

## MEASURES TO REDUCE GREENHOUSE GASES FROM SOLID WASTE

### SOLID WASTE TRENDS

Fort Collins' City Council approved a commitment in 1994 for the Natural Resources Department to establish an integrated Solid Waste Reduction program. The program carries out projects such as public promotion and education programs, changes to City ordinances to make recycling easier, tracking the community's progress at recycling and diverting solid waste, and planning for the future of integrated solid waste management. In 1995, Council established a policy to reduce Fort Collins' waste stream by 20%

In the four years since Council set its solid waste reduction goals, several important successes have been realized. First, the rate of participation in residential curbside recycling has risen to over 80%. Secondly, the amount of waste that is diverted from landfill disposal for recycling or composting appears to have reached nearly 25%.

### CITY WASTE REDUCTION POLICIES

**Resolution 95-63** was passed with a policy to reduce Fort Collins' total waste stream by 20% (based on 1993 figures), and specific targets:

- a. 70-80% diversion of compostable material currently being landfilled, and conversion into a useable product.
- b. Increased participation in residential curbside recycling to 80-90%.
- c. 35% reduction of paper products from commercial waste customers.
- d. Increased participation in commercial recycling services (for all recyclable materials) to 50%.

**ENV-2.3 Coordination.** The City will participate with private businesses and local, state, and federal agencies to consistently support and foster pollution prevention and recycling efforts, strengthen market conditions for recycling industries, and to enforce environmental legislation.

### WASTE REDUCTION MEASURES

**Staff/Focus Group Initiatives.** Measures that have been selected for inclusion in Fort Collins Local Action Plan to reduce Greenhouse Gas Emissions are highly compatible with the community's adopted policies for solid waste reduction. To establish consistency between the Local Action Plan and solid waste planning goals, the City will reassess 1995 policies and propose updated goals for adoption by the Council in 2002.

Five "Pending" waste reduction measures were evaluated by the Staff Technical Team and the Citizen Advisory Committee for their cost-effectiveness in reducing greenhouse gas emissions that result from waste disposal. These measures, presented in order of their ranking, are discussed in detail below. The Pending waste reduction measures are:

- 50 % Waste Diversion Goal by 2010
- Expand Central Recycling Drop-off Site or Add Second Site
- Expand Larimer County Recycling Center
- Larimer County Landfill Gas-to-Energy Project
- Construction and Demolition Debris Project

**50 % Waste Diversion Goal by 2010**

**Status:** Pending Measure  
**Staff Team Ranking:** 2nd out of 12 Pending Measures  
**Citizen Committee Ranking:** 1st out of 12 Pending Measures

**Estimated CO2 Savings in 2010:** 112,787 tons

**Supporting Policy direction:**

**ENV-2.3 Coordination.** The City will participate with private businesses and local, state, and federal agencies to consistently support and foster pollution prevention and recycling efforts, strengthen market conditions for recycling industries, and to enforce environmental legislation.

**Description:**

Because the 1995 overall goal to divert 20% of the waste stream from landfill disposal has been met and exceeded, the City will evaluate how much higher to “raise the bar”. A proposal has been made to City Council to incrementally increase the City’s waste diversion goal to 30% diversion rate by the year 2002, 35% by the year 2004, and ultimately 50% diversion by the year 2010. In the “Interim Report: New Measures for Solid Waste Reduction in Fort Collins”, July 1999, six actions are outlined to support realization of this goal. They are:

- 1) Adopt a policy to increase landfill diversion rate,
- 2) Continue and Expand Public Outreach with Emphasis on New Messages,
- 3) Data Collection to Aid Market Development,
- 4) Expand Larimer County Recycling Center (See below for more discussion),
- 5) Build a Central, Multi-material Drop-off Site in Fort Collins (See below for more discussion.),
- 6) Construction and Demolition (C&D) Diversion Pilot Program (See below for more discussion.).

**Implementing Department:** Natural Resources

**Recommended Approach for Implementation:** At a Council study session on August 24, 1999, staff recommended that Council adopt this policy. Council viewed it favorably at the study session and will be taking final action in November 1999.

**Recommended Timeframe for Completion:** 2010

**Estimated Implementation Cost to the City:** Unknown

**Estimated Annual Operating Cost:** Unknown

**Potential Funding Source(s):** NA

**Potential Funding Sources.** The City General Fund pays for a Solid Waste Reduction program in the Natural Resources Department. Partnerships are cultivated with Larimer County Natural Resources Department and with Colorado State University, as well as other regional interests (public and private sector). New grant funding will be sought from federal and state agencies.

**Annual Cost Savings:** Increased volumes of recyclables collected in the greater Fort Collins community will improve the profitability of Larimer County Recycling Center, which processes most local material. This will help reduce the debt faster on the remaining public financing that was used to pay for its construction.

**Other Benefits**

- Community pride and awareness will be raised.
- Proactive businesses will be recognized and rewarded for their efforts.
- Finite and limited supplies of natural resources (oil, minerals, timber, etc) will be conserved.
- The lifespan of the Larimer County landfill, a public amenity, will be extended as a result of diverting materials through recycling and reuse efforts.
- More opportunities to recycle could help reduce citizens' trash bills, since the City requires haulers to charge by volume (pay-as-you-throw rates).

