

Surface Water Protection Case Study

Project. Greater Gallatin Toilet Tradeout and Bozeman Toilet Rebate Program

Location. Bozeman, MT

Population. 39,500

Contact. Brian Heaston, City of Bozeman; (406) 582-2282

Start of Program. March 2008

Program Description. Through a partnership with the city of Bozeman, area businesses, nonprofits and private citizens, the Toilet Tradeout program allowed people to trade in their old toilets for water-efficient models at a reduced cost. EPA WaterSense certified toilets were available for purchase for \$149 at the swap, approximately half the original price. In addition, city residents then qualified for a rebate from the city of Bozeman which awarded \$75 for every high-efficiency, pre-1996 toilet replaced. Area plumbers agreed to charge a flat fee of \$150 to remove the old models and install the new toilets. The actual toilet swap ran for 43 days, in which residents could exchange the models at a local plumbing supplier. A donated dumpster was set up for disposal of the older models. Instead of going to the landfill, the toilets were then taken to a Belgrade gravel yard to be ground up for pavement. The City of Bozeman rebate program runs continuously.

Goals of Program.

- Initiate interior water conservation measures in accordance with city water conservation plan
- Raise awareness of city water conservation

Target Audience. Residents of Bozeman and greater Gallatin Valley

Program Budget. \$50,000 to fund the rebate program and advertise the event

Results of Program. The program was very well received by the community. In the past year it has saved the city an estimated 3 – 3 ½ million gallons of water.

Barriers encountered. A marginal number of citizens were concerned with the use of city utility dollars to fund a conservation program. The overwhelming response was positive, however.

Program Strength. The Toilet Tradeout was designed to kickstart the city rebate program and raise awareness of water conservation. Over a year after the event, the city still receives approximately one rebate application each week.

Suggestions. Only 2 models were available for purchase at the Toilet Tradeout. The City of Bozeman toilet rebate program features over 200 EPA-certified models for residents to choose from in order to provide a greater range of choices.

Data Collected. July 16, 2009

Construction and Maintenance Case Study

Project. Bozeman Public Library LEED Certification

Location. Bozeman, MT

Population. Approximately 39,500

Contact. Alice Meister, library director; 582-2401, ameister@bozeman.net

Start of Program. 2001

Program Description. The Bozeman Public Library was designed and constructed to meet the U.S. Green Building Council's green building rating system, Leadership in Energy and Environmental Design (LEED). The certification is awarded to buildings that focus on energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. During construction of the library, recycled, non-toxic or non-polluting materials were selected and used wherever possible. Over 94% of the construction debris was recycled and diverted from the city landfill. Staff and patrons are encouraged to recycle white paper, plastic bottles, aluminum cans, cardboard, newspaper, and magazines. The recycling is picked up for free by Full Circle Recycling. A grant from NorthWestern Energy supported the photovoltaic (PV) system, efficient lighting, heating, cooling, and humidification. Six LEED energy credits were awarded for the library building, indicating a 27% reduction in energy use over conventional buildings. Waterless urinals, water-saving faucets, and irrigation systems reduce demand on the municipal water system. Light pollution is reduced as exterior lighting does not impact night skies and interior lighting does not trespass from the site. Alternative transportation is encouraged through available public transportation, bicycle racks, and preferred parking for carpooling and eco-friendly vehicles.

Goals of Program.

- Demonstrate good stewardship of public funds
- Create a building that will be described as beautiful, exciting, and inviting, and demonstrates and teaches respect for our natural environment,
- Minimize the cost of recycling and maintenance
- Respond to the wants and needs of the citizens of our community for lifelong learning

Target Audience. Residents of Bozeman and greater Gallatin Valley

Program Budget. \$4,000,000 to buy property and clean it up; \$10.7 million for the building

Results of Program. All goals were met in the completion of the library. The only aspect of the project that was not fulfilled was preserving the old depot that was previously located on the site.

Barriers encountered. The project ended up with higher building costs than anticipated, which led to ongoing funding issues and borrowing money from the City of Bozeman to complete the project.

Program Strength. Bozeman succeeded in building a green, LEED certified building that is the anchor of downtown.

