



TO: HENNEPIN COUNTY, MN
FROM: RESOURCE RECYCLING SYSTEMS (RRS)
DATE: JULY 2022
RE: GAPS ANALYSIS

Task #1 of the Hennepin County Zero Waste Plan scope of work requires the contractor to perform a systems-based gap analysis to identify the needs and opportunities of the county's current materials management system. The gap analysis is presented in the following memorandum.

HENNEPIN COUNTY GAPS ANALYSIS

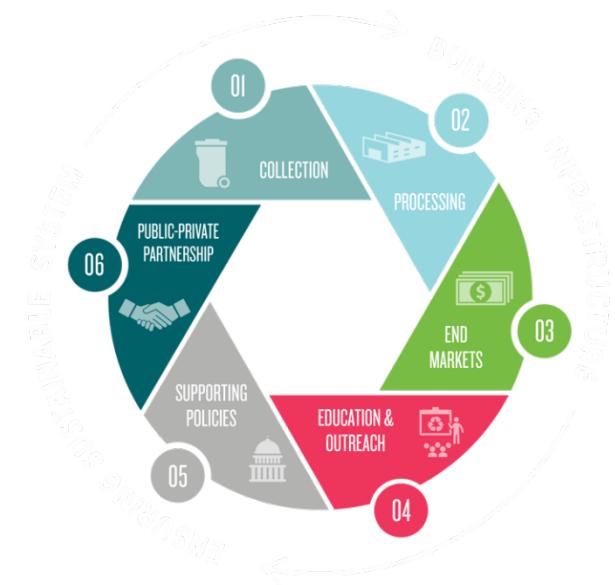
Following the baseline assessment of Hennepin County's waste generation, infrastructure, programs, and policies, the RRS project team completed an analysis of potential gaps in the system. The gaps are indicative of opportunities for additional programs, optimization of existing system aspects, or the potential for novel actions and investments to help the county achieve zero waste.

Methodology

To complete the gap analysis, the team reviewed Hennepin County's materials management system components, gathered data during the Phase 1 stakeholder engagement process, conducted a scan of six high performing systems around the globe, and compared Hennepin's system to national best management practices for model materials management systems.

The analysis identifies the potential system components that can be optimized or expanded and the gaps that may need to be addressed with new approaches to reaching zero waste. Collectively, these gaps are opportunities for targeted strategies to improve equitable access, improve recovery, reuse, and waste minimization, support recycling market development, and form partnerships. Once actions to improve the existing system have been identified, the project team will use the County's REIT process to analyze the results. The REIT tool will allow the team to identify disparities in materials management options and ensure the final zero-waste plan will have improved outcomes for all County actors.

The project team utilized six best management 'practice areas' as an organizing structure for the gap analysis. A highly functioning system requires all six practice areas to be working in concert, and no individual system component is significantly more important than another. For example, a community may have state-of-the-art processing for recyclables, but without education and outreach to instruct generators what should be recycled, or



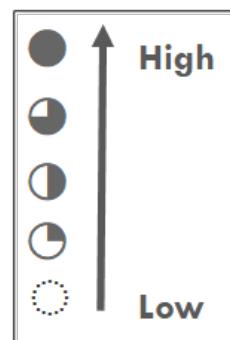
end markets to sell commodities into, the system will not function effectively. The six practice areas are presented in Figure 1 below.

Figure 1. RRS Best Management Practice Areas

PRACTICE AREA	DESCRIPTION
Collection and Access	Every household and business in a community needs convenient access to effective programs. This access can be through curbside collection, drop-offs, reuse and sharing economy, or a combination of all of the above. Material diversion and recovery needs to be as convenient as waste disposal as a first step in zero-waste recovery.
Processing and Facilities	It is crucial for the County to have processing facilities conveniently located, technologically advanced, and with enough capacity to handle the population's current and future material streams.
Robust End Markets	End markets for the recycling that is collected, and finished compost leads to the success of a sustainable circular economy that ultimately allows material to be diverted from landfills. This also includes reuse and refurbishment. By increasing demand, the County creates a 'pull' for additional materials that in turn, drives supply.
Outreach and Education	Once a strong infrastructure is in place, all residents and business will need to know how to handle material in their home, at work, and away. Systems continue to evolve as material composition changes and technologies change. Thus, information needs to be put in front of the residents on a regular basis in many different ways to feed MRFs, composters, and end markets with good quality material, while continuing to decrease the material buried in landfills.
Supportive Policy	Policy should be crafted to ensure responsible recovery of material is the standard practice throughout the community, not just the best practice.
Private Public Partnerships	The business community, not for profits, community groups, and Hennepin County will need to work closely together to find success. These partnerships can be found through funding opportunities, shared owner/operator agreements for MRFs and organics processing facilities, marketing and educational campaigns, and everything in between. Many retailers and packaging companies are realizing that local governments are responsible for the end of life for their products, thus leading to the sustainability of their product. Therefore, the benefits of public/private partnerships are becoming more apparent and accessible.

