4/25/2018

Solid Waste Program Review

Exeter, New Hampshire

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Abstract

The town of Exeter, New Hampshire operates a complex, multi-faceted solid waste program consisting of curbside trash and recycling collection, hazardous materials disposal, specialty waste disposal, and a transfer station. Economic forces and new contracts have led to increased costs in operating the program in recent years. This report looks at all aspects of the Exeter solid waste program, analyzing the past five years in an effort to project future costs. The report concludes with several recommendations to town officials and employees that seek to address the budgetary shortfall in the program.

Abbreviations

EIA ..... Energy Information Administration

EPA ..... Environmental Protection Agency

DOE ..... Department of Energy

HHW ..... Household Hazardous Waste

NHDES ..... New Hampshire Department of Environmental Services

RFP ..... Request for Proposal

STEO ..... Short Term Energy Outlook

DPW ..... Department of Public Works

PAYT ..... Pay As You Throw

Scope and Methods

This report represents a review of the solid waste program in Exeter, NH. All aspects of current solid waste financial concerns were explored to include solid waste collection, recycling, specialty waste programs, and the town transfer station. Financial implications related to the Cross Road landfill were not explored, since its continual monitoring is mandated, and therefore its cost is not subject to budgetary concerns.

The bulk of the financial data within this report comes from past years' budgets. Town budgets serve as baseline for spending and revenues and are used to develop projections. Other financial data comes from Finance Department reports as well as sales data from Waste Zero, the blue bag distributor. Projection data as it applies to waste tonnage costs, haul fees, etc. comes from analysis of invoices from both Northside Carting, Inc. and Waste Management for the period of 2013-2017. The town's website also provides invaluable information related to the various programs as well as access to the Northside Carting Inc. and Waste Management contracts. Finally, fuel price information comes from the Energy Information Administration (EIA) as outlined in the Waste Management contract.

Background

Exeter, New Hampshire is a historic town in Rockingham County situated upon the Exeter and Squamscott rivers. Located approximately 34 miles southeast of the state capital and 43 miles north of Boston, Exeter consists of 20.1 square miles of land and inland water area (NH Employment Security, 2017). Exeter is a varied town in that it consists of a walkable historic downtown and busy commercial areas surrounded by rural housing and conservation lands. The town is just a few miles from Interstate-95 while also being bisected by NH Route 101, the highway connecting many of New Hampshire's largest communities in the southern portion of the state.

The estimated town population was 14,845 in 2016, an increase of just under 800 since the 2000 census (NH Office of Strategic Initiatives, 2017). Within the population, the age distribution has changed dramatically. The percentage of residents older than 45 has increased by 17% since 2000 with the largest increase being in the percentage of residents aged 60-74%. There were approximately 6,257 households in 2015, of which 3,766 were family households. The average household size was 2.25 with a median household income of $73,519.

In 1993, the town implemented the pay-as-you-throw program that currently exists. This occurred once the town's Cross Road Landfill was no longer operational. Throughout the 2000s, Exeter has maintained curbside collection service through trash removal companies. While the service has remained relatively consistent, the contractor has varied. There have been two contracts through Waste Management, the current contractor, interposed by a contract with

Northside Carting from 2008-2017. While the town has had experience with Waste Management, that previous contract expired a decade ago.

Current Contract/MSW

In 2008, the town entered into a five-year contract with Northside Carting for the collection and disposal of solid waste and recycling. The contract was for a five year term, ending on May 31, 2013. In 2012, the contract was modified and extended through May 2017. The contract with Northside was fairly simple in that Northside charged the town an annual sum for all aspects of solid waste collection. After several service-related concerns, the town issued a Request for Proposal (RFP) for a new solid waste collection contract. After reviewing a few proposals, the town awarded the contract to Waste Management. Compared to the Northside Carting contract, the Waste Management contract is much more detailed with charges broken down by service.

The Waste Management contract term is from June 1, 2017 through May 31, 2022; with a three year extension provision provided there is mutual agreement between the parties. Solid waste collection services remain the same under the new contract. Table 1 outlines the contract charges. In addition to the charges below, there is a biannual fuel surcharge adjustment. Waste Management set a fixed quantity of 1,599 gallons of diesel fuel per month at a baseline rate of $2.50 per gallon. As prices rise or fall, according to EIA data, monthly fuel surcharges will be added to the monthly charges.

Table 1. Waste Mangement Contract Provisions

Curbside MSW & Recycling Collection/Disposal	$45,370.67 per month
MSW Disposal Per Ton	$70.00 per ton
Recycling Processing	Varied
Curbside Yard Waste Pickup	$7,200.00 bi-annually
Construction Debris (roll off container at Transfer Station)	$190.00 per haul & $70.00 per ton
Cardboard (roll off container at Transfer Station)	$190.00 per haul
Performance Bond	Year 1: $6729.23 Subsequent Years: $7402.15
Startup Costs	$1,666.67/month

Recycling

Recyclable materials are picked up curbside in the same manner as solid waste that goes in blue bags. Recyclables must be in approved recycling bins that are sold at the Department of Public Works. Under the Northside Carting contract, Northside Carting retained the proceeds from the processing of recyclable materials. Under the current Waste Management contract, the means of collection have not changed, but the handling of proceeds has. All recyclable materials must be processed at the materials recovery processing facility at the Turnkey Landfill in Rochester, NH. Acceptable materials include ferrous cans, plastic containers, paper, glass, etc. The recycling program is single-stream, meaning that all recyclables can be placed in the same bin for ease of collection. At the material recovery facility, the single-stream materials are sorted by a variety of mechanical processes.

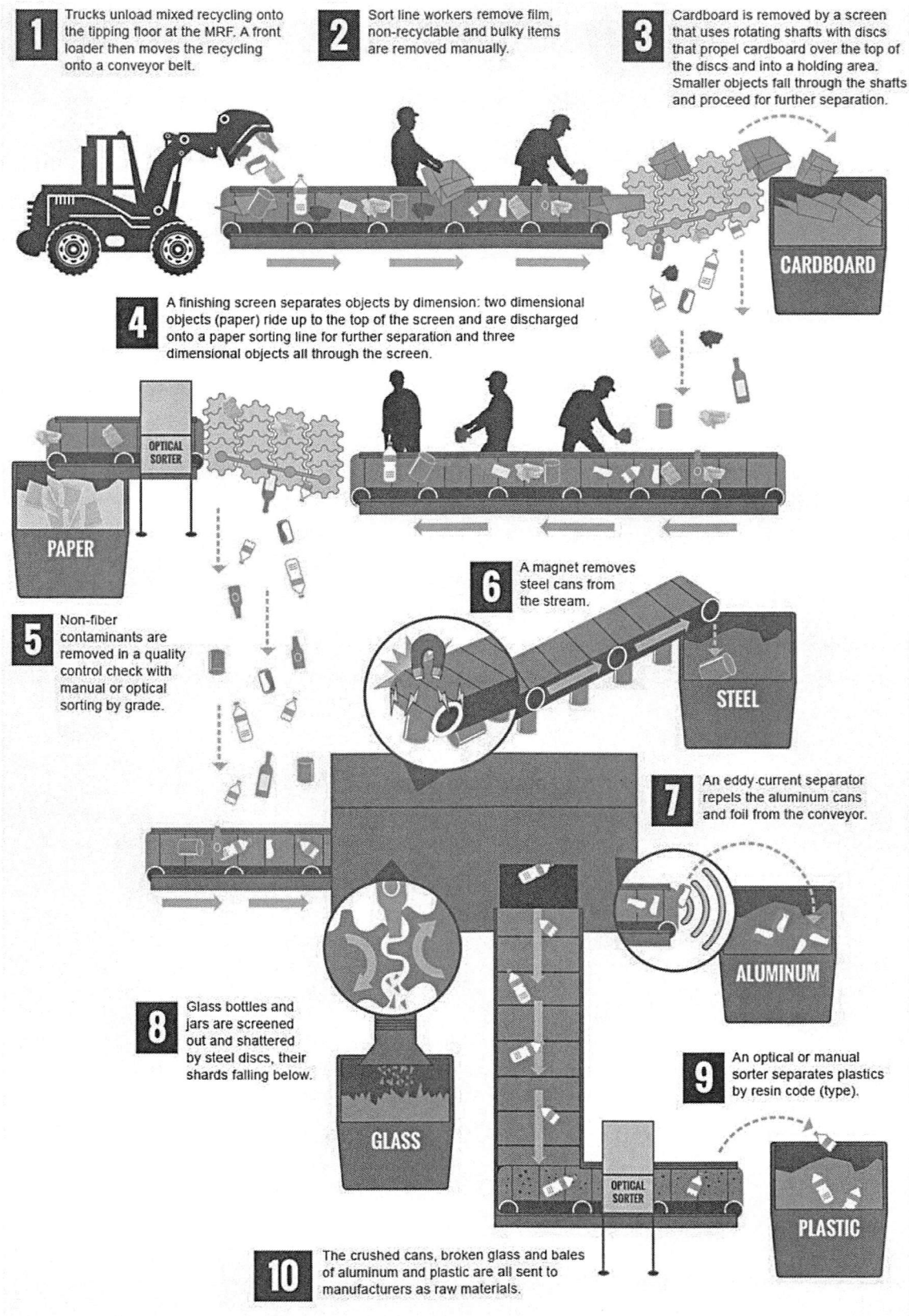

Figure 1. Single Stream Recycling Process; (Advanced Disposal Services, Inc., 2018)

At the processing facility, the composition of the town's recyclables is calculated. Percentages of each type of material give the facility a means for calculating the value of the materials. The percentage of each material is then applied to prevailing market values for each type. This determines the blended value of the materials. Subtracted from this blended value are the processing and transportation fees, which are $78.00/ton and $40.00/ton, respectively. Both are subject to the three percent annual increase per the terms of the contract. If the resulting value is positive, the town retains 50% of that value per ton. If the result is negative, the town is charged a the per ton fee.

