

## **Section 1 – Introduction: Why Maximize Recycling?**

The City of Madison started diverting recyclables from going into landfills long before the Recycling Act of 1991. The City’s recycling program began with bundled newspaper recycling in 1968. Over time, the City’s recycling efforts have expanded greatly, to include offering opportunities to recycle plastic, metal, glass, and mixed paper in home collection carts, and those and various other items at City drop-off sites, such as electronics, household batteries, and Styrofoam. In 2016, the City’s efforts led to the diversion and recycling of over 110,000 tons of material from the landfill.

However, despite the City of Madison’s success in expanding its recycling efforts, there is still work to be done. While over 110,000 tons of waste material generated from the City were diverted from the landfill and recycled in 2016, at least 75,000 tons of material from City of Madison residents was still sent to the landfill.

Any landfill, including the Dane County Landfill, which is the landfill Madison currently uses for its unwanted junk, only has a finite amount of space. Creating additional landfill space near Madison could only be achieved by transforming some of the best farmland in the world into a place to bury unwanted things. Moreover, the process of creating a new landfill is lengthy, very expensive, and highly politically sensitive. Any future site is also likely to be located farther away from the City, which would increase the costs associated with hauling, dumping, and transporting material – and this does not include the environmental impact such a development would undoubtedly cause.

These truths regarding landfills and Madison’s long commitment to recycling led to Madison’s Sustainability Plan, and the Madison Results guidelines have set down a lofty challenge for the City: zero waste by 2050.

The term “zero waste” has many potential definitions. Madison’s definition of zero waste will be to send zero recyclable waste to the landfill. This means the City will commit to taking advantage of each practical opportunity available to divert materials from being sent to the landfill.

This plan recognizes that some waste materials, such as disposable diapers and pet waste, are currently not recyclable or fully preventable at the municipal level today.

The plan also acknowledges that the term “recyclable” will be ever-shifting, as recycling technology changes along with changes to the waste stream and to the products city residents consume. Some presently non-recyclable items, like disposable diapers, might be able to be diverted from the landfill in the future. As a city we must maintain our aspirations of all waste material being recyclable or preventable while holding

Ultimately, this plan is meant to offer near-term steps that honor the City’s commitment to achieving its definition of zero waste by maximizing recycling at any given moment,

| and honor the value residents place on having a strong solid waste collection system, and the values and history the City as a whole must strive to represent.

## Section 2 – Values

The Solid Waste Advisory Committee developed a list of values that reflect what residents and visitors of the City of Madison expect from a high quality solid waste service. These seven values are defined below and this plan seeks to reflect these values:

- **Safety:** Solid waste services must be performed in a safe manner for both workers and residents.
- **Environment:** Solid waste services are expected to be responsible stewards of the environment, and must strive to minimize the impact waste has upon it by promoting recycling and waste diversion, while also ensuring the operations of the solid waste services are minimally impactful on the environment.
- **Convenience:** In order for solid waste services to be effective for the public, they must be easy to understand and easy to access.
- **Aesthetics:** While solid waste services play an important role in the health of a community, how these services impact and maintain the look of neighborhoods cannot be ignored or under-emphasized, since it is these impressions that shape opinions of neighborhoods and delivered services.
- **Public health:** Reliable, effective, and safe solid waste collection and disposal is a cornerstone of civilization, and any change to collections of solid waste must first be evaluated in terms of how it could impact public health.
- **Practicality:** Solid waste services function best when the services and opportunities are reasonable, cost effective to enact, and have low barriers for compliance.
- **Community values:** Solid waste services must reflect what residents want from said services by providing opportunities for community engagement regarding these services, so that not only are the services present, but there is community awareness and acceptance of these services.

## Section 3 – Lenses

As part of the City’s Comprehensive Plan initiative – also called Imagine Madison - four lenses were identified as areas that City efforts can work to improve for Madison residents.

The Solid Waste Plan, too, will attempt to address these lenses, as outlined below:

- **Equity:** The Streets Division is primarily a service-providing entity for the public, and as an agency commits to providing equal levels of service and equal opportunities for solid waste management to all residents and neighborhoods of Madison.
- **Health:** The Streets Division’s solid waste services play an integral role in maintaining the well-being of City residents, neighborhoods, and lakes, and this plan recognizes the Division’s role in maintaining and improving them.
- **Sustainability:** The Streets Division is the leading agency for Madison’s goal of being more environmentally responsible, and this plan will reveal ways the Streets Division can continue to provide this leadership and direction for the City.

