Cost of Service Report for Waste and Recycling Collection

City of Moses Lake

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Background

The City of Moses Lake utilizes a combination of private contractors and city departments to provide waste management services to the residential and commercial customers. Administration, invoicing, and customer service are provided by the City. Collection of solid waste, recycling, and yard debris is contracted to Lakeside Disposal and Consolidated Disposal. Collected waste is disposed at the Grant County Landfill and the Moses Lake Transfer Station. Recovery of recyclable materials is completed by Waste Management in their Spokane facility. Baling and transport of the collected recycling is contracted to Lakeside Disposal. Yard debris and other organic waste collected from residential customers is processed / composted by Ovenell Farms in Quincy.

Table 1 details the average number of units collected monthly by Lakeside Disposal and Consolidated Disposal.

Table 1: Average Monthly Collected Units

Service Units	Carts / Cans	Commercial Containers	Drop Box Hauls	Total
Lakeside	6,612	836	83	7,531
Consolidated	330	37	64	431
Totals	6,942	873	147	7,962

Cost of Service

For the current fiscal year, budgeted revenues for collection services was higher than the budgeted expenses for collection. However, the cost of processing commingled recycling in 2018 has substantially increased compared to 2017. The value of the collected material in 2017 was $21,653, but in 2018, the cost of processing now exceeds the value of the collected materials. For the first six months of 2018, the City has incurred $43,676 of costs to bale and process the collected materials. In 2017, the revenue from the collected material was $24 per ton, but in 2018, the cost exceeds the value by $95 per ton. This is a change of $119 per ton from the previous year. The projected cost of processing recycling for 2018 is approximately $95,000. Table 2 summarizes the financial performance of the solid waste fund for the previous years and the expected results for the current fiscal year.

Table 2: SW Fund 490 Summary Results

Fiscal Year	2015	2016	2017	2018
Service Revenue	$3,170,920	$3,448,340	$4,002,009	$4,340,000
Recycling Revenue / (Cost)	$153	$1,441	$21,653	$(95,000)
Collection Expense	$3,534,207	$3,573,159	$3,955,217	$4,135,243
Balance	$(363,134)	$(123,378)	$68,445	$109,757

Not included in Table 2 is the interfund loan activity and the fund balance

Over the previous years, the cost of providing service exceeded the revenue generated. Losses were offset by interfund loans. The reason for the losses was the rates charged for residential collection were less than the cost of providing the service. However, the losses from residential service were to be offset by charging commercial customers a rate higher than the cost of service. Commercial customers were, and still are, subsidizing residential customers.

While many jurisdictions have rates that subsidize one class of customers, the method employed by the City was not well executed. Typically, the subsidization is on the smallest cart / container volume to provide a reasonable financial incentive to reduce disposed waste by diverting material to the recycling container. For residential collection, a low volume roll cart is 20 gallons, followed by the 35 gallon, 48 gallon, 64 gallon, and 96 gallon. A reliable rate method for residential service is to set the rate at the cost of service for the most popular cart volume, and to provide a subsidy from the larger volume carts to offset the reduced cost for the smaller volume cart. Since the City has only 3 cart sizes, a pragmatic approach is to set the lowest volume, the 48 gallon cart, at the cost of service and set the rate for the 64 and 96 gallon cart above the cost of service to provide a financial incentive to reduce waste volume and increase recycling.

Residential Collection

Contracted collection includes weekly garbage, every-other-week collection of commingled recycling, and weekly collection of yard debris from March to November. Assuming a resident sets out their garbage and recycling every week, they will set a cart out 117 times over a 12 month period: 52 times for garbage, 26 times for recycling, and 39 times for yard debris. The contracted cost per pick-up is $1.61 ($15.65 x 12 months / 117 pick-ups).

The most popular cart volume is the smallest cart size available (48 gallons) with 4,474 (67%) of the 6,425 residential customers selecting it for waste disposal. The cost of service for the 48 gallon cart is detailed in Table 3.