In the example below, Exhibit D in the Waste Management contract, recyclable commodities are listed in the first column, followed by the index used for pricing in the second column. Column three shows an example of what a typical single stream recycling load may look like, with percentages listed for each type of material. After applying the market value in column four, the per-ton values are determined in the final column. At the bottom of this table, the total blended value of the recyclables is listed, $88.40/ton in this example. When the processing and transportation fees are applied, the result is a negative $29.60/ton. This means that the town, in this hypothetical example, is billed $29.60 for each ton of recyclables. While one may not expect the town to have to pay for recycling, this is far cheaper than the $70/ton rate for solid waste, not to mention the environmental benefits that are not accounted for here.

Exhibit D

Revenue Share Calculation - Single Stream

Commodity	Index *	Current Composition %	Market Value/Ton	Values
OCC (Cardboard)	PPI OCC #11	19.11%	$ 160.00	$ 30.57
ONP (Newspapers, magazines and inserts)	PPI Sorted Residential Paper #56	38.21%	$ 85.00	$ 32.48
Mixed Paper (All other paper)	PPI Mixed Paper #54	1.64%	$ 65.00	$ 1.06
Aluminum Beverage Cans	SMP for Aluminum Cans (Sorted, Baled cents/lb. delivered minus $.08 per pound)	1.14%	$ 1,220.00	$ 13.89
Steel/Tin Cans	SMP for Steel Cans (Sorted, densified, $/ton and delivered)	2.40%	$ 40.00	$ 0.96
PET (Plastic #1)	SMP for PET (baled, cents/lb. picked up)	3.08%	$ 260.00	$ 8.02
Natural HDPE (Plastic #2)	SMP for Natural HDPE (baled, cents/lb. picked up)	0.94%	$ 710.00	$ 6.65
Colored HPDE (Plastic #2)	SMP for Colored HDPE (baled, cents/lb. picked up)	0.94%	$ 490.00	$ 4.59
Mixed Plastics (Plastic #3-7)	SMP for Commingled ((baled, c/lb. picked up)	3.41%	$ 60.00	$ 2.04
Glass	Actual Value	19.15%	$ (28.00)	$ (5.36)
Residue	Fixed Rate	10.00%	$ (65.00)	$ (6.50)
	Total/Blended Value	100.00%		$ 88.40
	MRF Processing Fee	$ 78.00		
	Transportation Fee	$ 40.00		$ (29.60)
	50% share above Fees ($118)			

Blended Value is Calculated Monthly.

- PPI means the higher of the prices issues by RISI Pulp & Paper Index for the New England Region, Domestic Price, 1st issue of the month retroactive to the first of the month.
- SMP means the higher of the price published at www.SecondaryMaterialsPricing.com for the New York Region, first dated price each month, retroactove to the first of the month.
- Actual Value means the average price paid to or charged to the processing facility during the month of delivery, less any freight or other charges paid to third parties.

Figure 2. Waste Management Recycling Charges Example: (Waste Management, 2017)

On average, Exeter's net cost when combining the blended value of the recyclables and the fees is negative $39.78/ton. This means that Exeter was charged, on average, $39.78 for each ton of recyclables during the period from July to December 2017. This is considerably cheaper than the $70.00 that the town is charged for solid waste. When multiplied by the total weight of the recyclables, the total recycling charges end up being an average of $4,981.84 per month.

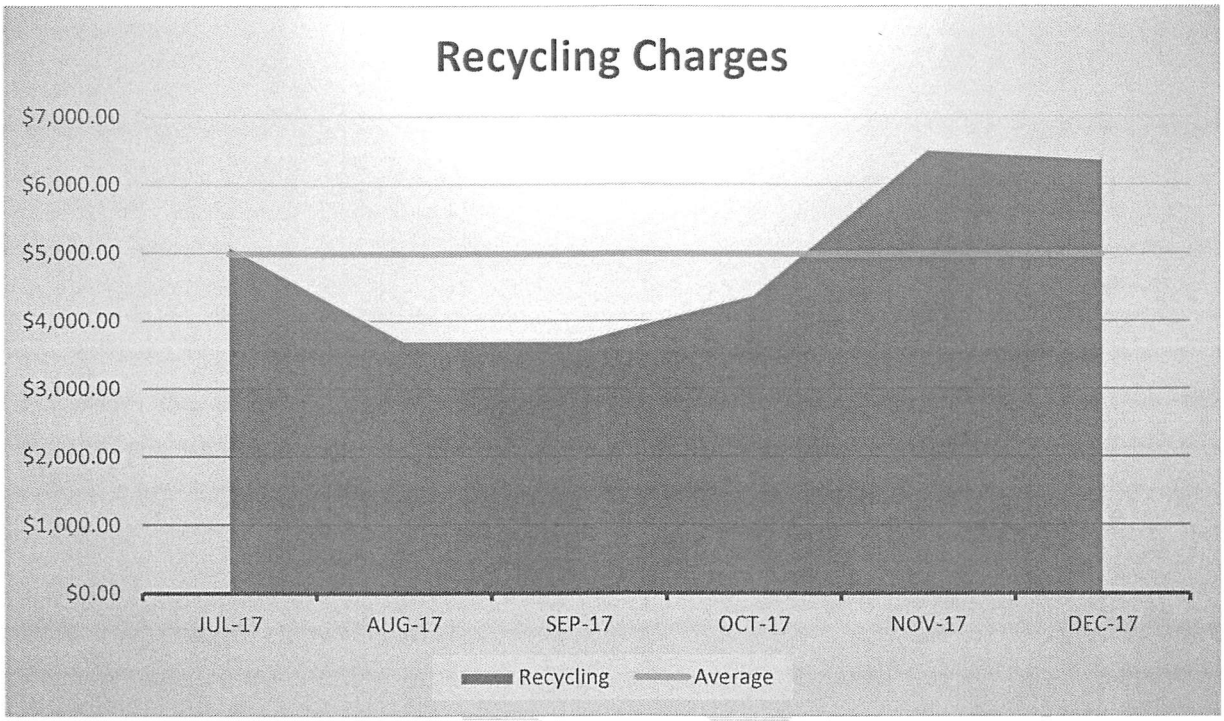

Figure 3. Recycling Charges by Month

Fuel Adjustment

Municipal solid waste collection utilizes large quantities of fuel in the collection, haul, and disposal of waste. The cost of operating a solid waste collection program can be highly variable based on prevailing fuel prices. Since it can be hard to predict operating costs in the later years of a waste collection contract, contractors may include a fuel adjustment provision. The contract with Waste Management contains a bi-annual fuel adjustment, occurring on December 1st and June 1st of each year. The contract establishes a fixed quantity of diesel fuel, 1599 gallons per month, and a baseline fuel cost of $2.50 per gallon. It is from this per gallon rate that the fuel surcharge is calculated. Diesel fuel prices from the six month period prior to the adjustment are subtracted from the baseline rate to determine the per gallon adjustment. To determine the total fuel surcharge, this per gallon adjustment is multiplied by the fixed quantity. The average diesel fuel price is determined by the Energy Information Administration (EIA), using data for the Northeast region. The Northeast region includes Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island. The EIA is part of the US Department of Energy (DOE), although it is independent from the DOE in matters related to data collection and reporting.

In December 2017, the first fuel adjustment occurred. The average retail diesel price for the New England region from June through November was $2.69333. This represents a $.19333 per gallon increase over the baseline. When multiplied by the fixed quantity, the resulting fuel surcharge is $309.14 per month. This monthly charge continues from December 2017 through May 2018, at which point a new surcharge will be calculated using average prices from December 2017 through May 2018. That newly calculated rate will go into effect June 1st.

$2.69333 – $2.50 = $.19333/gal $.19333 * 1599gal = $309.14

Looking forward through the life of the contract, EIA projections provide a means of calculating a reasonable cost of the fuel adjustment over the life of the contract. Each month, the EIA releases an updated Short Term Energy Outlook (STEO), which projects energy prices through the next calendar year using data, trends, and statistical modeling. Current projections show diesel fuel prices exceeding $3.00/gal at the beginning of 2018 and then dipping down to around $2.80 before creeping above $2.90 by the end of 2019 (Figure 1). To project the latter half of the contract, the EIA's long-term projection is used, which projects the price of energy through 2050. Current projections show that by the end of the current solid waste contract, fuel prices will likely be well over $3.00/gal (Figure 2). As a point of reference, every $.10 increase in diesel prices above the threshold will result in just under $2,000 of additional cost to the town per year.

$.10 * 1599gal = $159.90/mo. * 12 = $1918.8/yr

If diesel prices are $3.30/gal in 2022, as currently projected, the fuel surcharge at the end of the contract will be $1,279.20/month, or $7,675.20 for the last six months of the contract. Using a conservative $.30 surcharge over the remaining life of the contract, this provision could increase the total cost of the contract by over $30,000.

