

Section 4: Appendices

Appendix 1: Strategies - Traditional Recyclable Materials

Strategies

- Require Pay As You Throw (PAYT) Programs in all Sectors across the State.
- Require Mandatory Recycling Statewide.
- Enact Landfill Material Bans.
- Expand Vermont's Bottle Bill.
- Promote Waste Prevention in Schools.
- Promote Recycling Away from Home.
- Support Local and National Product Stewardship Initiatives.

Background

In 2001, ANR completed a waste composition study to collect data on the composition of the waste stream and to better target future waste prevention and diversion programs. The study identified that recyclable fibers (newspaper, boxboard, cardboard, magazines and paper) and containers made up 24% by weight of residential waste. Other waste, which included other non-recyclable containers and fibers, made up 39% by weight. In 2006, the Chittenden Solid Waste District (CSWD) conducted a residential waste composition study. Similar to ANR study, CSWD reported that recyclable paper and containers made up a significant percentage of residential waste destined for disposal (19.3% by weight).

The Solid Waste Program's 2005 Solid Waste Diversion and Disposal Report includes tonnages of materials recycled statewide (see table). Fibers and containers (cardboard, newspapers, glass bottles & cans) comprised the highest percentage of the waste stream. An increase in the amount of plastics has been noted, both in recycling and disposal.

Based on this information this subcommittee decided to focus its work on containers, fibers and packaging to improve both waste prevention and recycling.

Traditional Recyclable Materials

SOLID WASTE DIVERSION - 2006 2006 - ESTIMATED BY MATERIAL TYPE & DIVERSION ACTIVITY

MATERIAL	SOURCE OF MATERIAL						TOTAL
	Recycling Facilities	Soft Drink and Beer Distributors(1)(2) (Broker Direct)	Economic Recycling(2) (Direct to Market)	Scrap Metal Facilities	Organics Composting	Reuse Facilities & Programs(2)	
SINGLE STREAM	3164						3164
FIBERS	54,832	386	33,495			137	88,850
CONTAINERS	9,438	17,500	117			19	27,074
SCRAP METAL			251	34,830		159	35,240
ORGANIC WASTES					31,774	0	31,774
MISCELLANEOUS	3,720		14			2,167	5,901
Total:	71,154	17,886	33,877	34,830	31,774	2,482	192,003

2006 MSW DISPOSED (tons): 414,273

2006 MSW DIVERSION RATE: 32%

(1) Total includes 16,174 tons of deposit return containers processed by Vermont recycling facilities.

(2) Data for containers from report titled *Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion*, Northbridge Environmental Management Consultants, December 2006. Data for fibers from report titled *Vermont's Municipal Solid Waste Diversion Rate 2001*, DSM Environmental Services, September 2002

(3) Included in "Scrap Metal Facilities" totals.

(4) Includes composting data for exempt facilities from *Vermont's Municipal Solid Waste Diversion Rate 2001*, DSM Environmental Services, September 2002

Recommended Strategies

- Require Pay As You Throw (PAYT) Programs in all Sectors across the State.
- Require Mandatory Recycling Statewide.
- Enact Landfill Material Bans.
- Expand Vermont's Bottle Bill.
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Priority Action Steps are ranked in order of importance. However, the Action Steps: **Require Pay As You Throw (PAYT) Programs, Mandatory Recycling, Enact Landfill material bans and Promote Recycling Away from Home** are interdependent and will need to be supported simultaneously.

For example:

- A landfill materials ban can not be effective without convenient locations to recycle the banned materials (building infrastructure),
- Education and outreach about waste prevention opportunities, mandatory recycling, and places to recycle will need to be comprehensive and well-coordinated across the state including providing technical assistance to set up in-house programs.

Traditional Recyclable Materials

The overarching goal for recyclables is first to reduce the amount of these materials that Vermonter's generate (such as by reusing water bottles or reducing paper usage), second to achieve the state's 50 percent diversion goal by 2011. However, in order to accurately determine if the state has met its goal, it will need to capture all diversion beyond what is currently reported through facilities. This would include, at a minimum, adding economic recycling (larger stores that bring recyclables directly to market), scrap metal processors, recycling facilities outside Vermont accepting Vermont materials, bottle deposit tonnages, backyard composting estimates, and reuse. Before setting a goal to reduce waste generation, ANR will need to determine best way to collect the data that will represent the entire state's waste stream and the resources needed to do this.

