

# Aleut Community Store

## Refrigeration Efficiency Retrofit

2020 DOE Program Review  
Presenter Patrick Baker, Executive Director

### Project Summary Goals

- Replace refrigeration equipment and display cases with an energy efficient refrigeration system.
- Lower cost of energy and maintenance for Aleut Community Store by \$44,385 per year.
- Lower cost of Chill and Freeze goods by 10%

Project Estimate	Budget	Actual
Federal Funds	494,458	494,458
Local Cost Share	501,531	599,670
<b>Total</b>	<b>995,989</b>	<b>1,094,128</b>



# TRIBAL GOVERNMENT OF SAINT PAUL



Tribal Stats	
Local Members	390
Employees	80
Economy	Fishing/Tourism
Annual Budget	\$14M
Government	50%
Retail Sales	35%
Construction/Maint	15%
Offices	St. Paul & ANC
Diesel, \$/gallon	\$3.65
Electric, \$/Kw	\$0.49

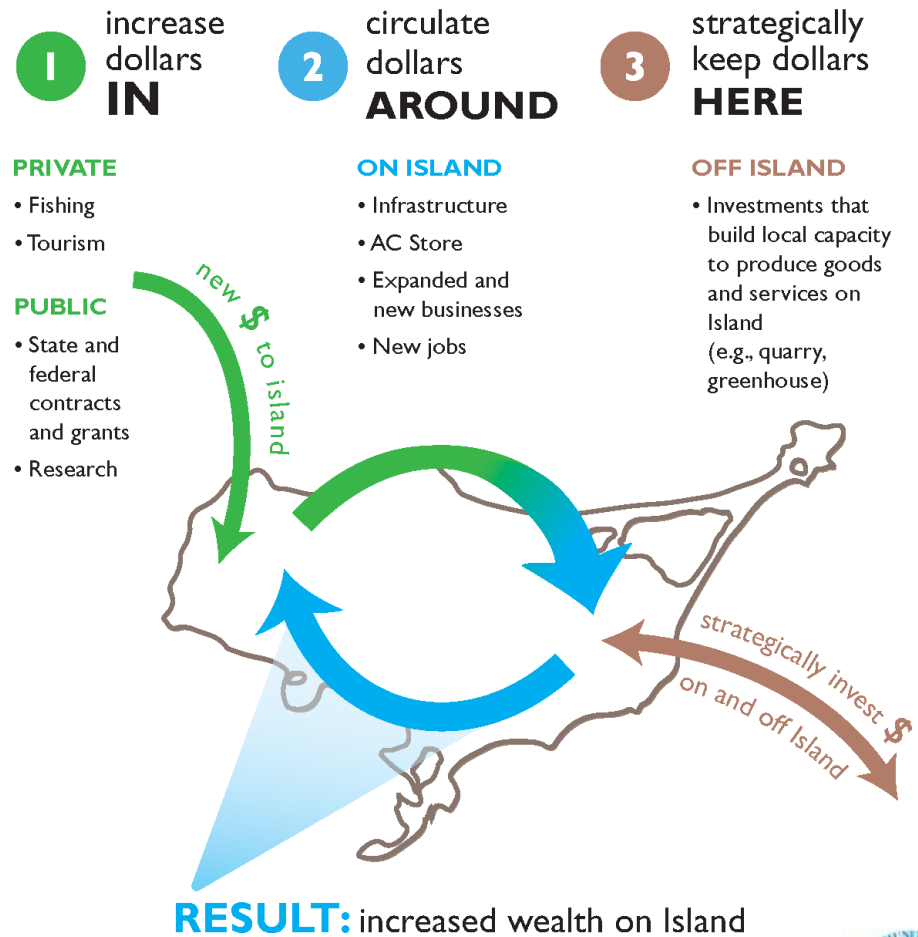
“Healthy Resilient People Working Together”



