

Northeast Waste Management Officials' Association

Promoting “Save Money and Reduce Trash” (SMART) Strategies to Increase Recycling of Solid Waste in Rural Communities

Project Report

October 1, 2013 - June 30, 2015

Introduction

For many households, residential solid waste services are provided by the local municipality, and the costs are hidden within the local tax assessment. In some communities, residents pay a fixed annual fee for curbside pick-up or to bring their waste to the local transfer station or landfill, or pay a monthly fee to have a private waste hauler pick-up their waste and dispose of it. In all of these systems, the amount a resident pays does not vary with the amount of waste they dispose.

Save Money and Reduce Trash (SMART) is a system under which residents pay for municipal waste management services per unit of waste disposed. SMART systems charge residents based on the amount of trash they throw away, thereby offering them an incentive to reduce the amount of waste they generate and dispose of. Communities across the U.S. that have implemented SMART programs, often called “pay as you throw” (PAYT), “variable rate pricing”, or “unit-based pricing” have found them to be the most effective way to incentivize residents to reduce the amount of municipal solid waste (MSW) that is disposed of, and to recycle and compost more of it.

SMART is a flexible approach and municipalities can design the program that works best for them. SMART programs have two common principles:

- A fee is charged per-unit of trash that is disposed of. The more units a household generates the more they pay. Units can be by volume or by weight. Most SMART programs are per-volume because a weight-based system would require the use of a certified scale.
- Recycling services are provided and there is no charge for them.

Municipalities can design the economics of their SMART programs in many ways. Generally, all communities use a 30-33 gallon bag/container as the base unit they set a fee on. Many communities also offer a smaller size (e.g. 15 gallons) at a lower fee and/or a larger size at a higher fee. Some communities decide to cover the entire cost of their trash and recycling management programs, including facility management and labor costs through collected fees.

The Northeast Waste Management Officials' Association's (NEWMOA)¹ “Promoting Save Money and Reduce Trash (SMART) Strategies to Increase Recycling of Solid Waste in Rural Communities” Project focused on encouraging adoption of SMART strategies in three rural regions in Vermont and New Hampshire. The Project Partners were:

¹ NEWMOA is a non-profit, non-partisan interstate association whose membership is composed of the state environmental agency directors of the hazardous waste, solid waste, waste site cleanup, and pollution prevention programs in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont (www.newmoa.org).

- **Northeast Kingdom Waste Management District (NEKWMD)** – This district, based in Lyndonville, Vermont, services approximately 46,400 residents and 48 member towns in rural northeastern Vermont.
- **Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC)** – This nonprofit regional planning commission and economic development district provides information, regional advocacy, technical assistance, community education, and direct services to 27 rural communities in west central New Hampshire.
- **Windham Solid Waste Management District (WSWMD)** – This district is comprised of 19 towns that have joined together to cooperatively manage solid waste in rural southeastern Vermont. The WSWMD manages the only publically-owned and operated Material Recovery Facility (MRF) in Vermont.

The objectives of the Project were to:

- Help the rural communities understand the benefits of SMART programs;
- Help the targeted areas develop SMART program strategies that address their unique solid waste management challenges; and
- Create a model and tools for SMART program outreach and assistance in rural areas that can be replicated in other parts of the Northeast.

Activities

The Project focused on developing outreach materials and educating municipal government leaders, residents, solid waste haulers, solid waste facility operators, and municipal and/or regional recycling coordinators on the benefits and challenges of implementing SMART programs. The project consisted of the following activities:

Project Steering Committee: NEWMOA formed a Project Steering Committee to oversee the Project, including reviewing and commenting on written materials and providing advice throughout the Project. The Steering Committee was made up of a representative from each of the Project Partners, the New Hampshire Department of Environmental Services (NH DES) and the Vermont Department of Environmental Conservation (VT DEC). NEWMOA staff organized three Steering Committee conference calls to review and discuss the Project and recommend work plan improvements, as necessary.

Outreach Materials: NEWMOA developed the following outreach materials:

- **Case Studies:** NEWMOA contacted 14 rural communities in the Project Partner areas that had implemented SMART and developed written case studies of 11 communities that include data on waste and cost reductions and recycling increases, where available. The case studies were published in 2014 and are available at: www.newmoa.org/solidwaste/projects/smart/case_studies.cfm.
- **Brochures:** NEWMOA worked closely with each Project Partner to develop a "Fair Pricing Strategies for Trash" outreach brochure that was customized for their location. The brochures target local government officials and include short local case studies and quotes from local government officials, in addition to SMART program benefits and design options and considerations. NEWMOA also developed a version of the brochure that is not location-specific so it can be used by any organization in any geographic area.