Recommended Strategy Details

1 - Require Pay As You Throw (PAYT) programs in all sectors across the state. (Sectors include municipalities, businesses, special events, public spaces, etc).

What is PAYT? PAYT, also known as unit pricing or variable-rate pricing, requires that residents are charged for the collection of municipal solid waste based on the amount they throw away. Fees charged for waste are sufficient to cover all costs of the recycling program. This creates a direct economic incentive to recycle more and to generate less waste.¹⁷ Some communities are concerned about illegal dumping when switching over to a PAYT structure. According to the EPA, most communities with PAYT have found that illegal diversion has proven to be less of a concern than anticipated and that there are steps they can take to minimize its occurrence.¹⁸

Benefits of PAYT

- Environmental Sustainability -- Communities with PAYT programs in place have reported increases in recycling and significant reduction in disposal.
- Economic sustainability - Programs are structured that the costs of disposal will cover recycling expenses.
- Equity -- residents pay directly for the trash they generate.

Action Steps:

1. ANR and solid waste planning entities (SWPE) to research the extent of PAYT and types of rate structures currently operating throughout Vermont.
2. Based on extent and types of PAYT programs, ANR and SWPEs to develop minimum standard requirements for PAYT programs throughout Vermont (in collaboration with stakeholders such as Vermont League of Cities and Towns).
3. ANR to provide a clearinghouse for existing tools and educational materials to promote PAYT program development, such as EPA's PAYT Tool Kit¹⁹.

¹⁷ EPA's Pay As You Throw home page <http://www.epa.gov/epaoswer/non-hw/payt/intro.htm>

¹⁸ EPA PAYT Illegal Diversion concerns <http://www.epa.gov/epaoswer/non-hw/payt/top8.htm>

¹⁹ EPA PAYT <http://www.epa.gov/epaoswer/non-hw/payt/intro.htm>

Traditional Recyclable Materials

Timeline:

Years 1 to 3

Partners:

Solid Waste Planning Entities (SWPE), ANR

Estimated Cost:

Low

Potential Funding Sources:

Program would be self funding through waste disposal fees.

Measures of Success:

- PAYT implemented in all communities in Vermont
- State's 50 percent diversion goal achieved
- Per capita generation of waste reduced

2 - Require Mandatory Recycling Statewide (including from residents, businesses, institutions, and at special events and other locations away from home)

Action Steps:

1. Develop convenient, comprehensive recycling opportunities statewide, build infrastructure in underserved parts of the state.
 - a. ANR and SWPEs to inventory the current recycling mandates, locations of recycling centers and infrastructure including Material Recovery Facilities (MRFs), transfer stations, and other opportunities to aggregate recyclables.
 - b. Based on results of the inventory, determine where gaps exist in current infrastructure and develop a plan to work with solid waste planning entities, private sector, haulers and economic development agencies to build needed infrastructure.
 - c. Require licensed waste haulers to offer recycling to all customers as part of the re-licensing requirements.
 - d. Secretary of ANR can add additional mandatory materials as markets develop (or remove materials)

Timeline:

Years 1 to 3

Partners:

Legislature, ANR, SWPE

Estimated Cost:

Traditional Recyclable Materials

Low for initial legislation

Potential Funding Sources:

Fund infrastructure development through additional bottle deposit funds.

Measures of Success:

- The State's 50 percent diversion goal is achieved.
- Mandatory recycling is required in all municipalities.

3 - Enact Landfill Material Bans

Action Steps:

Enact a landfill ban for materials with established markets and collection programs. Currently, fibers, glass and containers (metal cans and 1&2 plastics) are the most recyclable materials collected through Vermont facilities (from 2006 diversion data).

- a. ANR and SWPEs to identify the specific recyclable materials to target for the ban, and to research other states' landfill material bans including how the bans are enforced.

Timeline:

Years 2 to 3

Partners:

The State legislature would enact the ban. ANR, along with SWPEs would implement and enforce the ban. ANR could require bans to be included in Solid Waste Implementation Plans (SWIP).

Estimated Cost:

Low to moderate, depending on infrastructure needs in some parts of the state. No cost to State's General Fund.

4 - Expand Bottle Bill²⁰

Action Steps:

1. Expand bottle bill to include all beverage containers (excluding dairy products).
2. Change deposit to \$0.10. The additional \$0.05 will be a fee used to develop recycling infrastructure.
3. Improve efficiency of the program.