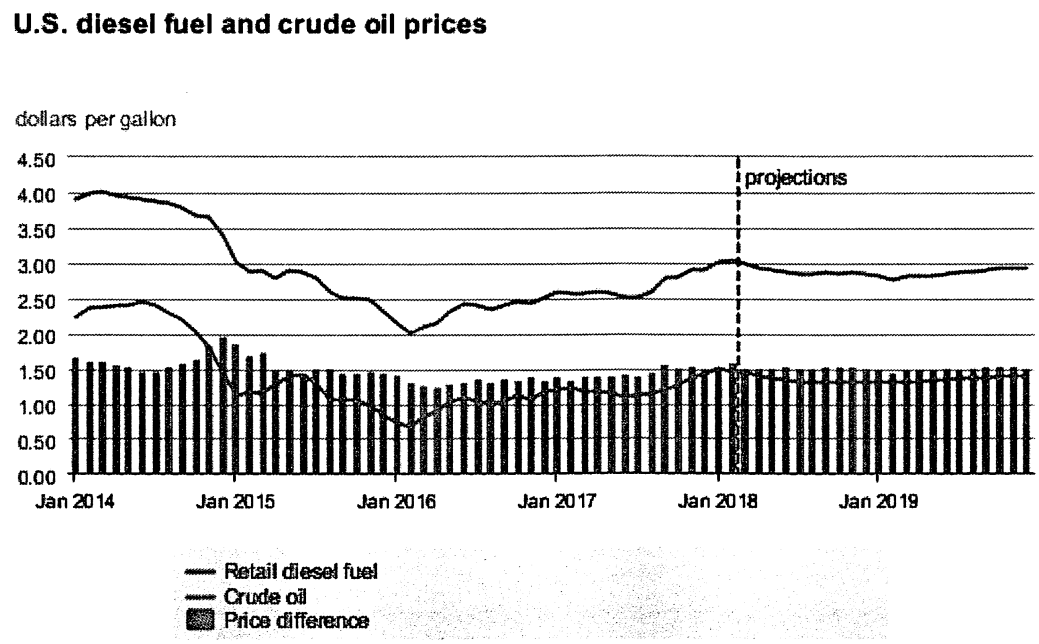

Figure 4. Short-Term Diesel Fuel Price Outlook

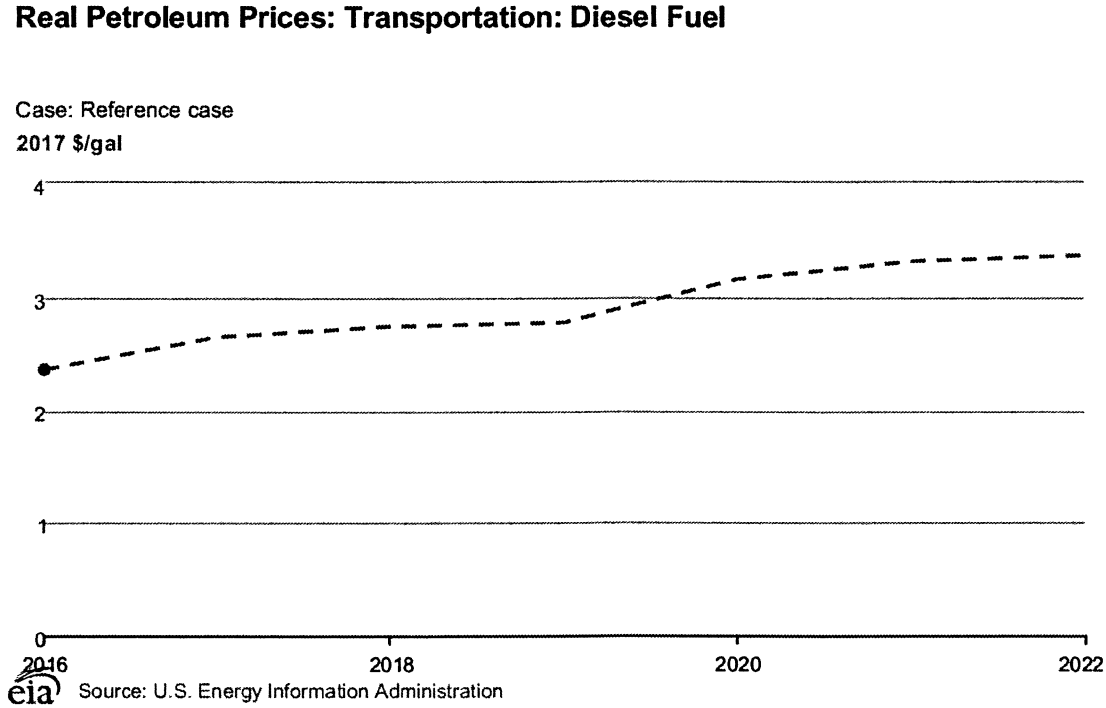

Figure 5. Diesel Fuel Price Projections Through 2022

Solid Waste Disposal

The solid waste program is listed in the town's budget as a part of the General Fund. Many of the programs in solid waste have fees that seek to cover the cost of operating that program. For example, transfer station permits are sold to cover the cost of operating the transfer station, electronic waste stickers are sold to offset the cost of disposal, etc. Solid waste collection and disposal is no different. The town collects funds through the sale of blue bags and bulky waste stickers. These funds then cover the cost of operating a curbside collection service.

Over the five-year period from 2013-2017, the cost of solid waste collection and disposal rose in accordance with the provisions of the contract extension through Northside Carting. The average percent increase in cost year to year was 2.49%. This represents an increase of $66,848.00 in the solid waste disposal budget in 2017 over 2013. Solid waste revenues from bags and stickers increased an average of 2.33% over the same period for an increase of $44,133.50 in 2017 over 2013. Thus, while the percent change of each are similar, the gap between the cost and revenue continues to widen. Figure 6 shows the trend of both revenue and spending. While the gap is fairly consistent, there is a pronounced widening that occurs in 2017 as the Waste Management contract takes effect. Figure 7 displays the net operating deficit of the solid waste collection when combining the cost of the collection and disposal with the revenues generated from blue bag and bulky sticker sales. The deficit is over $200,000.00 annually, and it will continue to grow with the more expensive Waste Management contract and its annual price increases.

