Nowakowski, Sonja

From: Cynthia Forsch [cforsch@montana.com]
Sent: Tuesday, June 01, 2010 6:04 PM
To: Nowakowski, Sonja
Subject: Comment on the The Coke Can from Columbus

My comment is regarding the proposed Montana's Recycling Incentives, the following:

Deduction for Purchase of Montana-Produced Organic Fertilizer *(15-32-303, MCA) Taxpayers may deduct expenditures for organic fertilizer, such as compost, that is produced in Montana and used in Montana. The deduction is allowed if the expenditure was not otherwise deducted in computing taxable income. The deduction is in addition to all other deductions from adjusted gross individual income allowed in computing taxable income under Title 15, chapter 30, MCA, or from gross corporate income allowed in computing net income under Title 15, chapter 31, part 1, MCA.*

The terms used in the proposed MT Recycling Incentives "organic fertilizer" and "compost" need some definitions, does the author mean organic as used in organic farm practices or compost made from organic materials such as naturally occurring plants. I think the clarification should not limit the composted material. Compost made from sewer sludge although not used for organic farms can be used for other non direct food contact or ornamental soil augmentation. Road side erosion control and construction are good examples.

Cities, towns and counties should be encouraged to compost household and commercial food waste as this can substantially decrease the amount of solid waste generated. Adequate education on the sitting and operating a facility as well as the composting of such materials is essential to success.

My second comment is on the report its self.

The 2006 IWMP, the most recent plan, identifies recommendations for increasing the recycling of both household hazardous wastes and electronic waste. The recommendations include:
- *Establish additional opportunities for collecting household hazardous waste by increasing the number of drop-off sites that are open and increasing the frequency of collections.*
- *Coordinate collection events in multiple communities.*
- *Provide a source of funding for collection of hazardous wastes generated by households and conditionally exempt small quantity generators.*
- *Ban whole tires from landfills.*
- *Collect a fee on new tires that can be used to support tire recycling.*
- *Form partnerships and look for opportunities to recycle tires locally.*
- *Label batteries or place signs at locations where batteries are sold to direct consumers to recycling locations.*
- *Educate consumers on the importance of recycling electronics waste.*
- *Encourage the reuse of electronic equipment.*
- *Partner with retailers for buy-back or recycling programs.*
- *Work with other states on national policies.*
- *Establish procurement guidelines to choose the best environmental options for electronics purchases in both the public and private sectors.12*

It is unclear in the list of 2006 IWMP recommendations what is meant by the item: • *Partner with retailers for buy-back or recycling programs.* Does this refer only to electronics waste?

EQC
JULY 22, 2010
EXHIBIT 12

Finally, my comment is that the report focuses on a few hard to recycle items rather than the real problems of creating and maintaining recycling programs in each county and city. Counties should be required to recycle a certain percentage of solid waste and report it. The standards should be set as in what is measured and penalties for not participating should be levied. Incentives for counties that participate would be helpful as well, such as tax revenue rebates, education for municipalities, help with staging sites for consolidation of loads, and state wide recycling education for the public.

Thank you for the opportunity to comment.

Cynthia Forsch
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"Economically Sound Environmental Strategies"

Please consider the environment before printing this e-mail

Nowakowski, Sonja

From: Tom Longshore [karintom@midrivers.com]
Sent: Sunday, June 06, 2010 11:26 AM
To: Nowakowski, Sonja
Subject: Recycling

I am glad to hear that someone is doing a study of recycling in Montana. I keep a watch for different recycling opportunities here in Lewistown. Currently we do have places here in town that recycle aluminum cans, metal, cardboard and magazines.

The big need as I see it is for locations to take glass and plastic. I do see from an article form the Billings Gazette that Earth First Aid there do pick up plastic and glass. Also the Walmart store in Great Falls has several bins to take plastic that the Walmart truck takes out. I don't know where these items go, I presume out of state. So the expense is probably high.

Thank you for the work you are doing on this and I hope that there will be something available here in the near future.
Karin Longshore
Lewistown, MT

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_____

The message was checked by ESET NOD32 Antivirus.

http://www.eset.com

Nowakowski, Sonja

From: Peg Likens [plikens@mt.net]
Sent: Monday, June 07, 2010 8:13 AM
To: Nowakowski, Sonja
Subject: Public Comment on Recycling Study

What effect does the closure of Stone Container in Missoula have on cardboard recycling? I thought Stone was a major in-state market for cardboard.

Peggy Likens
Helena, Montana

Nowakowski, Sonja

From: Twyla Anderson [twyla@nemont.net]
Sent: Sunday, June 13, 2010 12:25 PM
To: Nowakowski, Sonja
Subject: Recycling

I wanted to email and say that I think I speak for a lot of Montanans in that we would support any recycling efforts. I live in northeastern Montana and the only thing we can recycle here is aluminum cans (in Glasgow).

If there was a full-fledged recycling effort, I would glady recycle newspaper, glass and plastic. I live 50 miles from Glasgow but the effort would be worth it. I know recycling in Montana offers many challenging because it is so rural but we need to start somewhere and I believe the idea would take off. In addition, it could create new businesses and jobs.
Twyla Anderson, Opheim, MT

Nowakowski, Sonja

From: Cari [cariandcompany@yahoo.com]
Sent: Friday, July 02, 2010 10:53 AM
To: Nowakowski, Sonja
Cc: Recycle@Savemobile.org
Subject: recycling comments

I have been an avid recycler for the last 30 years and I am always amazed at how difficult the city of Helena makes it to recycle! I rent my home and do not have a garbage permit so the city chooses to charge me $6.25 to take in my glass. This is absurd! Of course, I borrow a pass from my neighbors to avoid the fee... but what a unnecessary hassle!

Most people who are in this position would like to recycle, choose not to because of this. The fact that we have to hold our plastics, take newspaper, cardboard and tin to other stations, etc. This does NOT encourage the habit of recycling! Helena needs to wake up to how huge this problem is and be much more proactive as to how to solve this. It will only get worse as we struggle to fight against the city of Helena to do what is right for our environment.

Do what Seattle did years ago... make recycling mandatory, provide bins for pick up and fines when you choose NOT to comply.

Sincerely,
Cari Louden

Nowakowski, Sonja

From: Ellen Forde [ellen.forde@gmail.com]
Sent: Friday, July 02, 2010 1:54 PM
To: Nowakowski, Sonja
Subject: Recycling Comments

Greetings,

My name is Ellen Forde, a resident of Sidney, MT. I want to comment on the Environmental Quality Council draft study, "The Coke Can from Columbus." First off I would like to thank the council and the organizers of this study for putting this together; it was very informative and useful especially for a non-native Montanan.

I would also really like to provide my support for some of the funding mechanisms mentioned in the study. As a Recycling Coordinator at a non-profit agency (and an avid recycler on a more individual level), I support any almost all funding options that will help divert material out of landfills and into alternative markets. In order to increase recycling rates state wide, I think a second initiative to allocate a fee on solid waste disposal toward a recycling grant program would be very beneficial. I think this would help non-profits, local governments and private entrepreneurs develop innovative solutions increase recycling in their area. With this increase in recycling and the full-cost accounting recommended in the 2006 Integrated Waste Management Act, I further think that this would save solid waste districts and local public works departments funds in the long run.

I would like to see an additional solid waste fee to be allocated toward a recycling grant program run by the DEQ's Energy, Prevention and Pollution Bureau with the stipulation that a proportional amount of fees paid into the grant program would be allocated back to the general area they came from i.e. fees from Eastern MT would come back to Eastern MT, etc. for Central and Western MT.

Thank you for the opportunity to comment on this worth while cause.
Sincerely,

--
Ellen Forde
810 5th St. SW
Sidney, MT
ellen.forde@gmail.com

...of the people, by the people, for the people...

Nowakowski, Sonja

From: Mark E Nelson [trashman@centurytel.net]
Sent: Friday, July 02, 2010 3:17 PM
To: Nowakowski, Sonja
Cc: 'jannataylor'
Subject: Recycling

Sonja - I am the Solid Waste Manager for Lake County and am the President of Recycle Montana. I also sit on the DEQ's Solid Waste Advisory Council. However, I am writing this comment only as the Solid Waste Manage for Lake County and a concerned citizen of Montana.

I am disappointed in the draft report from the Environmental Quality Council regarding recycling. I believe SJR28 was passed in anticipation of a much deeper analysis and response. The findings of the report simply restate much of the language in the Resolution.

Suggesting that raising the waste reduction targets will encourage more recycling completely ignores the realities and difficluties of recycling in Montana as presented to the EQC. We cannot merely "wish" increased recycling into existance, we must facilitate it. The findings that "Montana communities are encouraged to explore enhanced recycling" is not what the recycling community and the citizens of Montana asked for in SJR28. We asked for real solutions to be proposed, ones with some details not vague empty statements.

Last legislative session HB35 attempted to create a loan program that would have allowed communities to enhance recycling, unfortunately the funding was taken for other purposes. As a person in a community (Lake County) just starting to recycle, I can tell you that the Public is demanding the service, but local government is having difficulty finding the funds to purchase the equipment needed to start up. Then there is the problem of, "Now that I have baled all this plastic what do I do with it?".

If this is to be the Council's report to the Legislature, I hope that when it is presented there is a statement attached that says something to the effect of "we now know there is a problem and we ask the Legislature to work with the recycling community to find a solution."

Please feel free to contact me, if you need anything further.

-men-
Mark E Nelson
Program Manager
Lake County Solid Waste
406-883-7325
fax:883-7326
mobile: 249-3033
trashman@centurytel.net
Recycle Montana License Plates are Available Now!!
www.recyclemontana.org

SAVEMOBILE.ORG

Thursday, July 1, 2010

Attn: Sonja Nowakowski
Environmental Quality Council
P.O. Box 201704
Helena, MT 59620-1704

Re: SJ 28 / "The Coke Can from Columbus"

Dear Mrs. Nowakowski:

Please consider the following comments regarding the draft of "The Coke Can from Columbus" as part of Senate Joint Study Resolution 28 from the 2009 legislature.

The S.A.V.E. Foundation submits these comments as advocates for recycling and an organization that has been engaging in business, school and community recycling programs for more than five years.

Please contact us anytime regarding any questions or requests for additional information. Thank you very much for your work on this issue.

Sincerely,

Tyler Evilsizer, Chairman
The S.A.V.E. Foundation, 501(c)3
P.O. Box 1481
Helena, MT 59624

SAVEMOBILE.ORG

Who are we?

The Student Advocates for Valuing the Environment Foundation, better known as "S.A.V.E." is a Helena based nonprofit corporation. We are volunteers, community members and staff that work to expand recycling in the greater Helena area and to be a resource for recycling across the state through our work in policy and education.

We provide recycling for dozens of schools, businesses, and institutions in Helena, host community recycling events such as Erase your E*waste and Trash for Trees with public and private partners and facilitate Helena's only plastics recycling program. In this capacity, we have gained experience with the logistical challenges of recycling programs. We also are aware of the sentiment in the Helena area that public policy should foster more recycling as a means to reduce waste and lessen environmental impact.

Introduction

The current draft provides an accurate summary of the success Montana has had in preserving recycling incentives through tax credits and efficiently funding a small office in the D.E.Q However, we find this draft does not yet accomplish the task set out by the Legislature in SJ 28. The draft does not explore policy options to further promote recycling in Montana: e.g. providing assistance for rural communities or enacting policy to overcome challenges with difficult to recycle items such as e-waste.

The report's assumptions, many of which are based on the 2006 Integrated Solid Waste Management Plan, focus too much on the challenges our communities face and not enough on the solutions. No one denies that Montana is distant from manufacturing markets, but that does not mean there are not solutions through back hauling or cooperation between communities. The margin of profit will be smaller than for a large firm in Seattle, but successful recycling programs are generally a question of collection logistics rather than marketing. When recycling "breaks even," it has paid wages, saved money in solid waste costs, and met a community value.

The report assumes that little can be done until a local market for recyclable materials is developed. While this may be the case with some items, such as glass, it is important to note that service costs, tipping fees and bonds to the tax base for landfill and trash services dwarf the investment made for recycling. Recycling programs offer communities the opportunity to reduce their landfill costs while meeting the policy goal of expanded recycling.

Compost is not a significant recycling issue. Although some communities are still developing programs, most landfills use composting regularly. These landfills find composting yard waste and forest debris necessary to prevent hot spots in landfills. Composting is a successful program, and generally not in need of further legislative action.

Many local governments already have a solid waste district, utility or contract covering waste collection and disposal. Many waste collection systems can be phased into dual use equipment, enhancing recycling infrastructure at minimal cost. It is much better for rural communities to look

at using the systems they have in place, rather than a new recycling system that may be beyond their expertise and capacity.

Most consumer items are not produced in this state, which presents an opportunity for low-cost shipping outside the state through backfilling trucks.

While the report cites "inexpensive landfills" as a challenge, it is important to note that the infrastructure costs for landfills and waste collection are significant. One challenge is that those investments are long-term and must be paid for by waste generation. This creates a reverse inventive as waste collection in coupled with a return on investment for landfills and trash collection.

Communities are struggling. For that reason, SJ28 was popular across the political spectrum. We want to do better in Montana. Twenty years ago, the Legislature recognized a need and successfully created the safe landfills that were required. Now is time to take the next step and help communities that are struggling to recycle. At our community events, we hear from all demographics. Residents are ready to do their part and are looking for political leadership to step up to the plate.

Comments to findings page:

Findings Under Study Task 1:

**The solid waste reduction targets established in 75-10-803, MCA, should be updated to encourage more recycling and composting.*

We agree with this position, but are concerned that the policy update should focus more on recycling than reduction. By including reduction, the current goal will inadvertently count other factors that were not the result of conscious policy, like the reductions caused by the current economic downtown immediately after a building boom. A waste policy would be more effective if it measured material diverted from landfills once the waste has been generated.

Findings Under Study Task 2:

**Montana's relatively small population, spread across a large geographic area, makes recycling efforts more challenging...*

A small, rural population is a challenge that affects much of our state. One possibility for rural communities is to consolidate material to create a marketable resource. Many places in Montana already recycle successfully. Another alternative is to boost links with the existing network of processing facilities.

** The public and local governments must recognize that recycling is part of the entire municipal solid waste management strategy…*

Great! Whether through contract or by public utility, solid waste collection is a vital service that is often bonded with pubic dollars and paid for by all residents of a community. Some of the policy recommendations below can help make some strides in this area.

Finding Under Study Task 3:

**Using existing resources and statutory direction, the DEQ is appropriately acting as a clearinghouse for information on electronic waste recycling opportunities and household hazardous waste disposal.*

The work done by DEQ is a strong foundation from which to build. More can be done to "propose programs to address electronic and household hazardous waste." The report indicates the surge in electronic waste recycling in Bozeman when an e-waste recycling event was offered for free. This surge indicates that there is a large stockpile of electronic waste sitting in basements across Montana, waiting for an accessible method to recycle electronics. We propose a program modeled after successful legislation in the 2009 Session below if for the EQC's consideration.

Finding Under Study Task 4:

**...each city, county, and town is unique...select those options that are the best fit for each community's need.*

The wide difference between communities can be a daunting challenge to a community considering a recycling program. Despite the differences between communities, standardized events, policies, and procedures are still needed. Communities deal with same items and face many of the same challenges with items like pesticides, computers, old TVs. They should not be forced to reinvent the wheel.

Finding Under Study Task 5:

**...high transportation costs and long distances to recycling markets make recycling..... To overcome this obstacle, local markets for recyclable materials need to be established in Montana.*

Although transportation costs are important in any discussion of recycling, this finding should be expanded to meet the study task set forth by the Legislature: "Analyze methods to promote market development of recycled materials." Simply acknowledging that markets need to be established is only the first step of the EQC's task.

Any industry using post-consumer feedstock is going to face a chicken and egg dilemma for acquiring raw feedstock. Markets will not develop with available materials and available materials will not develop without markets. Infrastructure for high-quality post-consumer recycling should be established alongside any market efforts. Montana can have a greater effect on its collection infrastructure to create the resource, while the local market is given time to develop.

Through its involvement in solid waste, government can play a role in developing infrastructure, but is not be the end all. The recycling tax credit is one example of the state's involvement. State and federal procurement should also play a role. See our policy recommendation for glass (below) for an example.

Additional Cases

Plastics Drives in Helena

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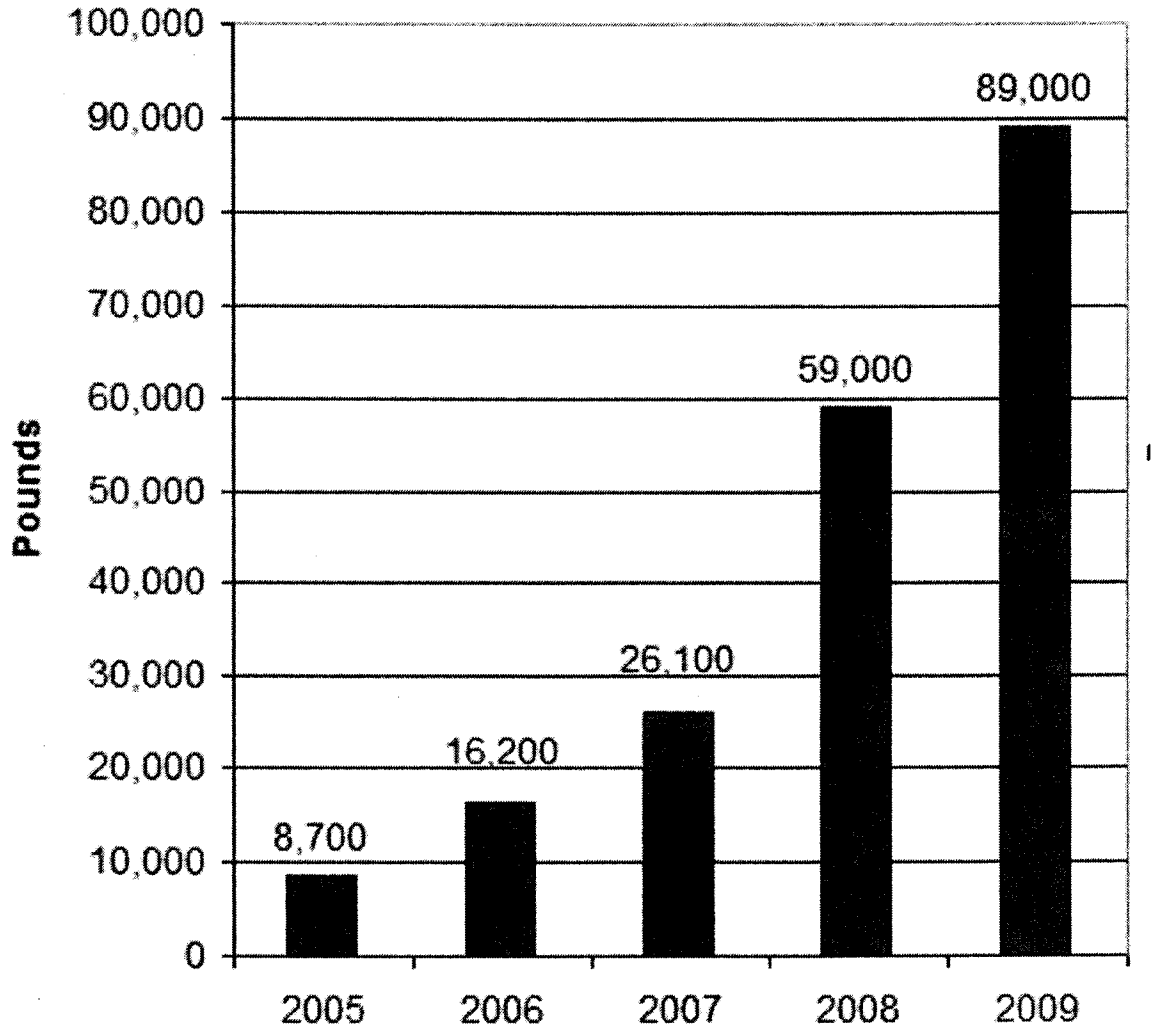
S.A.V.E. started an event-based community plastics recycling program in 2005 to meet a need for recycling in the Helena area. The program was quarterly and made possible by volunteer labor, donated press, and word-of-mouth advertising. The program's success immediately proved the demand for plastics recycling.

Five years later, the program has grown beyond our expectations. Today, we collect more material in a four-day collection drive than we collected during the entire first year of the program. We are on track to collect more than 100,000 pounds in 2010.

Estimated Yearly Totals Collected at Drives



The current program is a model of public-private cooperation. The City of Helena lends collection bins. The program uses two mobile plastic compactors donated by City-County Sanitation, a private waste-management company. We rent a generator from a local supply store. Our event-based program ensures quality control, and allows us to communicate directly with recyclers to explain the types of acceptable materials. The direct interaction between

The Student Advocates for Valuing the Environment Foundation, 501(c)(3)
P.O. Box 1481, Helena, MT 59624
406.449.6008 / Recycle @ Savemobile.org

S.A.V.E. volunteers and community members ensures a high-quality final product.

This community effort has successfully overcome the collection challenges. S.A.V.E. has reduced our costs and liabilities. Using local infrastructure (roll off containers designed for trash) allows us to obtain the necessary volumes of high-quality material.

Other Examples

1. The City of Great Falls has recently begun an event-based plastics program with Walmart.

2. Many retailers have exclusive shipping operations and can use this to backfill their recycling. Using this method, many stores already recycle plastic bags. This infrastructure can be a key component for rural communities, as recognized in some of the findings.

Resources to Add:

1. From DEQ's report "The Economic and Ecological Impacts of Recycling in Montana" (July 2004):

Statistics:

"The approximate numbers for 2003 are as follows:

Full Time Jobs: 300
Part Time Jobs: 40
Wages (+ benefits): $ 9,330,000
Revenues: $89,120,000

The average wage (including benefits) in Montana's recycling industry was calculated to be about $29,000 (9,332,580/321.5 = $29,028). Total avoided landfill costs in 2002 as a result of recycling were estimated to be $4,615,776—128,216 tons recycled which avoided landfill at a fee of $36.00 per ton. (Brian Spangler, Montana Department of Environmental Quality). There are also indirect positive economic effects from recycling and tax revenues collected from the recycling industry in Montana. Estimating these numbers is beyond the scope of this paper."

Conclusion:

"Recycling in Montana is more than just a fad; it is a real industry. Even without any form of mandatory recycling or other specific in-state mandate to foster recycling, this industry creates and sustains many full-time, reasonably well-paying jobs. With our continued growth in consumption and need for recycling, these numbers are likely to grow over time. The networks that enable recycling in Montana are mostly private. Recycling activity in Montana is a model point for the interplay between private sector activity and social concern—between economic incentive and environmental responsibility. Recycling in Montana has a vibrant economic base that reaches throughout the majority of the state. It has a tremendous opportunity for future growth."

2. Facts from Other States' Policies

Examine Bottle Bill States and Their Recycling Rates

1. In addition to the incentive created by a bottle deposit, bottle bills also generate revenue for the state through unclaimed refunds.
2. Although a traditional bottle bill may not be appropriate for the state, a similar funding mechanism may be appropriate for some commodities.
3. The deposit model it already used to address other items:
    a. Car battery take-back programs are the most successful recycling programs in the country, with a 99% recycling rate. This is a case where a deposit drives the program in order to deal with hazardous battery acids.
    b. Vintage auto parts often include a deposit.

Potential Policy Solutions to promote recycling:

We are aware that the EQC is not accepting proposals for draft legislation at this time. Below are some outlines of potential policy ideas. We will be happy to provide additional information about any of these ideas at the committee's request.

1. Require glass and other post-consumer recycled product be used in state and federal road and building construction if the product meets required specifications and is no more than 5% greater in cost.
    a. Often, recycled glass may be the cheapest option, since communities are currently paying to dispose of glass.
    b. Procurement provides a baseline outlet for product.
    c. While glass is not the largest component of the waste stream, it is a heavy item, and adds a lot to a community's recycling cost. The cost is increased for communities with high shipping costs.
    d. This program can build on communities' existing model of glass collection. Glass is also an item that can be stored without detriment, unlike plastic that decays in sunlight.

2. Review recommendations of the 2006 IWMP. The recommendations noted the potential for a model that connects the cost of responsible disposal or recycling with the point of sale. This could apply to tires, hazardous waste, or e-waste.

3. Develop a comprehensive recycling program for products at point of sale, perhaps modeled on the Mercury thermostat collection program in SB 424, which passed with industry support in the 2009 Legislature:
    a. Establishing a program for stores selling electronics to be able to collect old items with the purchase of new may be in their interest for customer service and provide an appropriate venue for recycling, Staples collection is an example of this for computer products.
    b. This would start as a voluntary program, but ultimately require recycling tied to purchase of hard to recycle products and set a timeline for a landfill ban of the items.
    c. Continue focus on community collection program to address the existing stockpile of electronic waste.
    d. A landfill ban on hazardous waste would be enacted in three years, or once the collection program is firmly established.

e. This program could be designed to address the recycling of an old TV when purchasing a new one, as well as ensuring end of life cost or at least a collection point is available for the newly purchased items as well.

4. Tipping fee to fund infrastructure grants and the establishment of priority waste collection programs
   a. Dedicate $.05 to $.25 tipping fee for 4 years to fund the establishment of priority waste programs and fund a grant program similar to stimulus grants distributed this year by DEQ.
   b. Allow a landfill to opt out if the landfill already meets recycling criteria, or is already using tipping fee funds toward a recycling program.
   c. All grants would be connected to tangible goals. The DEQ Pollution Prevention Bureau could provide technical assistance, evaluate the projects, and document their success, as with the stimulus grants.
   d. The recent stimulus grants proved DEQ capacity to effectively manage these grants in-house with existing resources. The stimulus grants should also be examined as a test case to determine the possible effectiveness of this program.

Comments on the Body of the Document:

RE: Montana's Recycling Framework

The report mentions "relatively inexpensive" landfills. Most communities have significant solid waste budgets, for collection, tipping fees, and bonding.

Composting is an important effort and successful at many of the transfer stations or landfills in the state. However, it does have landfill management benefits beyond waste reduction. The City of Helena uses yard waste and ground wood waste in the winter to mix with biosolids when ground temperature limits land application of the sludge. Composting provides an excellent example of a recycled material with a local use and market.

Waste reduction is important, but cannot be directly impacted by policy. Reduction is formed by individual lifestyles, like having a young family or being retired. Although it reduction and reuse are more important from an environmental standpoint, they don't require public involvement. Recycling, on the other hand, requires significant infrastructure outside of the home and interacts with waste collection policies.

Some of the "2006 IWMP Identified Barriers" are anecdotal. Many of these barriers would also apply to solid waste if were not required by law, and often a regulated monopoly. The "lack of funding" and "commitment by public" is two barriers that many community and state leaders have been addressing with the support of their constituents.

