



Section 04

Waste Management



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Why Waste Management Is Important

In Bloomington, solid waste contributed 6.3% of citywide greenhouse gas emissions in 2018. Municipal solid waste sector has great potential to avoid emissions thanks to waste reduction and waste recovery. Landfills are the third largest anthropogenic (man-made) source of methane, accounting for approximately 11% of the estimated total global methane emissions.

Habitat destruction, global warming, and resource depletion are some of the effects of our materials consumption. Recycling - converting discarded materials into new materials or putting them to beneficial use - is an important approach in mitigating these impacts and reducing the pollution caused by wasting. Recycling reduces the need for raw materials so that natural resources, and the environments in which they exist, can be preserved. Recycling creates manufacturing jobs, extends the value of materials, and conserves natural resources while reducing the need for landfill space.

Food discards and residuals that decompose in landfills release methane, a greenhouse gas that is at least 28 times more potent than carbon dioxide. This makes food waste a significant contributor to solid waste greenhouse gas emissions. On the other end of the food supply chain, food production accounts for 26% of global emissions. In the United States, approximately 30% of the food produced is wasted - meaning nearly 8% of US emissions come from the production and distribution of discarded food.

There are four distinct collectors of mixed waste in Bloomington and Monroe County: Monroe County Solid Waste Management District (MCSWMD) drop-off centers, City residential collection, haulers contracted by Indiana University (IU), and other private collection. These waste management providers manage the waste system by collecting waste generated by businesses, industry, multi-family residences, and households. City of Bloomington Sanitation Department collects waste and recycling from single family homes, all other customers must drop off at the District or contract with a private hauler.

According to the MCSWMD 2018 Mixed Waste Processing Feasibility Study, waste collection by hauler breaks down as 4% collected by the City, 6% associated with IU, 2% by the District, and 88% by private haulers. The report indicates that total county-wide mixed waste is over 118,000 tons and the City's 2018 GHG inventory reports the Bloomington city-wide mixed waste total as 88,196 tons.

Climate Change Considerations



Climate Impacts

This sector impacts climate change through combustion of fossil fuels in the collection and processing of materials, as well as the generation of methane from anaerobic decomposition of organic materials in landfills.



Climate

Hazards to the waste management system include damage to infrastructure from extreme weather and flooding.



