

# WASTEWISE COMMUNITIES

## Climate, Energy & Waste Connection



**Jan Canterbury**  
**Office of Solid Waste**  
**April 2007**

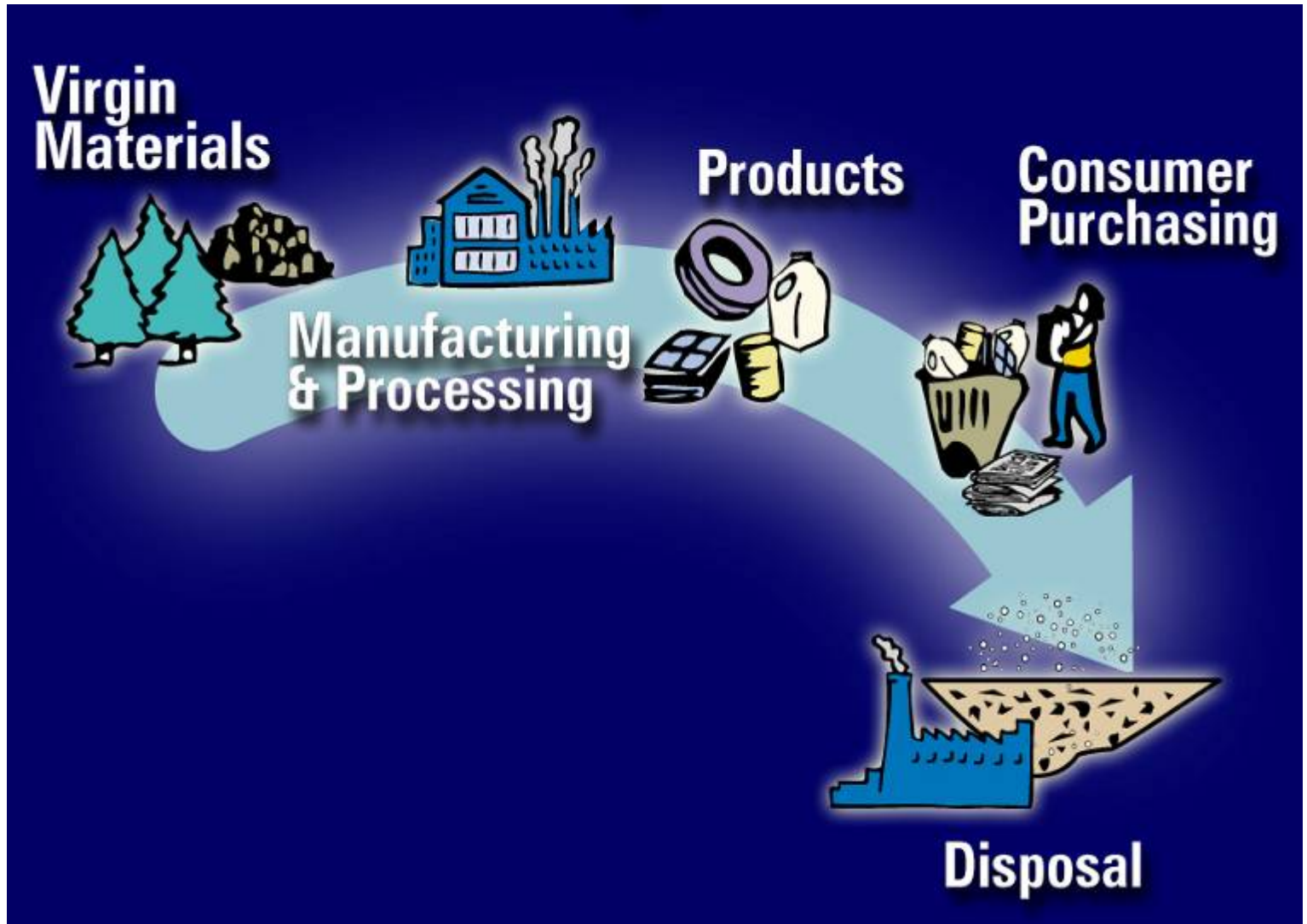
# Impacts of Climate Change



- Intense, more frequent storms
- Flooding of coastal areas including beaches and bay marshes
- Increased rains in some regions; decreased rains in other regions.
- Increased distribution of infectious diseases

