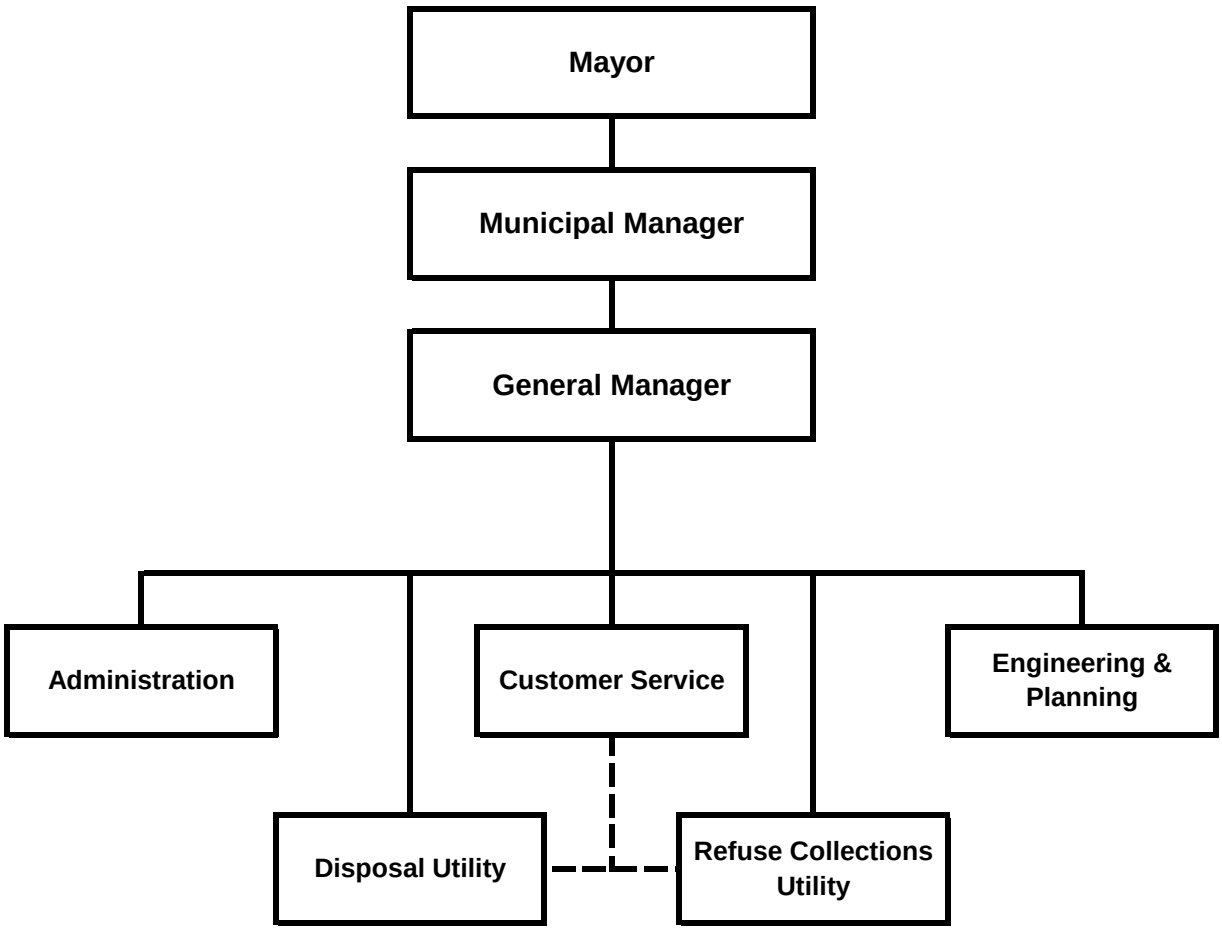
Solid Waste Services



Solid Waste Services
Organizational Overview

The Municipality of Anchorage's (MOA) Department of Solid Waste Services (SWS), comprised of the Refuse Collection Utility (RCU) and Solid Waste Disposal Utility (SWDU), is defined as a municipal utility by Anchorage Municipal Code (AMC 26.10.015). The Utilities are self-funded and self-supporting by revenues derived from operations; primarily customer fees for services. No tax dollars are used by SWS operations. By Code and Municipal Charter, each utility is required to operate in accordance with general business standards common to the solid waste industry (Charter Article 16.01) and to provide a reasonable profit in accordance with industry standards (AMC 26.10.060).

To support the RCU and SWDU, SWS has three additional operating divisions: Engineering & Planning, Customer Service, and Administration. Each SWS supervisor reports to the General Manager.

General Manager
The General Manager is responsible for the overall management of SWS. The General Manager oversees operational decisions, with the Solid Waste and Recycling Advisory Commission (SWRAC) providing an overview of strategies, operating plans and budgets, along with offering input on solid waste issues, ordinances and policies and providing recommendations to the Mayor.

Refuse Collection Utility (RCU)
The RCU provides both residential and commercial service to the former City of Anchorage service area. The RCU has converted 99% of its residential customers to automated collections operations. There are approximately 150 customers which still receive manual can and bag pickup.

Figure 1. Solid Waste Recycling and Commercial Collection Services

Commercial refuse collection consists of seven routes serviced Monday through Friday and four additional routes serviced on Saturdays. This equates to the servicing of over 5,000 dumpsters on a weekly basis. All commercial refuse collected is unloaded at the Central Transfer Station (CTS).

Residential refuse collection consists of 11 routes serviced Monday through Friday for over 10,000 customers. All residential refuse is collected and unloaded at CTS. Curbside Recycling is performed by two routes that service over 9,500 customers weekly. Mixed paper and cardboard recycling collection is also provided to more than 50 municipal offices on a weekly, bi-weekly, and monthly basis. All recycling is transported and unloaded at the Anchorage Recycling Center (ARC) and pays a recycling tipping fee. Residential organics (food scraps and yard waste) collections is also now available and there are approximately 900 customers enrolled with this service. This collected material is transported to a regional facility that converts it to compost for use by commercial and residential customers.

All refuse and recycling collection activities are currently performed by 27 full time employees. The RCU fleet consists of: ten 40 cubic yard commercial frontload vehicles; nine 27 cubic yard automated sideload vehicles; one 25 cubic yard rear loader; numerous light-duty support vehicles; and one forklift. RCU vehicle maintenance employees repair and maintain this fleet within a warm storage facility located at the CTS. Residential and Commercial collection operators are members of the local Teamster's union with the vehicle maintenance employees being part of the International Brotherhood of Electrical Workers (IBEW). All operators are required to participate in a pre-route safety-operations briefing, and daily Department of Transportation (DOT) required pre-shift and post-shift vehicle inspections.

Solid Waste Disposal Utility (SWDU)
The main function of the SWDU is to dispose of household and commercial refuse generated within the MOA. The refuse is brought to three locations: Girdwood Transfer Station (GTS), CTS, and the Anchorage Regional Landfill (ARL). The SWDU has an extensive fleet of specialized equipment for the disposal of refuse that is maintained, operated, and supported by highly skilled and trained staff.

GTS received over 1,200 tons of refuse in 2018. GTS has a paved area where solid waste is discarded into an enclosure containing a 120-cubic yard trailer for transfer to CTS. GTS accepts used oil and batteries from customers and these items are picked up by SWS's Household Hazardous Waste (HHW) contractors for proper disposal, recycling, or for reuse.

CTS is located between the old and new Seward Highways on 56th Avenue. Solid waste disposed of at CTS is transferred by SWS tractors pulling 120 cubic yard (approximately 20-tons at a time) open top trailers to ARL. An average of 800 tons per day of solid waste is transferred from CTS to ARL. CTS also has an HHW disposal location and accepts residential used oil, batteries, and appliances that are picked up by contractors for proper disposal, recycling, or for reuse. Customers can drop off small quantities (less than 220 pounds per month) of unregulated hazardous waste which is not allowed to be disposed at ARL. A total of 25 SWS operators perform the various duties and operations associated with CTS.

Figure 2. Solid Waste - Anchorage Regional Landfill

ARL is located near the intersection of the Glenn Highway and Hiland Road near Eagle River. It is a 275-acre, award-winning, subtitle D landfill that typically processes more than 1,000 tons of refuse daily. Currently, 10 cells are constructed, one is under design, with a total of 12 cells to be developed at full build out of the facility. Every day solid waste is compacted and then covered with soil using bulldozers or alternative daily cover such as plastic tarps and recycled construction and demolition debris. The soil cover material comes from the excavation of future cells located on-site. Each landfill cell is lined and contains a leachate (water) collection system. Leachate is collected and transported in pipelines at the bottom of the landfill to collection lagoons for pre-treatment by aeration to increase the oxygen levels within it. On average, three specially designed leachate tankers transport and dispose of 25 million-gallons per year at the Anchorage Water & Wastewater Utility's Turpin Road dump station. ARL employees are responsible for the daily disposal of all of the MOA's refuse, the excavation and hauling of daily cover material, the installation and maintenance of landfill gas recovery wells and lines, the hauling of leachate, the building and maintaining of roads, snow removal, dust

control and equipment repair. Located within a warm storage facility located at ARL, vehicle maintenance employees repair and maintain heavy equipment and SWDU vehicles. A total of 26 SWS operators and mechanics perform the various duties and operations associated with ARL. The main HHW facility is located at ARL and is operated by a contractor that serves the residential and small business customers.