The brochures were published in 2014 and are available at:

www.newmoa.org/solidwaste/projects/smart/outreach_brochures.cfm.

- **Fact Sheet:** NEWMOA and its project partners developed an outreach fact sheet to promote the benefits of SMART to the general public. It is a writable PDF so users can enter the appropriate local information in the "For More Information Contact" box on the back page before saving and posting or printing the handout. The fact sheet is available at: www.newmoa.org/solidwaste/projects/smart/outreach_brochures.cfm.
- **Template Program Guide:** NEWMOA and the project partners developed an outreach guide for residents in municipalities that have adopted a PAYT system and operate a transfer station to manage their trash, recycling, and bulky wastes. The one page tri-fold template is in Microsoft Word format so it is easy to edit and customize for a particular municipality. The template guide is available at: www.newmoa.org/solidwaste/projects/smart/outreach_materials.cfm
- **SMART Toolkit:** NEWMOA compiled all the material developed under the Project, as well as other helpful online information to create an online SMART information toolkit for rural communities and others. NEWMOA performed a comprehensive online search for SMART information and reviewed the available material so that only the most useful information was included in the resource. The toolkit is available at: www.newmoa.org/solidwaste/projects/smart/toolkit.cfm.

Workshops for Local Officials: A key step in community adoption of SMART strategies is gaining the support of municipal government authorities. NEWMOA and its project partners collaborated on engaging local government decision-makers and provided education for them on SMART and its benefits. As part of these efforts, NEWMOA staff and each project partner organized a meeting of local government decision-makers at a central location in their region. The following meetings were held:

- WSWMD: held in Townshend, VT on November 6, 2014 and attended by over 50 municipal officials and representatives of private companies that haul trash.
- UVLSRPC: held in Lebanon, NH on August 13, 2014 and attended by the commissioners representing 16 municipalities.
- NEKWMD: held in Lunenburg, VT on June 26, 2014 and attended by over 30 municipal officials and representatives to the state legislature.

NEWMOA staff and the project partners in New Hampshire also organized two workshops for transfer station operators:

- UVLSRPC regional meeting held in Lebanon, NH on July 10, 2014 and attended by over 30 operators representing 14 towns.
- NH DES statewide meeting held in Concord, NH on June 25, 2015 and attended by over 30 operators representing 17 municipalities.

NEWMOA made presentations at each meeting and these are available at www.newmoa.org/solidwaste/projects/smart/workshop_presentations.cfm. A representative of a nearby community that has already implemented SMART presented on their experience and answered attendee questions at three of the workshops: WSWMD, NEKWMD, and NH DES.

Regional and National Outreach: NEWMOA shared the materials available through the online toolkit and the project's results with interested state and municipal officials throughout the U.S. via conferences and webinars. NEWMOA staff presented on the Project materials and results at three solid waste conferences in the Northeast:

- MassRecycle in Quincy, Massachusetts on March 30th (www.massrecycle.org)
- Maine Resource Recovery Association (MRRA) in Northport, Maine on April 28th (www.mrra.net)
- Northeast Resource Recovery Association (NRRA) in Manchester, New Hampshire on June 8th (www.nrta.net) – NEWMOA ran a one hour workshop session at this conference

Each of these presentations was well attended, and together they reached over 75 state and local government officials and municipal solid waste program staff interested in implementing SMART.

NEWMOA held an end-of-project webinar, *Fair Pricing Strategies for Trash: PAYT Experience in Rural Areas & New Resources* on June 26, 2015 that was advertised nationally and attended by over 145 people from municipalities, state governments, and organizations across the US. The conference and webinar presentations are available at:

www.newmoa.org/solidwaste/projects/smart/workshop_presentations.cfm

Findings & Lessons Learned

NEWMOA contacted 14 rural communities that implemented SMART to discuss their programs; ran workshops that involved representatives of more than 50 New Hampshire and Vermont communities; and gave presentations at conferences that were attended by additional communities in Maine, Massachusetts and New Hampshire. This section presents the findings and lessons learned from the discussions held in conjunction with those and other Project activities. They center around four main themes:

- Improvements in waste reduction and recycling
- Town budget impacts
- Operational considerations
- Concerns and messaging

Improvements in Waste Reduction & Recycling

SMART reduced the tonnage of waste disposed by the 11 case study communities by 40-55 percent. Higher fees were associated with greater reductions. For example, Northfield, MA and Newark, VT charge \$1.50 and \$3.00 per 33 gallons, respectively and realized 40 percent and 55 percent reductions in trash managed, respectively. Generally, the quantity of material handled for recycling doubled when SMART was introduced. However, the tonnage of this “new” recycling is less than the tonnage reduction in trash managed. For example, in Vernon, VT the tonnage of waste disposed decreased by approximately 109 tons per quarter and recycling increased by approximately 29 tons per quarter.

