City of Moscow
Sanitation Program Review

1.0 Introduction

The City of Moscow retained Great West Engineering to provide a review of the City’s sanitation services program. This evaluation is being conducted under Task 3 (Deliverable 3.1 – Technical Memorandum #3) of the Comprehensive Sanitation System Master Planning Services Project (“Project”), in accordance with the contract between Great West Engineering, Inc. and the City of Moscow, dated February 26, 2018.

1.1 Purpose/Objectives

The purpose of this task is to prepare a general review and limited assessment of the City’s current sanitation system that includes both solid waste and recycling programs. The objectives are to provide a summary of the services that are provided by the City, an overview of the recent public outreach activities, and a relative cost comparison of Moscow’s services with other similar programs in the Pacific Northwest region.

1.2 County and City Population Growth Estimates

The population of the City of Moscow is expected to grow an average of 1.15% per year, while Latah County, without the City, is anticipated to grow 0.56% per year (per the City’s Finance Department). The County, including the City of Moscow, is expected to grow 0.92% per year. Exhibit 1 provides a bar chart showing the growth of Moscow relative to Latah County (without Moscow).
1.2.1 City and County Solid Waste
In Latah County, the total solid waste generated per year averages approximately 38,000 tons, based on 2013-2017 tonnages (refer to Table 1). Solid waste includes all the various waste types and those materials that are recycled or otherwise diverted from disposal. These include the following materials:

- **Municipal Solid Waste (MSW)** – Collected curbside in the City and direct-hauled waste to the Solid Waste Processing Facility (SWPF) by residents and commercial customers.
- **Non-Municipal Solid Waste (NMSW)** – Inert and construction and demolition (C&D) wastes collected from commercial accounts in the City and also direct-hauled to the Non-Municipal Solid Waste Landfill (NMSWFL) at the SWPF.
- **Conventional Recyclables** – Single-stream recyclables collected at the curb from both residential and commercial accounts in the City, and presorted materials dropped off at the Moscow Recycling Center (MRC).
- **Yard Waste** – Collected at the MRC and direct-hauled to the SWPF for grinding and composting. Yard waste materials include lawn clippings, clean wood, and brush.
- **Biosolids** – Dewatered sludge, generated from the City’s wastewater treatment plant, which is direct-hauled to the SWPF for composting.
- **Other Diverted Materials** – Materials direct-hauled to the SWPF, including scrap metal, appliances and tires.

Of the 38,000 tons of total solid waste generated by Latah County, about 26,000 tons (or 68%) is municipal and non-municipal garbage. The remaining 12,000 tons (or 32%) is diverted from the waste stream by recycling and composting operations.
Table 1 – Solid Waste Tonnages

<table>
<thead>
<tr>
<th>Waste</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Solid Waste</td>
<td>26,493</td>
<td>24,442</td>
<td>25,489</td>
<td>26,910</td>
<td>26,985</td>
<td>26,064</td>
</tr>
<tr>
<td>MSW</td>
<td>18,207</td>
<td>18,266</td>
<td>18,690</td>
<td>19,527</td>
<td>20,059</td>
<td>18,950</td>
</tr>
<tr>
<td>NMSW</td>
<td>8,286</td>
<td>6,176</td>
<td>6,799</td>
<td>7,383</td>
<td>6,926</td>
<td>7,114</td>
</tr>
<tr>
<td>Total Recyclables</td>
<td>11,977</td>
<td>12,080</td>
<td>11,699</td>
<td>12,620</td>
<td>12,498</td>
<td>12,175</td>
</tr>
<tr>
<td>Conventional Recyclables</td>
<td>3,638</td>
<td>3,605</td>
<td>3,417</td>
<td>3,538</td>
<td>3,433</td>
<td>3,526</td>
</tr>
<tr>
<td>Curbside Pickup</td>
<td>514</td>
<td>524</td>
<td>454</td>
<td>537</td>
<td>697</td>
<td>545</td>
</tr>
<tr>
<td>Moscow Recycling Center</td>
<td>3,124</td>
<td>3,080</td>
<td>2,963</td>
<td>3,001</td>
<td>2,736</td>
<td>2,981</td>
</tr>
<tr>
<td>Yard Waste</td>
<td>3,842</td>
<td>3,891</td>
<td>3,761</td>
<td>4,335</td>
<td>4,81</td>
<td>4,042</td>
</tr>
<tr>
<td>Biosolids</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Other Materials(1)</td>
<td>497</td>
<td>584</td>
<td>521</td>
<td>747</td>
<td>684</td>
<td>606</td>
</tr>
<tr>
<td>Total Waste</td>
<td>38,470</td>
<td>36,522</td>
<td>37,188</td>
<td>39,530</td>
<td>39,483</td>
<td>38,239</td>
</tr>
</tbody>
</table>