To investigate waste-to-energy options, the committee should examine the history of Livingston's incinerator and the waste to energy unit in Spokane, Wash. While the pine beetle situation may encourage biomass, the committee should consider that there is generally more resource and energy savings with recycling material. The incinerators necessitate a fairly intensive pretreatment program to prevent burning toxic items, which would dovetail nicely with a strong recycling and household hazardous waste collection program.

The report cites the challenge in getting accurate numbers due to the lack of mandatory reporting. It should also note that Montana has a limited number of collection points and

those companies are usually willingly to share their volumes anonymously. There is no guarantee that this will continue to be the case.

RE: Solid Waste Characterization

Although the report cites commercial and residential waste as one figure, Helena and some other areas of the state collects and bills these two waste streams separately. Therein is an opportunity to work with haulers, landfills and tipping stations to get more accurate amounts of household versus commercial waste.

Even without exact numbers, the evidence supports that communities across the state are struggling to establish basic collection programs for common items that do have some market value. If a program is established to allow the separation of materials, the value of the items exceeds the landfill cost.

RE: Special Wastes

These models for tires, household hazardous waste, and e-waste should be further explored as the committee considers draft legislation. The program setup last session that worked with non-profits, industry and the state was a good model.

The Student Advocates for Valuing the Environment Foundation, 501(c)(3)
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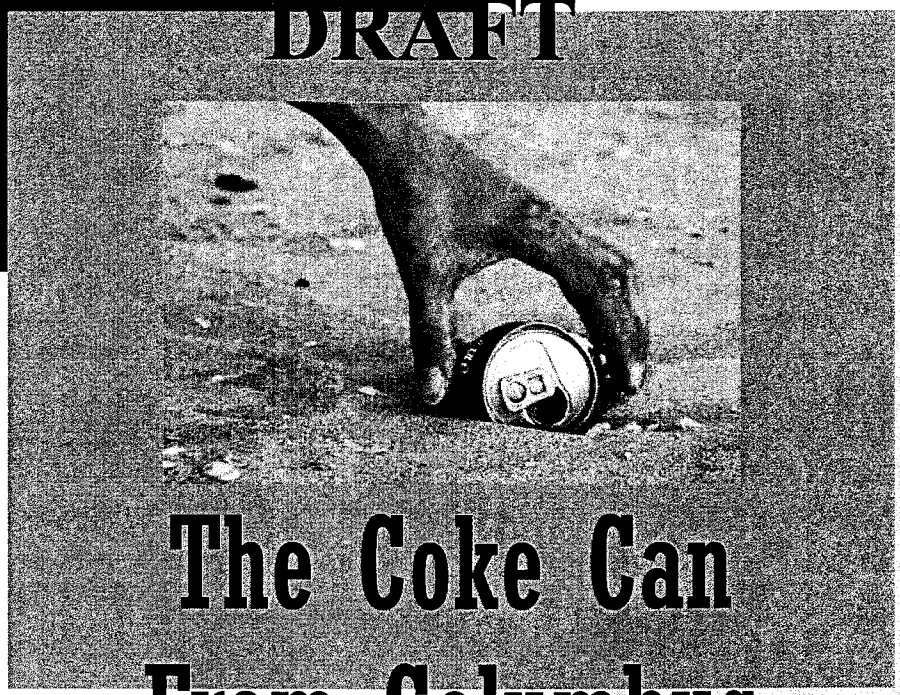

The Coke Can From Columbus

An analysis of methods for increasing recycling and solid waste diversion in Montana

A Report to the 62nd Montana Legislature
September 2010
Environmental Quality Council

Legislative Services Division

The Coke Can From Columbus

An analysis of methods for increasing recycling and solid waste diversion in Montana

A Report to the 62nd Legislature
September 2010

Environmental Quality Council
2009-10 Interim

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This report is a summary of the work of the Environmental Quality Council, specific to the EQC's 2009-10 recycling study. Members received volumes of information and public testimony on the subject, and this report is an effort to highlight key information and the processes followed by the EQC in reaching its conclusions. To review additional information, including written minutes, exhibits, and audio minutes, visit the EQC website:
www.leg.mt.gov/eqc

draft

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Introduction

Recycling isn't as simple as tossing a pop can into the aluminum bin outside a shopping center. Take the case of the Coke can in Columbus. For the sake of example, let's say the can is left in a bin at a community drop-off site. Next it makes the 40-mile journey to Billings where it is delivered to Pacific Steel and Recycling. Then the can is cleaned (using magnets), crushed, and compacted into a bale that weighs anywhere from 900 to 1,000 pounds. Between 40 and 50 bales are then loaded onto a semitrailer that heads to an Anheuser-Busch recycling center in Colorado. After the 7-hour journey to Colorado, the bale is shredded into potato chip-thin pieces, melted with virgin aluminum, and cast into ingots. The ingots are coiled and either make the trip to another can manufacturing plant or are rolled and stamped on site. The cans might next be filled at an Anheuser-Busch brewery or again be shipped to another beverage company where they are filled and sealed. (Anheuser-Busch recycles more than 27 billion cans each year -- far exceeding the number of cans Anheuser-Busch breweries annually package.[1])

Despite the miles traveled, in most cases, that Coke can from Columbus is back on the shelf in 60 days. And using a recycled aluminum can to make a new can uses 95% less energy than making a can from virgin ore.[2]

Aluminum cans are the most recycled and most recyclable beverage containers in the world, and an estimated 105,784 cans are recycled every minute nationwide.[3] While the Coke can in Columbus illustrates a success story, recycling challenges in Montana abound.

This report is the result of Senate Joint Resolution No. 28, which was passed and approved by the 2009 Legislature. S.J. 28, included in **Appendix A**, requested an interim study to evaluate methods for increasing recycling and solid waste diversion in Montana. The study was assigned to the Environmental Quality Council (EQC). The tasks assigned to the Council and a brief summary of the EQC's responses are included in **Appendix B**. The EQC's findings address recycling barriers and discuss the potential role, if any, the state should play in long-term solutions to those barriers.

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[1]http://www.anheuser-busch.com/Environment/RecyclingCorp.html.

[2]http://www.eia.doe.gov/kids/energyfacts/saving/.

[3]http://www.cancentral.com/funFacts.cfm.

Draft Findings

Study Task:

Evaluate and propose potential methods for increasing the recycling rates in the state of Montana.

Finding:

✔The solid waste reduction targets established in 75-10-803, MCA, should be updated to encourage more recycling and composting.

Study Task:

Analyze options to address rural recycling challenges.

Findings:

✔Montana's relatively small population, spread across a large geographic area, makes recycling efforts more challenging. Rural communities should work together to create increased opportunities and networks for recycling.

✔Rural communities are encouraged to investigate a variety of collection methods to promote recycling in their communities. Collection programs that target large commercial sources of recyclables (such as cardboard from the local grocery store) can generate larger volumes of materials.

✔When considering the economics of recycling, the public and local governments must recognize that recycling is part of the entire municipal solid waste management strategy and can reduce disposal costs by reducing the need for future landfill expansions.

Study Task:

Propose programs to address electronic and household hazardous waste.

Finding:

✔Using existing resources and statutory direction, the DEQ is appropriately acting as a clearinghouse for information on electronic waste recycling opportunities and household hazardous waste disposal.

Study Task:

Evaluate funding alternatives.

Finding:

✔Montana recognizes that each city, county, and town is unique and that there is no one right way to recycle. Montana communities are encouraged to explore opportunities for enhanced recycling and select those options that are the best fit for each community's need.

Study Task:

Analyze methods to promote market development of recycled materials.

Finding:

✔Montana recognizes that high transportation costs and long distances to recycling markets make recycling of many commodities difficult. To overcome this obstacle, local markets for recyclable materials need to be established in Montana.

draft

Montana's Recycling Framework

There is a hierarchy to waste management, of which recycling is just one part, according to Montana's Integrated Waste Management Plan. The first consideration in waste management is source reduction, or simply taking steps to reduce waste in the first place. The next step is reuse, giving some item, like an unwanted piece of furniture, a second life. The focus of this report is third in line -- it's recycling. Recycling is a process. It's taking a product that has been used and introducing it into the manufacturing process to produce something new. Composting is next in the pecking order, and finally landfill and incineration round out the waste management hierarchy. The hierarchy, as outlined in the waste management plan, is not based on economics, but rather is based on the long-term benefits of reducing energy and pollution.

Senate Joint Resolution No. 28 requested a study that focused on increasing recycling and solid waste recovery.

Before diving into a discussion of recycling, it is important to consider Montana's solid waste regulations and where recycling fits into the picture. The federal Resource Conservation and Recovery Act (RCRA) of 1976 required the Environmental Protection Agency (EPA) to adopt rules that define and prohibit open dumping and establish criteria for states to use in the regulation of solid waste disposal. Subtitle D of RCRA provides for the regulation of municipal solid waste and encourages resource recovery or recycling.[4] State laws guiding the regulation of solid waste include the Montana Solid Waste Management Act[5] and, discussed in more detail below, the Integrated Waste Management Act.[6] The Department of Environmental Quality (DEQ) has adopted administrative rules to implement the federal regulations contained in RCRA granting the state the primary responsibility over disposal of solid wastes.

Local governments play a key role and are responsible for financing, planning, constructing, and operating solid waste management systems that comply with state and federal regulations. Private contractors, cities and towns, and counties all provide this function. Counties have the ability to create solid waste management districts that can include cities, towns, and one or more counties. Montana law also notes the critical role of the private sector, stating, "Private industry is to be utilized to the maximum extent possible in planning, designing, managing, constructing, operating, manufacturing, and marketing functions related to solid waste management systems."[7]

In 1991, the Montana Integrated Waste Management Act was established by the Montana Legislature and set a goal to reduce the amount of waste landfilled in Montana by 25% by 1996, a goal that was not reached. It also established a hierarchy for waste management discussed earlier -- reduction, reuse, recycling, composting, and landfilling

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[4] 40 CFR part 258.

[5] Title 75, chapter 10, part 2, MCA.

[6] Title 75, chapter 10, part 8, MCA.

[7] 75-10-102(1)(c), MCA.

or incineration. The 1995 Legislature also moved solid waste responsibilities from the Montana Department of Health and Environmental Sciences and placed them with the permitting and compliance division of the DEQ.

The 2005 Legislature approved House Bill No. 144, which eliminated the 25% requirement and instead added the incremental steps now outlined in the law. It is noteworthy that the 25% goal was a waste reduction goal, not a recycling goal. Source reduction and reuse are difficult to measure. H.B.144 established a goal that was considered to be current and measurable and that includes recycling and composting targets.

Recycling in Montana falls under the "Montana Integrated Waste Management Act". The DEQ develops and implements the Montana Integrated Waste Management Plan (IWMP). The state's Integrated Waste Management Plan Task Force reviews the plan and makes recommendations to update the plan every 5 years, with the next update required by the end of 2011. The act requires the involvement of local officials, citizens, solid waste and recycling industries, environmental organizations, and others involved in the management of solid waste.

The IWMP includes a discussion of policies, potential legislation, education, technical assistance, and other suggestions in the areas of source reduction, reuse, recycling, and market development. Targets for the rate of recycling and composting, which aim to reduce the amount of solid waste that is generated by households, businesses, and governments and that is either disposed of in landfills or burned in an incinerator, currently include:

(1) 17% of the state's solid waste by 2008;
(2) 19% of the state's solid waste by 2011; and
(3) 22% of the state's solid waste by 2015.[8]

The 2006 IWMP identifies both barriers to and recommendations for recycling in Montana. Those recommendations served as a useful starting point for the EQC's discussion of recycling in Montana. The barriers and recommendations outlined in the IWMP are below.

2006 IWMP Identified Barriers:

- Montana's relatively small population, which is spread out across a large geographic area, makes recycling efforts more challenging.
- The lack of nearby industries that use recyclables as raw materials in their operations poses another obstacle.
- It is difficult to measure recycling without mandatory reporting.
- Landfills are convenient and relatively inexpensive in Montana, making it difficult for recycling to be an economic choice based on the cost of disposal.
- There is a lack of funding for recycling programs.
- There is a lack of commitment by the public to fully support recycling in all its forms.

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[8] 75-10-803, MCA.

2006 IWMP Identified Recommendations:

- Develop local markets for recyclable goods by collaborating and forming partnerships between private and public entities. This could require changing state regulations to allow an alternative source of material.
- Provide additional economic incentives for recycling. The 2009 Legislature approved EQC-proposed legislation that made the current tax credits and deductions permanent.
- Support national legislation that requires manufacturers to take back their products at the end of their useful life.
- Expand recycling opportunities through additional funding mechanisms with support from the solid waste industry, such as increasing solid waste fees to help pay for recycling programs. "Increasing solid waste fees would only be done with support of those involved, particularly the fee payers."[9]

As the IWMP update begins in 2011, the task force is encouraged to explore opportunities for advancing local government and private investor efforts to complete feasibility studies related to the use of municipal solid waste for power generation. Those opportunities could include matching grant programs. EQC member Mary Fitzpatrick included an overview of a proposal that is included in **Appendix C** and may be useful to the task force.

History of Recycling in Montana

In 1916, Carl Weissman started buying and selling buffalo bones, furs, steel scrap, and junk car parts -- officially becoming the first organized, professional recycler in Montana. By 1919, Pacific Hide and Fur opened operations in the state and by the early 1950s expanded into steel sales.

Household recycling started in 1971 when Montana Recycling Inc. started collecting aluminum cans and bottles. As markets changed, paper products and nonferrous scrap were also collected. During the 1980s and 1990s recycling increased across the state, and private buy-back centers started to pop up. Composting also increased in popularity.

In Montana, recycled materials are collected and typically shipped to out-of-state markets. The distance to these markets and Montana's small population have always hindered recycling efforts. The markets for recyclables also are easily and quickly influenced by international markets. By the early 1990s, the cost of shipping and market prices curtailed the recycling of many products, specifically plastic and glass.[10] Two cement companies, however, started to use glass as a source of silica for the manufacturing process, and DEQ regulations were altered to accommodate the change.

Local solid waste managers also increasingly started to collaborate in the 1990s

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[9]"Integrated Waste Management Plan (IWMP) 2006", Montana DEQ, Air, Energy and Pollution Prevention Bureau, September 2005, page 59.

[10] "Integrated Waste Management Plan (IWMP) 2006", Montana DEQ, Air, Energy and Pollution Prevention Bureau, September 2005, page 22.

to encourage recycling. In late 1997, for example, Headwaters Cooperative Recycling Inc. was established. Only three landfills remained in a 10-county region, largely in southwestern Montana, that the cooperative served. Headwaters has become a nonprofit cooperative that enables recycling by linking rural and urban communities. It is now the largest recycling cooperative in the United States, serving 190,000 Montana and Wyoming residents as well as millions of visitors to Yellowstone National Park.[11]

By 2008, Montana's recycling rate was over 19.6%, ahead of the goal currently established in state law. The DEQ continues to direct resources toward recycling, working closely with private businesses and other entities. Electronics recycling events, pesticide plastic recycling collections, and mercury thermostat and thermometer collections have been pursued in the last 2 years. The increase from 18.3% in 2007 to 19.6% in 2008 is largely attributed to an increase in scrap metal and other metal prices and the amount recycled. With the downturn in the economy and metal prices, such an increase is not expected in the next few years.

By 2008, Montana's recycling rate was over 19.6%, ahead of the goal currently established in state law.

Measuring the amount of waste that is recovered through recycling, however, is a challenge. The DEQ follows EPA guidelines, which measure only municipal solid waste recycling. This means Montana's rates may appear lower than rates in other states that measure and include other recycling activities. As noted above, Montana's Integrated Waste Management Act sets goals for recycling rates that the DEQ is expected to achieve. The Act does not require recyclers, brokers, processors, or other recycling businesses to report data to the DEQ. This means that Montana's recycling rate is based on data that is voluntarily provided. "DEQ recognizes that the voluntary reporting in Montana is not as complete or as accurate as some states that have mandatory reporting," according to the DEQ. This is also noted in the IWMP recommendations.

Solid Waste Characterization

General Waste

While recycling efforts have increased over the last few years, solid waste generation in Montana also continues to increase. The DEQ estimates that about 1.6 million tons of waste was generated in 2008. Based on Montana's population, the annual generation rate is about 9.3 pounds/person per day and the rate of recycling is 1.82 pounds/person per day. Montana's generation rate is significantly higher than the national average, which was about 4.5 pounds/person per day in 2008. Montana's recycling rate was also higher than the national average of 1.5 pounds/person per day. However, these rates are worthy of further review.

Pegging a number on how much truly goes into Montana's landfills is tricky. Some landfills simply estimate waste tonnage as a function of population. It's also

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[11] http://www.headwatersrecycle.com/.

noteworthy what actually is classified as solid waste in arriving at the numbers noted above. The definition of municipal solid waste includes packaging, newspapers, paper, magazines, plastics, glass, yard waste, wood pallets, food scraps, cans, appliances, tires, electronics, furniture, and batteries. It does not include construction and demolition waste or agricultural wastes. In Montana, however, these materials are often disposed of in municipal solid waste landfills. They are then included in the total landfilled tonnage, which inflates the tonnage reported above. All agricultural waste from leased Bureau of Land Management land, for example, is landfilled with municipal solid waste. Debris from hailstorms, snowstorms, and even forest fires can often be added to the totals in Montana's landfills.

Montana imports and exports some waste. In 1993, a prohibition on the importation of out-of-state waste ended. In 2008, Montana imported about 39,767 tons of out-of-state wastes from communities in Idaho, Wyoming, North Dakota, Washington, Canada, and Yellowstone National Park. Facilities that accept out-of-state waste are charged 27 cents per ton in addition to the 40 cents per ton access on in-state wastes. The state is estimated to export a similar amount (the total is not tracked by the DEQ) to other states.

Construction and demolition waste generated varies from community to community, based on differences in construction style and growth. "In Montana, most construction and demolition waste is discarded at Class II landfills," according to the DEQ. "Operators may separate construction and demolition waste from the rest of the waste stream, but they are not required to do so." A growing number of landfills in Montana are starting to build construction and demolition waste cells at landfills in an effort to better track tonnage in the future. On a national scale, construction and demolition waste usually represents about 30% of total waste--the largest single source in the waste stream. An average, new construction project yields about 3.9 pounds of waste per square foot of building area. **Figure 1** provides a breakdown of that waste. Using the national number as a baseline, one could estimate about 380,111 tons of construction and demolition waste is generated in Montana.

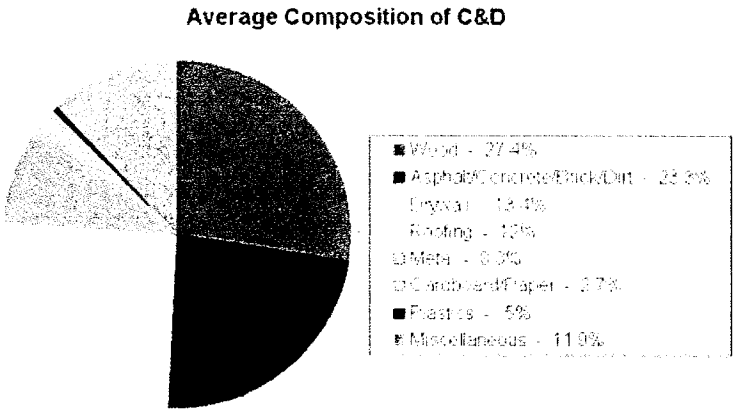

Figure 1
Source: EPA

Special Wastes

Montana law currently addresses both electronic and hazardous waste recycling. The IWMP recognizes these wastes under the umbrella of "special wastes". These wastes are identified separately from others in the plan because of their toxicity and the

increased possibility of contamination from small amounts. Focusing on the requirements of S.J. 28, this information focuses on household hazardous wastes, electronic waste, batteries, and waste tires. It does not include a review of hazardous waste management facilities, which operate in accordance with Title 75, chapter 10, part 4, MCA, or asbestos-containing materials.

The 2006 IWMP, the most recent plan, identifies recommendations for increasing the recycling of both household hazardous wastes and electronic waste. The recommendations include:

- Establish additional opportunities for collecting household hazardous waste by increasing the number of drop-off sites that are open and increasing the frequency of collections.
- Coordinate collection events in multiple communities.
- Provide a source of funding for collection of hazardous wastes generated by households and conditionally exempt small quantity generators.
- Ban whole tires from landfills.
- Collect a fee on new tires that can be used to support tire recycling.
- Form partnerships and look for opportunities to recycle tires locally.
- Label batteries or place signs at locations where batteries are sold to direct consumers to recycling locations.
- Educate consumers on the importance of recycling electronics waste.
- Encourage the reuse of electronic equipment.
- Partner with retailers for buy-back or recycling programs.
- Work with other states on national policies.
- Establish procurement guidelines to choose the best environmental options for electronics purchases in both the public and private sectors.[12]

Hazardous Waste

Federal law allows for the disposal of household hazardous waste in the trash, but many states and local governments establish collection programs for those wastes to reduce the amount going into area landfills. Household hazardous waste is defined as "products commonly used in the home that due to corrosivity, ignitability, reactivity, toxicity, or other chemical or physical properties are dangerous to human health or the environment."[13]

Household Hazardous Waste Figures (Provided by EPA)

➔Americans generate 1.6 million tons of household hazardous waste per year.

➔The average home can accumulate as much as 100 pounds of household hazardous waste in the basement and garage and in storage closets.

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[12] "Integrated Waste Management Plan 2006", Department of Environmental Quality, September 2005, pages 11-12.

[13] 75-10-203, MCA.

Wastes include cleaning, home maintenance, automobile, personal care, and yard maintenance products. The DEQ is required to be a clearinghouse for information on household hazardous waste disposal. The DEQ must administer a statewide household hazardous waste public education program.[14] The program must provide alternatives to the disposal of hazardous waste at landfills, options for recycling, methods for reuse or recycling, and alternatives to the use of products that lead to the generation of household hazardous waste. In the IWMP, the state identifies economic issues related to the recycling of household hazardous waste, noting, "Although the selection of non-hazardous waste may prove to be an expensive alternative to commonly available chemicals, the ease of disposal may offset the higher initial cost."

The DEQ provides information through a website about hazardous waste recycling. Information about the recycling of batteries, oil, compact fluorescent lights (CFLs), mercury, and pharmaceuticals is included. With the use of CFLs on the rise, there has been increased attention on recycling. More than 670 million mercury-containing bulbs (largely CFLs) are discarded each year, according to the EPA.[15] Many go into local landfills, raising concerns about the release of elemental mercury. In 2008, Home Depot launched a free CFL recycling program at its stores. States also are increasingly looking at CFLs. In 2009, Maine became the first state to require CFL manufacturers to provide for the free collection of household CFLs by 2011.[16]

Montana also generates more than 880,000 waste tires annually, according to the EPA.[17] During the 1997-98 interim, the EQC conducted a study that examined waste tire management in Montana. The report found, "At this time, Montana does not have a problem with waste tire management which is significant enough to warrant statewide policy changes in the current situation."[18] Because fewer than 1 million waste tires are generated annually and because of the low population density, it is difficult to provide waste tire recycling programs. Other states have a greater ability to promote the use of waste tires in civil engineering projects. Waste tires are also spread over a large geographic area in Montana, which isn't attractive to tire processors and recyclers. Montana landfills also generally have sufficient capacity to accommodate scrap tires, according to the report.

Montana communities have established household hazardous waste programs. The Gallatin Local Water District, for example, has produced a pamphlet that discusses

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[14] 75-10-215, MCA.

[15] http://www.epa.gov/waste/hazard/wastetypes/universal/lamps/faqs.htm.

[16] http://www.mainelegislature.org/legis/bills/bills_124th/chapters/PUBLIC272.asp.

[17] http://deq.mt.gov/Recycle/Tires/index.asp.

[18] "Status of and Alternatives for the Management of Waste Tires in Montana: Report to the 56th Legislature," EQC, 1998.

options for disposing of household hazardous waste throughout the Gallatin Valley. [19] The Flathead County Solid Waste District holds a household hazardous waste collection day on the third Saturday of every month. In 2008, using money provided by the DEQ and EPA, the Ravalli County Environmental Health Department held two collection events for hazardous materials. At the first event, 24 tons of household hazardous waste, including paint, pesticides, and solvents, were collected. At a second event, 24 tons of electronic waste were collected.

The Montana Department of Agriculture provides a waste pesticide and pesticide container collection, disposal, and recycling program in accordance with 80-8-111, MCA. From 1994 to 2008, more than 320,680 pounds of waste pesticides have been disposed of through the program, according to the state. The program is funded in part by license fees that private, commercial, and government pesticide applicators and pesticide dealers pay to be licensed in Montana. The disposal fee is free for the first 200 pounds and 50 cents per pound for amounts in excess of 200 pounds. Participants preregister unusable pesticide with the department prior to collection.[20]

Electronic Waste

The 2007 Legislature amended the household hazardous waste statute discussed above, requiring the DEQ to also provide information about the recycling and safe disposal of electronic waste, including video, audio, and telecommunications equipment, computers, and household appliances. There is not currently a federal mandate to recycle electronic waste (e-waste); however, there have been numerous attempts to develop federal regulations. The EPA currently is involved in an education program that stresses the reuse and recycling of electronics. A federal website outlines options for the safe recycling of various products. The state of Montana has taken a similar approach, with the DEQ providing a website that informs consumers about the manufacturers and retailers who are taking back and recycling electronics. The DEQ addressed the EQC in January 2010 and outlined e-waste recycling efforts in Montana. A detailed presentation is included in **Appendix D**. Electronics that are not recycled or reused are likely going into Montana landfills. Concerns are being raised across the country because of the volume of e-waste and because those electronics contain lead, mercury, and some other toxic materials.

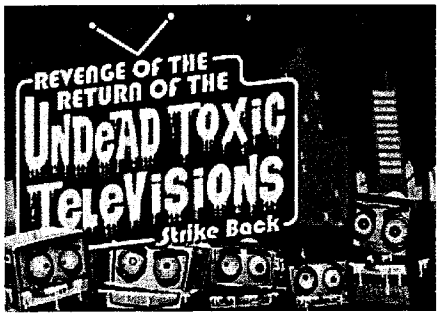

Figure 2: Source: Take Back My TV

In 1998, the National Safety Council Study estimated about 20 million computers

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19 http://www.gallatin.mt.gov/Public_Documents/GallatinCoMT_WQDFactSheets/S008FA.5A0-022E014F.0/HHW%20Disposal%20Options.pdf.

20 http://agr.mt.gov/pestfert/disposal.asp.

became obsolete in 1 year, and in 2007 that number has more than doubled according to EPA's most recent estimates. The EPA also estimates that only 18% of the 2.25 million tons of televisions, cell phones, and computer products that have reached the end of their useful life are recycled, leaving about 1.84 million tons to be disposed of in local landfills. "Every day Americans throw out more than 350,000 cell phones and 130,000 computers, making electronic waste the fastest-growing part of the U.S. garbage stream."[21] The information provided in **Table 1** provides additional data on e-waste.

