City of Portland Sustainability Office

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for
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Overview

- First GHG Inventory – 2001
- 2nd GHG Inventory – 2005
- Sustainable Portland Report – 2007
- Municipal Climate Action Plan – 2008

Some Major Actions

- Energy efficiency upgrades for City buildings in 2011

- Green Building Ordinance – projects using City funds exceed ASHRAE standards by 30% (new construction)

- Solar Ordinance allows solar generation in all zones

- Developing solar at landfill and Jetport

Deeper Dive

- Waste reduction and recycling
- Green Packaging
- Street lighting
- Heat Pump Challenge

Waste Reduction & Recycling

- Waste Reduction and Recycling
  - Curbside Recycling and PAYT: 1999
  - Single Stream Recycling: 2007
  - Cart based recycling: 2017
  - Food scrap collection: TBD
- Green Packaging Ordinance: 2015
  - Fee on shopping bags
  - Ban on polystyrene foam packaging

Waste reduction, why?

- EPA Report, 2011: "End of life management strategies such as recycling can lead to significantly lower emissions from earlier stages in the material life cycle, including material extraction, manufacturing, and distribution.

Source Reduction/Reuse

Source Reduction Benefits:

- Reduce Packaging use by 50% = > 40 MMTCO2/year

- Reduce non packaging paper by 50% = > 20 MMTCO2/year

- Extend the life of PCs by 25% = > 15 MMTCO2/year

Source EPA Solid Waste Management and GHG, a Lifecycle Assessment

Recycling

- Increase recycling of C&D to 50% = > 75 MMTCO2/year

- Increase national recycling and composting rate to 50% = > 70 MMTCO2 /year

Source EPA Solid Waste Management and GHG, a Lifecycle Assessment

GHG Value of Recycling

- Tons of carbon reduced by recycling:
  - Aluminum cans: 10 tons CO_2 / per ton
  - Newspaper: 2.5 tons CO_2 / ton
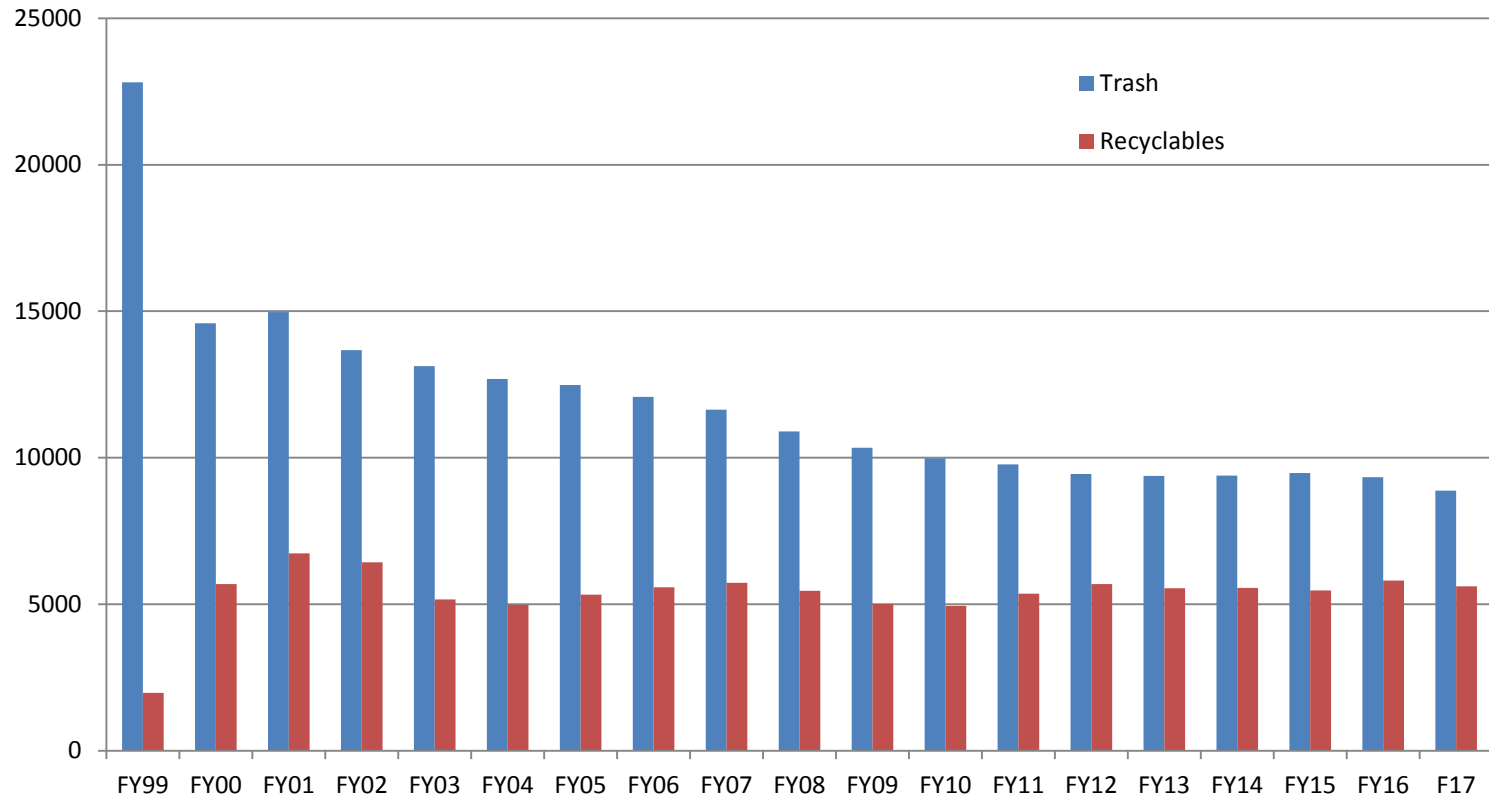 - PET (soda bottles): 1.7 tons CO_2 / ton

  Source: Popular Mechanics, November 12, 2008

  http://www.popularmechanics.com/science/environment/a3757/4291576/

Curbside Recycling and PAYT

Portland Waste / Recycling History

Over 60% reduction in trash tonnage since 1999

Green Packaging

US consumes 100 Billion Plastic Bags & 10 Billion Paper Bags Annually

Why?

- Source reduction: Get people to think about whether they need a bag

- Prevent marine pollution: Poly foam and plastic bags are pernicious forms of marine debris

- Keep debris off the street and out of the storm drains

- It takes 12 million barrels of oil / year to make the plastic bags used in the US!!! (Washington Post)

LED Streetlights

- Converting all street lights in the US would save $2.3 billion annually and eliminate 15 million tons of CO2. (The Climate Group)

- In Portland: Energy consumption from streetlight will fall from 4 million kWh/year to 1 million kWh.

- Portland's annual street lighting costs will fall from $1.2 million to $200,000.

Key Considerations

- Use warm lights -- no higher than 3000 K to avoid blue/white glare

- Consider town or utility ownership

- Consider advanced controls

- Payback can be very fast

- Every town in Maine should be doing this

Casco Bay Heat Pump Challenge

Events

Portland, South Portland, Scarborough, Falmouth

5 heat pump vendors

Efficiency Maine support

Discounted pricing for attendees

Promote energy efficient heating and cooling

Questions