Diversion Rate
- 2013: 31%
- 2014: 33%
- 2015: 31%
- 2016: 32%
- 2017: 32%
- Average: 32%

Notes:
1. Includes scrap metals, appliances, and tires.

Of the total approximate 19,000 tons of MSW collected annually in the County, 9,000 tons (or 47%) of it is collected curbside in the City of Moscow. Moscow residents also directly-hauled their MSW and NMSW to the SWPF.

As Latah County continues to grow, so will its generation of solid waste. Solid waste is expected to increase at the same rate as the population growth rate. Exhibit 2 shows the 20-year growth projection of total solid waste (MSW and NMSW).

Exhibit 2. Solid Waste Growth Projection

1.3 City and County Recycling

At the curb, Moscow residents are currently recycling about 700 tons per year. These recyclables are hauled to the MRC and account for 20% of the total conventional recyclables
handled through the facility. Comparing curbside recycling to curbside waste collection amounts, only 9% of the waste stream is currently diverted in the City through the curbside collection program. In addition to curbside collection, a good portion of the City’s resident’s drop-off pre-sorted recyclables directly at the MRC. The center, however, is used by a combination of City of Moscow and Latah County residents, and some out of county residents. A recent 2018 intercept survey at the MRC indicated that 67% of the users are from the City of Moscow. Assuming that this same percentage corresponds to the total tonnage of recyclables collected at the center, the diversion rate increases to over 2,000 tons per year, equating to a total diversion rate of approximately 20% in Moscow.

With the implementation of the single-stream recycling program in February 2016, the annual amount of conventional recyclables collected at the curb in Moscow increased by over 130%. The total amount processed at the MRC, however, has remained relatively steady over the last 5 years (2013 – 2017) (refer to Exhibit 3). The average amount of materials handled at the center, over this same period, is approximately 3,500 tons per year. The single largest tonnage of any one recyclable is corrugated cardboard, which makes up an average of 1,300 tons per year (or 30% of the total tonnage). Of the 1,300 tons, about 300 tons are collected from direct drop-off at the MRC, and the remaining approximate 1,000 tons are collected from City businesses.

Based on the population estimates (and excluding the amount of cardboard collected from businesses), the City and Latah County residents together recycle approximately 0.06 tons

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1. Previous to roll-out of the single-stream program, the City also collected glass curbside as part of the pre-sorted curbside collection program. Glass collection was not included in the single-stream collection program. Subtracting the amount of glass collected previously and comparing the two one-year periods of February-January 2015 (281 tons) and February – January 2016 (651 tons), curbside recycling increased by over 130% in accordance with the City’s estimates.

2. This total tonnage includes on average approximately 50 tons of “out of county” recyclables, which are collected from a bordering Nez Perce County site that LSI operates.
per year per person. This per capita figure has also remained relatively steady over the last five years (2013 – 2017).

At this point in time, recycling in Latah County is expected to grow at a rate equal to the population growth rate. Although the City of Moscow has implemented a commercial curbside collection program, which is expected to increase the amount of recyclables collected per capita, this will be offset by a reduction in the types of materials that can be recycled. Changes in the global markets are affecting the types of materials that can be recycled. As a result, the City is embarking on an education outreach program to inform the community of upcoming changes and will be changing the types of recyclables collected both curbside and at the MRC.

Exhibit 4 shows the 20-year growth projection for County-wide recycling. The category “Other Diverted Waste” includes yard waste, biosolids and other miscellaneous materials (scrap metal, appliances, and tires).

