Chapter 4
Waste Prevention and Reduction

The introduction to this chapter explains the terms and definitions used to describe State and local waste prevention policies. Extensive examples are given to illustrate the evolution of policies and practices aimed at reducing both the volume and toxicity of wastes. The rest of the chapter describes current waste prevention practices in Clark County and more opportunities to use waste prevention as a solid waste management strategy.

Introduction

Waste prevention is a strategy that involves altering the design, manufacture, purchase, use or reuse of products and materials to reduce their volume or toxicity before they enter the solid waste stream. Waste prevention reduces waste at its source, thus eliminating the need for recycling, composting and disposal. The best approach to solid waste management is to eliminate waste in the first place. Waste prevention (waste reduction) reduces the need to develop, finance and maintain collection, transfer, processing and/or disposal systems. These benefits make waste prevention the highest priority for management of solid waste in Clark County and Washington State.

Waste prevention is sometimes referred to as "source reduction," because it reduces or eliminates waste or pollution at the source. All waste generators have at least some opportunities to use waste prevention measures that reduce the generation of waste materials. Donating an unwanted computer to a charity is an example of waste prevention. So is photocopying on both sides of a sheet of paper. Altering material specifications so that fewer hazardous elements are used to make a product is another form of waste prevention.

Businesses and individuals can examine their purchasing of marginally needed or slightly used products as a way to save money and reduce waste. Consumers can exercise control and be thoughtful to help reduce waste, conserve resources, and save energy. Taking reusable bags to the store and carrying tap water in a reusable container are examples of simple strategies that would both reduce resources used and save money.

Product engineers, manufacturers and consumers can all make an impact on waste prevention. Packaging and product engineers can design items that use materials more efficiently or are more durable. Consumers can choose to purchase items with minimal packaging and to reuse certain items before disposing or recycling them. They can select alternative low toxicity or "green" household products in place of hazardous household products. When purchasing hazardous household products, consumers can choose to purchase smaller amounts. These can be used up as directed

or given to someone else who can use them, rather than disposing of them at the household hazardous waste facilities.

Preventing the generation and disposal of waste involves increasing product life; decreasing the amount of material and natural resources used to make the product and/or its packaging; reducing the toxic ingredients in the product; reducing product use and consumption; and increasing the on-site management of some materials, such as organic wastes. Examples include such innovations as NCR paper, which nearly eliminated carbon paper from the waste stream, and CitroSolv and similar products, which are citrus-based cleaners, instead of contaminating toxic solvents.

County and municipal waste prevention programs that combine local economic incentives, regulations, restrictions or bans and education programs to inform and motivate, can persuade manufacturers to reduce toxic ingredients and persuade consumers to reduce consumption. These program elements also tend to have a positive effect on the on-site management of waste and toxic elements.

Market forces often have the greatest influence on product life and packaging. When consumers change their buying habits, this can drive markets and influence how the commercial and industrial sector produces, ships and sells its goods. For example, consumers can tell manufacturers in writing, by phone or via the Internet when they are happy or displeased with a product or a particular type of packaging. If enough consumers stop buying a product because of its package, manufacturers are likely to notice and institute changes. When an electronics manufacturer makes it a practice to disassemble televisions that have been returned, then reuses or recycles the parts, that manufacturer may see an increase in sales by being environmentally responsible. Product design for disassembly and reuse has already become the standard in many European countries.

The main discovery of recent waste prevention research is that waste prevention programs are most effective when an outside motivator, such as cost, is combined with well-funded, intensive education. Successes in waste prevention in other jurisdictions prove that a significant opportunity for waste prevention still exists in Clark County. We can also contribute to the growing national discussion on the effectiveness of waste prevention programs. To take advantage of opportunities, the County and cities need to use the outside motivators together with a well-funded and thoughtfully designed education campaign.

The County and cities need to continue to support and fund programs which provide a number of opportunities to educate students, educators and the community about waste prevention. The need may also exist for the County and cities to find and support non-governmental agencies willing to take the lead in business waste prevention assistance. Businesses may be more responsive to solid and hazardous waste management information and assistance delivered by a non-governmental agency, dedicated to business assistance and economic development, such as the Columbia River Economic Development Council.