- **Adaptability:** As Madison changes in both boundaries and demographics, the ability of the Streets Division to continue to provide equitable services will be stressed. Additionally, the changing climate could potentially also stress solid waste services, particularly yard waste and brush collection since those services are weather dependent. This plan will show how the Streets Division will adapt to remain flexible and able to respond to future changes.

#### **Section 4 – Diversion Goals**

This plan aims to produce the diversion goals outlined below:

Year	Percentage of Waste Diverted from Landfill
2016	58% diverted
2020	65%
2025	70%
2030	75%
2035	80%
2040	85%
2045	90%
2050	Zero recyclable waste

The table below breaks down the Streets Division’s collection and recycling/composting tonnage in 2016 for different categories of materials:

Material	Tons Collected	Tons Recycled/Composted	% Diverted
Refuse	44,866.15	0.00	0.00%
Large Items	7,664.71	3,636.09	47.44%
Recyclables	20,518.88	19,378.99	94.44%
Leaf Collection	15,774.36	15,774.36	100.00%
Yard Waste Drop Off	3,036.67	3,036.67	100.00%
Brush	17,208.49	17,208.49	100.00%
Home Composting	7,076.85	7,076.85	100.00%
In House Metal	108.31	108.31	100.00%
Waste Oil	72.31	72.31	100.00%
Oil Filters	3.22	3.22	100.00%
Rigid Plastic	132.70	132.70	100.00%
Tires	39.20	39.20	100.00%
Computers/Electronics	358.56	358.56	100.00%
Move Out ReUse	65.90	65.90	100.00%
Madison Stuff Exchange	12.74	12.74	100.00%
Styrofoam	20.96	20.96	100.00%
Vehicle Batteries	26.06	26.06	100.00%

Household Batteries	7.21	7.21	100.00%
Shoes/Textiles	4.84	4.84	100.00%
Construction & Demolition	69,872.79	42,027.42	60.15%
Organics Program	334.32	334.32	100.00%
Monona Terrace Composting	22.40	22.40	100.00%
Parks/Mall Recycling	45.39	45.39	100.00%
Mattresses and Box Springs	207.28	207.28	100.00%
<b>Total</b>	<b>187,273.02</b>	<b>109,392.98</b>	<b>58.41%</b>

For additional context, the material categories are defined as follows:

### **Refuse**

This includes materials collected from tan household refuse carts by the Streets Division's automated collection trucks as well as non-recyclable material collected at the Streets Division's drop-off sites. Refuse tonnage also includes material collected by other agencies, such as the Parks Department and the Madison Metropolitan School District, and refuse collected at large city festivals, such as FreakFest and the weekly Dane County Farmer's Market.

### **Large Items**

This is material collected from the curb by the Streets Division's large item collection vehicles: both the truck-mounted crane vehicle and the rear-loading packer. Large items include any item that is too large for the refuse collection cart, and range from pieces of lumber from a homeowner's project to pianos. Large items are also collected at the Streets Division's drop-off site, but items from the yard in this category are predominantly wood, which can be repurposed as road base at the landfill, which is considered recycling.

### **Recyclables**

This includes recyclable material from the green household recycling carts collected from the curb by the Street Division's automated collection trucks as well as material placed into a recycling collection vehicle at the drop-off facilities.

### **Leaf Collection**

This is yard waste material collected primarily by Streets Division crews at the curb. Other agencies, such as the Community Development Authority, contribute a comparatively insignificant tonnage of material. The Streets Division collects yard waste during two periods each year: once in the spring and again in the fall. Yard waste is collected by driving a vehicle, such as a toolcat, onto the terrace and pushing the yard waste from the terrace into the street by using a front-mounted customized broom. The material is then pushed onto a pan that has been attached to a rear-loading packer vehicle. Yard waste material is not typically weighed by Streets Division crews as there is no scale available at the composter that receives the yard waste. Instead, an estimate is necessary to get this weight. One rear-loading vehicle can hold, on average, 8 tons of yard waste material and the number of loads is tracked. The weight reported reflects a

combination of both these estimates and the actual weight measurements during instances where yard waste was weighed at the Streets Division's transfer station.

### **Yard Waste Drop Off**

This is yard waste material delivered to a drop-off site by residents throughout the year. Again, a combination of estimates and actual weights was used to derive this number.

