

**FAIRBANKS NORTH STAR BOROUGH**  
**SUSTAINABILITY COMMISSION SPECIAL MEETING AGENDA**  
*Noel Wien Public Library Conference Room*  
*1215 Cowles Street, Fairbanks, AK*

October 3, 2018 @ 6:30 PM

**A. ROLL CALL**

**B. MESSAGES**

1. Citizen's Comments - limited to three (3) minutes
  - a. Agenda Items
  - b. Items other than those appearing on the agenda
2. Disclosure & Statement of Conflict of Interest

**C. APPROVAL OF AGENDA AND CONSENT AGENDA**

Approval of Consent Agenda passes all routine items indicated by an asterisk (\*) on the agenda. Consent Agenda items are not considered separately unless any Commission member or citizen so requests. In the event of such a request, the item is returned to the general agenda.

**D. MINUTES**

*None*

**E. CONSENT AGENDA ITEMS**

*None*

**F. UNFINISHED BUSINESS**

1. CRF Commercial Tip Fee – Action Item
  - a. Ordinance No. 2018-20
2. Draft Sustainability Plan – Action Item
  - a. Potential Sustainability Indicators for Food, Energy, and Waste
  - b. Sustainability Summit

**G. NEW BUSINESS**

*None*

**H. EXCUSE FUTURE ABSENCES**

**I. COMMISSIONER'S COMMENTS/COMMUNICATIONS**

1. Chairperson's Comments
2. Commissioner's Comments
3. Liaison Comments
4. Staff Comments

**J. ADJOURNMENT**



# Fairbanks North Star Borough Solid Waste Division

455 Sanduri Road • Fairbanks, Alaska 99701 • (907)459-1482 • FAX 459-1017

## MEMORANDUM

TO: Fairbanks North Star Borough Assembly

THRU: Karl Kassel, Borough Mayor

FROM: Dan Sloan, Director of Public Works

DATE: September 27, 2018

SUBJECT: ORDINANCE NO. 2018-20

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Attached for your approval is an ordinance amending FNSBC 21.20.010 Definitions, 21.20.70 Landfill Tipping Fees, and FNSB 21.20.090 Waiver of Tipping Fees for Landfill and Borough Recycling Facilities.

I urge your approval of this Ordinance.

Attachments: Ordinance  
FY19 Revised User Fee Schedule  
Commercial Examples

By: Karl Kassel, Mayor  
Introduced: September 27, 2018

FAIRBANKS NORTH STAR BOROUGH

ORDINANCE NO. 2018 -

AN ORDINANCE AMENDING FNSBC 21.20.010 DEFINITIONS, REMOVING OLD DEFINITIONS NOT REFERENCED ELSEWHERE IN FNSBC 21.20; FNSBC 21.20.070 LANDFILL TIPPING FEES; FNSBC 21.20.090 WAIVER OF TIPPING FEES, WAIVE MINOR LOADS OF NON HAZARDOUS WASTE, MINOR LOADS OF RESIDENTIAL RECYCLABLES AND MINOR LOADS OF COMMERCIAL RECYCLABLES, ALLOWING ELIGIBLE NON PROFITS TO BE EXEMPT FROM PAYING THE FEES AT BOROUGH RECYCLING FACILITIES, AND ALLOWING THE MAYOR TO WAIVE THE FEES AT BOROUGH RECYCLING FACILITIES FOR RECYCLABLES FROM COMMUNITY EVENTS

WHEREAS, FNSBC 21.20.010 contains definitions that are not used elsewhere in FNSBC 21.20; and

WHEREAS, The Central Recycling Facility opened September 1, 2017 to collect regular and electronic recyclables from the community; and

WHEREAS, The assembly approved the Central Recycling Facility FY19 user fee schedule charging some commercial loads to generate revenue for the Central Recycling Facility; and

WHEREAS, FNSBC 21.20.070 requires that any person disposing of solid waste at the borough landfill pay a tipping fee established in accordance with FNSBC 21.20.010; and

WHEREAS, FNSBC 21.20.090 A allows the tipping fee to be waived for minor residential loads to the landfill; and

AMENDMENTS ARE SHOWN IN LEGISLATIVE FORMAT  
Text to be *added* is underlined  
Text to be *deleted* is [BRACKETED, CAPITALIZED]

34  
35 WHEREAS, FNSBC 21.20.090 B allows for the waiver of tipping fees at the  
36 landfill for Internal Revenue Code 501 (c) or 501 (d) nonprofits that receive items that  
37 are in disrepair that cannot be resold or distributed; and

38  
39 WHEREAS, FNSBC 21.20.090 C allows the borough mayor to waive fees  
40 for materials brought to the landfill for borough recycling programs and for community  
41 cleanup activities; and

42  
43 WHEREAS, it is desired to amend FNSBC 21.20.70 to codify a fee for  
44 disposing of certain commercial loads of recyclables at a borough recycling facility; and

45  
46 WHEREAS, it is desired to amend FNSBC 21.20.90 A to waive the fee for  
47 residential and minor commercial recyclable loads to a borough recycling facility; and

48  
49 WHEREAS, it is desired to amend FNSBC 21.20.090 B to waive fees for  
50 certain Internal Revenue Code 501 (c) or 501 (d) nonprofits at a Borough Recycling  
51 Facility; and

52  
53 WHEREAS, it is desired to amend FNSBC 21.20.090 C to allow the  
54 borough mayor to waive fees for recyclables collected at programs, events, and  
55 activities which promote recycling, and brought to a borough recycling facility.

