
Refuse Collections Division Solid Waste Services Department

Anchorage: Performance. Value. Results.

Mission

Provide solid waste collection and disposal service to rate-paying customers within our defined service area.

Core Services

- Provide dumpster service to commercial and multifamily residential customers.
- Provide automated garbage and curbside recycle collection and disposal to residential customers.
- Provide manual garbage collection to residential customers not serviced by automated routes

Accomplishment Goals

- Reduce refuse disposal volumes by promoting waste reduction and increased curbside recycling diversion.
- Reduce injuries associated with residential refuse collection.

Performance Measures

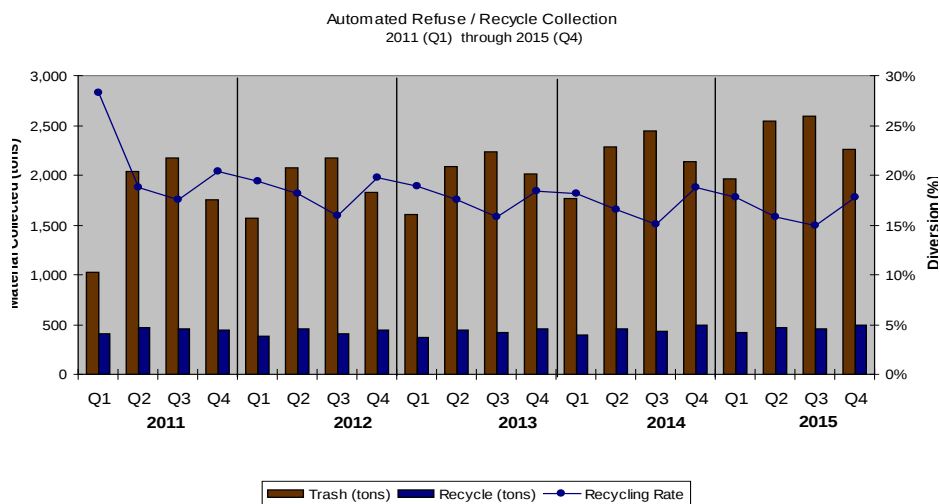
Progress in achieving these goals will be measured by:

- Percent change in recyclable material diversion from the residential waste stream.
- Percent change in worker injuries

The following provides actual data from previous years which quantify these measures:

Measure #1: Increase curbside recycle diversion.

Waste and Recycle Tonnage



Measure #2: Improved safety for Refuse Collection Workers.

Workers Comp Losses 2011 - 2015
Municipal Refuse Collection Utility

As of 31 December 2015

Service Type	Injury Type	2011		2012		2013		2014		2015	
		Incidents	Losses	Incidents	Losses	Incidents	Losses	Incidents	Losses	Incidents	Losses
Manual Residential	TLI	1	\$17,771	3	\$126,687	0	\$0	1	\$1,802	0	\$0
	MO / RO	1	\$98	3	\$2,426	2	\$81	1	\$173	0	\$0
Automated Residential	TLI	0	\$0	0	\$0	3	\$52,992	0	\$0	0	\$0
	MO / RO	1	\$0	0	\$0	0	\$0	0	\$0	1	\$0
Commercial	TLI	0	\$0	0	\$0	0	\$0	1	\$3,490	0	\$0
	MO / RO	0	\$0	7	\$3,246	2	\$154	1	\$552	1	\$0
Vehicle Maintenance	TLI	0	\$0	0	\$0	1	\$5,473	0	\$0	0	\$0
	MO / RO	0	\$0	0	\$0	0	\$0	0	\$0	1	\$0
Other	TLI	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
	MO / RO	4	\$2,806	0	\$0	1	\$1,379	1	\$0	1	\$0
Total	TLI	1	\$17,771	3	\$126,687	4	\$58,465	2	\$5,292	0	\$0
	MO / RO	6	\$2,904	10	\$5,672	5	\$1,614	3	\$725	4	\$0

Total: \$0

TLI = Time lost incident

MO = Incident required medical attention but no lost time

RO = Incident required no medical attention or lost time

Solid Waste Disposal Utility Division

Solid Waste Services Department

Anchorage: Performance. Value. Results.

Mission

Dispose of municipal solid waste generated within the Municipality in compliance with state and federal regulations.

Core Services

- Operate the Anchorage Regional Landfill (ARL)
- Operate the solid waste transfer stations and transfer fleet
- Promote community recycling efforts

Accomplishment Goals

Optimize solid waste transfer truck utilization

Performance Measures

- Solid waste transfer truck payload weight
- Transfer loads per driver shift

The following graph provides actual average payloads by month from January 2011 through December 2015.

Measure #3: Average transfer payload rate.