Suggestions. More bond money should have been secured from the City from the start, as the initial cost estimates were too low. Current projects at the library include working on the grounds: adding benches, landscaping, and creating a sculpture park for the library. Other projects include installing stack lighting for the inside of the building and setting up a radio frequency identification system to keep track of library materials.

Data Collected. July 16, 2009

Medical Waste Case Study

Project. Waste Amalgam Treatment, Education and Recycling (WATER) Program

Location. Missoula, MT

Population. 68,200

Contact. Sherry Kenyon, Lab Pretreatment Supervisor, Missoula Wastewater Division; (406) 552-6606, skenyon@ci.missoula.mt.us

Start of Program. 2007

Program Description. The WATER program was a joint effort of the Missoula Wastewater Treatment Plant, the Missoula City-County Health Department, The Montana Dental Association and Montana Department of Environmental Quality. It has been undertaken by local dentists and is modeled after the American Dental Association's best management practices, which encourage dentists to recycle the mercury amalgam that is used in silver fillings. The program promoted the use of amalgam separators in dental offices, which filter out mercury waste before it goes down the drain or in the trash and can remove up to 99% of mercury particles from the wastewater. A Missoula dentist served on the planning committee to act as a liaison between the city departments and dental offices and provide expertise on the issue.

Goals of Program.

-Have 100% of dentists connected to the city sewer use an amalgam separator

-Accomplish this goal through a cooperative, volunteer approach rather than a mandated program

Target Audience. Dental offices in Missoula that work with mercury fillings. Offices that do not deal with amalgam fillings were exempt (such as some orthodontist offices).

Program budget: No formal budget was allotted for the program. The State of Montana and the Montana Dental Association contributed funds for a training night for dental assistants and the creation of a decal for dental offices to display that identified them as an environmentally conscious office.

Results of Program. By December of 2008, 70% of qualifying Missoula dental offices had amalgam separators installed and in use. An additional 11% plan on installing them, and 8% declined to take part in the voluntary program.

Barriers encountered. Although the majority of dentists supported the program, some offices felt that they were being singled out for contaminating the water supply. The Missoula Wastewater Department created a brochure that described the process from the treatment plant perspective that provided information to the dental offices and the general public to combat this problem.

Program Strength. The program was successful due in a large part to the participation and involvement of local dentists and the Montana Dental Association in the decision making process.

Suggestions. It would have been helpful to find some resources for help defray costs of installing the separators in dental offices.

Data Collected. July 28, 2009

Special Collections Case Study

Project. Used Oil and Antifreeze Recycling Program

Location. Billings, Montana

Population. Approximately 104,000

Contact. Barb Butler, Environmental Compliance Coordinator, Billings Solid Waste Division, PO Box 1178, Billings, MT 59103, (406) 247-8633

Start of Program. 2000

Program Description. The City of Billings provides two collection sites for used motor oil and antifreeze that are open to residents of Billings. One is located in town in the parking lot of the Solid Waste Division and the other is at the landfill. The landfill site is open seven days a week, and the unmanned office drop-off is open Monday-Friday and checked every few hours. Containers are provided at each site so residents do not need to throw away their own containers. All oil and antifreeze is recycled locally through Oily Waste Processors.

Goals of Program.

-Provide easily accessible drop-off points for residents to dispose of used oil and antifreeze in an environmentally friendly way.

Target Audience. Residents of Billings

Program Budget. No yearly budget. Recycling is done for free by Oily Waste Processors.

Results of Program. The program is successful and both drop-off sites are frequented often. In 2008, the City recycled 24,000 gallons of used oil and approximately 1,000 gallons of used antifreeze from the two permanent drop-off stations.

Barriers encountered. none

Program Strength. The program allows residents to dispose of harmful substances at no cost.

Data Collected. July 21, 2009

Special Collection Event Case Study

Project. E-Rase Your E-waste Program

Location. Sidney, Montana

Population. 4,800

Contact. Jackie Couture, Safety and Occupational Health Specialist; (406)433-9422, jackie.couture@ars.usda.gov

Start of Program. 2005

Program Description. At what has now become an annual event, residents were invited to drop off their electronic waste (computers, televisions, etc) and receive a discounted rate for the cost of recycling the outdated products. The event took place in the parking lot of the USDA-ARS Northern Plains Agricultural Research Laboratory in Sidney, where volunteers collected and weighed the electronics. The full cost of recycling the e-waste was \$0.40 per pound but donations from sponsors cut

the cost in half for participants. To accommodate residents who were unable to attend the one-day event, the Richland County Solid Waste Department provided a storage and collection point at the county shop during the month of August, where each Thursday volunteers were available to accept and process e-waste and store it until the actual event. The event was organized by the Richland County Local Emergency Planning Committee, Richland Opportunities, Inc., the USDA-ARS Northern Plains Agricultural Research Laboratory, the Richland County Retired Seniors Volunteer Program, the Local Community Emergency Response Team, and the Montana DEQ.