Due to the November 30, 2018 earthquake in the MOA, the warm storage, vehicle maintenance, and administration facilities have been rendered unusable and staff are being housed in temporary facilities until the permanent structures can be ultimately repaired. This process is on-going with the assistance of the State of Alaska and the Federal Emergency Management Agency (FEMA) and is expected to be completed by 2021.

City-wide recycling has stabilized and trash disposed at the landfill has remained steady for several years. Funded from a recycling surcharge, the recycling program promotes recycling and the recycling industry with the goal of extending the ultimate life of the landfill. One fulltime recycling coordinator answers public inquiries, and, in coordination with private and non-profit partners, prepares educational media (including social media) campaigns and events related to recycling throughout the MOA. A sustainability coordinator position has been added in 2019 with the vision of expanding the recycling and diversion programs within the MOA and ultimately extending the life of ARL. The surcharge has funded the development of an expanded paved public recycling drop-off site at the landfill. ARL currently accepts aluminum cans, paper, plastic, and cardboard. The materials are then transported to the Anchorage Recycling Center.

The program also provides support for public space recycling and to the Anchorage School District (ASD) by collecting mixed paper from all their facilities. The recycling program along with assistance from ASD and Alaska Waste funds a recycling coordinator position for the district that helps to promote education for students and the reduction of waste generated from their facilities. Recycling within the MOA is further supported through a grant for Christmas tree recycling, and a grant to offset the Port of Alaska wharfage fees that the ARC pays to ship recyclables out of state. A large, but less visible effort is economic and business development grants. These funds are given to local recycling businesses for developing ideas for reusing materials in-state, such as glass, tires, construction and demolition debris, and organics. A commercial glass collection pilot program is being rolled out in late 2019 to test the effectiveness of this type of collection from commercial generators.

Engineering & Planning

The Engineering & Planning Division consists of one engineer/manager, one civil engineer, one engineering intern, and two engineering technicians. The group has the following main tasks:

- Planning, design and construction of new facilities;
- Major facility upgrades and repairs;
- Technical landfill operations;
- Landfill gas (LFG) collection system operation; and,
- Regulatory compliance.

The division is responsible for the planning, design and management of construction activities related to landfill expansion, LFG collection system expansion and maintenance, CTS improvements, and landfill closure projects. The division relies on contracted engineering services for major design and construction projects. As the landfill development progresses, engineering efforts will turn more toward closure and reclamation projects such as capping, re-vegetation and storm water management as well as the design and construction of the new

CTS. The current closure cost includes $59M of closure construction work, and $29M (both in 2018 dollars) of post closure care costs that will be conducted over a period of 30 years following the closure of ARL.

As SWS facilities age (many are over 30-years old), the division is responsible for the procurement of services for major repair and maintenance activities as well as new ones. These activities include periodic reconstruction of the CTS tipping floor; heating, ventilation, and air conditioning (HVAC) systems; paving of roads and work areas at ARL; rehabilitation of landfill gas and leachate wells and piping systems; and the design and construction of the new CTS.

The division provides technical support to the SWDU ARL staff to improve landfill operations and maximize airspace utilization. The division helps re-engineer outer landfill slopes which recovers valuable landfill airspace and regularly monitors waste compaction and daily cover quantities in order to re-evaluate these estimates. The division provides support for planning fill operations, developing access roads, and efficiently mining cover materials from the site. As an example, the landfill crew, in addition to processing solid waste, can also mine gravel for current and future cover operations.

The LFG collection system currently supplies Doyon Utilities (DU) with gas to power a 7 megawatt electrical generating plant which provides power to the Fort Richardson side of Joint Base Elmendorf-Richardson (JBER). LFG activities at ARL include daily checks of key operating parameters, as well as routine maintenance of LFG well heads and monitoring equipment. The system currently requires a bi-weekly check and rebalancing of over 68 gas collection points to optimize the efficiency of the gas collection system while maximizing the gas output delivered to DU.

The division is responsible for compliance with environmental regulations at ARL as well as three closed landfill sites. All sites have groundwater monitoring and reporting requirements, as well as solid waste permit compliance relating to operation or post-closure monitoring. The Merrill Field landfill site has active landfill gas and leachate management systems which have both operational and regulatory reporting requirements. ARL operates under an active Class I landfill operating permit, as well as a Title V Air Quality operating permit, both issued by the Alaska Department of Environmental Conservation (ADEC). In addition to specific operating requirements, these permits require numerous inspections, as well as documentation and reporting requirements. Because ARL accepts asbestos wastes, it is regulated under National Emissions Standards for Hazardous Air Pollutants which requires inspection and documentation of every load of regulated material received. Both ARL and CTS have Storm Water Pollution Prevention Plans approved by ADEC which have regular inspection, monitoring, sampling, and reporting requirements.

Customer Service

The Customer Service Division has two work groups; the Customer Service Administration and Call Center and the Scale House / Cash Booth. Both work groups, totaling 18 employees, are managed by one Senior Administrative Officer.

Customer Service Administration and Call Center

This work group is based out of the SWS Administration Building located at 1111 East 56th Avenue. This office is staffed with one Senior Administrative Officer, one Junior Administrative Officer, one Collector, one Code Enforcement Officer and three Account Representative III's. The SWS call center staff answer up to 160 calls per day and also maintain the SWS customer

information system, which allows the invoicing of up to 12,350 customers monthly. These customers provide, on average, more than $2.1M in monthly payments to their accounts.

The SWS Code Enforcement officer ensures compliance within the SWS mandatory service area by actively facilitating corrective action in accordance to AMCs 14, 15, 21.07 and 26; while handling all in-house collections efforts for accounts that are 31 to 90 days past due. Once these accounts reach 90 days past due, they are transferred to the MOA third party collections company for further collective action.

Scale House / Cash Booth

The 12 employees of the Scale House / Cash Booth work group operate both the scale houses and cash booths at CTS, ARL, and GTS. Operating hours and days of operation vary by location, but overall this work group operates approximately 311 days a year, including all MOA holidays except Christmas and New Year's Day. Opening shifts begin as early as 6:00 A.M. for the staff opening CTS, closers are often on duty until approximately 6:00 P.M.

This group is the smiling face that greets both the residential and commercial disposal customers as they visit our disposal locations. These employees screen the customer's load prior to disposal, help monitor safety compliance, and kindly educate many on safe disposal practices, and encourage compliance with AMC and State Laws regarding litter prevention through assessment of fees. These team members assist over a quarter of a million customers visiting SWS facilities each year.

Administration

The Administration division provides support to all SWS employees. It is responsible for key performance indicator monitoring, IT assistance, Safety, Finance and Accounting, Purchasing, Accounts Payable, as well as human resources, labor relations, security, code enforcement, facility maintenance, and vehicle parts inventory functions.

SWS has one position involved in the monitoring and reporting of key performance indicators. This employee also researches, evaluates, and implements existing and emerging technologies when deemed necessary, fiscally responsible, and/or becomes critical to operations.

The SWS Safety Manager ensures that all operations are conducted in a safe manner. The Safety Manager is responsible for compliance with Occupational Safety and Health Administration (OSHA) safety standards by ensuring that the work environment is safe, as well as identifying and mitigating potential hazards for SWS employees and the public long before the hazard becomes an accident statistic. The Safety Manager inspects buildings, projects, equipment, operating practices and working conditions for compliance with various MOA, State and Federal safety codes and regulatory requirements. The Safety Manager coordinates safety programs in training, personal protective equipment, clothing and devices, as well as organizes and conducting seminars on first aid and OSHA required safety training. The Safety Manager prepares reports and makes recommendations for improvement. By analyzing data on accident rates and compensation claims, the Safety Manager develops methods to reduce costs, loss time, and personnel suffering.

Finance and Accounting

The Finance and Accounting section, consisting of four employees, manages the financial matters of SWS, including the accounting for revenues and expenses, the preparation of budgets, asset management, capital expenditures, as well as providing financial reports. One employee is responsible for purchasing and accounts payable providing for the procurement of

and the payment for all equipment, supplies, and contracts, in coordination with other MOA departments. Invoices are received, checked, account coded, approved, and entered into SAP for payment. Purchase orders are initiated at SWS: verifying proper account codes and funding, attaching all supporting documentation, obtaining proper department approval through the SAP workflow; many of the purchase orders also go through the MOA Purchasing Department's SAP workflow for final approval. Over 100 SWS timecards are processed each week in the SAP timekeeping and payroll system to ensure proper pay and cost of service coding. Additional administrative staff provide other support duties that include: ordering office supplies; processing travel authorizations, expense reports, and incoming and outgoing mail; maintaining files; oversite of recycling and organics programs; and providing administrative support to supervisors and to the SWRAC.

The SWS philosophy is to retain a small staff, while encouraging safety and dedication to a job well done.