Table 3: Cost of Service Calculation for 48 Gallon Residential Service

Service Component	Solid Waste	Recycling	Yard Debris	Total Cost
Collection Cost [1]	$6.96	$3.48	$5.22	$15.65
Disposal / Processing [2]	$2.15	$1.38	$0.83	$4.36
Roll Cart Cost	$0.12	$0.12	$0.12	$0.36
City Administration	$2.77			$2.77
WA Refuse Tax [3]	$0.59			$0.59
Total Cost	**$12.59**	**$4.97**	**$6.17**	**$23.73**
Current Rate				$16.41
Loss				**$(7.32)**

Table Notes

1. Annual pick-ups per service was multiplied by $1.61 and then divided by 12 months to calculate the collection cost – SW is (52 pick-ups per year x $1.61) / 12 months = $6.96
2. Assumes 36 pounds per waste set out per week, recycling averages 24 pounds per customer per month, and yard debris averages 67 pounds per customer per month.
3. Washington refuse tax is 3.6% and is assessed on the current $16.41 rate.

Multiplying $7.32 by the 4,474 customers that have a 48 gallon cart is a monthly loss of $32,760. In addition to the loss on the 48 gallon cart, the 64 gallon cart and all of the senior cart sizes are being provided at less than the cost of service. Residents with a 96 gallon cart as well as the commercial cans / carts have rates that cover the cost of service. The combined loss on cart and commercial can collection service is approximately $30,300 per month. Table 4 details the cost of service for residential service with a 64 gallon cart.

Table 4: Cost of Residential Waste Collection with a 64 Gallon Cart

Service Component	Solid Waste	Recycling	Yard Debris	Total Cost
Collection Cost	$6.96	$3.48	$5.22	$15.65
Disposal / Processing	$2.84	$1.38	$0.83	$5.05
Roll Cart Cost	$0.12	$0.12	$0.12	$0.36
City Administration	$2.77			$2.77
WA Refuse Tax	$0.79			$0.79
Total Cost	**$13.48**	**$4.97**	**$6.17**	**$24.62**
Current Rate				$21.87
Loss				**$(2.75)**

Recycling

As previously noted, the cost of processing recycling has increased to a point where the value of the collected material doesn't pay for the sorting costs incurred by the material recovery facility. Table 5 compares the cost of recycling in 2017 to 2018.

Table 5: Comparison of Cost for Residential Recycling

Service Component	2017	2018
Collection	$3.36	$3.48
Processing	$(0.26)	$1.38
Total Cost	$3.10	$4.85
$ ▲		$1.76

Why the Cost of Recycling Processing has Increased?

China was the single largest consumer of recyclable materials generated in North America. In prior years, it consumed 40% of all scrap materials sold in the US; 55% of all paper/fiber, and 51% of all recovered plastics. Most of the recyclable collected in the Pacific Northwest region were shipped to China for remanufacturing into new products & packaging.

The Chinese government has taken significant unilateral actions that have completely disrupted the global market for recovered materials.

1). Banning all Mixed Paper and Mixed Plastics: Effective January 1st, 2018, The Ministry of Environmental Protection of the People's Republic of China (MEP) has banned the import of 21 recyclable commodities, including Mixed Paper & Mixed Plastics. The single largest commodity produced from the City's curbside recycling program has been Mixed Paper, which comprises approximately 45% of the collected recycle tons.

2). Reduction of Contamination Threshold to 0.50%: In addition to the ban, MEP announced that effective March 2018 all scrap materials imported into China must be 99.50% pure. No material exceeding 0.50% contamination will be allowed into the country.

On July 11, MEP released a proposal to completely ban imports of recovered fiber and every other form of solid waste. While all of the mixed paper and plastic have been banned, cardboard (OCC) and other high grade fiber has been exported to China.

The effect of the ban has decreased OCC values. A significant amount of the #1 (PET, water bottle, pop bottle) and the #2 Clear and Colored HDPE (milk jug, detergent bottle) collected in the West is sold domestically. However, the reduced exports to China has created a glut of recyclables in the US markets. All of the collected plastics that were being exported to China don't have market outlets. The markets for #3 through #7 plastic containers, tubs, and rigid plastic has disappeared.

The primary reasons for China's coming ban on recyclables:

The Chinese government is working to develop a strong domestic collection infrastructure to supply recyclable materials to domestic mills.

The Chinese government is eliminating manufacturing facilities that generate excessive pollution. The government is shutting down over 2,000 antiquated recycling plants across the country.