# Store Acquisition 2017

- Self-Determination
- Increase Tribal Self-Sufficiency
- Coordination with Other Community Programs
  - Greenhouse, Reindeer, Food Bank
- Economic Development
- Business Diversification
- Growth
  - Expansion into Grocery, Hardware, Fishing Supplies
- Retain Economic Values
  - Jobs, Administration, Assets, and Earnings
- Improve Quality of Life
- More Product Offerings
  - Health and Home Improvement Sections
- Enhance the Facility & Shopping Experience
- Jobs with Benefits and Career Opportunities
- Building Customer Service and Community Pride

## 3 STEPS for BUILDING a **POWERFUL** LOCAL ECONOMY



# Project Location



# Project Location



Aleut  
Community  
Store





Frozen Meats

2

Frozen Foods

Dairy & Cheese  
Deli & Fresh Meat

XTRATUF  
XTRATUF  
XTRATUF

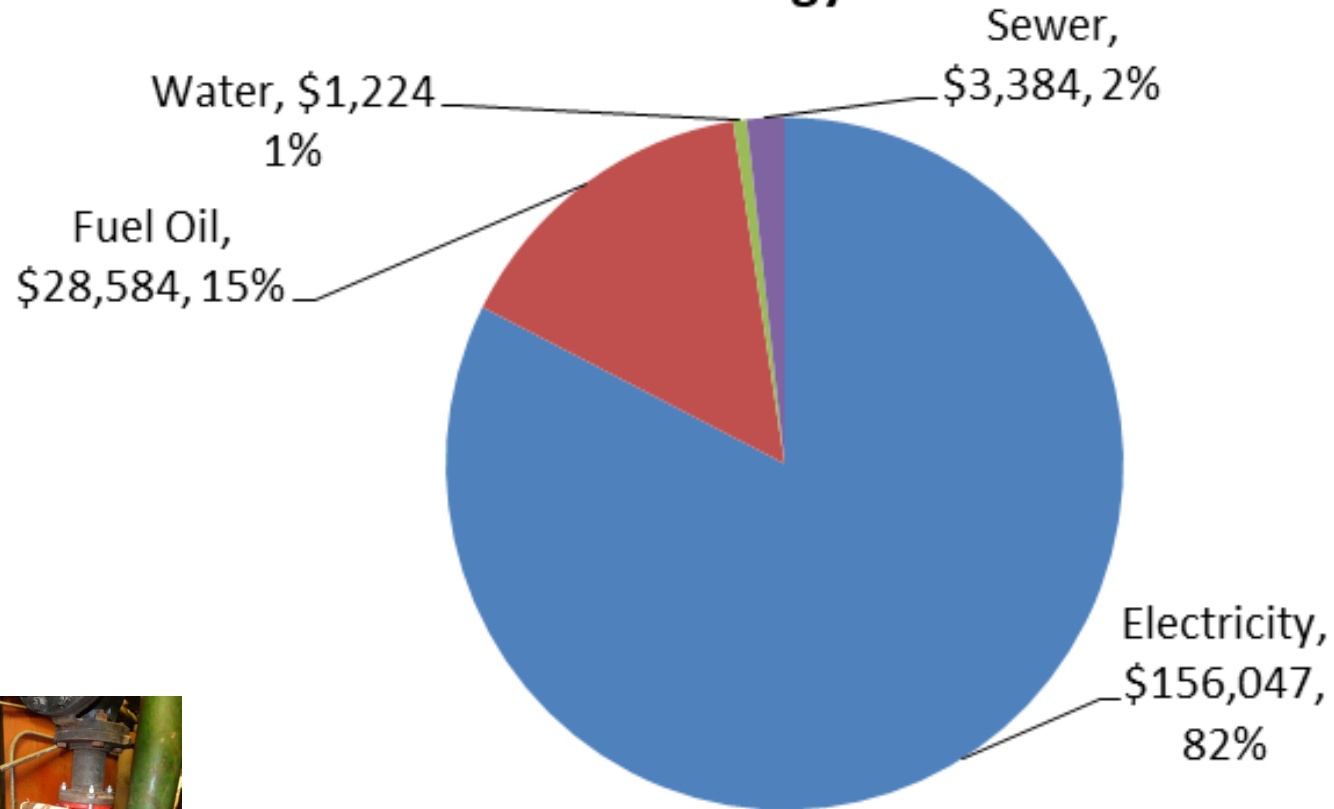
XTRATUF

clubparis  
by great



# Aleut Community Store – Energy Audit

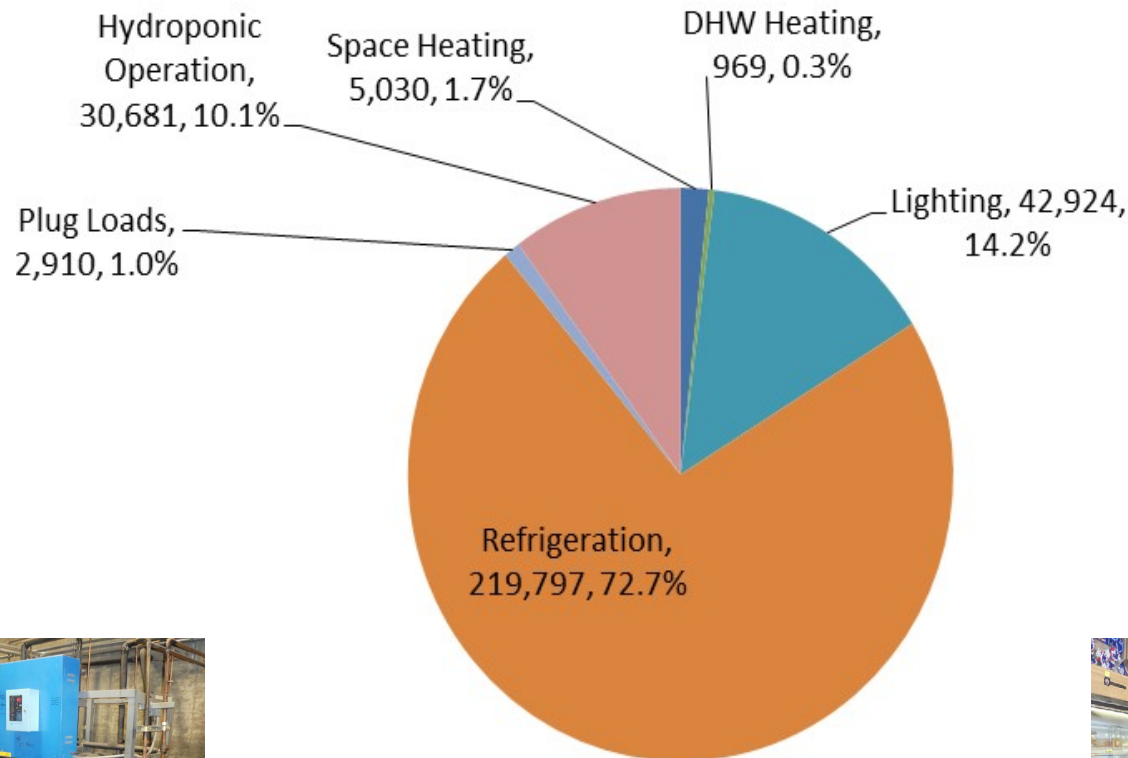
## Distribution of Energy Costs





# Aleut Community Store – Energy Audit

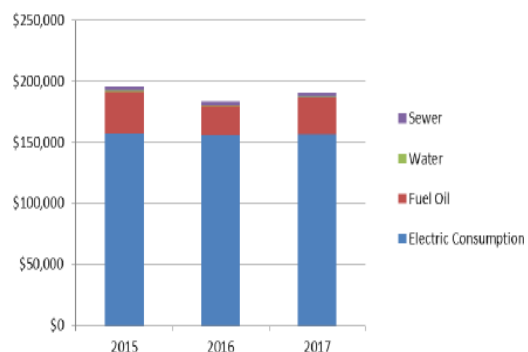
Distribution of Electric Consumption (kWh)