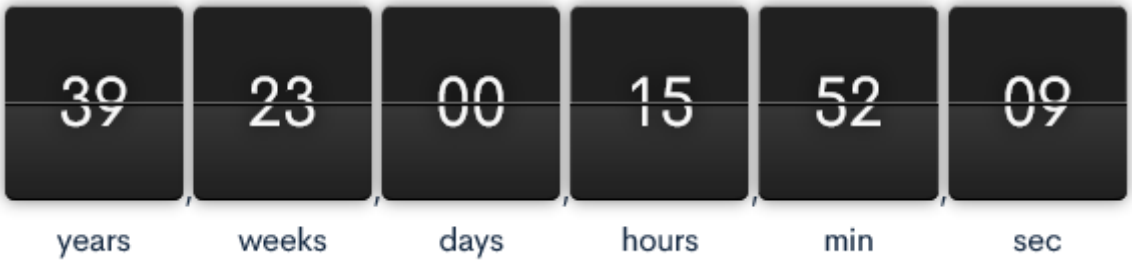


Figure 3. Solid Waste Services – Disposal "Doomsday Clock" https://acak.statwindow.com/landfill

Solid Waste Services
Business Plan

Mission
Providing safe, efficient and innovative solid waste management for the Municipality of Anchorage (MOA).

Services
The Refuse Collection Utility (RCU) provides garbage and recycling collection to the former City of Anchorage service area, which is approximately 20% of the population of the MOA. Since at least 1952, there has been mandatory service for all customers of the RCU service area. The RCU provides five types of service: commercial dumpster; commercial recycling; automated garbage roll cart service; recycling roll cart service; residential organics and limited can and bag service.

The Solid Waste Disposal Utility (SWDU) serves the entire MOA. The services include the disposal of solid waste, the collection of household hazardous waste, and the promotion of community recycling and sustainability. Municipal solid waste is received at three transfer stations located within the MOA. Waste generated in the community of Girdwood is transported from the Girdwood Transfer Station (GTS) to the Central Transfer Station (CTS) in Anchorage. All waste from the CTS is transported to the Anchorage Regional Landfill (ARL) for final disposal.

Business Goals and Guiding Principles
- Increase overall customer satisfaction rating.
- Reduce number of missed pick-ups by SWS.
- Reduce the average customer wait time.
- Maximize the usage of landfill has collected for beneficial purposes.
- Decrease the per capita amount of trash disposed at ARL.
- Expand the lifespan of ARL and maximize airspace utilization.
- Fully maximize existing collection and transfer truck routes through the leveraging of technology.
- Reduce time loss accidents and workman compensation claims.
- Create opportunities for employee development via training opportunities.
- Reduce greenhouse gas emissions across the MOA.

Strategies to Achieve Goals
- Invest in our business and community through the construction of a State-of-the-Art transfer facility on newly purchased property.
- Leverage SWS on-board vehicle computer systems.
- Streamline and improve CTS and ARL site traffic patterns. Invest in modernizing fleet and fuel technologies.
- Utilize alternative daily cover material and improve waste compaction.
- Communicate more effectively with employees about training opportunities and make them available.
- Work with Doyon Utilities to expand the landfill gas to energy facility or find another beneficial use for the gas.
- Promote the diversion of food waste, yard waste, metals, plastics, paper and cardboard.
- Improve recycling options for businesses and apartment buildings within the SWS service area.
- Standardize recycling outreach and labeling.

- Monitor the MOA's performance with respect to achieving the goals identified within the climate action plan.

Performance Measures to Track Progress in Achieving Goals

1. Disposal Costs Offset by Landfill Gas Revenue.
2. Garbage to Dirt Ratio.
3. Landfill Closure Date.

Refuse Collections & Disposal Utility
Solid Waste Services Department

Anchorage: Performance. Value. Results.

Mission

Providing safe, efficient, and innovative solid waste management for the Municipality of Anchorage.

Vision

Advancing solid waste management through continuous improvement and transparent performance.

Values

Providing value to our community through safe, innovative, and sustainable solid waste management.

Core Services

- Provide dumpster service to commercial and multifamily residential customers.
- Provide automated garbage, curbside recycle collection, and disposal to residential customers.
- Provide transfer station and landfill disposal services for the entire community of Anchorage.
- Support and promote energy efficient and sustainable practices for all residents throughout the community.

Accomplishment Goals

- Subsidize Disposal Utility operations with revenue collected from landfill gas sales to keep rates lower for longer periods of time.
- Extend the life of the Anchorage Regional Landfill by increasing the ratio of inbound garbage to dirt placed as daily cover. The less dirt used to cover garbage for means more space available at the landfill.
- Extend the useful life of the Anchorage Regional Landfill as far in the future as possible by improving recycling and operational performance on a continuous basis. The longer the landfill stays open the cheaper the cost to dispose of material in Anchorage is.

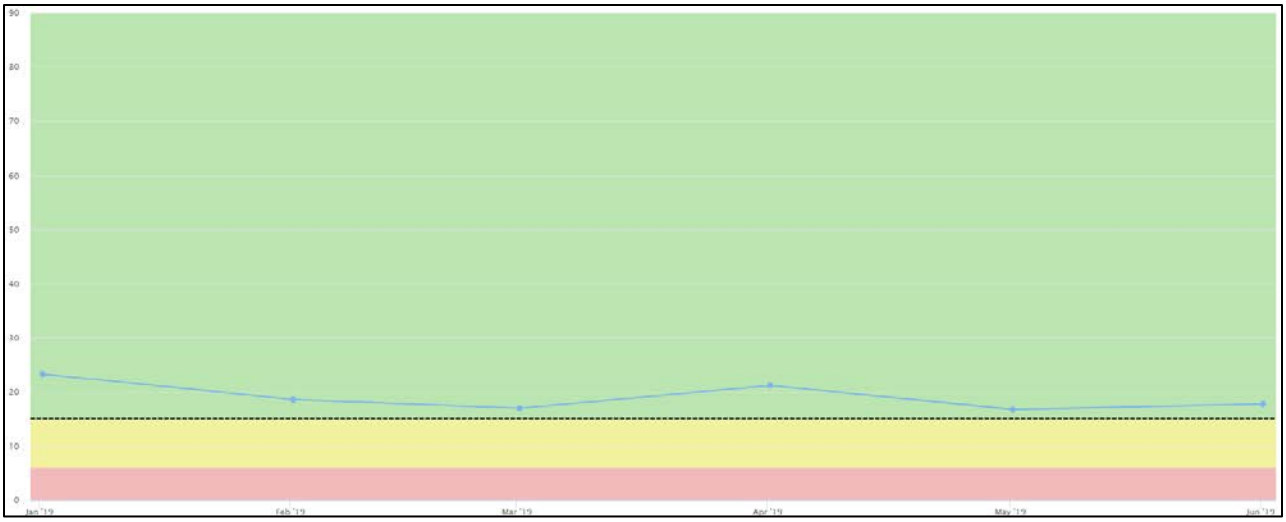
Performance Measures

Progress in achieving these goals will be measured by:

- Landfill Gas Revenue as a percent of Disposal Utility Operations Costs;
- Garbage to Dirt Ratio; and,
- Landfill Closure Date.

The following pages provide actual data which quantify these measures.
For more information on the performance indicators SWS has developed, please visit:
https://acak.statwindow.com

Measure #1: Disposal Costs Offset by Landfill Gas Revenue



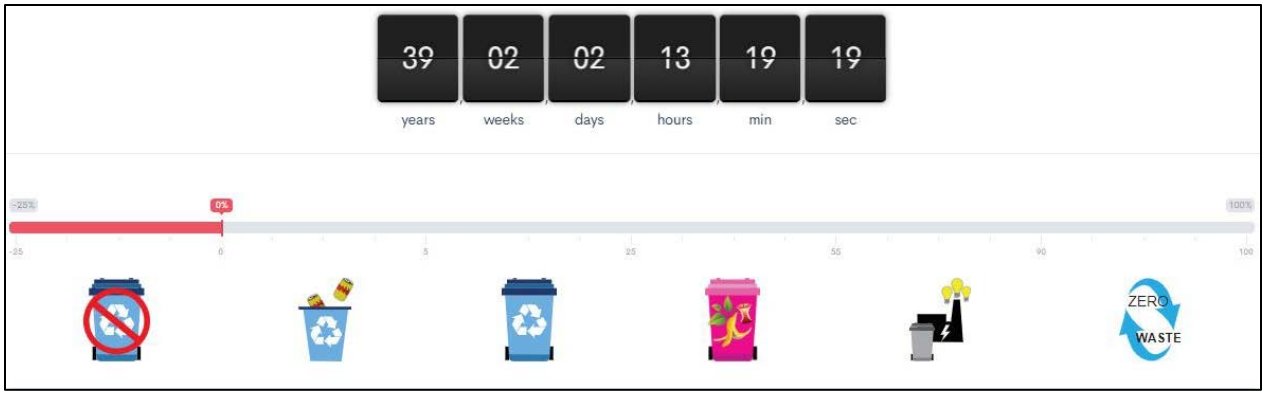
This measure is calculated by dividing the landfill gas revenue by the total disposal costs. SWS has set a target goal of > 15% indicated by the dashed line in the above line graph. This data is given to SWS on a quarterly basis. The months reflecting zero value are months in the current quarter SWS has no data.

Quarter 2 Data –

Disposal Costs Offset: 18%

SWS syphons the gas from collected refuse in the landfill. A portion of the gas is sold to Doyon Utilities to provide electricity to the Army side of Joint Base Elmendorf-Richardson. The revenue from selling landfill gas is used to subsidize disposal costs, therefore SWS customer rates are lower.

Measure #2: Garbage to Dirt Ratio



This measure is calculated by dividing the total tons of refuse (garbage) received at the landfill by the total tons of cover (dirt) used (which includes alternative cover.)
SWS has set a target goal of 1.4 indicated by the dashed line in the above line graph.