56  
57 NOW, THEREFORE, BE IT ORDAINED by the Assembly of the Fairbanks  
58 North Star Borough:

59  
60 Section 1. This ordinance is of a general and permanent nature and shall be  
61 codified.

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62

63 Section 2. Section 21.20.010 Definitions is amended to read:

64 In this chapter unless the context requires otherwise:

65 "Biomass" means a given quantity of organic material.

66 "Bulky wastes" are large items of refuse including but not limited to appliances,  
67 vehicles, furniture, large auto parts, tires, trees and branches, stumps and flotsam.

68 ["COMMINGLED RECYCLABLES" MEANS A MIXTURE OF SEVERAL RECYCLABLE  
69 MATERIALS INTO ONE CONTAINER.]

70 ["CURBSIDE COLLECTION" MEANS PROGRAMS WHERE RECYCLABLE MATERIALS ARE  
71 COLLECTED AT THE CURB FROM SPECIAL CONTAINERS, TO BE BROUGHT TO  
72 VARIOUS PROCESSING FACILITIES.]

73 ["DIRECTOR" MEANS THE PUBLIC WORKS DIRECTOR OR HIS/HER DESIGNEE.]

74 ["DIVERSION RATE" MEANS A MEASURE OF THE AMOUNT OF RECYCLABLES  
75 DIVERTED FOR RECYCLING COMPARED WITH THE TOTAL AMOUNT THAT WAS  
76 PREVIOUSLY LANDFILLED.]

77 ["DOCUMENTATION" MEANS WRITTEN PROOF THAT A QUANTITY OF RECYCLABLES  
78 HAS BEEN RECYCLED AND WILL NOT BE LANDFILLED.]

79 ["DROP-OFF CENTER" MEANS A METHOD OF COLLECTING RECYCLABLE OR  
80 COMPOSTABLE MATERIALS IN WHICH INDIVIDUALS TAKE MATERIALS TO  
81 COLLECTION SITES AND DEPOSIT THEM INTO DESIGNATED CONTAINERS.]

82 "Garbage" means any putrescible solid and semisolid animal or vegetable wastes  
83 resulting from the production, handling, preparation, cooking, serving or consumption  
84 of food or food materials.

85 "Hazardous waste" means a waste or combination of wastes that because of quantity,  
86 concentration or physical, chemical or infectious, pathological or radiological  
87 characteristics might cause, or significantly contribute to:

88 1. An increase in mortality or an increase in serious irreversible, or incapacitating  
89 reversible, illness; or

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90 2. A substantial present or potential hazard to human health or to the  
91 environment if improperly managed, treated, stored, transported or disposed of  
92 or otherwise managed.

93 "Industrial solid waste" means any waste substance or a combination thereof resulting  
94 from the operation of or from any process of industry, manufacturing, trade or  
95 business, or from the development of any agricultural or natural resources.

96 ["INERT SOLID WASTES" MEANS WASTES INCLUDING BUT NOT LIMITED TO WOOD,  
97 GLASS, CROCKERY, BRICK, PLASTICS, RUBBER OR OTHER MATERIALS WHICH HAVE  
98 MINIMUM POTENTIAL FOR ENVIRONMENTAL DEGRADATION AND LEACHATE  
99 PRODUCTION.]

100 "Infectious waste" means certain laboratory, surgical and hospital waste; surgical  
101 specimens including pathological specimens, tissues, blood elements, excreta and  
102 secretions obtained from patients; disposable materials that have been in contact with  
103 persons who have a suspected or diagnosed communicable disease; a substance that  
104 might harbor or transmit pathogenic organisms; disposable materials from outpatient  
105 areas, emergency rooms and rooms of patients with a suspected or diagnosed  
106 communicable disease that requires isolation; and certain equipment, including  
107 instruments, syringes and needles.

108 ["JUNK" MEANS USED MATERIALS WHICH WILL NOT BE FURTHER UTILIZED UNLESS  
109 COLLECTED AND PROCESSED FOR REUSE OR RECYCLING.]

110 "Litter" means any discarded, used or unconsumed substance or waste material which  
111 has not been deposited in a suitable litter receptacle.

112 ["MANUAL SEPARATION" MEANS THE SEPARATION OF RECYCLABLE OR  
113 COMPOSTABLE MATERIALS FROM WASTE BY HAND SORTING.]

114 ["MATERIALS RECOVERY" MEANS EXTRACTION OF MATERIALS FROM THE WASTE  
115 STREAM FOR REUSE OR RECYCLING, INCLUDING SOURCE SEPARATION, FRONT-END  
116 RECOVERY, IN-PLANT RECYCLING, POST-COMBUSTION RECOVERY, LEAF  
117 COMPOSTING, ETC.]

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118 ["MECHANICAL SEPARATION" MEANS THE SEPARATION OF WASTE INTO VARIOUS  
119 COMPONENTS USING MECHANICAL MEANS, SUCH AS CYCLONES, TROMMELS AND  
120 SCREENS.]

121 ["PUTRESCIBLE WASTE" MEANS MATERIAL THAT CAN DECOMPOSE AND CAUSE  
122 OBNOXIOUS ODORS.]