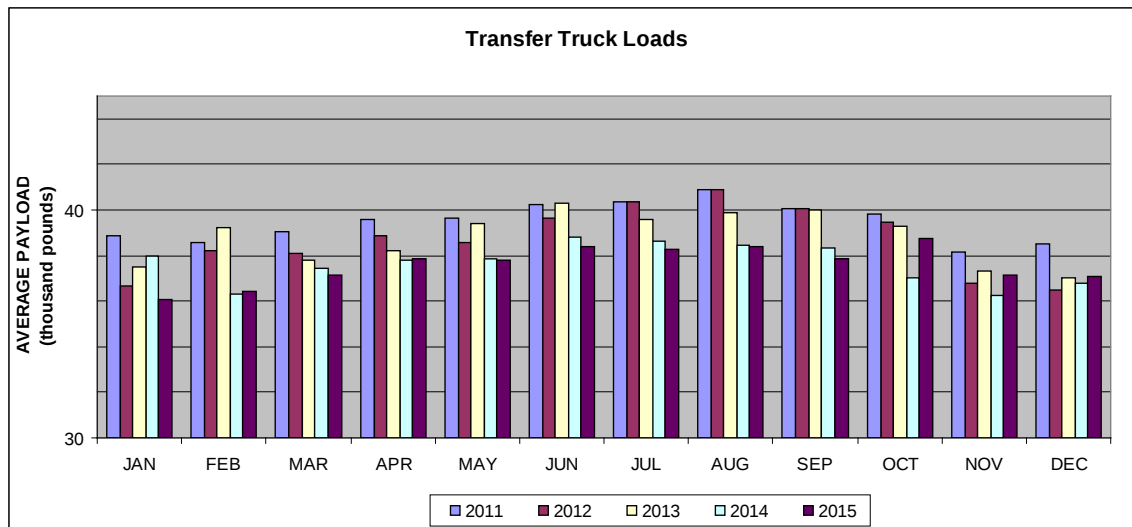


Table 1. Payload Data 2014 – 2015

<u>MONTH</u>	<u>AVERAGE WEIGHT</u>	<u>EXCEEDING TARGET</u>	<u>EXCEEDING TARGET (+/- 5%)</u>
OCT-14	37,036	35%	65%
NOV-14	36,239	57%	79%
DEC-14	36,758	79%	85%
JAN-15	36,073	56%	84%
FEB-15	36,449	63%	85%
MAR-15	37,119	70%	88%
APR-15	37,851	81%	94%
MAY-15	37,826	49%	81%
JUN-15	38,392	56%	85%
JUL-15	38,251	56%	84%
AUG-15	38,421	59%	87%
SEP-15	37,686	49%	80%
OCT-15	38,756	67%	89%
NOV-15	37,148	69%	87%
DEC-15	37,062	66%	87%

Table 2. Loads per Driver Shift Data 2014 – 2015

MONTH	SHIFTS $\geq$ 5 LOADS	SHIFTS $\geq$ 4 LOADS
OCT-14	77%	100%
NOV-14	72%	96%
DEC-14	18%	68%
JAN-15	8%	71%
FEB-15	9%	68%
MAR-15	11%	68%
APR-15	32%	90%
MAY-15	63%	96%
JUN-15	78%	97%
JUL-15	72%	91%
AUG-15	79%	97%
SEP-15	65%	96%
OCT-15	63%	93%
NOV-15	36%	86%
DEC-15	36%	91%

Performance Measure Methodology Sheet
Refuse Collections Division
Solid Waste Services Department

Measure #1: Increase Curbside Recycle Diversion
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Type

Effectiveness

Accomplishment Goal Supported

Achieve an overall recycle diversion rate of 20 percent for all residential customers.

Definition

Refuse Collections currently diverts between 16 percent and 20 percent of the waste stream from residential customers to recycle markets. We currently service greater than 98 percent of our customers on automated routes, with all residential refuse collection routes automated. Increasing diversion of recyclables reduces our operating costs.

Data Collection Method

All refuse and recycle loads are weighed by commercial scales at the Central Transfer Station. The diversion rate is calculated as the percentage of materials delivered to the recycle center out of all materials collected by the residential collection trucks. Customer participation is currently measured solely by subscription rate. SWS is evaluating means of estimating actual household participation by other measures, such as lift arm cycles on the recycle collection vehicles.

Frequency

All vehicles are weighed prior to unloading. Weights are automatically entered into our load management system, with scale house staff entering vehicle numbers on the weight transaction. Lift arms have an on-board cycle counter. Route drivers would record the beginning and ending count on the cycle counter for every shift.

Measured By

Weights are measured using the SWS commercial scales. Load counter data are recorded by route drivers on their daily route sheets. Diversion rate is calculated as the ration of tonnage diverted to total tonnage collected.

Reporting

Weight and arm cycle data are provided to the SWS Recycling Coordinator who reviews the data and calculates the diversion rates and household participation.

Used

Data is used by SWS to budget for disposal and recycle processing costs. Diversion and participation rates can be used to focus educational materials and customer outreach to better promote the program.

Explanatory Information

The automated refuse collection program includes a voluntary curbside recycling program which is provided to the customers at no additional charge. Source reduction and diversion of recyclables extends the life of the landfill. The Collection Utility realizes

a savings for each ton of recyclable materials diverted. The cost to dispose of refuse delivered to the Transfer Station is \$68/ton whereas the cost to process recycled materials is currently \$60/ton.