Opportunities

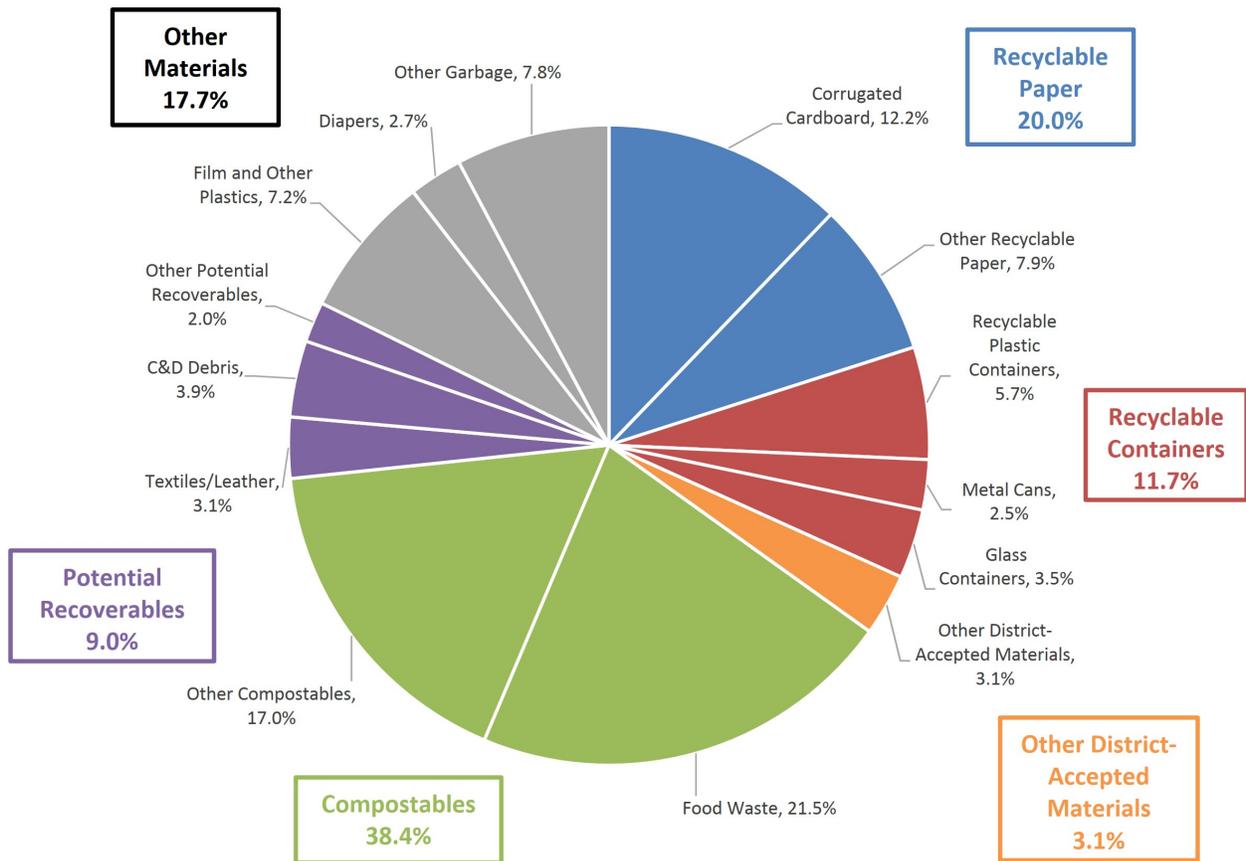
As indicated in the Waste Diversion Potential diagram above, a significant portion of Bloomington's waste stream has the potential for being put to beneficial use while avoiding GHG emissions.



Bloomington 2018 Solid Waste Characteristics

The 2018 MCSWMD study included mixed waste characteristics studies by hauler type. For purposes of projecting the uncaptured potential within the Bloomington waste stream, we have chosen to use the waste characteristics for private haulers from that report as they comprise 88% of the waste stream and consequently the majority of the potential. Based on that data, shown on the chart below, 38.4% of Bloomington waste (city-wide private haulers) is compostable organics, 31.7% are recyclable materials, and 9% are potentially recoverable/reusable. Taken together, this indicates the waste stream has up to 79.1% which can be diverted to beneficial use. As stated in the study “Private haulers are by far the largest untapped source of recyclable materials in the County.”

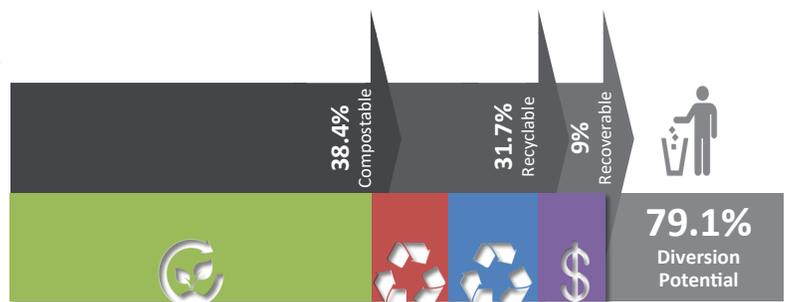
Mixed Solid Waste Composition Profile (Monroe County Private Hauler)



Source: MCSWMD 2018 Mixed Waste Processing Feasibility Study

Waste Diversion Potential

The waste diversion potential indicated in the 2018 MCSWMD study is illustrated to the right. Of the total mixed solid waste being landfilled today, there is a potential of up to 38.4% organics which could be diverted or beneficially used, 31.7% potentially recyclable material, and 9% potentially recoverable material. Successfully diverting these resources would reduce solid waste being landfilled by up to 79.1%.