Summary

Each key area has several components or categories of best practices that have been identified by the project team over nearly four decades in the industry. Within each practice areas, the evaluated system components are listed alphabetically. Their order is not an indication of priority. The project team utilized Harvey balls to represent relative uptake scores for each of the best practices (range from best (●) to worst (○) on the county's relative uptake). The gap analysis summary is presented in Figure 2 below.



Relative Uptake of Best Management Practices

Figure 2: Summary of Gap Analysis (categories are presented in alphabetical order, not order of importance)

COLLECTION & ACCESS		OUTREACH & EDUCATION	
UPTAKE	CATEGORY	UPTAKE	CATEGORY
●	Away from Home Recycling	●	Commercial Engagement and Technical Assistance
●	Collection Schedules	●	Consistent Recycling Language
●	Commercial Access	●	C&D
●	Construction and Demolition Sector Access	●	Governmental Leadership
●	County Collection Model	●	Multi-Family Engagement and Technical Assistance
●	Drop-off Locations	●	Online Resources
●	Hard to Recycle Items	●	Resident and Community Group Programming
●	Multi-family Access	●	School / Institution Resources
●	Schools and Institutions		
●	Single Family Access		

PROCESSING & FACILITIES		POLICY	
UPTAKE	CATEGORY	UPTAKE	CATEGORY
●	Advanced Solutions	●	Circularity & Upstream
●	Anaerobic Digester Facility	●	Data Tracking
●	C & D Processing Facility	●	Composting Mandates
●	Hard to Recycle Materials	●	C&D Mandates
●	Landfills	●	Embedded Recycling Rates
●	Organics processing	●	Incentivized Rate Structure
●	MRF/Recycling transfer station	●	Landfill Bans
●	Reuse Facilities	●	Recycling Mandate
●	Waste-to-Energy (HERC)	●	Building Codes
		●	Support Local End Markets

END MARKETS		PRIVATE PUBLIC PARTNERSHIPS	
UPTAKE	CATEGORY	UPTAKE	CATEGORY
●	C&D	●	Leverage Private Sector Partnerships
●	Local End Market Development	●	Partner with Municipalities/Counties / State
●	Hard to Recycle Materials	●	Local Grants
●	Reuse markets	●	Upstream Brands and Manufacturers
●	Regional end-markets		
●	Transportation to market		

Collection

The major strengths and gaps of Hennepin County's current system to access and collect residential and commercial materials are described below.

Strengths

- Commercial Access: Access to recycling services are available for businesses in the county, and businesses are required to subscribe to services provided by the open market. Some businesses are required to subscribe to food scrap collection as well and service is generally available throughout the county.
- Construction and Demolition Access: Hennepin County offers opportunities to recycle construction and demolition materials. There are multiple private sector actors that provide C&D recycling services throughout the county.
- Drop-off Locations: Hennepin County owns and operates two expansive drop-off locations for residents and businesses and cities offer other opportunities for both recycling and organics.
- Multi-family Access: Cities are responsible for having and enforcing ordinances requiring property owners of multifamily housing to provide recycling collection service for lessees. Hennepin County's Ordinance 13 requires sufficient and easy access to service in addition to annual education efforts.
- Single Family Access: Hennepin County offers a strong single family recycling program and the drop-offs (both city and county owned) which provide additional diversion opportunities and access.

Gaps and Opportunities

- Multi-family Access: Gaps in awareness of existing ordinances and enforcement of those ordinances' limits access to recycling services for some multi-family residents. There is also a gap in available data on who does / doesn't have access to recycling services making it harder to enforce the ordinance. There is a major gap in access to organics diversion and harder to recycle materials for multi-family. Outreach and education for property owners is difficult because data is inconsistent and lacking in general.
- Commercial Access: Gaps in the commercial sector are generally related to barriers to participation (cost, lack of control, space, challenges for small businesses), and not a lack of recycling service availability. Lack of awareness of existing ordinances as well as inequitable enforcement is also a gap to consider. Enforcement relies on complaints submitted online by the public.
- Construction and Demolition: While recycling services are generally available for common C&D materials, awareness of these services is lacking. There are also gaps in harder to recycle items. Additionally, there are challenges in the ability for contractors and businesses to secure access to services due to costs, space for storage, or building design.
- County Collection Model: While open market systems do provide some benefits, it also results in inequities in costs, service offerings, and data reporting. It also creates an efficiency gap, results in multiple vehicles servicing the same street, and has adverse impacts on pollution, safety, and noise.
- Drop-off locations: Gaps were reported related to locations, ability to easily transport materials to facilities, and awareness. Multi-family residents have less space to store materials until it makes a trip to the drop off location justifiable. Those who do not readily have a vehicle or rely on public transportation are also somewhat excluded from participating in drop off programs. Drop off programs are beneficial to those with the resources that make it a convenient option such as a vehicle and storage space.
- Hard to Recycle Items: Items not accepted in curbside or at drop-off recycling are difficult and inconvenient to dispose of under current system.
- Schools and Institutions Access: Gaps in school systems' resources, technical knowledge, and funding leads to differential access to recycling and organics services. Stakeholders representing this sector mentioned the difficulty of navigating and enforcing contracts with waste haulers.