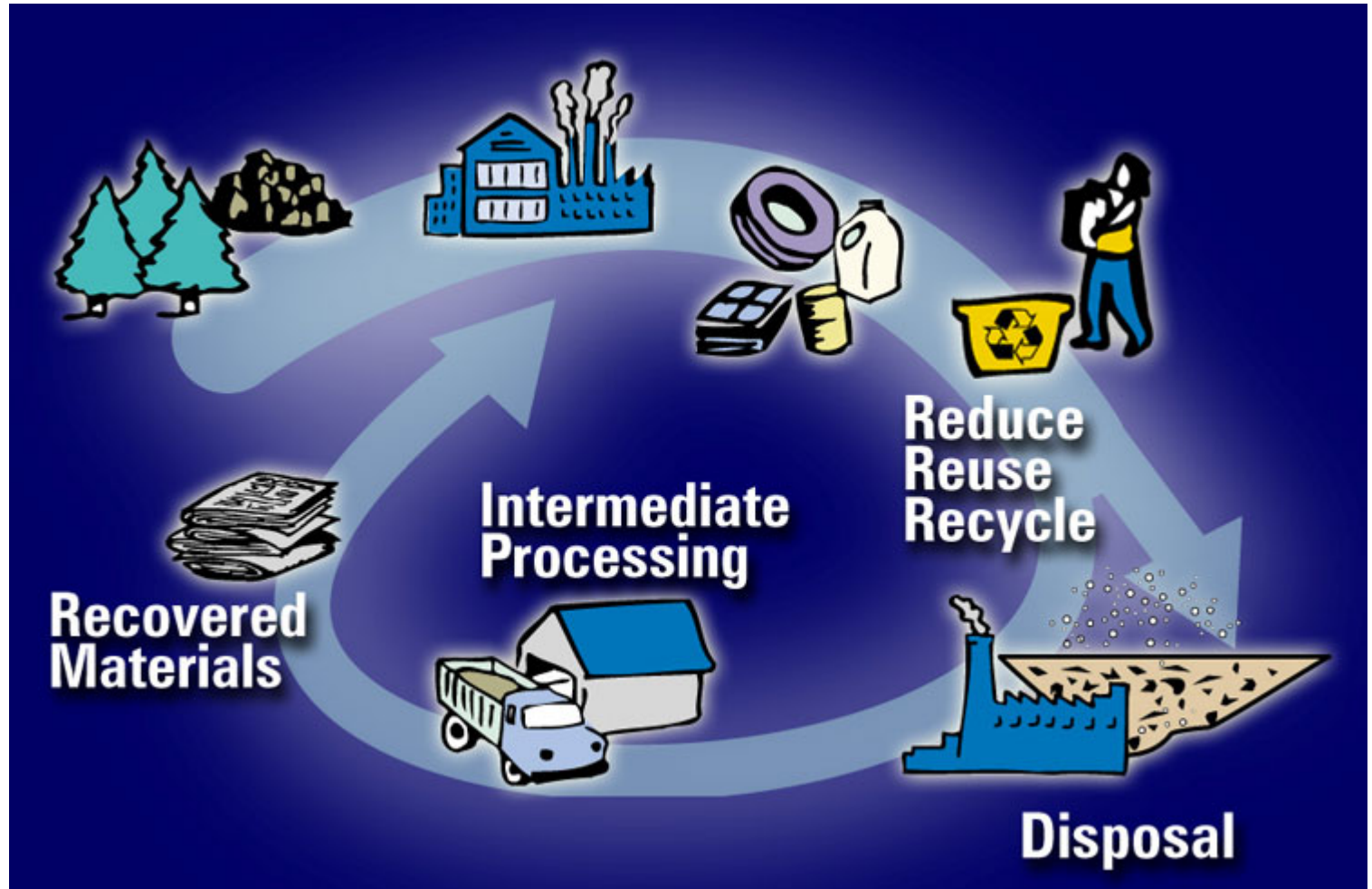
# Product Life Cycle—Linear

CO<sub>2</sub>



CH<sub>4</sub>

# Product Life Cycle —> Cyclical



**Climate, Energy & Waste Connection**

# Climate Change...

## Energy & Waste Connection

Waste increases:

- Production costs
- Use of natural resources
- Volume of waste in landfills

- Greenhouse Gas (GHGs) emissions
- Global Climate Change

WasteWise Partners reduce GHGs... equivalent to taking 5.8 million cars off the road.



# Waste Reduction Model (WARM)

WARM...  
Online  
Summary  
Report

EPA : Global Warming : Actions : Waste : Waste Reduction Model (WARM) : WARM Online - Microsoft Internet Explorer provided by I

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**U.S. Environmental Protection Agency**

**Global Warming - Waste**

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[EPA Home](#) > [Global Warming](#) > [Actions](#) > [Waste](#) > [Tools](#) > WARM Online

**WARM Online**

EPA created WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions and energy savings from several different waste management practices.

Use this worksheet to describe the baseline and alternative MSW management scenarios that you want to compare. Please follow the steps below to enter your material tonnage information in the input boxes in the tables, and select appropriate landfill and waste transport characteristics.