Several factors combine to account for the reduced tonnage of trash in rural SMART communities:

- New or increased recycling, composting of kitchen scraps and yard waste, and donations for reuse

- Smarter purchasing so less waste material is generated
- Out-of-town trash is no longer brought into the town
- Alternative disposal by:
 - depositing it in commercial dumpsters
 - bringing it to work
 - giving it to friends/relatives in other towns
 - hiring a private hauler

Documenting these impressive SMART impacts with real world examples proved essential to the success of NEWMOA’s training activities. Engaging community leaders from the case study communities in NEWMOA’s meetings and events to verify the results and correct misconceptions was also critical.

Municipal Budget Impacts

Waste management is typically the fifth largest cost in a municipal budget after schools, police, fire, and public works. Most communities adopt SMART to gain control of and reduce their waste management costs. SMART reduces the cost of waste management in town budgets in two ways:

- The reduced tonnage of trash costs less to haul and dispose of; and
- The fees charged per unit generate income.

If a municipality plans for the income from the SMART fees to cover all of their solid waste management costs, then fees should be set high enough to generate excess income that can be saved for future capital expenses, such as a compactor or curbside pickup vehicle. An innovative approach that Newark, VT adopted is to hire a contractor to operate their trash and recycling program and only be paid through the per-unit fees collected on the trash. Newark completely removed trash and recycling management costs and expenses from their budget.

Other case study communities decided to cover the cost of hauling and disposing of trash through the per-unit fees they collect. For example, through reduced tonnages, Northfield, MA reduced its trash hauling and disposal costs from approximately \$30,000 for a six-month period before SMART was adopted to \$18,400 for the same six-month period after SMART. Northfield also generated income from their per-bag fees that was approximately equivalent to their hauling and disposal costs.

The SMART fee system in most of the communities NEWMOA examined was designed to cover more than trash hauling and disposal, but does not typically cover all trash and recycling management costs. For example, Piermont, NH sets its’ per unit fee to generate enough income to cover approximately 50 percent of the total cost of their curbside trash and recycling program. The fees charged by the Unity, NH transfer station, along with income generated from recyclables typically covers approximately 75 percent of the cost to operate the transfer station, including labor.

At a minimum, SMART municipalities should set fees to be comparable with (or higher than) neighboring towns to remove the incentive to “smuggle” in trash. However, if fees are set to cover all of the costs, it will not matter if a town receives some trash from neighboring areas.

Operational Considerations

Most rural communities operate a transfer station that manages trash and recycling that residents bring to it. A few rural communities provide curbside pick-up of trash and recyclables for their residents. Some rural communities do not provide any services and therefore residents contract with a private company to manage their trash. Residents in towns that operate a transfer station or provide curbside service also have the option of contracting with a private hauler. Most private haulers provide curbside trash service but do not offer recycling. However, in Vermont, the relatively new Universal Recycling Law (Act 148) requires that all private haulers provide recycling services for no additional fee, and implement a SMART fee system. Communities outside of Vermont can also require private haulers to offer recycling and implement a SMART fee system through their local ordinances. However, this requires a commitment by the community to develop, implement, and enforce the rules covering private haulers, and NEWMOA did not become aware of any communities in the northeast outside of Vermont that have done it.

SMART systems are flexible and towns can design a system that works best for their situation. Transfer stations in rural areas generally implement SMART in one of four ways:

- Special bags that residents must purchase from the town and use for all their trash
- Stickers that residents must purchase from the town and put on each bag of a set size
- Punch cards that residents must purchase from the town that contain a set number of spaces; the transfer station attendant punches one space per bag or container of a set size
- Cash collection at transfer station where the attendant determines the quantity of trash and collects the appropriate fee

Some considerations with each of these include the following:

- Special bags, stickers and punch cards require convenient locations for residents to purchase them and involve some administrative costs and oversight to purchase and sell them, keep track of inventory, and manage the funds.
- Bags involve the greatest cost because they are more expensive to purchase than stickers or punch cards. Stickers and punch cards could be produced in-house as long as they cannot be counter-fitted.
- Convenient sales locations typically include town offices and local convenience stores. Some towns sell bags at the transfer station.
- Stickers allow residents to use their own disposable bags, but do not always adhere well, particularly in very hot, cold, or wet weather, and some residents can abuse a sticker system more easily than a special bag system.
- Punch cards and cash collection require that the transfer station attendant makes everyone pay the full amount which can be difficult to ensure.
- Cash collection requires that the transfer station attendant turns in all of the money collected to the town which may be difficult to enforce. Requiring use of a computerized cash register that provides receipts can help.