Equity Considerations

- Accessibility to recycling and composting programs may not be equally and readily available to all community residents and may also be impacted by other participation-related barriers, including awareness of programs, user fees, accessibility based on housing type, and language barriers.
- Populations that are situated very close to the landfill or composting facility may experience nuisance issues like bad odors and potential health issues unless mitigation actions are implemented.

Sector Goals

Sector goals are established to both support the City’s Climate Action Plan in creating a climate resilient community and to reduce city-wide GHG emissions 25% below 2018 levels by 2030.

Sector goals related to GHG emissions reductions are designed to balance reduction across all sectors and achieve the overall emissions goals set forth for the community. The goals seek to strike a balance between achievability while also reaching -for improvement beyond business-as-usual.

As indicated in the introduction, the Climate Action Plan is intended to be a 10 year plan to be updated at the completion of that time. Consequently, the goals and strategies outlined in this section are intended to be achieved by 2030 unless otherwise noted.

Implementation of actions are anticipated to be initiated over 3 phases: phase 1 within 1-3 years, phase 2 within 2-5 years, and phase 3 within 4-8 years of CAP approval.

Goal WM 1

Increase landfill solid waste diversion by 30% of 2018 values (26,500 tons of waste reduction).

Goal WM 2

Educate, motivate, and empower the public to achieve waste reduction and diversion.

City-Wide Solid Waste Targets Supporting Sector Goals

	Organics Diversion	Recyclables Diversion	Recoverable Material Diversion
Today (% of total waste)	 38.4%	 31.7%	 9%
2030 Targets (% of total waste)	23%	21%	6%



Goal WM 1 Increase landfill solid waste diversion by 30% of 2018 values (26,500 tons of waste reduction).

Strategy WM 1-A:

Increase organics diversion by 40% of 2018 values (from 33,900 tons - 38.4% of community mixed waste based on private hauler data - to 20,300).

All landscape organics collected at IU are composted at the IU nursery while food organics collected at IU and City of Bloomington Parks and Recreation are hauled to Green Earth by JB Disposal Services. Yard waste generated by City Parks and Recreation, as well as organics collected from private residences and commercial customers is hauled by the private composting company, Earthkeepers, to Fable Farms. Compost drop off services are offered District owned facilities for those with an Earthkeepers subscription. According to the 2018 Mixed Waste Processing Feasibility Study, most compostable waste is not being diverted from the landfill with the current system. Significant generators of food waste from non-residential sources in Bloomington include restaurants, grocery stores, food manufacturers, nursing homes, schools, and hospitals. Restaurants and grocery stores alone account for 93 percent of food waste from non-residential sources and represents a significant opportunity for improvement.

How We'll Measure Progress:

Reported organics processed at landfill, Waste mix reported by characteristics study

Co-Benefits of Strategy:

Reduced Costs



Reduced GHG Emissions



Improved Community Equity



Improved Quality of Life



Actions	Implementation Phase
WM1-A-1 Create a pilot "Food Scraps Bag" pilot program to test food scraps composting collection across restaurant, commercial and residential customer base where food scrap bags are separated at landfill without separate compost bins and collection vehicles. https://cutt.ly/tfBf5Dj	1
WM1-A-2 Establish a "Towards Zero Waste Certification" program to provide education to food retailers and restaurants on strategies to reduce waste and to promote businesses successfully achieving certification levels. Goal: 20 additional businesses enrolled annually. Resources or models for establishing a program include: https://carbonfreedining.org/ https://true.gbci.org/ https://www.crra.com/certification	1
WM1-A-3 Coordinate with local food banks to support edible food donation through coordination with the food bank and donations from City and community partner events. Explore expansion of effort by identifying food retailer and restaurant partners for increased participation and support.	1
WM1-A-4 Partner with Monroe County Waste District to promote drop-off of compostable material.	2
WM1-A-5 Increase voluntary participation in commercial food scrap collection by identifying businesses that face barriers to participation and providing direct outreach and assistance.	2
WM1-A-6 Establish an At-Home and Community Garden Composting program supporting the expansion of food waste diversion through at-home composting. Provide backyard composting workshops, tips, and resources. (https://www.bouldercounty.org/environment/composting/)	2
WM1-A-7 Based on results of the Food Scraps Bag pilot project, establish a policy or ordinance expanding or requiring in-trash food scrap composting based on results of pilot project. https://cutt.ly/tfBf5Dj	2