**Tips:**

- If the listed material is not generated in your community/organization or you do not want to analyze it, leave it blank or enter 0.
- Make sure that the total quantity generated equals the total quantity managed.
- If you have any questions, consult the [WARM User's Guide](#).

**Step 1. Baseline Scenario**

Please describe your current (or baseline) waste management scenario by entering the tons of each material type that is generated and disposed.

Material	Tons Generated	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted
Aluminum Cans	200	100	50	50	N/A
Steel Cans	100	0	100	0	N/A
Glass					N/A
HDPE					N/A
LDPE					N/A

WR Tonnage →  
GHG Emissions



# Climate Profile

## Company X Making a Difference

### 2003 Waste Reduction Achievements

Waste Management Activity	GHG Emission Reductions (MTCO2E)	GHG Emission Reductions (MTCO2E)
Waste Prevention	11,884	5,437
Recycling	1,953	489
TOTAL	13,837	5,926

These achievements are equivalent to:

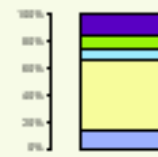


This profile describes the GHG emission reductions achieved as a result of recycling and waste prevention activities reported in WasteWise in 2003. These calculations use the emissions generated by landfilling waste as a baseline. Emission reductions represent the difference between this baseline and the GHG emissions resulting from alternative waste management practices, such as waste prevention and recycling.

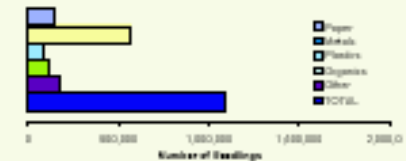
### 2003 GHG Reductions by Commodity

Commodity	Volume of Waste Prevented and Recycled (pounds)	GHG Reductions (MTCO2E)	GHG Reductions (MTCO2E)
Paper	5,742,880	1,715	3,785
Metals	5,430,880	6,735	10,420
Plastics	5,742,880	1,830	3,967
Organics	44,644,644	1,967	4,935
Other	256,644	1,387	6,620
TOTAL	57,671,888	13,629	43,642

#### GHG reduction by commodity



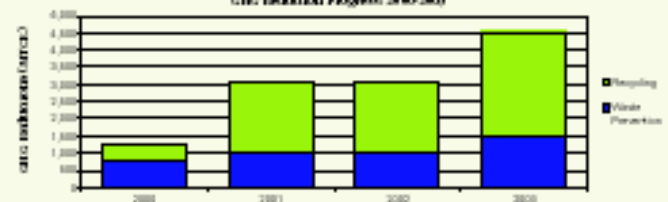
#### GHG reduction equivalent to growing the many trees seedlings



### 2000-2003 GHG Reductions Progress

Waste Management Activity	GHG Emissions (MTCO2E)			
	2000	2001	2002	2003
Waste Prevention	708	3,028	3,912	1,800
Recycling	308	2,088	896	5,826
TOTAL	1,016	5	0	8

#### GHG reduction progress in 2000-2003

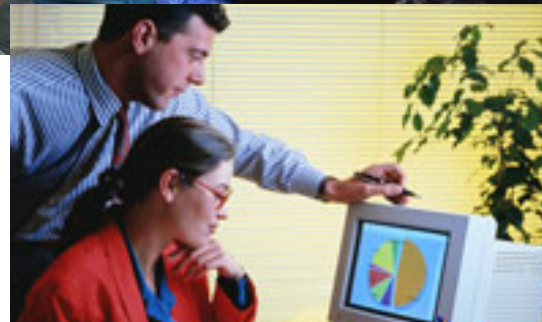


# WW Partners' "Climate Profiles"

Companies... and Cities...  
can take actions to reduce  
waste & track their  
**Climate Footprint**