Exhibit 4. Latah County Recycling Growth Projections

2.0 Sanitation Services Program

The City’s Sanitation Division is administered through the City’s Finance Department. Tim Davis is Sanitation Operation Manager and oversees the program for the City. Mr. Davis works closely with the City’s sanitation service provider, Latah Sanitation, Inc. (LSI). The sanitation program includes the SWPF, the MRC, and the curbside collection program MSW and single-stream recyclables.

In 2015, the City granted a franchise agreement extension with LSI for an additional 20-year term. The agreement is for: (1) solid waste and recyclable collection services within the City; and (2) operation of the waste transfer station at the SWPF, the MRC, and associated solid waste facilities.
LSI owns, operates and is responsible for all capital assets and equipment utilized in the sanitation system operations, except for the MRC which is owned by the City of Moscow. It is anticipated that the City will continue to receive sanitation services under the current franchise agreement with LSI until the end of the agreement term. Additionally, the City contracts with Waste Connections for MSW transport and disposal (T&D) services. MSW is long-hauled to Waste Connection’s Finley Buttes Landfill in Boardman, Oregon.

2.1 City’s Sanitation Division Goals

The Sanitation Division strives to build community confidence by actively exploring and assessing viable new technologies and opportunities in the management of the waste stream which protect the health, safety, and cleanliness of the City of Moscow. The goals are to:

- Deliver quality, efficient, and effective solid waste sanitation services and programs to the community at a good value.
- Deliver a system which encourages the reduction of solid waste and remains flexible and readily adaptable to the complexities of growth, change, and customer service needs.
- Design sanitation programs which recognize the fiscal and environmental responsibilities entrusted in the City.

The Sanitation Division continually strives to improve neighborhood collection day aesthetics and conditions, promotes product stewardship and producer responsibility and informs the public through the waste reduction education program efforts to rethink, reduce, reuse, and recycle.

Solid waste is regulated under the City’s Solid Waste Ordinance (Chapter 9 of the Title 9 – Business Regulations). Solid Waste fees, along with other City service fees, are set through City resolutions. The current resolution setting fees were adopted on August 15, 2016 (Resolution No. 2016-15).

2.2 Solid Waste Processing Facility (SWPF)

The SWPF is located approximately 5 miles east of the City of Moscow on Highway 8 (3299 ID-8) (refer to Exhibit 5). LSI owns and operates the SWPF. The facility accepts both MSW and NMSW such as demolition debris, clean wood waste, yard waste, large appliances (whitegoods), scrap metal, asbestos, household hazardous waste (HHW), and tires.

The SWPF is open from 8:00 am to 4:00 pm, Monday through Saturday. The HHW facility is open every Saturday from 8:00 am to 3:30 pm from April through October, and the first Saturday of each month from November through March, during normal SWPF business hours.

The SWPF generally consists of the following buildings and infrastructure:

- A single in-ground platform scale with a scale shack at the entrance that is used for both inbound and outbound customers;
- A waste transfer building (WTB) used for MSW drop-off and top-loading of long-haul waste trailers;
- A non-municipal solid waste landfill (NMSWLF) – both closed and active areas;
• A composting facility with yard waste/woody debris piles and grinding operations (and biosolids drop-off area);
• A household hazardous waste (HHW) facility;
• Collection points for appliances, scrap metal and tires; and
• Various supporting facilities and infrastructure, including an office/administration building, maintenance shop building, fueling station, roads, and stormwater management systems.

Exhibit 5. Location of the Solid Waste Processing Facility

2.2.1 Composting Facility

Composting operations are conducted as part of the franchise partnership with LSI at the SWPF. Compost is produced from two primary feed stocks – biosolids and yard waste. The City produces approximately 4,000 tons of dewatered sludge (biosolids) annually at the City’s wastewater treatment plan. Approximately 3,500 tons of yard waste (grass clippings, tree limbs, brush and the like) are collected annually from a number of sites in Moscow and Latah County, including: the MRC, City of Potlatch and City of Genesee. Material is also self-hauled directly to the SWPF.

The composting operation also includes collection of clean wood waste. Collection of this material started as a pilot program in October 2014 and has gained popularity ever since. Woody materials containing nails and screws are acceptable and can be processed with the metals removed utilizing magnets. Other metals and foreign materials that could cause damage to the grinding equipment are not accepted. Clean lumber materials that are unpainted and untreated are accepted (e.g., pallets and scrap dimensional lumber). Plywood, wafer board and particle board-type lumber that contain glues are not accepted.

