Recycling in Petersburg

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Executive Summary

Petersburg Borough has been a member of the Southeast Alaska Solid Waste Authority (SEASWA) since its inception in 2009. SEASWA has been a mechanism for cooperation and coordination among eight communities to develop and implement a regional strategy for waste disposal and recycling that is both economically and environmentally sound.

After a lengthy process involving issuance of a Request-for-Qualifications and a subsequent Request- for-Proposals, SEASWA selected Republic Services and a subsidiary, Regional Disposal Company (a Washington based solid waste management company) to provide waste disposal and recycling services. Refuse will be transported by barge, truck and rail to Republic's Roosevelt Landfill in Klickitat County, Washington. Recyclables will be transported by barge and truck to Republic's Materials Recovery Facility (MRF) in Seattle. However, SEASWA is not a contracting entity. Each SEASWA jurisdiction has its own contract directly with Republic Services or will access the Republic Services contract through another member community of SEASWA.

For the past fifteen years the Petersburg Borough has maintained a contract with Republic Services for waste disposal. As a result of SEASWA's involvement in developing a regional strategy, Petersburg was able to secure a long-term contract renewal and modification with Republic Services. This contract removes any uncertainty regarding future refuse disposal methods and offers the opportunity to redesign our recycling program. Based on analysis performed by the Borough's Sanitation Department of the contractual terms and conditions put forth bv Republic Services, recycling can be made more convenient and effective for Petersburg residents, businesses, and institutions.

Republic Services has offered a variety of recycling alternatives and associated rate structures to SEASWA members including the Petersburg Borough. Under all cases and scenarios the more recycling we do the more we can control our expenses for refuse disposal.

After careful analysis, Sanitation staff is recommending a shift to a program based on collection of commingled recyclables where no separation is required and all materials can be mixed together by residents and businesses. Staff believes this is the answer for stabilizing waste management expenses, increasing customer participation and satisfaction, and thereby increasing the amount of material diverted from disposal. Staff research shows many jurisdictions in the Lower 48 have adopted the commingled approach to residential and commercial recycling with similar positive results.

This report will discuss the many aspects of our local recycling program, the results of the recent commingled recycling trial, and the finances and options to consider when choosing the future direction of recycling in Petersburg. Specific recommendations on how Petersburg should proceed with implementing commingled recycling are contained in Section 13 of this report.

Contents

1.0 Past and Current Petersburg Recycling

Recycling has long been a part of Petersburg's sanitation operation. It was developed in the 1990's as a means to protect the environment and decrease the amount of solid waste that was landfilled locally. When local landfilling was no longer practiced, recycling was important to decreasing costs of shipping solid waste to Washington State.

Public drop-off locations for recycling have been the mainstay for Petersburg's recycling program. Initially, numerous areas were designated for siting of recycling dumpsters where citizens could drop off their materials free of charge. Unfortunately, certain drop-off sites have historically been misused by some in the community and are an eyesore to many locals. Drop-off locations have decreased due to the disfavor caused by the messy sites. Currently, drop-off sites still exist at the Baler and at the Scow Bay Fire hall.

Curbside residential recycling in Petersburg was started by the Petersburg Indian Association (PIA) with grant assistance through an Indian General Assistance program (IGAP). PIA staff developed the concept and began advertising for free curbside service. They would collect the separated materials on the same day that residents set their garbage out and the recyclables would be delivered to the Baler facility for the Sanitation Department to bale and ship to recycling vendors in the lower 48. The program started small and grew quickly by word of mouth and positive experiences of customers that were benefitting from the free service. The PIA also took on collection of cardboard and office paper from local commercial businesses and institutions and the collection of junk mail from the Post Office – a service that was originally performed by the Petersburg Pilot and Rotary Club.

When PIA was informed that the IGAP grant would no longer support the tribal recycling program, the Borough stepped up to continue the service that was being provided to the community. A Request for Qualifications was published seeking qualified entities willing and able to collect recyclable materials. PIA was the only respondent to this solicitation. A contract was agreed to and the Borough began to pay PIA to continue the curbside program in 2010. The recycling service was, at this point, still delivered without a fee being charged residents, businesses, or institutions.

The curbside customer base has continually grown over the years with the Borough currently serving 462 customers on a weekly basis. This is approximately 38% of the current solid waste customers residing in Petersburg.

The following chart shows the expenses and revenues received from the recycling program. These numbers do not include staff time to bale and ship materials to market, but do include the cost of the PIA collection contract and shipping of the commodities to various markets in Seattle. The timeframe covered by Table 1 was before our recently renewed and expanded

contract with Republic Services, under which all recyclables are sent to their recyclables processing facility in Seattle.

Revenues are generally low due to relatively small volumes of recyclables sent out of Petersburg and fluctuating recycling markets. One of the major advantages of recycling with Republic Services is that our recyclables will be merged into a much larger pool of material processed and marketed through their Seattle MRF. Petersburg will benefit from these economies of scale. Commodity prices will always go up and down but the negative fluctuations are likely to be less severe.