Approximately 13 percent of customers refused to have a recycling roll cart when they selected their automated service level. There are many other customers who have a recycling roll cart but do not use it.

Performance Measure Methodology Sheet
Refuse Collections Division
Solid Waste Services Department

Measure #2: Improved safety for Refuse Collection Workers
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Type

Effectiveness

Accomplishment Goal Supported

Reduce injuries for Refuse Collection Workers

Definition

SWS will provide fleet improvements and training to all Refuse Collection staff to improve operational safety of this group. We will track costs and lost time associated with worker injuries by operational activity.

Data Collection Method

All accident and injury related data is reported to and compiled by the Municipal Risk Manager's office in accordance with Municipal policies and procedures and Occupational Health and Safety Administration (OSHA) requirements.

Frequency

Data is collected on a per incident basis.

Measured By

Injuries and incidents are measured and reported per OSHA standard reporting requirements.

Reporting

The Municipal Risk Management department provides monthly reports which detail losses by month and year-to-date. The SWS Safety Officer attributes incidents to job-specific activities.

Used

Data is used by the SWS Safety Officer and Director to identify high risk activities, perform job safety analyses, and develop training and safety system adjustments to focus on reducing incidents.

Explanatory Information

From 2002 through 2006, the Refuse Collection Utility incurred approximately \$860,000 in Worker's Compensation medical claims. In 2008 SWS began implementation of automated refuse collection for residential customers. Currently 90% of all residential trash is collected by automated equipment.

Performance Measure Methodology Sheet
Disposal Division
Solid Waste Services Department

Measure #3: Average transfer payload rate.

Type

Efficiency

Accomplishment Goal Supported

Maximization of fleet utilization by ensuring that all transfer loads meet load targets (38,000 lbs in summer; 36,000 lbs in winter) whenever possible and that drivers ideally make 5 trips per day to the landfill.

Definition

This measure will improve utilization of the transfer fleet. Significant deviation from this measure may be an indication that the fleet is under-utilized or over-staffed.

Data Collection Method

All transfer trucks are weighed upon arrival at ARL. Truck number, driver identification, load weight and origin are recorded into our automated scale house database for each truck.

Frequency

Measurement is made for every truckload hauled to ARL. A summary report is produced on a weekly basis showing each load, by driver, by day.

Measured By

Weights are measured by the commercial scales at ARL which are certified for commerce by the State of Alaska. Truck number and driver identification are entered by the scale house staff, but weights are recorded directly from the scale to the database.

Reporting

A weekly report is prepared by the SWS IT group which summarizes the loads by driver, weight and day. Total loads and truck count are recorded in an Excel spread sheet which summarizes the sources of all loads entering the landfill by day, day of week, month and year.

Used

Data is used by the Director and Disposal Superintendent and Transfer Station General Foreman to schedule staffing and shifts and make decisions on fleet size and vehicle replacement.

Explanatory Information

Approximately 70 percent of all solid waste processed by the Disposal Utility is received at the Central Transfer Station (CTS) and then transported by our transfer fleet to ARL. Operation of our transfer fleet is one of the more costly operational activities of the utility. Each day, SWS processes an average of 800 tons of garbage through CTS. SWS operates a fleet of transfer trailers, each with a capacity of 120 cubic yards (cy). A trailer can carry a maximum payload of between 38,000 and 42,000 pounds depending on the

vehicle weight. Actual payloads are often less than that, and depend on the amount, type and condition of garbage received. Payloads are also further reduced when load restrictions are in force during spring thaw.

There are no national standards for transfer operations as each transfer station represents a unique combination of transfer equipment, haul distance and local garbage characteristics. SWS has tracked transfer operations since the inception of ARL. Our general goal for weekday operations is 38,000 pounds of payload per trailer in summer and 36,000 pounds in winter (November through April).

The optimal material for waste transfer operations is municipal solid waste from commercially collected residential and commercial garbage routes. These loads are soft, compressible and generally free of oversized materials. Loads of this material only could exceed the allowable axle load limits before reaching the volume capacity of the trailer. When frozen, the efficiency of packing these materials is reduced as the garbage tends to take on a more rigid structure. Loads tend to fill the trailer volume at between 36,000 pounds and 38,000 pounds in winter.

Loads containing construction and demolition debris, fabrication and warehouse wastes and loads hauled by individual homeowners and businesses tend to contain bulky objects and materials which do not pack well into the transfer trailers. Refuse received on Saturdays generally contains a much higher percentage of these less-optimal wastes due to the large number of residential users. Consequently load efficiencies on these days are significantly decreased and highly variable.

The time to load, unload and travel round trip between the Central Transfer Station and landfill is approximately 105 minutes. On an ideal shift, a driver can make five round trips, including vehicle fueling, safety inspections and contract defined breaks. Traffic, tire maintenance, mechanical maintenance, wait times entering the landfill and timing of garbage arrival can reduce the number of trips per shift. While 5 trips is the optimal goal, 4 trips are considered common.