Once received at the SWPF, the yard waste and clean wood waste is ground, using a large grinder, then blended with the biosolids at approximately a 5 or 6 to 1 ratio, by volume. The blended material is then piled in covered bays that are equipped with a controlled and sophisticated static pile aeration system built under the concrete floor (refer to Exhibit 6). Composting is an aerobic process that begins as air is forced into the piles. This increases the temperature of the pile, which is constantly monitored from various locations, to a point
where pathogen destruction and reduction of vector attraction occurs. This process can be completed in 15 to 30 days.

Exhibit 6. Static Pile Composting Operations at the SWPF

After the process of pathogen reduction is complete, the piles are then moved outside to windrows, to cool and cure (refer to Exhibit 7). The curing piles are sampled and tested before the screening and distribution takes place to ensure the material meets the requirements for Class A material in conformance with EPA 40 CFR 503 regulations. The composting facility and process is regularly inspected by regulatory agencies and the City of Moscow.

Exhibit 7. Curing Compost Piles at the SWPF
The City of Moscow offers compost free of charge to residents of the City of Moscow and Latah County. It is available at the SWPF during normal business hours. The uses and best practices of the compost offered by LSI are:

- The compost is safe for use on lawns, turf, and as landscape mulch.
- The compost is not recommended for use in vegetable or flower gardens. Trace residues of broadleaf herbicide may be present and potentially affect sensitive plants.
- This compost is recommended to only be used in a manner consistent with these recommendations to avoid risks to sensitive plants.

2.3 Moscow Recycling Center (MRC)

The MRC is located at 401 N. Jackson Street in the City of Moscow. Moscow Recycling is a public/private partnership between the City of Moscow and LSI and offers recycling services for both commercial and residential customers with over 30 commodities accepted. The center sits on a parcel of land with an area of approximately 72,900 square feet (or 1.67 acres) and is situated between N. Almon Street to the west, N. Jackson Street to the east, private property to the north, and C Street to the south. Exhibit 8 shows a photograph of the MRC.

Exhibit 8. View of Recycling Center and Redemption Office Looking Northwest

The facility is open 24 hours a day, 7 days a week for drop-off of recyclables and yard waste. The buyback office and main office hours are Tuesday through Saturday, 9:30 am to 5:30 pm. The facility offers large volume drop-off Tuesday through Saturday from 10:00 am to 4:00 pm. Much of the property is enclosed by perimeter chain link fencing. There is a grade-break with a z-wall (retaining wall) between the yard waste drop-off area on the west side of the property along N. Almon Street and the main building.

In 2013, the City reported that there was insufficient expansion capacity at the MRC. Recycling had grown from approximately 2,424 tons annually in 1995, to 3,644 tons in 2013, over a 50% increase since the center was opened. Operating with the original 1993 design, it was reported that warehouse/dry storage areas of the MRC were becoming inadequate and there were safety concerns with vehicles/equipment interfacing with people. These issues will continue to become increasingly problematic with continued population growth and increased volumes of recyclables.

The long-term goals reported by the City in 2013 were to:
- Increase the overall capacity and capability of the City’s recycling program and facilities,
- Reduce the number of risk factors involved with public interaction with forklift/skid steer equipment at the Recycling Center, and
- Decrease the frequency and length of wait times at the MRC.

The City is currently looking at relocating the existing recycling processing and baling components of the MRC to the SWPF, when property where the existing MRC is located gets repurposed for a different City use. The primary intent of the changes proposed for the new recycling center is to decouple the processing and baling components and still provide a convenient drop-off location for recyclables and yard waste for the public within the City limits. This will require development of a new piece of property somewhere in town to continue to provide this convenience to its residents.

Prototypical layout concepts for the new recycling center are being prepared and are included in a separate technical memorandum, “City of Moscow Recycling Center Prototypical Layout,” (Great West, September 2018).