An aspect of the overall recycling finances, which is important to understand and develop, is the "Avoided Disposal Cost" of the program. Diverting recyclable materials from the waste stream means we are not paying the costs for handling these items as trash. The rate structures from Republic Services give clear financial incentives to recycle portions of the waste stream as opposed to disposing of the same materials as solid waste, thus emphasizing this concept and stabilizing disposal expenses over time.

Table 1: Historical Recycling Revenue and Expenses

Fiscal Year	Revenues	Expenses	Avoided Disposal Cost	Net Revenues (losses)
2009	$13,130	$8,365	$15,217	$19,982
2010	$32,143	$9,370	$18,310	$41,083
2011	$3,425	$46,655	$11,725	($31,505)
2012	$11,460	$45,757	$13,956	($20,341)
2013	$16,414	$46,125	$16,029	($13,682)

Note: Net Revenues are presented as Revenues plus Avoided Disposal Cost minus Expenses. Recycling revenues in 2010 were bolstered by the first ever payment ($30,000) for bulk scrap metal removed from the landfill. Unfortunately this only occurs every three to four years. Expenses jumped in 2011 due to the Recycling Collection Contract.

2.0 Solid Waste and Recycling Contract

Recently, the Borough entered into a long-term contract with Republic Services, dba Regional Disposal Company, for the shipping and disposal of Petersburg's solid waste, as well as the shipping, processing and marketing of Petersburg's recyclables. This contract is basically an extension and modification of a contract that Petersburg has had with this company for the last 15 years. However the new inclusion of the recycling component is very important. Not only does the Republic contract provide for long – term stability of solid waste disposal rates, but it provides an opportunity to tap into the substantial resources this company has in the worldwide

recycling marketplace. For all recyclables sent to Republic Services, after shipping and processing fees, Petersburg receives a 100% pass-back of revenues received from our material.

Republic Services has a very large and technologically advanced Materials Recovery Facility (MRF) in Seattle where they accept, process and market approximately 200,000 tons of recyclables every year. With this volume of material passing through their facility on a regular basis, the company has staff working constantly on marketing of their recyclable materials. This resource is now working for Petersburg and other SEASWA communities and will be aiding Petersburg to get as much pass – back revenue as possible from the recyclables sent to Republic, thus reducing the overall costs of our recycling program.

Petersburg currently recycles approximately 260 tons per year from our annual 2,500 tons of solid waste. Petersburg's recycling volume doesn't provide much opportunity to large – scale recycling vendors, nor do we have the staff to constantly seek out the highest paying markets for each recycling commodity. The benefit of using Republic's marketing resources will therefore pay off immediately in higher commodity pricing for our recyclables.

Another benefit of Republic Services' contract is the fact that they accept a wide variety of recyclables. An opportunity that hasn't existed before for Petersburg is the inclusion of pricing for acceptance of commingled or mixed recyclables, both with and without glass containers. Glass is historically a difficult commodity to deal with in Petersburg so the opportunity to recycle it for beneficial use is very attractive to the Sanitation Department. They also update their recyclable pricing on a monthly basis to let us know what the recycling markets are doing and what we will receive for our material sent to them.

The Republic Services contract and its new recycling provisions allow the Borough to plan for reduction of solid waste disposal costs and increased diversion due to our recycling program. Because costs are more stable in the long run, strategies for increasing the volume of recovered recyclables have become much easier to work out. An excellent working relationship with Republic Services has created an opportunity for a more convenient and cost-effective recycling system.

3.0 Increased Recycling Rate = Lower Costs Overall

The key to lowering sanitation costs and funding recycling programs in Petersburg is to decrease the amount of waste we dispose and increase the amount of materials we recycle. Table 2 below shows the potential cost savings that can be achieved with different recycling or diversion rates. For purposes of comparison, the first line in the table shows what the situation would be if no diversion took place. In that case, under the renewed / expanded contract with Republic Services, the cost to dispose of the Borough's 2,545 annual tons of waste would be $ 267,255. This would be the cost of getting refuse via barge, truck, and train to Republic's landfill in Klickitat County, WA and does not include the cost to the Borough for collection. The current recycling rate, calculated as of 2012, is 10.5%. The calculations in Table 2 incorporate an assumed recycling "rebate" to Petersburg based on market conditions at the time this report

was written; such rebate is part of the terms and conditions in the renewed and expanded contract with Republic Services.

