

HENNEPIN COUNTY
MINNESOTA



Solid Waste Management Master Plan

2018

On the path to zero waste landfilled

Draft 11-14-17: submitted for board approval

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Introduction

Background about the plan

State statute requires metropolitan counties to prepare master plans every six years that identify strategies to meet the recycling goals and objectives in the state's Metropolitan Solid Waste Management Policy Plan. The policy plan was adopted by the Commissioner of the Minnesota Pollution Control Agency (MPCA) on April 6, 2017, and establishes the framework for managing solid waste in the metro area through 2036.

The following key themes underlie all elements of the policy plan:

- Accountability
- Solid waste management hierarchy
- Generator responsibility
- Government as a leader
- Product stewardship
- Private sector initiative
- Environmental benefits

The MPCA's policy plan outlines aggressive goals, including specific and quantifiable objectives for eliminating the practice of land disposal of mixed municipal solid waste.

Policy plan goals

Management method	2020	2025	2030	2036
Recycling	51%	54%	60%	60%
Organics recovery	12%	14%	15%	15%
Resource recovery	35%	31%	24%	24%
Max landfill	2%	1%	1%	1%

The policy plan objectives are intended to maximize the upper end of the hierarchy, emphasizing product stewardship, source reduction, and reuse, and achieving the legislative goals for recycling and organics recovery.

Hennepin County developed its 2018 Solid Waste Management Master Plan to reach the goal of recycling 75 percent of waste by 2030. The master plan demonstrates the county's commitment to conserving natural resources, protecting the environment and ensuring public health and safety. The county is a national and regional leader in environmental management. The county has received national recognition for the Choose to Reuse program and other innovative waste prevention work. The county's Master Recycler/Composter program, Fix-it Clinics, environmental partners program, recycling grants and education resources have been replicated by many others. The county is also acknowledged nationally for leadership in organics recycling development, household hazardous waste programs and education campaigns. This master plan was developed with the goal of maintaining and strengthening this leadership position.

The plan was developed to be consistent with the Hennepin County Board of Commissioner's mission "to enhance the health, safety and quality of life of our residents and communities in a respectful, efficient and fiscally responsible way." It is also consistent with the Hennepin County Environment and Energy Department's mission of "protecting the environment and conserving resources for future generations" and overarching strategic goal that "Hennepin County's environment is preserved for future generations."

The first part of this plan describes the public engagement process used to gather input. The second part discusses progress on goals as well as opportunities and challenges. Part three sets forth the strategies the county plans to implement to meet the state goals. Appendices at the end of the plan provide additional detail about the solid waste management system.

This master plan is intended to guide waste management in the county through 2036, but most of the strategies focus on meeting the 2020 objectives established by the state in the policy plan. Other strategies will lay the foundation for achieving the long-term goals. Progress on implementing strategies will be reviewed regularly, and revisions and new strategies will be developed as appropriate to continue progress towards achieving the primary outcomes.

Engagement process

The county gathered input from 1,705 participants through meetings, one-on-one interviews and online surveys. Participants included residents, elected officials and representatives from businesses, business associations, cities, schools, community groups, multifamily property owners, haulers and other waste industry experts. Promotions of these activities included arranging in-person meetings, sending emails and letters to stakeholders, and including information in newsletters and social media.

Summary of public engagement activities

Activity	Participants
Online survey	1,235 residents
Meetings with city elected officials	35 elected officials and city managers
Meetings with hauler representatives	6 haulers
Meetings with city recycling coordinators	26 city staff
Focus group discussions with businesses that generate large amounts of food.	21 business representatives responsible for waste management decisions
Interviews with Building Owners and Managers Association (BOMA) Greater Minneapolis representatives, Minnesota Grocers' Association, Hospitality Minnesota (which includes the MN Restaurant Association, MN Lodging Association, and the MN Resort & Campground Association), and the Minneapolis Regional Chamber of Commerce.	10 executive leaders and representatives of primarily large corporate real estate companies.
Meetings with school representatives	12 adult school staff and 2 students
Online survey of school representatives	24 school recycling contacts
Online survey of business grant recipients	35 business recycling grantee
Green Partners environmental education network meeting	34 community group representatives
Interviews with multifamily property managers	6 property managers
Phone interviews with multifamily property managers	31 property managers
Interviews with construction and demolition industry professionals	31 industry professionals, including building reuse retailers, contractors, city building officials, construction waste processors and end markets
Waste sort engagement event	23 attendees, including county commissioners, city council aides, environmental organization executives, retail sustainability officers and reuse and organics industry representatives.
Online survey about proposed strategies	167 respondents, primarily residents
Solicited written feedback on proposed strategies	7 emails from primarily trade associations
	1,705 total participants

Communities represented

Residents from 39 of the county's 44 cities as well as representatives, including mayors, council members, managers and recycling coordinators, from 29 cities provided input.

Residents from:

- Bloomington
- Brooklyn Center
- Brooklyn Park
- Champlin
- Chanhassen
- Corcoran
- Crystal
- Dayton
- Deephaven
- Eden Prairie
- Edina
- Excelsior
- Golden Valley
- Greenfield
- Hanover
- Hopkins
- Independence
- Long Lake
- Maple Grove
- Maple Plain
- Medina
- Minneapolis
- Minnetonka
- Minnetrista
- Mound
- New Hope
- Orono
- Osseo
- Plymouth
- Richfield
- Robbinsdale
- Rockford
- Rogers
- St. Anthony
- St. Bonifacius
- St. Louis Park
- Shorewood
- Wayzata
- Woodland

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- Rockford
- Rogers
- St. Louis Park

Key findings

Residential recycling has improved, but more recycling options are needed

- Residents emphasized increasing convenience by offering pickup services for items that currently need to be dropped off, such as plastic bags and batteries, or improving drop off options by adding more locations and expanding hours.
- Many residents need more capacity in their recycling carts. Many residents want recycling picked up weekly, while other residents asked for a larger recycling cart.

Interest in organics recycling is high, but the concept is still new

- Residents consider organics recycling to be important, and 62 percent said they would be very likely to participate.
- Businesses that generate large amounts of food waste have begun to implement organics recycling. Reasons they cite for starting their programs include having an individual who was passionate about the topic and a financial scenario that made sense. Other businesses have considered it but haven't made it a priority or found it was too expensive.

Barriers to organics recycling need to be addressed, and the benefits need to be better understood

- Barriers for residents include space for adding another cart, increased truck traffic, and odors.
- Barriers for businesses include finding space for outdoor containers, the need to conduct ongoing training for staff, and finding time to focus on an issue that isn't urgent.
- There is a need to better understand the benefits of organics recycling and the value of the compost that the food scraps are turned into. People say they participate in organics recycling to help the environment, to be less wasteful, to send less to landfills, and to create healthy soils.
- Promoting existing county incentives to businesses could build additional interest and support from businesses.
- Providing rewards for residents and business who participate in organics recycling programs should be explored.

There is openness to residential organics recycling requirements but concerns about implementation

- Residents expressed very strong support for requiring cities to provide residents the opportunity recycle organics by 2022.
- Most cities were accepting of the need for requirements, and their concerns were related more to the implementation rather than the requirement itself.
- Cities are concerned about what changes in the funding policy and an organics recycling requirement together would mean for the cost of recycling to their residents. Residents are not seeing the cost savings of reducing waste.
- County leadership is needed to determine the best collection methods and improvements to waste infrastructure to make organics recycling viable.

Organics recycling requirements for businesses that generate large amounts of food waste are not unexpected, and the suggested approach is sound

- Although few in the business community readily embraced requirements, the concept was not unexpected.
- Several businesses acknowledged that they likely wouldn't participate in organics recycling until it was required.
- The approach of the requirement made sense. Businesses told us a well-designed requirement implemented with county guidance and support would make requirements more palatable.
- Residents expressed very strong support for the business recycling requirement. They think this requirement will make a big impact on waste diversion.
- Some trade associations prefer voluntary strategies but all expressed interest in helping the county conduct stakeholder engagement.

People are willing to do their part to expand organics recycling if it is part of a broader effort

- Interest in the status of organics recycling in other locations came up in nearly all the discussions. For example, the business representatives asked about school organics programs, and residents strongly support an organics recycling requirement for businesses. There is a desire to see organics expanded as a broad effort and made available more widely, and individuals seem more willing to do more if others are also being asked to do more.

The educational and financial resources the county provides to encourage recycling are helpful

- The grants, recycling containers, education materials and technical assistance provided by the county are valuable to businesses, schools, multifamily properties and community groups.
- In general, the county is offering the right mix of resources for each sector. The barriers for each sector are unique but well understood.
- Partners that have received grants continue to want help with ongoing training needs and troubleshooting their programs.

Advocate for policies that reduce waste and help enforce existing requirements

- Many residents want the county to be more active in encouraging product stewardship, especially on plastic packaging and disposable products. Residents also want to see more done to enforce recycling requirements that are already in place for apartments, businesses and schools.