Goals of Program.

- Collect more e-waste than each previous year
- Keep dangerous materials out of the landfills

Target Audience. Richland County residents

Program Budget. No formal budget is allotted for the program. Donations were received from Richland County and the City of Sidney Health Center. The electric provider, Lower Yellowstone REA, donated advertising by placing notices into their billing statements. Additional advertising was provided by the Montana DEQ.

Results of Program. The 2008 event was a huge success, with over 46,000 pounds of recycled e-waste collected from participants. Since the program's inception, over 40 tons of electronic waste has been kept out of the landfill.

Barriers encountered. Even though it was advertised that there would be a cost for recycling the electronics, some people did not realize they would have to pay. Each year the residents become more aware of the program guidelines.

Program Strength. There has been substantial positive feedback from residents saying the program is very worthwhile.

Suggestions. At the 2009 swap, people will receive 75% off the cost of recycling old television sets that became obsolete in the digital switch.

Data Collected. July 28, 2009

Special Collection Event Case Study

Project. E-Waste Collection Event

Location. Billings, Montana

Population. Approximately 104,000

Contact. Barb Butler, Environmental Compliance Coordinator, Billings Solid Waste Division, PO Box 1178, Billings, MT 59103, (406) 247-8633

Start of Program. September 2007

Program Description. Once a year, Tatoonie Electronics, a local Billings business, hosts an event where old electronics can be dropped off to be recycled. The City of Billings provides a \$10,000 subsidy to cut the recycling costs approximately in half. Every electronic device is accepted except for large appliances. Residents who drop off electronics are still charged a nominal fee per pound of waste as the city subsidy does not cover the entire cost. No city personnel work at the event but advertising is provided by the City of Billings.

Goals of Program.

- Support a worthwhile business in Billings
- Raise awareness that electronics should be recycled, even though there are no laws banning them from landfills
- Introduce people to the concept of recycling electronics in the hope that they will continue the practice

Target Audience. Residents of Billings

Program Budget. \$10,000 per year

Results of Program. Initial program interest was high, followed by a drop in attendance at the second annual event. In 2009, the program was very successful, with over 40,000 pounds of electronics recycled.

Barriers encountered. Although heavily discounted, the program is not free. Initially there were complaints about having to pay for recycling.

Suggestions. Next year the City plans to hold two events, doubling the budget to \$20,000 per year.

Data Collected. July 21, 2009

Recycling Case Study

Project. Weekly Curbside Recycling of Yard Waste

Location. Billings, Montana

Population. Approximately 104,000

Contact. Barb Butler, Environmental Compliance Coordinator, Billings Solid Waste Division, PO Box 1178, Billings, MT 59103, (406) 247-8633

Start of Program. September 2007

Program Description. The City of Billings purchased a supply of 90-gallon wheeled bins and additional garbage trucks. City residents can request up to two bins free of charge to place on the curb each week for free pickup. Only yard waste such as leaves, tree limbs, and grass clippings is allowed in the bins. The waste is transported to the city landfill, where it is turned into compost and wood chips. Anyone is welcome to come and pick up the compost and wood chips free of charge.

Goals of Program.

-Divert organic waste from landfill

Target Audience. Residents of Billings

Program Budget. Initial investment of \$2 million dollars for bins and six new garbage trucks

Results of Program. Hugely successful. A large percentage of residents in city zones covered by the program have requested the bins.

Barriers encountered. The truck drivers had to check the bins initially to make sure that residents weren't putting household garbage in them.

Suggestions. Currently the free service is provided to half of the city. The entire city will be covered in two years as funding permits.