The table below presents the gaps for each of the evaluated system components.

Table 1. Collection Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
●	Away from Home Recycling	<ul style="list-style-type: none"> Access to any away from home garbage bins is not consistent across county, lower income neighborhoods are burdened Opportunities to recycle in away from home settings are not as widely available as garbage, there is a lack of paired (trash / recycling) bins the county Gap in clearly labeled waste stations (trash, recycling, and organics) in public spaces
●	Collection Containers	<ul style="list-style-type: none"> Ordinance 13 outlines label standards for collection bins Labels are not always legible and are oftentimes overshadowed by private hauler logos and marketing Dumpsters are not color coded, making disposal decisions difficult resulting in contamination. This is specifically impacting multi-family and commercial customers. Many single-family programs utilize color coded carts, but the colors are not consistent throughout all cities in the county
●	Collection Schedules	<ul style="list-style-type: none"> Collection schedules in Hennepin County are dependent on the waste hauler, residents are encouraged to contact their city waste coordinator for further information Gap in need for clear, consistent and precise schedules for residents, this leads to confusion Holiday scheduling may cause inequities when only select holidays require special scheduling
●	Commercial Access	<ul style="list-style-type: none"> Private haulers provide recycling and organics services for commercial generators, availability of services is high and is generally not a gap Participation in available programs is variable and represents a gap Some large generators are covered under Ordinance 13 for organics recovery / diversion, does not apply to all businesses in county Uneven levels of enforcement of ordinance 13 across county Gaps in technical support, coverage, and access for small and independent businesses (costs, lack of control, enforcement) or businesses in some neighborhoods Collection costs, contracting, and private hauler service leading to lower level of participation and a gap in needed county support Gap in access to recycling for customers and staff at businesses, recycling and organics may only be back of house
●	Construction and Demolition Sector Access	<ul style="list-style-type: none"> Opportunities to recycle C&D through private sector in Hennepin County, availability of service does not appear to be a gap in more densely populated parts of the county, may be a gap in more rural areas Stakeholders identified space for storing recycling containers as a gap Potential gap in the ability to pay for C&D recycling services, especially for smaller contractors / businesses Gap in the ability to access services for harder to recycle C&D materials, or for mixed C&D streams
●	County Collection Model (open vs. contract vs. franchise vs. municipality)	<ul style="list-style-type: none"> Single family services are provided through the private sector (open market) (~50%) or are city operated (~50%) for garbage collection, and 95% of recycling is contracted through a private hauler and the city Multi-family and commercial generators have an open market for recycling Collection schemes reported to result in gaps in inconsistencies in service offering, costs, and control Potential gaps in collection efficiency as multiple haulers servicing the same street, can be a burden on road infrastructure, increase greenhouse gas emissions, inequities in impacts

UPTAKE	CATEGORY	FINDINGS
		<ul style="list-style-type: none"> • No contract incentives for haulers¹ • Leads to gaps in data tracking
●	Drop-off Locations	<ul style="list-style-type: none"> • County manages two comprehensive drop-off sites • Stakeholders identified a gap between drop-off center locations and proximity to public transportation • Gaps in locations and access to drop-offs across county, more noted for organics and for those in lower income neighborhoods or those without transportation
●	Hard to Recycle Items	<ul style="list-style-type: none"> • Access is available to drop-offs for mattresses, e-waste, tires, printer cartridges, plastic bags, batteries, paint, and other hard to recycle materials are available, but may be hard to access (distance, hours open, lack of transportation, cost) for all generators • Some materials, including mattresses, can be picked up for a fee. This eliminates the transportation barrier but may be cost prohibitive. • In the past, Hennepin County has offered more extensive disposal options for materials like household batteries and unused textiles, but safety concerns and lack of transparency regarding disposal resulted in these services being terminated • Gaps in access to textiles recycling, plastic films, expanded polystyrene, and small format plastics – gaps are not exclusive to collection and are related to lack of sorting infrastructure and end markets
●	Multi-family Access	<ul style="list-style-type: none"> • Section III of Ordinance 13 outlines general recycling collection provisions for multi-family housing, organics diversion encouraged but not required • Cities are responsible for having ordinances requiring property owners of multifamily housing to provide recycling collection service for lessees. Cities are responsible for enforcing their ordinances. • Access to recycling for MFU residents is not consistent across county, and overall lower than access for recycling in single family and commercial, multi-family residents reported that they are not aware of recycling options • Access to organics diversion is very limited or not available at all for multi-family • Organics drop-offs are available in some communities, but requires more effort and cost for generator to access, potential gap in the location, scale, and number of MFU drop-offs • MFU residents do not have control over their services, it is up to property managers and there is a potential disconnect, leads to gaps in participation and motivation • Lack of access is more pronounced in some parts of the county than others but there are gaps in data availability and understanding of exactly who does / doesn't have access today • Lacking a way to address infrastructure related challenges in the sector (moving carts, space for bins)
●	Schools and Institutions	<ul style="list-style-type: none"> • Not all school systems have equal resources and access to recycling and organics services • These services can be costly for schools to sign up for, namely composting, and there is a gap in funding due to competing priorities • Hauler contracts reported to lead to challenges for schools, and rejected/highly contaminated loads contribute to cost impacts for schools
●	Single Family Access	<ul style="list-style-type: none"> • Single family services can either be provided through the private sector (open market), a city-contracted hauler, or a city operated system • Generally strong access for service in the single-family sector with few gaps in recycling access