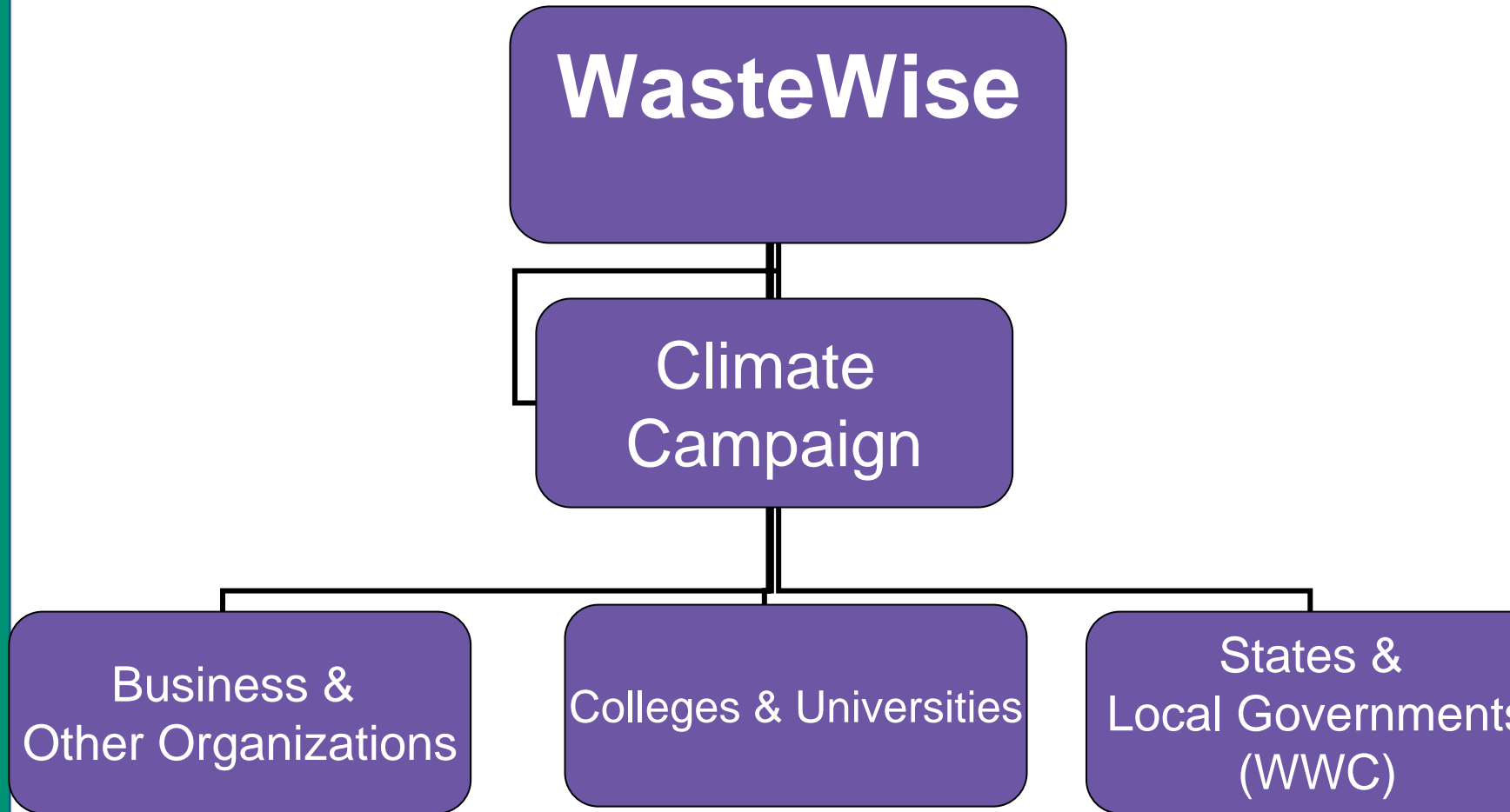
Cool...!







# WW: An Evolving Program





# WASTE WISE COMMUNITIES

*A new WasteWise campaign focusing on reducing residential municipal solid waste (MSW).*





# WWC GOALS

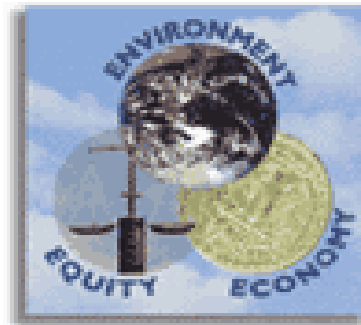
- Achieve our **35%** Recycling Rate
  - Promote **Climate E&W Connection**
  - Build **Partnerships** to advance Goals
  - Spread **Branding** of WW logo
  - Enroll **New Partners**
- 



# WW UMBRELLA

- **RCC Goal:** Increase national recycling rate of MSW to **35%**.
- To meet this goal, EPA is working with Partners & Stakeholders through existing and new projects.

## PAYT



# Pay-As-You-Throw (PAYT)



In PAYT cities... residents are charged for the collection of municipal solid waste—ordinary household trash—based on the amount they throw away.

This creates a direct economic incentive to recycle more and to generate less waste.



