



In Southeast Alaska, a regional authority and partnership with Republic Services have been established to tackle the area's unique solid waste challenges.



Collecting the Klondike

By Richard Hertzberg, Karl Hagerman, and Matt Henry

Coffman Cove, Alaska (top) is one of the Southeast Alaska Solid Waste Authority communities.

Photo courtesy of Mitzzy Fitzpatrick.

After waste is barged from Southeast Alaska, The Burlington Northern Santa Fe Railway Co. (opposite) transports it to a Republic Services landfill in southern Washington.

Photo courtesy of BNSF.

The Thorne Bay baling facility, transfer station and landfill on Prince of Wales Island, Alaska, (bottom) will be a key staging point for the new SEASWA plan.

Photo courtesy of Wayne Benner.



The constant presence of water is a fact of life for residents of Southeast Alaska. It exists in two forms – as frequent precipitation (rain or snow), and as the vast Pacific Ocean, which touches, and often surrounds, virtually every piece of land that makes up this region. Southeast Alaska is marginally connected to the rest of the state at Yakutat, its most northwestern point. To the east is British Columbia, Canada. Otherwise, this is a world unto itself, home to native peoples for thousands of years, a place many visitors only glimpse from the comfort of cruise ships.

Marked on maps as the Alexander Archipelago, but also referred to as Alaska's Panhandle, the region starts near Metlakatla, Ketchikan, and the southern end of Prince of Wales (POW) Island. It extends 500 miles north and covers 35,000 square miles. POW Island itself is the third largest island in the United States and has nearly 1,000 miles of ocean shoreline. S.E. Alaska has 34 communities with 74,423 people; 22 percent are native Alaskans. Juneau, the state capital, is here. Islands make up 40 percent of the total land area and almost 95 percent of the land is managed by federal agencies. Local government entities own a mere 53,000 acres, one quarter of one percent of the entire land base.



What ties this geographically fragmented part of the country together is also, paradoxically, what keeps its inhabitants apart: the highway of ocean that is regularly crisscrossed by barges ferrying goods and products in and out. This commercial traffic is the region's lifeline.

While these factors make southeast Alaska distinct, the region still produces one thing that links it to the Lower 48: solid waste. However, a combination of circumstances conspire to make efficient, cost-effective solid waste disposal and recycling difficult:

- Average rainfall from 80 to more than 150 inches annually.
- Isolated communities with small populations.
- Restricted road access, made

even more inaccessible by harsh winter weather.

- Boats and planes are the primary modes of transportation.
- Limited local finances, state grants or other support funding.

Southeast Conference

Southeast Conference (SEC) is a consortium of public, private and non-profit businesses, organizations, and agencies dedicated to economic development and environmental stewardship for this part of Alaska.

SEC has administered a contract for a hazardous waste management firm to service several communities. In doing so, according to Shelly Wright, SEC executive director, it became apparent that solid waste was a financial, operational and environmental burden best addressed through a regional approach.

However, regional coordination was thwarted at first because there was no legal process for establishing a regional authority.

At the municipal level officials had been talking to their state legislators about a regional strategy for solid waste management. Early proponents included Jim Gould, long-time mayor of Thorne Bay (on POW Island); Carl Johnson, public works director for Wrangell; Jon Bolling, city administrator in Craig (POW Island); and Leslie Isaacs, city administrator, Klawock (POW Island). Representative Peggy Wilson from Wrangell (House District 2) and Senator Bert Stedman from Sitka (Senate District A) led an effort which resulted in the Regional Solid Waste Management Authority Act being adopted by the state legislature in May 2006.

Takeaways

- The steps taken to form the Southeast Alaska Solid Waste Authority (SEASWA) offer a blueprint to far-flung and isolated communities looking to fill common waste handling needs.
- SEASWA was able to capitalize on and expand upon existing waste transport models by partnering with a large private waste firm (in this case Republic Services).
- By maximizing efficiencies but still allowing some local decision-making in terms of how waste and recyclables are collected and what type of recycling is pursued, SEASWA communities stand to realize significant cost savings compared with standard disposal while also benefiting the environment.

Southeast Alaska Solid Waste Authority

Southeast Conference assisted with preparation of an enabling ordinance so interested jurisdictions could come together to form the Southeast Alaska Solid Waste Authority (SEASWA, the Authority).

In 2009 the communities of Craig, Petersburg, Thorne Bay and Wrangell became the founding members of SEASWA, the first regional solid waste organization in Alaska. Since then four others have joined – Coffman Cove, Hydaburg, Kasaan and Klawock. Petersburg and Wrangell are the only members not located on Prince of Wales Island. Monthly meetings of the board of directors are held through telephone conference calls.

The authority conducted a survey to determine existing disposal quantities and costs. The results (March 2011), based on data from 21 communities, are presented in Table 1. Juneau and Ketchikan account for more than half the population and disposed tons.