For ease of reference the columns of data have been numbered and are explained as follows:

1. The recycling or diversion rate
2. Tons recovered for recycling annually
3. Tons disposed annually based on designated recycling rate
4. Cost to send recyclables to Republic Services MRF in Seattle based on renewed / expanded contract between Petersburg and Republic; does not include cost for collection of recyclables; assumes all recyclables, including glass, are commingled together
5. Cost to dispose of refuse by transport to Republic Services Roosevelt Regional Landfill in Klickitat County, WA based on renewed / expanded contract between Petersburg and Republic; does not include cost for collection of waste
6. This is the combined cost for waste disposal and recycling yielded by adding columns 4 and 5
7. This is the difference between $ 267,225 (disposal cost without any recycling) and the figure in column 6.

Table 2: Potential Cost Savings at Various Recycling Rates

1	2	3	4	5	6	7
Recycling Rate	Recycling Annual Weight T/yr	Solid Waste Annual Weight T/yr	Costs of Recycling $/yr	Solid Waste Disposal Cost $/yr	Solid Waste Costs plus Recycling Costs $/yr	**Potential Savings due to Recycling**
0.00%	0	2545	$0	$267,225	$267,225	**$0**
10.5%	267.2	2277.8	$8,818	$239,166	$247,985	**$19,240**
20.0%	509.0	2036.0	$16,797	$213,780	$230,577	**$36,648**
30.0%	763.5	1781.5	$25,196	$187,058	$212,253	**$54,972**
40.0%	1018.0	1527.0	$33,594	$160,335	$193,929	**$73,296**
50.0%	1272.5	1272.5	$41,993	$133,613	$175,605	**$91,620**
60.0%	1527.0	1018.0	$50,391	$106,890	$157,281	**$109,944**

Note: T = tons

Table 2 illustrates that with an increase in recycling rate, the costs for solid waste disposal go down and the costs for recycling go up. The key that saves the Borough money is that the costs to recycle are approximately 66% less than the costs to dispose of solid waste.

You can see that the savings due to recycling do not meet the current expense of our recycling collection contract. However, if our community can achieve a recycling rate of 30% or higher, the recycling program will fund the collection contract ($53,000 annually, the updated cost as presented by the collection contractor) and maintain the level of current solid waste service rates in Petersburg. Many communities that have aggressive recycling programs achieve a recycling rate of over 40% and some have even seen a 60% increase in overall recycling rates when implementing commingled recycling systems. With this information, Sanitation staff strongly believe that a 30 – 40% recycling rate can be accomplished and possibly exceeded in Petersburg Borough.

4.0 Commingled Recycling Trial

In order to determine the operational feasibility and potential impact of a commingled recycling system in Petersburg the Sanitation Department ran a limited duration pilot project in June and July 2013. We needed to see what effect this approach would have on customer participation and the quantities of materials recovered for recycling.

The six week trial was offered to the Borough's current residential voluntary recyclers that are picked up on Wednesdays. Information regarding what was to be accepted in the commingled stream was sent to every participant and, at the suggestion of staff, the Borough disseminated yellow recycling bags to the participants so they would have a container to use to store their recyclables and also keep them dry when set out on the curb. Commodities accepted in the commingled stream were aluminum, all plastics except Styrofoam and cellophanes, tin, newsprint, junk mail, small cardboard, and other paper and glass containers. This is an expansion of the materials normally collected in our current source separated program.

The Borough sent out surveys to the participants after the trial was over and also surveyed Sanitation and PIA staff to receive insight from an internal standpoint. Approximately 25% of participants returned surveys and the results of the survey are included as Appendix A to this report.

The trial had some initial hurdles to overcome but in the end it was a great success. The bags proved to be a very simple way to collect the materials avoided the need for specialized collection equipment. The material was emptied from the bags at the baler to check for unacceptable materials and prepare it for baling. The mix of materials seemed to bale well with few concerns over "shedding" of broken glass and other materials. Shrink wrapping the bales helped quite a bit with this.

Survey respondents enjoyed the ease and convenience of putting all recyclables in one container and taking it to the curb. There was a less enthusiastic response to the question of voluntarily paying for such a service and a majority of participants did not support mandatory recycling in Petersburg. Overall, an overwhelming majority of respondents supported a move to a commingled system.

Staff responses were also mostly positive about the trial. The bag system seemed to work well from their standpoint but a majority of staff were not supportive of a permanent bag system due to concerns about broken glass. There were questions about customer/Borough/contractor communication during the trial, but the customer participants in the trial felt that the service was provided as advertised and expected.

The numbers produced from the trial were very clear about what a commingled program can do to increase our recycling rate. Before the trial, Wednesday recyclers set out an average of 2.3 pounds of material per week. **During the trial, that weight jumped to an average of 9.7 pounds per week. This constitutes a 420% increase in recycling weight.** Appendix B compares the historical Wednesday weights versus the trial project weights.

These results indicate that Petersburg's overall recycling rate of 10% can increase to 40% or higher if a commingled program is implemented. Any hesitation on whether or not to go to a commingled system was answered by the trial. However, developing the details of the program is a large undertaking with many different possible scenarios and variables, both operationally and politically. These are discussed in the report sections that follow.