Quarter 2 Data – 1.79

Apr: 1.45
May: 2.12
June: 1.88

Everyday SWS uses many different forms of alternate cover to cover the garbage collected such as gravel, wood chips, tarps, and snow season-permitting.
This data is important because SWS has a goal to "Extend the Life of Anchorage Regional Landfill." The less amount of cover or alternative cover used to cover the refuse, the more space is left and the longer the landfill will be open.

Measure #3: Landfill Closure Date

SWS uses a 12-month average of waste generation and cover used by the landfill to predict the day the landfill will reach full capacity. As public behavior changes, the lower rate of waste generation and less cover used will slowly affect the life of the landfill. Decomposition and compaction are considered in the equation, as well as population growth. SWS derives this data from the most current landfill study.

SWS does not have a target set because this information is continually changing, however SWS has a goal to extend the life of the landfill.

Quarter 2 Data –

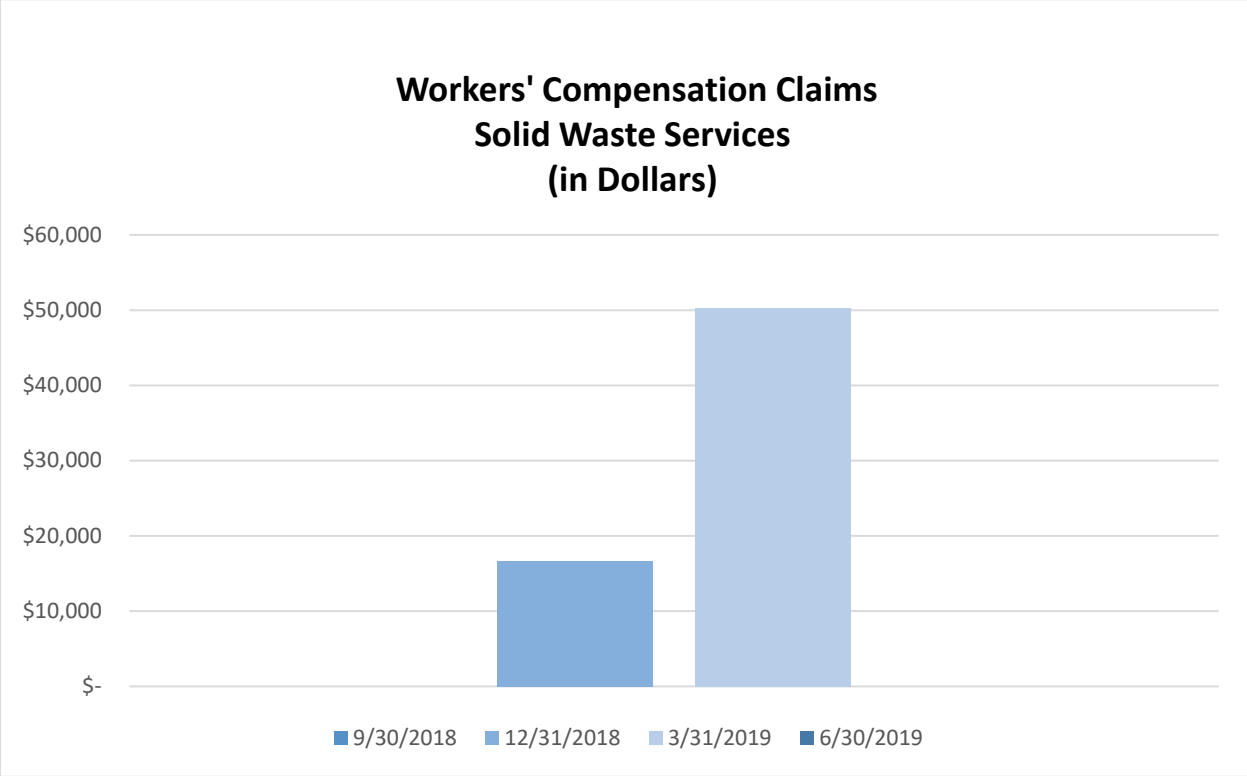
Estimated Year of Closure: 2058

As the year of closure draws near, SWS needs think about *how* to continually provide the Municipality of Anchorage safe, efficient, and innovative solid waste management (i.e. development of a new landfill) for many years to come. Through fine-tuning public behavior (i.e. recycling, composting, organics collection), SWS can successfully serve the MOA for many years beyond this estimated date. Landfills are not forever, there is no time waste.

PVR Measure WC: Managing Workers' Compensation Claims

Reducing job-related injuries is a priority for the Administration by ensuring safe work conditions and safe practices. By instilling safe work practices, we ensure not only the safety of our employees but reduce the potential for injuries and property damage to the public. The Municipality is self-insured and every injury poses a financial burden on the public and the injured worker's family. It just makes good sense to WORK SAFE.

Results are tracked by monitoring monthly reports issued by the Risk Management Division.



Solid Waste Services
Highlights and Future Events

Disposal Utility
The Solid Waste Services (SWS) Disposal Utility's (SWDU) Central Transfer Station (CTS) is nearing the end of its useful life. The facility is aged, poses health and safety risks, and is not properly designed for the vehicle size and volume that it serves. SWS recently closed a transaction to purchase a tract of land across the street from the existing facility and has begun the architecture/engineering design for constructing a new transfer station facility. The new facility will provide increased capacity for peak flows of commercial and residential customers as well as provide much needed on-site traffic circulation improvements. The new transfer station will enhance the SWDU's ability to serve the community, while accommodating needs for increased recycling and waste reduction efforts to extend the life of the Anchorage Regional Landfill (ARL).

Anchorage sustained a 7.2 magnitude earthquake on November 30, 2018, and ARL suffered irreparable damage to the main Shop/Admin building. Additional damage that was sustained at the landfill includes: various gas collection piping and gas wells, non-structural damage to the concrete floor of the Household Hazardous Waste building, as well as multiple smaller damages to roadways and slopes within the landfill. Temporary facilities and gas system repairs are currently being constructed to maintain operation through the winter and the utility is working with Federal Emergency Management Agency (FEMA) to obtain approval for reconstructing the permanent ARL Shop/Admin building. Additionally, various building and roadway repairs are ongoing.

The ARL has a total land area of approximately 275-acres and is being developed in phases called cells. Currently, cells 1 through 7, 8a, 8b, 10 - 12 have been constructed. Cell 9a will begin development in 2020 with preliminary design complete before 2020.

In 2018 SWDU trucked to over 31 million gallons of treated leachate generated at the landfill to Anchorage Water & Wastewater Utility (AWWU). SWDU started design for retrofitting the leachate lagoons with a more modernized aeration system that will be more efficient and provide better treatment to the leachate.

Leachate has been hauled via tanker truck since ARL was first opened in 1987. The truck haul system is considered inefficient and potentially unsafe to the public due to the additional truck traffic on the Glenn Highway. SWDU is currently evaluating alternatives to trucking leachate including installation of multiple leachate evaporators onsite.

SWDU continues to aggressively expand recycling programs in Anchorage. Organics collection is a priority for the department. Demand for the program is high and the SWDU is looking to expand capacity by developing back-end infrastructure and increasing community outreach for participation in food scrap drop-offs.

SWDU also plans to continue supporting recycling initiatives across the municipality, which has seen increased processing costs as a result of shifting global commodities markets. SWS will continue to invest in recycling, as well as communication and outreach, which is vital to the success of the programs.

Another priority for SWS is sustainability and climate issues. SWS spearheads MOA's sustainability efforts. The Anchorage Climate Action Plan, a strategic plan to reduce emissions and prepare for the changing climate, was passed by the Assembly in May 2019; SWS coordinates its implementation and reporting.

Refuse Collection

The SWS Refuse Collection Utility (SWRCU) owns and operates a fleet of refuse collection vehicles, which are housed in a shop/storage building along with administrative offices on land owned by SWDU. The recent land purchase by SWS includes land to construct new facilities to replace the aging structures owned by SWRCU.

New software has recently been installed in SWRCU vehicles allowing drivers to communicate directly with the billing system for improved tracking of refuse collection activities, missed stops, and other metrics. Installation and training for use of the new software is expected to be complete in 2019.

SWS worked in 2019 to restart a commercial glass recycling program in the downtown district. The department worked with local recyclers to expand uses for the recycled glass in construction projects. Demand is at the point where local recyclers can accept even more glass for recycling. SWS is testing glass recycling downtown with the goal of increasing participation and offering the service outside of downtown.

Solid Waste Services
External Impacts

Disposal
SWS is scheduled to construct two new landfill cells at the Anchorage Regional Landfill (ARL) before the end of 2020. SWS anticipates using State of Alaska Clean Water Loans with a low interest rate and 20-year term, whenever possible. It is unknown if the program will be funded in the future; if the eligible expenses related to landfill construction will further limit use of these funds for construction; or if SWS will be awarded loans based on the program scoring criteria. Currently, the total cost of the landfill expansion is over $22M, with potential loan amounts estimated at $21M to cover those costs.

The Landfill Gas (LFG) to Energy project came into commercial operation in 2013. Revenue to the Solid Waste Disposal Utility (SWDU) derived from the sale of landfill gas to Doyon Utilities (DU) is based upon the purchase price for natural gas as reported by Chugach Electric Association (CEA) to the Regulatory Commission of Alaska (RCA). Future revenues anticipated from this project will be based upon gas price projections by CEA and other area utilities. As a result, the actual revenue generated by the LFG project will fluctuate dependent upon market price of natural gas in Southcentral Alaska.

