1. **PURPOSE.** City of Saco elected officials, appointed officials and employees have an inherent responsibility to be good stewards of tax dollars and the environment. By observing prudent building climate control standards and operating assigned vehicles and equipment in a responsible manner, the City will be able to conduct safe and effective operations while minimizing energy (petroleum products, electricity, etc.) consumption and, as a result, energy costs. This policy establishes realistic and verifiable standards to optimize energy use by the City of Saco.

2. **APPLICABILITY.** This policy applies to:
   a. All permanent, temporary and volunteer (elected and appointed) employees while performing duties on behalf of the City;
   b. Contractors performing services on behalf of the City;
   c. Tenants using City owned facilities or equipment; and,
   d. New or replacement construction involving City infrastructure or equipment.

3. **REFERENCES.**
   b. 35-A M.R.S.A., Chapter 97 – Efficiency Maine Trust Act
   c. City of Saco Code, Chapter 74 – Building Energy Conservation
   d. City of Saco Code, Chapter 181 – Solid Waste
   e. City of Saco Purchasing Policy
   f. City of Saco Street Light Installation Standards Policy
   g. City Anti-Idling Policy, dated February 20, 2007 (superseded)

4. **DEFINITIONS.** (Unless otherwise noted, definitions were drawn from Furnace Compare -- http://www.furnacecompare.com/faq/definitions/.html.)
a. Annual Fuel Utilization Efficiency (AFUE) - The AFUE is the most widely used measure of a boiler or furnace's heating efficiency. It measures the amount of heat actually delivered to your house compared to the amount of fuel that you must supply to the furnace. Thus, a furnace that has an 80% AFUE rating converts 80% of the fuel that you supply to heat -- the other 20% is lost out of the chimney.

b. Energy Efficiency Rating (EER) – The Air-Conditioning and Refrigeration Institute standardized this rating, which reports central air conditioning efficiency at 80 degrees Fahrenheit indoors and 95 degrees Fahrenheit outdoors. This rating measures steady-state efficiency -- that is, the efficiency of the air conditioner once it is up and running. The SEER (Seasonal EER) rating is available for residential central air conditioners, and is generally considered a more reliable indicator of the overall energy efficiency of the unit than the EER. While the SEER has been criticized for not taking into account the efficiency of the system while under partial load, there is no widely available rating which accounts for this issue in residential air conditioners. (However, the IPLV measures partial load efficiency in non-residential units.)

c. Heating Season Performance Factor (HSPF) – the measure of a heat pump’s efficiency which is computed by dividing the total space heating required during a single heating season (expressed in Btu), divided by the total electrical energy consumed by the heat pump system during the same season (expressed in watt-hours). A heat pump with a high HSPF is more efficient than a heat pump with a lower HSPF. New heat pumps manufactured after 2005 are required to have an HSPF of at least 7.7. The most efficient heat pumps have an HSPF of 10.
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d. Idling – An idling vehicle is basically one whose engine is running when it is parked or not in use. (From the South Carolina Department of Health and Environmental Controls’ website) Market research has found that the most common reasons for engine idling are: warming up the car; waiting for someone; or, doing an errand. Other reasons, reported by drivers include: personal comfort; listening to the radio; parking illegally; and convenience.

e. Integrated Part Load Value (IPLV) – Like the EER, the IPLV rating was developed by the Air-Conditioning and Refrigeration Institute. (In 1998, the ARI released a revised Standard, ARI 550/590-98 to cover IPLV.) Unlike the EER, however, the IPLV measures the efficiency of air conditioners under a variety of conditions -- that is, when the unit is operating at 25%, 50%, 75% and 100% of capacity and at different temperatures. IPLV is only calculated for non-residential central air conditioners.

f. Seasonal Energy Efficiency Rating (SEER) – The most commonly used measure of the efficiency of consumer central air conditioning systems. As of January 2006, an air conditioner must have a SEER of at least 13 to be sold in the United States. Higher efficiency models have SEER of up to 21.


a. Lighting. The following standards apply to optimize energy use for lighting:

   i. Turn off all lights when leaving a room/area unoccupied for more than 10 minutes and at the end of each work day.