123 ["RECYCLABLE METALS" MEANS COPPER, BRASS, BRONZE, ALUMINUM, LEAD, ZINC,  
124 AND FERROUS METALS, BUT DOES NOT INCLUDE STEEL CANS AND THOSE METALS  
125 THAT ARE BONDED OR FUSED TO OTHER MATERIALS AND CANNOT BE READILY  
126 SEPARATED.]

127 "Recyclables" means materials that have useful physical or chemical properties after  
128 serving their original purpose and that can, therefore, be reused or remanufactured into  
129 additional products, including refuse derived fuel (RDF).

130 "Recycling" means the process by which a material that would otherwise be placed in  
131 the landfill is collected, reprocessed, or remanufactured, and then reused, or used for  
132 energy.

133 "Refuse" means any putrescible or nonputrescible solid waste, except human excreta.

134 "Resource recovery" means the processing of solid wastes in such a way as to produce  
135 materials or energy which may be used in manufacturing, agriculture, or other  
136 processes.

137 ["RUBBISH" MEANS ANY SOLID WASTE EXCEPT ASHES AND PUTRESCIBLE WASTE.]

138 "Secured" means tied down or otherwise not subject to release.

139 ["SEWAGE SLUDGE" MEANS THE ORGANIC SLUDGE GENERATED BY MUNICIPAL OR  
140 OTHER WASTEWATER COLLECTION AND TREATMENT ACTIVITIES, AND MAY INCLUDE  
141 PRIMARY, SECONDARY AND DIGESTED SLUDGES, GRIT AND SCREENINGS.]

142 ["SLUDGE" MEANS ANY SOLID, SEMISOLID OR LIQUID WASTE WHICH CONTAINS AT  
143 LEAST FIVE PERCENT SOLIDS BY WEIGHT GENERATED AT A MUNICIPAL,  
144 COMMERCIAL OR INDUSTRIAL WASTEWATER TREATMENT PLANT, SEPTIC TANK,  
145 WATER SUPPLY TREATMENT PLANT OR AIR POLLUTION CONTROL FACILITY;

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146 "SLUDGE" INCLUDES ANY SIMILAR MATERIAL ACCUMULATED IN AND REMOVED FROM  
147 A STORAGE TANK OR SURFACE IMPOUNDMENT CONTAINING OIL, INDUSTRIAL  
148 LIQUID WASTE, ACID, CHEMICALS OR OTHER SIMILAR SUBSTANCES.]

149 "Solid waste" means drilling wastes, garbage, refuse, sludge and other discarded  
150 material, including solid, liquid, semi-solid or contained gaseous material resulting from  
151 industrial, commercial and agricultural operations, and from community activities. For  
152 the purposes of this chapter "solid waste" does not include:

- 153 1. Spoil and overburden from road construction, land clearing or mining  
154 operations;
- 155 2. Mining waste regulated by the Federal Surface Mining Control and  
156 Reclamation Act of 1977, as amended, and by the Alaska Surface Mining Control  
157 and Reclamation Act of 1982 (AS 27.21);
- 158 3. Domestic sewage and other wastes that are discharged into the pass through  
159 a sewer system to a publicly owned treatment works;
- 160 4. Industrial or mining wastes that are being collected, stored or treated in:
  - 161 a. A wastewater treatment plant before discharge or removal, or
  - 162 b. An industrial processing facility for continual reuse;
- 163 5. Industrial discharges that are point sources subject to permits under Section  
164 402 of the Federal Water Pollution Control Act, as amended;
- 165 6. Source, special nuclear, or byproduct material as defined by the Nuclear  
166 Waste Policy of 1982, as amended January 7, 1983, at Public Law 97-425.

167 ["SOURCE SEPARATION" MEANS THE SEGREGATION OF SPECIFIC MATERIALS AT THE  
168 POINT OF GENERATION FOR SEPARATE COLLECTION. RECYCLABLES ARE SOURCE  
169 SEPARATED AT RESIDENCES AS PART OF A RECYCLING PROGRAM.]

170 "Special solid waste" means hazardous wastes, infectious wastes, radioactive wastes,  
171 industrial wastes or sludges and sewage residues. (Ord. 2017-49 § 6, 2017; Ord. 2012-  
172 49 § 2, 2012; Ord. 2009-39 § 3, 2009; Ord. 2003-43 § 2, 2003; Ord. 94-045 §§ 2, 3,

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173 1994; amended during 1993 republication; Ord. 89-038 § 2, 1989; Ord. 84-29 § 2,  
174 1984. 2004 Code § 8.12.021.)

175  
176 Section 3. 21.20.070 Landfill tipping fees is amended to read:  
177 [LANDFILL TIPPING] Fees  
178 A. Except as otherwise provided in this chapter, any person disposing of solid waste at  
179 the borough landfill shall pay a tipping fee established in accordance with FNSBC  
180 8.60.010. Except as otherwise provided in this chapter, any person disposing of  
181 commercial recyclables at a borough recycling facility shall pay a fee established in  
182 accordance with FNSBC 8.60.010.