# Types of PAYT Programs

**Cans**— fees based on size of containers

**Bags**— fees based on # of garbage bags

**Stickers**— stickers affixed to bags



# PAYT Functions Like a Utility

- Pay for waste like a utility
- Only pay for what they use



# Duke University National Study



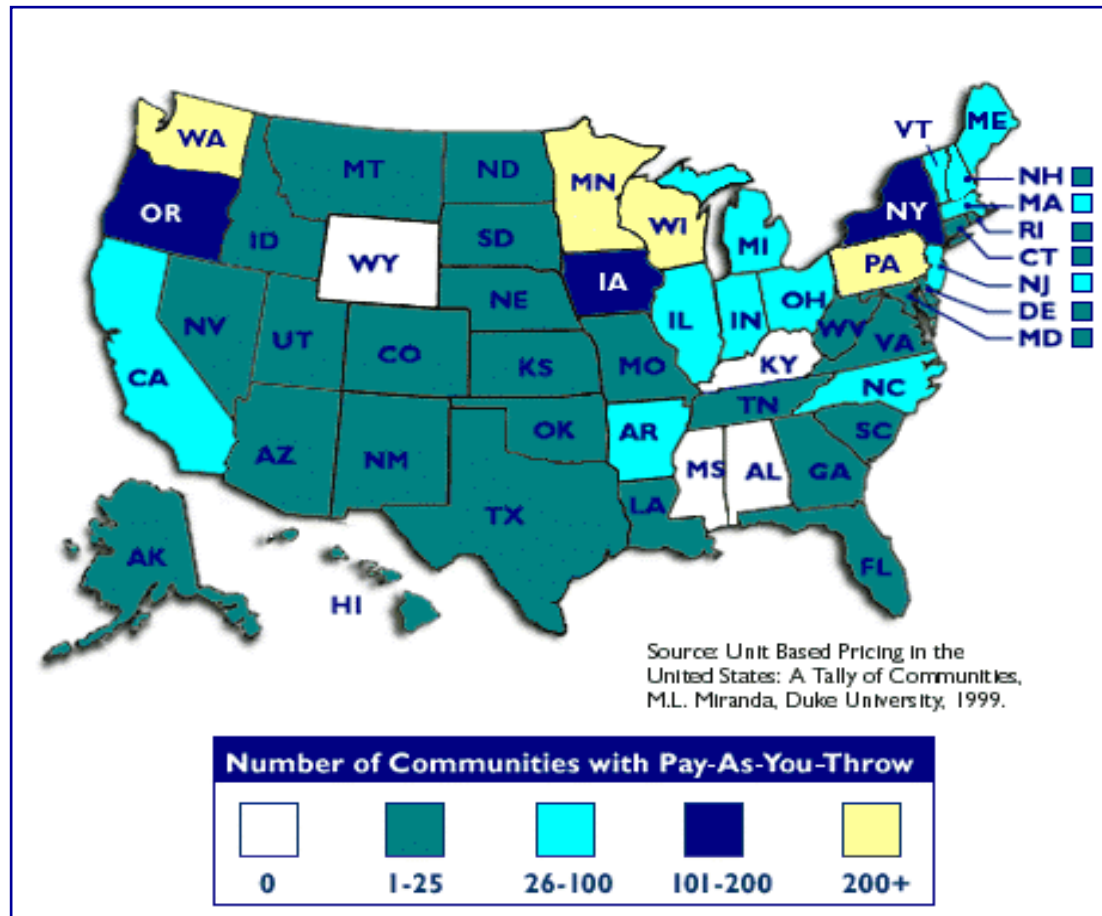
- **32 to 59% increase in Recycling**
- 19% found slight increase in illegal dumping

This report is available online at  
[www.epa.gov/epaoswer/non-hw/payt/pdf/swlitrep.pdf](http://www.epa.gov/epaoswer/non-hw/payt/pdf/swlitrep.pdf)



# Successes—PAYT

More than 7,000 communities in the United States implemented PAYT programs



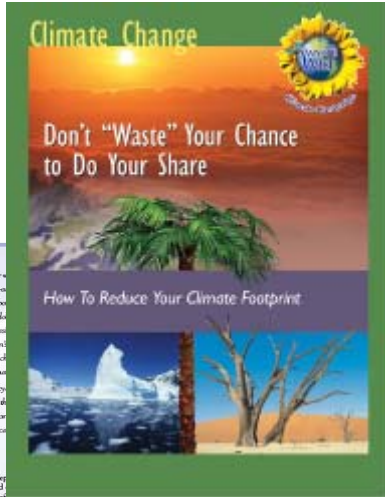
# PAYT Web Site

- Studies, reports, and articles
- *PAYT Bulletin*
- *Video*
- *Toolkit*
- *Presentation*
- *Fact sheets, success stories, lessons learned*



[www.epa.gov/payt](http://www.epa.gov/payt)

# C&W - Tools & Resources



**2005 CLIMATE PROFILE**

Every year, WasteWise partners work to reduce their... through waste prevention and recycling initiatives... good for the environment and for their companies'... in conjunction with these efforts, companies can learn about the... these activities provide, including greenhouse gas (GHG) emissions. One of the U.S. Environmental Protection Agency's WasteWise Program... educates companies about the important link between climate... One of the Climate Campaign's many useful tools is the Climate... GHGs are emitted at nearly every stage of a product's life-cycle... ing waste management. How companies choose to manage their... come implications for GHG emissions. Alternative waste man... such as waste prevention and recycling, can result in significant... GHG emissions, as noted in this Climate Profile.