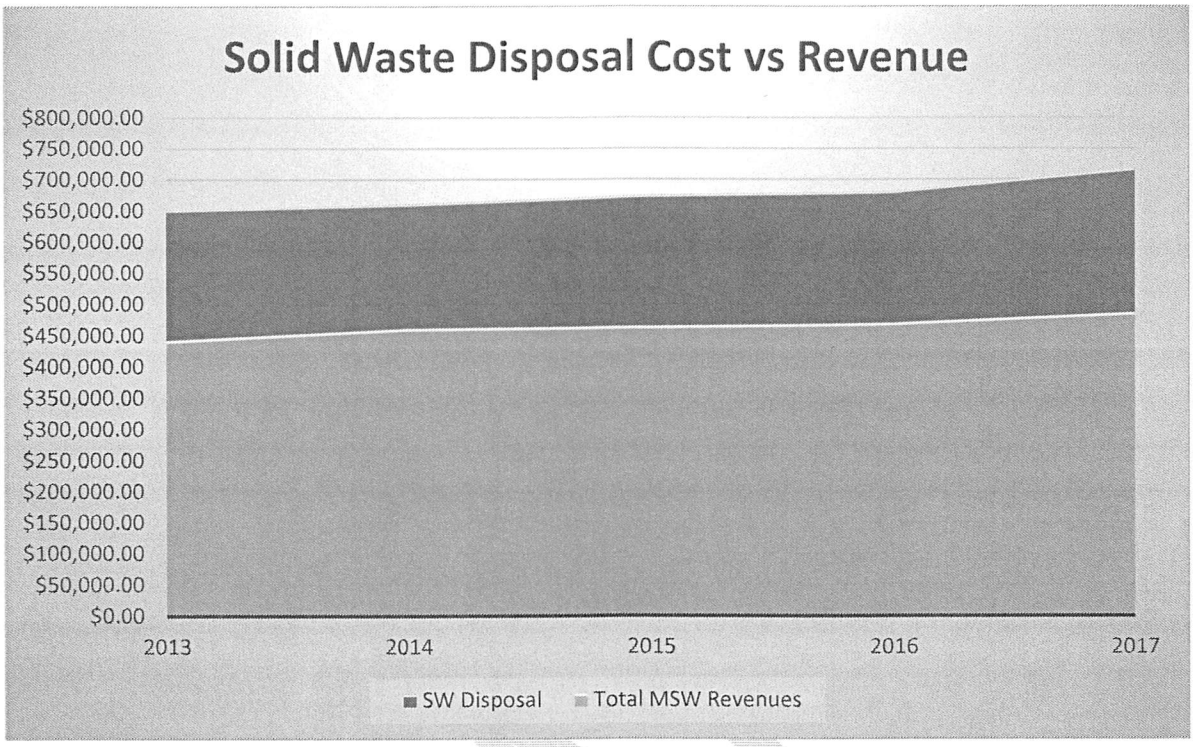

Figure 6. Solid Waste Revenues & Outlays

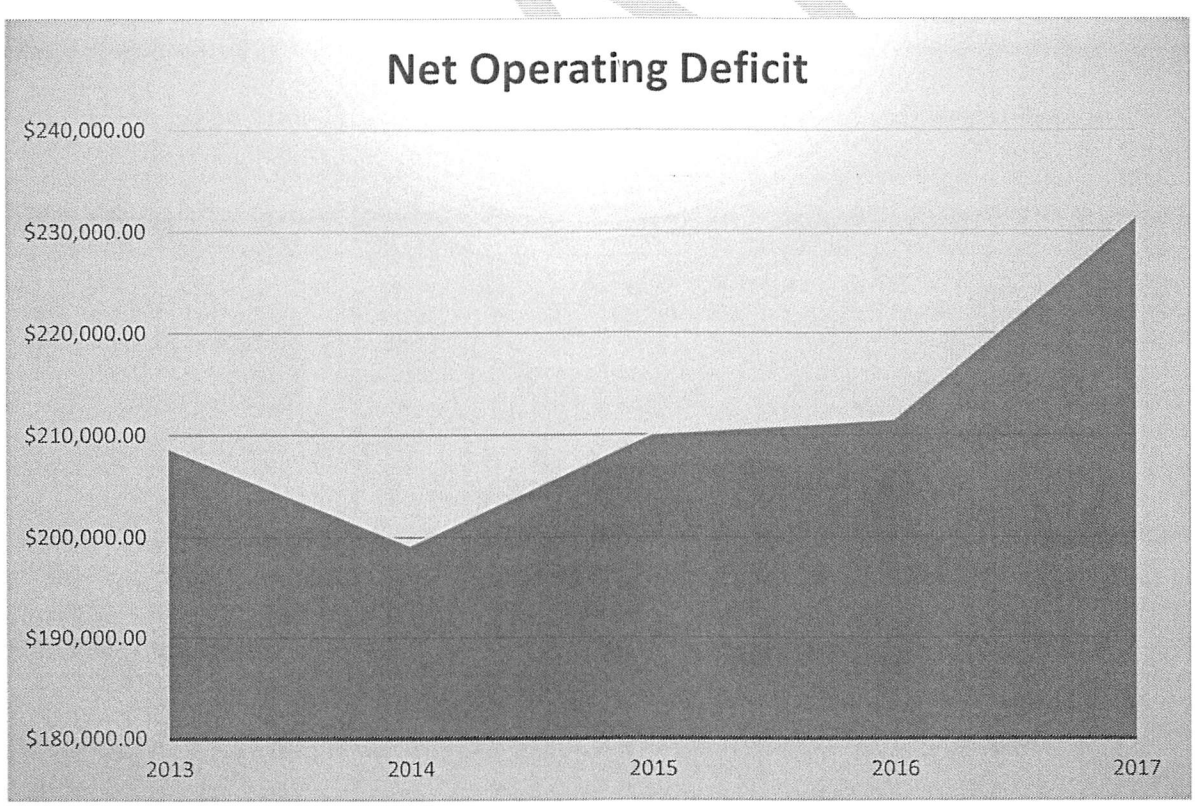

Figure 7. Net Operating Deficit, Solid Waste Collection

Blue Bags/Bulky Stickers

The largest portion of the town's solid waste program is the curbside municipal waste pickup by Waste Management. This service represents both the largest budget line item in the solid waste program and the most visible aspect of the program. To offset the cost of this aspect of the program, Exeter utilizes a Pay-As-You-Throw (PAYT) program. In such a program, residents directly pay for the trash they produce. Not only does this reward recycling and discourage excess disposal, it creates a link between the service provided by the town and the residents using the service.

Exeter has two primary means by which user fees are implemented to cover the cost of municipal waste collection: town designated trash bags and bulky items stickers. PAYT systems come in many forms. Some municipalities use bins of varying size and cost, some charge by weight of the trash, and others use specialty bags that residents purchase. Each of these programs fall within the category of trash-metering, and Exeter employs the third type of program. If an Exeter resident wishes to dispose of trash, it must be in specialty marked trash bags emblazoned with the town seal. Waste Management does not pick up trash that is not in a blue bag. The second means by which Exeter implements user fees is by selling bulky waste stickers. Bulky Waste stickers are used for household goods that are too large to fit into the bags. Items such as mattresses, tables, couches, etc. are all considered bulky items. Appliances and hazardous materials are not permitted to be disposed of as bulky waste items.

Blue bags are sold at a variety of retailers in the town including Arjay's Ace Hardware, Convenient Grocer, Deep Meadow Variety, Extra Mart, Gerry's Variety, Hannaford, Market Basket, Shaw's, and Walgreen's. The town offers small bags (15 gallon) which sell for $1.00 and large bags (33 gallon) which sell for $2.00. Bags are generally sold in rolls of ten bags. The town uses a contractor, WasteZero, who sells the bags to the town and facilitates delivery to the various stores. This eliminates the need for warehousing large quantities of bags, which represent thousands of dollars in retail value, as well as having a town employee deliver and maintain stock at the stores. Currently, when a store needs more bags, they contact WasteZero directly to order another shipment. Most stores sell the bags simply due to the increased traffic they receive. Since all residents need to purchase the bags, being one of the several locations that sells them is

lucrative enough to make it worth the stores' while. As an added incentive, stores are authorized to charge an extra $.05 per bag to offset the cost involved with participating in the program. Some stores take advantage of this opportunity while others do not.

Bulky stickers are sold at the town offices, the public works department office, and Arjay's Ace Hardware. For $5.00, residents may place a bulky item at the curb with their trash bags. Residents are limited to one bulky item per week. The bulky item must not be a "white good" such as a washer or dryer, a Freon item such an air conditioner or refrigerator, or an electronic item. All of these items must be properly disposed of or recycled through the programs at the town transfer station.

Combined, the blue bag revenue and the bulky sticker revenue provide the primary means for offsetting the cost of municipal waste collection. Over the five-year period, revenue from the bulky waste stickers increased by approximately 65% while revenue from the blue bags increased by just under 9%. Over the same period, solid waste disposal costs rose approximately 10%. Since bulky waste stickers represent a very small portion of the solid waste revenues, the large percentage increase over the five-year period does little to impact the net cost of the program (Figure 3).

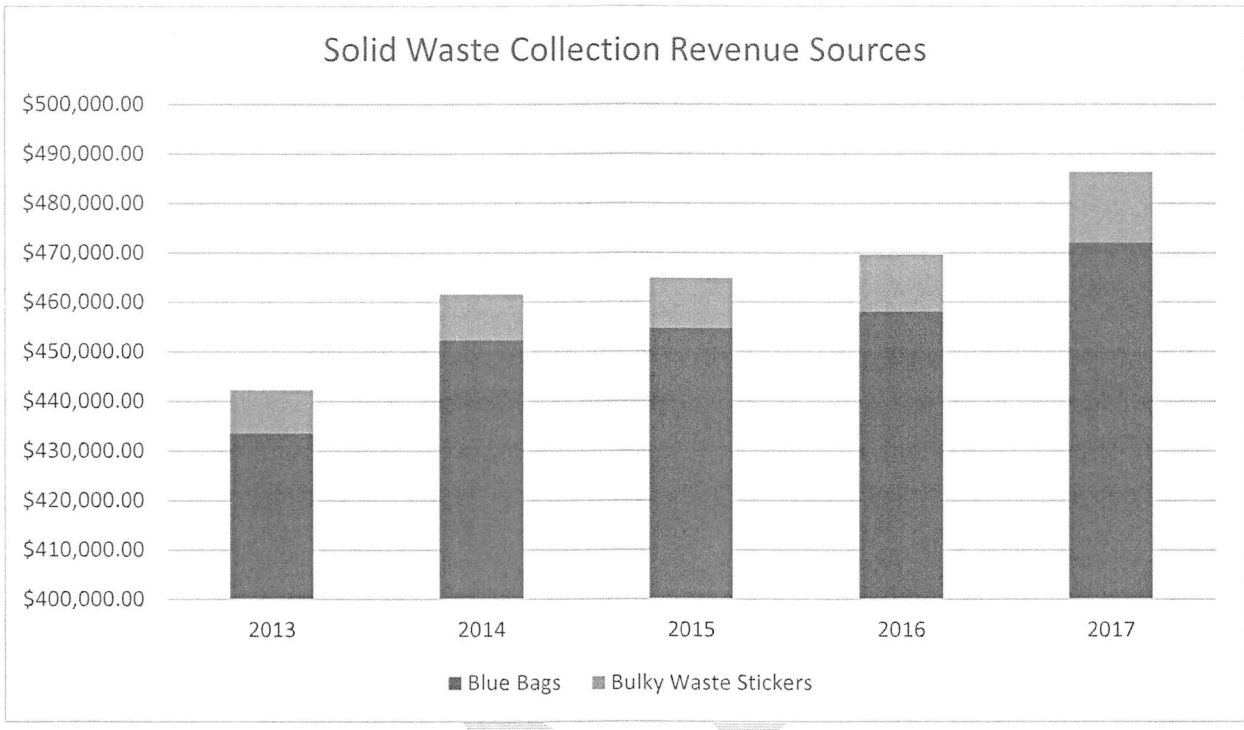

Figure 8. Solid Waste Revenues

Transfer Station

The town operates a transfer station on Cross Road, which allows residents to dispose of certain materials. The transfer station is generally open for 14 hours per week, with an additional four hours when winter hours are in effect. To use the transfer station, residents generally need to purchase a permit. Permits can be purchased at the Town Clerk's office or the Public Works office and are available in two options. An annual permit is $10, and a 5-day permit is $5. Used oil, leaves, Christmas trees, books, CDs, DVDs, clothes, shoes, cell phones, and calculators can all be dropped off at the transfer station at no cost to residents. Metal, non-refrigerant appliances, wood, propane tanks, recyclables, trash (in blue bags), batteries, and mercury-containing items can all be dropped off with a valid transfer station permit. Other specialty items (electronics, refrigerant-containing items, and construction debris) require a valid permit as well as specialty stickers of varying cost. In addition to providing a means of disposing of unwanted goods, the transfer station offers compost and wood chips for free to residents, subject to their availability.

Operation of the transfer station requires several expenses. These costs include the wages and training of employees at the station, operations maintenance at the station, tire disposal

(municipal tires only), bulldozer rental to consolidate brush that is dropped off, electricity to run the facility, and various necessary supplies. These costs are offset by permit sales. Transfer station operating costs have varied year to year but have stayed within approximately a $7,000 range. The variability comes from several sources. 2015 and 2016 saw significant decreases in wages due to employee turnover. 2016 wages (including FICA, Medicare, and overtime) were only $5,573.00, while they were $14,588.00 in 2017. Tire disposal in 2016 was $3,305.00 compared to $810.00 in 2015 due to variability in tire replacement. Revenue from permits has been very consistent over the five-year period, holding steady between $15-16,000 with a slight year-to-year increase. Figure 9 shows the budget impact of the transfer station. There is a small, albeit consistent, operating deficit for the transfer station. Deficits range from approximately $4,000.00 to just over $12,000.00.