The digital television transition also is expected to increase e-waste in U.S. landfills. The EPA has estimated there are 99.1 million unused television sets in the United States, and earlier this year, millions of those televisions became obsolete with the government-mandated switch from analog to digital. Older television sets can contain lead and cadmium. Cathode ray tubes contain, on average, 2 to 5 pounds of lead.[22] The Electronics TakeBack Coalition launched a "Take Back My TV" campaign in anticipation of the June 12, 2009, transition. The group supports national programs that take back and recycle televisions. To date, Sony, Samsung, LG, Panasonic, Sharp, and Toshiba have launched national recycling programs.

Table 1

Recycling vs. Disposal				
	Generated (millions of units)	**Disposed (millions of units)**	**Recycled (millions of units)**	**Recycling Rate (by weight)**
Televisions	26.9	20.6	6.3	18%
Computer products*	205.5	157.3	48.2	18%
Cell phones	140.3	126.3	14.0	10%
*Computer products include CPUs, monitors, notebooks, keyboards, mice, and hard copy peripherals.				

Source: EPA

Electronics recyclers, however, are reporting an influx of older televisions, especially in states with recycling regulations and mandates. Barbara Kyle, national coordinator for the Electronics TakeBack Coalition, was recently quoted in the *New York Times* stating that Washington State has collected more than 3 million pounds of old

[21] http://www.time.com/time/magazine/article/0,9171,1870485,00.html.

[22] http://www.epa.gov/waste/conserve/materials/ecycling/faq.htm.

televisions a month.[23]

In the absence of federal legislation, several states and municipalities have passed legislation and ordinances guiding the collection of electronic waste. Manufacturers and retailers are also increasingly developing programs to manage their products from "cradle to grave". The laws vary significantly from state to state. Twelve states, plus New York City, have passed legislation mandating statewide e-waste recycling. There are themes in all programs including:

- Definition of products covered by the law
- Program funding
  - Consumer pays model
  - Producer pays model
- Collection and recycling criteria
  - Landfill ban
  - Restrict e-waste exports
  - Recycling standards
- Product restrictions
  - Labeling requirements
  - Registration requirements
  - Restrictions on certain materials
  - Retailer requirements and restrictions

In 2009, Indiana became the most recent state to implement an e-waste program. The law requires manufacturers to register with the state and take responsibility for the collection and recycling of their products. Manufacturers must recycle 60% of their sales of those products and report progress to the state. Beginning in 2012, penalties for noncompliance kick in.

Consumers in several states have responded to e-waste programs. Oregon has an E-Cycles program that provides the free recycling of computers and televisions.[24] Manufacturers must label their computers, monitors, and TVs with their brands and register those brands with DEQ. Manufacturers also pay a registration fee, which covers DEQ's administrative costs to implement Oregon E-Cycles.[25]

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[23] http://www.nytimes.com/gwire/2009/06/15/15greenwire-some-see-e-waste-crisis-trailing-switch-to-dig-81110.html.

[24] http://www.deq.state.or.us/lq/ecycle/index.htm.

[25] Oregon Revised Statutes, 459A.300-365, http://www.leg.state.or.us/ors/459a.html.

Retailers are required to provide customers who purchase certain electronics with printed information about the recycling program. Retailers must also ensure that the brands they sell are listed on DEQ's manufacturer compliance list and that the products are affixed with a permanent and visible brand label. After January 1, 2010, the disposal of computers, monitors, and TVs will be prohibited in Oregon. The public quickly responded to the mandate, approved by Oregon's Legislature in 2007. "Less than five months in, Oregon's free electronics recycling program is collecting too much too fast for the largest manufacturer group involved, prompting it to ask the Oregon recyclers it works with to dial back their efforts."[26]

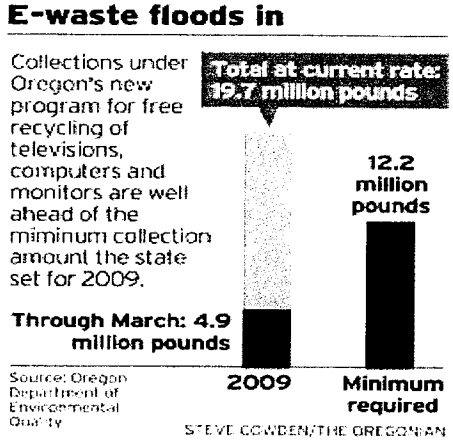

Figure 3

Oregon's law is largely modeled after Washington State's 2006 electronic recycling program.[27] "Since January (2009) Washington State residents and small businesses have been allowed to drop off their televisions, computers, and computer monitors free of charge to one of 200 collection points around the state. They have responded by dumping more than 15 million pounds of electronic waste, according to state collection data. If disposal continues at this rate, it will amount to more than five pounds for every man, woman and child per year." [28]

Mandatory e-waste recycling programs, such as those banning disposal in landfills, also raise a number of questions. In 2009 the Consumer Electronics Association and the Information Technology Industry Council filed a legal challenge against a New York City law that requires electronics manufacturers to pay for door-to-door pickup of discarded electronic waste. The technology groups argue the law will increase air and noise pollution by putting more trucks on the streets and cost manufacturers more than $200 million a year. The litigation is expected to set some precedents in terms of the requirements state and local governments can impose on manufacturers and retailers.

In addition, questions have been raised about where recycled electronics ultimately end up. In 2008, the news program *60 Minutes* conducted an investigation

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[26] "Oregon's electronics recycling too successful for some manufacturers," *Oregonian*, Scott Learn, May 12, 2009.

[27] Revised Codes of Washington, 70.95N, http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95N.

[28] http://www.nytimes.com/2009/06/30/science/earth/30ewaste.html?pagewanted=1&_r=2&ref=global-home.

that showed many "recycled" electronic items end up in salvage yards in developing nations, where the toxic materials are unleashed into the environment. The investigation tracked e-waste collected at an event in Denver. "It turns out the container that started in Denver was just one of thousands of containers on an underground, often illegal smuggling route, taking America's electronic trash to the Far East."[29]

The 111th Congress is currently contemplating House Resolution 3106, the "Hazardous Waste Electronic Manifest Act". The legislation directs the EPA to establish a hazardous waste electronic "manifest" system. The system would establish a traceable record showing who is in control of the hazardous waste and its ultimate disposition. A similar bill before the 110th Congress was estimated to come at an annual cost of $193 million to $400 million. The legislation, however, also imposes a fee on the users of the system to cover the costs.

Senate Bill 1397 is also before Congress. "The Electronic Device Recycling Research and Development Act", would provide about $85 million over the next 3 years to increase electronics recycling practices. Initiatives that could be funded include: providing grants for research and development into e-waste processes and practices, funding research into environmentally friendly materials for use in electronics, establishing an educational curriculum for engineering students, and publishing a report from the National Academy of Sciences laying out the good and the bad in the current state of electronics recycling. A box showing federal recycling initiatives is shown in **Figure 4**.

Federal Electronic Waste Recycling Efforts Before Congress

H.R.1580 Electronic Device Recycling Research and Development Act

Authorizes the Administrator of the EPA to award grants for electronic device recycling research, development, and demonstration projects and for other purposes. $18 to $22 million for fiscal years 2010-2012

Latest Major Action: 4/23/2009 Referred to Senate committee

S.1397 Electronic Device Recycling Research and Development Act

Same as H.R. 1580

Latest Major Action: 12/10/2009 Senate committee.

H.R.2595 To restrict certain exports of electronic waste

Amends the Solid Waste Disposal Act to direct the Administrator of the EPA to establish a hazardous waste electronic manifest system.

Latest Major Action: 5/21/2009 Referred to House committee.

H.R.3106 Hazardous Waste Electronic Manifest Establishment Act

Similar to H.R. 2595, with a more detailed manifest system.

Latest Major Action: 6/26/2009 Referred to House committee.

Figure 4

Another consideration when reviewing e-waste is reuse. An estimated 304 million electronics, including computers, TVs, VCRs, and cell phones, were removed from U.S. households in 2005;

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[29]http://www.cbsnews.com/stories/2008/11/06/60minutes/main4579229.shtml?tag=contentMain;contentBody.

however, two-thirds of those items were still in working order, according to the Consumer Electronics Association.[30]

Montana's electronics efforts start at the DEQ, where a website is maintained that helps Montanans find out where electronics recycling is available and what types of programs are being developed. Links are provided to manufacturers and retailers. In Montana, there are a number of opportunities. Some charge a processing fee to have an item returned for recycling. Some accept all electronics, while others accept only certain brands.

The DEQ, for example, provides a link to Samsung's e-waste site. At that site, a person can print off a voucher for a product, type in a ZIP code, and find a recycling center. In Helena, the local U-haul collects the products and vouchers and takes them back to the company. Similar information for cell phones is listed. Radio Shack, Target, and Home Depot all accept rechargeable batteries and cell phones for recycling. Verizon refurbishes recycled phones and donates the funds for phones and airtime for victims of domestic violence.[31]

The DEQ also links to a free data eraser to assist people in preparing their electronics for donation. A number of local repair shops and resale stores accept obsolete and used computers. Some recycle the metals, and others refurbish the items to be resold or donated. A contact list is provided by DEQ so that businesses and corporations that are disposing of computers can work with schools and other organizations to donate the materials. State law requires state agencies to work through the Office of Public Instruction to surplus state agency computers to needy schools.[32] The donations are made on a first-come, first-served basis. Since the program started in 1999, more than 24,000 pieces of computer equipment have been distributed to about 400 schools across the state

The DEQ also works with businesses and communities to provide electronics recycling collection events. E-waste events are licensed by the DEQ's solid waste program. The only exceptions are when collections take place at previously licensed facilities, like transfer stations. The free event license is good for up to 1 year, and some communities have held more than one event during the license period. The number of e-waste collection event licenses issued by the DEQ has not been consistent. In 2006, seven licenses were issued. In 2008, only two licenses were issued, and in 2009 that number increased to eight licenses. Despite an evolving website and the events, the DEQ, on its website, notes, "These diverse recycling options do not add up to a particularly strong recycling market for computers in Montana, but do offer creative

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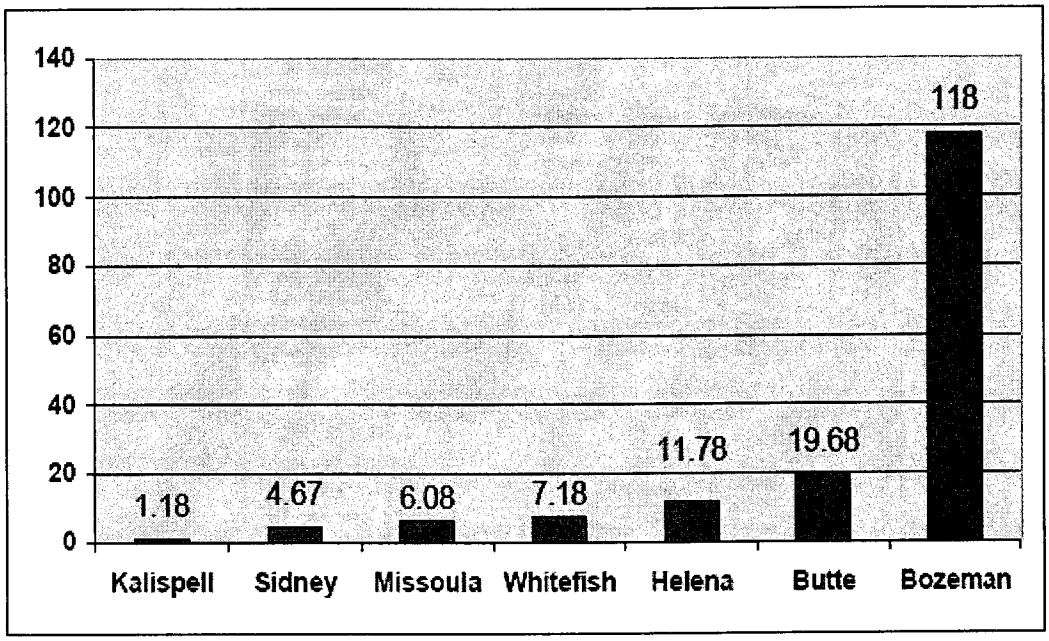
[30] http://www.epa.gov/waste/conserve/materials/ecycling/docs/fact7-08.pdf.

[31] http://wirelesssupport.verizon.com/faqs/Company+Information/faq_hopeline.html?t=4.

[32] 18-6-101, MCA.

alternatives to land filling."[33]

Bozeman was the first Montana community to host an e-waste event. It was part of the Gallatin Household Hazardous Waste Collection Event in 2003. Additional events have been held in 2004, 2006, and 2007. Using a $10,000 grant from Dell, Inc., a "No Computer Should Go To Waste" event was held in Bozeman and West Yellowstone in 2004. The goal was to collect 15 tons of computer equipment, and instead 44.4 tons were collected. A second event in 2006 had to be shut down an hour early because of the level of participation and the volume of equipment collected--about 118 tons. In 2006, a number of other Montana communities started holding e-waste events. **Figure 5** shows the statewide collection, noting that only Bozeman's event was a free event.



** Statewide, 168 tons collected in 2006. Of that, 118 tons collected at the Gallatin E-waste Event in Bozeman. This was the only collection event that was free to the public.*

Figure 5

Another free event was held in 2007 in Gallatin County. Two major sponsors, Gilhousen Family Foundation and Zoot Enterprises, in addition to a number of other sponsors, helped with the event. The Gallatin Local Water Quality District has organized the events, and volunteers operate the event. A surplus computer and electronics sale was conducted by the Gallatin County Auditor's Office, and equipment that wasn't sold was shipped to Inland Retech in Spokane for recycling. The 2007 event brought in another 68.26 tons of e-waste.[34]

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[33] http://deq.mt.gov/Recycle/cpuList.asp.

[34] 2007 Electronic Waste Recycling Collection Event: Gallatin E-waste Round-up for Gallatin County" Final Report, Gallatin Local Water Quality District, October 2007.

During 2006 and 2007 e-waste events, the DEQ surveyed participants and learned that many were motivated by a desire to prevent pollution and a firm belief that electronic products still have value. In addition, participants noted they would be willing to pay (or pay more) for recycling if it meant the items were responsibly recycled and not illegally disposed of in foreign countries.

Montana's Recycling Incentives

The EQC spent time during the 2007-08 interim examining the issue of recycling during its Climate Change study, focusing on tax incentives to encourage recycling and on Montana's solid waste management fees. The EQC discussed the following four specific concepts and House Bill No. 21, requested by the EQC and approved by the 2009 Legislature, eliminating the pending termination dates on Montana's recycling tax incentives.

- **Recycled Materials Tax Deduction.** (15-32-610, MCA) Taxpayers who purchase recycled material as a business-related expense can deduct 10% of the expense of the purchase from federal adjusted gross income in arriving at Montana adjusted gross income. The deduction is to encourage the use of goods made from recycled materials. The definition of recycled material is determined by the Department of Revenue.

- **Credit Against Air Permitting Fees for Certain Uses of Postconsumer Glass.** (75-2-224 and 225, MCA) The amount of the credit is $8 for each ton of postconsumer glass used as a substitute for nonrecycled material. The maximum is $2,000 or the total amount of fees, whichever is less. Anyone with a beneficial interest in a business can apply for a credit against the air quality fees imposed in 75-2-220, MCA, for using postconsumer glass in recycled material. The postconsumer glass used in recycled material may not be an industrial waste generated by the person claiming the credit unless:
  - the person generating the waste historically has disposed of the waste onsite or in a licensed landfill; and
  - standard industrial practice has not generally included the reuse of the waste in the manufacturing process.

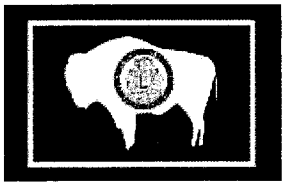
- **Tax Credit for Investments in Property or Equipment Used to Collect or Process Reclaimable Materials.** (15-32-602 through 604, MCA) An individual, corporation, partnership, or small business corporation may receive a tax credit for investments in depreciable property used primarily to collect or process reclaimable material or to manufacture a product from reclaimed material according to the following schedule:
  - 25% of the cost of the property on the first $250,000 invested;
  - 15% of the cost of the property on the next $250,000 invested; and
  - 5% of the cost of the property on the next $500,000 invested.

  The credit may not be claimed for investments in depreciable property in excess of $1 million, an investment in property used to produce energy from reclaimed material, or an industrial waste generated by the person claiming the tax credit unless:
  - the person generating the waste historically has disposed of the waste onsite or in a licensed landfill; and
  - standard industrial practice has not generally included the reuse of the

waste in the manufacturing process.

- **Deduction for Purchase of Montana-Produced Organic Fertilizer** (15-32-303, MCA) Taxpayers may deduct expenditures for organic fertilizer, such as compost, that is produced in Montana and used in Montana. The deduction is allowed if the expenditure was not otherwise deducted in computing taxable income. The deduction is in addition to all other deductions from adjusted gross individual income allowed in computing taxable income under Title 15, chapter 30, MCA, or from gross corporate income allowed in computing net income under Title 15, chapter 31, part 1, MCA.

A Snapshot: Western States Recycling

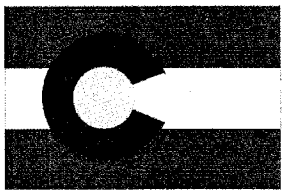


Wyoming

Recycling Rate: Wyoming pegs its recycling rate at about 5.1% for commodities, including aluminum and newspaper. That number is bumped up to about 12% if other types of reuse like composting and waste tires are included.[35]

Legislative Action: The 2006 Wyoming Legislature provided $1.3 million to help local government entities prepare Integrated Solid Waste plans. The final plans were due to Wyoming's Department of Environmental Quality by July 2009. Each plan addresses a 20-year period. While the state doesn't have a specific recycling goal, several of the Integrated Solid Waste plans proposed by local governments set a 30% diversion goal, marked by 2% annual growth. The plans also examine the potential costs of lining future landfill sites or hauling trash to other locations. The recycling goals will be increasingly incentivized as local governments review those potential costs.

Incentives: Wyoming, like Montana, struggles with recycling largely because of the distance to markets. There are currently no tax incentives for the recycling industry.



Colorado

Recycling Rate: In 2007 the state of Colorado reported a 16.6% recycling rate for municipal recycling. The total diversion rate, which includes diversion of construction and demolition waste, bumps that rate up to 28.5%. The state also has taken several steps in the last 2 years to bolster its recycling efforts.

Legislative Action: The Colorado "Climate Action Plan" calls for a 75% reduction in state waste by 2020, and in an effort to reach that goal, the 2007 Colorado Legislature approved the Recycling Resources Economic Opportunity Act.[36] The Act implemented new landfill surcharges, which went into effect in July 2007, in order to fund a recycling grant program. The additional surcharges fund implementation projects that promote economic development through recycling. Projects designed to implement source reduction, recycling, beneficial use/re-use, anaerobic digestion, or composting are all eligible for grant funds. The additional surcharge, a 10-cent tipping fee, has generated about $2.5 million. A tipping fee is a charge levied on a given quantity of waste received at a waste processing facility. Of the total, about $1.8 million has been awarded in grants and $600,000 has been used for a rebate program. The rebate program directs money back to Colorado's large recyclers, who are paying the most due to the surcharge. A Pollution Prevention Advisory Board administers the grants.[37] To date, the program has been a success. During the first grant cycle, the department

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[35] Information provided by Craig McOmie, Wyoming recycling coordinator, June 2009.

[36] House Bill 07-1288.

[37] http://www.cdphe.state.co.us/el/p2_program/ppab.html.

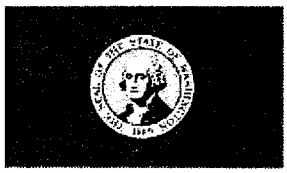
received 60 applications. That number of applicants has increased to 110. The grant program sunsets in 2010; however, Colorado's Department of Public Health and Environment, Pollution Prevention Program, indicated efforts are under way to continue the program.[38] In 2008 Colorado completed a "Roadmap for moving recycling and diversion forward in Colorado: Strategies, recommendations, and implications." The report identifies gaps in the state's recycling efforts and recommends funding mechanisms and policy changes.[39]

Incentives: Colorado also offers a plastic recycling investment tax credit that is equal to 20% of the first $10,000 of net expenditures to third parties for rent, wages, supplies, consumable tools, equipment, test inventory, and utilities made for new plastic recycling technology in Colorado. The credit is available to Colorado residents only.[40]

Idaho

Recycling Rate: Idaho does not require facilities to track their recycling rates, and the state does not maintain recycling rates.[41]

Incentives: Recycling incentives include a property tax exemption for qualified equipment utilizing postconsumer waste or postindustrial waste used to manufacture products.[42] Idaho also offers a tax credit for 20% of the cost of equipment used in manufacturing products that consist of at least 90% postconsumer waste. The credit is limited to no more than $30,000 in a single tax year, and unused portions may be carried forward up to 7 years. It is nonrefundable.[43]



Washington

Recycling Rate: Washington has been collecting recycling data since 1986 through the Solid Waste and Financial Assistance Program's annual Recycling Survey and annual reports from recycling facilities. The Department of Ecology tracks about 30 recycled materials to calculate the municipal solid waste recycling

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[38] Information provided by Patrick Hamel, Colorado sustainability coordinator, June 2009.

[39]http://www.cdphe.state.co.us/el/p2_program/grantreports/sow1finalreport.pdf.

[40]39-22-114.5, Colorado Revised Statutes.

[41]Information provided by Dean Ehlert, Idaho Department of Environmental Quality, solid waste program coordinator, June 2009.

[42]63-602CC, Idaho Code.

[43]63-3029D, Idaho Code.

rate. In 2007, the rate was calculated to be about 43%.[44] A plan called "Beyond Waste", issued first in November 2004, is the state's long-term strategy to eliminate most wastes and the use of toxic substances in 30 years. The plan consists of five initiative areas--industrial wastes, moderate-risk waste, organics, green building, and measuring progress. A 2007 study in Washington also provided a comprehensive estimate of statewide costs and revenues from solid waste management activities and services. The study identifies gaps and limitations in existing revenue and expenditure data.[45]

Legislative Action: For the last three decades, the Washington State Legislature has explored recycling laws and incentives, establishing in state law everything from a recycling database and hotline to recycled paper goals. The Washington State Legislature in 1969 enacted a Solid Waste Management Act that placed responsibility for waste management in the hands of local government.[46] In 1989 the Waste Not Washington Act was passed, establishing waste reduction and source-separated recycling as fundamental goals for the state. A recycling goal of 50% diversion by 1995 was established. In 2002, the Legislature renewed the 50% recycling goal to be reached by 2007. The Washington Legislature continues to be active in the area of recycling legislation. The 2006 Legislature approved an extensive e-waste program. The 2007 Legislature approved House Bill No. 2056 requiring vendors to provide recycling services at official gatherings and sports facilities located in communities where there are established curbside or other recycling services and programs.[47]

Incentives: There are a wide variety of recycling incentives in Washington. Those incentives range from grant and loan programs to variations in permitting and revenue-sharing arrangements for varying types of entities. The Department of Ecology administers a Coordinated Prevention Grant program that helps local government develop, enforce, and implement solid waste management plans. The grant program is funded by the Model Toxics Control Act.[48] Motor vehicles are exempt from rate regulation when transporting recovered materials from collection to reprocessing facilities and manufacturers. Various permitting and reporting requirements for recyclers are also established.[49] A "Pay as You Throw" program is also regulated into the local solid waste rate structures and is regulated by the Washington Utilities and Transportation Commission.

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[44]http://www.ecy.wa.gov/programs/swfa/solidwastedata/recyclin.asp.

[45]http://www.ecy.wa.gov/beyondwaste/BWDOCS_consultantStudy.pdf.

[46]Chapter 70.95, Revised Codes of Washington.

[47]70.93.093, Revised Codes of Washington.

[48]70.105D.070, Revised Codes of Washington.

[49]70.95.430, Revised Codes of Washington.

Funding Mechanisms

Solid Waste Fees

Solid waste management facilities in Montana are regulated by the Solid Waste Management Act and the administrative rules promulgated under the Act. DEQ's Solid Waste Program oversees the implementation of the Act. The program licenses, regulates, and provides compliance assistance to the solid waste management facilities in the state. In 1993 the program received approval and program authority to adopt and implement the federal EPA RCRA Subtitle D regulations into the solid waste administrative rules. The federal regulations provided nationwide standards for the siting, design, and operation of municipal solid waste, or Class II, landfills in Montana.

In the early 1990s, the Montana Legislature approved a series of bills that dealt with solid waste management and fees in Montana. The 1991 Legislature authorized license application, renewal, and license transfer fees to pay for solid waste programs. A solid waste management system must be licensed by the DEQ's solid waste program. The annual license renewal fees range from $480 to $4,200 depending on the type and size of the facility. In addition to the annual license renewal fees, each facility is required to pay 40 cents per ton of solid waste disposed of or incinerated per year.[50] A list of the different solid waste facilities is included in **Table 2.**

Table 2

Number of tipping fee paying solid waste management facilities in Montana	
Classification	**Number**
Class II Major	11
Class II Intermediate	13
Class II Minor	9
Major Transfer Station	5
Minor Transfer Station	5
Large Composters	5
Major Soil Treatment Facility	4
Class III Major	16
Class III Minor	38
Class IV Major	1
Class IV Minor	1

Source: Montana DEQ

[50] Administrative Rules of Montana, 17.50.411.

During the 2009 fiscal year, the fees are expected to generate $713,726 for the state. Of that total, operating and personnel expenses are projected at $592,971. Operating expenses also include about $80,000 per biennium that is paid through the Montana Association of Counties for training programs for local solid waste managers and operators. Of the fees, $135,658 is transferred to the DEQ's Planning, Prevention, and Assistance division, which includes the state's waste reduction and recycling program. About $39,131 of the total is transferred to the DEQ's attorney pool.

The base solid waste annual, renewal, and transfer fees were last increased in 2005. The tonnage fee was also increased from 31 cents to 40 cents per ton at that time. The increase was vetted through the Solid Waste Advisory Committee and then approved by the Board of Environmental Review. The above-mentioned fees have allowed the solid waste program to maintain a consistent funding source for operating and personnel expenses. The program also received $123,000 in general fund appropriation to cover program administration.