**HOW TO USE THIS CLIMATE PROFILE**  
Individualized Climate Profiles are distributed annually to rep... partners to provide them with the means to easily learn, and... about their company's individual GHG emissions reduction eff... equivalency data provided in the Climate Profile can be used by the company in... various ways, including:

- Granting Support**
  - Preparation
  - Project Status Reports
  - Annual Reports
  - Stakeholder/Stockholder Reports
- Educating Support Client**
  - Employee Handouts
  - Educational Posters
  - Payback Incentives
- Educating the General Public**
  - Community Event Displays
  - Billboards
  - Mail-Site Announcements
  - Press Releases
  - Newspaper/Print Article Advertisements

www.epa.gov/wastewise/climate



**EPA Full Cost Accounting for Municipal Solid Waste Management: A Handbook**



Global Warming - Waste U.S. Environmental Protection Agency

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# Partnerships & Marketing

- **WasteWise Business Partners** (GM,USPG)
  - **City and State Officials & Leaders**  
(City Councils, State Recycling Associations, State Environmental Quality Departments, etc.)
  - **NGOs** ( ICLEI, USCM, PEW, USCAP, etc. )
  - **Trade Associations** (ASTSWMO, SWANA, etc.)
- 
- **Tailor message to audience** (Saving Money, Economic Development, Reducing Climate Footprint, Partnership Benefits, Awards, etc.)