¹ Note that there are also advantages provided through open-hauler systems (no need for public sector funding, competition can lead to value added service offering, allows for smaller or locally owned/ operated businesses to compete) that are not presented in the gap analysis but should be considered.

UPTAKE	CATEGORY	FINDINGS
		<ul style="list-style-type: none"> For organics, 19 cities offer organics drop-offs as opposed to curbside, which can make it harder to participate and could be a potential gap. Implementation of organics has not been consistent – some haulers require everyone to pay while others in the same city do not. Stakeholders identified gaps for access to service for renters, as they are not always in a position to make service decisions Some gaps identified in access to harder to recycle items (see Hard to Recycle access section)

Processing

It is crucial for the County to have processing facilities conveniently located, technologically advanced, and with enough capacity to handle the population's current and future material streams. The major strengths and gaps of the county's current processing system are described below.

Strengths

- MRFs: There are multiple MRFs in and around Hennepin County and there is ample capacity to process the recyclable materials generated in the county today.
- Waste to Energy (HERC): Nearly 50% of Hennepin County's MMSW stream is sent to a WTE facility as opposed to being landfilled. The facility is the only in-county option for processing waste.

Gaps and Opportunities

- Reuse facility: While Hennepin County is home to numerous thrift stores and offers a Choose to Reuse platform for reuse information, stakeholders still identified this area as needing additional investments. Small businesses suggested innovative ideas including reuse malls, incubator programs, supporting small businesses that already do this type of work/education, and more
- Organics Processing: There is a gap in capacity and compost infrastructure. As participation in organics diversion continues to increase, this gap will continue to expand and must be addressed. Current composting facilities are in areas of concern for Environmental Justice (designated per MPCA). Siting future facilities must consider environmental justice impacts on the community
- Waste to Energy (HERC): The HERC represents a gap in addressing equity and reducing the burden in areas affected by cumulative health impacts from multiple sources of pollution and other social conditions and stressors combined.
- Landfills: Hennepin relies on out of county landfills to capture almost 50% of the MSW. Some of these landfills have applied for additional capacity in recent years, highlighting that capacity may be an issue in the future. Additionally, the burden of managing waste is being placed on neighboring communities.

Table 2. Processing Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
○	Advanced Solutions (post collection sorting, chemical recycling)	<ul style="list-style-type: none"> While metal is recovered from the HERC and from ash at the landfill, the county does not have other post-collection separation facilities. This represents a potential long-term gap for consideration
○	Anaerobic Digester Facility	<ul style="list-style-type: none"> In 2021, Hennepin County released an RFP to build an anaerobic digestion facility, if developed the facility could process a minimum of 25,000 tons of organics annually

UPTAKE	CATEGORY	FINDINGS
		<ul style="list-style-type: none"> Gap in capacity to process organics as organics recovery increases will continue to expand as service is utilized more broadly. Solutions like the AD facility should be part of the future solution
●	C & D Processing Facility	<ul style="list-style-type: none"> There are multiple C&D processors in the area that provide recycling services and 5 C&D specific transfer stations All facilities are privately owned and use a mix of manual and mechanical technology to sort C&D and MSW No reported issues or gaps on capacity at this time Potential gaps on the technology and clean feedstocks required for facilities to recovery more materials out of mixed waste loads Potential gaps to recovery ceiling tiles, industrial carpet, gypsum board, and asphalt shingles from the sector Gap in data on recovery fines, and residue
●	Hard to Recycle Materials	<ul style="list-style-type: none"> Drop-offs for source separated materials do not require processing, thus are not noted as a gap Gap in ability of existing systems to recovery textiles, plastic films, and smaller format plastics were identified, but are not unique to the county. More regional processing could lead to potential of secondary sorting.
●	Landfills	<ul style="list-style-type: none"> Three landfills in neighboring counties received approximately 45% of Hennepin County's annual trash There is a gap in the ability for the county to manage its own waste in-county as MSW is exported out of county, without the HERC, Hennepin County would be transporting all waste out of county There is a gap in incentives for waste diversion due to the low cost of landfilling While not reported as a gap at this time, landfill capacity may be a concern in the long term (20 plus years)
●	Organics processing	<ul style="list-style-type: none"> There are multiple composting facilities and food-to-feed options with enough availability to manage county organics today Gap identified for available composting capacity as organics recovery continues to increase Gaps in community-based composting solutions (community gardens, small scale composting at a hyper local level)
●	MRF/Recycling transfer station	<ul style="list-style-type: none"> 8 privately owned MRFs in region, three in county, MRFs are vertically integrated by hauling companies Improving and expanding recycling programs could lead to an additional 100-160k tons of material being processed however, no gaps in the available capacity or sorting infrastructure were reported
●	Reuse Facilities	<ul style="list-style-type: none"> Stakeholders expressed a need to increase available reuse options, specifically in low-income and rural areas. This could include things like reuse malls, tool libraries, supporting a share economy, thrift stores, bulk food stores, and more. Potential gaps in food donation and rescue infrastructure including refrigerated trucks and distribution centers
●	Waste-to-Energy (HERC)	<ul style="list-style-type: none"> Approximately 50% of Hennepin County's trash is sent to the county's WTE facility. HERC is permitted to accept 365,000 tons of waste per year. The county is not seeking additional permit capacity at HERC. HERC does not represent a 'gap' in processing, but almost 40% of stakeholders believe the HERC should be phased out as the county reaches zero waste, 14% called for the HERC to be shut down immediately.