Currently DU Inc. holds an air quality permit which will allow continuous operation of up to six generating units at the LFG power plant on Joint Base Elmendorf-Richardson (JBER). The power plant currently operates five generating units, producing approximately seven (7) megawatt of power. In the summer months, power usage at Fort Richardson decreases below this capacity in off-peak hours. Because of the lower demand, one generating unit is shut down on evenings and weekends, resulting in decreased landfill gas consumption seasonally. Currently, there is no energy integration between the Fort Richardson and Elmendorf sides of JBER. This limits the amount of revenue that can be generated by the project. A project is currently in the final phases of design to interconnect the Fort Richardson and Elmendorf electrical grids.

The current tonnage received at the landfill is dependent upon all refuse providers servicing the MOA. SWS is in the process of implementing a Recycling Education Program as well as recycling incentives. As a result, there is an expected decrease in the amount of refuse received by ARL.

Since 1994, SWS has stored gravel generated from cell development activities on leased land from Fort Richardson. SWS currently has over 4 million-cubic yards of material stored at this location which will all be used in the normal operation of the landfill. An extension of this lease needs to be negotiated prior to expiration in 2019 to ensure continued use of this property until the gravel is expended.

Leachate from the ARL is disposed of to Anchorage Water & Wastewater Utility's (AWWU) wastewater collection system. SWS hauls the leachate from ARL to AWWU's Turpin Street septic hauler station. SWS has hauled over 25 million gallons annually to this facility. The cost for this activity is driven by labor, fuel and vehicle operations and maintenance (O&M) costs as well as AWWU disposal rates, all of which are continuously rising. SWS is in the process of initiating design activities for a pipeline to allow direct discharge to the AWWU system.

ARL and Central Transfer Station (CTS) facilities were all constructed in 1987. Consequently, many mechanical, electrical and structural components of these facilities are rapidly approaching or have exceeded their useful lives. Many of these systems are either life safety issues or critical to the continued operation of the facilities. SWS has and will continue to incur significant capital and maintenance costs as these facilities and components are upgraded or replaced. Disposal customers are subjected to long wait times and safety issues each time they come to the CTS to dispose of their loads. Therefore, SWS has proposed and received approval for a plan to construct a new CTS. The new facility will also allow SWS to control the destiny of the Disposal and Refuse Collection Utilities through additional space to explore new technologies, and the ability to re-purpose the existing space to meet other growing needs within the Municipality.

Refuse

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Solid Waste Services
Workforce Projections

Division	2018	2019	2020	2021	2022	2023	2024	2025
Administration	23	25	24	24	24	24	24	24
Disposal	49	47	49	49	49	49	49	49
Refuse Collection	26	26	26	26	26	26	26	26
Total Full Time	**98**	**98**	**99**	**99**	**99**	**99**	**99**	**99**
Part time/Temp	6	6	7	7	7	7	7	7
Seasonal	6	6	7	7	7	7	7	7
Total Part Time	**12**	**12**	**14**	**14**	**14**	**14**	**14**	**14**
Total Positions	**110**	**110**	**113**	**113**	**113**	**113**	**113**	**113**
Total FTE	**105.3**	**107.3**	**109.6**	**109.6**	**109.6**	**109.6**	**109.6**	**109.6**

Solid Waste Services - Disposal
8 Year Summary
($ in thousands)

Financial Overview	2018 Actuals	2019 Proforma	2020 Proposed	2021	2022	2023	2024	2025
				Forecast				
Revenues	23,237	25,518	25,573	26,852	28,194	29,604	30,196	30,800
Expenses	24,930	22,563	24,517	25,007	25,758	26,788	27,859	28,695
Net Income (Loss)	**(1,693)**	**2,955**	**1,056**	**1,844**	**2,437**	**2,816**	**2,337**	**2,105**
Budgeted Positions	83(27)	83(27)	86(27)	86(27)	86(27)	86(27)	86(27)	86(27)
Capital Improvement Program	5,475	24,885	19,999	28,037	23,470	9,892	7,449	4,945
Transfers (Dividend)	790	233	750	750	750	750	750	750
Bond Sales/ New Debt	-	16,570	12,294	12,147	22,675	19,775	6,600	4,570
Net Plant (12/31)	64,707	84,942	100,291	105,291	145,063	150,009	157,458	162,403
Net Assets (12/31)	65,137	68,092	69,148	70,992	73,429	76,245	78,582	80,686
Unrestricted Net Assets	2,631	3,839	2,395	1,739	1,973	2,860	3,248	3,388
Future Landfill Closure Liability**	1,602	-	590	-	-	-	-	-
General /Construction Cash Pool	8,056	41	95	(9,154)	(4,949)	9,934	14,085	18,710
Landfill Closure Cash Reserve**	31,558	32,458	33,048	53,692	63,692	73,692	83,692	93,692
Total Cash	**39,614**	**32,499**	**33,143**	**44,538**	**58,743**	**83,626**	**97,777**	**112,402**
Charges by Other Departments	2,789	3,525	3,704	3,852	4,006	4,166	4,333	4,506
Utility Revenue Distribution	-	-	-	-	-	-	-	-
Transfers (MUSA)	871	1,153	851	1,579	2,176	2,250	2,362	2,436
Total Outstanding Debt	14,256	29,079	24,050	23,903	34,728	32,102	18,907	16,862
Total Annual Debt Service	1,723	1,747	2,500	2,500	2,203	1,929	1,949	1,964
Debt Service Coverage	(0.98)	1.69	0.42	0.74	1.11	1.46	1.20	1.07
Debt/Equity Ratio	18/67	29/67	23/67	23/67	32/67	28/67	16/67	14/67
Rate Percentage Change (CTS /ARL)								
Tipping Fee Rate per Ton (ARL / CTS)	$58/$68	$58/$68	$62/$72	$66/$76	$70/$80	$74/$84	$78/$88	$80/$90
Pickup Rate per Load	$16	$16	$16	$17	$18	$19	$20	$20
Car Rate per Load	$6	$6	$6	$7	$7	$8	$8	$8
Proposed Annual Rate increase			6.25%	6.25%	6.25%	5.00%	5.00%	2.00%
Statistical/Performance Trends								
Tons Disposed	310,052	305,000	305,000	305,000	305,000	305,000	305,000	305,000
Vehicle Count	239,840	240,000	240,000	240,000	240,000	240,000	240,000	240,000

**In 2018, an investment account was established with the assumption that the investment growth would offset the closure liability amount in future years.

Certain actual financial figures above will not match the Comprehensive Annual Financial Report; the CAFR combines Disposal with Administrative and Vehicle Maintenance cost centers.

MUSA - Municipal Utility Service Assessment

Solid Waste Services - Disposal
Statement of Revenues and Expenses

	2018 Actuals	2019 Proforma	2019 Revised	20 v 19 $ Change	2020 Proposed	20 v 19 % Change
Operating Revenue						
Landfill Disposal Fees	19,936,703	19,618,067	20,421,680	1,276,355	21,698,035	6.3%
Hazardous Waste Fees	604,499	217,165	318,750	19,922	338,672	6.3%
Community Recycling Residential	171,696	182,473	175,313	10,957	186,270	6.2%
Community Recycling Commercial	438,224	391,757	435,625	27,227	462,852	6.3%
Landfill Methane Gas Sales	2,967,624	2,053,767	2,000,000	-	2,000,000	0.0%
Reimbursed Costs	204,883	20,039	106,000	(6,000)	100,000	-5.7%
Unsecured Loads	14,830	15,000	15,938	996	16,934	6.2%
Other	(36,610)	19,179	193,525	17,521	211,046	9.05%
Total Operating Revenue	**24,301,849**	**22,517,447**	**23,666,831**	**1,346,978**	**25,013,809**	**5.69%**
Non Operating Revenue						
Other Revenue	33,010	-	-	30,000	30,000	0.0%
Interest from Cash Pool	107,280	200,922	400,000	(421,000)	(21,000)	-105.3%
Realized Gains	589,868	300,000	-	200,000	200,000	0.0%
Unrealized Gains/(Losses)	(2,087,755)	2,500,000	100,000	200,000	300,000	200.0%
Other Property Sales/Disposal of Assets	292,563	17	50,000	-	50,000	0.00%
Total Non Operating Revenue	**(1,065,034)**	**3,000,939**	**550,000**	**9,000**	**559,000**	**1.64%**
Total Revenue	**23,236,814**	**25,518,386**	**24,216,831**	**1,355,978**	**25,572,809**	**5.60%**
Operating Expense						
Labor						
Salaries and Benefits	6,409,708	6,615,341	5,929,367	450,755	6,380,122	7.6%
Overtime	518,695	580,503	538,366	24,933	563,299	4.6%
Total Labor	**6,928,403**	**7,195,844**	**6,467,733**	**475,689**	**6,943,422**	**7.4%**
Non Labor						
Non Labor	6,507,387	6,435,438	6,178,152	1,021,533	7,199,685	16.5%
Travel	21,092	21,092	15,000	20,000	35,000	133.3%
Landfill Closure Costs	1,602,499	-	900,000	(310,000)	590,000	-34.4%
Transfers (MUSA, Dividend, and Gross Receipts)	1,673,279	1,385,957	1,385,957	215,328	1,601,285	15.5%
Depreciation and Amortization	5,408,664	4,000,000	4,650,000	400,000	5,050,000	8.6%
Total Non Labor	**15,212,920**	**11,842,487**	**13,129,109**	**1,346,861**	**14,475,970**	**10.3%**
Total Direct Cost	**22,141,323**	**19,038,331**	**19,596,842**	**1,822,550**	**21,419,392**	**9.3%**
Charges by Other Departments	2,788,766	3,525,308	3,729,507	(20,233)	3,709,274	-0.5%
Total Operating Expense	**24,930,089**	**22,563,639**	**23,326,349**	**1,802,317**	**25,128,666**	**7.7%**
Non Operating Expense						
Interest During Construction	-	-	(123,479)	(488,567)	(612,046)	395.7%
Total Non Operating Expense	-	-	(123,479)	(488,567)	(612,046)	0.0%
Total Expense (Function Cost)	**24,930,089**	**22,563,639**	**23,202,870**	**1,313,750**	**24,516,620**	**5.7%**
Net Income (Loss)	**(1,693,274)**	**2,954,747**	**1,013,961**	**42,228**	**1,056,189**	**4.2%**
Appropriation:						
Total Expense			**23,202,870**	**1,313,750**	**24,516,620**	
Less: Non Cash Items						
Landfill Care and Closure			900,000	(310,000)	590,000	
Depreciation and Amortization			4,650,000	400,000	5,050,000	
Total Non Cash			5,550,000	90,000	5,640,000	
Amount to be Appropriated (Cash Expense)			**17,652,870**	**1,223,750**	**18,876,620**	