183  
184 Section 4. 21.20.090 Waiver of tipping fees is amended to read:  
185 A. The borough will waive the tipping fee to residents of the borough who bring minor  
186 loads of residential nonhazardous solid waste to the landfill. The borough will waive the  
187 fee to residents of the borough who bring loads of residential recyclables, and waive  
188 the fee for minor commercial loads to a borough recycling facility. For the purpose of  
189 this subsection, loads of residential nonhazardous waste brought to the landfill from a  
190 residence in a passenger vehicle, a pick-up truck, or a trailer with two wheels and a  
191 single axle or four wheels and a double axle will be considered minor loads. [IF THE  
192 VEHICLE IS NOT REGISTERED IN THE NAME OF A COMPANY OR BUSINESS OR USED  
193 FOR COMMERCIAL PURPOSES.] For the purpose of this subsection, loads of  
194 commercial recyclables brought to a borough recycling facility from a passenger vehicle,  
195 pick-up truck, or trailer with two wheels and a single axle will be considered a minor  
196 commercial load.

197  
198 B. Any Internal Revenue Code Section 501(c)(3) or 501(d) nonprofit organization which  
199 accepts clothing, furniture, or other items of personal property, on a year-round basis  
200 and sells those items of personal property to raise funds for the organization's services,

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201 or distributes those items of personal property to persons in need, shall be exempt from  
202 paying tipping fees on that personal property which is in such disrepair that it cannot be  
203 resold and must be transported to and disposed of in the landfill, and shall be exempt  
204 from paying fees for the recyclables that are generated from their operations, and  
205 transported to a borough recycling facility.

206  
207 C. The borough mayor may waive tipping fees for materials to the landfill for borough  
208 recycling or hazardous waste disposal programs and for community cleanup activities.  
209 The mayor may waive fees for recyclables to a borough recycling facility from  
210 educational programs, community events, and other activities which promote and  
211 educate the community on recycling. The mayor may waive tipping fees for debris  
212 from private residences in the borough damaged by fire if there is no reimbursement  
213 for such waived fees from any other source. The mayor, when there is a direct and  
214 primary benefit to the public, may waive tipping fees for materials removed from  
215 deteriorated property, as defined in FNSBC 8.04.010, during the course of rehabilitation,  
216 repair, construction, reconstruction, renovation, demolition, removal or replacement of  
217 any structure on such property.

218  
219 D. All other loads will be considered commercial and will be charged the [USUAL]  
220 applicable tipping fee on the entire load. (Ord. 2005-26 § 4, 2005; Ord. 99-006 § 2,  
221 1999; Ord. 94-085 § 2, 1994; Ord. 94-074 §§ 2, 3, 1994; Ord. 93-002 § 3, 1993; Ord.  
222 91-056 § 2, 1991. 2004 Code § 8.12.055.)

223  
224  
225 Section 5. 21.20.100 Collection and transportation of solid waste is amended to  
226 read:

227

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228 D. Any person who arrives at any borough-operated solid waste disposal facility,  
229 including the South Cushman [BALEFILL/]landfill, a borough recycling facility, and any  
230 borough solid waste transfer station, with a vehicle or container which is not covered or  
231 with a load which is not secured is in violation of this section. (Ord. 2003-43 § 3, 2003;  
232 Ord. 84-29 § 2, 1984. 2004 Code § 8.12.061.)

233  
234 Section 6. Effective date. This ordinance shall be effective at 5:00 p.m. of the  
235 first Borough business day following its adoption.

236  
237 PASSED AND APPROVED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2018.

238  
239  
240

241  
242

243  
244

245  
246

247 April Trickey, CMC  
248 Borough Clerk

\_\_\_\_\_  
Kathryn Dodge  
Presiding Officer

APPROVED:

\_\_\_\_\_  
Jill S. Dolan  
Borough Attorney

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

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**CENTRAL RECYCLING FACILITY  
FY19 USER FEE SCHEDULE**

(JULY 1, 2018 – JUNE 30, 2019)