**Expand Central Recycling Drop-off Site or Add Second Site**

**Status:** Pending Measure  
**Staff Team Ranking:** 1st out of 12 Pending Measures  
**Citizen Committee Ranking:** 7th out of 12 Pending Measures

**Estimated CO2 savings in 2010:** 1,095 tons

**Description:**

A new, expanded drop-off site is proposed that would increase the range of the materials that are currently collected through Fort Collins drop-off programs, and also to serve as a recycling education center. From data the produced by Larimer County's Waste Characterization Study, it is clear that large amounts of paper generated by households go to the landfill instead of being recycled. Currently, the Larimer County Recycling Center is the only public drop-off site for cardboard, paperboard, office paper and other grades not collected in Fort Collins residential curbside programs. Multi-family housing residents would immediately benefit from the expanded drop-off site because apartment dwellers only receive on-site recycling at the discretion of the property manager.

**Implementing Department:** Natural Resources

**Recommended Approach for Implementation:** If the project is approved by Council, planning would be completed to establish a suitable location. Partnerships with Colorado State University and Larimer County would be sought.

**Recommended Timeframe for Completion:** 2002

**Estimated Implementation Cost to the City:** \$100,000

**Estimated Annual Operating Cost:** \$ 60,000 (Net cost is \$20,000/yr)

**Potential Funding Source(s):** City General Fund

**Annual Cost Savings.** \$ 40,000/yr

**Other Benefits**

- Community awareness will be raised through education.
- Drive time for recycling efforts will be greatly reduced.
- More materials could be recycled.
- The lifespan of the Larimer County landfill, a public amenity, will be extended as a result of diverting materials through recycling and reuse efforts.

**Expand Larimer County Recycling Center (LCRC)**

<b>Status:</b>	Pending Measure
<b>Staff Team Ranking:</b>	6th out of 12 Pending Measures
<b>Citizen Committee Ranking:</b>	3rd out of 12 Pending Measures

**Estimated CO2 savings in 2010:** 18,834 tons

**Description:**

The future of Fort Collins' integrated solid waste management is closely linked with the capacity and scope of the LCRC's operations. The facility is now accepting 110 tons per day, with a maximum design capacity of 140 tons per day. An ad hoc citizen/staff committee evaluating solid waste actions has determined that expanding the capacity of the LCRC is one of the most critical steps for boosting citizen recycling levels. As well as collecting more material, an expansion would allow Larimer County to consider adding new streams of material at the processing plant. The County Commissioner's have informally supported the concept of expanding the recycling center.

This measure encourages the City to work with the County to promote expansion of facilities.

**Other Benefits:**

- More opportunities to recycle could help reduce citizens' trash bills, since the City requires haulers to charge by volume (pay-as-you-throw rates).

**Larimer County Landfill Gas-to-Energy Project**

<b>Status:</b>	Pending Measure
<b>Staff Team Ranking:</b>	7th out of 12 Pending Measures
<b>Citizen Committee Ranking:</b>	4th out of 12 Pending Measures
<b>Estimated CO2 Savings in 2010:</b>	84,308 tons

**Description:**

Clean Air Act Title V permitting requires that landfills exceeding a certain volume must install a gas collection system for non-methane organic compounds (NMOC). The Larimer County landfill has initiated a process of sampling and evaluation to determine whether a gas collection system will be required. It is roughly estimated that a gas collection system would cost over two million dollars to install. If installation is required, it would be useful to evaluate the cost effectiveness of installing a system that creates energy (gas to energy), rather than simply flaring off the piped methane.

If the gas collection system is not required, it will be cost-prohibitive for the County to install a system UNLESS there are significant funds available to help offset the costs. This measure recommends that the City work with the County to locate funding assistance for the installation of a gas-to-energy system for the landfill. EPA's Landfill Methane Outreach Project is available to provide technical assistance on these issues.

**Construction and Demolition Debris Project**

<b>Status:</b>	Pending Measure
<b>Staff Team Ranking:</b>	10th out of 12 Pending Measures
<b>Citizen Committee Ranking:</b>	11th out of 12 Pending Measures
<b>Estimated CO2 Savings in 2010:</b>	Not Quantified

**Description:**

Building construction and demolition (C&D) debris was identified in Larimer County’s recent waste characterization study as one of the most abundant components of the local waste stream. The objective of this project would be to continue research into the design and implementation of a C&D diversion project in the vicinity of greater Fort Collins. Work is being done to investigate options. The intended outcome of the pilot project is for the City and its partners to create a source separated disposal system for builders. The project would run 18 months or more, and volumes of diverted C&D waste would be measured.

<b>Implementing Department:</b>	Natural Resources
<b>Recommended Timeframe for Completion:</b>	2001
<b>Estimated Implementation Cost to the City:</b>	\$ 30,000
<b>Estimated Annual Operating Cost:</b>	NA
<b>Potential Funding Source(s):</b>	City General Fund
<b>Annual Cost Savings:</b>	Unknown

**Other Benefits**

- The lifespan of the Larimer County landfill, a public amenity, will be extended as a result of diverting materials through recycling and reuse efforts.