Rural communities that provide curbside trash and recycling services to their residents generally implement SMART in one of three ways:

- Special bags that residents must purchase from the town and use for all their trash

- Stickers that residents must purchase from the town and put one on each bag of a set size
- Containers where each household pays a set fee to put out one container per week of a base size and then pays more for larger or additional containers

Some considerations with each of these include the following:

- Special bags and stickers involve the first four considerations from the above transfer station list
- Curbside pickup staff can be reluctant to leave trash without the proper bag/sticker at the curb given the pressure to do a good job and leave the pickup route clean. An educational handout left with improperly bagged/labeled trash is helpful.
- Containers systems are most efficient when standardized containers are provided to residents.
- Container systems involve administrative costs to bill residents each month or quarter for their container size and to collect payments.
- Container systems require a method to deal with “extra” trash that does not fit in the container(s) for which the resident is billed. The hauler could keep track of additional volumes so that the charges are added to the bill for that resident. Another option is to require residents to purchase a special bag/sticker for the waste that is not in the regular container.

Towns can apply SMART to businesses and residents served by private haulers that bring their collected trash to community’s transfer station if the community utilizes a special bag or sticker system. The transfer station can require that all incoming trash is in the special bag sold by the town or is in a bag with the special sticker.

Concerns & Messaging

Communities that have implemented SMART view it positively and “...would never go back to the old system”². However, prior to implementation, some residents oppose SMART and make it difficult for some communities to adopt it. Public education messaging that can help communities minimize opposition is outlined below.

Equity and Fairness: It is not fair to those that make the effort to recycle and/or compost that they subsidize the wastefulness of those that do not. Under SMART, municipalities treat waste disposal services as a utility, similar to gas or electricity so the customer is charged only for the level of service used. Each household is responsible for their own quantity of trash so that those that produce less are no longer subsidizing those that produce more. SMART makes waste disposal expenses transparent and enables residents to control their costs. Everyone can minimize their costs by:

- Reusing and recycling as much as possible,
- Composting kitchen scraps and yard waste, and
- Purchasing goods in recyclable packaging.

² Greg Noyes, Selectman, Canaan, Vermont. www.newmoa.org/solidwaste/projects/smart/Canaan_Case_Study.pdf

Economics: SMART allows municipalities to control and reduce waste disposal costs in their budgets. Communities should educate their citizens on the current cost of waste management in the tax rate, and projections of future changes if SMART is adopted and if it is not. Communities should also clearly explain how the money saved by SMART will be allocated, such as not having to raise taxes to pay for something specific, or not having to reduce specific services. While SMART is not a new tax, it does change the way residents pay for waste services. Communities are often concerned about impacts to low-income households. Just as electric and gas utilities provide special rates for low-income customers, a SMART program can also accommodate residents that demonstrate hardship. Some communities provide one free bag per week, or sell bags at reduced prices through their low-income support service agency. Subsidies should not be unlimited so that the incentive to reduce trash production remains.

Environment: Illegal dumping does not increase in communities that implement SMART programs. SMART programs target trash and illegal dumping is usually associated with bulky items such as mattresses, sofas, and tires, and not with trash. In some cases, a disgruntled citizen will illegally dump their trash at the start of a SMART program. However, quick enforcement by authorities can stop it. Communities should work with law enforcement prior to SMART implementation so they are available to quickly address any problems. Communities should also alert businesses and others with commercial dumpsters to restrict access to prevent potential abuse. None of the communities contacted through the Project reported any illegal dumping issues with their SMART programs.

SMART programs also give communities the opportunity to explain the hidden costs of waste management to their residents. Traditional waste management systems often obscure the economic and environmental costs associated with waste generation and disposal. SMART decreases waste generation and increases recycling, which preserves landfill space and reduces greenhouse gas emissions and other pollutants associated with extraction of natural resources and manufacturing products with virgin materials. Once individuals understand their impacts on the environment, many choose to take steps to minimize them.