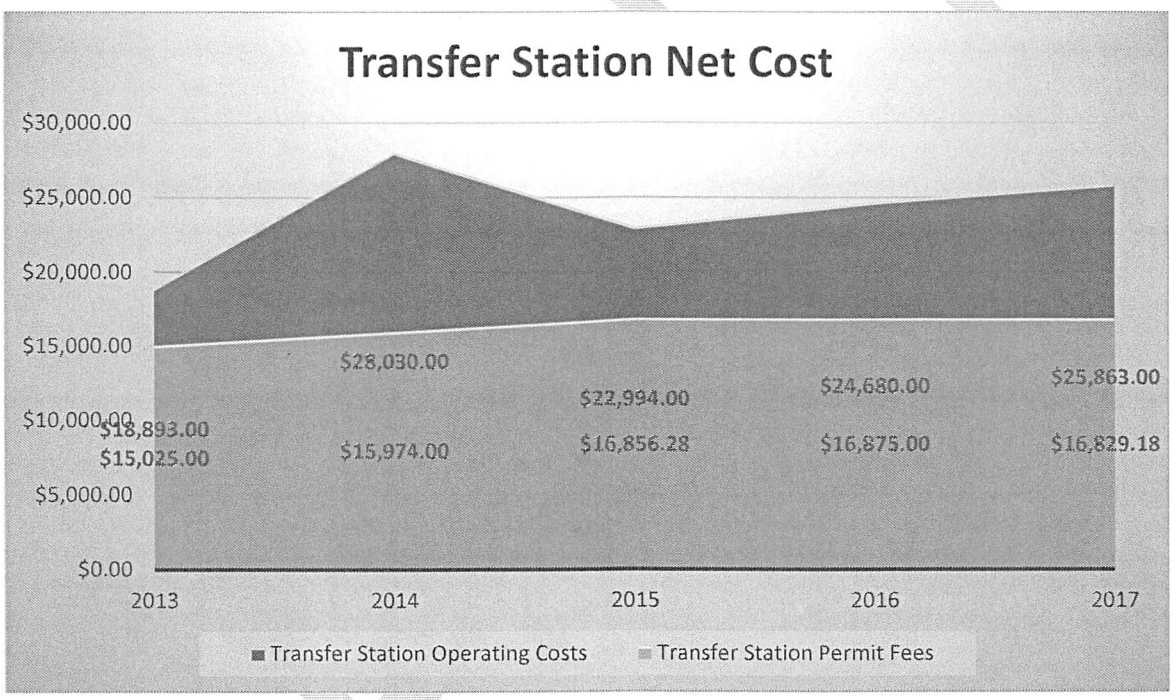

Figure 9. Transfer Station Net Cost

Additionally, the transfer station maintains a roll off container for cardboard and one for construction debris. Valid permit holders can drop off cardboard at the transfer station. When the cardboard bin is full, Waste Management is notified who then hauls off the container for a flat fee of $190.00. The collected materials are added to the town's recyclables. The construction debris roll off operates much the same way except that residents must purchase construction

debris stickers or bags in addition to the required permit. Construction bags are used for small items such as drywall pieces, shingles, insulation, etc. The stickers are used for bulky items such as windows, doors, toilets, etc. Stickers and bags both cost $8.00. This revenue helps to offset the cost of the roll off: $190.00 per haul plus $70.00/ton of debris. The cost of the construction debris is tied to the number of hauls needed, which is variable depending on residents' home improvement projects. Table 10 depicts a program that generally runs a few thousand-dollar deficit, with the exception of 2016, which saw a dramatic increase in the number of hauls during the summer months. Typically, there are 1-4 hauls needed every month of the construction debris roll off. June, July, and August of 2016 required 23 hauls of the construction debris roll off, approximately two hauls per week during this time period.

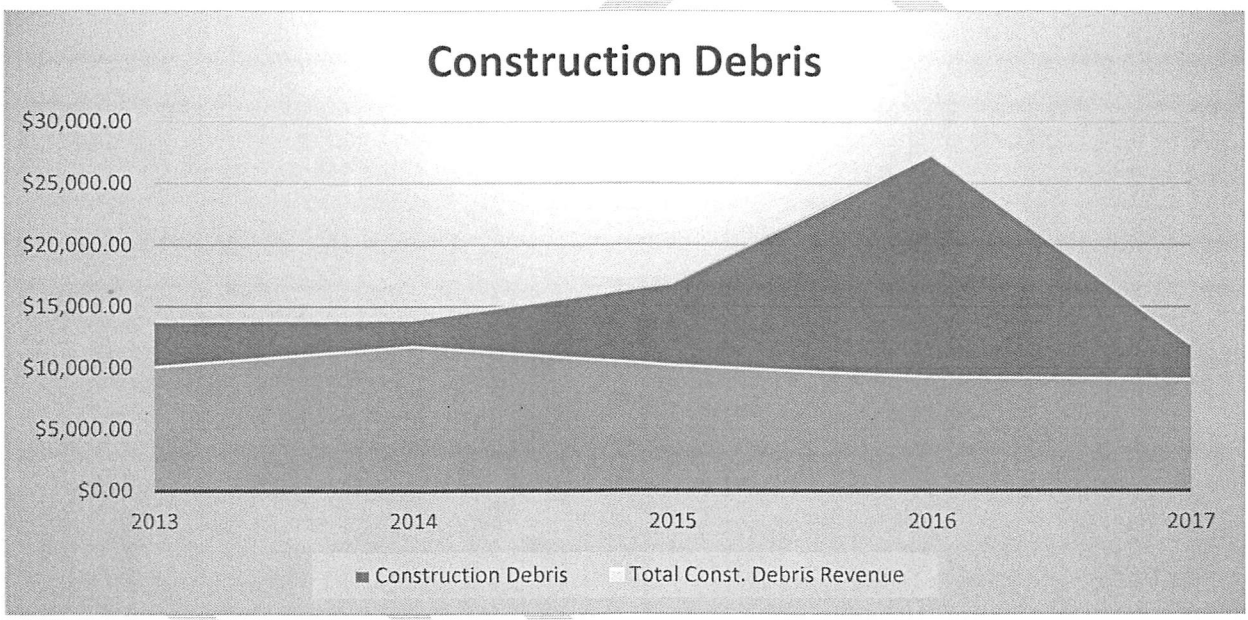

Figure 10. Construction Debris Net Cost

HHW

Since the mid-1980's, the Rockingham Planning Commission has coordinated a regional Household Hazardous Waste (HHW) collection event. The collection event occurs annually, typically on a Saturday in October. The regional program serves East Kingston, Epping, Exeter, Newfields, Seabrook, South Hampton, and Stratham. The Rockingham Planning Commission plans and manages the event, and Exeter hosts the event at the DPW facility while also acting as the fiscal liaison. In such a role, Exeter pays the upfront costs of operating the program and

executes the household hazardous waste grant through the New Hampshire Department of Environmental Services (NHDES). This grant provides municipalities with funding at a per capita rate for up to half of the cost of facilitating the program. Costs include not only the disposal and recycling of the materials but also the outreach and education components of the program. To qualify for grant funding, communities need to do much more than advertise the event. The education campaign must "assure the division that it will conduct public educational activities regarding household hazardous waste, including education about its potential dangers and the proper means for its disposal, as well as information about ways to reduce its generation" (NHDES, 2008).

In addition to the grant money and contributions from participating municipalities, the HHW program asks for a $5.00 voluntary donation to help offset the cost of the program. This is a voluntary donation since municipalities would rather have the hazardous materials properly disposed of than worry about collecting a fee. Mandatory fees could suppress participation and lead to illegal dumping or improper disposal, especially among those facing financial hardship. There have been moderate fluctuations in the net costs of the program over the past five years, with 2016 being an outlier compared to the other four. Most years, the cost of the program is within a few thousand dollars of the revenue generated from the donations, town cost sharing, and grant funding. The difference between the overall cost and revenue represents the cost to Exeter.

