

Update on City of Nanaimo's Energy Management Plan

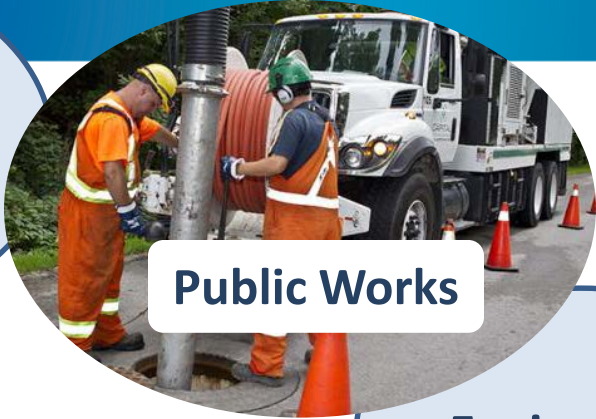
Scott Pamminger
Manager, Infrastructure Planning & Energy





Fire Rescue

**Bylaw
Department**



Public Works

Engineering

**Community
Planning**

City of Nanaimo

**630 Permanent Employees
157 Seasonal Employees**



Legislative Services



Police Services

IT Department



Parks & Recreation

Finance



What is Energy Management?

- Encourage energy conscientious behaviours
- Seeks opportunities with existing and new assets to operate more efficiently

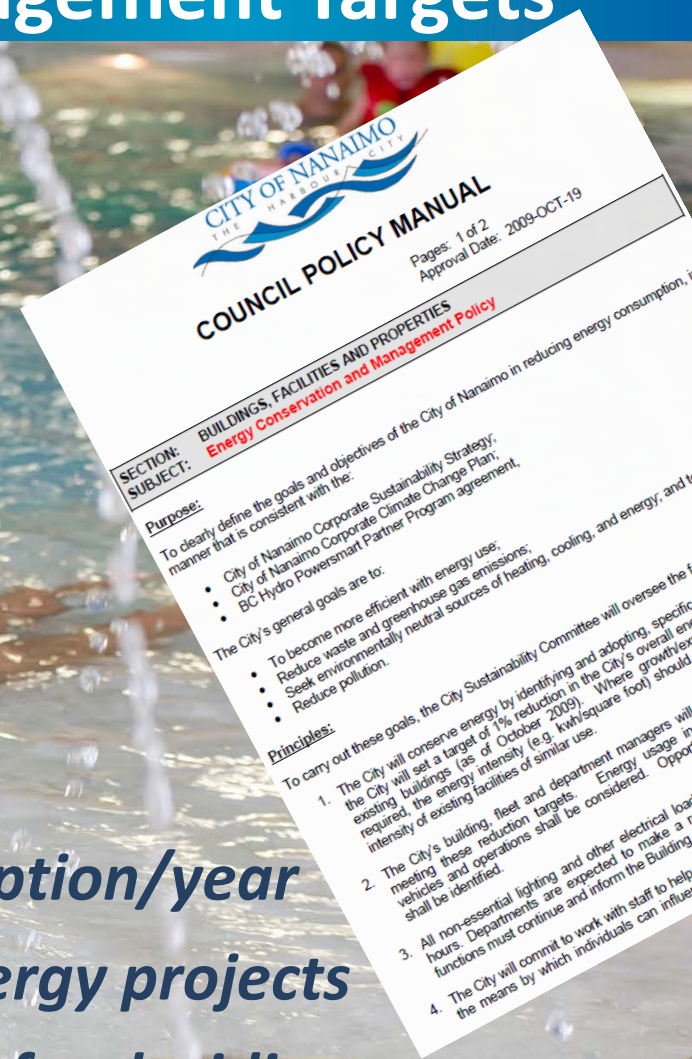
Why is Energy Management Important?