	Actions	Implementation Phase
WM1-A-8	Close the loop on organics recycling; initiate a Compost Soil Amendment pilot project for use of compost as a soil amendment for public and private construction projects.	2
WM1-A-9	Based on Compost Soil Amendment pilot project results create a policy encouraging or an ordinance requiring use of compost soil amendments for all projects meeting appropriate threshold as supported by the pilot project.	3

Strategy WM 1-B:

Increase recyclables diversion by 35% of 2018 values (from 28,000 tons - 31.7% of community mixed waste based on private hauler data - to 18,200).

The District manages five drop-off recycling centers throughout the County for use by its residents, as well as a pay as you throw and hazardous waste recycling program. Private haulers, such as Republic, also provide recycling services and collect comingled recyclables from for delivery to a material recovery facility in Indianapolis to be sorted, baled, shredded or granulated for purchase from brokers or end-user purchasers. If materials are not loose, clean, dry, or appropriately sorted, that decreases the feasibility of the items being recycled. Recyclable containers (plastic, metal, and glass) and recyclable paper items make up 31.7% of communitywide waste stream indicating a significant opportunity for increased diversion of materials being landfilled and an opportunity for increased beneficial use.

How We'll Measure Progress:

Reported recyclable material processed at landfill, waste mix reported by characteristics study

Co-Benefits of Strategy:

Jobs / Economic Development



Reduced GHG Emissions



	Actions	Implementation Phase
WM1-B-1	Ensure that recycling in schools, City buildings, public housing, and public spaces is fully implemented. Conduct a study to determine which facilities do not currently have recycling or could have recycling diversion significantly improved. Coordinate with those facilities to improve recycling participation.	1
WM1-B-2	Conduct outreach to determine what assistance may be needed to increase recycling, organics collection, and composting.	1
WM1-B-3	Incorporate criteria regarding recycled content and extended producer responsibility into procurement guidelines for City purchasing.	3



Strategy WM 1-C:

Increase diversion of potential recoverables by 33% of 2018 values (from 8,000 tons - 9% of community mixed waste based on private hauler data - to 5,280).

Potentially recoverable materials are materials that have the potential to be recovered or recycled, but are not currently collected for recycling at the District’s collection centers or in the City’s single stream recycling program. Some of these materials, such as textiles/leather and construction and demolition debris, would require source separation and/or additional processing to recover, rather than recovery through mixed waste processing. Outreach and partnering with waste sources (businesses, households, etc.) to support the identification of recoverable materials and explore re-use and recycling pathways represent an opportunity to increase diversion of these materials.

How We'll Measure Progress:

Reported potential recoverable material processed at landfill, Waste mix reported by characteristics study

Co-Benefits of Strategy:

Reduced Costs



Reduced GHG Emissions



Jobs / Economic Development



Reduced Pollution



Actions	Implementation Phase
WM1-C-1 Develop and fund a waste audit and diversion assistance program for businesses. Program to support businesses in establishing tracking and reporting waste streams, identify reduction, diversion, beneficial use opportunities, identification of potential financing sources, and connect businesses with energy audit and other resources in support of full CAP goals. Goal: 60 business waste audits completed annually with businesses engaged in measuring and diverting waste. Example programs: https://www.mnchamber.com/your-opportunity/waste-wise https://www.portland.gov/sustainabilityatwork	1
WM1-C-2 Conduct a Beneficial Use Study to identify greatest beneficial use opportunities present in current City solid waste streams. Study to estimate potential return on investment and identify job and economic development potential associated with opportunities. Research/identify pilot project opportunities to explore capture of benefit.	1
WM1-C-3 Conduct a Phase 2 Waste-to-Energy Analysis to build on and proceed with further analysis of the waste-to-energy potential at wastewater treatment facilities as outlined in the recommendations of the 2020 Phase 1 Waste-to-Energy Analysis. Phase 2 analysis should identify pilot project(s) and an implementation schedule.	2
WM1-C-4 Establish a policy requiring the use of recycled asphalt, used roofing shingles, or other materials, particularly construction and demolition debris, in new streets.	2
WM1-C-5 Explore partnership with clothing reuse non-profits and businesses and a textile specialized recycling company to create a Clothing Reuse and Recycling pilot project to explore the potential of zero waste textiles within the City. Example clothing reuse entities: https://www.goodwillindy.org/ https://sisterscloset.org/ Example recycling partners: http://atrscorp.com/ https://www.terracycle.com	2
WM1-C-6 Establish a policy or ordinance expanding or requiring textile reuse and recycling based on outcomes of the Clothing Reuse and Recycling pilot project. Example clothing reuse entities: https://www.goodwillindy.org/ https://sisterscloset.org/ Example recycling partners: http://atrscorp.com/ https://www.terracycle.com	3
WM1-C-7 Explore options to support, influence and increase the preservation, reuse, repurposing and retrofit of existing structures to reduce demolition waste, preserve the embodied energy and materials, while avoiding the energy usage related to demolition.	3

	Actions	Implementation Phase
WM1-C-8	Continue to support collaborative consumption community projects, such as neighborhood compost projects, tool libraries, and repair cafes through mini-grant programs.	3
WM1-C-9	Provide event support for Fix It Fair at the Library and create a resource list for reuse.	3
WM1-C-10	Research best practices for recycling hydrofluorocarbons (potent GHG used in refrigeration and air conditioning) and identify Hydrofluorocarbon Pilot Project to implement.	3
WM1-C-11	Based on best practice research and the Hydrofluorocarbon Pilot Project, recommend city policy or ordinance modifications.	3

Strategy WM 1-D:

Support waste reduction through policy and operational refinements.

According to a 2011 study (“Policy versus Practice in Municipal Solid Waste Diversion” Canadian Journal of Urban Research), municipalities typically do not pursue policies supporting aggressive landfill diversion and increased beneficial use of waste streams until their landfill capacities reach crisis levels. Establishing visionary policies and operational refinements to advance meaningful landfill diversion and beneficial use of waste streams, therefore, represents a significant environmental opportunity for Bloomington, as well as an opportunity to avoid long-term landfill capacity crisis and to model for other communities the benefit of visionary policy establishment in lieu of waste management by crisis management more frequently experienced by other communities.

How We'll Measure Progress:

Status of Zero Waste policy, PAYT trash rate establishment, Universal Waste Ordinance, and other policies supporting significant waste diversion

Co-Benefits of Strategy:

Improved Community Equity



Improved Quality of Life



	Actions	Implementation Phase
WM1-D-1	Establish a Zero Waste policy for City operations that outlines increasing incremental annual waste reduction goals charting a path to Zero Waste. Policy to require that outside users of City facilities also follow Zero Waste policy and will modify the event permit application to require the inclusion of recycling and composting at events.	1
WM1-D-2	Study current best practices and most effective progressive Pay-As-You-Throw (PAYT) residential trash rates and implement a restructuring of City solid waste collection rates to promote solid waste diversion.	2
WM1-D-3	Explore the creation of a Universal Zero Waste Ordinance, requiring all property owners to provide recycling and compost collection services and requiring businesses to use these services. Example policy: https://bouldercolorado.gov/zero-waste/universal-zero-waste-ordinance	2
WM1-D-4	Increase recycling surcharge on landfill fees to develop more recycling programs.	2
WM1-D-5	Conduct an optimization study to increase the efficiency of City solid waste collections and transfer routes and implement findings.	3



Strategy WM 1-E:
Expanded recycling and organics options for multi-family residents.