Data Collected. July 21, 2009

Medical Waste Case Study

Project. "Green for Good" Program for Environmental Sustainability at St. Patrick Hospital and Health Sciences Center

Location. Missoula, Montana

Population. 68,200

Contact. Beth Schenk, Facilitator of Women’s Health; St. Patrick Hospital and Health Sciences Center, 500 W. Broadway, Level 3, Missoula, MT 59802, (406) 329-2730, BSchenk@saintpatrick.org

Start of Program. October 2007

Program Description. The St. Patrick Hospital campus began a concentrated effort to increase sustainability in all aspects of operation. Under energy management changes, all 32 watt fluorescent light bulbs were switched to 28 watt, a new high-efficiency and low emission generator was installed, and employees were rewarded for commuting sustainably through reduced rate bus passes and “Downtown Dollars” for carpoolers. In the waste management department, a goal of 10% of total waste recycled was set. Leftover food was composted for pig slop, and recycling was available campus-wide through the purchase of 28 new recycling containers. Each employee, volunteer, and medical staff member received a stainless steel water bottle to discourage the use of plastic disposable bottles. Employee engagement was achieved through a bi-weekly Green Corner in the employee newsletter and an extensive educational Green 4 Good website on the hospital intranet.

Goals of Program.

- Eliminate waste, choose less toxic products, and reduce, reuse and recycle wherever possible
- Save or use renewable energy and decrease the hospital’s carbon impact
- Reduce pharmaceutical waste, institute a “green cleaning” program using less harmful substances, improve paper recycling and encourage staff efforts in responsible commuting

Target Audience. Medical staff, employees and volunteers of St. Patrick Hospital and Health Sciences Center

Program Budget. Minimal funds for recycling fees and other expenses are diverted from the Mission Leadership budget.

Results of Program. The program has been very successful. Due to the collective efforts of the hospital staff, 20% of total hospital waste was recycled in 2008, doubling the goal. The hospital was awarded an Energy Star Award and an Ecostar Award from the Montana Governor’s Office, as well as other recognitions. St. Patrick’s hosted a seminar on Topics in Environmental Sustainability in Healthcare, attending by healthcare providers across the state of Montana. In addition, the hospital sponsored recycling in Missoula Public Schools and started development on a model to consider environmental impacts as part of capital purchasing decisions.

Barriers encountered. It took a large effort to change the behaviors of 1600 staff members, 250 physicians and 250 volunteers. Additionally, health care issues are complex and it was often difficult to decide which measures will provide the most value in terms of environmental protection, cost, ability to engage staff, and clinical reliability.

Program Strengths. The program is comprehensive, broad, and involves most of the staff. Goals are set and included in the 3-year strategic plan. The hospital is involved in the community and has shared the successes and ideas of the Green 4 Good program in several public forums.

Suggestions. More attention should be focused on energy use in healthcare in terms of conservation and education, both locally and nationally. Pharmaceutical disposal is a big issue that St. Patrick's is working on, and revised regulations would help with the complications. The hospital intends to focus more on toxin reduction in cleaning supplies, anesthesia gases, and mercury products. In addition, the hospital would like to obtain more local foods.

Data Collected. July 16, 2009

Waste Reduction Case Study

Project. Mobile Glass Pulverizer

Location. Butte, Montana

Population. 31,700

Contact. Bill Crane, Headwaters Cooperative Recycling, Inc., PO Box 1570, Helena, MT 59624, (406) 443-3101, the manager@headwatersrecycle.com

Start of Program. 2006

Program Description. A mobile glass pulverizer based out of Butte was obtained in response to the need to recycle glass in widespread areas of Montana. The focus of the program was to create secondary products from the recycled glass such as sand and gravel to be used in the immediate area for projects. Initially all glass was recycled as a cement substitute and the entire first year of the program was devoted to processing three years worth of stockpiled glass. Recycling projects have been undertaken at various points in the state, including Boulder, Helena and Missoula. A 100% recycled concrete product created from glass and fly ash (residue left from coal in electrical generating plant) was used in a LEED certification project in the Missoula Credit Union floor and walls. Other uses for the recycled glass have been for landscaping gravel, road base, and concrete.

Goals of Program.

- Develop a method for dealing with glass products.
- Create a mobile demonstration of how to recycle glass and find a market for the resulting product.