### 2.4 Curbside Collection Program

The City of Moscow provides curbside collection of MSW on a weekly basis through its franchise agreement with LSI. The curbside recycling program began in 1999, with collection of pre-sorted materials. This program continued until February 1, 2016 when the City implemented single-stream (“no sort”) recycling collection every other week with single family customers collected on one week and apartment complexes and Good Samaritan Society duplexes collected on alternating weeks. The single-stream curbside recycling program costs are included in the refuse rates whether one chooses to participate in the program or not. Participation in the single stream curbside recycling program is easy and may potentially result in downsizing of current solid waste service levels, resulting in savings on monthly refuse bills. In January 2018, the City extended the curbside collection program to businesses.

The single-stream recycling program adds convenience and customer participation, resulting in an increased diversion rate and reduction of garbage going to the landfill. Residents can choose either a 65 or 95-gallon recycling roll cart. Materials that are currently accepted in the single-stream bins are shown in [Exhibit 9](#). Glass is collected at the MRC.
Exhibit 9. Acceptable and Unacceptable Materials for the Curbside Collection

Moscow residents are encouraged to drop-off extra recyclable materials at the MRC or wait until the following week for the next curbside pick-up. If residents try to put more garbage than will fit into their roll carts, they are charged additional fees. Residents that produce more waste, pay more, under this “volume based” system. Volume based billing reflects the idea that residents who produce more waste should be charged accordingly. Tailoring the size of the roll cart to the amount of waste produced and charging a higher fee for larger cart sizes encourages residents to recycle and reduce the amount of waste they produce.

Currently, aluminum cans, tin/steel cans, cardboard, mixed paper, shredded paper, plastic grocery sacks, and plastics #1-7 are accepted for recycling both curbside and at the MRC. Glass is not accepted at the curb but is accepted at the MRC. Lightbulbs, window glass, lead glass, fluorescent bulbs, ceramics, and dishes, are not accepted at the MRC.

Changes in the global recycling markets are affecting the types of materials that can be readily recycled. This in turn is impacting recycling programs across the U.S. and driving
communities to reassess their recycling programs. The City of Moscow is embarking on an education outreach program to inform the community about these changes and plans to revamp the list of materials that are collected for recycling. For example, there is currently no market for #3 through #7 plastics. Commingled plastics that are collected in single-stream programs are baled and hauled all together to regional material recovery facilities so that #1 and #2 plastics can be separated. The rest of the plastics are landfilled. This adds extra costs for hauling and handling of these materials that could otherwise be avoided if they were not collected in the first place.

2.5 Community Outreach

The City of Moscow utilizes several social media platforms to reach their citizens and keep them informed and educated on new policies, programs and events. The City uses Facebook, Instagram, Twitter, and YouTube to stay connected with its citizens.

As part of the sanitation system master planning, a series of community outreach and surveys were conducted in 2018 to gather feedback from system users. A “three-pronged” survey approach was administered by the City that included mailed written surveys, focus group interviews, and intercept surveys at the MRC.

2.5.1 Mailed Written Surveys

The City mailed out 1,200 surveys to randomly-selected City residents that covered both the City’s sanitation services and recycling services. Each of the households was first mailed a postcard explaining that they would be receiving a survey the following week. The survey packet included a cover letter from the mayor, the survey form, and a self-addressed-stamped envelope. Of the 1,200 surveys, 35 were returned non-delivered and 274 were completed and returned for a response rate of 24%. This response rate was reported by the City to provide a sufficient sample size to result in 95% confidence interval for most questions, making it statistically valid and representative of all citizens of Moscow. Twenty-four questions were included in the survey. Eight of the twenty-four questions were asked with five possible answers, resulting in a means to statistically measure the results on a Likert scale in a percentage format. The remaining questions were a mixture of “open-ended,” yes/no, or multiple choice.

The overall take-aways from the written survey pertaining to recycling services included:

- The overall majority (90%) of the respondents rated the City’s solid waste services as “good” or “excellent.”
- 41% of the respondents knew that free compost was available to the public at the SWPF.
- 74% of the respondents indicated that they participate in the single-stream curbside collection program; those that didn’t participate noted that they lived in apartment complexes3 dropped off their recyclables at the Moscow Recycling Center, lived on

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3 Recycling at apartments in Moscow is available. Many of the multi-family units have recycling carts; however, at some multi-family complexes, recycling has been stopped because of past contamination issues. Property managers/owners have chosen not to provide the services for their tenants. All multi-family units pay a monthly “recycling base fee” in the City of Moscow whether they choose to participate or not. The City has rolled out two major “contamination education efforts” where LSI tags the contaminated carts and writes on the tag what the issues are. If not corrected after three consecutive stops, the carts are removed. It has been challenging for the City to provide recycling services to some multi-family units if the property managers are unwilling to pass on information to their tenants on how to properly recycle. The City continues educating the property managers/owners, and in some cases, the tenants are demanding recycling services from the property managers/owners.
the U of I campus, had no container, did not know about the program, or other similar reasons.