According to the US Census, 49% of Bloomington’s residents live in multi-family buildings with 3 or more units. This very significant portion of the city’s population represents an under-tapped waste diversion resource. If all multi-family households were able to participate in a recycling program, it would significantly reduce the city’s waste stream. Apartment recycling can also have real, tangible benefits for landlords, property managers and the tenant community including: reduced costs for trash pick-up, potential for additional revenue through sale of recoverable material, provide an amenity for residents and help landlords attract tenants.

How We'll Measure Progress:

Reported potential recoverable material processed at landfill, Waste mix reported by characteristics study

Co-Benefits of Strategy:

Improved Community Equity



Improved Quality of Life



Jobs / Economic Development



Actions	Implementation Phase
WM1-E-1 Based on results of outreach action WM1-B-2, identify financial and other barriers to recycling and composting in multi-family buildings (e.g., different priorities between property management company and tenants, lack of knowledge of costs).	1
WM1-E-2 Based on results of outreach action WM1-B-2, and action WM1-E-1, explore creation of additional collection drop off sites.	1
WM1-E-3 Make a brochure that can be used by landlords to give info to their residents to assure developers and apartment owners help residents know about park locations, bike/walk/transit info, sustainability goals and resources, trash and recycling opportunities, renewable energy options, incentives, etc. Brochure can be distributed as a part of the Rental Licensing program in addition to other avenues. Brochure should link to the most up-to-date information maintained on the https://bloomington.in.gov/ website	1
WM1-E-4 Developing a fiscal impact statement of expanding the organics and recycling program ordinance. Impact statement should compare implementation options such as offering multi-family residents opt-in pick up services, or an incremental implementation starting with smaller apartment complexes and gradually expanding to larger complexes.	2

Goal WM 2 Educate, motivate, and empower the public to achieve waste reduction and diversion.

Strategy WM 2-A:

Create, implement, and promote public awareness and education campaigns.

Landfill alternatives have many benefits including GHG emissions reductions, utilization of beneficial materials, and potential for economic development. If community residents and businesses do not properly utilize these diversion programs or limit their consumption of disposable goods, the programs developed will make far less of an impact than they are capable of. A focus on a robust, clear, and consistent message to support education, awareness, and utilization of resources available can support achieving better success.

How We'll Measure Progress:

Status of communication, marketing, and education campaigns

Co-Benefits of Strategy:

Reduced Costs



Improved Quality of Life



	Actions	Implementation Phase
WM2-A-1	Create a comprehensive communication campaign to provide standardized information and communications on waste reduction, recycling, and organics collection options to reach the residential sector. Example campaigns: City of Portland Be Cart Smart, City of Fayetteville Solid Waste Diversion and Recycling Education Plan: https://palebluedot.llc/bloomington-cap-policies	1
WM2-A-2	Collaborate with partners such as Bloomington Chamber of Commerce, Downtown Bloomington, community businesses, and Indiana University to create a recycling marketing campaign and branding and provide reduce/recycle marketing and signage at storefronts, in parking lots, at point-of-sale, on websites, in local papers, on TV, etc. Campaign to standardize information and communication on solid waste, recycling, and organics options.	2
WM2-A-3	Coordinate with the Monroe County Community Schools to establish paths towards Zero Waste program. Program to include zero waste curricula and family content as well as zero waste strategies for school facilities. (https://www.ecocycle.org/files/Zero%20Waste%20A%20Realistic%20Approach%20Sustainability%20Program%20for%20Schools.pdf) (http://www.zerowastechallenge.org/curriculum.html)	3



Planned Waste Management GHG Emission Reductions

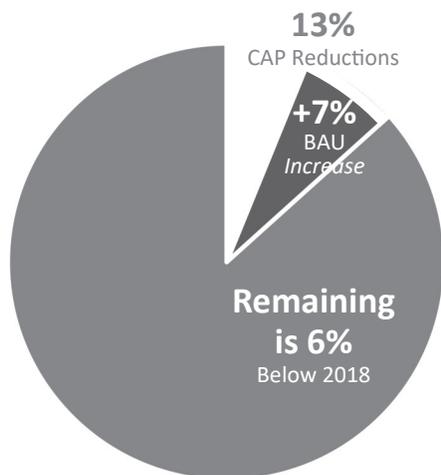
Planned Sector Emission Reductions Through 2030