Programs also need to be coordinated with other local, regional and state campaigns in order to ensure uniform messages and maximized resources. The Portland Metro area, Seattle-King County area and State of Washington all provide opportunities for the County and cities to partner on waste prevention campaigns.

Definitions

RCW 70.95 and the Washington Department of Ecology define waste reduction as "reducing the amount or toxicity of waste generated or reusing materials."

Although the state of Washington still uses the term "waste reduction," the term "waste prevention" is becoming a more universally recognized phrase and is consistent regionally and nationally. The term "waste prevention" has become the standard term used by EPA, the Portland, Oregon area governments and various agencies and entities in the Seattle-King County area. Because of its wide use and acceptance, the term "waste prevention," which includes the concepts of waste prevention, reduction and reuse has replaced "waste reduction."

According to RCW 70.95, the priorities in managing solid waste "are necessary and should be followed in descending order as applicable." Clark County is incorporating into this Plan priorities for solid waste handling which places energy recovery at a higher hierarchy level than the state. The County will continue to emphasize "Reduce, Reuse & Recycle" in its programs and messages. This County's hierarchy is as follows:

- Waste reduction (prevention);
- Reuse;
- Recycling, with source separation of recyclable materials as the preferred method;
- Energy recovery of separated waste;
- Incineration or landfilling of separated waste;
- Energy recovery of mixed waste;
- Incineration or landfilling of mixed wastes.

Waste Prevention and Reduction Goals

Established with this Plan Update, the overall objectives of the regional solid waste management system is:

- Reduce the amount of materials generated and landfill disposal from Clark County and its cities;
- Increase the recycling rate to 50 percent; and
- Reduce toxicity.

To achieve these objectives, the following targets have been established:

- Increase recovery of basic recycling by 50,000 tons by 2011; person/day
- Recover an additional 10,000 tons of organics by 2011;
- Recover an additional 10,000 tons of construction and demolition materials by 2011;
- Recover an additional 500 tons of hazardous waste materials by 2011; and

- Reduce per person per day waste generated by 5% by 2011. A 5% reduction of 7.4 lbs/per person/day to 7.0 lbs/per person/day.

In general, waste prevention goals have been difficult to measure. Many cities and towns have attempted to develop methods to analyze waste prevention. The amount of garbage and recyclable material set out for pick up may be measured and tracked, but this method does not account for materials that are discarded or recycled by other means, such as self-haul. Additional problems lie in measuring waste that is no longer produced due to educational efforts as opposed to economic factors. Population growth, retail sales and per capita income are factors that influence waste generation, regardless of waste prevention education. In general, the margin for error of any method used to measure waste prevention is greater than the total amount of any waste prevention target.

Success may be measured by conducting surveys to evaluate changes in behavior and conducting waste stream analyses to track reductions in toxicity. Please note that waste prevention requires individuals, businesses and governments to change purchasing and use habits - basic changes in the way people live their lives. It requires repeated waste prevention messages to create such changes in what people buy and use.

Additional discussion of waste prevention goals and measurement is contained in the Waste Monitoring and Performance Measurement, Chapter 15.

Assessment of Conditions

A number of waste prevention activities are occurring in Clark County. These activities can be discussed in two categories: residential and commercial/institutional. Although many waste prevention activities apply to both the residential and commercial/institutional sector, in general, in-home waste prevention behaviors are more difficult to instill, because individual preferences, personal convenience and income levels affect behavior more at home than at work.

Residential Waste Prevention

Clark County implemented its first residential waste prevention promotion and education campaign in 1991-1992, with the financial and technical support of the Washington Department of Ecology. A key part of the program was the distribution of reusable canvas shopping bags to encourage reduced use of plastic and paper bags.