UPTAKE	CATEGORY	FINDINGS
		<ul style="list-style-type: none"> Stakeholders found it more important to lessen reliance on landfills as opposed to the HERC, suggesting it is potentially the more favorable of the two disposal methods. Potential gaps in the pollution control measures, data reporting, or overall information about the HERC's role in the county's material management Gaps in equity as HERC is reported to place an uneven burden of point source pollution, noise, litter, and other impacts on the community in which it operates

End Markets

End markets for the recycling that is collected, and finished compost leads to the success of a sustainable circular economy that ultimately allows material to be diverted from landfills. This also includes reuse and refurbishment. By increasing demand, the County creates a 'pull' for additional materials that in turn, drives supply. The strengths and gaps of the current end markets are presented below.

Strengths

- Regional end markets (recyclables): Hennepin County is in a strong place in terms of available end markets for recyclables. Glass, paper, cardboard, and #2 HDPE plastics are regionally processed and sold to market.
- Transportation: The county has many major interstates that pass through, making it an ideal location for shipping and transportation of materials despite the distance to major ports.

Challenges

- C&D: Market development for C&D was mentioned was identified as a gap. Though there is adequate access to the processing of these materials, and end markets for cement, asphalt, and other common C&D materials, end markets are needed for other potential C&D items and reusable commodities.
- End market development: Helping to develop end markets in Hennepin County could benefit the local economy and could be a potential public-private partnership. While there have been some efforts to date, this has not been a major focus. Stakeholders noted viable end markets as a significant challenge to reaching zero waste.
- Reuse: There is an opportunity for Hennepin County to invest in small reuse focused businesses. Equitable access to reuse infrastructure (stores) and resources (durables) was identified as a gap. Additionally, there appears to be a need for these resources specifically in low-income/rural areas.

Table 3. End Markets Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
●	C&D	<ul style="list-style-type: none"> Local end markets / users available for recycled asphalt, cement, rock, stone, brick, and some wood. Transportation of these materials is also expensive and difficult to justify due to lack of markets. Gaps in local end markets for carpet, drywall, ceiling tiles, and treated wood Potential to bolster local reuse markets for deconstruction materials reported by stakeholders (i.e., cabinets, wood, windows, white good, others)
●	Local End Market Development	<ul style="list-style-type: none"> County has undertaken efforts to support some local end markets (i.e., mattresses), but this has not been a primary focus to date, and the state provides most of the grants and support to local recycling businesses and end markets. Gap in adoption of innovative programs to grow local end markets while supporting local disadvantaged communities or businesses Need to develop local end markets (municipal, community) for finished compost

		<ul style="list-style-type: none"> Gap in the market for food reuse and rescue, large potential to impact climate by addressing food that hasn't been fully tapped
●	Hard to Recycle Materials	<ul style="list-style-type: none"> Markets available for paint (through Paintcare), mattresses, batteries, e-waste, and other hard to recycle items Like other parts of the country, there are gaps in available markets for textiles, furniture and other bulky wastes, and hard to recycle plastics Need to address upstream packaging to influence the amount of hard to recycle packaging or single use items that are sold in the county
●	Reuse markets	<ul style="list-style-type: none"> County has invested in supporting local reuse (Join the Circle) but stakeholders report that there is still a gap in the ability of local reuse outlets to be financially stable in the county The current economic model (low cost, fast fashion, changing tech, etc.) does not favor reuse or refurbish
●	Regional end-markets	<ul style="list-style-type: none"> There are regional markets for paper, cardboard, #2 HDPE plastic, and glass. MN recycling markets include West Rock and Pioneer for paper and cardboard, Master Mark and Choice Plastics (#2 HDPE) and Anchor Glass Markets in the region are generally well developed and are better than in other land locked parts of the country This was not identified as a system gap
●	Transportation to market	<ul style="list-style-type: none"> Established transportation corridors outline and connect the county, makes shipping materials easy and convenient There are limited railroad lines and about 146 miles of freight railroad Not noted as a major gap