When contemplating recycling and solid waste costs, the costs of a landfill also must be reviewed. The information included is based on the development, design, construction, collection, digging, and engineering costs for a new landfill. All new landfills must comply with EPA regulations. The average cost for a Class II landfill is:

- Fully lined (artificial liner): $580,000 -- $635,000 per acre
- Clay liner only construction: $250,000 -- $255,000 per acre
- No migration landfill: $155,000 -- $175,000 per acre

The DEQ estimates that if the costs are amortized over a landfill's lifetime, landfill costs are about $4 to $10/ton of trash that is buried. If one anticipates recycling costs based on space saved at a landfill, diverted waste saves $4 to $10/ton of trash that is not buried, plus transportation costs. (Example: 100 tons of cardboard diverted = $400 to $1,000 saved in landfill costs.)

Monitoring costs also must be considered at a landfill. Monitoring must be done to detect any contaminants entering ground water because of leachate produced at landfills. Ground water testing and methane monitoring are required. Communities that contract for such monitoring, pay about $20,000 to $40,000 a year. Wells must be sampled, and sampling must be done twice a year.

The 2006 IWMP recommends implementation of full-cost accounting and reporting at landfills. "Local waste managers should set garbage disposal fees based on a full-cost accounting method. It differs from the common current practice in which fees are largely based on operating costs only. It requires local governments or private landfill operators to estimate future costs and set up reserves."[51]

Additional General Fund

The DEQ's Energy Prevention and Pollution Bureau is responsible for increasing recycling at the state level. General fund revenues for the bureau in fiscal year 2009 were $146,000, with roughly $90,000 focused on supporting the Integrated Waste

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[51] "Integrated Waste Management Plan (IWMP) 2006", Montana DEQ, Air, Energy and Pollution Prevention Bureau, September 2005, page 40.

Management Act and $56,000 for supporting general recycling activities, such as the issues outlined in S.J. 28.

The 2007 Legislature approved House Bill No. 555, which also directed additional funding toward recycling. The bill provided $16,500 for electronics recycling education. The department is required to implement a statewide household hazardous waste public education program, as noted earlier in this report. The electronic waste recycling education program was included in those duties.

Additional Fees -- Curbside Pickup

Bozeman initiated the first municipal curbside pickup program in Montana. The program started December 1, 2008. For $10 a month, city residents who are solid waste customers can have recyclables picked up once a week. The city collects paper, plastics 1 through 7, tin, aluminum, and cardboard. Businesses also can participate but are required to separate recyclables and can acquire larger boxes at an additional cost. A recycling truck, which the city purchased for about $200,000, collects the 18-gallon buckets. The operator sets the bucket on a rack, where it is separated and placed into one of four compartments in the truck. The recyclables are taken to Four Corners Recycling in Belgrade. "The key to recycling in the state of Montana is having a processor within 30 miles," said Steven Johnson, superintendent of Bozeman's Solid Waste Division.[52] "If you don't have a processor within 30 miles, it doesn't make sense."

Bozeman estimated that it needed 800 customers to break even on the curbside recycling endeavor. The city, as of late June 2009, had 771 customers and had 800 customers by August. "People respond to opportunity and access more than laws and mandates," Johnson said. The city paid for the truck using solid waste funds that had accrued because the city operated a landfill. The landfill, which closed June 30, 2009, generated excess revenue.

The city of Helena offers a limited curbside pickup program, allowing residents to pick up "blue bags" and collect aluminum, steel, newspapers, and magazines. The city picks up the bags on the first Monday of the month.

There are a number of private recycling firms in Montana that offer curbside recycling pickup programs--primarily in larger communities. Earth First Aid Recycling in Billings, for example, charges a setup fee of $35 and $11.50 a month to residents. Service is provided twice monthly in conjunction with a resident's regular garbage pickup schedule. Paper, plastic, aluminum and steel cans, and corrugated cardboard are collected. Missoula Valley Recycling offers curbside pickup for $12 a month. Paper, cardboard, aluminum and steel cans, and various plastics are accepted.

Pay as You Throw

Pay as You Throw (PAYT) is the concept of treating household trash the same way utilities treat electricity or gas consumption. Residents pay for solid waste based on the amount each resident throws away. The idea is to recycle more and generate less

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[52]Information provided by Steven Johnson, June 2009.

waste. Typically, a resident is charged based on each bag or can of trash that is thrown away.[53] In 2006, there were 14 PAYT communities in Montana, representing about 5% of all the communities in the state, according to the EPA.

"Ultimately, PAYT can help reduce the burden on the disposal system and lead to more efficient resource use, reduced environmental burden, and lower long-run solid waste system management costs. The programs enhance community recycling and waste reduction programs."[54] There are different types of PAYT programs noted in **Table 3**.

In 1991, Bozeman implemented a PAYT program -- the first in Montana. Initially Bozeman used a "tag and bag" system where residents put tags on bags of garbage that were collected. Tags were sold for 20-pound or 30-pound bags and were tracked. Items that didn't fit into bags were tagged based on estimated weight. Bozeman now offers residents totes of 35, 65, or 100 gallon for waste disposal. Those who have a 35-gallon tote can choose from weekly or monthly pickup, with fees scaled accordingly.[55]

The Lincoln Refuse District container site is another example of a community that put the PAYT system to work. In the early 1990s, new EPA rules for waste disposal left Lincoln with no option but to close its 30-year-old landfill. A container site operated by an outside contractor was selected, and a computerized system was developed to operate at the site.[56] Residents haul their own waste to the site, where waste is separated by type. Those who use the site have a card that is scanned when they visit the site. The volume of the waste is also estimated and entered into a computer. The amount of waste taken to the site by each cardholder is totaled annually, and corresponding dollar amounts are sent to the county assessor and added to tax bills. A cardholder then pays only for the amount of waste disposed of during the year. "One benefit of the system is that it encourages recycling. A rural recycling cooperative placed containers in Lincoln to collect aluminum and steel cans and newspapers."

Those living in the Scratch Gravel Solid Waste District in Helena pay an annual assessment on their tax bill for disposal of solid waste at the City of Helena Transfer Station. They pay only for the solid waste they dispose of, unlike other county residents who receive a permit and can dispose of up to 1.5 tons annually without paying an additional fee.

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[53]http://www.epa.gov/waste/conserve/tools/payt/index.htm.

[54] "Pay as you throw (PAYT) in the US: 2006 Update and Analyses", EPA Office of Solid Waste and Skumatz Economic Research Associates, Inc., December 2006, page 8.

[55]http://www.deq.state.mt.us/recycle/PAYT/BozemanPayt.asp.

[56] "Pay a$ you Throw . . . works for Lincoln," Montana DEQ, April 1998.

Table 3

PAYT Programs	
Program	**Description**
Variable or Subscribed Can	Customers select the number or size of a container for their standard disposal amount. Rates are set according to size and rate of pickup.
Bag Program	Customers purchase bags imprinted with a certain logo, such as a city or hauler. The bag cost incorporates the cost of collection, transportation, and disposal of the waste in the bag.
Tag or Sticker Program	Almost identical to the bag program, except instead of using a special bag, a tag is fixed to the waste that the customer wants disposed. Tags are usually good for 30-gallon increments, similar to the bag program.
Hybrid System	Instead of receiving unlimited collection for a monthly fee or annual assessment, the customer gets a smaller, limited volume of service for a set fee. Disposal of anything extra is only available using a program like the tag or bag system. This serves as an incentive for large disposers to reduce if the fee-based volume is set appropriately.
Weight-based System	This is called a "garbage by the pound" system and uses truck-based scales to weigh garbage containers and waste. On-board computers record waste per household, and customers are billed on that basis. This system is only used in one U.S. community.

Source: U.S. EPA

Grants

During the 2007-08 interim, the EQC discussed creating a recycling and waste reduction grant act, similar to the Colorado grant program discussed above, to create more markets for recycled materials.

Grants would have been used to assist in purchasing equipment, promoting the expansion of waste reduction and recycling businesses, researching and demonstrating how waste reduction and recycling can be applied to Montana markets, assisting in market development activities that develop local uses for recycled materials, and conducting educational activities.

Two alternative funding mechanisms were reviewed to provide about $440,000 for the program. The first funding mechanism was a fee of 35 cents per ton on solid waste. The second funding mechanism would have allocated 1.2% of the coal severance tax revenue to fund the program.

With the downturn in the economy, the EQC ultimately agreed not to pursue this concept during the 2009 Legislative Session.

Loans

The EQC has explored the concept of a recycling loan program and pursued House Bill No. 35 during the 2009 Legislative Session. The bill proposed to create a loan program to assist political subdivisions of the state, including local and tribal governments, and private entities in developing recycling technologies and equipment at local landfills.

The bill created a $1 million recycling equipment revolving loan account to the credit of the DEQ. The money was a one-time transfer from the junk vehicle disposal fund into the new account. Loans of up to $50,000 could have been offered to assist in the purchase of equipment and machinery. The bill died.

Extended Producer Responsibility (EPR)

States and local governments are implementing a growing number of waste reduction programs that require producers to integrate "cradle to grave" expenses into the product cost. This is an issue that is discussed more in greater depth in the e-waste portion of this report. An EPR program means that designers, suppliers, manufacturers, distributors, retailers, consumers, recyclers, and disposers take responsibility for the environmental and economic impacts of a product. Montana has some EPR programs.

- **Mercury-Added Thermostat Collection Act** (75-10-1501, MCA) Senate Bill No. 424, approved by the 2009 Legislature, requires thermostat manufacturers to create a take-back program to reduce mercury pollution caused by improper disposal of thermostats. The program launched in 2010. After January 1, 2010, thermostats that contain mercury may not be offered for sale in Montana.
- **Department of Agriculture and DEQ** work with producers to collect and recycle unused pesticides. The DEQ works with national associations that operate a voluntary take-back program for plastic pesticide containers.
- **The Rechargeable Battery Recycling Corporation** provides free recycling and partners with retailers, like Radio Shack, to place drop-off bins in their stores.
- **Electronics manufacturers** have created take-back programs that are operational in Montana.

Other Funding Sources

The 2007-08 EQC also reviewed a proposal to increase the allocation to the Montana Manufacturing Extension Center from $200,000 to $300,000 (through extension of the coal severance tax allocation). The draft required that 35% ($105,000) of the Montana Manufacturing Extension Center funding be used in collaboration with the DEQ to encourage manufacturers and commercial business owners to recycle. The bill died, and ultimately the allocation of coal severance taxes was extended through June 2019, with the current $200,000 going to the Montana Manufacturing Extension Center. At the direction of the EQC, staff followed up with the Montana Manufacturing Extension Center and inquired about their interest in working with DEQ on recycling. The Center's response is included in **Appendix E**.

Stimulus

The federal American Recovery and Reinvestment Act of 2009 included money to assist recycling efforts in Montana. The DEQ's State Energy Program awarded about $300,000 in recycling infrastructure grants. Local governments, nonprofit organizations, and private entities applied for grants to develop the recycling infrastructure in Montana and achieve greater recycling rates. Applicants had to show that they would increase tonnage recycled and show a measurable reduction in energy used for the

manufacturing of goods. The DEQ received 44 applications for a total of about $1 million in requests. The DEQ awarded grants to 19 applicants. The awards are listed in **Figure 6**. In the next interim, the EQC would like to learn more about how communities used the recycling infrastructure grants. The EQC believes it would be useful to learn more about how the grant money increased tonnage recycled and reduced energy used in the manufacturing of goods. This information would provide legislators with valuable data on the usefulness of these types of grant programs when considering future proposals.

Figure 6

Recycling Infrastructure Grants		
Applicant	**Amount**	**Explanation**
Lincoln County Department of Environmental Health	$25,000	Recycling trailers to be placed in Libby and Troy.
Palindrome Products -- Missoula	$25,000	A densifier to process recycled plastic.
Flathead County Solid Waste District	$25,000	Compactor for cardboard collected at Columbia Falls site.
Lake County Transfer Station	$24,867	Three compartmentalized roll-off bins to be placed in St. Ignatius, Ronan, and Polson areas.
Granite County	$24,590	Two balers for county collection sites.
City of Polson	$22,380	Communitywide collection bins. A trailer to haul material to recycler.
Earth First Aid -- Billings	$21,000	Roll-off bins for collection from rural areas.
City of Shelby	$18,900	Recycling trailer, collection bins for schools, hospitals, employment hubs, and educational campaign.
Powder River County	$16,340	Baler and collection bins.
Home ReSource -- Missoula	$16,156	Equipment to prepare items for reuse. (Only construction and demolition waste applicant.)
City of Bozeman	$14,117	School districtwide recycling program. A professional video developed as a training tool.
Lincoln Solid Waste District	$14,000	Baler, concrete pad, and shed cover. No glass crusher.
Augusta Solid Waste District	$14,000	Baler, concrete pad, and shed cover. No glass crusher.
City of Colstrip	$13,775	Baler, collection bins, and educational campaign.
Broadwater County	$12,500	Roll-off bins for collection of cardboard.
Broadwater County Development Corporation	$12,500	A cardboard baler.
Associated Students of Montana State University	$4,660.59	Recycling bins to be used at special events including sporting events and concerts.
Hill County	$3,200	Recycling bins for office paper.
Headwaters Cooperative Recycling	$3,150	Crane scale and floor scales so cooperative can work on a hub system with Lincoln and Augusta solid waste districts.

Rural Recycling Challenges

Recycling in rural communities can often be an uphill effort. Montana's rural nature is one of the greatest challenges in advancing recycling efforts across the state. Obstacles include distance to recycling centers, lack of economies of scale, and lack of funding. Numerous efforts are moving forward to give the residents of smaller communities the opportunity to recycle common household items. The DEQ addressed the EQC in September of 2009 and discussed efforts to promote rural recycling opportunities. The presentation is included in **Appendix F**.

A Case Study: Eureka, MT

Eureka is located in the Tobacco Valley about 65 miles from Kalispell. The 2000 Census listed the population at 1,017. In late 2007 a handful of residents initiated a program that evolved into the nonprofit, volunteer effort "Recycle Eureka" to encourage recycling in the small community--a community that is about 70 miles from the nearest recycling center.[57] Recycle Eureka illustrates the ups and downs experienced by one rural Montana community in developing a successful recycling program.

Shortly after forming, in January 2008, Recycle Eureka connected with the DEQ. The two entities started researching options and reasons recycling programs hadn't worked in the past in the Tobacco Valley. They found the top three challenges for rural recycling to be:

- Lack of funding
- Market
- Reliance on volunteers

"The public perception in our area was that recycling efforts didn't work and were at best only embarked on by a bunch of tree-hugging, left-wing liberals who didn't have good business judgment," said Carole Tapp, who led the volunteer effort in Eureka.[58] "So we attempted to learn from history and vowed not to repeat it. And even though we were a nonprofit organization, we approached Recycle Eureka with a strictly business and marketing mind set."

Figure 7 Supersacks: Photo courtesy of Carole Tapp.

Recycle Eureka started an outreach program by contacting the local newspapers, school board, and civic organizations and developing a website. The group worked closely with the school district, involving local students, and also launched an e-waste program in the spring of 2008 to raise money and awareness.

Initially volunteers looked at

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[57] http://www.recycleeureka.com/.

[58] Waste Not Montana Conference, Billings, May 2009.

purchasing a 30-yard roll-off container that would be hauled to Kalispell or Libby and emptied twice a month. However, the container would have come at a projected annual cost of $12,000 and, based on estimated recycling efforts, would have generated only about $2,600 annually. Volunteers were faced with finding a way to triple the amount recycled in the community for each shipment in order to have a self-sustaining program. The group also investigated purchasing a vertical baler (equipment to bale recyclables) and found it would be cost-prohibitive. "I was trying to bring a city recycling mentality to a remote, rural community, and it just didn't work, mainly due to geography, being a border town, and having a sparse population," Tapp said.[59]

Volunteers turned their focus to working with the post office in Eureka to initiate a campaign to stop junk mail at the source. Flyers were circulated in the community showing people how to register online and stop junk mail. The DEQ also suggested the Eureka volunteers start out with quarterly recycling drives and assisted the group in acquiring "supersacks" or lightweight, large, easily transportable containers for the drive. In August 2008, the first recycling drive resulted in the collection of plastic, paper, cardboard, aluminum, tin, and e-waste. Recyclables were separated and loaded into the supersacks and hauled to Kalispell--with the exception of cardboard. The cardboard had to be broken down and separately baled, a time-consuming process according to volunteers.

Figure 8 Cardboard recycling. Photo courtesy of Carole Tapp

Eureka, however, had caught the recycling bug by that time. The post office initiated a program to recycle junk mail and newspaper left at the office. The school district formed a recycling committee to address paper recycling efforts. Recycle Eureka started planning for its next quarterly recycling drive.

The group also learned that Stein's Family Foods in Eureka was building a new store and planned to acquire a vertical baler to handle its cardboard waste. Lincoln County officials agreed to donate two used bins that would be set behind the new store and open for cardboard collection. As of mid-2009, Stein's had recycled 103,000 pounds of cardboard since December 2008.

Recycle Eureka continues its efforts to improve recycling opportunities and spread the word about recycling. Volunteers have a strategy for meeting the three challenges noted above:

- Lack of funding
  - applying for multiple grants
- Market
  - tracking current efforts to determine their effectiveness
- Volunteer effort

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[59] Waste Not Montana Conference, Billings, May 2009.

- working with the county to establish a permanent drop location

Hard Times: Flathead County, MT

During the last 12 years, Flathead County has made a profit only twice while operating its recycling operation. Those were good years, when commodities were up. That, however, doesn't mean that recycling is a losing endeavor in Flathead County. For the last 12 years, the program has continued to grow every year. The county, in late 2008, took over recycling bins previously operated by the city of Kalispell and has stepped in in other areas of the county because Evergreen Disposal is no longer providing recycling services.

In 2009, the county expected to collect 2.3 million pounds of recyclables, compared to 1.9 million pounds in 2008 and 1.3 million pounds in 2007. The financial picture, however, doesn't match up. The county expected to lose $110,000 in 2009, compared to $33,761 in 2008 and $1,580 in 2007. While recycling doesn't pencil out financially, the county continues because there is a public demand and because it also saves space in the public landfill, said Public Works Director Dave Prunty.

"In a pure profit and loss scenario, our expenses are more than our revenues," Prunty said. "But our program continues to grow each and every year. Our board of directors firmly believes that the district has an obligation to provide a service for recycling to our ratepayers."[60]

The county contracts with Valley Recycling, a private recycler, in order to place recycle bins at various collection sites. Valley Recycling charges a rental fee on the bins and charges for hauling, processing, and marketing the materials. The county gets the revenue from the recyclables that are sold.

Recycling efforts are largely focused on cardboard, newspaper, aluminum, and a few other items. Glass is not recycled, simply because there is no nearby market for it. There are no bottling plants in or near Montana, which are the most common purchasers of crushed glass. Recycling glass in Montana often means costly out-of-state treks. Prunty also notes that glass is something that when crushed takes up relatively little landfill space.

"We have commodities that have a greater value that take up far more space," he said. "Let's focus on that."

In the month of June, however, because of declining commodity prices, the county lost $11,241 in its recycling efforts. During that time period, the county collected 229,223 pounds of recycled material, generating $7,530 in revenue. The costs to haul and handle the materials, along with the site maintenance and bin rentals, totaled $18,469.[61]

Prunty said in the future, he is hopeful that the program will become more cost-effective. And overall, the losses aren't a burden to ratepayers -- in budgeting, the program is not expected to be profitable. The loss also factors out to be less than 2% of

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[60] Information provided by Dave Prunty, August 2009.

[61] "County recycling program losing money," *Daily InterLake*, August 2009.

operational expenses.

Flathead County's landfill has an estimated 45 to 50 years' worth of space remaining, depending on the amount of trash generated in the expanding county. The estimates are based on a 2% to 4% growth rate. Prunty notes that at one time the county had 16% growth in 1 year and most recently felt a 15% contraction.

Flathead County, however, isn't the only one in the recycling business in the area. There are private recyclers like Valley Recycling, which recycles about 8 million pounds a year according to manager Bob Morrow. They collect cardboard, mixed paper, some plastics, aluminum cans, and nonferrous metals. Most of the material is taken to markets on the west coast. Morrow said hauling costs are the most expensive aspect of the process. Higher gas prices and tanking commodities have taken their toll in the last year.

"It's mostly a loss," he said. "We don't make a lot of money, but we do it as a service."[62]

There are also at least two curbside recycling entities in Flathead County. New World Recycling started offering the service 7 years ago, when owner Cory Cullen used a $5,000 loan and a Subaru to lead the way. Cullen charges $10 a month for residential curbside pickup and $15 a month for pickup that includes glass. He initially would drive glass to Idaho, where it was used in a road reconstruction project. He later built his own glass crusher. With a $25,000 loan, Cullen purchased a glass pulverizer. He averages 400, 32-gallon garbage cans a month -- an estimated 0.5% to 1% of the glass in the valley.[63] In July 2009, he collected 647 garbage cans of glass. The markets for glass cullet and glass aggregate are slowly growing. Cullen is working to connect with a concrete business owner to use cullet to make countertops.

A "Freecycle Flathead" website also is maintained in Flathead County, allowing, among other things, residents to post information about items they wish to "recycle" or get rid of. The site is open to all county residents and is not a charity or online shopping service. It serves as a type of information resource for those looking to give an item a second life (reuse) or find a used item. The site has more than 1,400 users.

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[62] Information provided by Bob Morrow, August 2009.

[63] "Shattering obstacles to glass recycling," *Flathead Beacon*, April 2008.

Markets and Conclusion

In 2007 recycling markets were riding high, but in lockstep with the global recession that hit in 2008 and 2009, markets tanked. As the economy plummeted, prices plummeted by as much as 80% for some recyclables like cardboard and plastic jugs. Cardboard that had sold for $100 a ton was worth only $25 a ton. Aluminum cans that were 55 cents a pound dropped to 17 cents a pound. In late 2009, Montana aluminum prices were about 30 cents a pound and cardboard was at $60 a ton. When the industry takes a hit because of poor prices, local governments that operate recycling services also feel the pinch. "One reason prices slid so rapidly this time is that demand from China, the biggest export market for recyclables from the U.S., quickly dried up as the global economy slowed," according to the DEQ.

When consumer demand for new homes, cars, and other goods declines, so does the need for steel and fiber -- which in many cases come from recycled scrap, paper, and other materials. In a declining economy, recyclers face a greater challenge in finding buyers for their goods. "The well-documented problems in the auto and housing industries have helped push aluminum inventories to a 14-year high of around 2 million metric tons, according to one report."[64]

According to many in the recycling industry, markets are starting to come back. Metal prices are rebounding. The "cash-for-clunkers" program, for example, generated a number of automobiles that were shredded by recyclers. Plastic prices remain low, however; those prices are generally tied to gas prices.

While recycling is often associated with local volunteers and grassroots efforts, it's also intrinsically tied to the global economy. The EQC's study came at a time when a downturn in the world economy added to existing recycling challenges. Bad economic times, however, are not expected to undermine the public's commitment to recycling. Local programs are expected to continue their efforts with the confidence that markets will rebound in the future.

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[64] http://www.recyclingtoday.com/Article.aspx?article_id=21645

A JOINT RESOLUTION OF THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA REQUESTING AN INTERIM STUDY TO EVALUATE METHODS FOR INCREASING RECYCLING AND SOLID WASTE RECOVERY WITHIN THE STATE OF MONTANA.

WHEREAS, increased recycling rates will provide substantial economic and environmental benefits to Montanans; and

WHEREAS, recycling is a value-added manufacturing process that provides jobs for Montanans; and

WHEREAS, recycling reduces energy consumption associated with the manufacturing of products from raw materials and reduces landfill usage by diverting solid waste; and

WHEREAS, rural areas have a need for infrastructure support to increase recycling; and

WHEREAS, electronic waste and household hazardous waste present unique recycling challenges that may require additional programs; and

WHEREAS, the Montana Integrated Waste Management Act proposes increasing Montana solid waste recycling rates to 19% by 2011 and 22% by 2015 using a variety of methods, including source reduction, reuse, recycling, and composting.

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA:

That the Legislative Council be requested to designate an appropriate interim committee, pursuant to section 5-5-217, MCA, or direct sufficient staff resources to:

(1) evaluate and propose potential methods for increasing the recycling rates in the state of Montana;

(2) analyze methods to promote market development of recycled materials;

(3) analyze options to address rural recycling challenges;

(4) propose programs to address electronic and household hazardous waste; and

(5) evaluate funding alternatives.

BE IT FURTHER RESOLVED, that if the study is assigned to staff, any findings or conclusions be

presented to and reviewed by an appropriate committee designated by the Legislative Council.

BE IT FURTHER RESOLVED, that all aspects of the study, including presentation and review requirements, be concluded prior to September 15, 2010.

BE IT FURTHER RESOLVED, that the final results of the study, including any findings, conclusions, comments, or recommendations of the appropriate committee, be reported to the 62nd Legislature.

- END -

Recycling Work Plan Tasks

Council action: The EQC allocated .20 FTE for this topic. For more information on this topic, contact Sonja Nowakowski: (406) 444-3078, snowakowski@mt.gov.

x 1. Review legislative history of Montana recycling incentives, rates, and law.

Who: EQC staff, DEQ staff
Time line: September 2009 meeting

x 2. Overview of recycling funding alternatives, incentives, and role of states in promoting recycling in other Western states.

Who: EQC staff
Time line: September 2009 meeting

x 3. Discussion of rural recycling challenges.

Who: EQC members, staff, stakeholders
Time line: September 2009 meeting

x 4. Panel discussion from stakeholders.

Who: Private recyclers, local governments, nonprofits.
Time line: September 2009 meeting

x 5. Summary of e-waste efforts in Western states and efforts in Montana.

Who: EQC staff, DEQ staff
Time line: January 2010 meeting

x 6. EQC discussion and study direction.

Who: EQC members
Time line: January 2010 meeting

x 7. Summary and discussion of recycling markets.

Who: EQC staff, DEQ economist
Time line: March 2010 meeting

x 8. Presentation of preliminary report and development of recommendations and proposed legislation.

Who: EQC members, staff
Time line: March 2010 meeting

x 9. Review draft report, findings, recommendations, and any proposed legislation.

Who: EQC members, staff
Time line: May 2010 meeting

__ 10. Review public comment on draft report and any proposed legislation.

Who: EQC members, staff
Time line: July 2010 meeting

__ 11. Approval of final report and any findings, recommendations, or legislation.

Who: EQC members
Time line: September 2010 meeting

Appendix C

Feasibility Study Funding: Power from MSW

Proposal: Matching grants for feasibility studies for Biomass/Power/Recycling Businesses Using Municipal Solid Waste

I want to propose a legislative idea: to provide matching grants to local government/private investors to do feasibility studies pertaining to using municipal solid waste for power generation. Although the information we have received about the Envirocycler inspires this idea, the grants should not favor any particular technology.

As we have looked at recycling and at energy production from biomass, we keep seeing the same problems. With biomass, there are few opportunities to create a long term, reliable cost-effective stream of feedstock at sufficient quantities. Recycling presents similar challenges: transportation costs make it uneconomical to sort and ship our relatively low quantities of materials for processing into new manufactured goods.