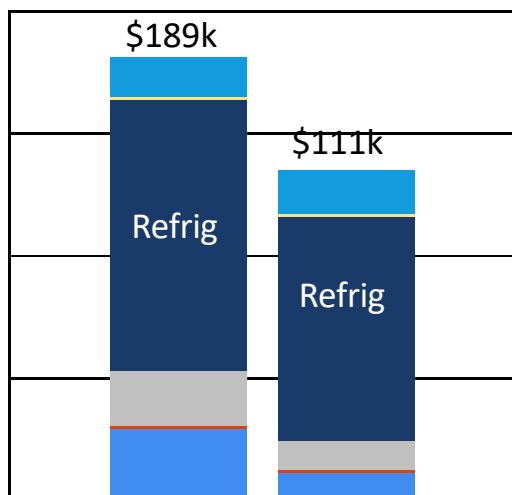
# Aleut Community Store – Retrofit Cost/Benefit

Figure 1.7 – Energy Costs

Annual Utility Costs



Baseline Utility Data			
		Consumption	Annual Cost
Aleut Community Store	Electricity (kWh)	302,132	\$156,047
	Fuel Oil (gallons)	7,405	\$28,584
	Water	< 120,000 gal	\$1,224 min.
	Sewer	not measured	\$3,384
<b>Building Total</b>			<b>\$189,239</b>



	Installed Cost	Energy & Maint. Savings	Simple Payback (yrs.)
HVAC related	\$133,800	\$13,020	10.3
Lighting	\$23,349	\$9,654	2.4
Envelope	\$90,966	\$6,831	13.3
Refrigeration	\$814,270	\$48,319	16.9
<b>Totals</b>	<b>\$1,062,385</b>	<b>\$77,824</b>	<b>13.7</b>



# Project Status & Results

September 30, 2020: Project Substantially Complete

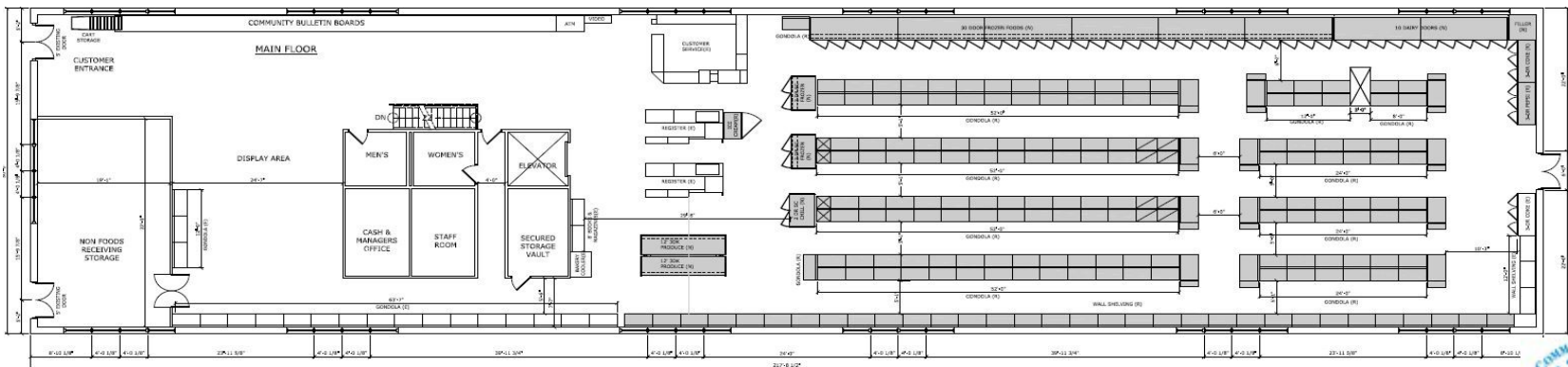
December 2020: Project 99% Complete (Monitoring)