Solid Waste Services - Disposal
Reconciliation from 2019 Revised Budget to 2020 Proposed Budget

	Appropriation	Positions FT	PT	T
2019 Revised Budget	23,202,870	72	5	4
Transfers by/to Other Departments				
- Charges by Other Departments	(20,233)	-	-	-
Debt Service				
- Debt Service	543,585	-	-	-
Changes in Existing Programs/Funding for 2020				
- Salaries and Benefits Adjustments	202,422	-	-	-
- Non Labor - Contractual Increases	477,948	-	-	-
- Landfill Closure Accrual	(310,000)	-	-	-
- Depreciation and Amortization	400,000	-	-	-
- Dividend Distribution	517,200	-	-	-
- Municipal Utility Service Assessment (AMC 26.10.025 Removed 1.25% Revenue from Calculation)	(301,872)	-	-	-
- Int Capitalized on Construction	(488,567)			
2020 Continuation Level	**24,223,353**	**72**	**6**	**5**
2020 Proposed Budget Changes				
- Adding new Disposal VMT Foreman, Engineering Intern, and Accounting Assistant	273,267	1	1	1
- Travel	20,000	-	-	-
2020 Proposed Budget	**24,516,620**	**73**	**7**	**6**
2020 Budget Adjustment for Accounting Transactions (Appropriation)				
- Depreciation and Amortization	(5,050,000)	-	-	-
- Landfill Care and Closure	(590,000)	-	-	-
2020 Proposed Budget (Appropriation)	**18,876,620**	**73**	**7**	**6**

Solid Waste Services - Disposal
2020 - 2025 Capital Improvement Program
(in thousands)

Project Category	2020	2021	2022	2023	2024	2025	Total
Construction and Land Improvements	9,257	7,475	5,500	1,500	500	500	24,732
Heavy Equipment	5,950	2,650	1,800	-	900	3,300	14,600
Misc Light Equipment	120	280	80	215	80	80	855
New Central Transfer Station	3,337	15,612	14,775	6,627	4,569	-	44,920
Vehicles	1,335	2,020	1,315	1,550	1,400	1,065	8,685
Total	**19,999**	**28,037**	**23,470**	**9,892**	**7,449**	**4,945**	**93,792**

Funding Source	2020	2021	2022	2023	2024	2025	Total
Debt - Clean Water Loan	8,957	7,000	5,000	-	-	-	20,957
Debt - Bonds	3,337	15,612	14,775	6,627	4,569	-	44,920
Equity/Operations	7,705	5,425	3,695	3,265	2,880	4,945	27,915
Total	**19,999**	**28,037**	**23,470**	**9,892**	**7,449**	**4,945**	**93,792**

Solid Waste Services - Disposal
2020 Capital Improvement Budget
(in thousands)

Project Title	Debt	State/Fed Grant	Equity/ Operations	Total
Annual Additional Gas Wells/Piping	-	-	300	300
Cell 9 - Construction	8,807	-	-	8,807
Cherry Pickers- Knuckleboom Cranes	-	-	800	800
D3 Caterpillar Dozer	-	-	175	175
Engineering Design Contract - Anchorage Regional Landfill	150	-	-	150
Mini Excavator	-	-	275	275
New Central Transfer Facility	3,337	-	-	3,337
Office Equipment (Administration)	-	-	30	30
Renewable Energy Project	-	-	50	50
Replace 2005 3/4 Ton Pickup	-	-	75	75
Replace 2005 Light Duty Pickups	-	-	130	130
Replace 2010 Cat Compactor/Dozer	-	-	1,600	1,600
Replace 2013 A35F Volvo 6WD Dump Truck	-	-	800	800
Replace 2014 Peterbilt Tractors (3)	-	-	570	570
Replace 2014 Wilkins Trailers (4)	-	-	560	560
Replace 988K Wheel Loader	-	-	1,200	1,200
Roll-off Containers	-	-	40	40
Shredder	-	-	1,100	1,100
Total	**12,294**	**-**	**7,705**	**19,999**

Solid Waste Services - Disposal Utility
Statement of Cash Sources and Uses

	2018 Actuals	2019 Proforma	2020 Proposed
Sources of Cash Funds			
Operating Income[1]	3,758,896	3,159,918	3,433,936
Depreciation, net of amortization	4,400,603	4,650,000	5,050,000
Interest Received	92,455	400,000	(21,000)
Loan Proceeds	-	16,569,923	12,294,000
Total Sources of Cash Funds	**8,251,954**	**24,779,841**	**20,756,936**
Uses of Cash Funds			
Capital Construction and Acquisition	4,852,874	15,515,352	19,999,000
Land Purchase	-	9,369,923	-
Debt Principal Payment	1,486,613	1,486,612	2,973,224
Debt Interest Payments	213,838	260,000	803,585
Landfill Post Closure Cash Reserve	(1,543,502)	900,000	590,000
Due to Areawide	(141,656)	-	-
Investment Loss on Landfill Post Closure Cash Reserve	1,496,567	-	-
MUSA	871,401	1,153,157	1,170,157
Transfer to Other Funds	12,000	-	-
Dividend Distribution	789,878	232,800	750,000
Total Uses of Cash Funds	**8,038,013**	**28,917,844**	**26,285,966**
Net Increase (Decrease) in Cash Funds	213,941	(4,138,003)	(5,529,030)
Cash Balance, January 1	10,472,180	10,686,121	6,548,118
Cash Balance, December 31	**10,686,121**	**6,548,118**	**1,019,088**
Detail of Cash and Investment Funds			
General Cash Less Customer Deposits	2,630,075	6,507,424	924,088
Construction Cash [(2)]	8,056,046	40,694	95,000
Cash Balance, December 31	**10,686,121**	**6,548,118**	**1,019,088**
Landfill Post Closure Cash Reserve	31,558,268	32,458,268	33,048,268

(1) Operating Income less Functional Costs plus Debt Interest, MUSA, and Dividends.
(2) Assumes transfer from operating cash sufficient to cover constrcution/CIP needs

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Solid Waste Services - Refuse Collection
8 Year Summary
($ in thousands)

Financial Overview	2018 Actuals	2019 Proforma	2020 Proposed	2021	2022	2023	2024	2025
				Forecast				
Revenues	11,170	12,130	12,877	13,521	14,197	14,907	15,652	16,435
Expenses	11,544	11,029	12,381	12,714	13,095	13,488	14,027	14,588
Net Income (Loss)	**(374)**	**1,101**	**496**	**807**	**1,102**	**1,419**	**1,625**	**1,847**
Budgeted Positions	27	27	27	27	27	27	27	27
Capital Improvement Program	2,385	3,710	4,830	12,278	11,345	6,183	4,441	1,755
Transfers (Dividend)	552	-	300	300	300	300	300	300
Bond Sales/STBP	-	1,100	2,225	1,475	11,000	10,000	5,000	4,000
Net Plant (12/31)	5,022	7,332	10,762	21,640	31,585	36,368	39,409	39,764
Net Assets (12/31)	5,452	7,762	11,192	22,070	32,015	36,798	39,839	40,194
Total Cash	**2,213**	**3,189**	**584**	**-**	**-**	**-**	**-**	**-**
Charges by Other Depts	2,298	2,872	2,919	2,977	3,037	3,098	3,160	3,223
Utility Revenue Distribution	-	-	-	-	-	-	-	-
Transfers (MUSA)	75	75	83	271	395	455	493	497
Total Outstanding Debt	-	76	2,301	3,776	14,776	24,776	29,776	33,776
Total Annual Debt Service	-	-	-	144	289	518	681	765
Debt Service Coverage	N/A	N/A	85.00	85	1,639	1,639	1,639	1,639
Debt/Equity Ratio	0/100	1/67	14/67	11/67	31/67	45/67	50/67	56/67
Residential Rate per month								
Commercial Rate (3Yd-1 per wk)	$125.00	$131.00	$137.55	$144.43	$151.65	$159.23	$167.19	$175.55
Rate Increase		5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Statistical/Performance Trends								
Waste Collected (Tons)	35,310	36,500	36,500	36,500	36,500	36,500	36,500	36,500
Average Residential Services	12,230	12,230	12,230	12,230	12,230	12,230	12,230	12,230
Average Dumpsters Services	4,378	4,378	4,378	4,378	4,378	4,378	4,378	4,378