- Reduces Costs
- Reduces Carbon Emissions = provides healthier environment
- Leads to longterm sustainability



City of Nanaimo's Energy Management Targets

- **1% reduction in overall energy consumption/year**
- **Simple payback of 8 years or less in energy projects**
- **Lifecycle-cost and cost-benefit analysis for deciding energy projects**



Electricity: 234,000 kWh

Gas: 573 GJ

Heating Oil: 651 L



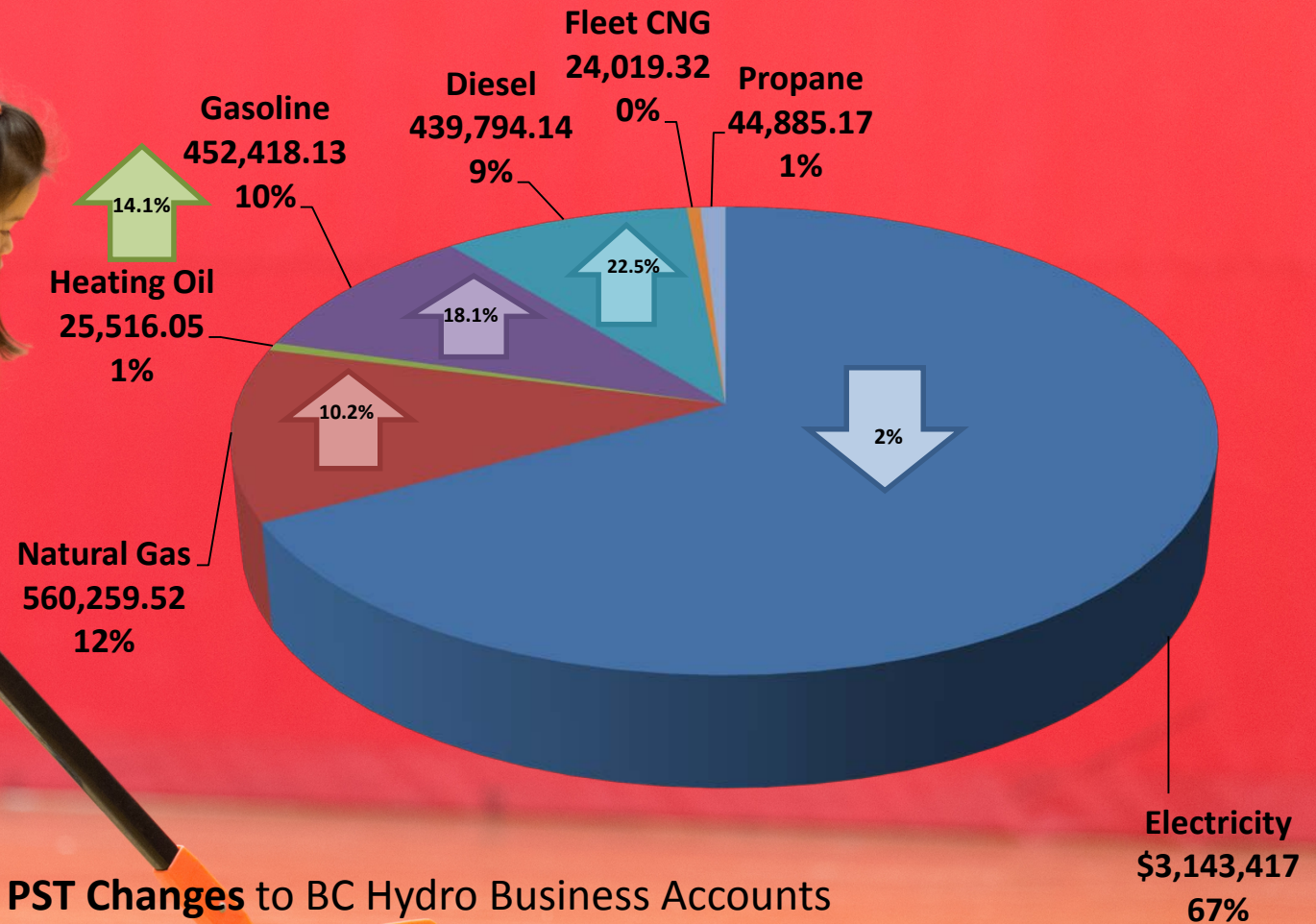
City of Nanaimo's Energy Users

- Office Buildings
- Operations Facilities
(Public Works, Parks Operations, WTP, etc.)
- Recreation & Parks Facilities
(Arenas, Pools, Fieldhouses, etc.)
- Fire Rescue & Police Facilities
- Parkades
- Street Lighting