More education is needed

- Residents want very detailed lists of what can and can't be recycled or composted.
- Cities want the county to do more to promote organics recycling so residents better understand the benefits of organics recycling and the value of the compost.

Guiding principles

The following principles encompass the concepts and values that were used in the development of the strategies included in this plan. These principles also provide general guidance to support work plan activities and management decisions regarding solid waste.

Sustainability

The county should be a place where natural systems are in balance with the systems people need to live well – a place where people and systems are resilient and adaptable to both short-term and long-term changes. Sustainable materials management recognizes that products and materials vary in the environmental impacts they cause throughout their life cycles and should be managed accordingly. Advancing sustainability will mean responsibly managing natural and financial resources, ensuring that people have what they need to participate, and making strategic investments for the future.

Equitable access

The county strives to ensure equitable access to programs, services, assistance, resources and opportunities to protect the environment for its diverse community. The planning and delivery of programs, services and outreach are intended to meet people where they are both geographically and within the context of their environmental concerns, knowledge and actions. The county works with community members and organizations to understand their needs, interests, barriers and concerns in order to develop customized programs and outreach.

Meaningful involvement

Efforts to involve the public should go beyond building awareness by ensuring that people have access to information and an opportunity to participate in decisions about activities that may affect their environment and/or health and the tools to take action and make environmentally responsible changes in behavior. Decision-makers should seek out and facilitate the involvement of those potentially affected, ensuring that the public's concerns will be considered and their contribution can influence decisions. Outreach efforts engage our community and partners in developing the knowledge, skills, attitudes and motivation to work individually and collectively towards sustaining a healthy environment.

Data-driven decision making

Staff continually gather and analyze data, incorporate scientific research findings into program design, respond to industry trends, and adapt to the needs of the community. Deliberate evaluation of data and thoughtful planning help determine priorities and facilitate the development of creative solutions. The county will make the most of its resources by focusing on what is important and how to best meet established goals, whether that is through the implementation of proven best practices or new, innovative strategies.

Shared responsibility

We all have a responsibility - individuals, businesses, private sector and government - to prevent waste and recycle everything we can. The county's responsibility is to develop and implement policies, offer programs to reduce waste and expand recycling opportunities, offer financial and technical assistance, provide education, and engage our community. Residents and businesses need to prioritize waste prevention and recycling. Ultimately, the ability of the county to reach its waste goals will be determined by the everyday choices and behaviors of the county's 1.2 million residents and thousands of businesses.

Holistic approach

The challenges communities face are interrelated and require a holistic approach. The focus of this master plan is on solid waste management, but the county recognizes the importance of other programs within the Environment and Energy Department – from contaminated lands cleanup and hazardous waste inspections to tree planting and youth environmental education. The county also addresses environmental stewardship and human health through programs in other departments, including lead paint abatement, investment in public transportation, and aligning housing with access to transit services.

Financial stewardship

Advancing sustainability will mean responsibly managing natural and financial resources and making strategic investments for the future. The county will protect the environment and health of residents in a fiscally responsible way by allocating funds to leverage available resources, implementing cost-effective strategies and programs, providing strategic financial assistance, and improving the solid waste management infrastructure to ensure efficient operations. Policies and programs will maximize environmental benefits while being responsive to the economy and ensure the benefits are widely shared by residents and businesses.

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Progress on goals

The county has made steady progress toward state goals and in 2016 diverted 82 percent of waste from landfills, a rate on par with national leaders. The county has made positive progress in reducing landfilling, increasing the processing of waste through waste-to-energy and increasing recycling since 2010 but still has a ways to go to reach the 2030 goals.

What's changed since the last plan in 2012



Improved recycling services

One-sort, materials added, public space recycling, container signage



Expanded organics

Minneapolis, St. Louis Park



Launched new reduction efforts

Fix-it clinics, Master Recyclers, Zero Waste Challenge, move out and bulky waste



Offered incentives

Businesses, schools, apartments, public spaces



Enhanced education

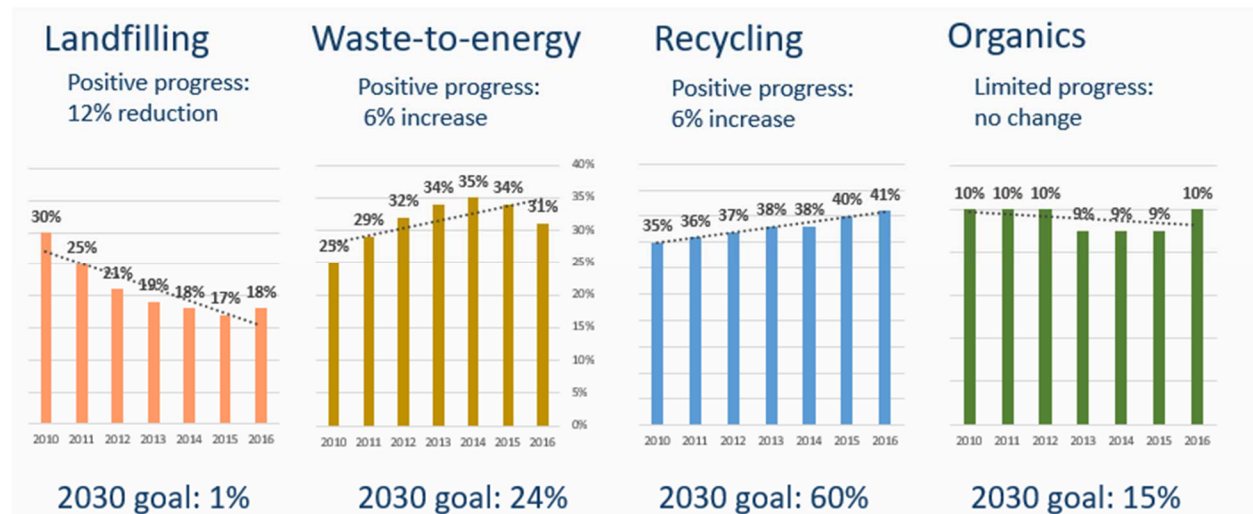
Recycle Everywhere, Choose To Reuse, Save the Food, Green Partners grants

Over the past six years, the county has made progress on the path to zero waste landfilled. The most noteworthy accomplishments include:

- Minneapolis moved to one-sort recycling.
- More materials are accepted in curbside recycling programs.
- There are more recycling options at parks and events.
- Signage on waste containers are better and more consistent.
- St. Louis Park started residential organics recycling service in 2013 and Minneapolis followed in 2015.
- The county started the business recycling grant program, Fix-It Clinics, the Master Recycler/Composter volunteer program, the Zero Waste Challenge, and the move out and bulky waste pilot program at multifamily properties.
- The Recycle Everywhere campaign reached wide audiences over five years.
- The Green Partners environmental education program strengthened collaboration with community groups.
- Innovative programs started by the county have been duplicated across the metro.

Incremental progress

With these efforts, progress toward our recycling goals has shown incremental but positive trends.



Landfilling is down, and more trash now goes to processing facilities that produce energy and recover metal for recycling.

Recycling has inched up about 1 percent every year even though changes in the waste stream have made progress more difficult. Reasons for this include that digital devices have displaced print media, packaging materials are lighter, and there are more non-recyclable plastics. In other words, there is less recyclable material per ton of waste generated, and it takes more recycling just to maintain the same recycling rate.

The diversion rate of organic materials has been flat for several reasons. The majority of organic materials is yard waste, which has a diversion rate that remains fairly consistent from year to year. Organics diverted to composting has increased significantly due to new business and residential organics recycling programs. However, those gains have been offset by decreasing participation in food-to-animals programs that recover bakery and cereal grain by-products to make livestock feed. Overall, there is plenty of room for improvement on organics diversion, and waste sorts repeatedly show that organics is the most common material in the trash.