# Cities Contribute to the Problem and Can Create the Solutions

Local governments influence all major  
sources of global warming pollution



Energy



Transportation



Solid Waste



# WWC Climate Initiatives

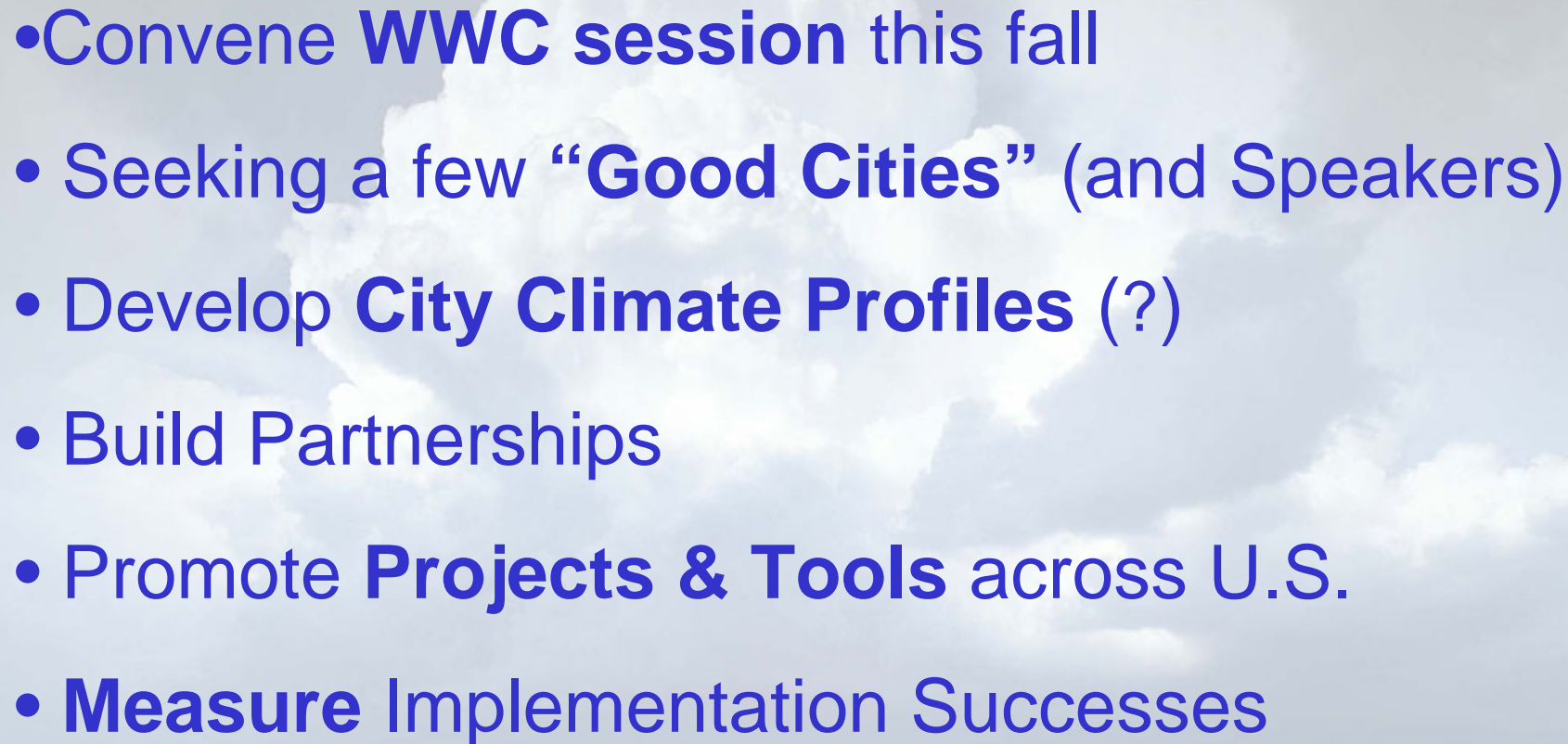
- **Local Actions:**

- Burlington, VT – CAP - MSW reductions from city buildings = ~ 2000 MTCE
- Fort Collins, CO – City Council set a 50% diversion goal by 2010
- Portland, OR – CC Local Action Plan requires businesses to recycle 50% of wastes
- San Francisco, CA – CAP – Waste Diversion rate of 63% - w/ 1<sup>st</sup> curbside food scrap composting

- **State Actions:** MA – SC – OR – CA



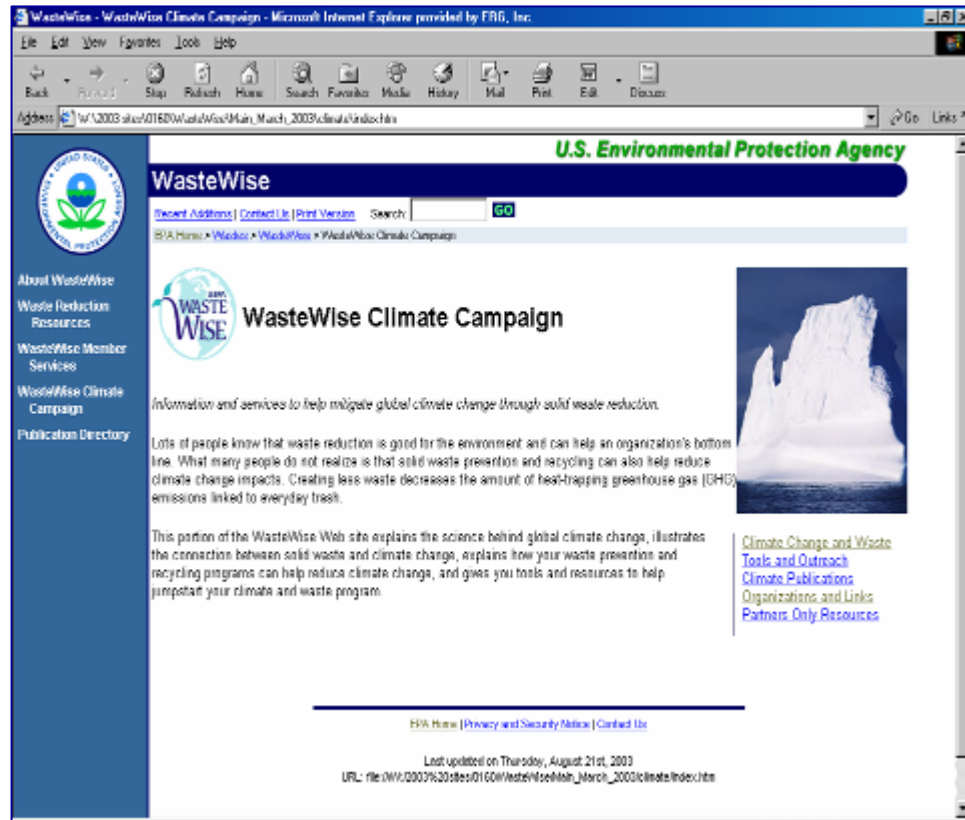
# WWC NEXT STEPS

- Convene **WWC session** this fall
  - Seeking a few “**Good Cities**” (and Speakers)
  - Develop **City Climate Profiles** (?)
  - Build Partnerships
  - Promote **Projects & Tools** across U.S.
  - **Measure** Implementation Successes
- 

# Climate Campaign Web Page

[www.epa.gov/mswclimate](http://www.epa.gov/mswclimate)

- To calculate waste and GHG reductions
- o Corporate Case Studies
- o Links to Climate-related documents and organizations