MUSA - Municipal Utility Service Assessment

Solid Waste Services - Refuse Collection
Statement of Revenues and Expenses

	2018 Actuals	2019 Proforma	2019 Revised	20 v 19 $ Change	2020 Proposed	20 v 19 % Change
Operating Revenue						
Commercial	6,919,310	7,217,129	7,665,000	(97,651)	7,567,349	-1.27%
Residential	3,474,533	4,119,265	3,622,500	970,025	4,592,525	26.78%
Dumpster Container Rental	479,920	500,149	498,750	23,468	522,218	4.71%
Other Collection Revenues	201,500	193,304	130,000	(15,748)	114,252	-12.11%
Total Operating Revenue	**11,075,263**	**12,029,847**	**11,916,250**	**880,094**	**12,796,344**	**7.39%**
Non Operating Revenue						
Interest from Cash Pool	95,267	100,000	80,000	(11,000)	69,000	-13.75%
Other Revenue	(80)	-	10,000	1,348	11,348	13.48%
Total Non Operating Revenue	**95,187**	**100,000**	**90,000**	**(9,652)**	**80,348**	**-10.72%**
Total Revenue	**11,170,450**	**12,129,847**	**12,006,250**	**870,442**	**12,876,692**	**7.25%**
Operating Expense						
Labor						
Salaries and Benefits	1,748,213	1,744,999	1,867,994	120,574	1,988,568	6.45%
Overtime	128,494	153,488	125,000	-	125,000	0.00%
Total Labor	3,315,306	3,211,634	3,368,734	124,204	3,492,938	3.69%
Non Labor						
Non Labor	4,111,819	3,654,622	3,828,000	240,400	4,068,400	6.28%
Travel	12,491	12,491	10,000	2,000	12,000	20.00%
Transfers (MUSA, Dividends, and Gross Receipts)	627,492	75,101	75,101	308,199	383,300	1.39%
Depreciation and Amortization	1,178,980	1,196,164	1,017,000	240,000	1,257,000	23.60%
Total Non Labor	5,930,782	4,945,432	4,937,155	783,545	5,720,700	15.87%
Total Direct Cost	**9,246,088**	**8,157,066**	**8,305,889**	**907,749**	**9,213,638**	**10.93%**
Charges by Other Departments	2,297,527	2,871,719	2,871,719	46,902	2,918,621	1.63%
Total Operating Expense	**11,543,614**	**11,028,785**	**11,177,608**	**954,651**	**12,132,259**	**8.54%**
Non Operating Expense						
Interest During Construction	-	168,149	129,333	119,687	249,020	92.54%
Total Non Operating Expense	-	-	129,333	119,687	249,020	0.00%
Total Expense (Function Cost)	**11,543,614**	**11,028,785**	**11,306,941**	**1,074,338**	**12,381,279**	**9.50%**
Net Income (Loss)	**(373,164)**	**1,101,062**	**699,309**	**(203,896)**	**495,413**	**-29.16%**
Appropriation:						
Total Expense			**11,306,941**	**1,074,338**	**12,381,279**	
Less: Non Cash Items						
Depreciation and Amortization			1,017,000	240,000	1,257,000	
Total Non-Cash			1,017,000	240,000	1,257,000	
Amount to be Appropriated (Cash Expense)			**10,289,941**	**834,338**	**11,124,279**	

Solid Waste Services - Refuse
Reconciliation from 2019 Revised Budget to 2020 Proposed Budget

		Positions		
	Appropriation	**FT**	**PT**	**T**
2019 Revised Budget	11,306,941	26	-	1
Transfers by/to Other Departments				
- Charges by Other Departments	46,902	-	-	-
Changes in Existing Programs/Funding for 2020				
- Salaries and Benefits Adjustments	49,199	-	-	-
- Non Labor - Contractual Increases	240,400	-	-	-
- Depreciation and Amortization	240,000	-	-	-
- Municipal Utility Service Assessment (MUSA)	1,145	-	-	-
2020 Continuation Level	**11,884,587**	**26**	**-**	**1**
2020 Proposed Budget Changes				
- Salaries and Benefits Adjustments	75,005	-	-	-
- Travel for Training	2,000	-	-	-
- Interest During Construction	119,687	-	-	-
- Dividend Distribution	300,000	-	-	-
2020 Proposed Budget	**12,381,279**	**26**	**-**	**1**
2020 Budget Adjustment for Accounting Transactions (Appropriation)				
- Depreciation and Amortization	(1,257,000)	-	-	-
2020 Proposed Budget (Appropriation)	**11,124,279**	**26**	**-**	**1**

Solid Waste Services - Refuse Collection
2020 - 2025 Capital Improvement Program
(in thousands)

Project Category	2020	2021	2022	2023	2024	2025	Total
Construction and Land Improvements	200	-	-	-	-	-	200
Heavy Equipment	-	-	-	360	-	360	720
Misc Light Equipment and Containers	395	395	395	395	395	395	2,370
New Central Transfer Station	2,225	10,408	9,850	4,418	3,046	-	29,947
Vehicles	2,010	1,475	1,100	1,010	1,000	1,000	7,595
Total	**4,830**	**12,278**	**11,345**	**6,183**	**4,441**	**1,755**	**40,832**

Funding Source	2020	2021	2022	2023	2024	2025	Total
STBP/Revenue Bonds	2,225	10,408	9,850	4,418	3,046	-	29,947
Equity/Operations	2,605	1,870	1,495	1,765	1,395	1,755	10,885
Total	**4,830**	**12,278**	**11,345**	**6,183**	**4,441**	**1,755**	**40,832**

Short-Term Borrowing Program (STBP)

Solid Waste Services - Refuse Collection
2020 Capital Improvement Budget
(in thousands)

Project Title	Debt	State/Fed Grant	Equity/ Operations	Total
Automated Sideloaders (2)	-	-	740	740
Dumpsters and Lids	-	-	350	350
Electric Collection Vehicle	-	-	600	600
Electric Vehicle Charging Station	-	-	200	200
New Transfer Station	2,225	-	-	2,225
Replace Data Processing Equipment	-	-	30	30
Replace Office Equipment	-	-	5	5
Residential Roll Carts	-	-	10	10
Straight Fork - Peterbilt (2)	-	-	670	670
Total	**2,225**	**-**	**2,605**	**4,830**

Solid Waste Services - Refuse Collection
Statement of Cash Sources and Uses

	2018 Final	2019 Revised	2020 Proposed
Sources of Cash Funds			
Operating Income	(148,649)	691,464	492,201
Depreciation, net of amortization	1,178,980	1,017,000	1,257,000
Interest Received	283,829	80,000	69,000
Misc Non-Operating Revenue	-	10,000	-
Loan proceeds [(1)]	-	11,046,541	2,225,000
Total Sources of Cash Funds	**1,314,160**	**12,845,005**	**4,043,201**
Uses of Cash Funds			
Capital Construction	2,320,461	3,823,568	4,830,000
Land Purchase	-	6,246,541	-
MUSA	75,101	82,155	83,300
Dividends	552,391	-	300,000
Total Uses of Cash Funds	**2,947,953**	**10,152,264**	**5,213,300**
Net Increase (Decrease) in Cash Funds	(1,633,793)	2,692,741	(1,170,099)
Cash Balance, January 1	10,774,436	9,140,643	11,833,384
Cash Balance, December 31	**9,140,643**	**11,833,384**	**10,663,285**
Detail of Cash and Investment Funds			
General Cash Less Customer Deposits	6,927,317	8,643,626	10,078,527
Construction Cash	2,213,326	3,189,758	584,758
Cash Balance, December 31	**9,140,643**	**11,833,384**	**10,663,285**

(1) Loans proceeds approved in 2019 includes Loan Proceeds approved in 2018, and utilized in 2019 for land Purchase.

About Solid Waste Services

The Department of Solid Waste Services (SWS) is composed of two utilities, the Refuse Collections Utility (SWRCU) and the Solid Waste Disposal Utility (SWDU). The SWRCU provides refuse collection service to residential and commercial customers in the old "City of Anchorage" Service Area and the SWDU operates two transfer stations and the Anchorage Regional Landfill (ARL) providing affordable and environmentally responsible municipal solid waste disposal services for the entire Municipality of Anchorage (MOA). SWS is divided into three organizations: SWRCU, SWDU, and Administration (which is a support organization that fully charges out expenses to both SWRCU and SWDU).

Refuse Collections Utility

History
The SWRCU was originally a function of the former City of Anchorage Public Works Department. When the City and Borough merged in 1975, the SWRCU became an enterprise activity of the MOA.

Service
The SWRCU provides refuse collection to the service area of the former City of Anchorage, which is approximately 20% of the population of the MOA. Since 1952, there has been mandatory service for all occupants of the SWRCU service area. The SWRCU has five types of services: commercial dumpsters; automated roll cart service; can and bag service; curbside recycling; and, curbside organics collection. The SWRCU services over 5,000 dumpsters per week with six daily dumpster routes, and two Saturday routes to serve its commercial and multi-family residential customers.