Education and Outreach

Ensuring all residents have equitable access to educational materials allows all community members to properly participate in the waste diversion programs and help Hennepin County achieve zero waste. With over a million residents, it is important to equip all residents with the right knowledge. The strengths and opportunities of the current system are included below:

Strengths

- Online Presence: Hennepin County's recycling webpage is full of valuable information for interested readers. Recycling guides, grant information, and more is available for residents.
- Technical assistance programs: The county offers free technical assistance programs for schools and businesses and multi-family. Signage, containers, and more are offered to help schools and businesses improve recycling and reduce waste. Grants/funding is available for bins and compostable bags and recycling MFU
- Low-waste lifestyle challenges and social marketing: Use of innovative 'challenges' for neighborhoods, zero waste, and food recovery
- Environmental Education: Through Green Partners environmental education grants, the county funds organizations to actively educate, engage, and motivate residents to become environmental stewards and make positive behavior changes.

Gaps and Opportunities

- Awareness of Programs: While Hennepin County offers many outstanding educational opportunities for residents, businesses, and schools, reported gaps related to the awareness of these resources, highlighting a need for improved marketing.

- Multi-family programming: Gaps identified in the engagement for multi-family residents, renters, and property owners and managers.
- Neighborhood and targeted marketing: Potential gaps in leveraging community leaders and usage of keystone partners in information dissemination, system understanding by community groups and a need for communities to have an increased ownership over their own programs.

Table 4. Education and Outreach Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
●	Commercial Technical Assistance	<ul style="list-style-type: none"> • Hennepin County provides grants, signage, and technical assistance to businesses to help reduce waste and improve recycling. Includes commercial food-to-people program and start up support • Reported gaps in access and awareness for business resources by stakeholders • Additional gaps reported by small businesses and their ability to benefit from the technical assistance provided by the county
●	Consistent Recycling Language	<ul style="list-style-type: none"> • As part of Hennepin County's funding policy for city recycling programs, the county requires the cities to use language consistent with the county's educational materials, along with other requirements outlined in the baseline assessment. • The Recycling Association of Minnesota has developed a Recycling Education Committee consisting of haulers, city, and county representatives that meet regularly to collaborate on education efforts to increase recycling and reduce contamination throughout the state • Generally, works well for single family, gaps in the consistency in service and messaging for the open market services in the county (commercial and multi-family) • Gap identified in a lack of shared understanding of recycling language and jargon (i.e., 'meaning of zero waste') across all communities • Stakeholders report that there is a lot of recycling misinformation, and it is hard to cut through the noise and the clutter, indicating there may be a gap in the way information is conveyed and competing priorities • When changes in the recycling system do occur, it can be difficult to effectively and efficiently communicate these changes to all program participants, and it can be difficult to change individual behavior and habits
●	C&D	<ul style="list-style-type: none"> • Technical assistance for residential deconstruction, commercial deconstruction, structural move, and used building material installation available • Gap in awareness of the availability of these resources across the county • Gap in resources available for, and targeted at, contractors to drive C&D recycling
●	Governmental Leadership	<ul style="list-style-type: none"> • Each city in Hennepin County has a designated recycling coordinator, this person serves as the liaison between county/city and helps to maintain consistency • While helpful, the inconsistencies in resources and time dedicated to recycling varies in some cities. Dedicating enough staff time to recycling and waste reduction remains a challenge •
●	Multi-family Outreach and Technical Assistance	<ul style="list-style-type: none"> • County provides free educational materials and on-site assistance for property owners, managers, or association members • Signage and educational resources are available at no charge • Gaps in the uptake of the resources by property owners and management companies, usage is not consistent across county / communities • Gap in data on the uptake and needs in the sector • Additional education needed to reduce contamination in sector. 2017 report indicates ~25% of recycling stream is contaminants

UPTAKE	CATEGORY	FINDINGS
		<ul style="list-style-type: none"> Gap in awareness of options and requirements by renters, ESL, lower income communities
●	Online Resources	<ul style="list-style-type: none"> Outreach channels include social media, email, newsletters, Bang the Table, phone/email line. High reported impact of county Facebook page campaigns Multiple webpages are dedicated to recycling in the county and provide information on the technical assistance programs, Green Disposal Guide helps residents understand proper disposal methods, printable guides are available in commonly spoken languages No major gaps identified
●	Resident and Community Group Programming	<ul style="list-style-type: none"> Hennepin County encourages residents to participate in Zero Waste Challenges and offers an entire webpage dedicated to “Choose to Reuse”. The county also provides fix-it clinics, master recycler/composter courses, and collection events (see private public partnerships for Green Partners grants and funding) Despite resources, community cohort and stakeholders report gaps in neighborhood sized programs and planning Potential gaps in leveraging community leaders and usage of keystone partners in information dissemination Reported gaps in system understanding by community groups Need for communities to have an increased ownership over their own programs Potential need for ‘storytelling’ that reflects the diversity of community voices Translations available but may not be used by all
●	School/Institution Resources	<ul style="list-style-type: none"> School technical assistance available as well as free container signage Programs: reduce or prevent waste, reduce food waste, donate food, and start or improve recycling and organics at school Potential to increase county support of youth engagement in schools, stakeholders report this to be especially true in high schools Hennepin County offers technical assistance for schools to reduce waste and improve recycling but there appears to still be a gap in the need for technical and financial support Hennepin County does offer grants to schools, but is currently reevaluating the program structure to ensure these grants are distributed equitably