Challenges and opportunities

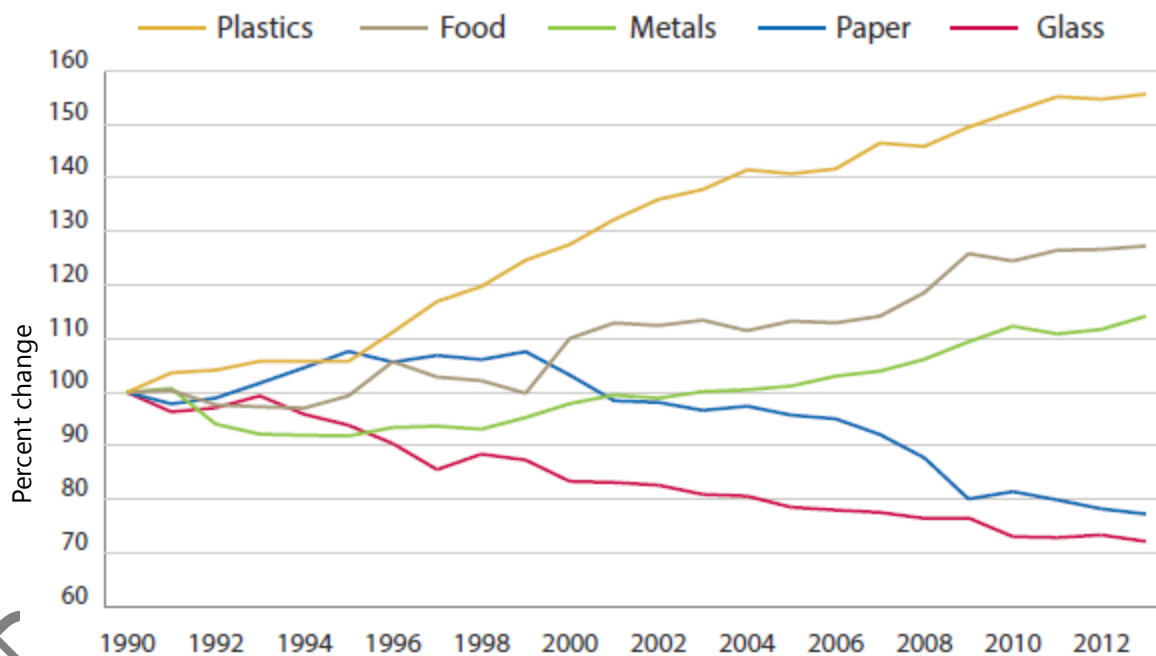
Trends in waste management

Hennepin County's ability to meet its recycling goals is impacted by trends in the waste management and recycling industries. Those trends include changes in the material mix, packaging getting lighter, processing costs increasing, and volatile commodity prices.

The evolving ton

The change in material mix – known as the evolving ton – is particularly challenging. There are less traditional recyclables by weight per ton of waste generated. Plastics, which have become increasingly prevalent in the waste stream, are light and take up a lot of space. Food waste continues to increase, but few people have the opportunity to participate in organics recycling. Meanwhile, the amount of paper in the waste stream continues to decline. All of these changes mean that people need to recycle more and better in order to maintain or increase the recycling rate.

Changes in waste generation (tons) of specific materials compared to a 1990 baseline



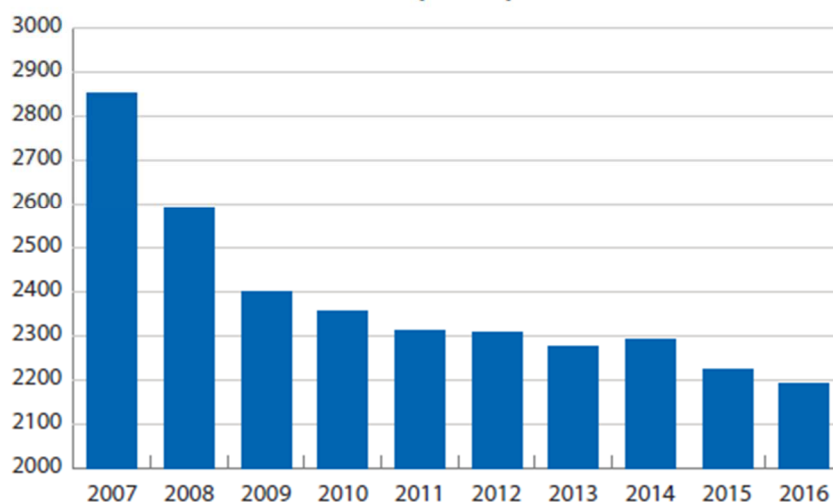
What does it take to get to 75%?

The county realizes that continued progress will require a detailed understanding of what is in the trash and what can realistically be recovered. The county conducted a residential waste sort at the Hennepin Energy Recovery Center (HERC) in May 2016 to support a data-driven approach to policy and program development.

The study found that achieving a residential recycling rate in excess of 60 percent is not realistic even with aggressive capture rate assumptions at levels that have never before been achieved. The study did not make conclusions about diversion of commercial waste, which has a higher proportion of recyclable and compostable materials. However, the viability of the state goal remains to be demonstrated even with optimistic assumptions about new recovery technologies, the development of new markets, and significant enhancements to collection programs.

It has become increasingly clear that weight-based recycling goals alone are an obsolete measure for evaluating overall progress made toward sustainable management of materials through waste prevention, reuse, recycling, and energy recovery. Because the realities of the evolving ton limit the usefulness of year-to-year comparisons, weight-based recycling goals on their own also have limited effectiveness for program planning. To address the shortcomings of weight-based recycling goals, Hennepin County has been keeping track of annual average waste generation per capita, which is the average amount of waste – trash, recycling, and organics – produced by a county resident in a year.

Waste generation in Hennepin County
Pounds per capita



Since 2007, average waste generation per capita in the county has decreased by 20 percent, which is a much greater decrease than the national reduction of about 4 percent since 2007. Moreover, recycling rates in the county have increased only incrementally during the same period. Although waste generation per capita is also impacted by the evolving ton, it is a more robust and useful measure of what residents and businesses in the county are doing overall to reduce disposal and sustainably manage materials. This measure also accounts for annual increases and decreases in population.

Therefore, the county will be placing more focus on waste generation per capita to inform and guide our efforts in the future. Weight-based recycling goals will remain, but they may become secondary goals as the county explores opportunities to use waste generation data to better inform programming. Likewise,

the county strongly encourages the state to re-evaluate its weight-based recycling goals, which are not realistic based on the materials found in today's waste streams.

The county will continue to track program-level results and report annually on the implementation of the strategies outlined in the master plan. The county will also rely on data collected by the state to evaluate progress toward the objectives established in the policy plan since solid waste haulers and permitted facilities now report directly to the MPCA. This data will be used to calculate recycling, organics recycling, resource recovery, and landfill numbers.

Moving forward

Despite the challenges, opportunities to divert materials from the trash still exist. The following strategies will lead diversion efforts to make progress toward state goals:

- Focus on organics, including increasing organics recycling and reducing food waste.
- Build momentum for waste prevention and reuse.
- Engage residents through outreach and education.
- Serve residents where they are (at home, at work, at school, at events and on-the-go).
- Promote drop-offs for hazardous waste and additional recyclables.
- Divert construction and demolition waste from trash.
- Recover resources from trash.
- Achieve more through collaboration.
- Lead by example in county operations.

Focus on organics

Diverting organic materials, which include food, food-soiled paper and compostable products, is the biggest opportunity to reduce our trash. Waste sort studies continue to show that organic materials are the largest proportion of our trash – making up about 25 percent of the trash stream. Diverting organics from the trash involves many different strategies: food waste prevention, food rescue for hunger relief, food to animals, composting, rendering, and anaerobic digestion.

There is a lot of work to be done on preventing food waste in the first place. Each year, 40 percent of food in the United States goes to waste, which means wasted water, energy, fertilizers, cropland and production costs. Raising awareness about the problem of food waste and implementing strategies in both the residential and commercial sectors is needed to address this social and environmental issue.

Recycling organics puts our trash to better use by turning it into valuable compost, which has many benefits. Organic materials decomposing in landfills generate methane, a potent greenhouse gas. Diverting organics to composting helps to reduce landfill methane emissions. Using compost also increases carbon storage in soil and improves plant growth, further increasing carbon sequestration. Soils are the largest source of carbon storage in the world, but soil erosion has decreased those benefits. Additionally, Minnesota's composting industry supports about 700 jobs and produces \$148 million in gross economic activity per year. The composting industry supports four to eight times more jobs on a per ton basis than landfilling operations.

There are many opportunities to increase organics recycling, which would make significant progress toward our recycling goals and maximize the benefits of composting. However, ambitious strategies, such as organics recycling requirements, are needed to push the system forward and make organics recycling more widely available.



Require residential organics recycling

It has been 15 years since Hennepin County conducted the first residential organics recycling pilot, and progress has been slow. Only 11 percent of households in Hennepin County have organics recycling service.

There are now nine cities in Hennepin County where organics recycling service is available citywide (highlighted in blue on the corresponding map), and several other cities have limited availability through one hauler in an open system. Experience from these programs shows that the best results are achieved when organics recycling is available citywide, the service is structured so that everyone pays by bundling organics service with recycling or trash, and implementation is supported by a comprehensive communications and outreach plan. Cities that have implemented such programs include Minneapolis and St. Louis Park, where participation is more than 40 percent and approaching 30 percent respectively.

The 2004 master plan focused on conducting pilots and offering technical assistance, and the 2012 master plan focused on providing incentives and financial assistance. These approaches have had limited success, and many residents still do not have the opportunity to participate in organics recycling.

All of the stakeholders involved are hesitant to move forward with organics recycling. For cities, organics recycling is not a priority and they are uncertain how to implement it. Haulers say they need more demand. City recycling coordinators say it is difficult to create demand for a service that isn't available. Processors are reluctant to expand capacity without the promise of more organics.

Because of this, many cities do not have organics recycling service available, and participation in organics recycling in open cities is very low. However, residents are interested in organics recycling. In the residential survey for the master plan, residents said they consider organics recycling to be important, and 62 percent said they would be very likely to participate.