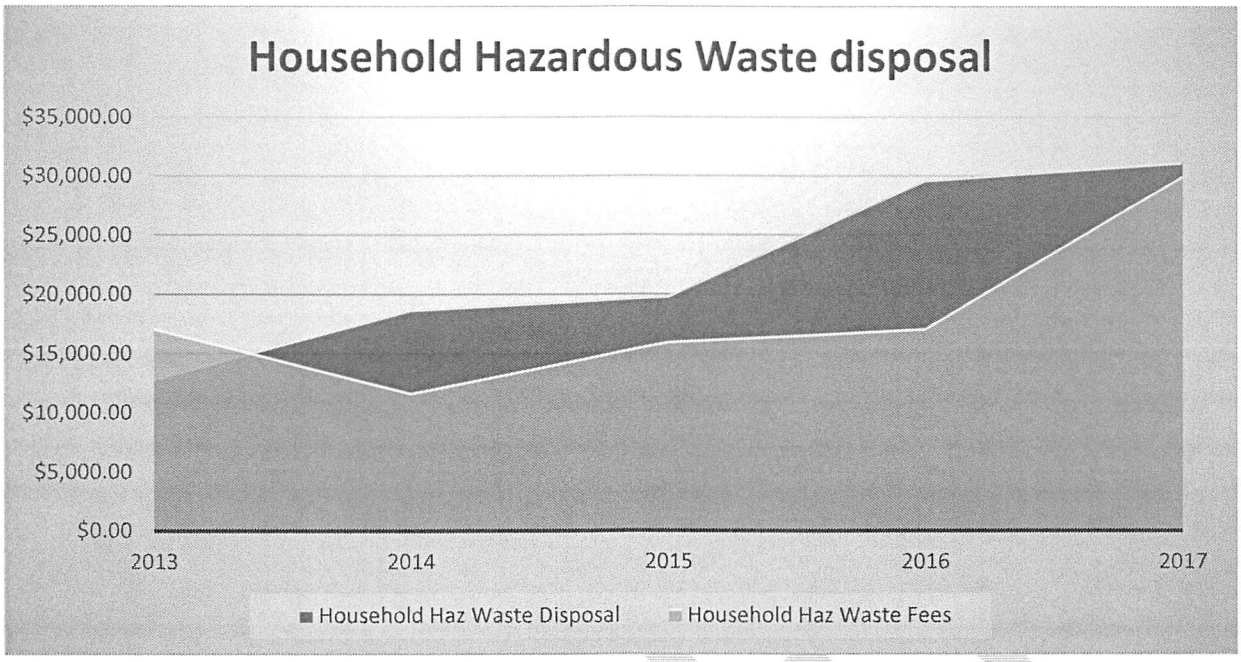

Figure 11. HHW Program Financials

Freon/Refrigerant Program

Exeter operates a Freon disposal program through the transfer station to facilitate the safe and environmentally conscious disposal of Freon or refrigerant containing appliances. All refrigerant-containing appliances (refrigerators, freezers, air conditioners, water coolers, and dehumidifiers) require special disposal. The Environmental Protection Agency (EPA) requires that refrigerant is recovered from a piece of equipment before it is disposed of under the Clean Air Act. Each piece of equipment cited for disposal requires a certification that the refrigerant has been properly recovered. This is why refrigerant equipment cannot be tagged as bulky waste. In Exeter, residents who have a transfer station permit can drop off Freon-containing appliances at the transfer station after purchasing an appliance sticker at Arjay's, the public works office, or the town offices. Stickers cost $7.00, and the revenue goes to offset the cost of disposal.

Due to the varied nature of appliance disposal, net operating costs of this program are highly varied. Some appliances that contain large amounts of metal may have value on the scrap metal market. The copper and refrigerant can both be of value which can reduce or eliminate the cost of disposal for a given year. The number and type of appliances dropped off vary from year to year which also affects the cost of the program. Figure 6 shows program overview for the year 2013-2017. In 2015, the value of the appliances was greater than the cost of disposal, so there

was no budgetary impact for Freon disposal that year. The Freon program generally runs a net surplus, although this could change from year to year, based on resident disposal patterns and prevailing market rates for recyclables.

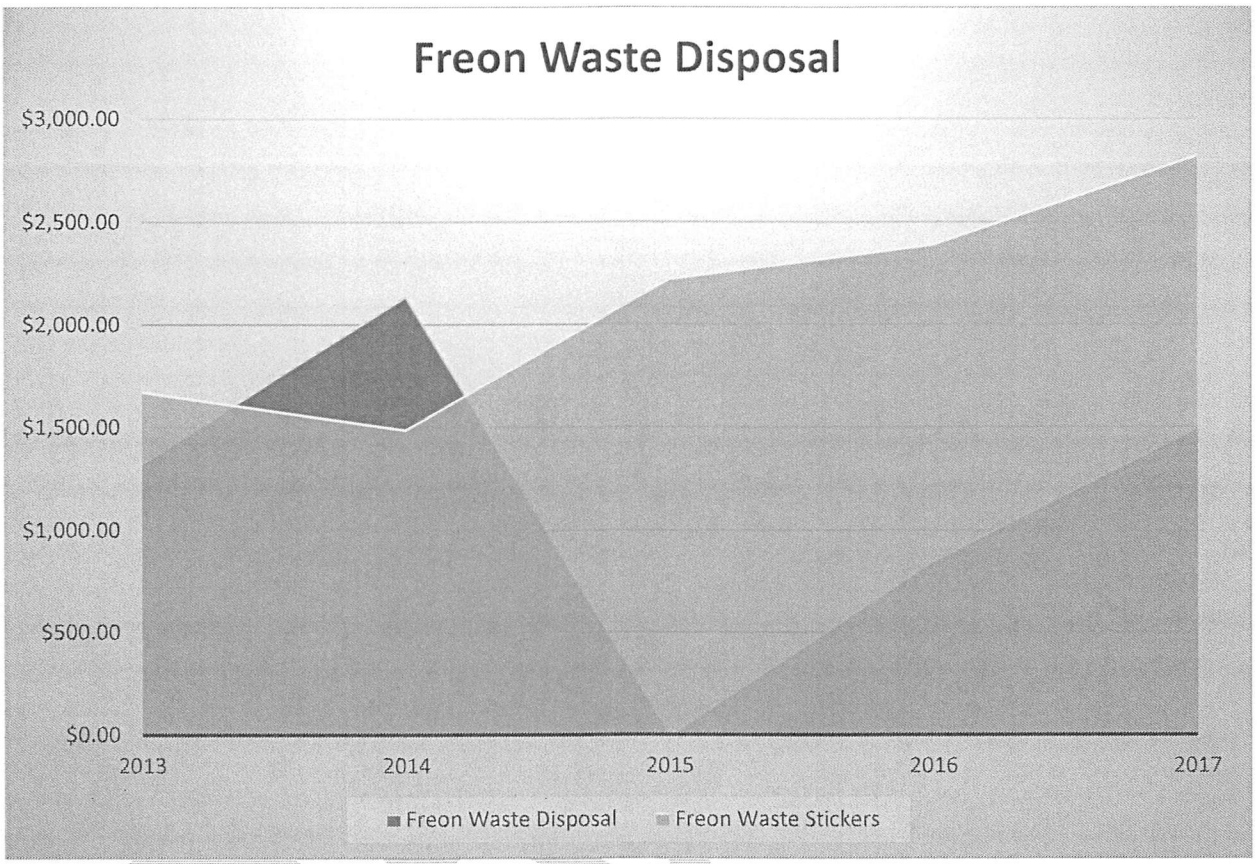

Figure 12. Freon Program Financials

Electronics Disposal

Electronic products that are at or near the end of their useful life are commonly referred to as "e-waste." E-waste is becoming an ever-increasing problem as the number electronic products continues to grow and as the content of the products becomes ever more complex. Toxic heavy metals and harmful chemical compounds are found within the most common electronic products. The environmental and health implications of discarding these goods provides the impetus for enacting strong electronic recycling measures to ensure that they are disposed of properly.

Exeter operates an electronics disposal program through the Transfer Station. After purchasing a Transfer Station permit, residents can purchase a $10 electronics disposal sticker so that they may leave an electronic item at the Transfer Station. Accepted e-waste items include: computers,

televisions, scanners, printers, fax machines, microwaves, small kitchen appliances such as toaster ovens or coffee makers, vacuum cleaners, fans, etc. Each item requires a $10 sticker.

Over the past five years, the electronics disposal program has seen large financial changes (Figure 3). In 2013 and 2014, there was a negligible budget surplus in the program with revenue from the fees outweighing disposal costs by roughly $650, on average. In 2015, the trend began to shift, as there was a roughly $700 shortfall. In 2016, disposal costs jumped by roughly $5,000, a 78% increase, while revenues only increased by $1500. 2017 saw a similar discrepancy as disposal costs rose by another $2,000, while revenue increased $1,350, further widening the gap.

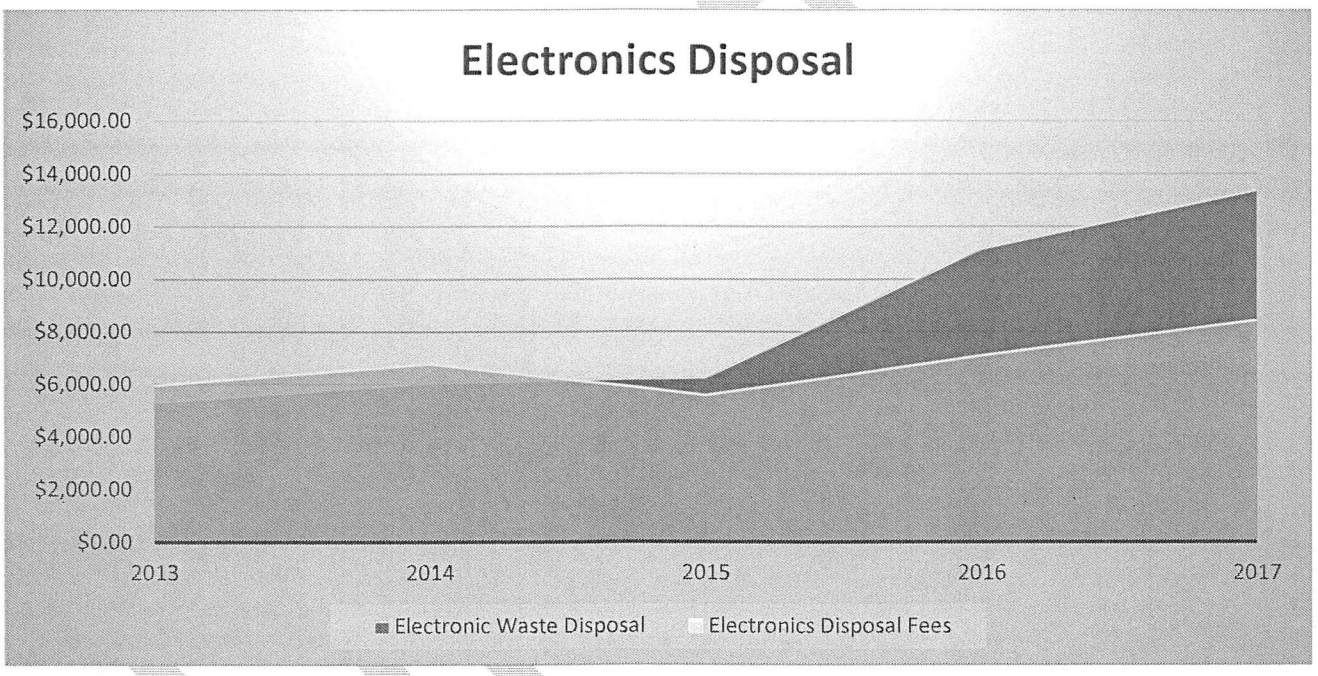

Figure 13. Electronics Disposal Financials

Recycling Bins

Part of the Waste Management contract includes curbside collection of recycling. Collected at the same time as trash, recycling is required to be in town-approved bins. Since the recycling program is single stream, all recyclables go into one bin. The town offers two sizes of bins for recycling, an 18-gallon bin and a 65-gallon tote. Containers, which cost $12 for the bin and $45 for the tote, can be purchased at the Department of Public Works (DPW).