Our one long-term, reliable and abundant potential feedstock already being transported to central locations is municipal solid waste, including wastewater treatment sludge. Using MSW as feedstock for energy production could have benefits such as:

- Production and sale of renewable electricity
- Reduction of land filling, with its attendant problems of pollution and permanent monitoring, and waste of usable materials (biomass, metals, plastics, glass)
- Increased stream of recyclables, including electronics and other material not suitable for incineration, such that recycling becomes more cost effective
- Reduced waste management costs for local government, perhaps even a profit as an investor or from selling the waste (aka fuel) to the power producer.
- Savings (or profits) might be used to reduce the currently prohibitive cost to consumers of keeping electronics out of the waste stream.
- Jobs, many permanent, in construction, operation, related recycling activities

The feasibility studies would have to look at:

- Life cycle issues of the waste stream from on-site waste production (home, business, waste-water plant) through transportation, energy production-recycling-land filling, the usability/hazardous waste potential of the ash, all compared to costs of BAU;
- Integration of already-existing local recyclers into the overall waste-management plan;
- Ability to comply with state and federal environmental laws;
- Social considerations such as jobs, noise, view shed, public acceptance;
- Impacts on wildlife, other uses of the land, etc;
- A business plan;
- Other requirements???

Although each project would necessarily involve very local considerations, there are potential benefits to the state:

- Jobs and tax revenues
- Increased renewable energy supply
- New industries in power production, recycling and manufacturing
- Less land devoted to landfills
- Disposal option for excess fuels on state and private land

Things I don't know:

- Funding possibilities: might some current funding and granting source be used, or do we need some new creation?
- How much should a feasibility study and business plan cost?
- Are there other ways the state could encourage local governments and private investors to consider using MSW as a resource rather than a management problem?
- Other things that *you* know I don't know.

I think this could be included in either the recycling or biomass sections of our agenda. If the Council thinks this is worth consideration, I hope members will offer more details to improve the idea and to help the staff draft possible legislation.

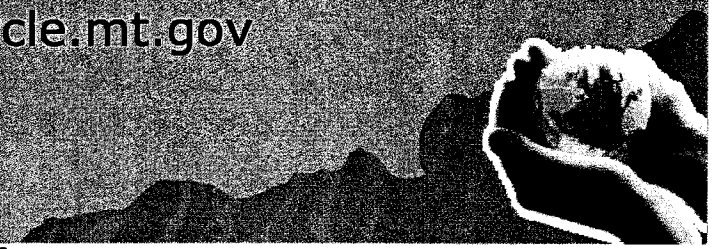
Thanks for your time.

Mary E. Fitzpatrick
Billings

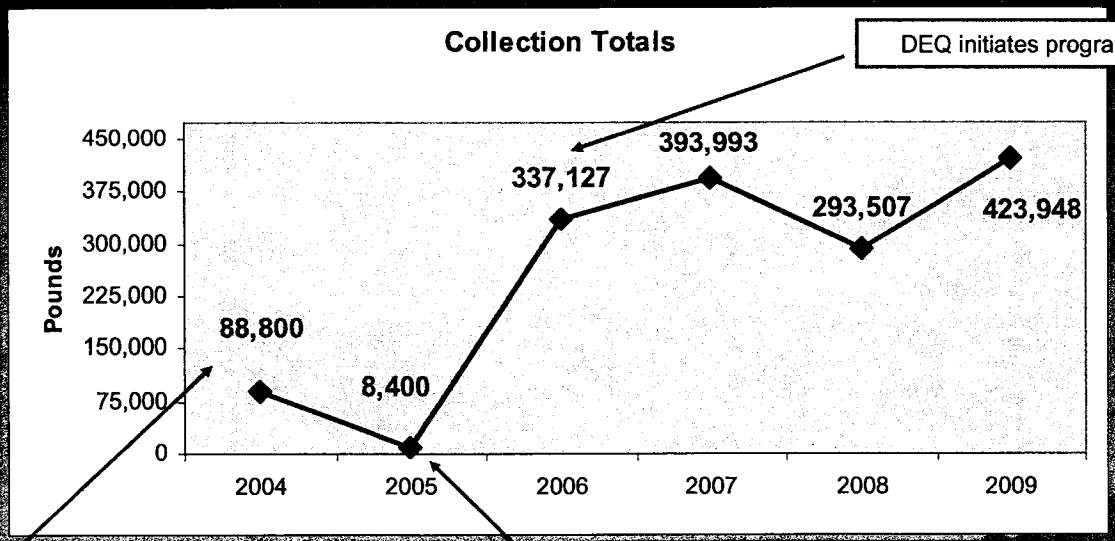
Montana Department of
ENVIRONMENTAL QUALITY

Recycling Electronics in Montana

Presented by Sandra Boggs,
Recycling and Marketing Development Specialist
www.recycle.mt.gov



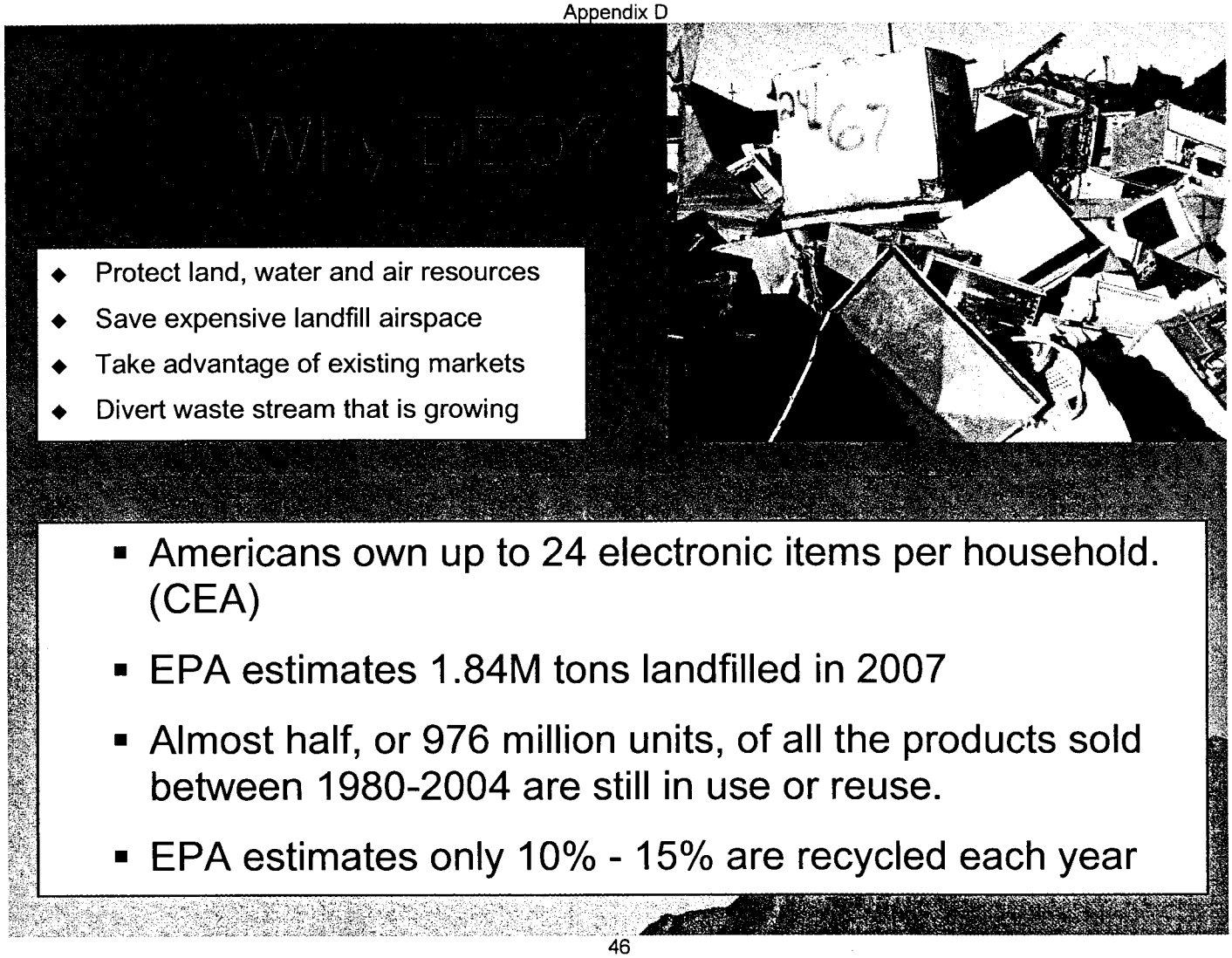
e-rase your e-waste!



Why Electronics?

- Valuable Materials (small amounts)
  - chromium
  - cadmium
  - mercury
  - beryllium
  - nickel
  - lead
  - zinc
  - gold
  - brominated flame retardants

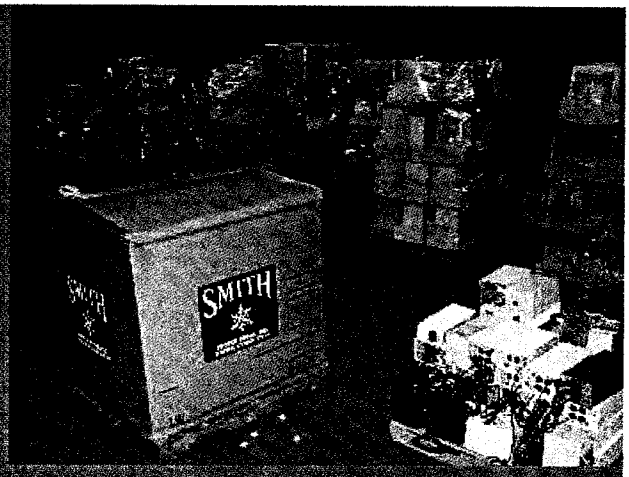
- Protect land, water and air resources
- Save expensive landfill airspace
- Divert waste stream that is growing
- Take advantage of existing markets
- People want to recycle



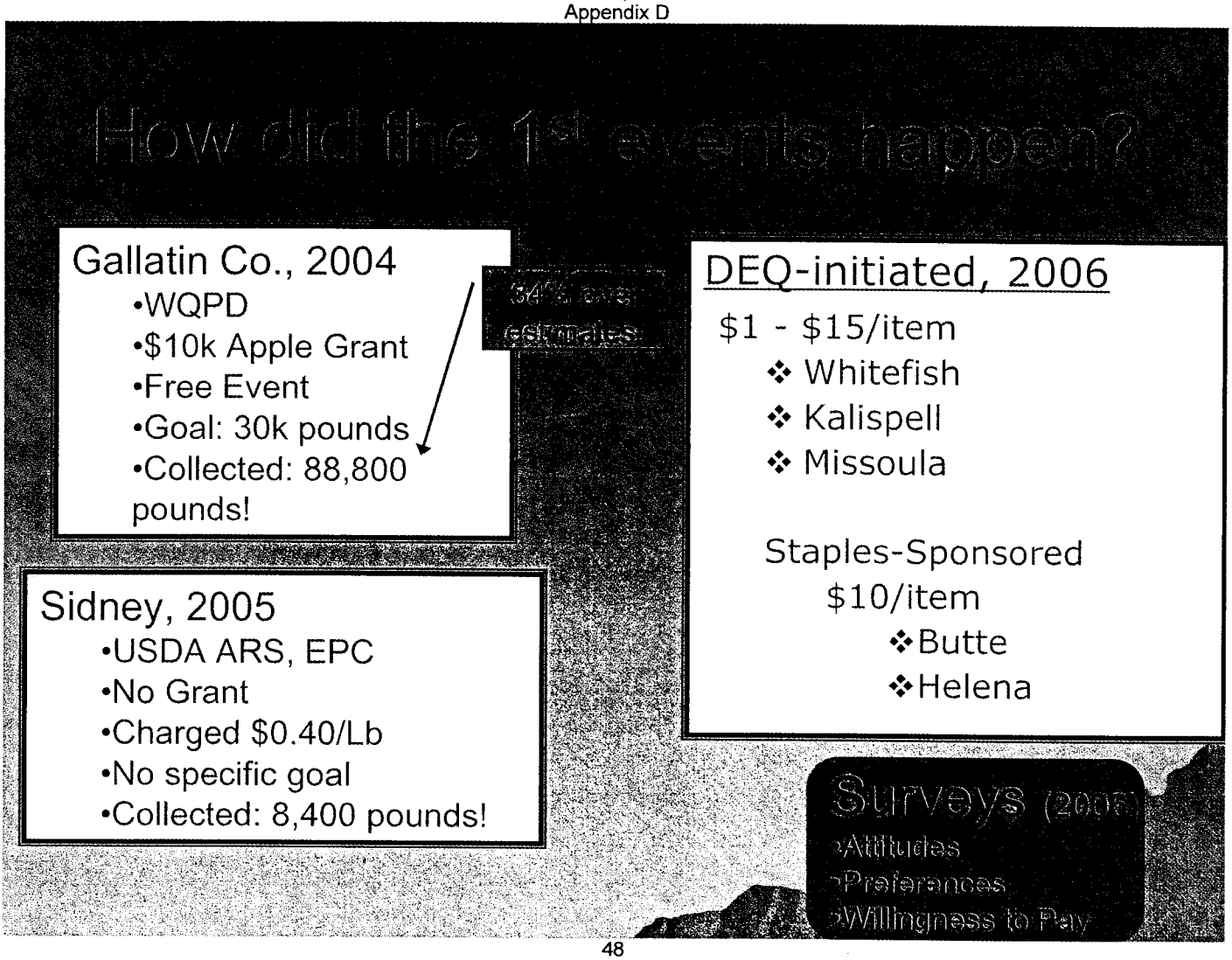
- Protect land, water and air resources
- Save expensive landfill airspace
- Take advantage of existing markets
- Divert waste stream that is growing

- Americans own up to 24 electronic items per household. (CEA)
- EPA estimates 1.84M tons landfilled in 2007
- Almost half, or 976 million units, of all the products sold between 1980-2004 are still in use or reuse.
- EPA estimates only 10% - 15% are recycled each year

DEQ Assistance



- Relationships with Electronics Recyclers
- Financial support from manufacturers
- Assistance with education & outreach
  - Help directing public to data destruction resources
- Access to case studies and experienced community organizers
- Volunteer liability coverage
- On-the-ground assistance with event
- Initiate and support start-up of local e-scrap recycling

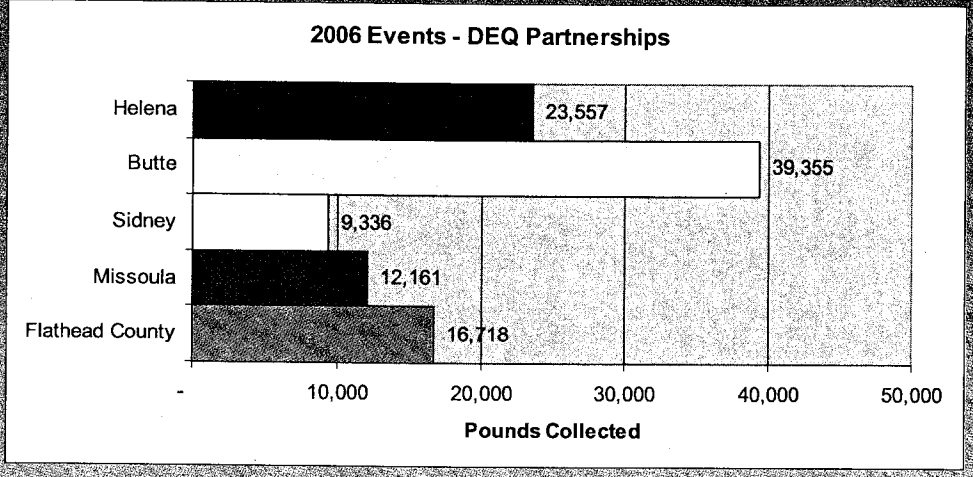

How did the 1st events happen?
Gallatin Co., 2004
•WQPD
•$10k Apple Grant
•Free Event
•Goal: 30k pounds
•Collected: 88,800 pounds!
34% over estimates
DEQ-initiated, 2006
$1 - $15/item
❖ Whitefish
❖ Kalispell
❖ Missoula
Staples-Sponsored
$10/item
❖ Butte
❖ Helena
Sidney, 2005
•USDA ARS, EPC
•No Grant
•Charged $0.40/Lb
•No specific goal
•Collected: 8,400 pounds!
Surveys (2006
•Attitudes
•Preferences
•Willingness to Pay

Appendix D

2006 DEQ, EPA, Industry Partnerships

Plug-In To eCycling
With U.S. EPA

TOSHIBA



JVC
The Perfect Experience

SONY

SHARP
be sharp

BEST BUY

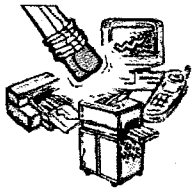
STAPLES
that was easy.

Panasonic

PHILIPS

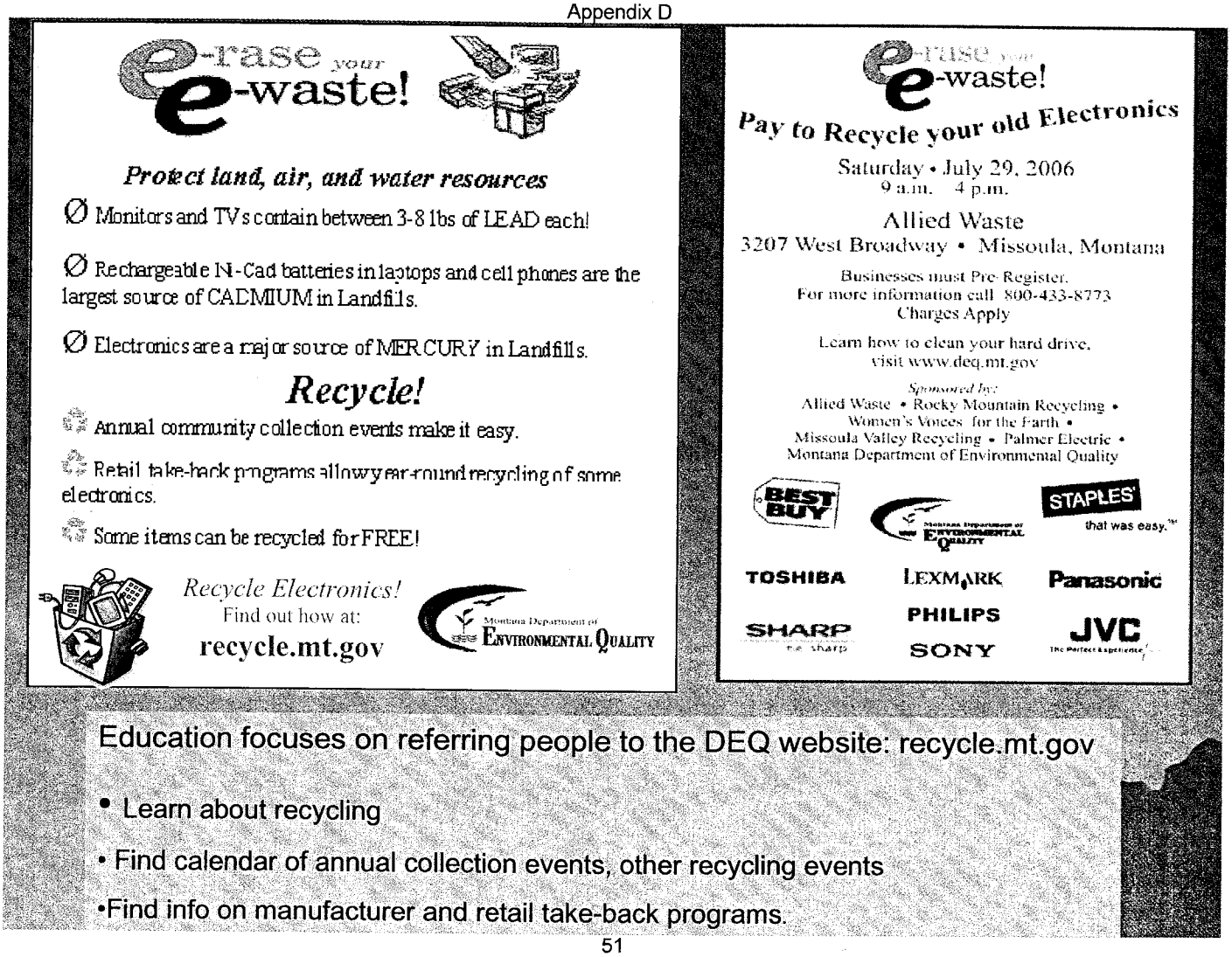
Since 2008

e-rase your e-waste!



- Annual events continue
  - Collection Event Planning Guide
  - Free operational SW license
  - Promotional templates on the "E-rase Your E-waste" Site
- Over 13 communities have held events
- Manufacturer Recycling Programs
- Retail Take-Back Programs
- Public Education & Outreach
  - $16,000 authorization and directive for education & promotion of electronics recycling
    - Television PSA & advertising piece
    - Support of local outreach & educational efforts

recycle.mt.gov



Education focuses on referring people to the DEQ website: recycle.mt.gov

- Learn about recycling
- Find calendar of annual collection events, other recycling events
- Find info on manufacturer and retail take-back programs.

2006 Surveys

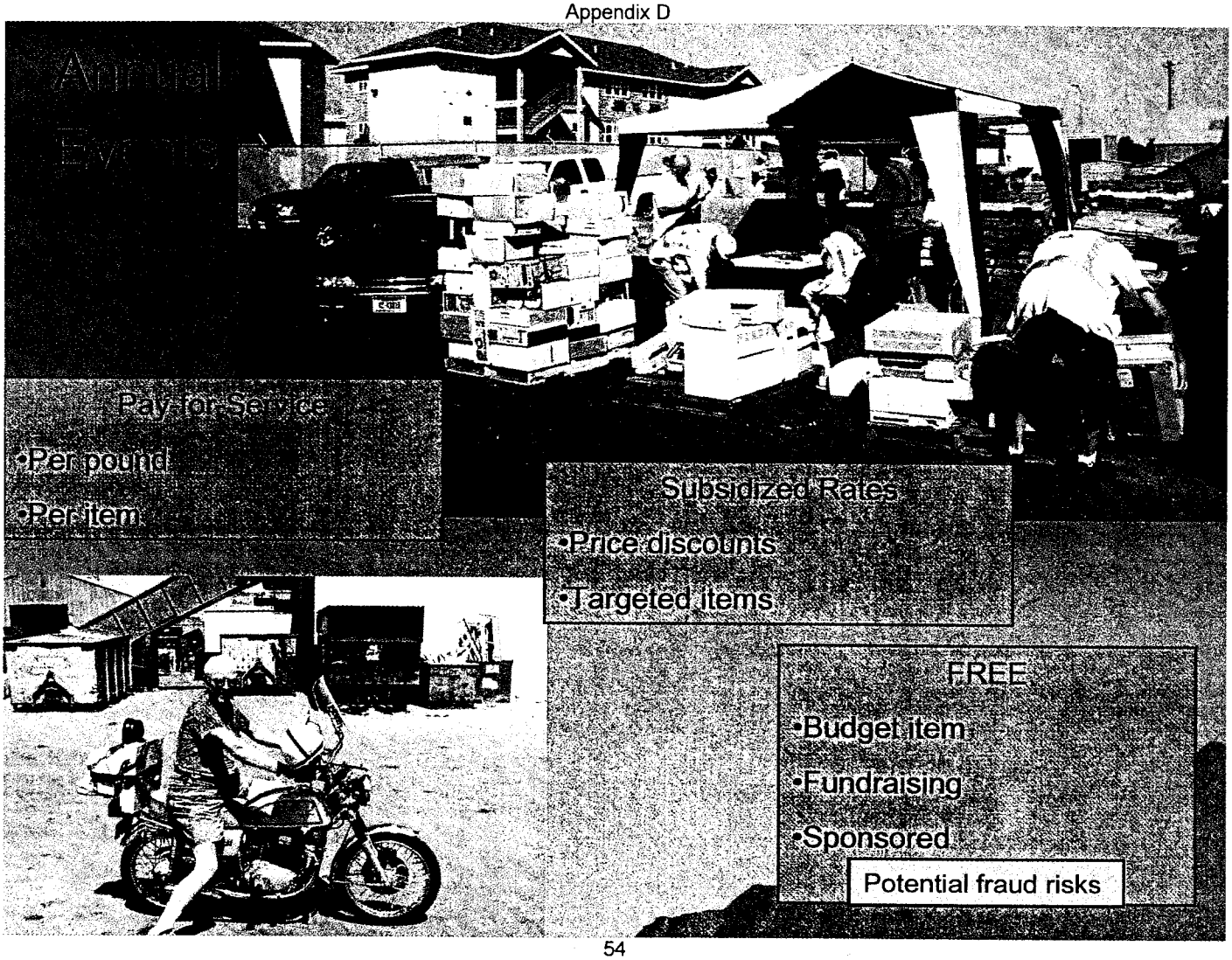
What do citizens want?

- Recycling should be FREE – or
- Consumers / OEMs should share recycling costs
- No exporting
  - Even free events – would pay a fee for it
    - If such responsible recycling was promised
- Convenience
  - Landfill, Transfer Station
  - Recycling Centers
  - Retailers

Public Recycling Options

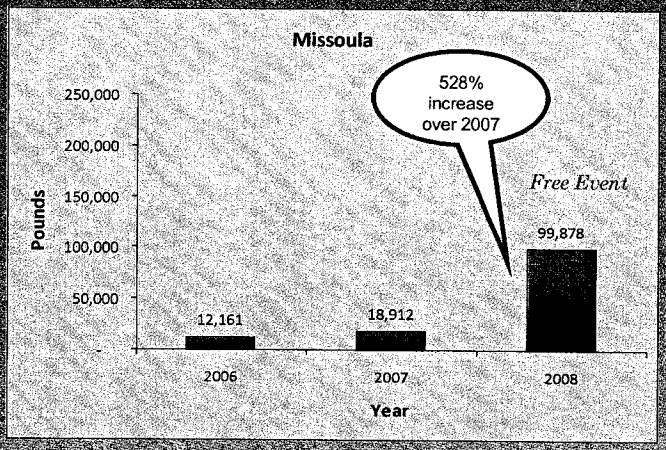
- Annual Collection Events
- Electronics Recyclers
- Retail Take-Back Programs
- Manufacturer Recycling Programs
  - Online & Mail-in Programs
  - Drop-off Programs

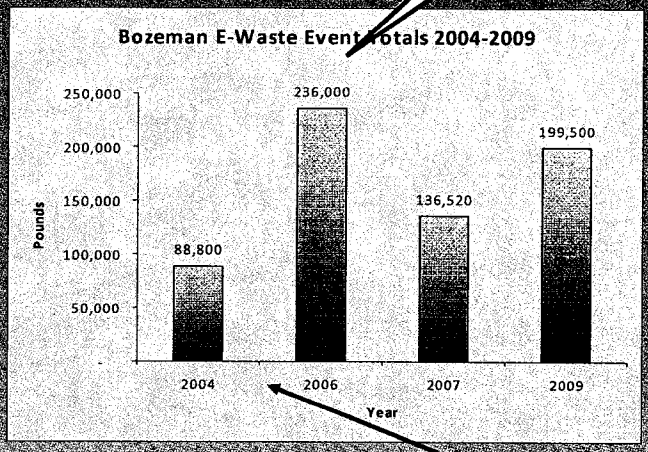
How accessible is electronics recycling?