Target Audience. Statewide across Montana

Program Budget. Original purchase of glass pulverizer: \$140,000. Annual operating expense: \$17,000

Results of Program. Approximately 1,200 tons of glass per year is recycled with the pulverizer.

Barriers encountered. One of the biggest issues with the program has been the challenging finances. While the costs of recycling glass are good in comparison to landfilling the material, it is not a profitable endeavor. It has also been difficult to find markets for the pulverized glass, finding commercial buy-ins, and getting municipalities to understand the benefits of recycling glass in relation to the costs.

Program Strength. The program enables communities to utilize a recycled product such as gravel and sand in their own municipalities without having to transport the materials. In addition, a community's ability to recycle glass encourages citizens to recycle more in general.

Suggestions. A mobile pulverizer is not the best way to process glass. It is expensive to transport and is limited in terms of space for driving on the road. There are no established markets for secondary glass products such as sand and gravel substitute – they have to be independently developed.

In the future, every major city in Montana should own their own stationary pulverizer and should plan on municipal projects that use up the end result, such as in road projects, pavement, and/or landscaping. A concrete work surface and an overhead roof to work under would make the pulverizing process much easier.

Data Collected. July 30, 2009

Waste Reduction Case Study

Project. "Recycle Eureka" Recycling Program

Location. Eureka, Montana

Population. Approximately 1,000

Contact. Dusti Johnson, Recycling and Marketing Development Specialist, Montana DEQ; 406-841-5253, dujohnson@mt.gov

Start of Program. 2007

Program Description. The town of Eureka has no local landfill and the nearest recycling facility is located 89 miles away. Residents started looking at ways to reduce their waste output and lessen their dependence on the remote landfill. Quarterly recycling drives were established where citizens would

save up their recyclables and pool resources to transport them to the recycling facilities. The program relied on donations from locals who donated trailers and trucks. Large grain bags known as “super sacks” were used to transport the products. Initially one day was devoted to collecting recyclables and educating people on what products can and cannot be recycled, and the program was so popular that it became a quarterly event. The local schools became involved, with students collecting paper and other recyclables and bringing them on the school buses to drop off when they would take part in sporting events in Kalispell. Residents decided to create a permanent cardboard recycling program in partnership with the local grocery store, which would bale all of the cardboard collected in town. Bins donated by the county were placed around town for businesses and residents to dispose of their cardboard. The bins were donated by the County and refurbished by local businesses.

Goals of Program.

- Get one commodity recycled on a regular basis
- Educate residents on recycling practices in conjunction with litter prevention

Target Audience. Residents of Eureka

Program Budget. No formal budget. The sale of recyclables was used to cover gas and transportation expenses. All time was donated.

Results of Program. The program has been hugely successful. Since the citizens were aware of how to present the recyclables, the products were very clean and worth more money when taken to Kalispell to be processed. In addition, the community has a 90% collection and recycling rate of cardboard.

Barriers encountered. The popularity of program led to overwhelming response, which initially created some logistical issues. Eureka is a traditional community and a preservation approach was taken to gain support for the project rather than a push in the direction of environmentalism.

Program Strength. The program was driven by community members in a sparsely populated area. The citizens take pride in the program and there are no contamination issues with the recyclables. Any money made on the program has been spent on community projects that benefit the entire city, such as beautification projects and a new town sign.

Suggestions. The future goal is to focus on recycling office paper. In addition, the city plans on setting up a permanent site to drop off the recyclables and purchase trailers to haul them to the facility.

Data Collected. July 30, 2009

Waste Reduction Case Study

Project. One-Day Household Hazardous Waste Collection Program and One-Day Business Hazardous Waste Collection Program

Location. Billings, Montana

Population. Approximately 104,000

Contact. Barb Butler, Environmental Compliance Coordinator, Billings Solid Waste Division, PO Box 1178, Billings, MT 59103, (406) 247-8633

Start of Program. 1995

Program Description. One day a year, the City of Billings holds a free household hazardous waste collection event for city residents. Residents are asked to bring their waste to the designated collection point where it is removed from the vehicle. Collected waste is then separated by city personnel into several different categories. Certain types of waste, such as radioactive and infectious medical wastes, are prohibited. Under special circumstances, residences can bring in hazardous waste from unexpected cleanup projects and the city will store the waste until the yearly cleanup event.