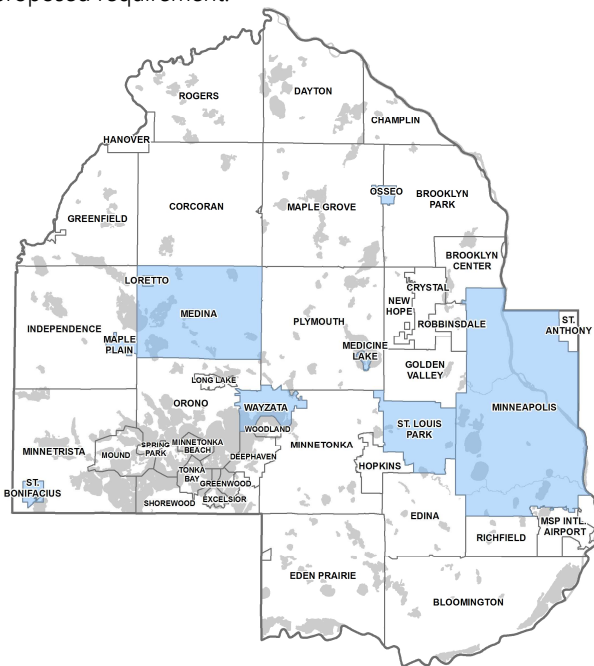
This master plan proposes organics recycling requirements for cities, which would send a signal to the market and establish a framework for action. This worked in Minneapolis after the county in 2014 required the city to implement an organics recycling program. The program has been a success with about 43 percent of customers participating. This is a higher participation rate than any other city. Without the motivation of a requirement, there has been no indication that other cities plan to move forward. A requirement would provide the impetus for cities to explore their options and come up with creative solutions.

Strategies

- Revise Ordinance 13 in 2018 to require cities to provide residents the opportunity to recycle organics by 2022.
- Increase awareness about organics recycling and the benefits of participating and assist cities in setting up their programs leading up to the requirement.
 - Provide \$100,000 of funding for city organics recycling drop-offs annually through 2021.
 - Assist three to five cities to finance and implement organics recycling pilots to address barriers, test alternate collection methods, and evaluate different aspects of an organics recycling program.
 - Facilitate conversations with haulers to discuss collection options, pricing, and sharing benefits with residents such as cost savings for using a smaller trash cart and receiving finished compost.

Residential organics recycling requirement

Communities highlighted in blue already meet the proposed requirement.



- Provide sample contract language for organics recycling.
- Continue to provide customized educational materials.
- Explore options to provide communities with compost for community gardens, city parks, or other projects.
- Evaluate the feasibility of working with compost facilities to offer bagged compost made from recycled organics.

Require organics recycling for certain businesses

During the past 12 years, the county has initiated multiple incentives to make recycling and organics recycling more attractive and financially feasible for businesses. These incentives include free technical assistance, lower tipping fees for organics, exemption from county solid waste fees, grants for containers and equipment, and free container labels and signs. In spite of this broad range of incentives, growth of organics recycling in the commercial sector has been slow.

Hennepin County's business recycling grants program has been successful at helping some businesses start organics recycling programs, but it has reached only a small fraction of businesses in the county. In focus groups, businesses who have started organics recycling say it's important to have an individual who is passionate about the topic to lead the effort and a financial scenario that makes sense. Other businesses said they have considered starting organics recycling but haven't been able to make it a priority or found that it was too expensive. Businesses say that finding space for outdoor containers, conducting ongoing training with staff, and finding time to focus on an issue that isn't considered urgent are all barriers to starting organics recycling.

No other reasonable incentives have been identified by staff, businesses, or the trade groups representing these businesses to significantly expand organics recycling in the commercial sector. Furthermore, the focus groups showed that most businesses are unlikely to implement organics collection without a requirement, and an organics recycling requirement was not unexpected.

Based on more than a decade of experience, staff recommend initiating an organics recycling requirement, in combination with existing incentives in order to make significant progress toward achieving the county's organics recycling goals.



Strategies

- Revise Ordinance 13 in 2018 to require businesses that generate large quantities of food waste to implement organics recycling by 2020. The approach to the proposed requirement includes:

1. The requirement would apply to businesses in the following sectors that generate one ton (eight cubic yards) of trash or more per week:

Restaurants	Sports venues and event centers
Grocery stores	Caterers and food trucks
Food wholesalers/distributors	Nursing/residential care facilities
Food manufacturers	Offices with dining services
Hotels	Farmers markets and food shelves
Hospitals	

This proposed approach to determine which businesses are subject to the requirements is recommended because it targets facilities likely to generate large quantities of organics first, manages processing capacity to avoid overwhelming the existing processors, and encourages the development of additional capacity by starting with large generators and phasing in smaller ones after costs hopefully decrease.

2. To be in compliance with the requirements, these businesses would need to:
 - Have organics recycling service.
 - Have collection containers in their back-of-house areas for food waste (front-of-house would be optional).
 - Meet a standard to ensure organics recycling service is being used effectively. (This standard has yet to be determined by the county)

Enforcement of the requirement will focus on targeted assistance and compliance that creates a level playing field.

During implementation, the county will facilitate cooperation with haulers and help businesses address barriers such as space constraints, training challenges, and cost effectiveness.

The county will communicate the requirements as part of a broader organics recycling effort that makes the case by promoting the environmental, financial, and social benefits.

- Before the requirement takes effect, the county will:

Target business recycling grants toward large food waste generators.

Further develop the requirement, including refining the approach to determining compliance based on feedback from stakeholders.

Develop infrastructure

To support the expansion of organics recycling in a cost-effective way, additional capacity is needed to receive, transfer and process organics close to where the organic materials are generated and collected.

Currently, compost sites are located on the outskirts of the metro area – not close to where the majority of organic materials are generated. Transporting organics directly to compost sites takes more time and money for haulers, which translates into higher costs for their customers. The organics area at the county's transfer station in Brooklyn Park is operating at full capacity. Additionally, the county has been challenged to find facilities to process organics since a composting facility that regularly received half of the county's organics closed in 2016.



In order to keep pace with the anticipated increase in organics recycling, the county will expand capacity at its transfer station and evaluate available short-term and long-term processing options.

Additionally, as in other areas of recycling, organics recycling presents several opportunities for the public sector to lead by example. Using finished compost in county operations is an untapped opportunity that the county intends to pursue to demonstrate the benefits of compost and support the development of end markets.

Strategies

- Consider expansion of the county's transfer station in Brooklyn Park to build an area dedicated to managing organics. Evaluate the use of pre-processing equipment as a part of the expansion at the Brooklyn Park Transfer Station that could remove contaminants from incoming organics, further increasing the amount of organic materials that can be managed.
- Explore options for working with private transfer stations to accept organics in order to add transfer capacity where none currently exists.
- Continue to work with local composters and the MPCA to increase composting capacity in the region by reopening the closed composting facility or adding capacity at other facilities.
- Create a plan for developing processing capacity, such as anaerobic digestion or other technologies that are capable of managing large quantities of organic materials and creating renewable, bio-based energy and green chemicals.
- Release a request for qualifications and proposals in 2018 for an anaerobic digestion project to be operational no later than the end of 2022.

Reduce food waste

As much as 40 percent of food produced for human consumption goes uneaten in the United States for many reasons. Of that wasted food, 43 percent is generated by consumers and 40 percent is generated by restaurants, grocery stores and foodservice businesses. So both residents and businesses play a significant role in preventing and reducing food waste in our communities.

Most consumers don't think they contribute to the food waste problem, believing they waste less food than the average person. The reasons people waste food is related to good intentions – they want to eat healthy, be a generous host, be good caretakers, and be adventurous eaters. There is also confusion over food labeling and when food is still okay to eat.

The commercial sector also faces many challenges in reducing food waste. Businesses need to realize that food waste is an issue, understand the safety and legal guidelines for food donation, know how to connect with hunger-relief agencies that can use excess food, and find a program that is convenient for them. Securing timely transportation is critical to getting food that is still good to eat from the generators of the excess food to hunger relief agencies that need the edible food. And an abundance of seasonal produce results in more food than food shelves and meal providers can use – an issue that can be addressed through further processing that allows produce to be stored and distributed during seasons when the availability of fresh produce is low.

Schools are another specific area where more could be done to reduce food waste. About 50 percent of waste from schools is organic materials, and there is a potential to capture uneaten food among those organics. Some schools are leading the way with successful examples of repurposing food through sharing tables and food donation.



Strategies

Commercial

- Develop a demonstration pilot with three to four businesses to test the use of technology-based solutions for food-related businesses to improve supply management by inventorying products, identifying waste issues, and pursuing reduction strategies.
- Partner with food shelves and community kitchens to match their needs with food that can be recovered from grocery stores, hotels, event centers, hospitals and nursing homes and transported to these hunger-relief agencies.
 - Evaluate and facilitate the development of app-based solutions to increase the amount of edible prepared food that is recovered.
 - Evaluate the feasibility of using Master Recycler/Composter volunteers and nonprofit job training programs to overcome the barrier of transporting food to hunger-relief agencies.
- Partner with the University of Minnesota's Institute on the Environment to evaluate options and determine the need for capturing and processing excess produce from farmers, retail and wholesale sources into food products that can be stored by hunger-relief organizations and later distributed to member agencies and clients.
- Encourage more food donation by finalizing safe handling guidelines that reduce the barriers to participation.
- Continue to use business recycling grants to incentivize food waste reduction and the environmental partners program to recognize business that donate food.