Annual Events
Pay for Service
•Per pound
•Per item
Subsidized Rates
•Price discounts
•Targeted items
FREE
•Budget item
•Fundraising
•Sponsored
Potential fraud risks

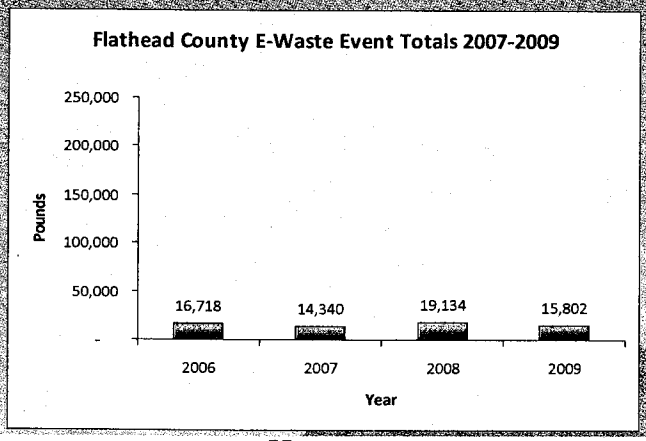
Recycling: Annual Events

Participation

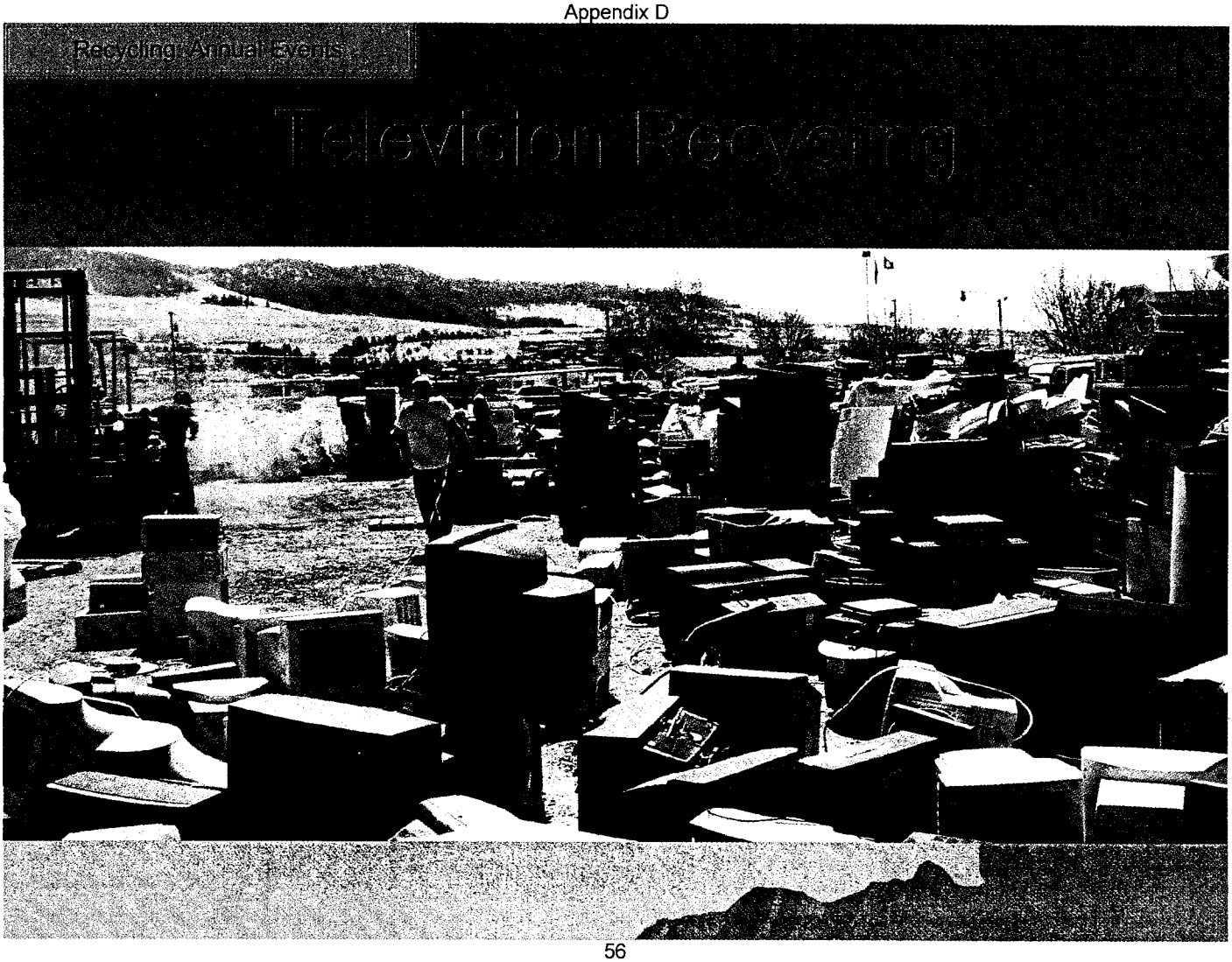




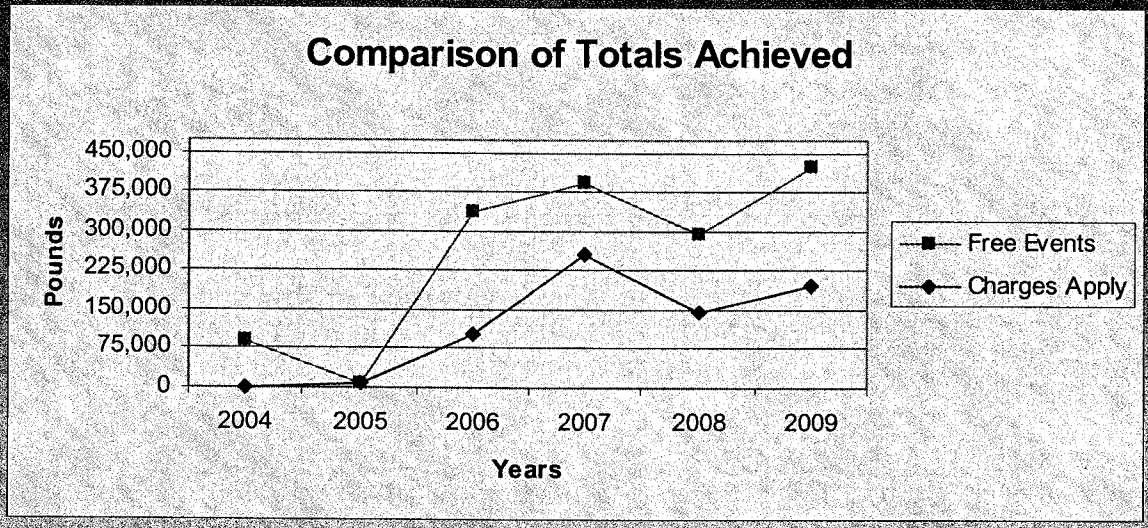
No event in 2005



Appendix D



Collection Success

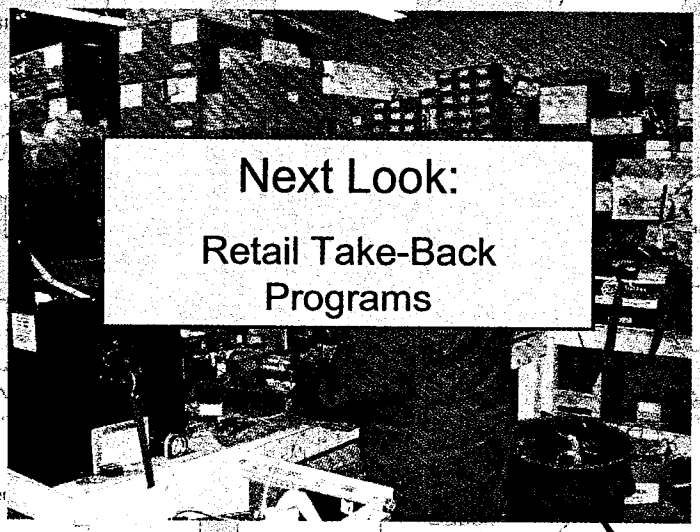


Next Look:

Electronic Recyclers in Montana

Recycling: Electronics Recyclers

Electronic Recyclers in Montana



Next Look:

Retail Take-Back Programs

P.E.T.E.S. Palmer Electric

(Total ReClaim, Seattle)

Tatooine Electronic Systems

(Warehouse)

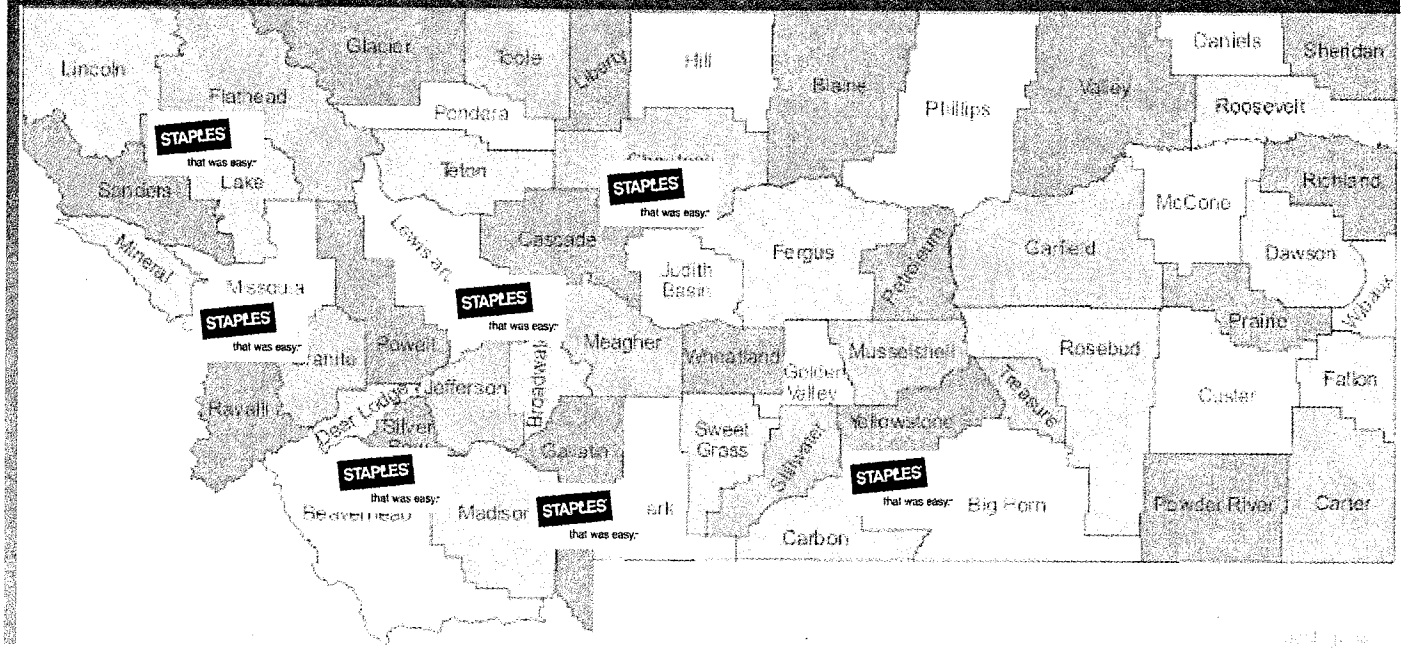
Appendix D

Recycling: Retail Programs

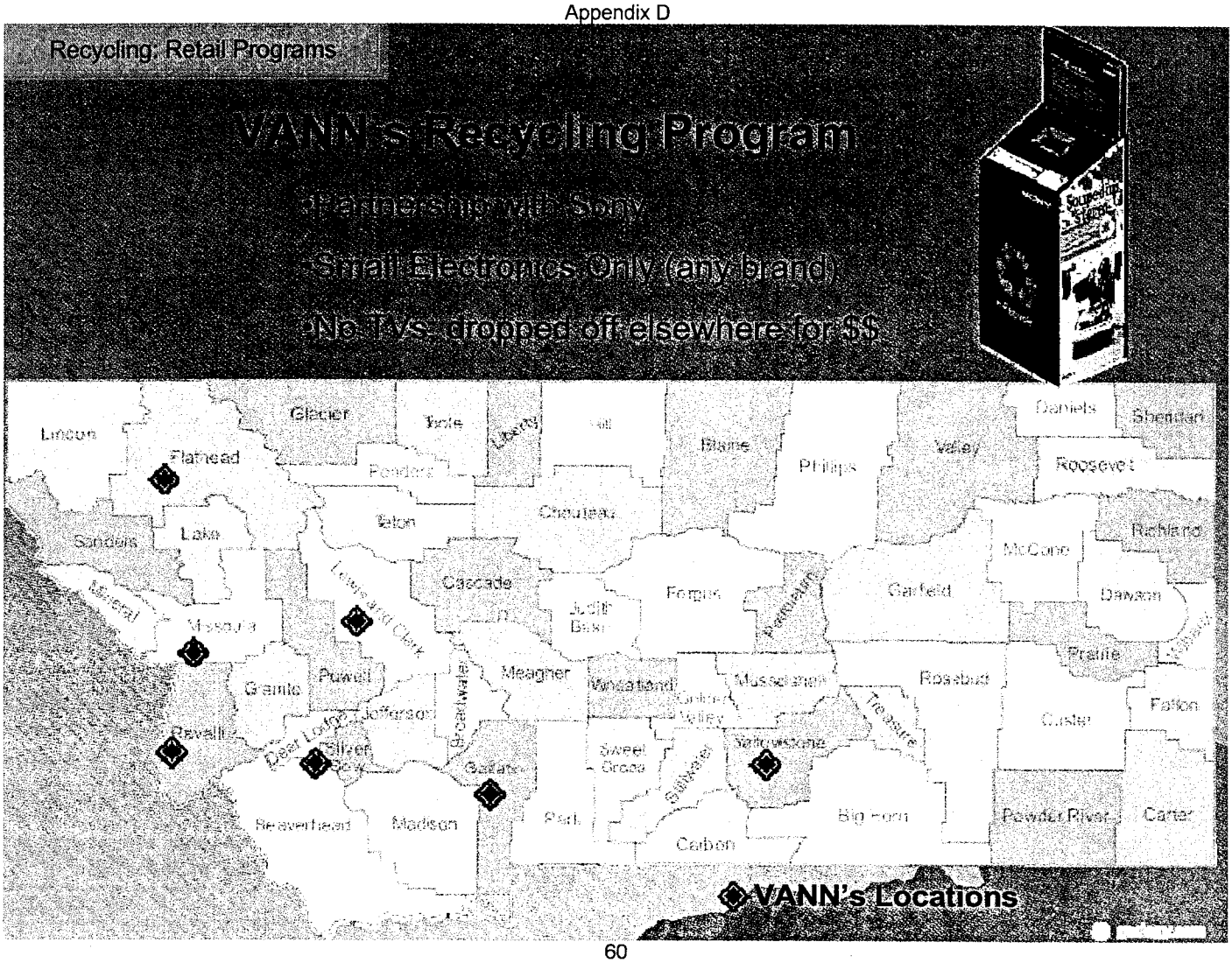
Retail Take-Back Programs

Staples

- Anything they sell
- Some items free (cellphones, chargers, PDAs)
- $10 per unit fee (printers, Desktop, copier, and more)
- No TVs or stereo equipment
- Dell-brand items FREE

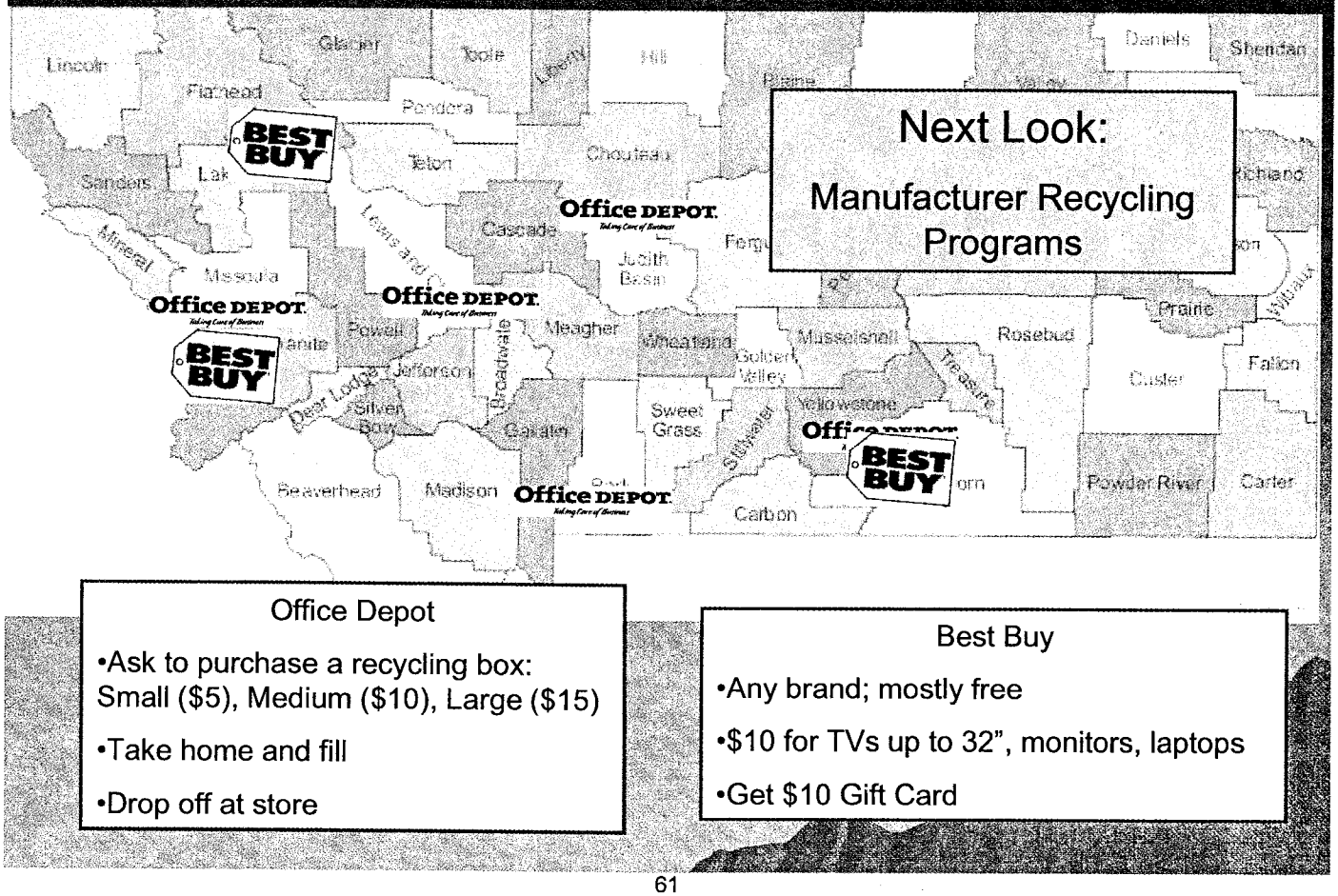


Appendix D


Recycling: Retail Programs
VANN's Recycling Program
•Partnership with Sony
•Small Electronics Only (any brand)
•No TVs- dropped off elsewhere for $$
Lincoln
Flathead
Glacier
Toole
Liberty
Hill
Blaine
Phillips
Valley
Daniels
Sheridan
Roosevelt
Pondera
Teton
Chouteau
Sanders
Lake
Richland
McCone
Cascade
Judith Basin
Fergus
Garfield
Dawson
Mineral
Missoula
Lewis and Clark
Prairie
Granite
Powell
Meagher
Wheatland
Musselshell
Rosebud
Jefferson
Broadwater
Golden Valley
Treasure
Custer
Fallon
Ravalli
Deer Lodge
Silver Bow
Gallatin
Sweet Grass
Stillwater
Yellowstone
Beaverhead
Madison
Park
Carbon
Big Horn
Powder River
Carter
VANN's Locations

Recycling: Retail Programs

Office Depot and Best Buy



Next Look:

Manufacturer Recycling Programs

Office Depot

- Ask to purchase a recycling box: Small ($5), Medium ($10), Large ($15)
- Take home and fill
- Drop off at store

Best Buy

- Any brand; mostly free
- $10 for TVs up to 32", monitors, laptops
- Get $10 Gift Card

Recycling: Manufacturer Programs

Mail-in & Online Programs

Apple

- Free IF you buy a new Apple
- Lots of restrictions
- iPods, iPhones are FREE

HP

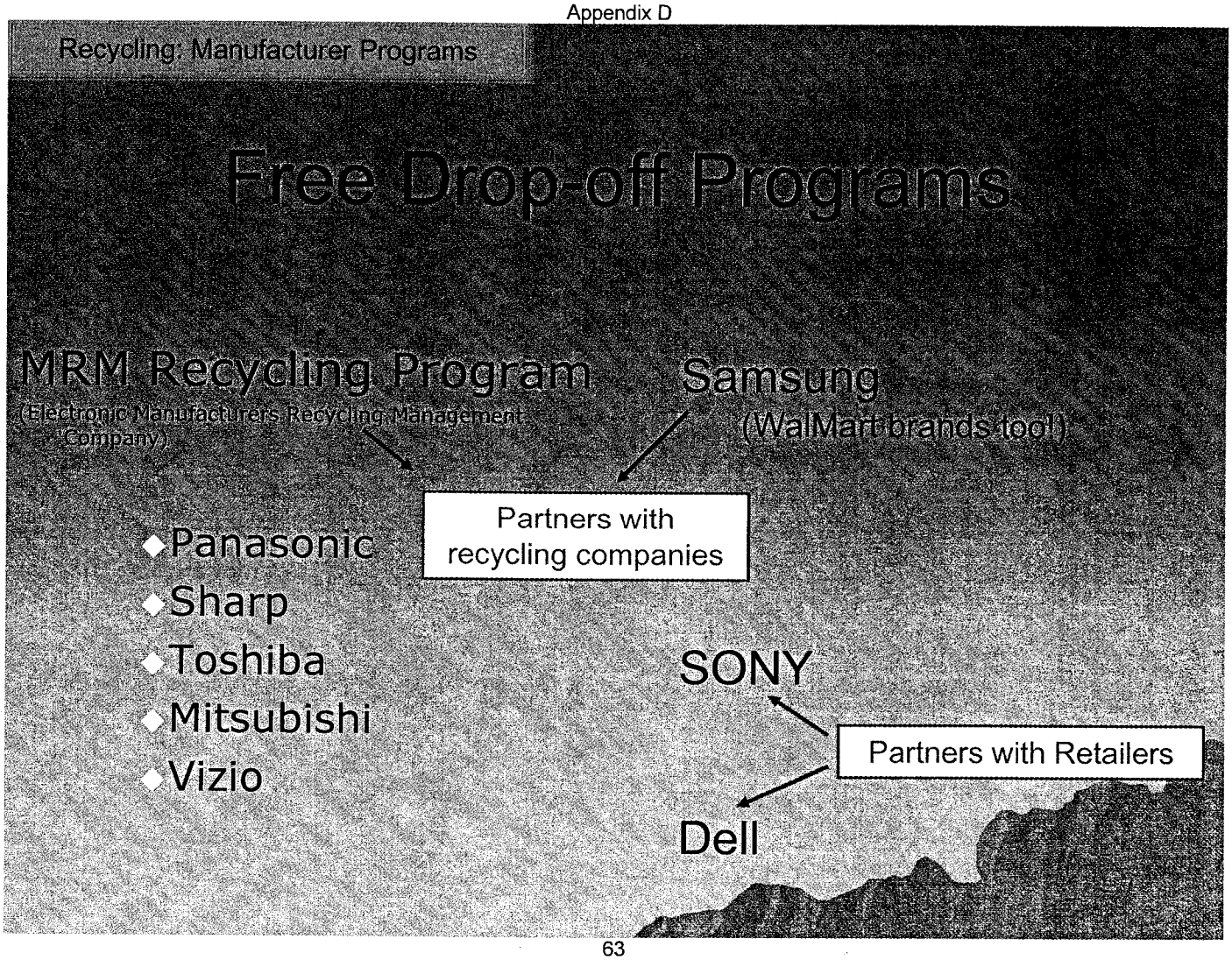
- Buys items back if still valuable (any brand, free shipping)
- HP & Compaq products always free
- Other products at no value: you pay shipping, free recycling