The Washington Department of Ecology has continued to provide local governments, including Clark County, with grants to help promote waste prevention and recycling. These grants require local matching funds. The current grant program is referred to as the "Coordinated Prevention Grant Program." Although the primary focus of many county and city solid waste management education programs during the first half of the 1990s was recycling education, waste prevention was still a component; especially when it came to residential yard debris management. The County puts a great deal of emphasis on using the results of the Waste Stream Analysis to determine target generators and waste streams for waste prevention education. Waste prevention programs and campaigns that address residential waste include:

- Neighborhood chipping programs — Clark County, the cities of Ridgefield and Vancouver, and the town of Yacolt offer a yard debris chipper and crew

to recognized neighborhood associations. Residents take the chipped material for use as mulch in their yards;

- Leaf collection programs are offered in the cities of Vancouver and Battle Ground, as well as in the unincorporated areas of the County as a method to promote the use of leaves as mulch;
- Christmas tree collection programs have been promoted to provide for the proper disposal and composting of discarded trees;
- To reduce yard debris and food waste, the County and City of Vancouver have presented and sponsored backyard and worm composting workshops, backyard composting demonstration sites, grasscycling education, compost bin sales, composting displays and brochure distribution, and composting presentations by the Clark County Master Composter/Recycler Program;
- County and City solid waste programs have given waste prevention and recycling presentations to community groups and schools;
- *Mother Nature's Garden*, a puppet show that teaches the value of compost and gardening without chemicals has been presented to primary grade students throughout Clark County;
- Waste reduction displays are presented at the Clark County Fair and the Home and Garden Idea Fair along with other regional fairs and festivals,
- Interactive displays were developed on the topics of Waste Reduction, Natural Gardening, Stormwater, Transportation and Wastewater Treatment;
- A Recycled Arts Festival was introduced that provides citizens an opportunity to learn about reuse and waste reduction;
- The Naturally Beautiful Backyards program provides information on working in the yard and garden without using chemicals that could be harmful to people, animals and the world around them. This is done through brochures, lectures, community workshops and informational displays;
- Curbside recycling collection was expanded to include anti-freeze, household batteries and empty aerosol cans;
- Unwanted electronics waste including computers, monitors, TV's, printers, answering machines, VCR's, typewriters, FAX machines, cell phones and other computer related electronics may be dropped off at the jail work center through a partnership with CREAM (Computer Reuse and Marketing). Details about this program can be found in the Household Hazardous Waste chapter;
- Collection programs for sharps (needles, syringes, & lancets), old and/or unwanted medications and mercury thermometers;
- Residents were encouraged to donate reusable items through events such as Reuse Fairs and Community Share Fairs. Community Share

Fairs were implemented to give citizens an opportunity to bring reusable items to one location and donate them to a variety of non-profit agencies,

- A website, www.2good2toss.com, was established to allow residents an opportunity to give away (or sell for up to $200) unwanted items that could be of use to someone else.
- In 1999, the County and Portland Metro signed an agreement to have Metro process all latex paint received in Clark County in Metro's new latex paint recycling facility. The recycling costs are significantly less than household hazardous waste disposal;
- The Clark County website was refurbished and, and a result, the Solid Waste Program site has been updated and contains much useful and easily accessed information for the public.
- The County continues to provide technical assistance consultations for businesses to improve their waste reduction, recycling and sustainable practices.
- The County web site hosts *Recycling A-Z* which is an on-line directory with a detail listing of where to take unwanted items.

Despite all these valuable and popular programs, significant opportunities still exist for residential waste prevention. In comparing the 2008 Waste Stream Analysis to the 2003 Study, there were some increases and decreases in the percentage amounts for some materials but there have been no statistically significant changes in overall waste composition as compared to 2003. The overall categories of Paper, Metal, Organics and Glass have decreased but Plastics have increased slightly. The amount of aluminum beverage cans remain unchanged. Food waste shows a slight increase. A more detailed discussion of the waste stream composition is in the Waste Stream Analysis in Appendix I.

(**Note**: General solid waste education and promotion programs are discussed in detail in the *Education and Promotion*, Chapter 5; moderate risk waste prevention activities are discussed in detail in the *Moderate Risk Waste Plan*, Chapter 11.)