Schools

- Gather information from schools to document current practices on donating to food shelves or meal programs and create a food recovery best practices guide.
- Connect schools with resources to help them repurpose food in their own meals, donate food to hunger-relief organizations, and create sharing tables in their cafeteria where students can share extra food with their peers.

Residents

- Increase support of the national "Save the Food" campaign to raise awareness about the problem of food waste.
- Provide additional educational materials like flyers, education kits and activity guides and support the outreach efforts of our educational partners.

Build momentum for waste prevention and reuse

The county considers waste prevention to be any action taken to not produce waste of any kind – including generating recyclables and compost. But the survey results show that residents define waste prevention differently than the county, with residents considering composting and recycling to be key waste prevention actions. They also struggle to identify new waste prevention action to take.

When asked to name one action they currently take to prevent waste in the residential survey for the master plan, 21 percent of residents said they compost or participate in organics recycling and another 11 percent cited a recycling action. And when asked to name a waste prevention action that they want to be doing, 12 percent fewer residents even answered the question. Of those who answered, only 45 percent of the actions identified were a true waste prevention action, and many of those responses were people who want to do an action more consistently, such as remembering to bring reusable bags to the store all the time.

Residents reported many similarities among their current and aspirational actions. The most popular actions include using reusable bags, looking for the least amount of packaging, and avoiding disposable or single-serve items. Many residents noted that these items were difficult to recycle or not recyclable at all. These items also took up noticeable space in their trash or to store for reuse.

Surprisingly, actions to reduce paper use and donating household items were low despite the increase in opportunities to take these actions. Additionally, actions that the county has promoted widely – including buying used and fixing broken items – were not frequently mentioned.



Businesses are also still not familiar with waste reduction to a large degree, and very few businesses recycling grantees have used their grant funds toward any waste prevention efforts.

But there is high interest among residents in learning more about what they can do to reduce their trash. Articles on the county's Choose to Reuse website that take a deep dive into waste prevention actions have successfully spurred lively conversations about these topics, and the county's Zero Waste Challenge has received about 100 applications in each recruitment round from households wanting to learn what more they can do to reduce waste.



Support reuse retailers and community efforts

The reuse industry is made up of mostly independent retailers, franchisee retailers, and nonprofit organizations. Many in the industry do not have the resources to advertise their business, and therefore residents might not be aware of these options.

There has also been a recent growth in community-based and grassroots reuse efforts. One example is the sharing economy in which individuals borrow or rent goods owned by someone else.

The county encourages residents to support local reuse, rental, and repair retailers and highlights community reuse efforts through the Choose to Reuse program, which includes the Choose to Reuse website and annual coupon book. In an effort to reduce paper waste, the county began offering electronic coupons through the free Chinook Book app in 2013. Since then, the number of coupon books printed has decreased by 65 percent.

Another opportunity to support reuse is working with both traditional and reuse retailers to find outlets for materials that traditional retailers cannot sell. Traditional retailers commonly have items that don't sell, are incomplete or are missing parts, and most of these items end up being disposed of in our waste stream. This presents an opportunity to work with retailers and help connect them with the reuse industry so that these items may be reused or repurposed.

Strategies

- Promote the newly revamped Choose to Reuse website, which provides residents a searchable listing of local reuse retailers, articles on reuse topics, and local reuse events.
- Evaluate the Choose to Reuse coupon campaign and explore new ideas to encourage residents to shop at local reuse retailers.
- Monitor organizations involved in the sharing economy and identify opportunities to develop partnerships and offer support.
- Work with retailers to divert unsellable items by researching donations options and connecting retailers with nonprofit organizations who can sell or give items away to people who can use them.

Rethink consumption habits and promote repair

Every product manufactured impacts the planet through the resources required to produce it and the pollution generated throughout its lifecycle. When we must buy a product, the environmental impacts can be reduced by purchasing durable and made-to-last products, looking for products with recycled content, choosing to reuse products instead of buying new, and selecting products with minimal packaging. More education and awareness is needed to encourage consumption habits that focus on waste prevention.

Additionally, learning to repair and maintain can extend the life of the goods we own. Many household items are thrown away when they break or need mending because people lack the skills and confidence to repair their belongings. Fix-It Clinics provide residents the opportunity to get free, guided assistance from volunteers with repair skills on disassembling, troubleshooting and fixing their broken household items, including appliances, clothing, electronics, mobile devices and more. Fix-It Clinics teach valuable repair skills, build community connections and reduce the number of repairable objects thrown in the trash. Since 2013, nearly 80 percent of items brought into the Fix-It Clinics have been repaired, and the clinics continue to draw about 50 participants each month.

Strategies

- Continue to hold monthly Fix-It Clinics for residents to learn how to fix their broken household items.
- Promote the most popular, aspirational and impactful actions identified by residents, including using reusable bags, looking for the least amount of packaging, and avoiding disposable or single-serve items.
- Conduct research on consumption habits and waste prevention actions to inform the development of an education-based campaign focused on better consumption habits.

Encourage reuse during move out

When people move, they often make quick decisions about the goods they own, which can result in a lot of waste of reusable items. Making reuse a more convenient option can cut down on the waste created from moving. The county has been increasing reuse and donation opportunities by connecting multifamily properties with local reuse retailers. The properties set up a reuse collection point on-site, and the reuse partner picks up the materials to resell at their retail locations.

Strategies

- Continue and expand efforts to divert household goods and clothing for reuse and recycling from multifamily properties.
- Explore new options for keeping furniture and household goods out of the trash.

Find recycling options for items that cannot be reused

Despite their best efforts to resell, donate or otherwise reuse materials, reuse retailers and residents have materials that are not in good enough shape to be used again. A prime example is clothing and textiles. The county gets many calls from residents wanting to recycle their torn textiles. And although reuse retailers recycle unusable textiles, they don't want to advertise it because they prefer to receive high-quality goods and worry they will be inundated if they tell residents they will take it. To provide residents an option to recycle their clothing, shoes, bedding, curtains, tablecloths and toys that can't be reused or donated due to tears, stains and other damage, Hennepin County drop-off facilities now accept these items for recycling.

Strategies

- Continue to accept unusable textiles at the county's drop-off facilities for reuse or recycling into rags and other items.
- Explore recycling options for materials that cannot be repaired or reused.

Engage residents through outreach and education

The ability of the county to reach its solid waste management goals will be determined by the everyday choices and behaviors of the county's 1.2 million residents and thousands of businesses. When people choose to use less, recycle more and properly dispose of waste, their actions will be reflected in the county's waste management data and results.

The county promotes environmental stewardship by raising awareness about changes in recycling programs, promoting new opportunities, and generating excitement about recycling and waste prevention. The county also partners with community organizations to motivate behavior change, trains motivated residents to become champions in their communities, and works one-on-one with households to make lasting changes.



Communications and outreach

The county uses a combination of mass communications and one-on-one outreach approaches to provide information and help residents take action.

Strategies

- Develop high quality messages and materials supported by comprehensive communications and outreach plans, and deliver messages using both mass communication channels, social media and direct outreach methods.
- Maintain and promote the Green Disposal Guide, an online guide to help residents find the best way to recycle, reuse or dispose of household items.
- Provide information about recycling and waste prevention programs, services and actions at events and through presentations.
- Provide tours of the Hennepin County Drop-off Facility in Brooklyn Park and the Hennepin Energy Recovery Center to a variety of groups.
- Develop and support youth environmental education programs that foster a connection to the natural world, promote understanding of our interactions with and impact on the environment, and motivate lifelong environmental stewardship.

Raise awareness for organics recycling

Many of the people who provided feedback on the master plan expressed interest in seeing a broad effort to raise awareness about organics recycling. Individuals seem more willing to participate in organics recycling if they see it being implemented across all sectors, including residential, commercial and schools. There is also interest in better understanding the benefits of organics recycling and the value of the compost that food scraps are turned into. People say they participate in organics recycling to help the environment, be less wasteful, send less to landfills, and create healthy soils.

Strategies

- Develop a campaign to raise awareness about the benefits of organics recycling, help address barriers, and motivate participation.
- Promote the campaign through advertising, media outreach, and community events.
- Weave messages into existing promotional materials to ensure consistency among sectors.
- Provide materials to cities and other partners to support and enhance their work.

Engage the community and conduct socially inclusive outreach

Effective community engagement is critical to the success of the county's efforts to increase recycling and waste prevention. Good community engagement focuses on the touchpoints, relationships and strategies that will lead to community trust and reduced disparities. Establishing sustainable relationships and conducting stakeholder analysis through a systematic and strategic approach will enable staff to better problem solve, consult the community, and collaboratively create better solutions.