All local material processors have changed their operations to capture marketable materials. The changes have significantly increased the amount charged to the waste and recycling haulers. Waste Management, the processor used by the City, charged $84.90 per ton in July for residential commingled recycling. An addition $25 per ton is charged to bale and transport commingled material to Spokane; therefore, the total cost is $109.90 per ton.

Recent composition studies completed on the commingled mix collected in Clark County, Washington reveal a majority of the current collected materials don't have a viable market. With state mandates enacted to divert materials, finding markets in the future for mixed waste paper and plastics is extremely difficult. All non-marketable items will end up in the landfill. Local jurisdictions can't stop the flow of incoming materials now that these recycling programs have been implemented and customers have become accustomed to placing certain materials in the cart for recycling.

With the elimination of markets for mixed waste paper and mixed plastics, the City should consider collecting materials that have a viable market to include cardboard, steel / tin cans, clean metal, aluminum cans, and #1 PET / PETE and #2 HDPE plastic bottles. Eliminating mixed waste paper from the recycling program would reduce the cost of processing; however, getting customers to change their habits will be problematic.

City Recycling Program

If recycling cost more than waste disposal, can the City end the current curbside collection program?

The State's goal is to reach 50% recycling and composting. Chapter 70.95 RCW does not mandate that each county or city adopt a 50% goal; however, each community is expected to set a goal that suits its situation, provided that the goal is based on justified and sound reasoning.

Before making any decisions, the Department of Ecology (DOE) recommends that jurisdictions consider all available options to maintain their recycling program(s). Other counties and cities have instituted rate increases to offset the rising cost of commodities, adjusted the list of collected materials, increased education and outreach efforts, and increased efforts such as policing set-outs for contamination.

The DOE would request that Moses Lake contract Grant County, which is the wasteshed manager, of any changes to their recycling program. The County would then notify the Department of the changes to any recycling programs, the reason(s) for the change, and a plan for either a replacement program or to reestablish the program at a future date. Grant County is currently in the process of updating the Solid Waste Management Plan, so any future changes should be incorporated prior to approval.

Recycling Depot

Moses Lake rate payers bear the cost to operate the recycling depot. People who live outside the City that drop off materials for recycling benefit from the inequity of the current system. While no user surveys have been completed by the City or the County, it has been observed that a growing portion of the people that use the depot live outside the City. Unlike City residents, county residents are not required to subscribe to waste collection services; therefore, many utilize the depot to dispose of recyclables. Some people also use the depot to dispose of their waste in the commingled drop box, as noted by the elevated level of contaminants and non-recyclable materials dumped in the recycling container.

While the material markets are in decline and the cost of operating the depot increases, the City should consider the following steps to reduce costs.

1. Restrict the usage of the facility to City rate payers. Users would have to identify themselves as Moses Lake rate payers.

2. Collect materials that have a market value to include the following:

- Cardboard
- Aluminum
- Steel / Tin cans
- #1 Plastic (PET, water bottle, pop bottle)
- #2 Clear and Colored HDPE (milk jug, detergent bottles)

3. Discontinue accepting all materials except glass. Curbside services are collected the remainder of material that are recyclable.

4. Close the depot and discontinue accepting glass in the recycle stream.

Yard Debris

Yard debris and other organic waste collected from residential customers is delivered to Ovenell Farms in Quincy to be composted at a cost of $25 per ton. As long as residents set out clean material for collection, Ovenell will provide the service. In the past, the level of contamination in the material collected from residents caused the previous service provider to discontinue accepting organic waste from Moses Lake. The City will continue to have an organic collection program as long as the residents set out uncontaminated organic material.

Comparable Rates

Comparing rates to neighboring jurisdictions is complicated by the base level of service. Moses Lake is the only city that has a 48 gallon cart as the base service with recycling and yard debris. None of the compared cities offer a 64 gallon roll cart for waste. Table 6 compares the City's cost for 48 gallon and 96 gallon service to the rates charged by other jurisdictions. The service notes following the table explains the levels of service that are compared.