5.0 Future Options for Petersburg Recycling

Working out details of a recycling direction begins with evaluating options. This section of the report will discuss several options for recycling in Petersburg, including variations to our current system and alternatives that involve moving to a commingled program.

5.1 Source Separated Program

The current system in Petersburg for residential and commercial recycling is a combination of voluntary curbside collection (for residential customers) and drop-off sites. Commercial customers can also voluntarily sign up for cardboard and office paper recycling collection and some of the bars and restaurants have their separated glass picked up by the Sanitation Department.

The common theme in the program is that all materials are separated by the customer, at the source, and kept separate for baling, shipping and marketing. No sorting or separation is needed by Sanitation staff as it is done by the customer.

Improvements to this program that may boost recycling rates include:

- Expansion of accepted commodities, although all commodities will still need to be kept separate.
- Implementation of a mandatory recycling ordinance so that all Sanitation customers were also required to participate in the recycling program.
- Expansion of curbside recycling pickup to include all businesses in Petersburg.

Pros

- Little additional capital expense to continue with current program.
- System is already understood by customers.
- System is already working and staff has worked out logistical problems.
- Recycling pricing for source separated materials is generally higher than for commingled recyclables.

Cons

- All materials must be separated by the customer, which takes time and storage space, and kept separate throughout the delivery and baling process.
- Not likely to increase recycling rate to suggested target levels, which is necessary to achieve significant positive economic benefits from reduced disposal costs.
- Current voluntary customer base not likely to increase simply due to expansion of commodities accepted.
- If volume did increase dramatically, the contractor may have trouble collecting it and keeping it separate for delivery to the baler.
- Increasing the number of separated materials collected will result in an even more labor – intensive operation than is the case now, and this could lead the contractor to request a corresponding service rate increase.

Expenses

- Likely to be status quo, with no large capital expenses or large variations in collection contract unless voluntary participation increases dramatically.
- $53,000/year.

5.2 Commingled System Using Collection Carts

A commingled system is normally implemented with separate collection carts for recyclables. This provides a weatherproof and animal-proof container that is picked up with specialized collection equipment (cart tipper or tipper arm on a garbage packer truck). Carts are sized to accept at least a week's worth of recycling. Using a larger capacity cart (96 gallons) may make it feasible to collect recyclables every other week rather than weekly, thus cutting down on operational costs.

Pros

- A durable, properly sized container is provided to customers.
- All commingled materials are placed into one container.
- Machinery is performing the tipping of the carts, minimizing worker injury.
- Materials are contained in the packer truck and dumped directly on baler belt for baling.
- No further handling of materials after they are in truck.
- Likely to increase voluntary participation in curbside program significantly.
- Likely to increase local recycling rates significantly.

Cons

- Capital costs are high (see prospective budget below).
- Customer fees may be required for startup or initial funding of capital purchases.
- Existing Contractor does not have correct equipment to collect carts.
- Increases dependency on current packer fleet if Sanitation personnel pick up recyclables, which will increase O&M costs.
- If Sanitation personnel pick up recyclables PIA jobs may decrease locally.

5.3 Cart System Variations and Budgeting

Option A: Cart system picked up by Borough with current trucks. The schedule would be to alternate pickups of garbage and recyclables every other week to avoid purchasing another truck and hiring an additional employee.

Expenses

• Cart purchase (96 gallon carts)	$80,000
• Increased O&M on Borough truck	$ 5,000/yr
• Collection contract reduced to picking up cardboard, office paper and junk mail. Contract reduction unknown.	Less than $53,000/yr
Estimated First Year Costs	Less than $138,000
Estimated Annual Costs	Less than $58,000

Option B: Cart system picked up by Borough with additional truck and employee. Weekly garbage pickup and recycling pickup retained. Purchase used truck and hire one employee.

Expenses

• Cart purchase (64 gallon carts)	$65,000
• Used packer truck	$30,000
• Annual truck O&M	$10,000/yr
• Truck replacement	$ 5,000/yr
• Employee (wage & benefits)	$75,000/yr
• Collection contract reduction unknown.	Less than $53,000/yr
Estimated First Year Costs	Less than $238,000

Estimated Annual Costs	Less than $143,000

Option C: Cart system picked up by contractor with additional Borough truck. Borough purchases used truck for collection contractor to operate. Weekly pickups retained. Collection contractor employs minimum of two collection workers through their contract with Borough. Collection contract costs will most likely increase as additional customers participate in recycling.

Expenses

• Cart purchase (64 gallon carts)	$65,000
• Used packer truck	$30,000
• Truck O&M	$10,000/yr
• Truck replacement	$ 5,000/yr
• Collection Contract	More than $53,000/yr
Estimated First Year Costs	More than $163,000
Estimated Annual Costs	More than $68,000

5.4 Commingled System Using Collection Bags

Maintain a similar approach as used in the commingling trial. A bag system is easy to implement and avoids many of the higher capital costs associated with using carts.