**\* FEE SCHEDULES AND VARIOUS OTHER SOLID WASTE DIVISION FORMS ARE LOCATED ON THE WEBSITE \***

<p><b>REGULAR RECYCLABLES</b> </p>	<p><b>Residential:</b> Accepted free of charge. <b>Commercial:</b></p> <ol style="list-style-type: none"> <li>1. Loads transported in a passenger vehicle, pickup truck, or <b>trailer with two wheels and a single axle</b> - Accepted <b>free</b> of charge</li> <li>2. Other loads accepted at <b>\$70/ton</b> (2,000 lbs)</li> </ol> <p>Approved application and Memorandum of Agreement required prior to delivery</p> <p><b>Regular Recyclables generated outside the FNSB:</b> <b>NOT ACCEPTED</b></p>	<p>Regular Recyclables include:</p> <ul style="list-style-type: none"> <li>♦ Aluminum Beverage Cans</li> <li>♦ Cardboard</li> <li>♦ Mixed Paper</li> <li>♦ Newspaper</li> <li>♦ Office Paper</li> <li>♦ Plastic #1 PET Bottles</li> <li>♦ Plastic #2 HDPE Jugs</li> </ul> <p><b>Recyclables must be separated and free of contamination.</b> <b>NOTE: This list is not complete.</b></p> <p><b>FOR ADDITIONAL INFORMATION VISIT:</b> <a href="http://fnsb.us/pw/Pages/CentralRecyclingFacility.aspx">http://fnsb.us/pw/Pages/CentralRecyclingFacility.aspx</a></p>
<p><b>RECYCLABLES</b> </p>	<p><b>Residential:</b> Accepted <b>free</b> of charge <b>Commercial:</b></p> <ol style="list-style-type: none"> <li>1. <b>Up to ten (10) items accepted free of charge</b> Loads transported in a passenger vehicle, pickup truck, or trailer with two wheels and a single axle - Accepted <b>free</b> of charge</li> <li>2. Ten (10) items or more accepted at <b>\$0.35/lb</b> or <b>\$700/ton</b> (2,000 lbs) Other loads accepted at <b>\$700/ton</b> (2,000 lbs)</li> </ol> <p>Approved application and Memorandum of Agreement required prior to delivery</p> <p><b>Electronic Recyclables generated outside the FNSB:</b> <b>NOT ACCEPTED</b></p>	<p>Electronic Recyclables include:</p> <ul style="list-style-type: none"> <li>♦ TV's &amp; Monitors</li> <li>♦ Computers / Laptops / Servers</li> <li>♦ Tablets &amp; Smartphones</li> <li>♦ Desktop Peripherals</li> <li>♦ Ink Toner / Cartridges</li> <li>♦ Printers / Copiers</li> <li>♦ Cords / Cables</li> <li>♦ Small Household Appliances</li> <li>♦ Household Batteries</li> </ul> <p><b>NOTE: This list is not complete.</b> <b>CANNOT ACCEPT:</b> CD/DVD/Floppy Discs, Exit Signs, Light Bulbs, Smoke Alarms, Thermostats, Vacuum Cleaners, Vehicle Batteries, VHS/Cassette Tapes</p> <p><b>FOR ADDITIONAL INFORMATION VISIT:</b> <a href="http://fnsb.us/pw/Pages/CentralRecyclingFacility.aspx">http://fnsb.us/pw/Pages/CentralRecyclingFacility.aspx</a></p>

## Central Recycling Facility

### Commercial examples to determine whether proposed code changes provides for fee waiver

Customer Type	Material Type	Quantity	Fee	Vehicle Type	Interval	Code provides for fee waiver (Yes/No)
1 Small Retail Store	OCC	15 T/Yr	\$1,050	Box Truck	Bi- Weekly	No
2 Local Petroleum Company	OCC, MP, #1, #2, ALU	4 T/Yr	\$280	Box Truck	Weekly	No
3 Large Retail Store	OCC (baled)	10 T/Yr	\$700	Box Truck or other	Bi-Weekly	No
4 Nonprofit Community Organization	OCC (baled)	35 T/Yr	\$2,450	Box Truck	Weekly	Yes - 21.20.090 B
5 Non Profit Community Organization - Hauling Service	All Types	200 T/Yr	\$14,000	Box Truck	Daily	No
6 Organization coordinating and promoting recycling	ALU, OCC, PETE, HDPE	2 T/Yr	\$120	Various	Monthly	Yes - 21.20.090 C
7 FNSB School District - Warehouse	ER	18 T/Yr	\$12,600	Box Truck, Flat Bed	Monthly	No
8 Local Business	ONP	50 T/Yr	\$3,500	Box Truck	Weekly	No
9 Small Pet Store	OCC	Estimate 4 T/ Yr	\$280	Box Truck	Weekly	No
10 Local Business	ER	Estimate 7 T/Yr	\$4,900	Box Truck	Monthly	No
11 Local Auto Glass Co.	OCC	Estimate 10 T/Yr	\$700	Dual axle trailer	Monthly	No
12 Borough Administrative Office	All Types	Estimate 6 T/Yr	\$420	Box Truck	Weekly	No
13 Public Library	All Types	Estimate 5 T/Yr	\$350	Box Truck	Weekly	No
14 FNSB School - Program	OCC, SOP	Estimate 1 T/Yr	\$70	School Bus	Weekly	Yes - 21.20.090 C

**Material Type:**

<b>OCC - Cardboard</b>	<b>ALU - Aluminum Cans</b>
<b>MP - Mixed Paper</b>	<b>PETE - Plastic #1</b>
<b>ONP - Newspaper</b>	<b>HDPE - Plastic #2</b>
<b>SOP - Office Paper</b>	<b>ER - Electronics</b>

## MEMORANDUM

**To:** Fairbanks North Star Borough Sustainability Commission

**Date:** August 31, 2018

**From:** Jim Powell, Assist. Professor, University of Alaska Southeast  
Bob Orttung, Research Professor, George Washington University

**Subject:** Potential Sustainability Indicators for Food, Energy and Waste

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Sustainability is generally described as meeting the needs of the present without compromising the ability of future generations to meet their needs. What needs do we have in the Fairbanks North Star Borough? What can the commission and FNSB do to help meet those needs without compromising the needs of future generations? These are complicated questions. As a first step, the commission agreed to focus on the following aspects of sustainability: food security, energy security and waste reduction. We present general goals with a suite of potential indicators to track progress in these three areas. These were developed after interviewing local experts and practitioners, discussions with government officials, and research. The indicators below are organized according to theme, goals, and data/references.