Table 6: Comparable Residential Service Rates to Moses Lake's Cost of Service

Service	Moses Lake 48 gal	Moses Lake 96 gal	Grant County	Richland	Walla Walla	Yakima
Waste - **48** gal cart	$13.48					
Waste - 32 gal cart / can			$10.05			$17.60
Waste - 96 gal cart		$14.89	$18.17		$23.30	$20.10
Yard Waste	$6.17	$6.17			$20.00	$16.30
Richland – Waste & YD service				$17.50		
EOW Recycling	$4.97	$4.97		$5.70	$4.76	$8.95

Service Notes:

Moses Lake cost of service for the 48 gallon base service is $24.62 and the cost of service for the 96 gallon cart is $26.03.

Grant County service is limited to only waste collection and is regulated through the UTC. Customers that want 32 gallon service need to provide their own can whereas the 96 gallon cart is provided by the regulated hauler.

Richland's base service is a 96 gallon cart for waste collected weekly and a 96 gallon cart for yard debris collected every-other-week (EOW). Recycling is through a subscription and is collected EOW.

Walla Walla base service is 96 gallon cart collected weekly and recycling is collected EOW. The monthly rate is $28.06 ($23.30 + $4.76). Yard debris is a subscription and is collected weekly with a 96 gallon cart.

Service Notes Continued: Yakima waste service is either a 32 gallon cart or a 96 gallon cart collected weekly. Yard debris and recycling are subscription services. Yard debris is collected weekly while recycling is EOW through Yakima Waste Systems, a UTC regulated collection company.

Commercial Service

The most popular level of service for commercial customers is a 2 yard container collected once a week. Customers that generate a high volume of waste may require a drop box or roll off compactor. Using industry averages for waste disposal weights, Table 7 details the cost of service for the 2 yard container and the 30 yard drop box collected once a week.

Table 7: Cost of Service Calculation for Commercial Customers

Service	2 yd. Container	30 yd. Drop Box	Note
Collection Cost	$41.69	$997.74	Lakeside contracted amount
Landfill Disposal	$12.02	$198.33	Assumed Industry Averages
City Administration	$3.03	$0.98	Budgeted City costs
WA Refuse Tax	$2.50	$48.33	3.6% on collection rate
Total Cost	$59.24	$1,245.38	
Current Rate	$69.46	$1,342.46	
Margin	$10.22	$97.08	

The additional revenue generated above the cost of commercial container and drop box service is calculated at $29,800 per month. Table 8 compares the monthly loss from residential service to the additional revenue generated from commercial service.

Table 8: Service Revenue by Source

Service	Monthly Revenue	Annual Revenue
Cart / Can Collection	$(30,311)	$(363,732)
Commercial Container / Drop Box Service	$29,829	$357,954
Net Revenue	$(481)	$(5,778)

While the budget, less the additional cost of recycling, has the surplus of approximately $110,000 (Table 2), comparing the costs of service with the current customer mix shows an estimated loss.

Even if the fund generates $110,000 over the cost of service, the fund has generated debt from losses during the previous years.

Recommended Steps

Eliminating the loss from the residential collection rates should be completed over the next 17 months. Rather than one large increase in January, the City should increase the rates by half of the necessary amount in January 2019 and the remaining amount in January 2020. Table 9 details this approach. The additional revenue generated from the increase is approximately $219,000 annually.

Table 9: Proposed Residential Collection Rate Increases

Level of Service	Current Rate	2019 Increase	% ▲	2020 Increase	% ▲	Cost of Service
64 Gal Cart	$21.87	$1.38	6.3%	$1.38	5.9%	$24.62
48 Gal Cart	$16.41	$3.66	22.3%	$3.66	18.2%	$23.73
2nd Cart	$12.96	$2.63	20.3%	$2.63	16.9%	$18.22

While it may be politically expedient to increase, or continue to increase the rates for commercial customers, that approach has not proven successful in Moses Lake because the commercial customer base is not large enough to absorb the costs. At some point, businesses will reduce service or utilize other methods such as self-hauling, to reduce their garbage costs.

Recommended System Changes

During this project, practices and operations were observed that are unnecessarily complicated and should be changed. While the City's system has evolved over time, most of the operational inefficiencies can be addressed with the commencement of a new collection contract in September 2020. Here are the recommended changes:

1. Eliminate the current daily calculation fee set up in the City's invoicing system by establishing collection rates based on the monthly cost of service. The day-use method utilized by the City was established for water usage, not waste / recycling collection. This recommendation can and should be implemented immediately.