Pros

- High capital costs for carts and collection equipment are eliminated.

- All commingled materials are placed into one weatherproof bag.
- Materials are contained in the bags and put directly on baler belt for baling. No emptying of bags is required.
- No specialized trucks are needed to collect the bags.
- Likely to increase voluntary participation in curbside program significantly.
- Likely to increase local recycling rates significantly.
- Collection Contractor jobs would most likely be retained in the community or even increased depending on customer participation in commingled recycling program.
- Allows for development of a larger customer base for commingled recycling and a proving out of the potential savings of the program before a possible transition to a more traditional cart system.

Cons

- Workers could be injured while handling bags.
- Increases dependency on current packer fleet if Sanitation personnel pick up recyclables.
- Potential increase in payroll expenses if Sanitation personnel pick up recyclables with our truck.
- Hazards from broken glass could harm employees.
- Will require due diligence from collection staff to reject any bags that are contaminated with unacceptable materials.
- Bags are easily destroyed by animals, thus causing litter and requiring labor to clean up strewn recyclables.
- Bags are susceptible to damage by snow plows in winter months, also causing litter and increasing spring cleanup labor requirements.

Option A: Recycling collection service provided by collection contractor. Use plastic bags to collect recyclables on a weekly basis. Bags do not have to be removed or emptied for baling of materials. No need for packer truck purchase or additional employee at Borough. Potentially utilize 15,000 bags per year. Collection contract cost likely to rise due to increased customer base.

Expenses

• Bag purchase	$15,000/yr
• Collection Contract	More than $53,000/yr
Estimated Annual Costs	More than $68,000

Option B: Bags picked up by Borough Sanitation personnel from residences. Potential exists to use one of the Borough's packer trucks to pick up bagged recyclables. Truck has 2 – person crew, one driver and one collector picking up bags from curb. Collector would be an additional employee hired by Borough. Collection contract fee would decrease due to contractor only picking up cardboard, paper and junk mail from commercial / institutional sources.

Expenses

• Bag purchase	$15,000/yr
• Collection contract	Less than $53,000/yr
• Additional Borough employee	$75,000/yr
Estimated Annual Costs	Less than $143,000

6.0 Labor Costs

The expense estimates for the collection options presented above indicate a significant difference in labor costs between Borough employees and contract employees for collecting recyclables. Simply put, labor union contracts, which have been agreed to by the Borough in good faith, provide competitive wages and good benefits to our employees. Contracted labor is not subject to the same wages or benefit packages as Borough employees. The annual cost for two full – time contracted employees is about $20,000 below the cost of the Borough hiring one additional driver.

Both the Borough and our current Contractor could provide jobs to the community in support of the recycling program however, the lower cost of retaining a separate collection contractor may yield a greater benefit to the revamp of the recycling program. By expanding the program at the lowest cost possible, the program becomes financially feasible and results in rate stabilization for all customers. This is a point that requires due consideration as Petersburg moves toward redesigning the recycling program.

The recycling collection service fee of $ 53,000 annually (cited previously) is from the latest communications with the Borough's existing recycling collection contractor. The Borough currently has a contract with the Contractor through the end of March 2014. As that deadline nears, two courses of action could occur: one, a contract renewal may be negotiated or two, a Request-for-Proposals for recycling collection services could be advertised and a competitive process undertaken to seek a qualified and capable entity or company to provide this service. Either course of action may result in lowering or increasing the cost of recycling collection. The

cost of a recycling collection contract depends greatly on the type recycling program undertaken and the labor / resources required to implement it.

The bottom line is that recycling collection services are needed. This need creates jobs in Petersburg and the Borough should try to fill this need as cost – effectively as possible. That could mean the use of a collection contractor, Borough staff for recycling collection or a combination of both as could occur if the Borough collected residential recyclables and a contractor collected commercial and institutional recyclables.

7.0 Paying for the Recycling Program

Recycling saves the community money by diverting solid waste from more expensive landfill disposal to less costly recycling activities. This is due to the renewed / expanded contract with Republic Services that evolved from the combined efforts of the Southeast Alaska Solid Waste Authority members. Increased recycling and associated rising diversion rates are critically essential to using presently budgeted revenues to fund additional programs. In addition, there is abundant local (from our pilot project) and national evidence that a commingled recycling system leads to more participation because of its convenience, thus producing higher diversion rates. Estimated costs to operate a commingled recycling system can incur varying startup and annual expenses depending on which program option is selected by the Borough. Some of the key variables in program design for the Petersburg Borough are whether to use standardized carts or bags for material storage and whether Borough staff, a contractor, or a combination of both will provide recycling collection service to residences, businesses, and institutions.

The primary goal of a recycling program change should be to operate the new program within current Sanitation revenue and expense budgets as much as possible. If this goal is reached, Sanitation rate increases are avoided and if done correctly, rates will actually stabilize for a longer period of time in regards to covering annual operational costs.