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### Food Security

**Definition:** Food security means having access to enough food at all times to meet the nutritional needs for physical health.<sup>1</sup>

**Problem Statement:** We have a three-day supply of food in our local stores yet it's estimated 40% will end up in the landfill. We've become less independent. Now ninety-five percent of our food is imported from the Lower 48 and foreign nations. Meanwhile the percentage of Alaska adults who are obese has steadily increased over the past two decades reaching 31.1% in 2016. Leading health officials state that obesity is the predominant public health threat of our lifetimes. Access to local foods, especially fruits and vegetables, reduces food insecurity and obesity.

#### Food Security Goal: Increase Local Food Production

Indicator	Data / References
Percent of locally-produced food in stores	<a href="#">Interior Alaska Food Network?</a> Survey of stores?

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<sup>1</sup> Maiser, M.L., (2017). Redefining Food Security in a Community Context: An Exploration of Community Food Security Indicators and Social Worker Roles in Community Food Strategies. *Journal of Community Practice*, 25:2, 213-234, DOI: 10.1080/10705422.2017.1308897.

Number of farms	Fairbanks Economic Development Corporation?
Number of participants in community gardens	<a href="#">Interior Alaska Food Network?</a>
Acres of land farmed or gardened	FNSB-Community Planning?
Business environment for local food producers	[Develop entrepreneur ecosystem map?]
Schools buying local produce	FNSB School District?
Farmers participating in Farmer's Markets	<a href="#">Tanana Valley Farmer's Market?</a>
Restaurants, distributors or stores buying local	<a href="#">Interior Alaska Food Network?</a>
CSA participants	<a href="#">Interior Alaska Food Network?</a>
Number of food education programs in schools	FNSB School District?
Number of food education programs for aspiring gardeners and farmers	[One farmer cited YouTube as best source]

### Food Security Goal: Increase Access to Local Fruits and Vegetables

Indicator	Data / References
Percent living above the federal poverty rate <b>(88.9% in 2015)</b>	Alaska Dept of Health and Social Services (ADHSS) <a href="#">Healthy Alaskans 2020 Scorecard</a>
Pounds of fruits and vegetables distributed	Fairbanks Community Food Bank?
Number of families served in the Commodity Supplemental Food Program	Fairbanks Community Food Bank?
Number of community gardens	FNSB-Community Planning or <a href="#">Interior Alaska Food Network?</a>
Number of SNAP recipients per month <b>(3,303 cases/mo x 2.35 avg people/case = 7,762 recipients/mo in FY17)</b>	<a href="#">ADHHS-Div of Public Assistance Statewide Profile</a>
WIC recipients	ADHSS?

School & summer youth meal recipients	ADHSS?
Percentage of households deemed food secure <b>(91% in 2013)</b>	ADHSS <a href="#">Behavioral Risk Factor Surveillance System</a>
Percentage of population deemed obese <b>(31.6% of adults in 2016)</b>	ADHSS <a href="#">AK-IBIS</a>

**Notes:** The literature states universally, that the poverty rate is the most important indicator for food security. Based on our interviews and expert observations there are several trends that the commission might want to track.

## Energy Security

**Definition:** Energy security means the ability of residential and community energy systems to function optimally and sustainably. (Adapted from Azzuni and Breyer, 2017<sup>2</sup>)

**Problem Statement:** The average annual energy cost for a home is over 2X the national average. The majority of homes are poorly-insulated, which create additional energy demand. Traditional energy options are expensive or can seriously impact human health and the environment. Above-average energy costs contribute to food insecurity.

### Energy Security Goal: Reduce Household Energy Costs and Consumption

Indicator	Data / References
Average annual energy cost per home <b>(\$5,292 in 2017)</b>	Alaska Housing Finance Center <a href="#">Annual Housing Assessment</a>
Average annual energy usage (MMBTUs) per home <b>(238 MMBTUs in 2017)</b>	Alaska Housing Finance Center <a href="#">Annual Housing Assessment</a>
Percentage of homes built to Alaska BEES	AHFC?
Percentage of homes built prior to 1980 needing weatherization <b>(40% in 2017)</b>	Alaska Housing Finance Center <a href="#">Annual Housing Assessment</a>
Access to education in schools, community	FNSB School District?

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<sup>2</sup> Azzuni, A. and C. Breyer (2017). Definitions and Dimensions of Energy Security: A Literature Review. Wiley Online Library, <https://bit.ly/2oqWXnm>, accessed on August 28, 2018.

## Energy Security Goal: Reduce CO<sub>2</sub> and Other Emissions

Indicator	Data / References
Tons of CO <sub>2</sub> emissions per year (All Sources) <b>(3.76 MMT CO<sub>2</sub>e, or 38.6 metric tons per resident in 2007)</b>	UAF-Alaska Center for Energy & Power <a href="#">2007 Baseline Inventory</a>
Tons of PM <sub>2.5</sub> emissions per day (Winter season, All Sources) <b>(4.2 tons/day in 2013)</b>	Alaska Dept. of Environmental Conservation <a href="#">2017 Draft Baseline Emission Inventory</a>
Local energy production (biomass, coal, other)	UAF-ACEP?
Number of members per year in GVEA's SNAP and SNAP Plus programs (or combined capacity in kW) <b>(191 members/979kW in 2017)</b>	GVEA
Percent of energy from renewables <b>(20% of peak load in 2014)</b>	GVEA
Number of natural gas customers <b>(1100 in 2018)</b>	Interior Gas Utility
Cost of energy and business development	[no existing baseline data]

## Energy Security Goal: Reduce FNSB Operational Energy Consumption

Indicator	Data / References
MMBTU heat energy usage per year <b>(2013-17, 12-month avg trending downward)</b>	FNSB-Public Works (Loeffler Report, 2017)
kWh electricity usage per year <b>(2013-17, 12-month avg trending downward 2%/year)</b>	FNSB-Public Works (Loeffler Report, 2017)
Tons of CO <sub>2</sub> emissions per year (structures and transportation) <b>[no existing baseline data]</b>	UAF-ACEP? FNSB-Public Works?
Tons of CO <sub>2</sub> emissions offset per year (direct and indirect) <b>[no existing baseline data]</b>	UAF-ACEP? FNSB-Public Works?
Number of solar panels installed/year	FNSB-Public Works?