A cross-department team formed in 2017 to advance Environment and Energy's strategy to reach lower income communities, communities of color, new immigrant communities and American Indians and to mobilize and integrate behavior change around environmental issues.

Strategies

- Develop and implement a five year plan to enhance relationships and engagement, enrich knowledge gathering, and embrace change in department operations to better serve residents, including those from lower income communities, communities of color, new immigrant communities and American Indians.
- Ensure equitable access to services by translating literature into multiple languages, offering interpreter services to non-English speakers, and training staff to know how to access these resources, understand bias in communication and increase cultural competencies.
- Work with community members and organizations to understand and respond to their needs, interests, barriers and concerns in order to develop customized outreach and authentic communications.

Work with community groups to engage communities and motivate action

Through the Green Partners environmental education program, the county provides funding, activity supplies, field trip transportation and project support to organizations that empower residents to reduce waste and increase recycling. Since 2012, 122 grants totaling more than \$1.3 million have been awarded.

The county recently started Green Partners Grow, a new pilot group that focuses on increasing participation in residential organics recycling programs through peer-to-peer outreach. Participating organizations receive training, funding and environmental education resources to conduct a project in their communities.



Strategies

- Conduct evaluation of the Green Partners grant program to reassess goals, analyze outcomes, check alignment with community needs, and develop future recommendations for environmental education grants.
- Train and support groups in the Green Partners Grow program to implement their projects and evaluate successes in order to inform organics recycling outreach.

Train Master Recycler/Composter volunteers

Master Recycler/Composter volunteers are trained on waste prevention, recycling and composting and then educate their peers and community through volunteer activities and waste diversion projects. More than 500 residents have been trained through the program since its launch in 2011, contributing more than 6,000 volunteer hours.

In addition to the twice-per-year training for residents, the county has partnered with various organizations to offer a modified version of the training to their employees.

Strategies

- Continue to offer two Master Recycler/Composter trainings a year.
- Continue to implement modified versions of the training to the commercial sector.
- Continue to work with organizations to connect Master Recycler/Composters to volunteer payback opportunities.

Mentor households through the Zero Waste Challenge

Recently 35 households – a total of 133 adults and children – completed the county's first Zero Waste Challenge pilot that started in September 2016. The county developed the challenge to help people figure out what waste-reduction actions to take and how to fit them into their lives.

Overall, participating households decreased the amount of waste they produced by 20 percent. On average, households recycled or composted 62 percent of their waste, significantly more than the countywide diversion rate of 45 percent. About half of the households started composting their organic waste due to the challenge. The households are also helping to spread the word about recycling and waste prevention actions – most of the household said they shared their Zero Waste Challenge story with their family and friends.



Strategies

- Offer the challenge annually, targeting 30 to 50 households for participation.
- Continue to assist participating households in measuring and tracking their waste and progress towards their zero waste goals.
- Use education tools developed for the challenge and insights gained from participants to inform the development of an education-based campaign to encourage waste prevention and better consumption habits.

Serve residents where they are

For recycling to be most effective, people have expressed the importance of it being convenient and consistent no matter where they are. Residents have emphasized their desire for more education about recycling with clear messages about what is accepted. Businesses are working to provide recycling signage, consistent recycling stations and access to recycling bins. Representatives from community groups have said they appreciate the efforts to make recycling programs and labeling consistent across businesses and want to see those efforts continue to expand. Residents have noted the importance of recycling in schools to teach kids, suggesting they will bring their learning home and continue the practice throughout their lives. Others want to see better recycling options at events. The county is committed to convenient and consistent recycling everywhere people go – at home, at work, at school and on-the-go.



At home

Recycling, organics, and trash service depends on where you live. Cities provide recycling service to most houses and smaller multifamily buildings (those with two to eight units). This service is commonly referred to as single-family curbside recycling. On the other hand, larger, multi-unit residential buildings have waste services provided by the property owner or manager.

Single-family

The county supports city recycling and organics recycling programs by providing financial incentives, education and outreach support, and technical assistance. The county continues to pass through 100 percent of the state's SCORE funding to cities. In 2016, the county awarded \$3.6 million for recycling and organics recycling programs. To receive a grant, cities are required to meet the terms of the county's residential recycling funding policy.

In addition, the county supports education and outreach efforts in all cities by providing educational resources such as recycling guides, newsletter articles, social media posts and additional materials on a variety of topics. The county also works with cities to implement best practices and explore more effective program set up options, such as using standard contract language, ensuring residents can upgrade to a large recycling cart, and offering weekly recycling pickup.

Strategies

- Continue to provide SCORE funds for recycling and organics recycling programs as well as education and outreach support and technical assistance.
- Provide support for organics recycling by helping cities conduct pilot programs and identify the best practices for program set up.
- Continue to coordinate the standardization of recycling guides and messages by using consistent terminology and images.
- Work with interested cities to collect recyclables and trash on the same day or to develop pilot programs with bi-weekly trash collection and weekly recycling and organics recycling collection.
- Encourage cities to explore weekly recycling pickup when recycling contracts expire.
- Continue to encourage backyard composting by partnering with Sentencing to Serve to offer high-quality compost bins at a reasonable price.

Multifamily

The county's multifamily efforts over the past five years have focused on providing technical assistance and educational resources to property managers and residents. Through these efforts, more than 11,000 units at about 50 to 100 properties are reached each year.

Despite these efforts, challenges with multifamily recycling persists. Hennepin County conducted a study of multifamily waste in 2017 and found that diversion is low at multifamily properties, contamination of recyclables is high, and service levels are inadequate for capturing the amount of recoverable material generated. The county's strategies will continue to focus on educating residents and property managers, right-sizing service levels, and expanding collection options to increase diversion at multifamily properties.

Strategies

- Continue to provide technical assistance and educational materials.
- Expand efforts to divert household goods and textiles for reuse and recycling.
- Provide resources and technical assistance for organics diversion.
- Pilot and study new outreach strategies at properties with high populations of immigrants.
- Work with cities to ensure that multifamily units have recycling services.
- Continue to coordinate efforts regionally to ensure standardization of messaging and shared resources.
- Continue to fund multifamily waste diversion projects through the business recycling grant program.

At work

The county has provided \$1.5 million in grants since 2013 as well as technical assistance, signage and education materials to businesses and nonprofit organizations as an incentive to implement and improve recycling and organics recycling efforts. Businesses who have received grants have successfully increased the amount of materials they divert from the trash.

The county also began recognizing businesses and organizations for their efforts to recycle and divert organic waste from the trash through the Environmental Partners program in 2014. County staff provide onsite assistance to potential partners to ensure they are using best management practices for their recycling and organics recycling programs. Businesses that have earned recognition receive decals and other outreach materials and are listed in an online directory on the county website. The program helps businesses communicate to their customers that they care about the environment, and the online directory provides residents a way to find and support businesses that are taking action to protect the environment.



Strategies

- Continue offering \$750,000 per year in business recycling grants.
- Help address barriers to recycling and organics collection, such as space, training and cost.
- Continue to develop partnerships and build relationships with businesses and organizations to promote the availability and use of resources and incentives, and continue to work with entities that can help coordinate with multiple small businesses, such as the Lake Street Council, Building Owners and Managers Association, the Downtown Improvement District, chambers, and associations.
- Pilot a business-to-business mentorship program in partnership with the Environmental Initiative in 2018 and seek future non-governmental partners to implement an ongoing mentorship program to facilitate information sharing among peers and business leaders on waste reduction and recycling.

At school

School recycling and organics recycling programs are critical to helping the county achieve waste abatement goals and educate future generations about the importance of reducing waste, recycling and overall environmental stewardship. The county has provided technical assistance and \$1.7 million in grants to schools for recycling and organics recycling since 2002. More than 160 of the 350 schools in the county collect organics for composting. School staff and students are educated on waste reduction and recycling through presentations, free recycling signage, and bi-monthly school recycling meetings.

Strategies

- Continue to provide technical assistance and presentations to staff and students.
- Support food waste reduction by providing a best practices guide and connecting schools with resources.
- Evaluate future needs for grants and financial assistance.

At events and on-the-go

To help make recycling more widely available, the county supports recycling at events and other public locations. The county provides assistance to cities and parks to improve recycling programs in public spaces such as parks, recreation centers and business districts. The county partners with the Minneapolis Parks and Recreation Board to provide a container loan program for recycling and organics collection that 80 to 100 events with a total attendance of more than 100,000 people use each year. The county has supported the implementation of organics diversion at the Minneapolis-St. Paul International Airport, Target Field, TCF Bank Stadium, the Minneapolis Convention Center, and U.S. Bank Stadium.

Strategies

- Continue the container loan program for events.
- Continue to partner with cities and parks to expand recycling collection opportunities in public spaces.
- Target large, visible venues to increase diversion, incorporate best management practices for recycling and waste collection and increase consistency of materials accepted, messaging, terminology and signage.
- Continue to assist event organizers with the planning and implementation of low-waste events.