The strategies and actions included in this section of the Climate Action Plan are projected to reduce the city’s annual GHG emissions by 11,000 metric tons (MT) by 2030 - a 13% reduction over 2018 levels. Changes in business-as-usual impacts, however, are anticipated to *increase* emissions in this sector by 5,800 metric tons based on projected population increases. If population projections hold true, the resulting total community wide waste management sector reduction will be 6% over 2018 levels.

This is equivalent to eliminating **99 million** cubic feet of man-made greenhouse gas atmosphere annually by 2030.

Sector Emissions Reduction below 2018 Achieved by 2030

The total change to sector emissions include CAP Plan reductions as well as BAU emission changes as follows:



Individual Strategy Annual Emission Reductions by 2030

Below are the CAP Plan reductions by strategy for this sector:

Strategy	Annual GHG Reductions by 2030
Strategy WM 1-A: Increase organics diversion by 40% of 2018 values (from 33,900 tons - 38.4% of community mixed waste based on private hauler data - to 20,300).	7,300 MT
Strategy WM 1-B: Increase recyclables diversion by 35% of 2018 values (from 28,000 tons - 31.7% of community mixed waste based on private hauler data - to 18,200).	3,580 MT
Strategy WM 1-C: Increase diversion of potential recoverables by 33% of 2018 values (from 8,000 tons - 9% of community mixed waste based on private hauler data - to 5,280).	120 MT
Strategy WM 1-D: Support waste reduction through policy and operational refinements.	(included)
Strategy WM 1-E: Expanded recycling and organics options for multi-family residents.	(included)
Strategy WM 2-A: Create, implement, and promote public awareness and education campaigns.	N/A

Estimated Cumulative Economic Savings

Implementing many of the measures in this plan, such as reduction of food waste, material waste, and overall consumption, can save money for the community. The estimated community savings of the goals for this section include:

Organics/Food Waste Diversion Savings:	Commercial/Industrial Waste Reduction Savings:	Estimated Cumulative Savings Potential
<p>\$77,608,211 +</p> <p>\$2,511 per household</p>	<p>\$1,567,500 =</p> <p>\$33 per job</p>	<p>\$79,175,711</p> <p>\$930 per capita</p>

*Savings for organics/food waste diversion are based on multiplying the estimated pounds of food waste reduced by an estimated value per pound based on “A Roadmap to Reduce US Food Waste” by ReFED. Savings for commercial waste reduction are calculated based on multiplying the estimated number of participating organizations by the average savings per company reported by the MN WasteWise program (a similar initiative). See Appendix for Cumulative Potential Cost Savings Assumptions and data sources.



What You Can Do

- How much of your waste can you divert to recycling? Challenge yourself and your household to increase your recycling. Make sure to rinse and dry your recyclables; dirty materials contaminate the process and have to be landfilled.
- Carry groceries and other purchases in reusable bags.
- Give up single-use plastics by switching to sturdy, reusable items like metal/hard plastic water bottles, cutlery, & to-go containers.
- Give unused clothes and household items (in good condition) to a local nonprofit, neighbor or friend.
- Shop local second-hand and vintage stores.
- Create a composting bin and routine.
- Attend Bloomington's "Fix It Fair." Bring an item to be fixed or buy at least one repaired item.
- Challenge yourself and your household to eliminate your food waste. Minimize your food waste by first eating what you already have in your fridge. Meal planning and making grocery lists can also reduce your food waste. <https://www.epa.gov/recycle/reducing-wasted-food-home>
- Never throw hazardous household waste, like batteries and paint, in the trash. Take these to the Monroe County Solid Waste District recycling center. <https://bloomington.in.gov/utilities/prettreatment/residential/household-hazardous-waste>