In addition, Billings businesses that generate less than 220 pounds of hazardous waste per month can participate. The conditionally exempt generators are charged to participate; however, disposal costs are significantly reduced as labor and transportation costs are covered by the city. To participate, businesses must preregister in advance and the city limits the types of waste brought to the event.

Goals of Program.

-Keep toxic materials out of landfill

Target Audience. Household cleanup: residents of Billings and surrounding counties of Yellowstone, Treasure, Stillwater, Carbon, and Musselshell. Business cleanup: Billings businesses

Program Budget. \$70,000 annually

Results of Program. Program participation has increased each year, with the most recent event serving over 1,000 carloads of residential waste and 30 businesses.

Barriers encountered. More advertising was needed at the onset of the program. Now the event is held on the same day every year and residents are more aware of the program.

Suggestions. The city is attempting to build a permanent facility to house the program within the coming year.

Data Collected. July 21, 2009

Waste Reduction Case Study

Project. Pesticide & Agricultural Plastics Program

Location. Statewide

Contact. Dusti Johnson, Recycling and Marketing Development Specialist, Montana DEQ; 406-841-5253, dujohnson@mt.gov

Start of Program. 2005

Program Description. As part of a program established by the Montana Department of Environmental Quality, agricultural plastics are collected and inspected at various locations around Montana so that the materials can be recycled. Agricultural plastics include any containers which held pesticides, fertilizers, or any other chemical based products. To stage an event, the DEQ advertises the location and provides instructional material for farmers and ranchers who would like to take part. All plastic brought to the collection event must be triple-rinsed before it arrives. DEQ agents then inspect the plastics and transport them to an out-of-state recycling facility. Most collection events take place in field settings where numerous farmers and ranchers can convene to drop off their materials. Collections are done in the spring and fall, when farmers and ranchers are spraying for pests and fertilizing.

Goals of Program.

- Provide farmers and ranchers with safe disposal methods for their agricultural containers
- Take steps to become a permanent, statewide program

Target Audience. Montana farmers and ranchers

Program Budget. No budget. Transport costs rely on donations from businesses, farmers, and ranchers.

Results of Program. The program has proven to be successful in terms of participation.

Barriers encountered. There are many issues involving regulation and permits to contend with. The actual logistics of the collection events can be difficult, as they are often in remote settings with inclement weather conditions. The target audience of farmers and ranchers is spread out and it is often hard to get them to meet in one area.

Program Strength. There is a great deal of determination on the part of program partners and participants.

Suggestions. The DEQ is working on stockpiling materials to reduce transport costs. Additional inspection steps are also being developed.

Data Collected. July 30, 2009

Waste Reduction Case Study

Project. Spring/Fall Cleanup Program

Location. Hamilton, Montana

Population. Approximately 4,800

Contact. Rose Allen, Clerk, City of Hamilton, 223 South 2nd, Hamilton, MT 59840, (406) 363-2101

Start of Program. 1995

Program Description. During a specified 3 day period, City of Hamilton residents may place leaves, tree limbs, grass, etc. on their curbs for proper disposal by the City. Leaves must be bagged and tree limbs cut and bundled in order for the City to pick them up. A new addition to the program has been the practice of composting the collected leaves rather than disposing of them. Tree limbs are chipped. The program occurs twice a year during the spring and fall.

Goal of Program.

-Prevent illegal dumping by offering the means for proper disposal.

Target Audience. City of Hamilton

Program Budget. Labor costs for City employees and parks department, plus vehicle and fuel costs

Results of Program. The program is successful and most residents take advantage of the service. The newer practice of composting the leaves creates less waste than previous methods of disposal.

Program Evaluation Tools. The city rates the program on a scale from 1 (low) to 10 (high). The city rates the program an 8.

Data Collected. July 15, 2009

Waste Reduction Case Study

Project. Cardboard Recycling Program

Location. Malta, Montana

Population. Approximately 1,800

Contact. Carolyn Schmoeckel, Clerk, City of Malta, PO Box 1300, Malta, MT 59538, (406) 654-1251

Start of Program. July 2006

Program Description. The City of Malta's cardboard recycling program collects and bales used cardboard from city residents. A central collection point is used. The collected cardboard is then shipped to a local recycler (*currently Frenchtown is closed...stockpiling cardboard until it reopens*).