Promote drop-offs for hazardous waste and additional recyclables

Many items that aren't accepted in residential recycling programs can still be recycled through drop-offs. This includes plastic bags and film, clothing and textiles, electronics, mattresses and scrap metal. There are also items that contain hazardous materials that must be kept out of the trash because they can harm our health or the environment if not disposed of safely. This includes automotive items, household cleaning products, paints and pesticides.

To encourage more recycling and proper disposal, Hennepin County provides disposal options for household hazardous waste and additional recyclables at drop-off facilities and collection events and containers throughout the county. The county also promotes additional disposal and recycling opportunities provided by cities and retailers.



Provide disposal options for hazardous waste, problem materials and additional recyclables

The county operates two permanent drop-off facilities in Bloomington and Brooklyn Park where residents can get rid of electronics, appliances, household hazardous wastes, mattresses, scrap metal and more. To provide more convenient local disposal options, the county also holds collection events at various sites throughout the county and provides containers to collect household batteries for recycling in libraries and community centers.

To provide recycling and disposal options for more materials, the county has started programs to collect medicines, sharps and textiles in recent years. Medicine drop boxes are available at law enforcement agencies throughout the county, and collection events are held at senior living facilities quarterly to provide a more convenient disposal option for that population. Sharps, which are not accepted in the medicine drop boxes and are challenging for residents to dispose of, are now accepted

at the county's drop-off facilities. The county also recently started accepting textiles for recycling at the drop-off facilities in response to the feedback from residents who want to recycle their torn textiles and hesitancy of reuse retailers to advertise that they'll accept unusable textiles for fear of being inundated. Residents can now drop off their clothing, shoes, bedding, curtains, tablecloths and toys that can't be reused or donated due to tears, stains and other damage for recycling.

To facilitate reuse of materials that are brought to the drop off facilities but are still usable, the county operates free product centers at the two drop-off facilities. Materials like paints, cleaners, automotive products and more are available to the public free of charge.

Strategies

- Continue to operate the county's drop-off facilities and hold six to eight household hazardous waste collection events each year.
- Continue to collect sharps, textiles, mattresses, scrap metal, plastic bags and other hard-to-dispose of items and recyclable materials not accepted in residential recycling programs.
- Explore the feasibility of new partnerships and the use of the Brooklyn Park Transfer Station to facilitate increased recycling of plastic film, unusable textiles, and other hard-to-recycle materials.
- Work with local law enforcement agencies to provide additional medicine drop boxes throughout the county and continue to offer quarterly medicine collect events at senior living facilities.
- Continue to offer household hazardous waste disposal assistance to city and county cleanouts of tax-forfeited homes.
- Promote the county's existing battery collection containers at libraries and community centers.

Promote disposal and recycling options provided by cities and businesses

In addition to the disposal services provided by the county, many cities and businesses provide recycling and disposal options for materials that are not accepted in residential recycling programs.

Most cities host a special drop-off event or pick-up service that accept hard-to-get-rid-of items. Although acceptable items and fees vary by city, items commonly accepted at city cleanup events include appliances, batteries, carpet, construction materials, furniture, mattresses, scrap metal, and tires.

There are also many retailers that accept items like plastic bags and film, paint, batteries and fluorescent light bulbs from residents for recycling. And some businesses provide recycling options for appliances, electronics and scrap metal. Depending on their locations, these may be the most convenient option for residents.

Strategies

- Compile a listing and promote city drop-off days and special pick-up services.
- Promote opportunities to drop off items such as plastic bags and film, batteries, compact fluorescent bulbs, and paint at retailers.
- Provide information on the best disposal options for household items and businesses that accept those materials through the Green Disposal Guide.

Divert construction and demolition waste

Only 30 percent of the construction and demolition (C&D) waste generated in the region is diverted for recycling, but there are opportunities to do more. C&D processors can divert 60 to 75 percent of the waste for recycling, biofuel or landfill cover, while deconstruction can divert up to 90 percent of the material. A 2015 Hennepin County study found that there is adequate capacity in the region to greatly increase the amount of C&D waste diverted for recycling and reuse.



Strategies

- Develop C&D waste diversion practices and bid language for county facilities, operations and county-funded development projects that favors deconstruction over demolition when removing a building is necessary.
- Actively engage stakeholders, including cities, construction and demolition companies, waste haulers and property developers, to identify actions that could increase C&D waste diversion.
- Investigate opportunities to provide assistance to demolition contractors to assure proper disposal of hazardous materials and increase diversion of C&D material during the removal of buildings in the county.
- Collaborate with cities to increase deconstruction and diversion of C&D material through incentives and policies.
- Create educational materials targeting builders and residents on building material reuse and recycling.
- Continue to allow and encourage the use of tear-off shingle scrap in county paving projects when practicable and cost effective to increase diversion of this material.

Recover resources from trash

The county continues to take action to divert more from the trash through waste reduction, reuse, recycling, and organics recycling. Nonetheless, in 2016 residents and businesses put 720,000 tons of material in the trash, which amounts to 1,200 pounds per person. There are two options for managing waste that remains after residents and businesses recycle: burning it to generate energy or burying it in a landfill.

Processing waste to generate energy is environmentally preferable to landfilling and provides the opportunity to recover metal for recycling. The county's waste-to-energy facility, the Hennepin Energy Recovery Center (HERC), produces enough electricity to power 25,000 homes and provides steam to the downtown Minneapolis district energy system and Target Field. Additionally, more than 11,000 tons of scrap metal is recovered from the trash at HERC and



recycled each year, which is more than double the amount of metal collected in curbside recycling programs in the county. Furthermore, processing waste at HERC generates about \$8 million in electrical revenue each year that is used to fund the county's waste prevention, recycling, and organics recycling programs as well as environmental education, water and natural resources protection programs.

Hennepin County maintains the highest performance standards at HERC. For example, the county further reduced the relatively low NOx emissions from HERC in 2016 by proactively installing new pollution control equipment that reduced emissions of NOx by about 25 percent. Although HERC's emissions account for only about one percent of NOx emissions countywide, the county recognizes that every reduction of NOx contributes to protecting human and environmental health.

In operating HERC, the county strives to be a good neighbor, taking steps to control odors and dust and pick up litter. The county is an active member in the MPCA's Minneapolis Air Pilot Project, which includes 12 facilities with air permits in communities identified for environmental justice concerns. This group works to identify ways to reduce air emissions, better understand air quality in Minneapolis, and improve engagement with communities.

The county reduces the landfilling of waste by using the existing permitted capacity at HERC and sending waste to Great River Energy (GRE). The county will further reduce the landfilling of waste and

meet state goals through waste prevention and increases in recycling and organics recycling. As of 2014, the county is not seeking additional permit capacity at HERC (board resolution 14-0058R2).

Strategies

- Meet state law by recovering energy from the waste managed in the county system by operating HERC at its permitted capacity of 365,000 tons per year and delivering excess waste from the county system to waste processing facilities.
- Operate HERC safely and efficiently to ensure air emissions are well below permitted limits, and monitor advancements in pollution control technology to assess feasibility of additional voluntary reductions in air pollution.
- Manage HERC in a fiscally responsible way that includes adequate maintenance to protect the county's investment and maximize energy revenues to fund environmental programs.
- Improve transparency about HERC's operations by posting environmental performance data online and offering tours.
- Increase and enhance engagement with communities by building relationships, seeking to understand values, identifying and addressing concerns, and finding common interests of areas to work together.
- Give presentations and tours to help residents visualize how much trash is generated, understand HERC's role in an integrated waste management system, and encourage actions to prevent waste.

Achieve more through collaboration

The metro solid waste management system is governed by multiple entities, public and private, and collaboration is needed to implement comprehensive and effective strategies. The state, counties, cities, waste management industry, businesses, nonprofits, communities, and residents all have specific roles and responsibilities for improving solid waste management.

The county is committed to waste prevention and recycling. The success of our efforts relies in part on individuals, businesses, and partners taking action to support and improve recycling. In particular, the county works on product stewardship initiatives to ensure everyone involved in a product's lifecycle takes responsibility for reducing its impacts and relies on the state to implement policies and practices that support the solid waste management system. The county is committed to working with the state to meet environmental justice goals to ensure the fair treatment and meaningful involvement of all people.



Pursue product stewardship initiatives

Product stewardship means that all parties involved in designing, manufacturing, selling, and using a product take responsibility for the environmental impacts of that product, and take steps to reduce the impacts. Many household hazardous wastes and problem materials accepted in county programs are banned from municipal solid waste. The county has identified foam insulation tanks, one-pound propane tanks, and fire extinguishers as some of the most toxic, costly, and hazardous materials collected through county program. The continue diversion programs for hard-to-recycle materials like mattresses and unusable textiles. The system established by the county is important to maintain. The county drop-off facilities and collection events offer a convenient one-stop for residents to get rid of priority wastes.

Hennepin County has been involved in the Minnesota Product Stewardship Council as well as a state-wide committee in partnership with other waste organizations and the MPCA. The focus of these groups is to bring together counties across Minnesota to come to a consensus on what products are of the most concern for them. The county sees the importance of collaborating with non-profits, other counties, and waste management organizations to develop product stewardship efforts.