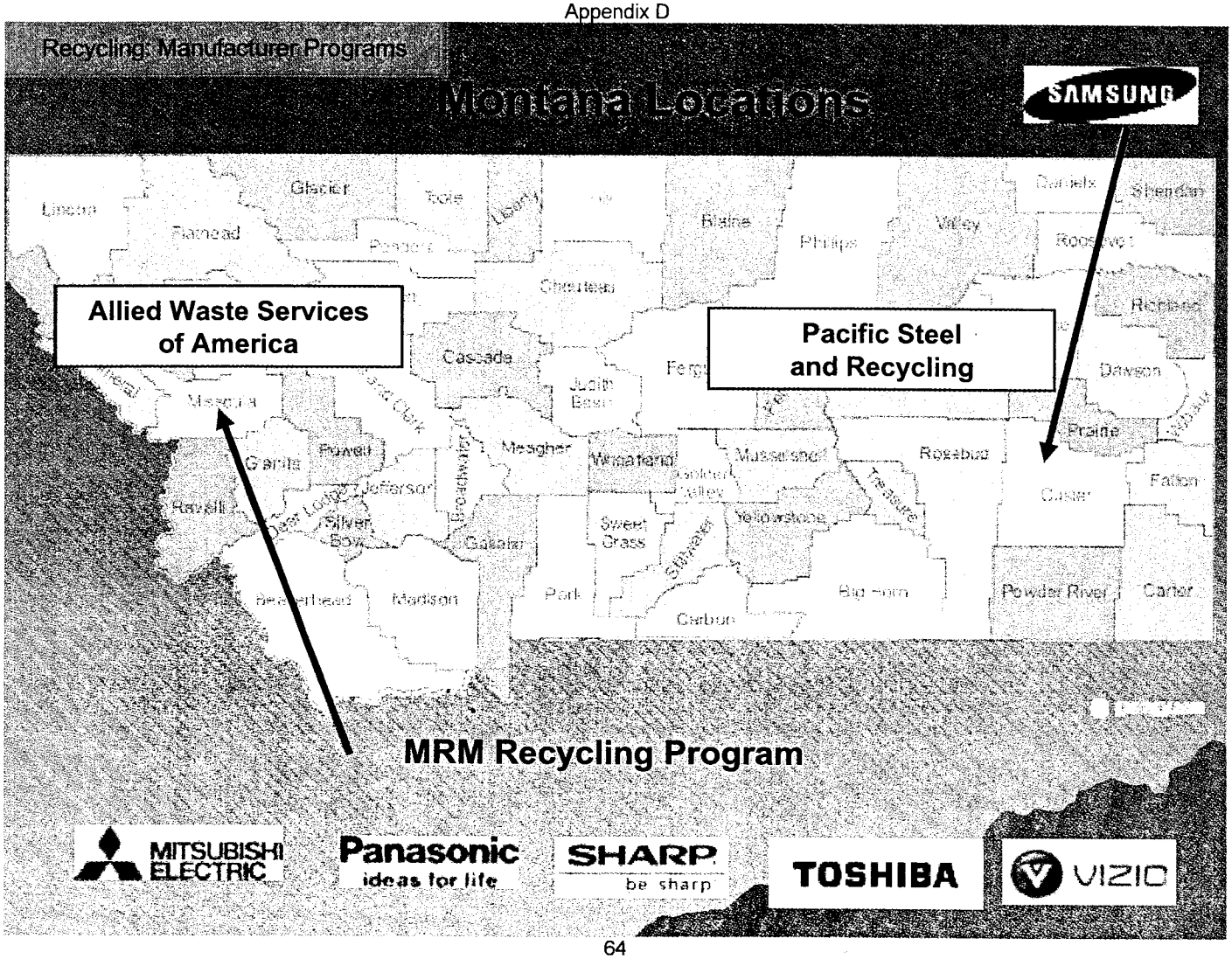
Dell

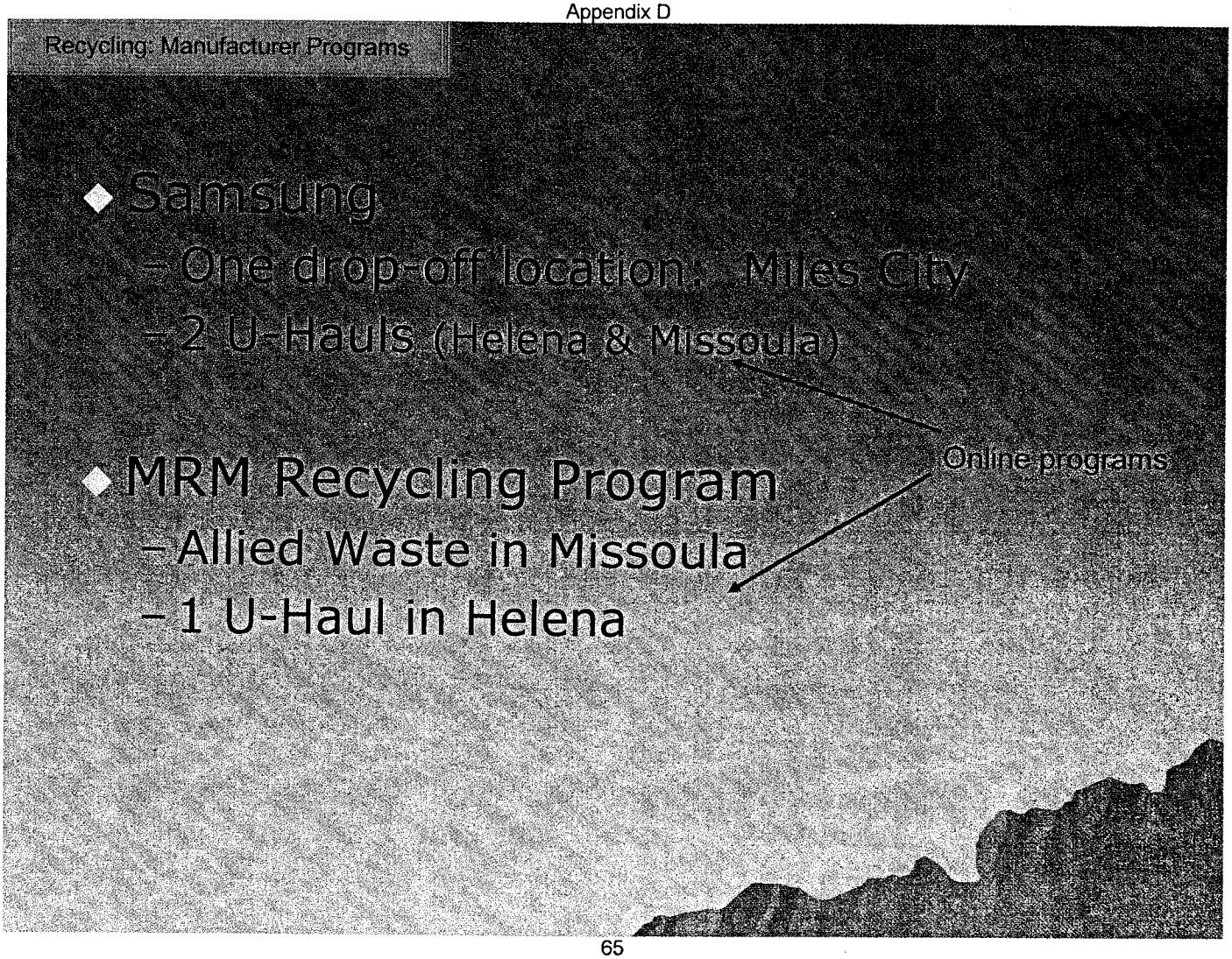
- Free drop-off at Staples stores
- If mailing: Free shipping & recycling

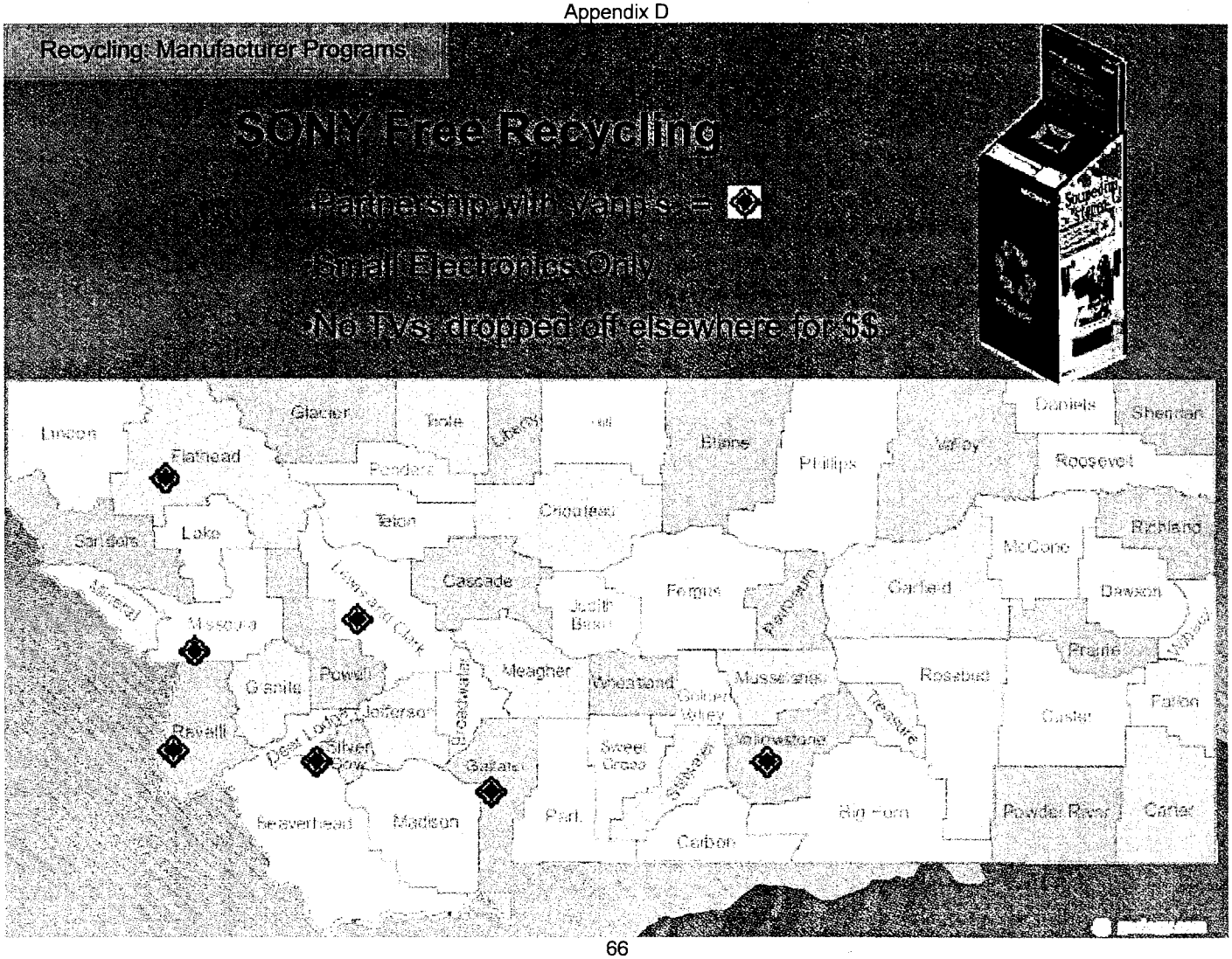
Lenovo

- Very similar to HP program


Recycling: Manufacturer Programs
Free Drop-off Programs
MRM Recycling Program
(Electronic Manufacturers Recycling Management Company)
Samsung
(WalMart brands too!)
Partners with recycling companies
Panasonic
Sharp
Toshiba
Mitsubishi
Vizio
SONY
Partners with Retailers
Dell


Recycling: Manufacturer Programs
Montana Locations
SAMSUNG
Allied Waste Services of America
Pacific Steel and Recycling
MRM Recycling Program
MITSUBISHI ELECTRIC
Panasonic ideas for life
SHARP be sharp
TOSHIBA
VIZIO


Recycling: Manufacturer Programs
Samsung
– One drop-off location: Miles City
– 2 U-Hauls (Helena & Missoula)
MRM Recycling Program
– Allied Waste in Missoula
– 1 U-Haul in Helena
Online programs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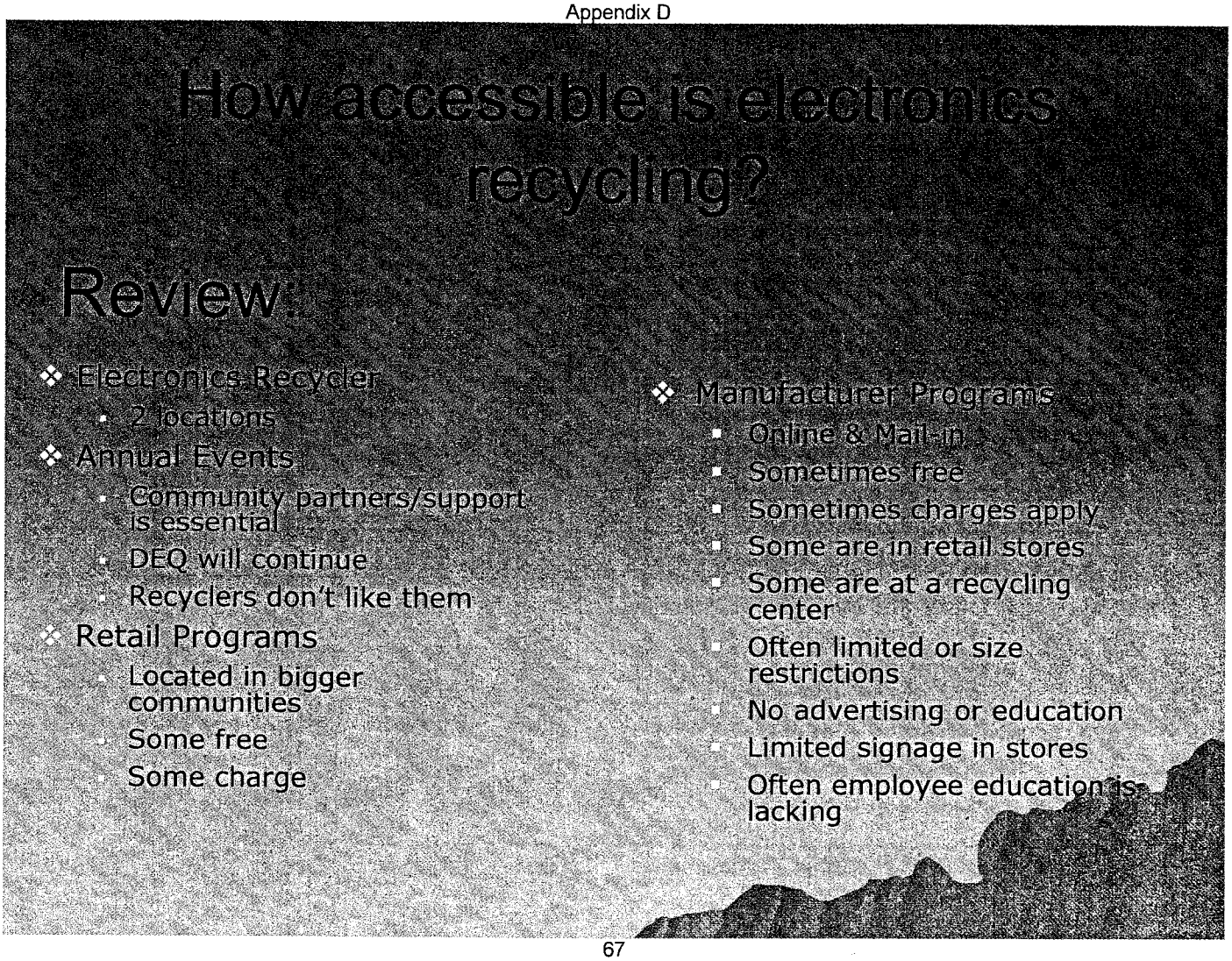
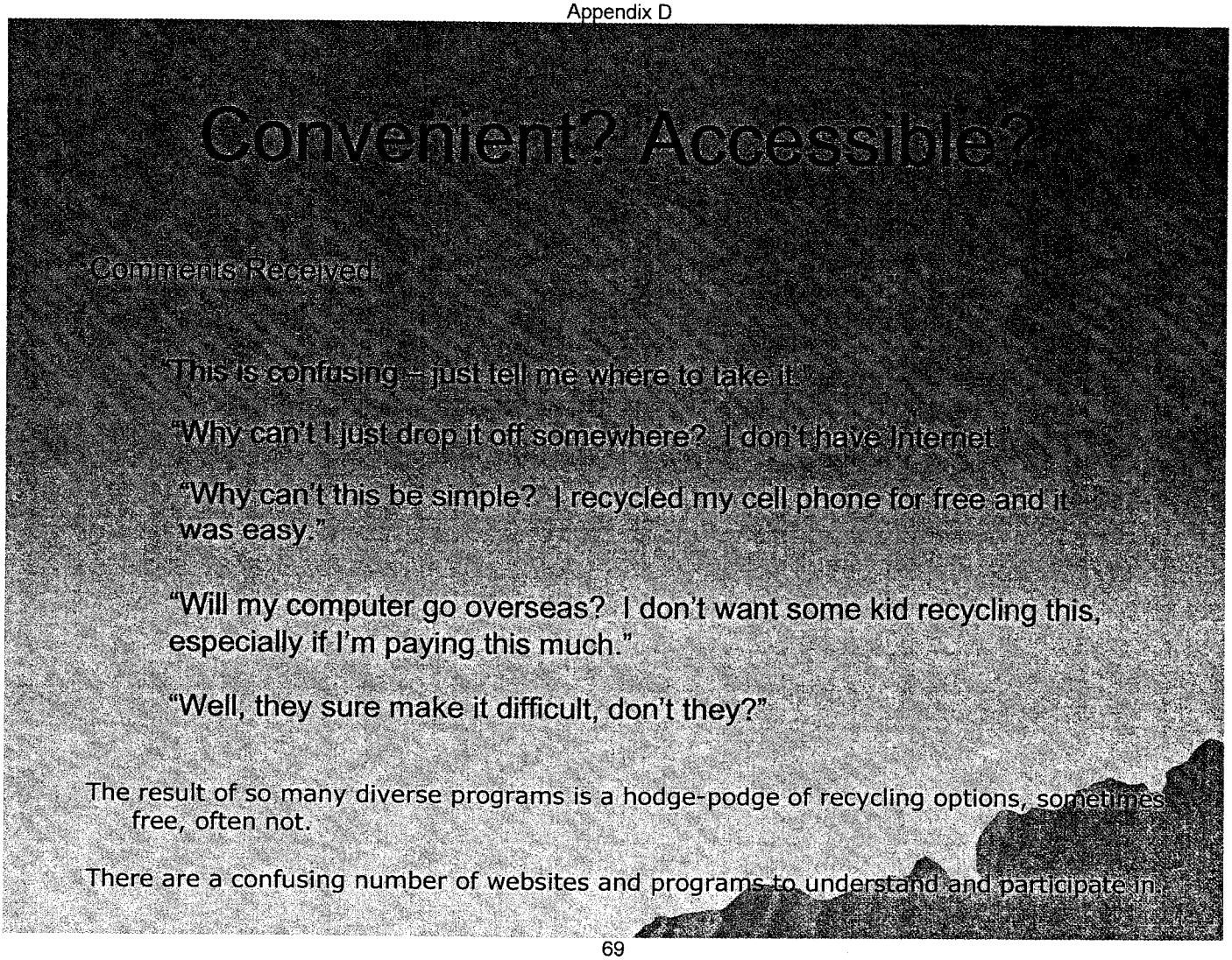
Teton
Chouteau
Sanders
Lake
Richland
McCone
Lincoln
Missoula
Cascade
Judith Basin
Fergus
Petroleum
Garfield
Dawson
Prairie
Powell
Granite
Meagher
Wheatland
Musselshell
Rosebud
Custer
Fallon
Jefferson
Golden Valley
Treasure
Ravalli
Deer Lodge
Silver Bow
Gallatin
Sweet Grass
Stillwater
Big Horn
Powder River
Carter
Beaverhead
Madison
Park
Carbon


How accessible is electronics recycling?
Review:
Electronics Recycler
2 locations
Annual Events
Community partners/support is essential
DEQ will continue
Recyclers don't like them
Retail Programs
Located in bigger communities
Some free
Some charge
Manufacturer Programs
Online & Mail-in
Sometimes free
Sometimes charges apply
Some are in retail stores
Some are at a recycling center
Often limited or size restrictions
No advertising or education
Limited signage in stores
Often employee education is lacking

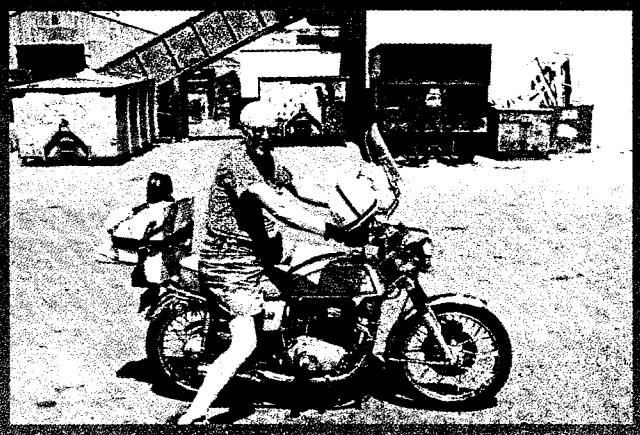
The public suggested:

- Recycling should be FREE, or
- Consumers / Manufacturers should SHARE recycling costs
- Convenient
  - Landfill, Transfer Stations
  - Recycling Centers
  - Retailers
- No Exporting

From the 2006 Surveys


Convenient? Accessible?
Comments Received:
"This is confusing – just tell me where to take it."
"Why can't I just drop it off somewhere? I don't have Internet."
"Why can't this be simple? I recycled my cell phone for free and it was easy."
"Will my computer go overseas? I don't want some kid recycling this, especially if I'm paying this much."
"Well, they sure make it difficult, don't they?"
The result of so many diverse programs is a hodge-podge of recycling options, sometimes free, often not.
There are a confusing number of websites and programs to understand and participate in.

Appendix D



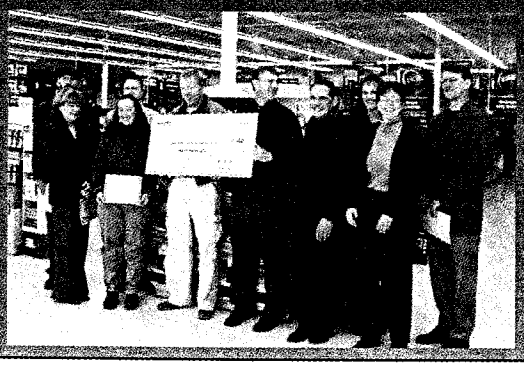
- Must be motivated
- Must be Internet savvy
- Must know the brand (when calling the organization recall the brand name or item name)

Often must be willing to:

- Travel to a drop-off location,
  - Pay a recycling fee (Sometimes),
- Package for shipping,
  - Pay for shipping (Sometimes)
- Hold items until annual events.

Motivated recyclers are discouraged

Department of Environmental Quality



Staples Check Presentation
Butte Schools, 2006

Accomplishments

- First Rocky Mountain state to partner EPA's Plug-in to E-Cycling program.
- First state in our region to engage manufacturers.
- Started as a pilot project; quickly grew to include more communities; much larger program.
- Majority of communities participating have continued with annual events; some looking at permanent programs.
- Advocate for rural access to any federal recycling legislation
- Survey work quoted by EPA regarding public wish for no exporting.

Measuring Electronics Recycling

- Don't know actual volume recycled
  - No required reporting
  - In-state recyclers
  - Out-of-state recyclers
  - Manufacturers
  - Retail Stores
- EPA estimates only 10-15% of electronics are recycled each year
- Federal 'study' legislation introduced
  - Meanwhile 20 states have enacted their own e-scrap recycling laws

Thank You
recycle.mt.gov
Sandra Boggs
Recycling and Marketing Development Specialist
Montana Department of Environmental Quality
406-841-5217
sboggs@mt.gov

Appendix E

Nowakowski, Sonja

From: Holland, Steve [sholland@coe.montana.edu]
Sent: Tuesday, March 16, 2010 10:56 PM
To: Nowakowski, Sonja
Subject: RE: EQC Follow-up

Sonja,

I was out of town all of last week... sorry for the delay responding.

I have serious concerns about MMEC doing anything in the regulatory arena. It would erode our ability to provide unbiased technical assistance, which is what we are chartered to do.

We are currently working with DEQ on several waste reduction fronts... especially energy. We readily work with them on educational and other non-regulatory projects.

Another concern, if I recall correctly, was that the bill required us to dedicate a percentage of the effort toward this effort. That could reduce the state match we have available that we need for Federal funds. The result would be a reduction in total funds we have and a reduction in the services we were chartered to provide.

I'd be happy to talk more about how we can work directly with DEQ and other state agencies. Please let me know if I can be of assistance.

Steve
Montana Manufacturing Extension Center

From: Nowakowski, Sonja [mailto:snowakowski@mt.gov]
Sent: Monday, March 08, 2010 12:42 PM
To: Holland, Steve
Subject: EQC Follow-up

Director Holland,

My name is Sonja Nowakowski, and I staff the Environmental Quality Council (EQC). During the EQC's 2007-08 Climate Change study, the EQC brought forward draft legislation (House Bill No. 22) to provide additional funding to the Montana Manufacturing Extension Center and require a portion of that funding be used in collaboration with the DEQ to promote recycling. As the EQC worked on the legislation, you raised concerns about working with a regulatory agency such as DEQ and measuring results based on the bill.

This interim, the EQC is working on a study dedicated to recycling, as required by Senate Joint Resolution 28. At the EQC's March 4-5 meeting, Representative Dickenson asked that the EQC again contemplate asking the Montana Manufacturing Extension Center to work with the DEQ to promote recycling efforts. Representative Dickenson asked if you would have the same concerns as you did about HB 22 last interim. She asked that I visit with you about the proposal and report back to the EQC.

When you have an opportunity, could you let me know if you continue to have concerns about a potential proposal that would be similar to HB 22 (as contemplated by the 2009 Legislature). Feel free to call me any time, if you have additional questions about the EQC's recycling study.

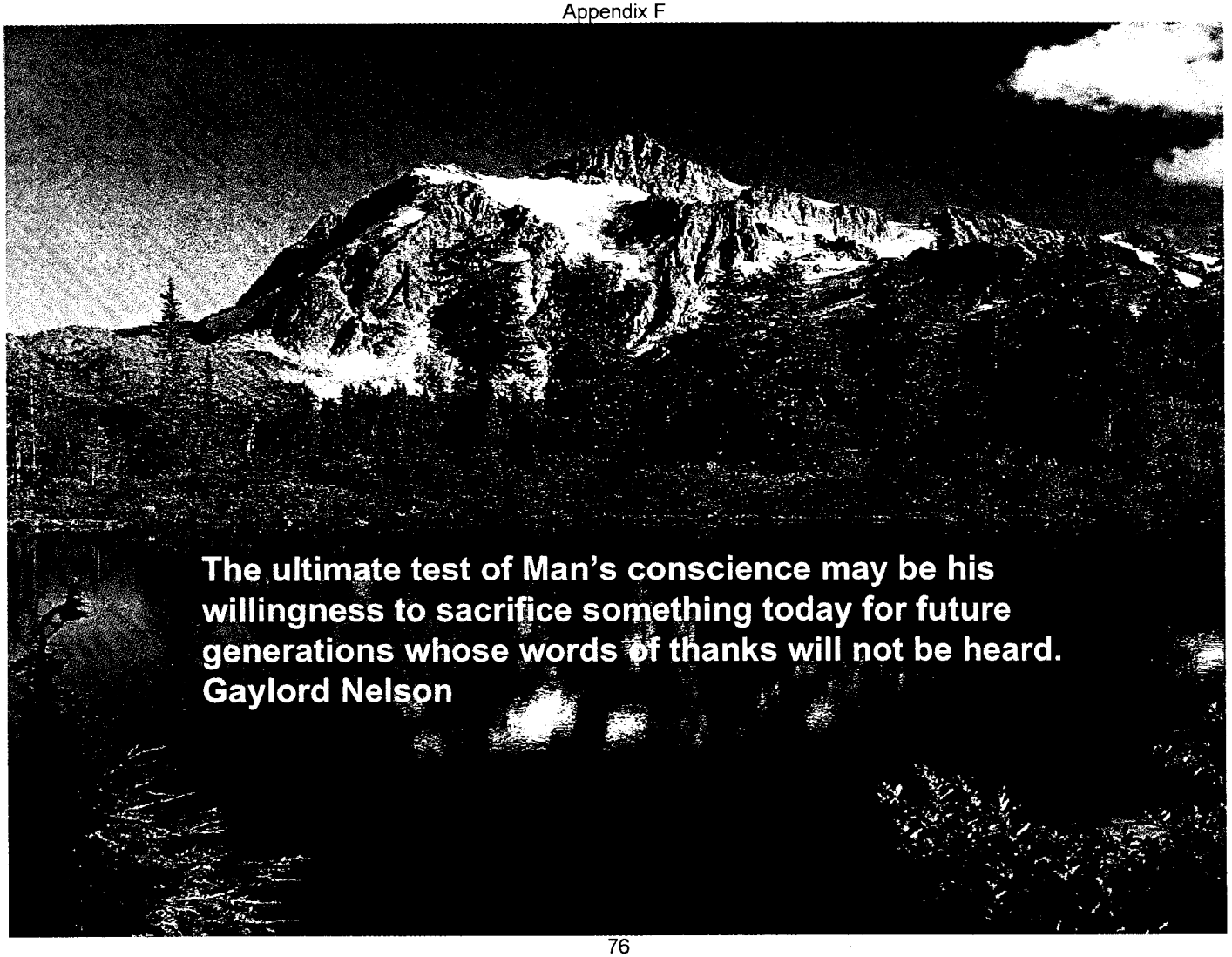
I look forward to hearing back from you.