It is anticipated the convenience of commingling will encourage more participation in recycling; this has been the pattern in the Lower 48. However, it must be remembered that currently the curbside program is voluntary only. The customers that have signed up for the free curbside service only make up about 33% of the total residential solid waste customers. To truly make a run at a targeted community recycling rate of say 30% - 40%, there needs to be higher participation from the community, both in the residential and commercial / institutional sectors. One third of the community alone cannot make this work.

Table 3 below presents some additional information provided from the commingled trial. It compares the weekly recycling weight per customer before and during the trial and calculates the average quantities of recyclables per week during each time period for all voluntary recyclers and for all Sanitation customers. The table makes it clear that the potential recycling savings will increase dramatically with a commingled system and even more so if additional customers participate in the total program.

Table 3: Savings Comparison – Source Separated vs. Commingled

Source Separated Savings Calculation

	Customers	Source Sep Tons/yr	Source Sep Cost/yr	Avoided Disposal Cost	Savings
Trial Group	120	7.2	$237	$753	$517
All voluntary curbside recyclers	369	22.1	$728	$2,317	$1,589
All Residential customers	1097	65.6	$2,165	$6,888	$4,723

Commingled Savings Calculation

	Customers	Commingled Tons/yr	Commingled Cost/yr	Avoided Disposal Cost	Savings
Trial Group	120	30.3	$999	$3,178	$2,179
All voluntary curbside recyclers	369	93.1	$3,071	$9,771	$6,700
All Residential customers	1097	276.7	$9,130	$29,050	$19,920

Note: Costs/Ton used for this table are $105/Ton for solid waste disposal and $33/Ton for recycling; the recycling cost takes into account the recycling revenue pass-back to Petersburg based on the renewed and expanded contract with Republic Services, and also based on market conditions at the time this report was written.

However, this table does not portray the potential operational and financial impacts of fully extending recycling collection service to commercial and institutional customers. These customers have been offered cardboard, office paper and some glass recycling collection service and also have the opportunity to separate commodities and take them to a drop- off point. It is understandable though that drop – off points for commercial customers are impractical when a large amount of sorting, separation and delivery costs come into play. Most businesses in

Petersburg have chosen to fill a garbage can or dumpster instead of spending labor and fuel on recycling.

Harbor customers can also contribute dramatically to the local recycling rate but it is impractical and unrealistic to expect boat owners to keep recyclables separated on board and to deliver these commodities to a drop-off point. The lack of convenience to the harbor users is holding back the recycling rate in the harbors. The Harbor Department budgets approximately $80,000 per year for garbage service. If commingled recycling containers were available in the harbors and made a practical alternative to placing all materials in trash dumpsters, the community recycling rate would be bolstered and the Harbor department would save significant dollars every year. This is something that could help to stabilize long -term moorage rates in addition to aiding the overall recycling rate in Petersburg.

As documented previously in the report, waste diversion and recycling is the best way for the Borough to reduce solid waste disposal costs and thereby fund the recycling program without raising sanitation rates. The key to increasing diversion is through greater customer participation (both residential and commercial / institutional). Simplifying the program design to incorporate the convenience of commingling recyclables into one storage container is a major step toward that objective. There are also several others ways to potentially stimulate higher participation from the community that fall under the category of public policy and incentives. It should be noted that some of these alternatives are likely more controversial than others. They are discussed in the sections below.

8.0 Mandatory Recycling

The Borough has the authority to require its citizens, businesses, and institutions to recycle. Mandatory recycling could be drafted into the sanitation ordinance and if the Assembly was supportive, this provision could potentially move through the public decision-making process and be implemented. This is probably the only way that 100% participation by Petersburg residents and businesses could conceivably be guaranteed. Making recycling participation mandatory, in combination with implementation of a community - wide commingled collection system, would have the greatest chance of successfully meeting targeted recycling rates over time. As the results of the commingled trial survey illustrate, 42% of the respondents indicated they would support a mandatory recycling provision. The possible negative impact of introducing the politically contentious policy of mandatory participation at the outset of implementing a transition to commingled recycling should be given due consideration.

There could also be fees associated with the mandatory service. If diversion rates were not met and the expenses of the recycling program were not covered by an offset in disposal savings, fees could be implemented to cover the costs of the program. This policy may also carry with it the potential for political controversy.

Another fee option for mandatory recycling involves the development of a penalty system for failure to recycle. In such a program, all customers will be expected to recycle and if recyclable materials are found in their garbage cans instead of their recycle container, they will be fined.

This supports delivery of recycling to all Sanitation Department customers within the same rate structure currently used, but provides a penalty-driven revenue stream from customers that violate the rules of the program. Although this is a possibility, it has the potential to be very contentious when fines are levied. It would also require collection staff to be very diligent about checking garbage cans and recycling containers for misplaced materials. This can be time – consuming and lead to public relations nightmares for the Sanitation Department.