Strategies

- Share the county's experience, expertise, and needs on product stewardship by sitting on the board of the Minnesota Product Stewardship Council to support the promotion of product stewardship efforts.
- Participate in a statewide committee hosted by the MPCA to establish a statewide effort to evaluate and establish the framework of product stewardship policy in Minnesota.
- Investigate options, product stewardship efforts in other states and countries, and solutions for toxic, hazardous, and costly products such as foam insulation tanks, one-pound propane tanks, fire extinguishers and other materials that may arise.
- Enhance tracking and reporting on priority wastes for product stewardship initiatives and support future efforts as they develop.

Coordinate with the state and region

The state, metro counties and cities all play a role in solid waste management. The goals outlined in the policy plan can only be achieved with support from each level of government.

Minnesota Pollution Control Agency

The county's ability to meet the state's recycling goals depends on leadership by the state in the following areas:

- Enforce the Restriction on Disposal statute, § 473.848.
- Implement hauler reporting with a focus on commercial recycling.
- Actively participate in creating a solution to the lack of capacity for organics management.

The Minnesota Legislature established a solid waste management hierarchy and requirements for implementing alternatives to land disposal, including the processing of waste at resource recovery facilities. The Restriction on Disposal statute (Minn. Stat. § 473.848) prohibits the disposal of unprocessed trash unless the waste is certified as unprocessable in accordance with the criteria in the policy plan. More landfill diversion is possible if waste haulers using landfills delivered waste to resource recovery facilities.

The complexity of the solid waste system makes it difficult to measure how waste is managed. Some data is relatively reliable, such as the waste delivered to facilities. Other data is not as reliable, such as recycling in the commercial sector. The county estimates commercial recycling using a baseline derived from a study completed in the early 1990s. That baseline number was indexed to employment data from the Department of Employment and Economic Development (DEED). Each year commercial recycling tons are adjusted up or down based on employment in the county. In 2015, the legislature required haulers to directly report to the MPCA in order to get better data on commercial recycling. The hauler forms were completed in 2016, and in 2017 haulers will begin to report data from 2016 using the new forms.

Additional composting capacity is needed to handle the increased quantities of organics diverted from the waste stream. In August 2016, a composting site that regularly received half of the county's organics ceased operations. Since that time, the county has struggled to secure adequate composting capacity for the organics currently received at the county's transfer station. The county has talked to local composters about the need for increased processing capacity, but no definitive plans are moving forward at this time. The county has been in communication with the MPCA and other key stakeholders regarding the steps needed to re-open the facility that closed last year.

The policy plan outlines numerous strategies for reducing waste and increasing recycling and organics recovery. The MPCA has committed to leading several of those strategies, including recycling market development, organics market development, and emerging technology. The county will actively participate in the MPCA's development of those strategies and work to ensure successful implementation.

Metro coordination

Although the metro counties do not have a formal regional waste management district in place, it is worthwhile to implement certain strategies at the regional level. These strategies include consistent regional messaging, reciprocal use for household hazardous waste facilities, and regional hauler licensing.

Starting in June 2016, representatives from haulers, cities, counties, and other regional organizations and associations, met to discuss how to improve recycling efficiency through coordinated messaging and community outreach. Recognizing the inconsistency of recycling messages, the Recycling Education Committee (REC) sought to better coordinate recycling communications and outreach. After a series of meetings, the group identified a set of materials that were universally agreed upon to always or never be acceptable for curbside recycling collection.

Each of the metropolitan counties has at least one year-round site for the collection of household hazardous waste. A reciprocal use agreement allows residents to use any of the household hazardous waste collection sites located in Anoka, Carver, Dakota, Hennepin, Ramsey, and Washington counties.

The regional hauler licensing program was established through a joint powers agreement. The program provides for the issuance of one base license by the county in which the hauler is based and an operating license by each county in which a hauler operates. The base license provisions, including insurance requirements, fees, hauler application form and license year, are consistent throughout the region.

Strategies

- Implement standardized messaging regarding residential recycling.
- Standardize metro practices by offering reciprocal use for household hazardous waste and coordinating hauler licensing.

Seek environmental justice

The MPCA has adopted an environmental justice policy and defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. This will be achieved when everyone benefits from the same degree of environmental protection and has equal access to the decision-making processes that contribute to a healthy environment. The county is committed to reaching this goal and acting on the three principles of environmental justice: full and fair participation, equal sharing of benefits, and mitigation of disproportionate adverse effects.

Strategies

- Ensure full and fair participation in solid waste planning
 - Actively engage stakeholders to guide development of an environmental justice framework. The framework will use the county's core values, disparities reduction work and Health in All Policies efforts as a foundation and will involve listening to and collaborating with others to create a shared set of values and outcomes for the work that affects communities.
 - Identify areas of concern for environmental justice using the MPCA parameters and map, the EPA's EJScreen tool, and Hennepin County's Public Health SHAPE disparities data book.
 - Develop and implement public participation plans to engage the community and conduct socially inclusive outreach for policy development and program decisions.
 - Incorporate environmental justice considerations into solid waste policy and program recommendations.
- Equally share the benefits of this solid waste plan
 - Require cities to offer organics recycling and work with multifamily property managers to ensure that residents have adequate access to recycling services.
 - Analyze program data such as grant recipients and location of collection events to identify who is benefiting from county waste and recycling programs and if any disparities exist.
 - Examine our solid waste system, including recycling and waste facilities and the transportation of waste, to better understand community health impacts.
- Mitigate disproportionate adverse impacts of this solid waste plan
 - Identify new strategies to reduce disparities found in waste and recycling programs.
 - Work with the MPCA, Clean Air Minnesota, City of Minneapolis and other cities to support air emission reduction projects that could offset air emissions from the solid waste system.

Lead by example in county operations

The county has several internal initiatives to increase both recycling and waste prevention. These include comprehensive recycling services and a number of sustainable purchasing programs.

Recycling services

Internally, the county began collecting office paper at the Government Center in 1974. The in-house recycling program has now expanded to all county-owned facilities, many leased locations, all 41 Hennepin County libraries and the Hennepin County Medical Center, and the list of materials collected has expanded greatly.

Program services include:

- Single-sort recycling
- Cardboard
- Organics (back-of-house at corrections facilities, Park Café, and several pilots)
- Library books (reuse and recycling)
- Media (CDs, DVDs, and more)
- Household batteries
- Scrap metal

Strategies

- Continue to provide convenient in-house recycling services.
- Create a recycling guide and educational materials for new employees.
- Evaluate the expansion of organics collection in the Government Center and other locations.
- Work with the libraries to reduce waste.

Sustainable purchasing initiatives

Public entities have significant purchasing power, which provides an opportunity to make a positive impact on human health and the environment through procurement decisions. The county has made an effort to lead by example and take responsibility for the consequences of its spending by focusing on sustainable purchasing.

The Hennepin County Board approved Resolution 01-4-263 in 2001, which directed the county administrator to designate recycled-content products for procurement and develop procedures to continuously evaluate product purchases for environmentally preferable alternatives. The Environment and Energy Department worked with other departments to incorporate environmentally preferable specifications into county contracts.

The county has partnered with Staples, its office supply contractor, to automatically substitute eco-friendly products that save the county money. One example is the purchase of remanufactured toner cartridges instead of new toner cartridges. Staples uses third party certifications to offer products with reduced environmental impact. Eco-conscious products include those that contain recycled content or are remanufactured, refillable, or rechargeable. The life cycle of products is also part of the equation. Staples also works on packaging reduction and order efficiency to reduce the impact of delivery.

The county purchases electronics that are registered with the Electronic Product Environmental Assessment Tool (EPEAT). EPEAT is a method for purchasers to evaluate the effect of a product on the environment. It assesses various lifecycle environmental aspects of a device and ranks products as Gold, Silver or Bronze based on a set of environmental performance criteria.

In order to minimize the health and environmental impacts of maintaining clean facilities, the county requires the use of environmentally preferable cleaning products and methods. Cleaning products must be certified through Green Seal, EPA's Design for the Environment, or Canada's EcoLogo program.

The reuse of office supplies is organized through the county's purchasing department. If a county employee needs an item or wants to get rid of something, the reuse process is initiated by emailing the designated contact in purchasing, who then distributes the announcement to a large group of contacts. Those who are interested connect to exchange the surplus items.

Strategies

- Continue sustainable purchasing initiatives.
- Participate in the state's GREEN Group to develop sustainable purchasing initiatives and report on common metrics.

Attachments

The attachments are available at hennepin.us/solidwasteplanning.

- Description of existing solid waste management system
- Description of county system
- Supporting documents
 1. 2016 recycling progress report
 2. Stakeholder engagement report
 3. Waste sort report
 4. Residential recycling funding policy
 5. Waste delivery agreement template
 6. County solid waste ordinances
 7. County solid waste system operating manual
 8. City contract rates
 9. List of selected policy plan strategies

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