ELECTRIC		
OCTOBER	Kw	\$
Oct-20	17,499.00	8,854.20
Oct-19	22,842.00	11,386.56
Net Change	<b>-23%</b>	<b>(2,532.36)</b>

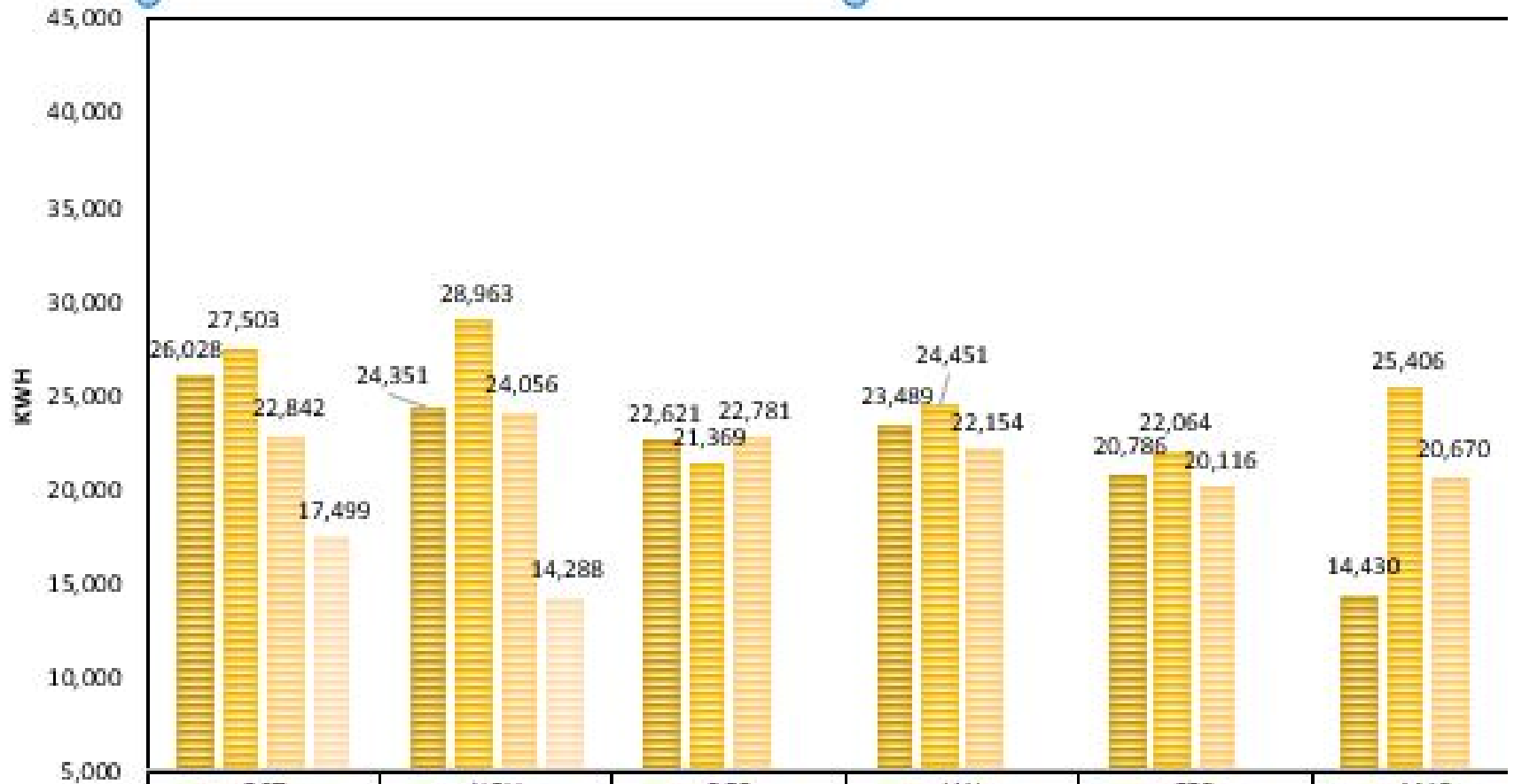
HEATING FUEL		
OCTOBER	Diesel, Gal	Diesel, \$
Oct-20	494.00	1,683.76
Oct-19	522.00	1,891.36
Net Change	<b>-5%</b>	<b>(207.60)</b>