2. Combine collection, waste disposal, recycling and yard debris processing under one service contract.

- Including the disposal cost with the collection cost provides the contractor a financial incentive to select the lowest cost alternative for disposal and eliminates the additional administrative time incurred by the City to reconcile the disposal invoices from Lakeside and Consolidated.
- Establish a baseline cost for processing recycling and yard debris so rate adjustments can be made by the City if necessary.
- Require the contractor to provide a monthly cost for waste collection / disposal to easily calculate the Washington State refuse taxes. The refuse tax is assessed on refuse collection and disposal, not recycling. If Grant County is paying the tax on disposal, then the City is liable for the amount incurred to collect waste only.

3. Change the method for invoicing drop box / roll off compactor service. Rate should be based on the cost to haul the box / compactor plus the actual disposal cost.

- Require the contractor to invoice for drop box service independent of the City. The contractors utilize invoicing systems designed for this type of service.
- Monthly reports would be submitted to the City to account for the drop box / roll off compactor service provided by the contractor.

4. Require the contractor to utilize collection trucks that are 5 years or newer.

- While older trucks incur less depreciation expense, the trade-off is older trucks incur additional repair costs and leak oil / fluids / leachate (garbage juice).
- Requiring newer trucks levels the bid costs because some potential proposers don't have outdated trucks that can be relegated to Moses Lake. These proposers will need to purchase trucks to provide the services.

5. Establish a City policy to set rates at the cost of service plus a 60 day operational reserve in the fund balance. Once the reserve has been reached, the rates would be adjusted to account for the savings.

Contract for All Services

There are four forms of collection services that are allowed by Washington State law in the cities are as follows:

Municipal: This approach utilizes municipal employees and equipment to collect waste.

Contracted: Incorporated cities and towns may elect to contract with private companies for waste and recycling collection. Services provided by the contractor and regulated by the jurisdiction need to comply with RCW Chapter 70.95 (Washington State Solid Waste Management program).

Certificated: With this collection method, cities are not actively involved in the management of garbage collection. Instead, it allows the UTC-certificated hauler to provide service under UTC regulation and at rates approved by the UTC.

Licensed Collection: This method applies to municipalities that require private collectors to have both a city-issued license as well as a UTC certificate. This approach gives the municipality limited control over collection services and allows cities to require that important services be provided. For instance, some cities in the past have required collection companies to pick up Christmas trees, provide a semiannual residential cleanup, and provide free service to public buildings and facilities.

The City should consider an exclusive contract to provide comprehensive services for collection, disposal, processing, billing and customer service. The primary role of the City would be to administer the contract. The City would stipulate the services provided as well as regulate the collection rates charged by the contractor.

There is also the assumption that some administrative costs would be reduced or eliminated with the remaining costs to be covered from assessing a utility tax on future services. Cities are also allowed to assess a utility a tax on waste collection services within their boundaries. Aside from the current budgeted contracted services of collection, disposal, and processing, the City has

budgeted $252,613 for administration and shared utility expenses. These costs are approximately 7% of the total budgeted expenses for collection services. The City currently is not dependent on the revenue generated from waste and recycling collection; therefore, the transition to an exclusive contract should not be complicated.

If the City increases the residential collection rates to the cost of service, there should be adequate revenue to pay off the balance of the interfund debt incurred from 2013 to 2016 prior to the expiration of the current collection contract. Taking these actions will also reduce the impact of the transition to a full-service contract.

Service Procurement

If the City decides to procure collection service under a comprehensive service contract, the time from the decision to the commencement of service typically requires 24 months. There are three phases to the project.

Phase 1 is planning of the requested services, drafting of the contract and RFP, and issuance of the request for services. Six to eight months should be budgeted for this phase.

Phase 2 is the evaluation of the proposals, selection of the service provider, and negotiation of the contract. This phase requires four to five months to complete.

Phase 3 is the implementation phase where the contractor and city work in conjunction to provide a smooth rollout of service. Depending on the requested services, this phase can vary from a few months to ten months. Truck and container procurement are usually the reason for the prolonged period in phase 3.

If the City decides to contact for services at the end of the current contract, which expires in September 2020, the decision should soon be rendered.