Percentage of electricity from FNSB solar	FNSB-Public Works?
Percentage of heat and electricity from FNSB biomass	FNSB-Public Works?

## Waste Reduction

**Definition:** Waste reduction or minimization refers to the use of source reduction, affirmative procurement, equipment modification, reuse, and/or environmentally-sound recycling methods prior to energy recovery, treatment, or disposal of wastes. (Adapted in part from the Environmental Protection Agency<sup>3</sup> and State of Alaska<sup>4</sup>)

**Problem Statement:** Landfills are toxic, expensive to operate, and must be managed forever. Last year we buried an estimated 23 million pounds of food and 20 million pounds of plastics in our landfill. About 25% of our waste is paper and cardboard - resources with steady demand in the recyclables market.

### Waste Reduction Goal: Divert 25% of our waste from the landfill by 2025

Indicator	Data / References
Percentage of waste diverted from landfill per year (recycled tons/landfill tons) <b>(1% in FY18)</b>	FNSB-Central Recycling Facility <a href="#">Annual Report</a>
Number of building lots per day added to the landfill <b>[no existing baseline data]</b>	FNSB-Solid Waste?
Pounds per day per person solid waste generated <b>(5.75/day/person in FY16)</b>	FNSB-Solid Waste <a href="#">Annual Report</a>
Pounds per year of solid waste generated per household <b>[no existing baseline data]</b>	FNSB-Solid Waste?
Tons per day of solid waste delivered to landfill <b>(290 tons/day in FY17)</b>	FNSB-Solid Waste <a href="#">Annual Report</a>
Gallons of oily water recovered and used per year <b>(689 gallons in FY17)</b>	FNSB-Solid Waste <a href="#">Annual Report</a>
Gallons of used oil recovered and used per year <b>(23,523 gallons in FY17)</b>	FNSB-Solid Waste <a href="#">Annual Report</a>

<sup>3</sup> EPA definition of waste minimization, <https://bit.ly/2wtwf1t>, accessed on August 28, 2018

<sup>4</sup> Chapter 66 of Alaska Admin Code, <https://bit.ly/2wtwSrR>, accessed on August 28, 2018

Percent food waste recovered from municipal solid waste <b>[no existing baseline data]</b>	(EPA <a href="#">estimates</a> 15% of US MSW is food waste with a typical recovery rate of 2.3%)
Tons of electronics recycled per year <b>(100 tons in 84% of FY18)</b>	FNSB-Central Recycling Facility <a href="#">Annual Report</a>
Avg. number of residential vehicle visits per day <b>(Avg. 116 vehicles/day in FY18)</b>	FNSB-Central Recycling Facility <a href="#">Annual Report</a>
Number of business visits per day <b>(Avg. 7 businesses/day in FY18)</b>	FNSB-Central Recycling Facility <a href="#">Annual Report</a>



## FAIRBANKS NORTH STAR BOROUGH

907 Terminal St. Fairbanks AK 99701 (907) 459-1000

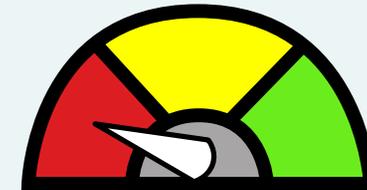
### SUSTAINABILITY METRIC:

# Energy Use and Security

Energy security is the ability of residential and community energy systems to function optimally and sustainably. The average annual energy cost for a home in Fairbanks is more than twice the national average. High energy demand results from poor insulation in most Fairbanks homes. Traditional energy options are expensive or can seriously impact human health and the environment. Above-average energy costs contribute to food insecurity.

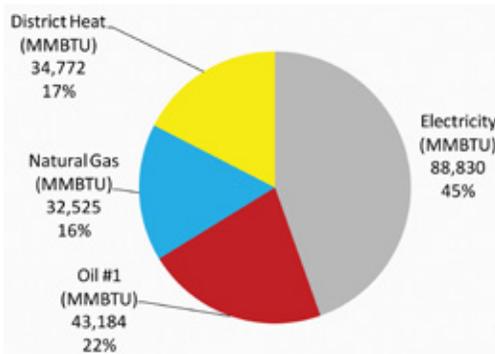
## FNSB Government Operations: Current Situation and Trends

How are we doing?