²⁰ Note: a legislated study committee is currently reviewing and making recommendations to improving the program.

Traditional Recyclable Materials

Timeline:

Years 2 to 5

Partners:

Bottle Bill Working group, ANR, legislature

5 - Promote Waste Prevention in Schools

Action Steps:

1. Require waste prevention and waste diversion as an educational unit for grades K through 12.
2. Select the best teaching units available and promote the unit(s) throughout Vermont.²¹
3. Form a working group consisting of a member of the Association of Vermont Recyclers (AVR), a minimum of two teachers (one K-6, one secondary), an ANR staff person involved in outreach programs, and at least one solid waste district representative. Group should form by early 2008.
4. AVR to develop a Train the Trainer program, and have information available about the program on a website. AVR to develop a database of teachers who have received the training, and can teach the waste prevention and waste diversion curriculum. AVR to develop a list of additional volunteers interested in helping. Such a program would be modeled similar to the Master Composters *Train the Trainer* program²²
5. Integrate school education programs with mandatory recycling requirements. Ensure that the basics of recycling collection are consistently and efficiently integrated into school operations by involving facilities personnel, kitchen and custodial staff. (as well as the purchase of recycled-content and non-toxic products through the state of Vermont purchasing contracts²³)
6. AVR to develop a calculator for schools to measure their carbon footprint including a baseline of waste, tracking results, and sustained program participation.

Partners:

AVR, ANR, SWPE, teachers, and other environmental education providers.

Estimated Cost:

Low to moderate. Cost would include increasing funding for AVR for its school programs.

²¹ For examples - 1) see AVR's School Composting Guide and 2) the 8th grade class at Stowe school is doing a waste audit (trash sort), visiting a materials recovery facility (MRF), a landfill, and a waste water treatment plant. The class also toured a local grocery store with AVR to look at characteristics of packaging.

²² UVM Extension Master Composter Program <http://www.uvm.edu/mastergardener/mastercomposter/>

²³ VT Buildings and General Services paper purchasing contract
<http://www.bgs.state.vt.us/PCA/contract/11866.pdf>

Traditional Recyclable Materials

Potential Funding Sources:

State Solid Waste Management Assistance Fund (SWMAF), school budgets, and possibly state education funding. Waste prevention savings could help offset costs of the program (such as reducing paper usage).

Measures of Success (could be tracked within each school district)

- Waste generation and waste disposal costs reduced
- Diversion rates increased
- Energy use and greenhouse gas emissions reduced

6 - Promote Recycling Away from Home (public spaces)

Establish recycling programs away from home, including fairs, airports, sporting and other special events, convenience stores, downtowns, etc...

Action Steps:

1. Evaluate existing "tool kits" (such as EPA's recycling on the go -- ROGO²⁴). Select a program to promote throughout the state, one that can be easily put into practice by event organizers - from planning to implementation.
 - a. Implement recycling and composting at public events and fund pilot programs.
 - b. Evaluate whether to add a requirement for special event planning and implementation as part of the Solid Waste Program's Solid Waste Implementation Plans. (SWIP)
2. ANR to develop a rating program for special events, based on reaching gold, silver, or bronze levels; the rating system would include waste prevention, recycling and composting. Develop standards for each component.

Partners:

SWPE, ANR, through SWIP approvals, special event organizers, town and city managers

Estimated Cost:

Low to moderate

Measures of Success:

- Amount of waste diverted through the program
- Cost savings to the event
- Waste reduction programs are institutionalized into the ongoing operations and management for event operations (sustainable)

²⁴ EPA's Recycling on the Go <http://www.epa.gov/recycleonthego/>

7 - Support Local and National Product Stewardship Initiatives²⁵

Action Steps:

1. Bring Vermont's perspective to national dialogues, such as the Product Stewardship Institute (PSI).
2. Encourage PSI to tackle packaging as one of its priority materials.
3. ANR to work with Buildings and General Services, Purchasing Division to evaluate opportunities for product stewardship in State of Vermont purchasing contracts.

Estimated Cost:

Membership fees for the National Product Stewardship Institute

²⁵ Note - bottle bills are a form of product stewardship, thus expansion of Vermont's bottle bill fits into this category in addition to the bottle bill expansion Action Step