Since 2015, revenue from the sale of the containers has not matched the cost of acquiring the bins from the vendor, although 2017 did see gap narrow quite a bit. In that year, the revenue

generated was only $1,400 under the cost of procurement. Over the five-year period from 2013-2015, there was a $6,500 shortfall in the revenue generated as compared to the cost to procure the containers.

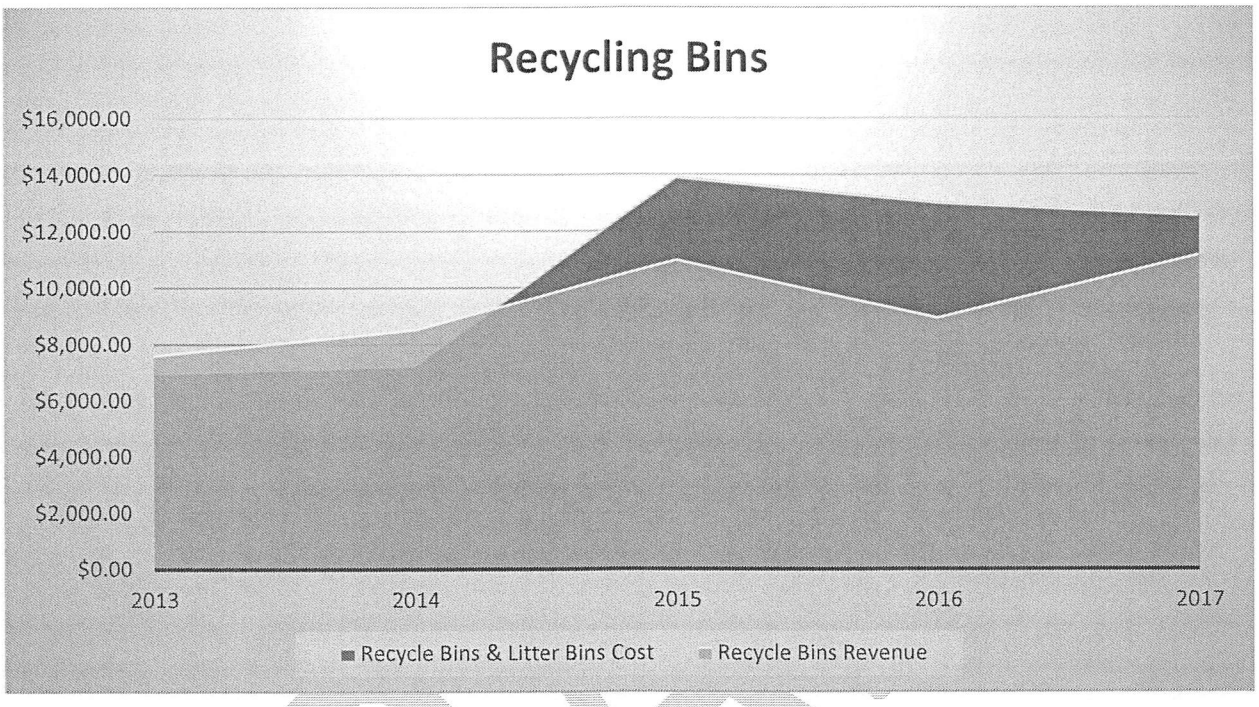

Figure 14. Recycling Bins Financials

Solid Waste Disposal Projections

Based on the 2017 budget line item for solid waste disposal combined with the annual three percent increase, there will be a steady increase in the deficit for the solid waste collection service. The revenue projections assume a continued 2.33% increase each year, as was the trend from 2013 through 2017. In 2013, the gap between revenue and cost was $208,857.00. Based on the assumptions above, by the end of the current Waste Management contract, the gap could be as high as $272,000.00 (Figure 13).

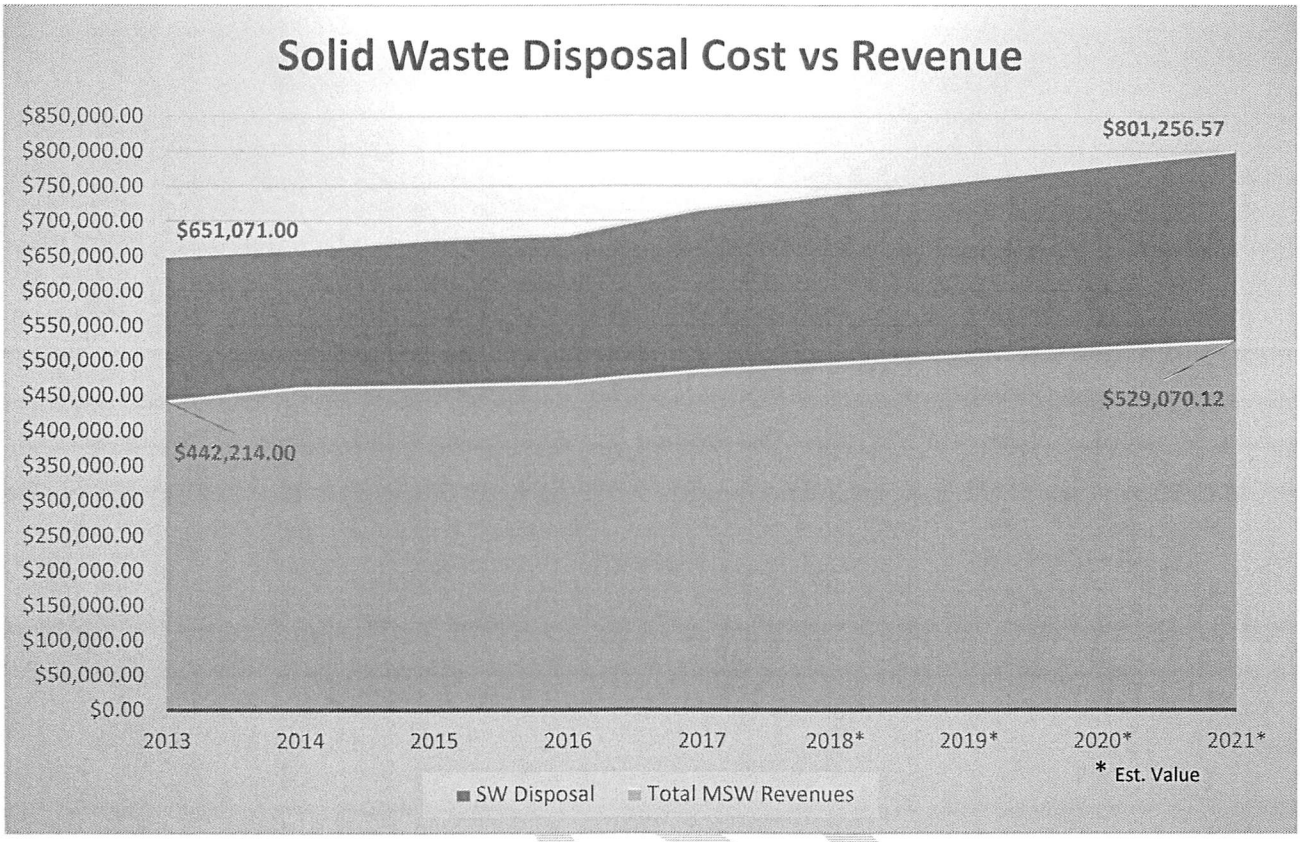

Figure 15. Solid Waste Projections

Solutions/Recommendations

Option 1: Stay the Same

This option is the easiest and most passive option. It acknowledges the rising cost of solid waste disposal and the ever-widening gap between revenues collected and program costs. By choosing this option, the town simply absorbs the cost in the general fund of the budget. The programs are still funded, but resident's tax payments end up subsidizing the areas in which there is a budget shortfall. This may seem attractive since it is the status quo. There will not be any public outcry or backlash since nothing is changed. This option is not the best suited for the town and the solid waste program's long term health. By allowing the general fund to make up the shortfall, the town would be removing the linkage between service and fees. Fees are an important means for ensuring equitable contribution based on program use. This is especially important in a PAYT program, since the goal of such a program is not only to fund the service, but also to give residents a financial incentive to be more environmentally conscious consumers and promote

recycling. If the general fund covers the difference, the average taxpayer ends up subsidizing households that produce large amounts of waste. Therefore, while decisions for change may be difficult, they are integral to the underlying theory and spirit of the program.

Option 2: Re-evaluate the Costs of each Program

Recommendation 1: Increase the cost of blue bags

The purpose of a PAYT program is to fund trash disposal costs and tie program use to a fee. Households that produce more trash and do not recycle pay more than more conscientious households. While the cost of solid waste disposal continues to increase each year, the town's fees for blue bags have not. As a result, there is a sizeable gap between revenue collected from blue bags and bulky waste stickers and the cost of solid waste disposal. With the new Waste Management contract, that gap will only continue to grow. Therefore, the town should consider an increase to the price of blue bags. Table 2 shows the price Exeter charges for bags compared to other New Hampshire cities and towns. This table represents the number of New Hampshire towns with populations above 5,000 who have a PAYT bag program in place. This data was derived from each town's website, so the potential exists that the information may not be accurate at the time of this report, especially if a town implemented or changed a program at their 2018 town meeting. It does, however, provide a good reference for where Exeter stands in relation to other New Hampshire municipalities.