Commercial/Institutional Waste Prevention

According to the waste stream analysis conducted in 2003, approximately 50% of all disposed waste in the County came from non-residential generators. This includes commercial generators and self-haul loads to the transfer facilities. The waste stream analysis shows that recyclable paper, construction/demolition and wood wastes, food wastes, metals and yard and garden wastes are components of this waste stream that present additional opportunities for waste prevention and reduction.

Examples of commercial/institutional waste prevention activities that have been implemented in the county are as follows:

- Cardboard+: Business cardboard recycling program;
- WE Compost!: Commercial food composting;

- Commercial Waste Reduction and Recycling Assistance Program: A program that increases the size of the desk-side recycling container and reduces the size of the garbage container to encourage employees to recycle all paper and reduce waste;
- E-Newsletter (Business Environmental Newsletter – BEN): Communication and recognition among Clark County businesses about commercial waste reduction;

In addition to the above activities, Clark County government and other local agencies have conducted in-house waste prevention programs including:

- A Green Purchasing policy has been adopted at Clark County;
- Environmental Management System: EMS is a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals. Most EMS programs are built on the "Plan, Do, Check, Act" model. This model leads to continual improvement. The Solid Waste Program is using this model to develop workplans and a set of five year goals. This system will allow for an opportunity to develop forward-focused programs that are goal based and measurable. More details about the EMS program appear in Chapter 3 Sustainable Choices.

The County has also worked with institutions to encourage waste prevention. Activities include the following:

- SOS Program: a school cafeteria composting program;
- Support and funding was provided for the Columbia Springs Environmental Education Center (CSEEC) and its *Project Learning Tree/Municipal Solid Waste* teacher training workshop program. *Project Learning Tree* is an interdisciplinary curriculum that gives educators the tools to integrate waste prevention and recycling into math, science, reading and language arts, social studies, economics, fine arts and other subject areas. CSEEC also presents and develops other curricula that address waste prevention issues. The Master Composter/Recycler program, located at Columbia Springs Environmental Education Center (CSEEC) presents composting, vermicomposting and waste reduction messages to grade school students in Clark County school districts.
- Classroom presentations, service learning projects and school environmental fairs have been introduced to further promote waste prevention activities. Staff has also worked with instructors at Clark College and Washington State University Vancouver to help integrate waste prevention concepts into different business, industrial, biology, natural resource management and economics classes;
- Funding and support was provided for the Master Composter/Recycler "Worms Go To School" program. Through the program, teachers attend vermicomposting workshops and receive classroom worm bins and vermicomposting curricula. Program volunteers also do presentations and place worm bins in classrooms.

- www.2good2toss.com is a reuse website for business and household items. Coordinated through the Washington Department of Ecology with other counties throughout the state, Clark County has a designated section for residents to exchange reusable items locally. As the site is continually improved, statistics are being gathered on the number of successful exchanges as well as an estimate of the weight of those items kept out of the landfill

Recommendations

1. Expand and augment County's and cities' waste reduction and recycling education and promotion programs for residential, institutional and commercial generators of waste.

2. Support legislative efforts that encourage the Washington Utilities and Transportation Commission (WUTC) to allow counties to provide stronger rate incentives for waste reduction, such as a linear rate.

3. Continue to develop County and city procurement standards that encourage waste prevention.

4. Continue and expand yard debris and chemical reduction programs such as natural gardening and home composting.

5. SWAC and the County and cities should take an active role in trying to prevent new types of wastes from entering the waste stream by continuing to focus on products which create more waste and less recycling.

6. Lobby State and federal governments to pass legislation that requires waste prevention: including packaging reduction and improvements.

7. Promote waste exchange and reuse programs.

8. Continue county in-house waste prevention programs and practices.

9. Expand existing public recognition programs and develop new ones.

10. Encourage market development for waste prevention efforts for both private and public entities to find alternatives to disposal such as reuse or product development with a planned "second life".

11. Utilize partnerships with other regulatory agencies and or representatives of the business community to increase the visibility and accessibility of commercial assistance programs.

12. Place emphasis on commercial waste reduction while maintaining existing programs for residential waste reduction.

13. Investigate the potential for providing financial incentives to encourage waste reduction among ratepayers.

14. Promotion campaign to decrease the use of plastic and paper bags.