9.0 Voluntary Curbside Commingled Recycling

Maintaining the same voluntary status of the current program allows customers to decide if they wish to recycle or not. Given the chance to participate in the very simple commingled system, it is anticipated that the involvement with this program would increase substantially over the present level of participation. Including commercial / institutional customers in a curbside commingled program would extend convenient recycling service to all Sanitation Department customers and offer them a direct way to control their monthly refuse disposal cost.

In terms of service fees, the ideal would be to retain the free status of local recycling services. Fifty percent of commingled trial respondents did indicate that they would be willing to pay a minimal fee for this type of program. However, the implementation of fees could deter potential voluntary customers from participating so fees for service should only be considered if disposal cost savings and revenue from sale of recyclables did not cover recycling program expenses.

10.0 Participation Incentives

Another way to enhance participation on a voluntary basis would be to implement monetary incentives to residential customers.

For commercial customers, incentives are already built into our Sanitation Department rate structure. There are many different solid waste collection service levels available to local businesses and institutions. By signing up for a curbside commingled recycling program, they will be diverting volume from their solid waste stream and will be able to reduce their monthly garbage bills accordingly. For example, if a customer that is filling a 540 gallon (3 cubic yard) dumpster three times per week could reduce their service level by filling that same dumpster once per week, the savings to them would be $614.60 per month!

Table 4: Current Sanitation Rate Structure

Sanitation Rates as of July 1, 2013							
Pick-ups Per Week	32 gal	64 gal	96 gal	288 gal	384 gal	480 gal	540 gal
1	$27.63	$49.08	$57.58	$166.84	$221.47	$276.10	$310.25
2		$75.79	$112.21	$330.73	$440.00	$549.26	$617.55
3			$166.84	$494.63	$658.52	$822.42	$924.85
4				$658.52	$877.05	$1,095.57	$1,232.15
5						$1,368.73	$1,539.45
6							$1,880.90
7							$2,154.05

Note: Prices shown represent a monthly billing for the service level selected.

Incentivizing the residential class of recycling customers is more difficult to accomplish. The majority of all residential customers already retain the lowest service level possible in our solid waste collection rate schedule. For households at the lowest service level, there is no lower cost in the rates to access by engaging in recycling.

To address this issue, a rate change that would raise the residential rate for 32 gallon garbage service and offer a reduced 32 gallon rate for those customers that recycle would likely appeal to most any consumer that wants to keep their monthly expenses at as low a level as possible.

Customers at all other levels of garbage service (64 gallon cart through 3 cubic yard dumpster) are able to access lower service levels, made possible by participation in the commingled recycling program. As stated previously, lower garbage service levels equal potentially substantial savings per month.

Under this type of incentive system, and assuming no increases to voluntary recycling customers, a $5.53 (or 20%) increase per month to garbage collection rates would generate an additional $48,000 annually for the Sanitation Department. This amount in combination with the increased diversion and disposal cost savings would have an excellent chance to pay for recycling program costs. As more customers sign up, the sanitation rate revenues will go down but so will the revenue requirement for annual disposal of solid waste.

11.0 Flat Fee to All Borough Residents

One last method for funding the recycling program would be to implement a monthly Borough-wide Recycling Fee, regardless of program participation. All property owners that had access to the offered recycling program would pay a flat fee to support the program. Although this idea is

simple in concept, it is politically complicated. Many of our residents understand and accept "pay as you go" systems in which they pay for services that they use in the community. Citizens that do not wish to recycle will not like paying for a service they do not use. Programs like this are often looked at as another form of taxation.

12.0 Summary

In summary, the main points of this report are:

- The renewed and expanded solid waste disposal and recycling contract with Republic Services creates an opportunity for a more convenient, effective recycling program that is both economically stable and environmentally beneficial over the long-term.
- Commingled recycling could increase household recycling rates by over 400%.
- Commingled recycling is easy and was overwhelmingly supported by participants of the trial group.
- Contract labor is less expensive than Borough labor, based on the existing contract with PIA for recycling collection services.
- If a recycling rate of at least 30% is achieved locally, the disposal cost reduction pays for current annual recycling expenses.
- Capital costs associated with a commingled system will vary depending on whether bags or carts are used for storage of recyclables.
- There are methods to increase participation and the recycling rate that are operationally and politically achievable within one to three years following implementation.