Thanks,
Sonja Nowakowski

Sonja Nowakowski

Appendix E

Research Analyst
Montana Legislative Services Division
Room 171E, State Capitol
PO Box 201704
Helena, MT 59620-1704
Phone: (406) 444-3078
Fax: (406) 444-3971
Email: snowakowski@mt.gov

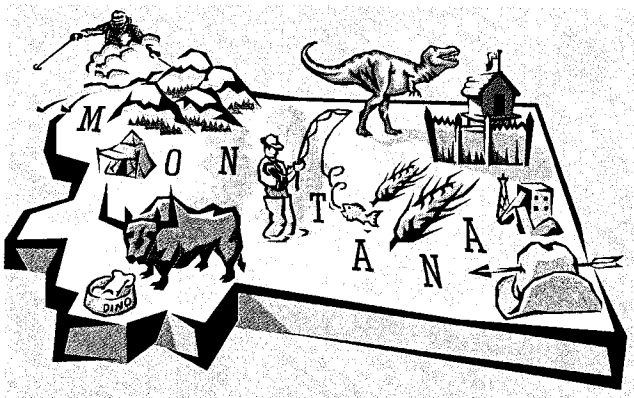

The ultimate test of Man's conscience may be his willingness to sacrifice something today for future generations whose words of thanks will not be heard.
Gaylord Nelson

Appendix F

Introduction

Across the country, local and state governments are faced with the challenge of meeting recycling goals, reducing solid waste tonnage and minimizing costs.

Adding to this challenge is implementing recycling in rural areas. Solving rural recycling issues is not an easy solution and is only a small part of a larger problem that local and state governments are faced with regarding recycling as a whole.



Montana Is A typical "rural" state, by definition

Rural Areas are designated as having population densities less than 999 persons per square mile and greater than 1 person per square mile.

Montana is the fourth largest state averaging 147,000 square miles with a population of 967,440 people. We have 56 counties and 22 of those have less then 5,000 people. We have an average of 6.2 people per square mile.

Hence the old saying we have more cattle than people!

Appendix F

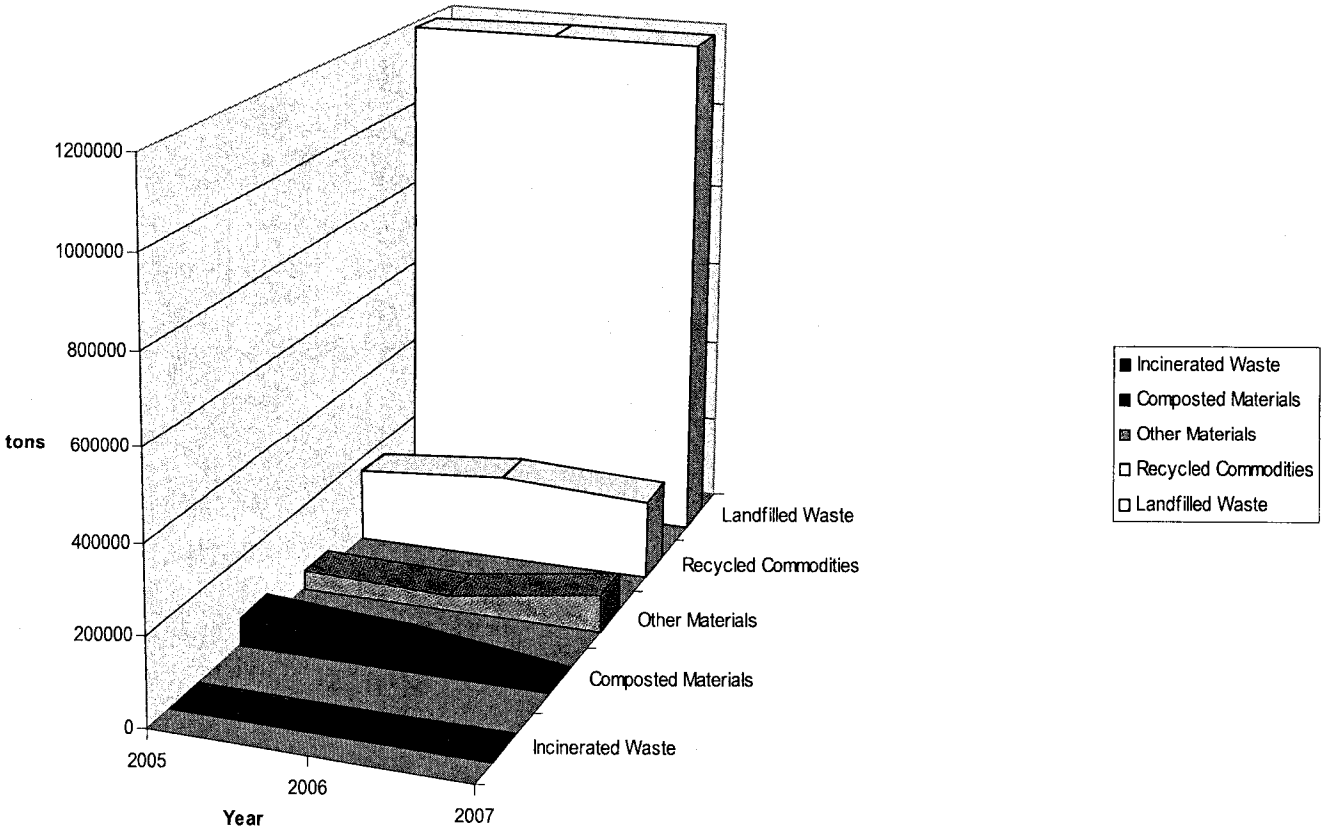
Rural areas have solid waste management problems just as urban areas do.

Rural communities are striving alongside their urban counter parts to meet recycling and reduction goals.

Montana has a current waste reduction goal of 19% by 2011

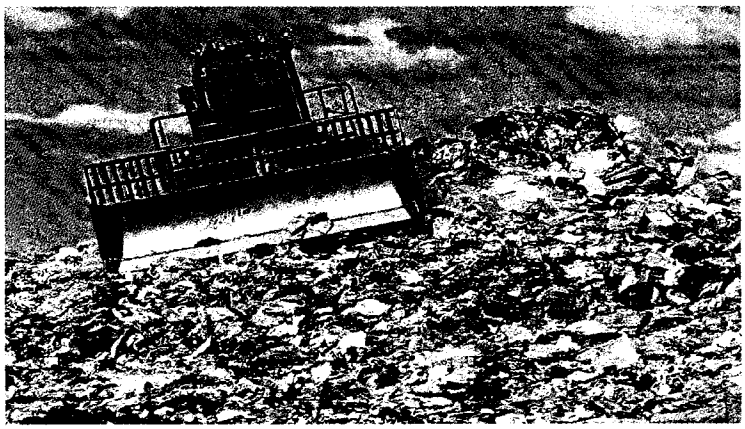
Appendix F

Trends in Waste Generation, Recovery, and Disposal



These recycling and reduction goals are important because many communities are trying to offset the cost of climbing solid waste fees and preserving valuable landfill space.

Landfill expansion is expensive!
The average cell expansion for a landfill cost around 2 million dollars, and many of our rural communities will have huge burdens trying to meet these costs.



Recycling can be a solution

View recycling costs as part of the entire municipal solid waste (MSW) management strategy.

For example, a recycling program should be considered a viable method for **reducing overall disposal costs**

Disposal Costs

Example:

Landfill cost to dispose one ton garbage

Average tipping fee $27.00

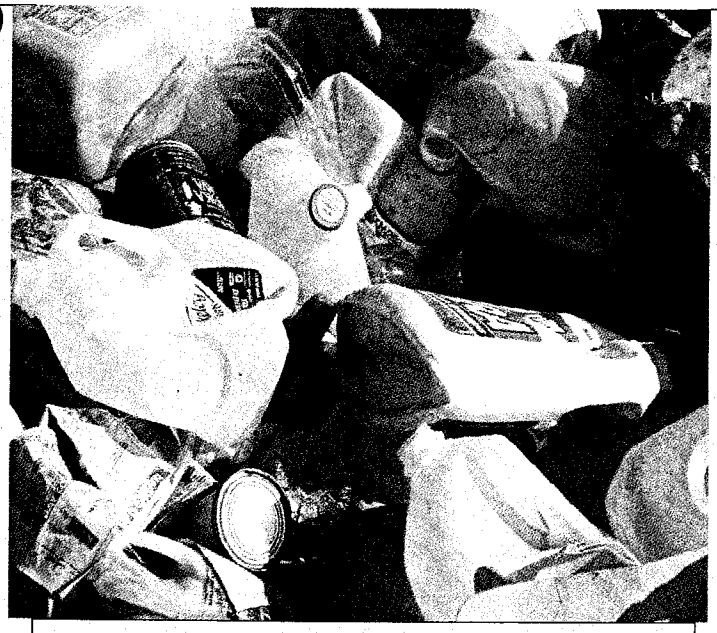
Landfill airspace per ton $7/$10 dollars

Average $37.00 to dispose

In 2007, Montanans generated

1,455,595 tons

of trash



Landfills Today

At $7/ton it cost:

$10,189,165

to bury all that trash!

Landfills Today

Landfill space is valued at

$4 - 10/ton

182,064 tons were recycled in 2007

$1,274,448 of landfill space was saved by recycling in 2007 (At $7/ton)

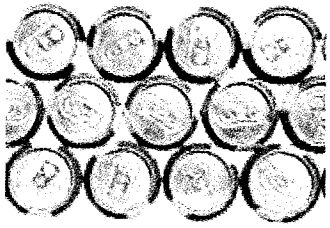
Landfills Today

Recycling Means:

- Income Generated from Sales
- Landfill Cost Savings

Rural Landfill Example:

- Licensed as Intermediate (5,000 – 25,000 tons/year)
- Only recycles aluminum cans at Landfill
- Far from Markets
- Landfill space valued at $7/ton



Aluminum Recycling

$600/ton -Today's market prices ($0.30/Lb)

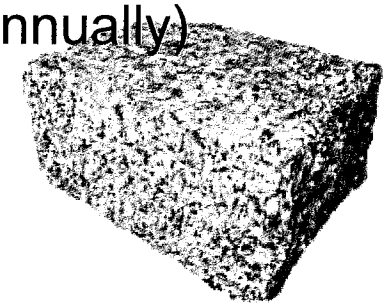
30 tons x $600 = $18,000 from sales of Al cans

+ 210 Landfill space savings

$18,210 total value of Al Cans to landfill

- 1,050 Back-haul cost to market (1.4 trucks w/22 ton max.)

$17,160 Net value to Landfill (annually)



Landfill Example
Recycling
$3,540 Net value to Landfill (annually)

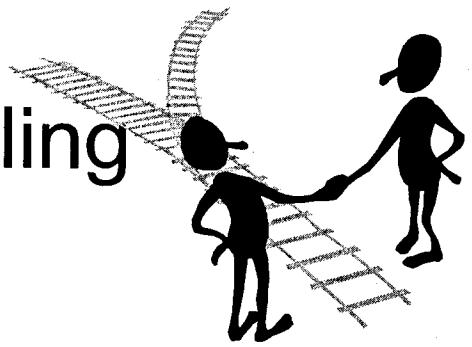
Appendix F

How Markets Affect Recycling Commodities

Reminder

Collecting & Stockpiling recyclables does Not mean the market will be developed

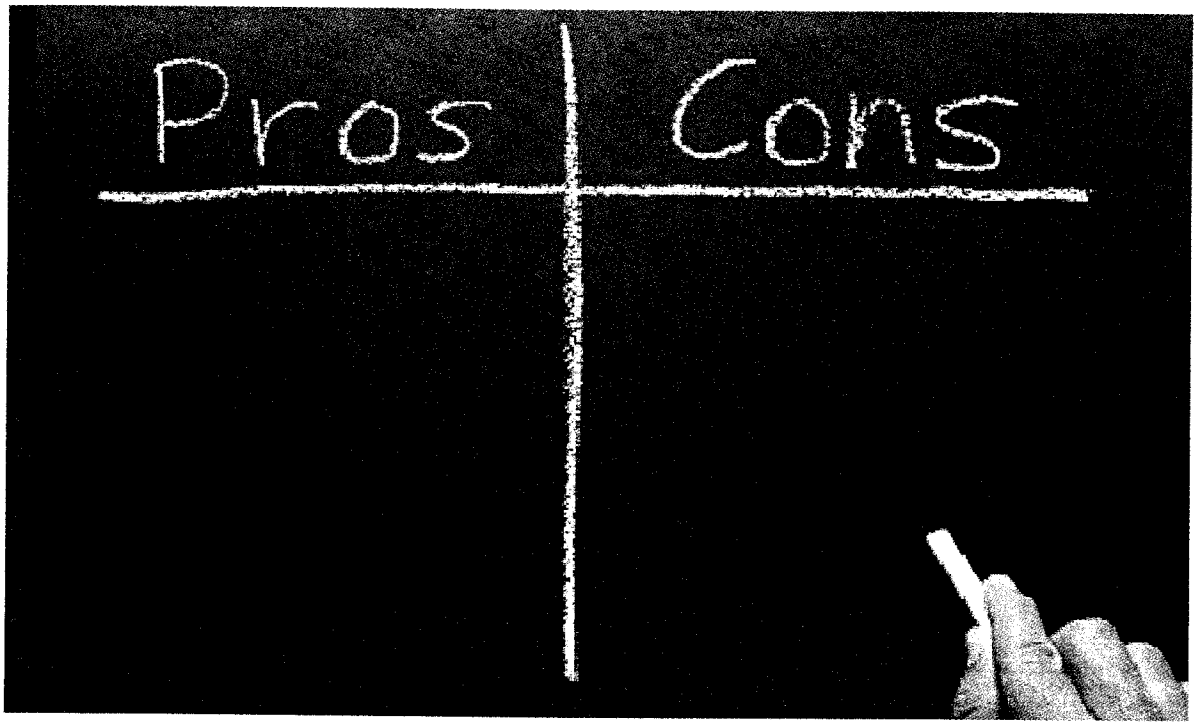
Markets & Recycling



- The scrap market in general, is closely tied to economic conditions because demand for some recyclables tracks closely with markets for new products.
  - Cardboard, for instance, turns into the boxes that package electronics. Rubber goes to shoe soles, Metal is made into auto parts.
- Recycling is a **cyclical industry** that has seen price swings before. The industry follows consumer spending trends.

- One reason prices slid so rapidly this time is that demand from China, the biggest export market for recyclables for the U.S., quickly dried up as the global economy slowed.

Appendix F



Of
Rural Recycling

Rural Recycling Efforts can be Hampered by

- Low population, tax base, limited local government budgets and personnel, low-density housing and limited commercial development.

- Some of these areas are faced with solid waste volumes that fluctuate due to seasonal residents or tourists.

- Accumulating enough processed materials

Strengths

That assist rural communities in developing and operating recycling programs

Rural residents have a strong sense of community

Appendix F

A HISTORY

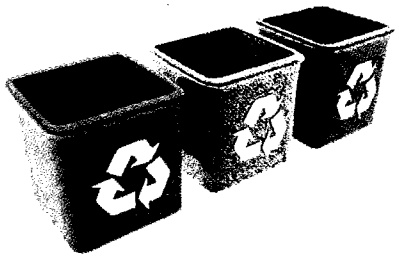
OF

VOLUNTEERING

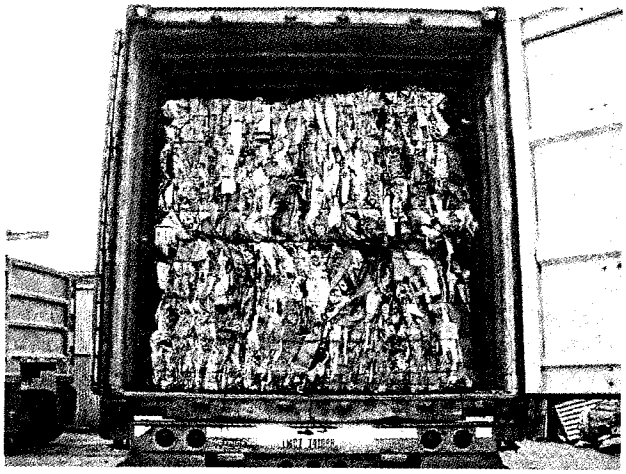
Appendix F

Creative & Thrifty approaches to Solid Waste management

Each **County**, **City** and **Town** is unique:
There is no one right way to recycle

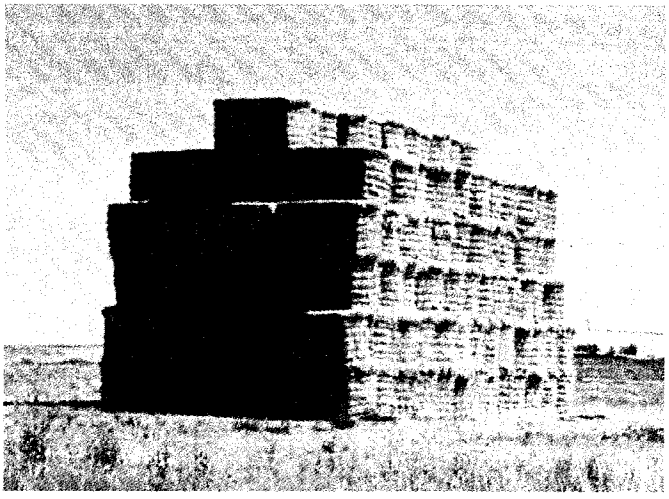


There is one commonality each of them must have to make recycling successful



Similar?

Preparing
recyclables
For transport



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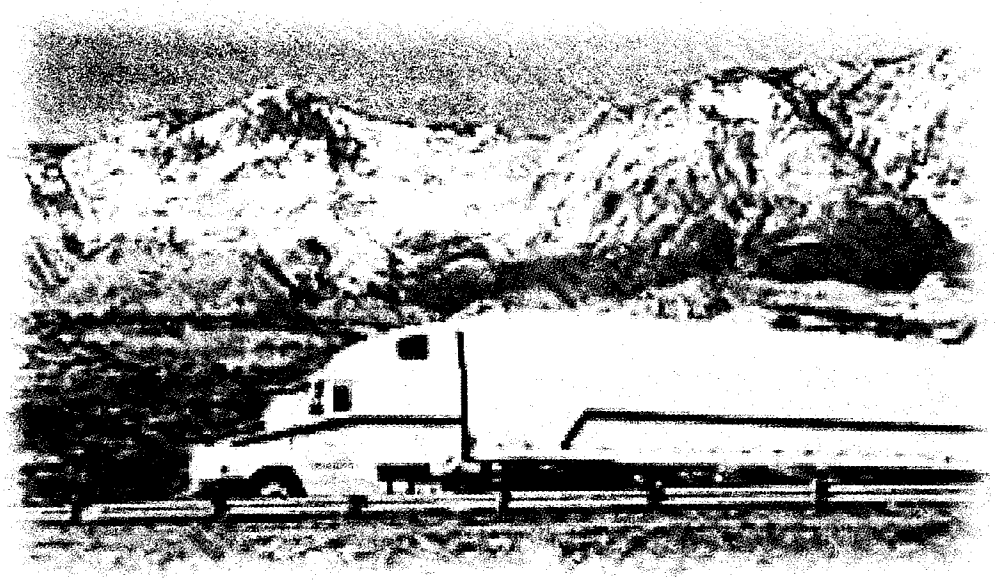


Transportation in Montana will always be A major factor

Understanding transportation & requirements for loads is a key to pricing and markets.

Transportation on the average runs $1.80 a mile. Maximizing your load is very important to get full value of the trip.

Example: To ship a full truck (22 tons) of baled paper to Spokane (310 miles) would cost on the average about $550.00 in shipping. The paper would bring $25.00 a ton or $550.00 in revenue. Landfilling this product at $27.00 a ton you pay $594.00.

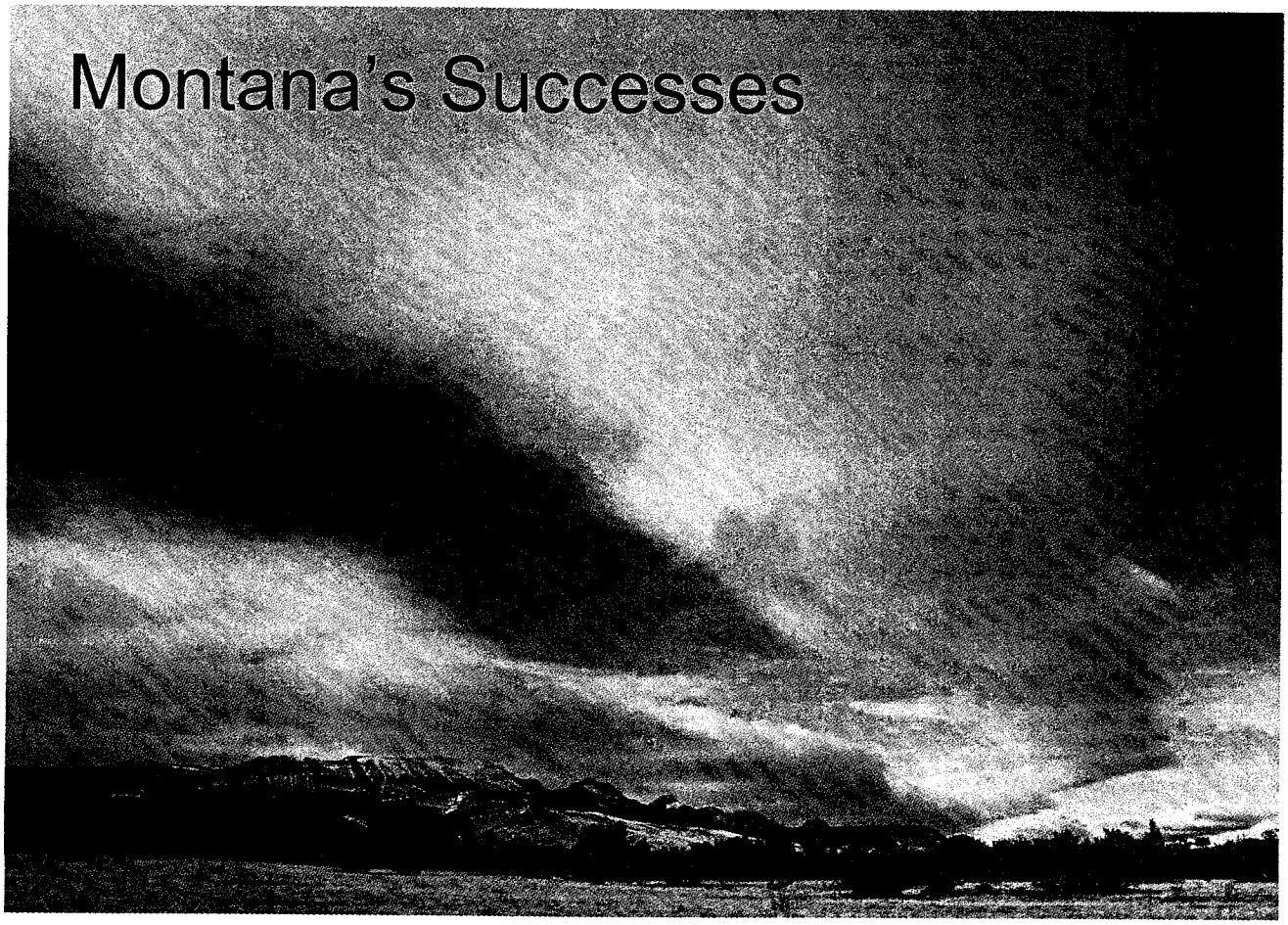
A regional recycling approach will help to overcome the challenges facing individual rural governments

- Increased volumes of recyclables, will open marketing opportunities and increases revenues.

- Shared costs for equipment, personnel, processing, transportation, marketing, facility capital and operating costs.

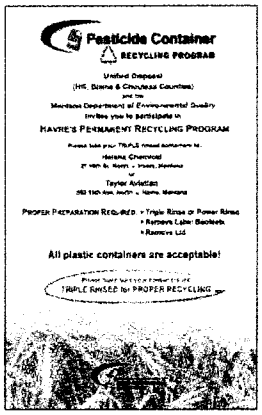
- Regional economic stimulus from new collection and processing jobs

Appendix F

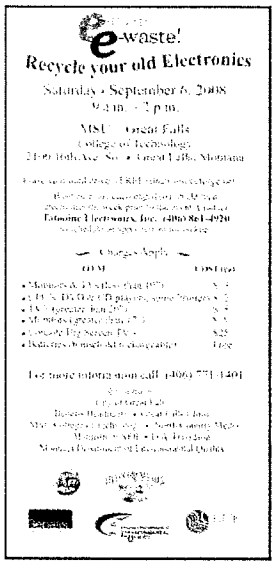


Montana Department of
ENVIRONMENTAL QUALITY

Small overview of Accomplishments



- 866 tons of electronics
- Over 100 tons of Ag plastic
- 610 lbs of mercury containing materials
- 5,960 lbs from the chemical school clean out program
- Numerous National awards for accomplishments



20 X 10 Montana Leading by Example

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT KIT

Recycle Eureka

Lead by Example mt.gov Sustainable Government

REDUCE BUSINESS JUNK MAIL