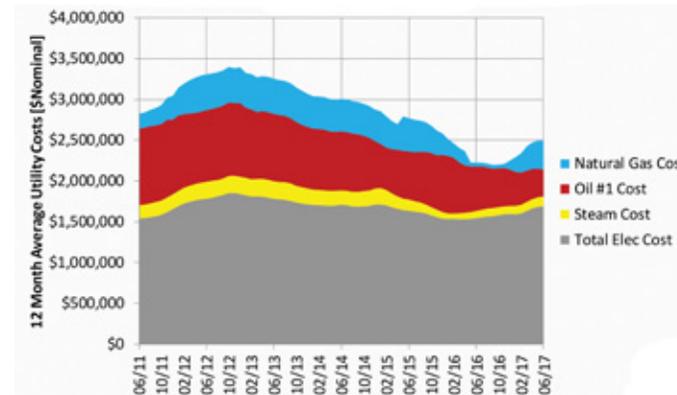


**Needs  
Improvement**

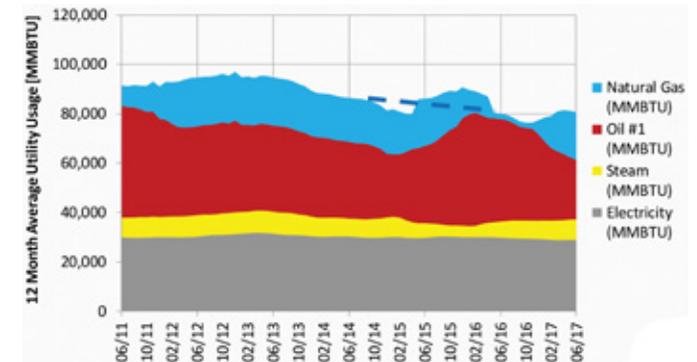
Fairbanks Energy Usage, FY17



Fairbanks Energy Cost Trends, 2011-2017



Fairbanks Energy Use Trends, 2011-2017





## FAIRBANKS NORTH STAR BOROUGH

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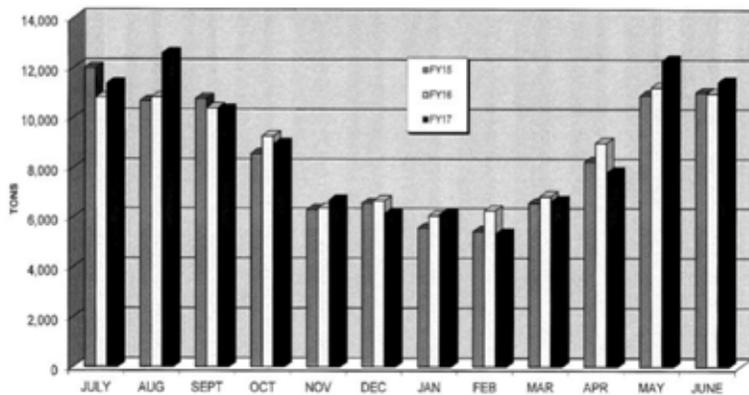
### SUSTAINABILITY METRIC:

# Solid Waste & Recycling

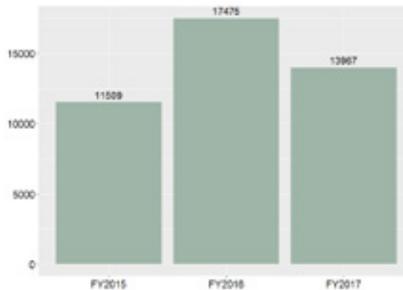
**Goal: RECYCLE MORE AND DIVERT MORE WASTE FROM THE LANDFILL.**  
 Most hazardous waste can be either recycled or used as a waste-to-energy fuel. And, the scrap metal recycling program—mostly junk automobiles—provides recycling opportunities for unwanted vehicles.

## Current Situation and Trends

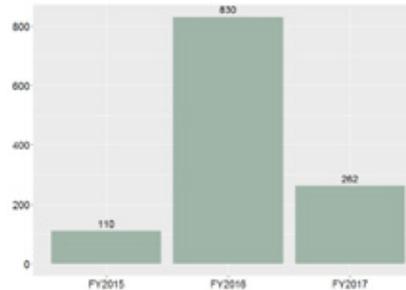
Total Tonnage of Solid Waste into the FNSB Solid Waste Facility



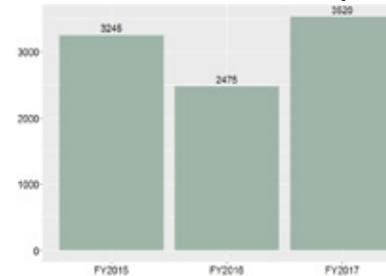
Gallons of Antifreeze



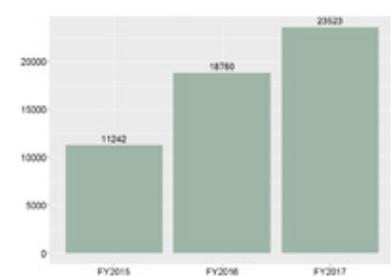
Pounds of Aluminum



Gallons of Flammable Liquids

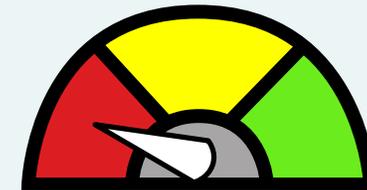


Gallons of Used Oil



## How are we doing?

### Recycling in Fairbanks



**Needs Improvement**

### Solid Waste Disposal in Fairbanks



**Doing OK**