Supporting Policies

The strength and opportunities of the counties existing policies are included below.

Strengths

- Organics Mandates: Cities are required to make organics recycling service available for households with recycling, and larger businesses are required to have food scraps collection service.
- Landfill Bans: Certain materials are banned from landfills per state law.
- Climate Action Plan: Hennepin County's Climate Action Plan was adopted in 2021 and outlines various strategies to meet greenhouse gas reductions within the waste management sector. These actions are also aligned with the county's goal of zero waste.
- Recycling Mandates: Cities and property managers are required to offer residents the opportunity to recycle, but residents are not required to participate.

- Support Local End Markets: The state of Minnesota has grants available for businesses working in end market development.

Challenges

- Circularity & Upstream: There are few circularity/EPR focused initiatives at the state level. Some cities have zero waste packaging requirements, but not uniform throughout jurisdictions. Some counties in Minnesota, including Hennepin County, are developing an EPR bill to be introduced in 2023.
- C&D Mandates: No mandates on C&D disposal or building for deconstruction.
- Building Codes: The county has no authority regarding building codes. Additionally, the county has no authority to regulate construction and demolition waste.
- Hauler Licensing: Haulers are not required to report on tonnages or performance through Ord. 13.
- Space for Recycling: State code requires new construction projects to account for necessary space for waste hauling trucks and bins. Some cities have adopted advanced regulations within this realm, but Hennepin County does not have jurisdiction over building codes.
- Incentivized Rate Structure: There are fees for solid waste and taxes on trash, but not on recycling or organics which incentivizes residents to recycle. While this is a strong incentive, it is not always passed on to the generator, this is especially true for renters, MFU residents, and some commercial generators. The state requires volume-based rates, but the rate differentials are not prescribed resulting in rates that do not necessarily provide a strong economic signal for behavior change.

Table 5. Supporting Policies Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
⌚	Building Codes	<ul style="list-style-type: none"> • The built environment presents a significant potential for mitigating the impacts of climate change and reaching zero waste, but the county does not currently have the authority to regulate this • Policies and building design codes to support future deconstruction have not been developed or implemented, this is uncommon in the US today but has been identified in other countries as a needed tool to reduce carbon impacts in the sector
⌚	Data Tracking	<ul style="list-style-type: none"> • Strong data tracking for single family for recycling and organics, but not trash • Minnesota State Legislature required haulers to report directly to the MPCA, commercial data is not tracked by the county and there are potential gaps in the data • Gaps in multi-family data tracking and reporting by open market haulers
⌚	C&D Mandates	<ul style="list-style-type: none"> • County authority regarding construction and demolition is limited, so potential to expand policy for county-owned and funded construction projects to prioritize reuse and recycling to include non-county owned/funded operations may not be possible • Policies requiring minimum C&D recovery rates (demolition and deconstruction) were not identified and pose a potential gap in the sector •
⌚	Embedded Recycling Rates	<ul style="list-style-type: none"> • Not all residential rates and fees are embedded in trash fees for residential customers
⌚	Incentivized Rate Structure	<ul style="list-style-type: none"> • County and state utilize solid waste fees and taxes on trash service to create an economic incentive for recycling and composting service • Fees are not transparent for MFU and commercial generators, disconnect between generator and rate payer • Gap in residential awareness of fee • Stakeholder identified the lack of subsidies or incentives for participation amongst multi-family residents, renters, and lower income neighborhoods as a gap