- When asked about the recycling collection service type, 72% of the respondents indicated they use a roll cart and 5% used a shared roll cart.
- Majority of respondents rated their level of satisfaction with the overall curbside collection program as Excellent & Good.
- When asked if they are interested in seasonal yard waste collection at the curb, over 60% of the respondents indicated that they were not interested. About 12% indicated that they would pay an extra $4 per month for seasonal collection.
- Overall general comments about the curbside collection program mostly included remarks pertaining to not providing glass pick anymore, high cost for limited service, needing larger containers, more frequent collection (weekly rather than biweekly), providing seasonal fees/pay-per-use system, offering recycling at apartment complexes, and being happy with dropping off yard waste at the MRC.
- When asked about the types of materials that they drop-off at the MRC, the majority were glass (64%), corrugated cardboard (60%), yard waste (56%), aluminum cans (37%), magazines (35%), and mixed paper (32%).
- The survey included questions for rating virtually all services provided by the MRC. Over 80% of the respondents rated general satisfaction as Excellent & Good. Almost 80% of respondents rated wait times as low. Although still rated high, some of the other aspects of interaction with staff and equipment were rated lower relative to the other services.
- When asked about the most important consideration to them regarding relocation of the MRC, the majority of respondents wanted it kept within city limits (74%). They also wanted to keep yard waste drop-off (54%), provide better accessibility (46%), and continue to provide sorted material drop-off (30%).
- Other improvement suggestions for the recycling center included: accepting full-length fluorescent bulbs, providing battery recycling, providing better lighting and safer parking, providing larger containers, providing recycling at apartments (see footnote 3), and improving traffic flow.
- The survey asked about the level of satisfaction for the yard waste drop-off area at the MRC. The majority of respondents indicated their level of satisfaction with wait time and general satisfaction as “Good.” Adequate traffic flow, safe and convenient access, and space to maneuver rated in the “Fair” and “Poor” range.
- When asked about a new location for yard waste drop-off, respondents indicated that they prefer to have it within the city limits (55%), easy to access (53%), be safe and convenient (37%), and have a larger service area (31%).
- Other comments pertaining to the yard waste drop-off area include: accommodating more vehicles, better traffic flow, keeping it free, provide a drive-through, and enhance safety.
- Some notable general comments and suggestions about the City’s recycling services included: adding more recycling options downtown, better outreach to citizens about free compost, adding food composting, and consider changing program to a pay-per-use system.

2.5.2 Focus Group Survey
Following the written survey process, the City organized community focus groups with only moderate success. Initially, the City invited 100 randomly-selected utility payers to
participate. Only a few responded that they would attend, and so, the City turned to social media to request participation from City residents. Those that were interested were asked to come to the City Hall during one of three 1-hour time slots on May 31, 2018, at either 7 am, 12 pm, or 5:30 pm. All sessions had at least one participant with three participants at the 5:30 pm session. The City facilitated each of the sessions and topics included site accessibility, seasonal curbside yard waste collection, and use of the Moscow Recycling Center and Redemption Center. The following were take-aways from the focus group sessions:

- Moscow residents are eco-conscious and tend to over-utilize the recycling facility by sorting recycling materials themselves, even when single-stream (“no sort”) is available at the curb.
- When it comes to safety and accessibility, the participants are concerned with the size of the Moscow Recycling Center, especially pedestrian safety and navigating around the center.
- The primary barrier for proper recycling is a lack of knowledge and confusion as to what can and cannot be recycled, or the proper methods of recycling.
- The cost of recycling was also a major concern and the focus group participants viewed use of the facility by non-County residents as “theft of service.” Several recommendations included monitoring the MRC for non-residents and limiting access for non-paying members.
- Adding curbside collection for yard waste and glass would be good additional services that could increase the use of the single-stream collection program.