NOVEMBER		
NOVEMBER	Kw	\$
Nov-20	14,288.00	7,315.61
Nov-19	24,056.00	11,969.28
Net Change	<b>-41%</b>	<b>(4,653.67)</b>

NOVEMBER		
NOVEMBER	Diesel, Gal	Diesel, Gal
Nov-20	686.90	2,335.85
Nov-19	1,582.00	5,727.64
Net Change	<b>-57%</b>	<b>(3,391.79)</b>



# ALEUT COMMUNITY STORE KWH



	OCT	NOV	DEC	JAN	FEB	MAR
■ FY 18 KWH	26,028	24,351	22,621	23,489	20,786	14,430
■ FY 19 KWH	27,503	28,963	21,369	24,451	22,064	25,406
■ FY 20 KWH	22,842	24,056	22,781	22,154	20,116	20,670
■ FY 21 KWH	17,499	14,288				



A control panel featuring a monochrome screen at the top, a keyboard with function keys (F1-F5), a numeric keypad, and a directional pad. A blue logo is visible on the right side of the panel.

**Compressors**

1-1

1-2

1-3

1-4

1-5

1-6

WATER RECLAIM

SC

**CAUTION**  
 High Voltage  
 Do not touch the terminals or components inside the cabinet.  
 Disconnect the power supply before working.

**WARNING:**  
 Risk of Electric Shock  
 Do not touch any part of the equipment.  
 Disconnect all power electric power supplies before working.

FOR SERVICE ONLY - DO NOT TOUCH  
 THIS AREA. THE SYSTEM IS UNDER MAINTENANCE.  
 ALL OPERATIONS SHOULD BE STOPPED.  
 CONTACT THE SERVICE DEPARTMENT FOR MORE INFORMATION.  
 THANK YOU FOR YOUR UNDERSTANDING.





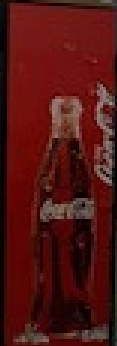




MONSTER ENERGY

Coca-Cola ICE

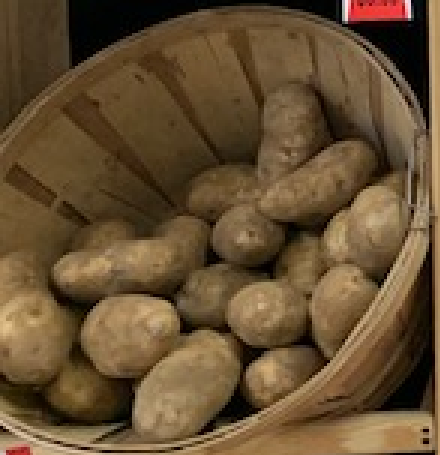
Coca-Cola ICE CO







3.99



3.99



3.99



3.99



3.99





# Challenges & Lessons Learned

- 2018/2019 Gov't Shut Down
- Logistics
  - Tribe Coordinated
- Relocation of Heating Loop
  - Rehab Expanded Scope
- COVID19
  - 14-day Quarantine
  - Distancing
  - Cleaning



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