Next Step Recommendations

Communities with SMART report that a careful planning process and effective public education was critical to obtaining the citizen support needed to approve the program. The recommended first step is to form a committee focused on solid waste and SMART. An effective Solid Waste Committee and SMART program planning process must involve key players from municipal government and the community, such as members of the Board of Selectmen, the transfer station manager, and concerned citizens. Taking the time and committing the resources to build support across the community can minimize confusion and address potential misinformation about SMART.

The recommended first effort of the Solid Waste Committee is to understand the costs of the current waste management system, including labor, hauling, disposal, recycling, and facility management. The next step is to clearly break out the costs in the Town's annual report and budget process, and in the property tax bills sent to residents. Another early effort is to project future costs of waste management under the current system and report them to decision-makers

and the public, and suggest that other options are available such as SMART. Include waste reduction and town budget cost saving success stories from similar communities in the region.

Once town leaders and others are interested in SMART, the next step for the Committee is to develop a proposed SMART program that meets community needs. Town leaders need to convey to the Committee how much of waste and recycling management costs they want the SMART program to cover. For example, all costs, some of the costs, or just trash hauling & disposal. The Committee can then design a per-unit fee structure to meet that objective. If “fixed” costs, such as labor to operate the transfer station are to be covered by the SMART program, it is essential to plan using post-SMART trash tonnages not current tonnages. The Committee should also recommend the type of system. For example, special bags, stickers, or containers, and one size or multiple sizes. Other logistics such as where bags/stickers/punch cards will be sold and how the fees will be collected and managed.

Throughout the process the Committee should solicit comments and ideas from the residents to help with understanding public opinion, identifying misperceptions and opposition, and developing strategies for program implementation that address residents’ needs. Public meetings provide an avenue for residents to voice their views and raise issues, but need to be managed effectively to prevent opponents from dominating. Communications should always stress the reason(s) the community needs to change their waste management system/costs, the unfairness of the tax-based system and the fairness of SMART, examples of how to reduce trash disposal costs, and the results of other local communities that have done it. Some communities handed out information about a proposed SMART program at the transfer station prior to the Town Meeting vote.

Once SMART is adopted, residents need additional education on when and how the new program will be implemented. Several communities held open houses at the transfer station to show people how the new system will work and how easy it is to recycle. Education needs to start several months before the system takes effect. The Committee needs a mechanism to answer questions and address concerns, as well as to respond to any issues that arise after implementation. Communities recommend that the SMART program is reviewed periodically and adjusted as necessary.

Conclusions

As a result of the research, meetings, and interactions with officials in rural communities in Vermont and New Hampshire, NEWMOA offers the following observations about effective adoption of SMART program strategies:

- SMART is a proven method that can help reduce the quantity of waste managed by and estimated 40-55 percent and save rural communities thousands of dollars each year. Other communities can expect similar results.
- Communities that have adopted SMART are uniformly satisfied with their programs and recommend SMART to others.
- Outreach on SMART programs is most effective when a local SMART community participates and explains why they adopted SMART and how it works, and to validate its results.

- SMART program design is flexible and can be applied to virtually any community. Municipalities can set fees to meet their community's needs.
- In general, higher fees are correlated with greater decreases in the quantity of waste managed.
- Many communities adopted SMART when their solid waste program faced the need to make a change, such as closure of a municipal landfill, an increase in disposal facility tipping fees, or closure of a local business that had supported the tax base. Communities that are interested in adoption of SMART should identify the changes in their circumstances that SMART can help to address.

During the project period NEKWMD and WSWMD worked with their member communities to design and implement SMART programs to comply with Vermont's Universal Recycling Act (Act 148). The NEKWMD and WSWMD meetings described above provided the first regional opportunity for local officials to learn about the new solid waste requirements in Vermont and how they might begin to adopt a SMART program to comply. A key component of the success of these events was participation by a representative of a nearby community that had already implemented SMART. The local case studies and brochures developed through the Project were essential components of the outreach that NEWMOA and its partners conducted with NEKWMD and WSWMD.

New Hampshire communities do not have a statewide requirement to implement SMART and therefore any change in their practices would be voluntary. The workshops held in New Hampshire, combined with distribution of the outreach materials, particularly the local case studies have raised the profile of SMART in New Hampshire.

As a result of the various outreach and training efforts throughout the Project, rural communities in Maine, Massachusetts, New Hampshire, Vermont, and beyond are better informed about the benefits of SMART and are more aware of the results it can achieve, and have access to new resources to support its adoption.

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