2.5.3 Intercept Surveys

As a final step in the community outreach, the City conducted intercept surveys at the MRC to better understand the residents’ actual practices at the center. The survey was designed to collect basic demographic information about individuals using the center and their recycling attitude, behavior, and knowledge, as well as awareness and participation in the single-stream recycling program. A total of 98 users were surveyed. The first survey was conducted on Friday, June 22nd and the second on Saturday, June 30th. The two days were purposely selected to cover a week day and a weekend day.

An intercept survey was conducted in 2016 by the Sanitation Division and included 485 respondents. The 2016 survey served as the general guideline for the approach and questions for this survey. Four questions were asked and are summarized below with the results:

- **Residency: Do you live in Moscow? If no, where do you live?** These questions were asked to determine what percentage of the users were from Moscow, residents from Latah County, or non-county residents. Of the respondents, 67% were from Moscow, 23% from Latah County, 9% from out of county, and 1% not provided. Only 4 respondents stated they were from Pullman. In comparison to the 2016 survey, 48% of the respondents were from Moscow, 39% from Latah County, and 13% from out of county.

- **Sorted Materials: What types of sorted materials did you bring today?** This question was asked to get a sense of the materials types that users are willing to drop-off at the center. Glass (20%) and cardboard (20%) were the two items that were brought the most respondents, making up 40% of the overall recyclables, followed by plastics
(16%), aluminum (15%), paper (14%), and newspaper (8%). In 2016, glass (45%) and cardboard (31%) were the majority again but a much higher combined percentage of 76%, followed by plastics (12%) and newspaper (8%). Aluminum was not included as an item in 2016.

- **Single-Stream Curbside Recycling**: Do you participate in the curbside recycling program (only for residents of Moscow)? If no, why do you prefer to separate the material? These questions were asked to determine if users were also participating in the curbside program and why they were choosing to drop off recyclables at the center. 60% of the respondents in 2018 did not participate in curbside recycling as compared to 45% in 2016. The reasons for not participating in single-stream and delivering materials to the recycling center included: living in apartment complexes, bringing glass anyway, curbside is not available where they live (live out of town), having large amounts of cardboard, and preferring drop-off to recycle everything.

- **Overall Quality**: How do you rate the quality of the recycling at the Moscow Recycling Center (with list of multiple choices – a) Excellent, b) Very Good, c) Neutral, d) Poor, e) Very Poor, and f) Don’t Know. This question was asked to get a sense of the overall satisfaction of the recycling center. 94% of the respondents rated the quality as Excellent or Very Good. This question was not asked in 2016.

- **Other Sites**: Do you use any other-off sites (yes or no)? If yes, please indicate which other site you use. This question was also not asked in 2016. 51% of the respondents indicated that they use the yard waste drop-off area, 38% use the transfer station (SWPF), and 11% indicated they use out of town sites.

### 2.5.4 Survey Summary

Overall, the survey results indicated that the community is satisfied with the recycling services provided by the City including those at the MRC. The community wishes to have the recycling center remain within the City limits should the center need to move. The facility is used extensively by people that want to “do the right thing” and recycle as much as they can, even though they have, and may also participate in, the City’s curbside single-stream collection program. County and non-county people alike also use the facility, although there is some expressed concern from City residents of people using the facility that are not paying members.

The cost of recycling is a priority to the community and respondents want the City to consider a ‘pay-as-you-use fee’ while also continuing to provide free yard waste drop-off. Although the focus group identified both glass and yard waste for curbside collection, the written survey indicated that curbside collection for yard waste was not a priority, and residents didn’t want to pay the extra cost for its collection. Continuing to provide yard waste drop-off at the new convenience center is a top priority of users, but with better access and safety than is currently provided at the MRC.

Curbside glass collection was ceased with the adoption of the single-stream program in February 2016. It continues to be a large percentage of the recyclables dropped off at the MRC. Reinstating curbside glass collection was mentioned as a possible program improvement based on survey comments and the focus groups. However, collection of glass with comingled materials is fraught with issues. Glass is heavy and is notorious for breaking and contaminating other recyclables. Moscow’s quad-city neighbor, Whitman County, is eliminating glass from their single-stream collection program because of these very issues. Another option would be to collect glass in a separate curbside container. This would add an
additional pickup and increase cost to the program. Based on survey feedback, the community’s priority is to keep the program inexpensive, so separate glass is probably not viable.