HIGHEST CONSUMERS (kWh)	2016	2017
Street Lighting	4,895,719	4,650,579
Nanaimo Aquatic Centre	2,808,360	2,788,920
Beban Park Recreation Centre	2,589,000	2,261,400
Water Treatment Plant	1,208,880	1,504,080



Energy Consumption & Costs – 2017



Greenhouse Gas Emissions

2020 Target per BC Climate Action Charter:

- 33% reduction of 2007 corporate emissions



POLICE STATION – LED Lighting Upgrade

INTERIOR LIGHTING:

- **2,024** LED lamps
- **919** ballasts
- **48** LED pot lights
- **10** LED fixtures in the parkade

Budget: **\$118,000**

FRONT & REAR PARKING LOTS:

- **24** lights being replaced with new LED fixtures

Budget: **\$20,788**



Savings 307,032 kWh

Payback 3.3 years & 5.8 years

Annual savings \$ 33,400



Cliff McNabb Arena Lighting Upgrade



- Replaced 456 tubes with 25.5 watt LED tubes
- Cost \$25,000 Payback 2.3 Years
- 53% less energy consumption over ice sheet

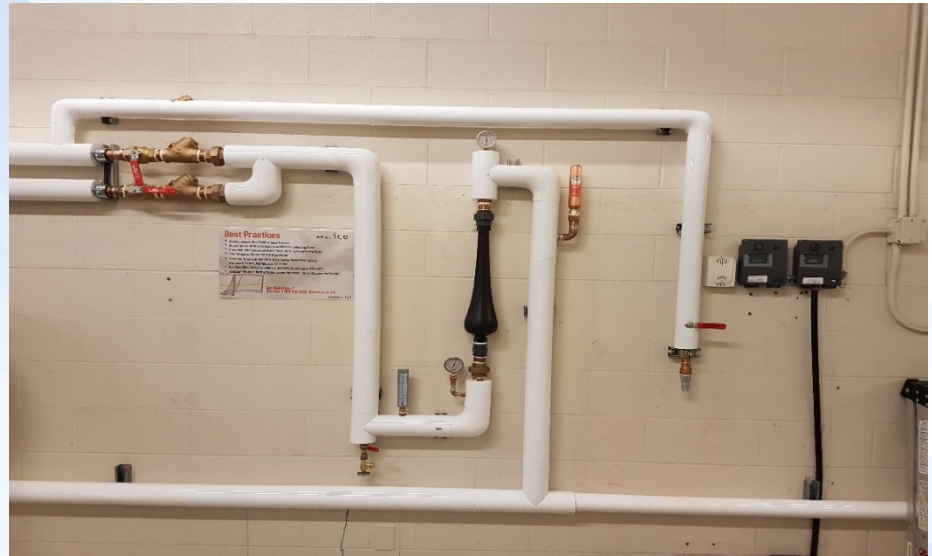
**FIRST ICE SHEET TO BE
CONVERTED TO LED!**



Cold Water Ice-Making – Beban Park



- Installation of Real Ice System at **Frank Crane Arena** and **Cliff McNabb Arena**
- System has been operational at the **Nanaimo Ice Centre** since June 2017



Waterslide End Covers



- Located on all 3 slides at the Nanaimo Aquatic Centre and 1 slide at Beban when slides are not in use
- Stops cold air flowing in and hot air flowing out, reducing energy costs





Scott Pamminger,
Manager of Infrastructure Planning & Energy