated with the use of the Belman facility would be shifted to Eskimo Hill, with some degree of traffic impacts, and would inconvenience City and County residents in approximately equal numbers.

Elimination of these two services would result in expenditure savings of approximately \$500,000, well short of the minimum annual funding necessary for sustainable operation.

Staff also investigated the savings potential of extending Saturday residential collection hours to 8:00 AM to 5:00 PM, while eliminating Sunday hours. We calculated a savings of approximately \$62,000 per year, resulting from a decrease of 6 hours of equipment running time. Personnel savings would be minimal, with overtime costs from the extended Saturday hours offsetting reductions from the Sunday closure.

Staff is concerned about concentrating our weekend residential traffic into a single day. During the recent survey, the Eskimo Hill location received over 1,000 visits on both Saturday and Sunday. Doubling the number of visitors on a single day would create logistical problems with the traffic and waste handling capability at our convenience centers.

**Revenue Enhancements**

**Tipping Fee Increases**

As noted previously, our largest source of revenue is derived from tipping fees paid by commercial trash services operating in Stafford County. R-Board staff recently conducted a survey of other regional landfills, including those operated by our peer localities, to determine their tipping fees as well as obtain other information relative to their funding sources.

<b>Tipping Fee Survey</b>			
<b>Facility Name</b>	<b>Commercial Tipping Fees</b>	<b>Residential Tipping Fees</b>	<b>Notes</b>
Loudoun County Sanitary Landfill	\$62/ton	\$62/ton minimum fee \$6 per vehicle	All residents are charged for solid waste services
Prince William County Sanitary Landfill	General Fund supported - no direct charge for residents \$45/ton for out of county solid waste	General Fund supported through property tax rate for County residents; Incorporated town/city residents pay minimum \$5 per visit;	Solid waste service paid directly by residents through property tax bill; consequently, commercial haulers are not charged tipping fees
Fauquier County Solid Waste Mgt. Facility	\$55/ton;	General fund supported at \$50 per ton. Also charged for special waste categories (appliances, electronics, etc.).	
Hanover County	\$50/ton;	No charge for household waste, but residents are charged	Hanover County is a member of the Central VA Waste Management Authority.
Spotsylvania County Livingston Sanitary Landfill	Tipping Fees MSW \$29/ton. Reduces to \$24 and \$19 per ton, depending on monthly quantities.	General Fund supported at \$2.69 million	
Albemarle County	\$66 / ton	\$7 per vehicle (resident rate); also charge for special waste (appliances, etc.)	Albemarle County is a member of the Rivanna Solid Waste Authority.

All comparison localities have instituted either a “pay as you throw” revenue system for residents, and/or are subsidized by the locality.

It is evident from the information above that our tipping fees are very competitive with our comparison localities, with the exception of Spotsylvania County, which provides their landfill with a general fund subsidy amounting to \$2.69 million. We have also determined that our fees are competitive with area commercial landfills as well.

The R-Board enacted selected increases to tipping fees which will result in minimal loss of tonnage from commercial customers. Staff believes other possible increases to our base tipping fees will result in significant diversion of commercial collections to other area landfills.

It has been suggested that municipal waste could be diverted to other area landfills as a means to ease the current financial concerns. Staff is aware that residential waste collected by commercial waste haulers could be diverted to other landfills by adjusting our tipping fees. This would extend the life of the landfill considerably, and defer construction of Cell F-2. However, it would also divert a large percentage of our paying customers, while continuing the practice of free disposal by residents. The R-Board would have the operational and regulatory expenses largely unchanged, while substantially reducing revenues from operations.

Diversion of all waste to other facilities is possible, but has not been investigated. This action would, in effect, result in closing the landfill, thereby leaving residents to find other means of solid waste disposal. It is expected that the exploration of the ramifications of this option would entail considerable study.

#### Reinstating Locality Subsidy

As noted above, R-Board operations were subsidized by the localities for years. The subsidy was based on the provisions of the 2000 amended Operational Agreement which specified that when a fiscal year ends with an operating deficit, “Each party’s contribution shall be based upon its respective actual usage of the Landfill over the preceding 12-month period.”

The operating loss for FY2013 was calculated by our auditors at \$697,909. Applying the usage ratios adopted in the original agreement of 68% Stafford and 32% Fredericksburg, this deficit would be split as follows:

Stafford	\$474,578
Fredericksburg	<u>\$223,331</u>
TOTAL	\$697,909

An alternative method would base the subsidy on the proportional use of the residential drop-off areas, and uses the current tipping fee in effect at the time. This method underwrites the practice of free residential drop-off and uses our current tipping fee of \$41/ton. Including the quantities delivered by the City’s Department of Public Works with the quantities delivered by residents, the contribution for FY2015 for each locality would be as follows:

Stafford	\$516,477
Fredericksburg	<u>\$391,099</u>
TOTAL	\$907,576

### Charging for the City's Public Works Collections

Staff has determined that a tipping fee charge of \$20 per ton for waste received from the City's Department of Public Works would generate approximately \$165,000 in additional revenue in FY2015. This is about a 50% discount from our normal commercial rate, and 33% below the \$30 per ton minimum rate going into effect on July 1. The City has agreed to this tipping fee and budgeted the funds in their adopted FY2015 budget.

### Implementing Charges for Residential Drop-off

Staff also investigated equitable charges for residential drop off customers. We contacted commercial haulers serving the Fredericksburg area and determined the average monthly charges for residential service is \$30. This equates to a weekly charge of approximately \$7. We were also informed that tipping fees at our landfill account for 2/3 of that charge, with the rest being operational costs and profit. Assuming our residential drop off customers visit the landfill once a week (comparable to weekly commercial residential service), a per-visit charge of \$4 is roughly equivalent to a household using a commercial hauler. The per-trip charge is relatively common in Virginia, and used by two of our comparison localities.

Applying the \$4 per trip charge to the recent customer use survey conducted at our convenience centers, staff estimates weekly revenue from this source of \$29,600, with an annual revenue potential of slightly more than \$1.5 million. Reducing the per-trip charge to \$3 will reduce potential revenue to approximately \$1.15 million, which will still generate sufficient revenue for sustainable operations.

We note certain advantages and disadvantages in implementing charges for residential drop-off as follows.

#### Advantages

- Provides sufficient revenue to fund operational costs and replenish the reserve fund to allow for construction of Cell F2.
- Equitable charge system when compared to residents contracting with commercial services.
- Discourages businesses from using the convenience locations to avoid waste disposal charges.
- Potential reduction in vehicle traffic at the convenience centers.
- Implementing a system of universal payment for use of landfill services has proven to be effective in other communities at reducing quantities of waste delivered to the landfill.

#### Disadvantages

- Resistance from customers used to the free service.
- Potential increase in illegal dumping.
- Additional staff demands to process payments, monitor activity, and collect charges at the convenience centers.

Staff believes that by the incorporation of one or more of the options presented above, the landfill can be operated in a financial sustainable manner. The need to proceed very soon with construction of Cell F-2 makes it imperative that a course of action be decided upon quickly.

KCD:kd

Attachment

**Legend**

-  Civwar
-  Flood Zones
-  RPA

Route 1 Jefferson Davis Highway

Adjoining County/City Owned Property

Stafford Civil War Park  
41.20 +/- Acres

Future Cells  
65.5 +/- Ac.

Current Cell  
9.0 +/- Ac.

Closed Cell Area 2

Closed Cell Area 1

Rt 628 Eskimo Hill Road

Boundary of Active Landfill Property