Goal of Program. To decrease the amount of solid waste being disposed of in the city's solid waste landfill

Target Audience. City of Malta residents

Program Budget. \$12,000 annually

Strategy Used.

- Advertised the importance of recycling to residents and the city
- The City provided a convenient collection site
- The City contracted with a local handicap center to process the collected cardboard

Results of Program. The program has been consistently successful with community visibility increasing each year.

Program Evaluation Tools.

- Using a waste product for the betterment of the community
- The amount of money saved by conserving landfill space

Barrier Encountered. Initial resistance by citizens in taking cardboard to the collection center; now the majority accepts the program and takes part in it.

Program Strength. Malta residents have a strong desire to help their community by saving the landfill, which is important for a small community.

Suggestions. One suggestion for improving the program would be to expand the program to bale all solid waste to help conserve landfill space and recycle other products.

Data Collected. July 15, 2009

Waste Reduction Case Study

Project. City of Livingston Stationary Glass Pulverizer

Location. Livingston, Montana

Population. 7,500

Contact. Sandy Wulf, Assistant Public Works Director, 330 North Bennett Street, Livingston, MT 59047, (406) 222-1142, swulf@livingstonmontana.org

Start of Program. October 2008

Program Description. Livingston is the only city in the state of Montana to own a stationary glass pulverizer. Residents of Livingston, as well as any outside parties, can bring their glass products to the Public Works building inside the city limits at no charge. Once the glass has been crushed, the sand is used in a variety of city projects such as landscaping of trails. In addition, residents can purchase the pulverized glass for personal use at \$15/ton. MSU students are also saving glass to take to Livingston to turn into crosscrete, a 100% recycled blend of glass and fly ash. The city of Billings, Yellowstone Park, and participants in Bozeman's curbside recycling program all bring glass to Livingston to be recycled.

Goals of Program.

- Provide glass recycling facility for Montana
- Reuse crushed glass in the local area

Target Audience. State of Montana

Program Budget. A \$100,000 grant was received from the State of Montana to purchase the pulverizer. Additional costs associated with running the equipment are included in the budget for the city transfer station.

Results of Program. The program has been successful and the pulverizer is used on a regular basis.

Barriers encountered. None

Suggestions. Promote the purchase of sand for those who are doing landscaping projects. Continue to take glass from more areas, and obtain an even bigger glass pulverizer.

Data Collected. July 31, 2009

Case Study

Project. “Green Up West Yellowstone” Recycling and Sustainability Program

Location. West Yellowstone

Population. Approximately 1,200

Contact. Jack Clarkson, Green Up West Yellowstone founder, P.O. Box 1410, 719 N. Electric Street, West Yellowstone, MT 59758, (406) 646-9328

Start of Program. 2008

Program Description. Green Up West Yellowstone is a partnership between the West Yellowstone Chamber of Commerce, residents, and local business owners. The program is an ongoing educational effort focused on local sustainability issues. Participants have succeeded in obtaining recycling bins donated by PepsiCo and placing them at various locations within the city limits. The local grocery stores provide shoppers with the option of using cloth bags. Westmart Building Center collects grease refuse from the local Arby’s and McDonalds restaurants and turns it into biofuel which is used in their fleet of vehicles. Efforts are also focused on educating local hoteliers about sustainable steps they can take in reducing the carbon footprint of their businesses. A brochure was created which provided information on hazardous waste disposal. During the 4th Tuesday of each month in the fall and winter, a seminar is held which features experts on sustainability issues. Business owners also use these meetings to share their ideas and successes with the green program.

Goals of Program.

- Stamp-Out Styrofoam: reduce the use of Styrofoam by restaurants in town
- Reduce the overall environmental footprint of West Yellowstone

Target Audience. Residents and business owners of West Yellowstone

Program Budget. None; all efforts are carried out through volunteers and donations.

Results of Program. The program is successful, especially in terms of recycling. There is a lot of enthusiasm in town about creating change.

Barriers encountered. Lack of knowledge on behalf of residents. West Yellowstone has also encountered difficulties in finding a market for glass recycling.

Program Strength. People are very involved and act as good broadcasters for sustainable practices.