As a result of an automated trash and recycling collection service that began in the fall of 2009, most SWS residential customers are serviced using automated vehicles and roll carts. In 2017, the final phase of automated collection rollout was completed and the SWRCU is servicing eight automated collection routes. Approximately 150 customers remain on can/bag service.

Regulation
The fees charged by SWRCU are overseen by the Anchorage Municipal Assembly. SWRCU is granted the exclusive right to collect solid waste within its defined service area by a Certificate of Public Convenience and Necessity which is issued by the Regulatory Commission of Alaska.

Environmental Mandates
Although there is no specific state or federal regulations governing refuse collection, SWRCU must comply with a number of mandated regulations. These regulations include, but are not limited to, the Federal Clean Air Act; the Clean Water Act; and the Occupational Safety and Health Administration. These regulations have and will continue to impact the economics and operations of SWRCU.

Physical Plant
The SWRCU's truck fleet assets include:

- 11 commercial refuse collection vehicles;
- 10 residential refuse and recycling vehicles (automated and can/bag); 10 automated / 2 Tomcats
- Two rear load vehicles for MOA paper collection and recycling; and,

- 9 support vehicles (General Foreman Vehicle, Refuse Collections Leadman Vehicle, Expeditor Vehicle, Mechanics' Truck, 1-ton tilt Flatbed with lift gate, Box Van, and a 2-ton Flatbed)

Currently, there is an average of 25,000 roll-carts and 2032 dumpsters in service. The SWRCU maintains a 27,000 square foot building that contains vehicle maintenance, warm storage space, and administrative offices and it is located at the Central Transfer Station (CTS).

Future Planning Efforts
The SWRCU is currently in the process of evaluating and rolling out additional collection services such as curbside residential organics collection and commercial glass collection. The SWRCU also plans on deploying all electric medium duty roll-cart and class 8 collection vehicles and is currently working with truck manufacturers in the development of them. The SWRCU is also assisting with the planning and design of the new CTS as there will be numerous components of the new facility that will support their functions.

Solid Waste Disposal Utility

History
Municipal solid waste disposal was originally a function of the City Public Works Department, which operated the city landfill at Merrill Field. Under unification, the MOA acquired responsibility for five waste disposal sites from Peters Creek to Girdwood. The SWDU was formed to operate and maintain these sites, while managing solid waste disposal matters throughout the MOA. The five sites were ultimately closed, and waste disposal was consolidated at the Anchorage Regional Landfill (ARL). ARL is an award winning, state-of-the-art, fully engineered landfill. The facility was opened in 1987 and is the only operating municipal solid waste landfill within the MOA.

Service
The SWDU serves the entire MOA. The services include the disposal of solid waste and collection of household hazardous waste. Municipal solid waste is received at two transfer stations located within MOA. The waste is then transported by the SWDU to ARL for final disposal.

The ARL has a total land area of approximately 275-acres and is being developed in phases called cells. Currently, cells 1 through 7, 8a, 8b, 10 - 12 have been constructed. Cell 9a will begin development in 2020 with preliminary design starting in 2019 for Cell 9. ARL is projected to have a total capacity in excess of 47.5 million cubic yards and should reach its capacity in 2060, dependent upon population growth, waste compaction, diversion of more recyclables and construction activities. In 2018, approximately 350,000 tons were deposited in ARL, which represents approximately 42,000 tons more than in 2017. SWDU currently expects an average of approximately 300,000+ tons in 2019 and 2020.

The transfer stations located at Girdwood and midtown Anchorage (CTS) allow the SWDU to reduce traffic flow to the landfill and restrict access to the working face. CTS receives the largest amount of solid waste, having received nearly 210,000 tons in 2018 from almost 161,000 customers. This facility has an operating capacity of 1,600 tons per day. The 2018 quantity was 12,000 tons less than 2017, which was primarily due to a 3-week shut down of the transfer station in the fall of 2018 for a major reconstruction project of the tipping floor. The SWDU operates a fleet of 29 transfer tractor and trailers that transport the solid waste from Girdwood and CTS with a capacity of 120 cubic yards each.

The SWDU is responsible for post closure care and monitoring of former landfill sites at Merrill Field, Peters Creek (Loretta French Park), and International Airport Road (Javier de la Vega Park). At each of these sites, SWS must perform annual groundwater and landfill gas (LFG) migration monitoring. The SDWU operates an active LFG collection system at Merrill Field to mitigate migration of LFG to commercial buildings constructed along Merrill Field Drive. The SWDU also operates and maintains a leachate collection system along 15th Avenue to mitigate potential migration of groundwater contaminants to the Chester Creek system. Since no closure funds were ever designated for these sites, all post closure care activities must be funded out of the SDWU's annual operating budget.

The SWDU operates a 6,000 square foot hazardous waste collection facility built in 1989 at ARL. Through 2018, the facility has collected nearly 24 million pounds of hazardous waste that otherwise may have been improperly disposed of at ARL, the storm drain system, or citizens' backyards.

Household hazardous waste can be dropped off at CTS (on Tuesday, Thursday, and Saturday) or the Hazardous Waste Facility located at ARL (Tuesday through Saturday). The hazardous waste is then handled by a contractor that sorts and processes the waste into proper containers. Hazardous products are shipped out of state to federally approved hazardous waste disposal sites. Other materials are rendered inert and landfilled, processed locally, or recycled. Anchorage residents bring household items such as paints, cleaners, and solvents to Reuse Centers at CTS or at ARL. The items are then stocked for other Anchorage residents to take home for reuse on household projects. SWS is also exploring the option of using waste oil collected from collection and transfer vehicles to use as fuel in heaters that will provide heat for warm storage locations at CTS and ARL.

Regulation

The SWDU is not economically regulated by any non-municipal agencies but is overseen by the Anchorage Municipal Assembly. SDWU operates under numerous permits and many Environmental Protection Agency (EPA) regulations. ARL is operated under a Solid Waste operating permit issued by the Alaska Department of Environmental Conservation (ADEC). This permit must be renewed every five years. ARL construction and certain operations must comply with the EPA Resource Conservation and Recovery Act (RCRA) subtitle D. The facility is also regulated under a Title V air emissions operating permit issued by ADEC. SWDU operates under two permits from Anchorage Water & Wastewater Utility (AWWU) for industrial water discharge, one for disposal of leachate from ARL and one for discharge of leachate contaminated groundwater at Merrill Field Airport. ARL has permits from the U.S. Department of Fish and Wildlife and the Alaska Department of Fish and Game for bird management.

Environmental Mandates

SWDU must operate under, and comply with, numerous environmental mandates. These mandates have a significant economic impact on the cost of operations and construction for the Utility. The main environmental mandates that have a significant impact on the SWDU are RCRA subtitle D, the Clean Air Act, New Source Performance Standards (NSPS), the Clean Water Act, SARA Title 3 (Super Fund), NESAP (asbestos), and NPDES (storm water discharge). In 2010, EPA added greenhouse gas monitoring and reporting requirements that affect both active and closed landfill sites. It is projected that the environmental mandates regarding operating and constructing a landfill will become even more stringent in the future.

Physical Plant
The SWDU's assets include:

Anchorage Regional Landfill (ARL)

- 275 acres, estimated to last through the year 2050.
- 47.5 million cubic yard capacity.
- Phased construction of cells lasting four to five years each.
- Ten of the 11 landfill cells are fully or partially constructed.
- Located on municipal land.
- Scale house
- 22,000 square-foot shop with an adjoining storage facility, that was severely damaged in the 2018 Earthquake and reconstruction is in the planning stages.
- Heavy equipment fleet: dozers, loaders, dump trucks, water truck, leachate trucks, tankers, lube trucks, grader, excavator and solid waste compactor.
- Two leachate storage and treatment lagoons with a 2.9-million-gallon capacity.
- Gas collection facility with 700 square foot blower and flare station with a 2,000 cubic feet per minute capacity enclosed flare.
- Gas processing facility processes gas to fuel quality and transports it by pipeline to Doyon Utility's power generation system to produce electricity on adjacent military lands. MOA is currently in a 20-year agreement with Doyon, in which Doyon will generate electricity from methane gas to sell to military customers on Joint Base Elmendorf-Richardson (JBER).

Three transfer stations provide intermediate disposal, easy access for public

- Cash booths at Girdwood, CTS, and the ARL public site.
- Two scale houses, one each at CTS and ARL.
- 29 transfer tractor and trailers haul from stations to landfill.

Hazardous waste management

- 6,000 square foot collection facility for household hazardous waste.

Merrill Field Airport

- LFG collection system and leachate/groundwater collection system.

Future Planning Efforts
Future projects include:

- Development of cell 9 will occur by 2020 with an estimated cost of $10.7 million.
- Development of the remainder of the cells (9b and 8c) will occur by 2023 with an estimated cost of $10 million.
- Slope closure and storm water run-off development is on-going.
- Upgrades to
- Expansion of gas collection system into cells 11 and 12 by 2020.
- Construction of leachate evaporators to mitigate growing expense of hauling leachate.
- First strategic plan and Masterplan have been completed and are continuously being updated based upon new goals and strategies as developed by SWS staff.
- CTS Upgrade and Expansion to a new site is in the design and engineering stages. It is anticipated that construction will commence in 2020 and be substantially completed by 2022.

- Construction of replacement for the shop/administration/vehicle maintenance building, and replacement of gas wells and piping are on-going as part of the 2018 earthquake recovery project.