2.6 Sanitation Rates Comparison

As part of this assessment, sanitation services rates for residential customers in Moscow were compared to other communities of similar size in the Pacific Northwest, including Pullman, Walla Walla and Wenatchee, Washington and Lewiston and Rexburg, Idaho. A key element of the comparison is the availability of a local landfill in each the community. Pullman’s waste is sent to the Whitman County Carothers Road Solid Waste Facility and transferred by truck to Spokane where it is put on a railcar and hauled to Republic Service’s site in Roosevelt, Washington. Walla Walla, Washington owns and operates its own landfill – Sudbury Road Landfill. Wenatchee also has a nearby landfill, although it is operated by a private company. Lewiston uses the nearby Asotin County Regional Landfill in Clarkston, Washington, and Rexburg collects and transfers their waste to the Circular Butte Landfill in neighboring Jefferson County.

Table 2 provides a summary of the curbside collection rates.

Table 2 – Moscow's Waste Collection Fees Compared to Other Cities' Rates

<table>
<thead>
<tr>
<th>City</th>
<th>35-Gallon</th>
<th>65-Gallon</th>
<th>95-Gallon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moscow</td>
<td>$20.50</td>
<td>$26.30</td>
<td>$32.30</td>
</tr>
<tr>
<td>Pullman, WA</td>
<td>$18.14</td>
<td>$24.14</td>
<td>$30.13</td>
</tr>
<tr>
<td>Lewiston, ID</td>
<td>$13.23</td>
<td>$20.11</td>
<td>$24.81</td>
</tr>
<tr>
<td>Rexburg, ID</td>
<td>NA</td>
<td>NA</td>
<td>$21.34</td>
</tr>
<tr>
<td>Walla Walla, WA</td>
<td>NA</td>
<td>NA</td>
<td>$23.30</td>
</tr>
<tr>
<td>Wenatchee, WA</td>
<td>$12.40</td>
<td>$17.36</td>
<td>$22.37</td>
</tr>
</tbody>
</table>

Notes:
1. Instead of the 35, 65, and 95-gallon bins, Pullman offers 32, 64, and 96 respectively. Also, they offer 10 and 20-gallon bins, as well as an option for two and three bins. Pullman garbage collection is every week, and recycling is bi-weekly.
2. Lewiston offers 32, 64, and 96 bins. Rates include solid waste, yard waste, and curbside recycling. Commercial rates are the same as residential rates. Garbage collection is every week and recycling is bi-weekly. Yard waste collection is once a week from the last week of March through November and once a month from December through the first week of March.
3. Rexburg only offers a 90-gallon bin. Weekly pickup of garbage costs $21.34. Bi-weekly pickup of garbage is $12.78, and monthly pickup is $6.50. Recycling is collected bi-weekly. The first recycling bin is free and additional bins cost $9.00 per month.
4. Walla Walla only offers a 96-gallon bin with weekly pickup. Recycling is also collected with a 96-gallon bin, is picked up every other week and costs an additional $4.76 a month. Green waste is accepted in a 64-gallon container and will cost an additional $17.80 a month.
5. Wenatchee offers 35, 64, and 96-gallon bins. Rates are for weekly pickup of garbage. Other options such as monthly pickup of the 35-gallon bin and weekly pickup of up to 6 cans are offered. Every other week recycling is $8.40 and yard waste is $9.90.

Although within a few dollars, Moscow’s rates are slightly higher than the other cities’ rates. The City of Moscow’s long-haul of solid waste is one of the longest, if not the longest of all the communities that were compared. This is most likely the primary driver for the higher rate. The City also offers exceptional sanitation services based on the survey results and the
Sanitation Division’s community outreach. Providing a centralized and convenient recycling center in the community comes with a price.

The City also recently issued a request for proposals for haul and transport services. This will result in lower fees for these services, which will provide an opportunity to reassess the fee structure while also continuing to provide convenient and excellent sanitation services for the community of Moscow.