Table 1. Summary of Survey Results

1 / Population

70,000 total
25,000 without Juneau & Ketchikan

2 / Disposed Tons Per Year

60,883 total
18,883 without Juneau & Ketchikan

3 / Disposal Cost Per Ton

Range is \$25 to \$580

4 / Per Capita Disposal Rate

Range is .1 to 1.2 tons / year
average is .7 tons / year

The survey emphasized the basic factors impacting solid waste management in Southeast Alaska: small, geographically isolated communities with limited access; high energy and transportation costs; economies and efficiencies of scale difficult to achieve with each jurisdiction pursuing its own program.

Further, SEASWA members are only a portion of the region, as shown in Table 2.

Table 2. Estimated Annual Disposed Tons for SEASWA Members

Community	Population	Tons Per Year
Coffman Cove	180	126
Craig	1,243	870
Hydaburg	367	257
Kasaan	70	50
Klawock	800	560
Petersburg	2,972	2,080
Thorne Bay	508	356
Wrangell	2,448	1,714
TOTALS	8,588	6,013

NOTES

- In some cases data is rounded.
- Population figures from *Southeast Alaska by the Numbers, 2013*, prepared by Southeast Conference.
- For purposes of consistency, disposal figures based on population X .7 tons per year average per capita disposal rate from SEASWA survey.



Alaska Marine Lines uses barges to transport Southeast Alaskan waste and recyclables down the Canadian coast to the U.S. mainland.

Photo courtesy of Alaska Marine Lines.

Confronted by the financial, technical and infrastructure limitations on resources available for solid waste management, SEASWA formulated guidelines for future actions:

- SEASWA is a mechanism to deal with the marketplace realities for waste and recyclables where volume rules.
- SEASWA allows members to combine and share resources, control costs and achieve greater environmental care in managing solid waste.
- Through SEASWA, members could aggregate trash and recyclables and have a better chance to overcome financial and logistical barriers.
- Regional landfill development is difficult and expensive due to low waste volumes that are widely dispersed, high rainfall and lack of available suitable land.
- Collection methods for waste and recyclables would continue to be determined locally.
- At this juncture, no waste conversion technologies are commercially viable or practical for conditions in Southeast Alaska.
- Capital dollars to finance projects are hard to come by.

These conclusions made it clear to the authority that private sector involvement was essential to any regional strategy for waste disposal and recycling. To focus on critical needs the authority issued a request for qualifications (RFQ) and then a request for proposals (RFP) for refuse disposal and processing / marketing of recyclables.

The RFQ / RFP Process

The RFQ elicited 29 responses encompassing experimental technologies, processors of recyclable materials, established waste service providers, equipment manufacturers and consulting companies. The SEASWA board of directors zeroed in on submissions from Waste Management, Waste Connections and Republic Services.

An RFP was sent to these firms. Responses received from Waste Connections and Republic Services were assessed during October / November of 2011. At the January 2012 board meeting it was decided to continue discussions with Republic Services as the preferred provider of disposal / recycling services.

Significantly, Republic Services had a long presence in Southeast Alaska. Even before SEASWA was formed Ketchikan, Petersburg, Sitka and Wrangell were shipping waste on Alaska Marine Lines (AML) barges to Seattle. There it was transferred by truck to trains operated by Burlington Northern Santa Fe Railway Co. (BNSF) for ultimate disposal at Republic Services' Roosevelt Regional Landfill in Klickitat County, Wash.

Southeast Alaska is comprised of a string of islands and small coastal communities, and includes the state's capital, Juneau.

Map courtesy of Alaska Map Company, LLC.

Recyclables were being trucked to Republic's large materials recovery facility (MRF) near downtown Seattle. The MRF occupies 12 acres and processes around 200,000 tons per year of commingled material. Rail lines are located on the same property as the MRF.

Republic veterans Joe Casalini and Roy Westmoreland started this unique intermodal transport network for waste and recyclables back in 1995.

The established partnerships with AML and BNSF were important factors in Republic's selection. Republic essentially proposed to extend the intermodal system to all SEASWA members. The system's advantages as articulated by the board and decision makers in each jurisdiction:

- A dependable operation that avoids unproven technologies.
- Utilizes existing solid waste infrastructure, minimizing initial capital costs.
- Taps into economies / efficiencies of scale already present in Republic's Northwest infrastructure for recycling and disposal.
- Environmental liabilities and risks have been largely addressed by Republic's ownership and operation of facilities.
- Offers long-term cost stabilization for customers.
- Is not impacted by severe weather conditions.
- Relative ease of implementation.



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Wrangell, Alaska, is another key staging point for waste and recyclables in the SEASWA chain.

Photo courtesy of Carl Johnson.