13.0 Recommendations

Recommendations from the Sanitation Department are as follows:

- Near term program implementation: Develop a curbside commingled recycling system that includes commercial and residential customers in Petersburg, utilizing a bag system and contract labor for collection of residential and small commercial customers. Use existing dumpsters and borough trucks/labor for large commercial and harbor commingled collection.
- Long term program goal: Purchase recycling carts for all residential and small commercial customers. Utilize borough staff and equipment for curbside recycling collection. Utilize recycling dumpsters for large commercial and harbor customers.
-
- Materials to be included in the commingled recycling stream would include:
    - All recyclable plastics with the exception of Styrofoam and plastic bags. Food containers rinsed. No lids or caps.
    - Tin cans (labels removed and rinsed).
    - Aluminum cans.
    - Junk mail, catalogs, phone books, newspaper, magazines, office paper.
    - UNBROKEN glass bottles and jars. No window or plate glass will be accepted.
    - Cardboard, broken down and placed inside of bag.
- Issue an RFP for near-term recycling collection services based upon the new system, the expected customer base, expected resources required and time frame for attaining long term community diversion goals (see last bullet point below). If proposals received are deemed non-responsive, too expensive, or both, the Borough reserves the right to consider the feasibility of delivering recycling collection services itself.
- Draft an ordinance that increases the 32 gallon garbage rate by 20%, but provides for continuation of service within the current rate structure (i.e. no increases) for all customers that voluntarily participate in the curbside recycling program.
- Timeframe for program development to be as soon as possible, but targeting a program implementation date no later than March 31, 2014.
- Formally adopt a set of diversion goals to be achieved over a period of seven years from the implementation date for commingled recycling. Suggested goals are: 30% diversion in three years; 40% diversion in five years; 50% diversion in seven years.

Appendix A

Commingled Trial Participant Survey

Survey Item	Responses			% of total responses		
	No	Unsure	Yes	No	Unsure	Yes
1. Participation in the pilot program made recycling easier for my household.	1	2	31	3%	6%	91%
2. My household saw a noticeable reduction in our weekly garbage volume.	3	4	27	9%	12%	79%
3. The program goals were easily understood and instructions were clear.	1	4	29	3%	12%	85%
4. Pilot program communication was effective and timely.	1	2	31	3%	6%	91%
5. Supplies and pick up were reliable and as expected.		1	33	0%	3%	97%
6. Commingling recycles posed no problems for my household.	2		32	6%	0%	94%
7. Commingling of recycles was a positive experience for my household.	1	1	32	3%	3%	94%
8. Should the Borough make a permanent change to a commingled system?	1	3	30	3%	9%	88%
9. Would you be in favor of making recycling mandatory in the Borough?	10	9	14	30%	27%	42%
10. Would your household voluntarily recycle if there was a minimal cost?	4	13	17	12%	38%	50%

Commingled Trial Staff / Contractor Survey

Survey Item	Scale			% of total responses		
	No	Unsure	Yes	No	Unsure	Yes
1. Did customers understand the program?		2	9	0%	18%	82%
2. Did you see many items that should not have been in the recycle stream?	3	6	2	27%	55%	18%
3. Did the commingled recycles bale well with glass included?		6	5	0%	55%	45%
4. Was there any noticeable decrease in Wednesday garbage volumes?		9	2	0%	82%	18%
5. Was the volume of collected commingled easily managed at the baler?		4	7	0%	36%	64%
6. Did you receive any complaints about the program? Detail below please.	4	1	6	36%	9%	55%
7. Did the bags work out well for collection and dumping at the baler?		3	8	0%	27%	73%
8. Should the Borough make a permanent change to a commingled system?		2	9	0%	18%	82%
9. Would you be in favor of making recycling mandatory in the Borough?	1	2	8	9%	18%	73%
10. Would you support a permanent system that used the bag system only?	4	1	6	36%	9%	55%

Appendix B

Commingled Trial - Weight Comparison

Pre-trial Recycling Weights

Month/Yr	wks/picked up	Total lbs		lbs/week	lbs/week/customer
May-10	4	1310		327.5	2.7
Jun-10	5	1442		288.4	2.4
Jul-10	4	1325		331.3	2.8
Aug-10	4	970		242.5	2.0
	Total	**5047**	**Average**	**297.4**	**2.5**

Month/Yr	wks/picked up	Total lbs		lbs/week	lbs/week/customer
May-11	4	790		197.5	1.6
Jun-11	5	835		167.0	1.4
Jul-11	4	1390		347.5	2.9
Aug-11	5	1280		256.0	2.1
	Total	**4295**	**Average**	**242.0**	**2.0**

Month/Yr	wks/picked up	Total lbs		lbs/week	lbs/week/customer
May-12	5	1980		396.0	3.3
Jun-12	3	850		283.3	2.4
Jul-12	4	860		215.0	1.8
Aug-12	5	1500		300.0	2.5
May-13	5	1290		258.0	2.2
	Total	**6480**	**Average**	**290.5**	**2.4**

Overall Average lbs/wk		**2.3**

Commingled Trial Recycling Weights

Month	wks picked up	Total lbs		lbs/week	lbs/week/customer
June	(5th - 26th) 4	4810		1202.5	10.0
July	(3rd & 10th) 2	2230		1115.0	9.3
	Total	**7040**	**Average**	**1158.8**	**9.7**

All averages based on 120 participating customers.

Increase to normal recycling during the trial **419%**