   ii. With the exception of hallway and security lights, do not leave lights on for cleaning staff – they will turn lights on and off as they need.
iii. Adjust timers for exterior lights biannually – within one week of the change to and from Day Light Savings Time – to remain in concert with expected sunrise and sunset. Reset timers after power interruptions if the power loss affected settings.

iv. Use day light and task lights instead of overhead lights whenever practical.

v. Clean reflectors and fixtures periodically (e.g., when lamps are replaced) to ensure maximum output of the light fixture.

vi. Each department should conduct a lighting survey of their offices and work area to determine the safe lumen level required.

b. Heating

i. Set thermostats to the lowest reasonable temperature to provide a safe and effective operating climate (preferably no higher than 70 degrees Fahrenheit).

ii. Have all automatic controls and boilers inspected and/or tested annually to ensure they work properly and as efficiently as practical. Clearly post annual combustion efficiency test results in the boiler room, near the boiler inspection certificate.

iii. When possible set HVAC systems to operate at a lower temperature (60-62 degrees Fahrenheit) when the office or facility is unoccupied.

c. Hot Water

i. Set the temperature on hot water tanks no higher than 120 degrees Fahrenheit unless specifications on the equipment or physical plant require a higher setting.

* If a hot tank serves a dishwasher or other sterilizing equipment that lacks a temperature booster, operators may set the tank temperature up to no more than 140 degrees Fahrenheit. Set mixing valve for other hot water uses to no more than 120 degrees Fahrenheit.
• Using a lower setting (e.g., 110 degrees) is preferred.

ii. Install faucet and showerheads that meet the Environmental Protection Agency’s WaterSense standard – defined as flow rates of 1.5 gallons per minute (gpm) or less for sink faucets and 2.0 gpm or less for showerheads – within 12 months of the implementation of this policy.

d. Air Conditioning

   i. Use shades and blinds as the initial strategy to control solar gain during hot weather.

   ii. Use operable windows for initial ventilation during hot weather if acceptable comfort can be achieved.

   iii. Set thermostats to the highest reasonable setting to provide a safe and effective working environment (preferably no lower than 78 degrees Fahrenheit).

   iv. Turn off air conditioning at the end of each work day when a room/facility is expected to remain unoccupied for the rest of the day.

   v. When used, set window air conditioners to the lowest comfortable setting for room occupants – the “economy” setting, if equipped.

e. Windows and Doors

   i. Do not leave windows and doors open when heating or cooling equipment is in use.

   ii. Close window shades and curtains at the end of each day to help reduce heat loss, reduce solar gain or retain cooling overnight.

f. Ventilation
i. Cycle exhaust fans, instead of allowing them to run continuously, to minimize energy losses, when practical and not in conflict with other regulatory requirements (e.g. NFPA, OSHA).

ii. Turn off ventilation when a room/facility is expected to be unoccupied.

g. Computers and Office Equipment

i. Turn off all monitors, printers and office equipment at the end of each duty day. Leave computers processing units (CPU) on to allow Information Technology staff to push patches and updates to CPUs.

ii. Turn off monitors, printers and office equipment when not expected to be used for more than 8 hours. During business hours or when the office is occupied, photocopiers/printers may be left on if they have an Energy Saver or Standby mode.

iii. Place self sticking “Please Turn Off” labels on office equipment to encourage compliance with this energy policy.

h. Vehicle Operations. Operators of City vehicles and internal combustion equipment will adhere to the following standards:

i. Idling is prohibited when the ambient temperature is above 32 degrees Fahrenheit, except when certain conditions are met (defined below).

ii. Vehicles will not be left idling when the operator is out of/stepped away from the vehicle/equipment, except when certain conditions are met (defined below).

iii. Idling is permitted for no more than 10 minutes when the ambient temperature is 32 degrees Fahrenheit and below.
iv. Due to the nature of certain emergency and non-emergency City operations, the following exceptions may apply:

- Operators may allow emergency response vehicles to idle when responding to an emergency or when standing by in readiness to respond, if weather conditions threaten to delay a response.
- Operators may allow ambulances, which must maintain onboard medication above a specific temperature, to idle.
- Department Directors may allow vehicles with batteries that may discharge because of the requirement to operate significant onboard electrical equipment (e.g., emergency lights, communication equipment, computers, radars), to idle to preserve the battery(ies) life.
- Department Directors may authorize other situations, in writing, to ensure the health and welfare of City employees or members of the public.

i. Equipment Maintenance

   i. All equipment shall be maintained according to the manufacturer’s recommended schedule and standards.

   ii. Replace or clean air filters regularly to ensure good air quality and flow.

   iii. Clean heat exchange coils at least annually for heat pumps, air conditioners, refrigerators, freezers and other temperature regulated equipment.

j. Equipment Replacement

   i. When replacing worn or unserviceable equipment always seek the most energy efficient equipment that effectively meets the operating need. Always try to obtain
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Energy Star rated equipment – meets or exceeds the U.S. Environmental Protection
Agency’s (EPA) high energy efficient standards.

ii. When possible, seek and take advantage of state, federal and utility company
rebate and incentives for purchases of high efficiency equipment.

iii. For lighting, use the lowest wattage that meets the luminescent needs for safe
operations in the specific work area. Use Light Emitting Diode (LED) or Compact
Florescent Light (CFL) technology whenever feasible.

iv. For heating equipment specify the highest annual fuel utilization efficiency
(AFUE) rating for boilers and furnaces and the highest seasonal energy efficiency
rating (SEER) or heating season performance factor (HSPF) rating for heat pumps.

v. For cooling, specify the highest SEER rating for central and window air
conditioning units.

vi. For motors, specify the highest efficiency replacement motors. Use a lower
horsepower or variable speed pump to improve efficiency when possible.

vii. Consider renewable energy options when replacing existing equipment.

k. New Construction/Renovation

i. The City will give priority to technologies, products and design options that reduce
energy consumption without degrading a facilities operational capability or
unreasonably inflate long term costs.

ii. For all City construction and building renovation projects, present this policy to the
architect/engineering firm and other appropriate parties in the initial planning stage
of each project to encourage energy efficient and operationally effective designs.
iii. Each building committee and associated design team of a new or renovation building project will consider energy efficiency as specified by this policy.

6. **Policy – Waste Management/Recycling.** All City offices and buildings will make recycling a conspicuous part of their operations. All departments will take reasonable steps to put containers to collect recyclable waste in obvious places for employees and customers to use. Appropriately disposed of waste to minimize the impact on the environment and the City’s solid waste disposal budget. These procedures will complement the requirements spelled out in Chapter 181 of the Saco City Code, Solid Waste.

7. **Policy - Procurement of Energy Resources.**
   a. Purchases of energy efficient equipment as well as the construction, renovation or modification of City facilities will occur in accordance with the City’s Purchasing Policy.
   b. Additionally, the City will seek the opportunity to reduce energy costs by centrally purchasing energy – petroleum fuels and electricity – when feasible. Such purchase will follow procedures outline in the City’s purchasing policy.

8. **Participation in Initiatives and Incentives.** City departments and agencies, (to include the Library, Museum and Schools if they wish to participate in the City’s energy purchasing program) are required to pursue energy incentives through the multiple utility companies and service providers whenever possible and practical. Departments and agencies should contact the City’s Energy and Sustainability Committee to learn about or share information on current incentives.

9. **Membership in Collaborative Organizations and Associations.** City Departments or the City’s Energy and Sustainability Committee are encouraged to become members of
organizations and associations that will help the City advance energy efficiency (e.g., Maine Clean Communities, professional organizations’ energy fora). City staff members should participate in energy information sessions or training courses regarding energy efficiency and sustainability available through collaborative organizations and associations to which they belong.

10. ** Enforcement and Reporting Problems and Successes.**

   a. Department directors are responsible for developing and implementing procedures to facilitate compliance with this policy. Supervisors at all levels will monitor their departments’ operations to ensure compliance.

   b. Department representatives to the City’s Energy and Sustainability Committee may occasionally report progress and challenges in complying with this policy.