Operational Logistics

Petersburg and Wrangell have regular barge service from AML. On Prince of Wales Island the situation is more complicated. There is only seasonal barge service from Klawock and Craig on the west side of the island. However, AML does have a permanent, year-round presence in Thorne Bay. Thorne Bay runs a landfill and has a large horizontal baler in an enclosed building used for baling its refuse plus waste from Kasaan and Coffman Cove, which are small, remote communities. Under the regional intermodal scenario the landfill will take only inert debris.

Presently Klawock operates a transfer station and inert debris landfill used by Craig as well, but the downstroke baler there is too small for consolidating waste. In recent years both locales have also been sending refuse south

to Republic's Roosevelt Landfill via barge, truck and train. The trash is loaded loose into containers and trucked to the AML dock in Thorne Bay.

Under the regional scenario both refuse and recyclables would continue to be hauled to Thorne Bay. Some baling of recyclables could occur at Klawock prior to truck transport to Thorne Bay. Or both material streams could be baled using Thorne Bay's bigger baler. These issues will be worked out in the coming months. Hydaburg, another remote community with its own small landfill, will send waste to the Klawock transfer site.

For storing refuse and recyclables Republic provides 48-foot open top containers with canvas tarps that hold loose, unbaled material and 40-foot hard or closed top containers for baled material. Petersburg is baling trash and achieving average bale weights of 2,400 pounds and 27 to 28 bales per container, or 32 to 34 tons. Open top containers from the Klawock site with loose refuse are averaging 26 to 27 tons. Wrangell does not have a baler but is considering purchasing one.

Barges with containers arrive at the AML dock in Seattle, and AML hauls containers of both refuse and recyclables to the Republic MRF where they are weighed. Recyclables are off-loaded for processing and waste containers are placed on rail cars for the 315-mile, 14-hour journey to Roosevelt Regional Landfill in south central Washington. A train typically consists of 150 waste containers.

A main feature at the landfill is a gas-to-energy facility now producing 22 megawatts (with a 37-megawatt capacity). The Klickitat Public Utility District owns the gas, and owns and operates the power generating plant and related infrastructure. Republic owns and operates the gas collection system and transmission lines.

For perspective, over the course of a year Roosevelt averages about 7,500 tons per day of incoming trash. That is more than is generated in a year by the eight SEASWA communities.

Contractual Arrangements

Republic Services normally enters into contracts with the actual generators of refuse and recyclables – typically individual cities and counties. Therefore, SEASWA as an organization would not have a contract with the company.

The Klawock and Thorne Bay facilities will be the central consolidation points for refuse and recyclables from POW Island. Petersburg and Wrangell are separate consolidation points as well. These four jurisdictions will contract individually with Republic. In turn, Hydaburg and Craig will have subcontracts with Klawock while Coffman Cove and Kasaan will have subcontracts with Thorne Bay.

By early 2013 the SEASWA Board had reviewed and approved a Master Service Agree-

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Existing Solid Waste and Recycling Regional System



Republic Services' existing waste and recycling transfer route became the basis of the SEASWA recycling transport scenario.

Map courtesy of Republic Services.

ment (MSA) from Republic Services. The MSA included prices for waste disposal and recycling services for each of the four contracting jurisdictions. The MSA was a contractual template that was then modified with additional community-specific content.

Service costs include a fuel surcharge that originates with the barge company. Republic will pass back 100 percent of sales revenue on recyclables after transport expenses and processing fees for commingled recyclables are covered. There is no processing fee associated with source-separated recyclables. Revenue varies by commodity type and will be based on the actual price Republic gets each month selling materials from its Seattle MRE.

Republic will take either source-separated or commingled recyclables (with and without glass). Each participating community will decide how to collect recyclables. However, Republic's rates favor source separation.

SEASWA – the Future

Petersburg, Thorne Bay and Wrangell have signed contracts with Republic Services based on the terms, conditions and fees from the MSA; Klawock is currently negotiating its contract. Attention now shifts to site and operations modifications at the Klawock and Thorne Bay facilities, necessary for their role in the regional disposal / recycling strategy on POW Island.

Source separation of recyclables provides a greater potential for revenue from Republic. However, the rates are structured so that recycling in any form will represent a notable savings compared with disposing the same material. That includes commingling with glass.

Recycling results in disposal cost savings for every SEASWA community, and the rates offer strong incentives for starting or expanding recycling programs. Petersburg has taken the lead. Its Public Works Department has submitted an analysis of program design and policy options to decision-makers that strongly recommends commingled recycling collection (with glass).

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The Petersburg report includes a detailed financial evaluation that concludes with the theme that increased recycling rates translate into lower overall costs – a savings of approximately 66 percent as compared to disposal. (A more detailed look at the Petersburg data and conclusions drawn is available in the online version of this article at <http://waste360.com/long-haul/collecting-klondike>) ■

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