Simplified Municipal Energy Conservation Measures

Administration Facility/Public Works Garage

Lighting:

- T12 fixtures should be replaced with T8 (at minimum); investigate the feasibility for LED depending on the application.
- Incandescent, halogen or CFLs should be replaced with LED bulbs.
- Replace garage bay metal halide or high pressure sodium fixtures with T5 medium or high bay fixtures (at minimum), investigate the feasibility for LED.
- Occupancy sensors should be installed in all low traffic areas (i.e. washrooms, stairwells, meeting rooms, storage areas).
- Explore potential for daylighting in areas with high sun exposure.
- Incandescent bulbs in EXIT signage should be replaced by LEDs.
- Upgrade outdoor wall packs to LED.
- Encourage a de-lamping campaign by asking employees to identify opportunities to reduce lighting.

Building Envelope:

- Ensure all air leaks around windows and doors are sealed.
- Ensure outdoor air dampers and louvers are in good state of repair and function properly.
- Consider the use of air-curtains at entrances used on a frequent basis or in the absence of a vestibule.
- Develop and implement a standard for insulation levels in all new facilities and when upgrading existing facilities.

Water, Space Heating and Cooling:

- Install programmable thermostats and set-back space temperatures depending upon space occupancy schedules.
- Replace electric domestic hot water heaters with more efficient and economic fuel systems.
- Use programmable line voltage set-back thermostats on electric baseboard heaters.
- Insulate domestic hot water piping and ductwork.
- Replace garage bay unit heaters with 2-stage natural gas-fired infrared tube heaters.
- Discourage the use of personal space heaters.
- Replace dirty filters in air handling equipment.
- Clean outdoor condensers.

Miscellaneous:

- Install economizers on vending machines.

- Replace antiquated appliances with energy efficient models.
- Implement a protocol to report and fix compressed air leakages.
- Ensure existing power bars are easily accessible or install current sensing power bars in individual work stations.
- Ensure computer monitor power management software is enabled.

Arena and Community Centre

Lighting:

- Replace ice surface metal halide or high pressure sodium fixtures with T5 medium or high bay fixtures (at minimum), investigate the feasibility for LED.
- Match lighting levels to facility use.

Building Envelope:

- Consider installing a Low-E ceiling if operated during the summer months.
- Caulk and weather strip the building shell.

Water, Space Heating and Cooling:

- Reduce flood water temperatures to 130°F (54°C) minimum.
- Set back spectator area heating when unoccupied.
- Dump snow outside of the building.
- Paint Ice with reflective, thermally conductive paints.
- Install locking thermostat covers to prevent tampering.
- Insulate water piping.
- Use high efficiency condensing ice resurfacing hot water heaters.

Miscellaneous:

- Keep ice thin, ideally 1 inch thick.
- Cycle brine pump by installing an ice thermostat.
- Allow ice temperatures to rise overnight, 28°F (-2°C) maximum.
- Maintain brine at a specific gravity of between 1.20 and 1.22.
- Clean the rink floor slab thoroughly before installing ice.
- Install timers on ventilation equipment.
- Use CO2 or NO/CO sensor for arena exhaust fans.
- For Change Rooms – Install exhaust fan heat recovery ventilator (HRV) or energy recovery ventilator (ERV) combined with timers or programmable thermostats.
- Replace compressor drive belts with notched v-belts.
- Replace aging motors with premium efficiency models.
- For Pools – Install a waste water heat-recovery system to pre-heat incoming make-up water.
- For Sauna/Steam Rooms – Replace electric heating units with gas/propane fired units.

This list of simple measures was put together by the LAS EESPs for a quick reference for staff struggling to develop energy conservation measures as part of their energy conservation plan. These ECMs are meant as a suggestion only and more detailed site-specific analysis should occur before moving forward. LAS was created in 1992 as the not for profit subsidiary of the Association of Municipalities of Ontario (AMO). LAS works with Ontario municipalities to help them make money, save money, and build capacity.