Suggestions. Get rid of all disposable plastic bags in grocery stores.

Data Collected. August 4, 2009

IPM Case Study

Project. Integrated Pest Management Information Booth

Location. Bozeman, Montana

Population. 39,500

Contact. Mary Burrows, Extension Plant Pathology Specialist, Montana State University,

Start of Program. 2007

Program Description. A booth to provide information about MSU Extension activities to the urban and suburban community was set up each Saturday at the Bozeman Farmers Market at the Gallatin County Fairgrounds. During the course of each market, MontGuides and fact sheets from Montana State University were distributed and questions on pest control and gardening from the community were answered. A table with displays was set up to draw people in to ask questions about each topic. A press release was sent out each week and used in the local paper and on the radio to popularize this activity. Each week would feature a different topic and had guest speakers available. The booth was staffed by plant pathologists to identify common pests. If the pest or disorder was not identifiable at the booth, these were brought back to the Schutter Diagnostic Lab for identification and recommendations to the client.

Goals of Program.

- Increase the profile of the Extension Service in the community.
- Promote the services of the MSU diagnostic lab.
- Reduce pesticide use in the community.

Target Audience. Attendees of the weekly farmers market.

Program Budget. No budget.

Results of Program. The program has been successful so far. Each year the number of questions has increased. In addition, 75% of those asking questions have said they would choose a non-pesticide, non-chemical control tactic for their insect problem after consulting with the experts at the booth.

Barriers encountered. It is difficult to convince people who want to control insects that inaction is often the best solution. Proper watering is a big issue and more education is needed to deal with issues associated with lawn care. Often insects are blamed for problems with plants when in fact the environment itself is not suited for that type of growth. Lowering people's expectation of landscapes and educating the public on reading pesticide labels are other hurdles.

Program Strength. The program provided insect and plant specialists with the opportunity to reach clientele that they may otherwise not be in contact with. The booth developed a following and regular participants would arrive each week with new questions.

Suggestions. Make more colorful displays to draw people in and feature even more diverse topics.

Data Collected. August 5, 2009

Surface Water Protection Case Study

Project. Missoula Area Clean School Bus Program

Location. Missoula, MT

Population. Approximately 39,500

Contact. Benjamin Schmidt, Missoula City/County Health Department, Air Quality Specialist, (406) 258-4755, schmidtb@ho.missoula.mt.us

Start of Program. Fall 2005

Program Description. The Missoula City/County Health Department (MCCHD) proposed to reduce school children's exposure to diesel pollution through the Missoula Area Clean School Bus (MACS) Program. The MACS Program worked with partners to increase the use and acceptance of biodiesel as a fuel. Eight K-12 school buses using B20 (a blend of 20% biodiesel with 80% petroleum diesel). There are around 14,000 students in the thirteen public K-12 school districts in Missoula County and approximately 50% of the students ride a bus to school. In the urban district, children average 60 minutes a day on the bus. For some rural school districts, school buses operate for about 3 hours per day and students average 1.5 hours a day on the bus. Program directors worked with area Cenex fuel suppliers who provided the biodiesel blend for the school buses. School district 1, based primarily in Missoula city, and school district 40 out of Frenchtown were the main participants in the MACS program.

Goals of Program.

- Create a healthy environment for school kids when commuting back and forth to school.
- Get people accustomed to using biodiesel

Target Audience. Missoula area public school bus fleets

Program Budget. \$4,560 was awarded in grant money to pay for the incremental difference in cost of biodiesel versus regular diesel.

Results of Program. Frenchtown participated in the program for two years, while Missoula ceased participation after a short trial.

Barriers encountered. Outlying school districts wanted to participate but had issues with obtaining the biodiesel on a fast and regular basis. Smaller areas could not participate because the fueling facilities had only one diesel tank and were unwilling to convert the entire operation to biodiesel. Frenchtown, a small community approximately 12 miles northwest of Missoula, was given a special tank to use for 20% biodiesel to make the program feasible in that area.

Program Strength. The program raised awareness that biodiesel is a safe and reliable alternative for vehicles. Additionally, small private bus companies can use the biodiesel pumps that are still available in town.

Suggestions. The program may have been more successful if the biodiesel was more readily available.

Data Collected. August 21, 2009