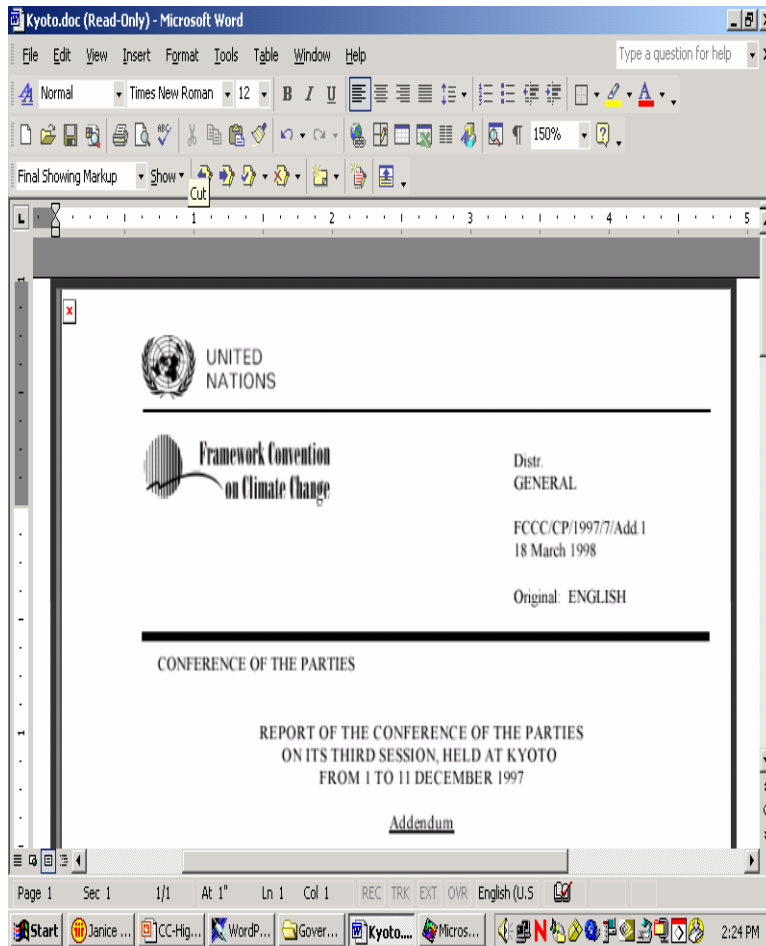


The screenshot shows a web browser window titled "WasteWise - WasteWise Climate Campaign - Microsoft Internet Explorer provided by FRG, Inc.". The address bar shows the URL: "file:///C:/2003/0160/WasteWise/Main\_March\_2003/Climate/index.htm". The page features the U.S. Environmental Protection Agency logo at the top right. The main heading is "WasteWise" with a search bar and navigation links: "Special Address", "Contact Us", and "Print Version". Below this is the "WasteWise Climate Campaign" logo and the text: "Information and services to help mitigate global climate change through solid waste reduction." A paragraph explains that waste reduction is good for the environment and can help reduce climate change impacts. A sidebar on the left contains links for "About WasteWise", "Waste Reduction Resources", "WasteWise Member Services", "WasteWise Climate Campaign", and "Publication Directory". On the right, there is an image of an iceberg and a list of links: "Climate Change and Waste", "Tools and Outreach", "Climate Publications", "Organizations and Links", and "Partners Only Resources". At the bottom, there are links for "EPA Home", "Privacy and Security Notice", and "Contact Us", along with a "Last updated on Thursday, August 21st, 2003" timestamp and the full URL.



# Legislation and Policies

## Kyoto Protocol



## Carbon Tax

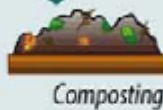


## Cap & Trade Programs

## Virgin Inputs



## Life Cycle Stage



## GHG Emissions

**CO<sub>2</sub>** +   
Energy and Non-Energy-Related Emissions + Reduced Carbon Sequestration in Forests

**CO<sub>2</sub>**  
Energy and Non-Energy-Related Emissions

## Sinks & Emission Offsets

Avoided Fossil Fuel Use +   
Increased Forest Carbon Sequestration

Carbon Storage in the Soil

Avoided Fossil Fuel Use

**N<sub>2</sub>O + CO<sub>2</sub>**  
Emissions + Emissions

Carbon in Long-Term Storage in Landfill

**CH<sub>4</sub>**  
Uncontrolled CH<sub>4</sub> Emissions or CH<sub>4</sub> Flared and Recovered Energy

Avoided Fossil Fuel Use



**WWWC - Join us...Act Now!**

**Climate & Waste Connection**

**WasteWise Helpline**