The table depicts that Exeter's large bag price is right at the average price for other communities. Its small bags, on the other hand, are $0.37 below the average. The last column of the table lists whether that municipality has curbside collection of trash that is contracted through the town. When considering only these municipalities, Exeter's prices are $0.36 below average for the small bags and $0.17 below average for the large bags. This provides an opportunity for the town to address the price of the bags and adjust them in a manner that closes the gap between the cost of solid waste disposal and revenues generated.

Over the past five years, Exeter has sold over double the number of large bags as small bags. Therefore, given the larger quantity sold and the higher price, changing the price of the large bags would be most impactful. It is unknown how this would impact the sales of each bag. If only large bags are increased, perhaps residents would shift their habits and purchase more small bags. The small bags are half the size, so one could assume that this would result in a doubling of

small bag sales for each resident that changes their bag use habit. The large bags have a much higher profit margin, so even if sales of small bags doubled for each large bag that was substituted for, revenue would still take a hit. Therefore, it makes the most sense to adjust the bag prices in tandem.

Raising the price of the bags by 25% appears to be cost-effective solution. The new price would be $1.25 for small bags and $2.50 for large bags. This keeps the bag costs proportional, in that the large bags are still double the size and double the price. It also maintains the price at a more "round" or aesthetically pleasing price rather than an arbitrary number such, as $1.37 per small bag. In 2017, the town sold 93,750 small bags and 195,750 large bags. Using these sales numbers, the price increase would yield an additional $121,313 if bag sales remained constant. Over the past five years sales have actually risen substantially. Small bag sales rose 20,000 from 2013-2017, and large bag sales rose 30,250 over the same period. This demonstrates that sales are expected to continue to rise, generating more revenue each year. This measure alone would cut the current solid waste program deficit in half.

Table 2. Trash Bag Prices, by Town and Size

City/Town	Small Bag Price (Up to 20 Gal.)	Large Bag Price (Up to 33 Gal.)	Curbside Collection Through City/Town?
Barrington	$0.90	$1.30	No
Concord	$1.25	$2.50	Yes
Dover	$1.45	$2.15	Yes
Exeter	**$1.00**	**$2.00**	**Yes**
Farmington	$1.50 (Bag Sticker)	$1.50 (Bag Sticker)	No
Keene	$2.00	$2.00	No
Hopkinton	$0.75	$1.25	No
Littleton	$2.00	$3.00	No
Peterborough	$0.75	$1.50	No
Raymond	$1.80	$2.35	Yes
Somersworth	$1.30	$1.85	Yes

AVERAGE	*$1.37*	*$2.04*	
AVERAGE WITH MSW COLLECTION	*$1.36*	*$2.17*	

Recommendation 2: Continue to Monitor Electronics Disposal Costs

Over the five year period there has only been a substantive shortfall in the past two years: $4,000 in 2016 and $5,000 in 2017. Given the cost of the entire solid waste program, this modest shortfall seems negligible. To maintain the user fee model, the electronics program should ideally pay for itself. If the gap continues to widen in subsequent years, it may be prudent to address the gap through increased electronics disposal fees.

Another option to cut disposal costs is to engage a public awareness campaign regarding disposal of e-waste. Public works, the town office, and the transfer station could all have posters that remind residents of retail stores that offer electronics recycling. Often times this recycling service is free, depending on the product, at many large retailers such as Best Buy, Staples, and Batteries Plus Bulbs. Some items that are still in fair condition may even have value to third-party vendors. Diverting some of this electronic waste can reduce the cost of disposal for the town.

In reviewing municipalities in Rockingham and Strafford counties, it is appears that the $10 electronics sticker is on par with surrounding towns. $10 is the most common price for things like TVs, monitors, and copiers/printers. Many towns charge for e-waste via a fee schedule that lists the item and its associated cost. For example, many towns have several prices for TV disposal based on its size. Often times, these far exceed the $10 that Exeter charges for any item. For example, Milton, NH charges $20 for TVs larger than 46" and Farmington charges $27.50 for TVs over 25 inches. Creating a fee schedule that charged more for larger and more costly items would provide an opportunity to generate additional revenue.

The biggest hindrance to implementing a fee schedule is the loss of simplicity. Currently, there is one sticker for one price which makes the process very simple. Introducing a fee schedule would require additional training of employees and public awareness efforts. It also introduces the concern for how the different permits or prices are collected. One way for this to be implemented would be to introduce a coupon system, such as the one Lee utilizes. Residents purchase coupons

that are valued at $2.50, $5, and $10 from a vending machine. They then affix the proper value of coupons to the item and drop it off at the transfer station. This avoids cash handling and can also take sticker sales out of the hands of the town office and PDW. Given that the potential revenue is not substantial and the changes and startup costs associated with the plan, this option can be re-evaluated if the electronics waste budget deficit worsens in subsequent years.

Recommendation 3: Consider Transfer Station Permit Fees

Many surrounding towns operate transfer stations that are either free to residents or charge a small fee for a yearly permit. Epping, Milton, and Stratham all charge $5.00 for permits. No surrounding town appears to charge what Exeter charges for transfer station access. This higher than usual fee does come with unique benefits, however. Most towns operate a fee schedule that charges for virtually everything that comes into the transfer station. Instead, Exeter does not charge for many of these items such as white goods (appliances) small propane tanks and mercury-containing items. The permit fee goes to cover the cost of disposing of these items that cannot be salvaged. Given the comparative cost of a transfer station permit, it may be inadvisable to raise the cost even more.

Recommendation 4: Increase the price of Freon appliance disposal

Given that increasing the cost transfer station permits may not be tenable, Exeter should increase the cost of Freon-containing appliance disposal. In reviewing the transfer station fees for surrounding towns in Rockingham and Strafford counties, it was discovered that Exeter charges much lower than any other town for the disposal of these products. In fact, none of the towns had fees for these products in the single digits. Table 3 shows the fees for surrounding town, which range from $10.00 to $25.00.

In 2017, the town raised $2,827.00 in revenue from the sale of Freon disposal stickers at the current $7.00. Raising the fee to $10.00 would yield roughly an additional $1,200.00 annually and raising it to $15.00 would yield approximately $3,000.00 in additional revenue. The latter option would cut the transfer station's 2017 operating deficit by one-third.

Table 3. Freon Appliance Disposal Fees by Town

Town	Freon appliance disposal fee
Barrington	$17.00
Dover	$10.00
Epping	$10.00
Farmington	$17.00
Hampton	$10.00
Kingston	$25.00
Lee	$10.00
Milton	$10.00
Newmarket	$15.00
Northwood	$15.00
Nottingham	$10.00
Raymond	$20.00
Rye	$15.00
Seabrook	$10.00
Somersworth	A/C: $14.00; Fridge/Freezer: $18.00
Strafford	$20.00
Stratham	$20.00

Option 3: Seek out new sources of revenue

Recommendation 5: Consider the Cost of free brush dumping and commercial utilization

One issue that has been raised regarding the transfer station is the costs associated with brush dumping. Currently, residents with a transfer station permit can dump unlimited amounts of brush and wood at no cost. While there is no additional cost to the resident, the town must rent a bulldozer several times a year to push the brush into a manageable pile at the bank. This allows orderly and continued brush dumping at the transfer station. Renting this equipment costs the town several thousand dollars each year and represents a large portion of the transfer station deficit. Most surrounding towns accept brush for free, so Exeter is not unique in this regard. The town should develop creative means to offset the cost of the equipment rental.

One means of doing so would be to charge commercial vendors a flat fee per load of landscaping debris. The issue has been raised that there is apparent abuse of the landscape materials dumping

by commercial vendors. While it is against the town's ordinances to dispose of out-of-town materials at the transfer station, there is no way to determine if a company is bringing in brush from Exeter or across the town line in Kingston. Charging for commercial dumping of brush would allow the town to recoup the cost of renting the bulldozer while also deterring improper disposal. Residents would still face no charges for their disposal of brush; the fee would only apply to businesses. A fee for commercial brush dumping could yield thousands of dollars per year. When combined with other efforts, the gap in the transfer station budget can be effectively eliminated.

Recommendation 6: Consider fees for large metal items and White Goods

As mentioned above, Exeter does not charge for the disposal of bulky metal goods such as washers, dryers, snow blowers, lawn mowers, etc. Residents with a transfer station permit can dispose of these items in the roll off container free of additional charge. The underlying theory behind this method is that these items can be sold as scrap metal and the town can recoup the cost of disposal that way. While this had been the case 5-10 years ago, it is becoming harder and harder to recoup the costs in this manner. First of all, fuel and labor prices continue to rise. This makes hauling the materials much more expensive. Second, today's scrap metal appliances are becoming more and more "contaminated." This refers to the non-metal parts that are attached to the units. The pieces all need to be stripped from the metal, costing more in labor, making the item less valuable. Finally, the price of scrap metal has fallen dramatically. These three factors combine to make what was once a cost-effective program one that puts a strain on the budget. To mitigate this issue, surrounding towns often charge for the disposal of these goods. Kingston, Northwood, and Barrington all charge $5.00 per item. Newmarket, Hampton, Nottingham, and Stratham all charge $10.00 per item. Strafford charges $15.00 per item. Since there is no log for how many of these items are disposed of at the transfer station, it is not possible to accurately predict how much revenue this would generate. It is, however, reasonable to assume that charging even $5 per item could potentially yield hundreds or thousands of dollars per year.

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