		<ul style="list-style-type: none"> • Open market hauler arrangement limits county ability to create rate consistency and incentives • Gap in franchise fees / contract incentives for haulers that encourage diversion and discourage contamination • County does not have a pay-as-you-throw policy, some cities have PAYT, but rates are not always set to send an economic signal to the rate payer to change behaviors
●	Landfill Bans	<ul style="list-style-type: none"> • Yard waste, electronic waste containing a cathode-ray tube, lead acid batteries, and scrap tires banned at state level • County does not have landfill bans on materials such as conventional recyclables or food waste, both of which are banned in other locales. However, landfills are out of county and thus, landfill bans are not a realistic gap
●	Organics Mandates	<ul style="list-style-type: none"> • Cities over 10K are required to make organics recycling service available to all households with curbside recycling. However, best practices such as city contracts and everyone pays/participates are not required. In some instances, cities rely on haulers to implement this service and participation tends to lack. • Residents are not required to participate in organics recycling. • Cities <10K are required to provide drop-off opportunities • Large businesses (over 52 TPY) must have food waste recycling, smaller businesses are exempt, services are only for back of house and do not need to be customer facing • Enforcement is on-call only, and compliance reporting is voluntary, potential to increase enforcement in future
●	Recycling Mandates	<ul style="list-style-type: none"> • Businesses must contract for weekly recycling collection for at least 3 types of materials, recycling / trash bins must be paired and labeled, • Cities and property managers are required to offer residents the opportunity to recycle • Residents and business are not required to participate in recycling, just pay for service • Enforcement is generally on an on-call basis and may lead to gaps in service availability
●	State Level Policies	<ul style="list-style-type: none"> • Yard waste landfill ban and violation to place yard waste in plastic bags • Hennepin is part of the Partnership on Waste & Energy (PWE), a combined Hennepin / Ramsey County effort to advance state policies that support materials management • Some cities have single use bag fees, namely Minneapolis, but not countywide • EPR exists in some industries (PaintCare, thermostat recycling, etc.) but there is a gap for packaging • Truth in labeling laws do not exist for consumer goods. • Gap in widely adopted procurement policies to influence upstream service providers
●	Support Local End Markets	<ul style="list-style-type: none"> • The county provides financial assistance to cover some of the startup costs through the county's business recycling grants. • Minnesota provides grants to recycling processors and manufacturers

Public Private Partnerships

Hennepin County has a history of successfully working alongside the cities and municipalities in the county to advance policy and provide program funding. The county also has a strong mechanism in place to support partners through their numerous grant programs. There remains potential opportunities to advance public private partnerships through expanding awareness and optimization of the grant program. There is also the opportunity to explore of partnerships, both formal and informal, with private materials management haulers, processors, or regional brands and manufacturers. The opportunities and gaps as well as the current system strengths are presented below:

Strengths

- Public partnerships: Hennepin County maintains strong public sector relationships in the county and works closely with communities to align programs and push for increased diversion.

Gaps and Opportunities

- **Leveraging Local Grants:** The county uses local grants to support private and public entities in the county. There is an opportunity to optimize this program to increase its effectiveness in DEI, local market development, neighborhood solutions, and local job creating.
- **Private Partnerships:** With so many large corporations in the county, there is a potential gap in fostering relationships with these companies to market programs and partner on projects. There may also be opportunities for the county to consider by working closer with haulers and processors.

Table 6. Public Private Partnerships Evaluation (categories are presented in alphabetical order, not order of importance)

UPTAKE	CATEGORY	FINDINGS
	Leverage Private Sector Partnerships	<ul style="list-style-type: none"> • Hennepin County has strong relationships with private sector haulers, MRF operators, non-profits, processing facilities, and other commercial entities operating in the county. • The county does not contract with haulers for collection services, and does not require tracking and performance measurements or contract / franchise incentives, this is a potential gap that could be explored • The county does have contracts with haulers and processors for materials that flow through county owned systems • There are no formal agreements like compost buyback / procurement. The county can look at future design /build /operate options (i.e., AD facility, secondary sortation) for long term infrastructure development
	Partner with Municipalities/Counties / State	<ul style="list-style-type: none"> • Hennepin County maintains several public sector partnerships including: MPCA, SWAA, the Partnership on Waste and Energy, cities within Hennepin, and various other groups including the Association of Recycling Managers, Association of Minnesota Counties, and more. • Hennepin County has strong relationships with municipalities in the county and has success aligning support for policy initiatives • Hennepin works closely with MPCA on funding and data • There is a gap at the state level on product stewardship, this is a policy issue, but would require strong partnerships with the county, operators, brands, advocates, and others to advance • Hennepin County provides funding for recycling and organics for advancing recovery (\$1.82M in 2020). • Each city has a recycling coordinator that is the liaison for the city/county • Continues to foster good relationships with cities in the county and align on future goals/ordinances • No major gaps were identified
	Local Grants	<ul style="list-style-type: none"> • County provides a wide array of grants (schools, business start-up grants, food rescue, Green Partners) and others to support diversion, this is a model program • Stakeholders identified gaps in the awareness of the grants, the ability and ease of the application process, specifically around underserved communities and neighborhoods

		<ul style="list-style-type: none"> Overall, this is a powerful tool that could be optimized and leveraged to increase diversion
	Upstream Brands and Manufacturers	<ul style="list-style-type: none"> Hennepin County is a member of the US Plastics Pact. Manufacturing is one of the top three industries in the county, there may be an opportunity for the county to explore partnerships and collaboration with industry to influence material Partnerships with the many large private companies in the county are difficult to navigate due to magnitude of these companies The county does not currently leverage its overall purchasing power to advance circularity, which may be a potential gap