### **Brush**

Brush is material trimmed from trees and bushes that have been collected curbside by Streets Division crews using tow-behind wood chippers and truck-mounted cranes. This total also includes brush delivered by homeowners to the drop-off sites as well as the tonnage produced by Forestry. Brush is processed with an industrial wood chipper and resold or reused as mulch.

### **Home Composting**

This is the estimated tonnage of material composted at home by residents of Madison based on the previous year's estimate and the number of homeowners who purchased a compost barrel from the annual compost bin sale at the Alliant Energy Center.

### **In House Metal**

This is the reported tonnage of metal that the City of Madison recycled during operations by various departments, such as the Water Utility and Engineering.

### **Waste Oil**

This is the reported tonnage of used motor oil collected from the public drop-off points. City Engineering oversees the drop-off points, and the oil is recycled by a private contractor.

### **Oil Filters**

This number reflects the tonnage of oil filters collected at the waste oil drop-off points that are managed by City Engineering.

### **Rigid Plastic**

This is the tonnage of rigid plastic material, such as 5-gallon buckets or laundry baskets, that has been delivered by residents to the City of Madison drop-off sites. Rigid plastic containers are collected by Pellitteri Waste Systems and recycled.

### **Tires**

This is the tonnage of tires collected curbside or taken to drop-off sites by city residents. Tires are aggregated at the transfer station facility and then loaded onto a semi-trailer to be delivered by a city employee to a tire recycler.

### **Computers/Electronics**

This is the tonnage of electronics, including televisions, computers, and other of electronic items, that have been delivered to the City of Madison drop-off sites for collection by an electronics recycling vendor.

**Move Out ReUse**

This is an estimated total based on a report from UW-Madison staff at their Donate and Take collection site on campus during the student move process.

**Styrofoam**

This is the tonnage of the Styrofoam residents of Madison delivered to the drop-off site for recycling. The Styrofoam is aggregated in a semi-trailer and hauled to Uniek in Waunakee, WI to be processed into picture frames.

**Vehicle Batteries**

This is the number of vehicle batteries recycled by City of Madison operations. This includes vehicle and other lead acid batteries delivered to the drop-off sites. This number also includes vehicle batteries recycled by Fleet Services and Metro through their own vendors.

**Household Batteries**

This is the number of household batteries delivered by residents to the City of Madison's drop-off sites. Batteries are collected from the drop-off site by the same vendor who collects electronics.

**Shoes/Textiles**

This is the weight of material placed into the clothing recycling bins at the City of Madison drop-off sites. The weights are reported by St. Vincent de Paul and Goodwill.

**Construction & Demolition**

This is the weight of material collected and recycled by area demolition recyclers.

**Organics Program**

This is the weight of material collected by Madison's pilot food waste collection and diversion program.

**Monona Terrace Composting**

This is the weight of material reported by Monona Terrace regarding their composting efforts for food waste.

**Parks/Mall Recycling**

This is the weight of recycling collected by the Parks Department on the State Street mall area and from their collection bins located throughout city parks.

**Mattresses and Box Springs**

This is the weight of the mattresses and box springs collected and recycled by the Streets Division. Collection occurred either at the curb during the large item collection day of the assigned area or delivered by a resident to a drop-off site.

**Section 5 – Current Services**

### **Residential and Commercial Overview**

The Streets Division provides automated curbside collection of refuse and recycling on a weekly basis for single-family homes, multi-family buildings containing fewer than 8 units, and some commercial entities. As of this writing, the Streets Division services approximately 77,000 homes and between 500 to 600 small businesses.

### **Curbside Refuse Collection**

Refuse collection occurs weekly by a single-operator automated refuse collection truck. The City of Madison has been performing collection in this manner since 2007.

“Automated” collection does not mean “autonomous.” A vehicle operator drives the collection truck on a pre-determined route. When they encounter a stop, the operator manipulates a joystick to position a mechanical arm to grab a collection cart from the curb and then triggers the arm to dump the cart’s contents into the vehicle. This method of collection keeps the operator in the vehicle, and does not require the operator to lift, tip, or dump heavy collection carts. This has been a boon to productivity and injury prevention.

The same collection truck is deployed for curbside recycling services as well.

### **Curbside Recycling Collection**

Recycling collection occurs every-other-week with a single-operator automated collection truck. The collection is “single stream,” meaning residents do not need to separate recyclables into different containers, and instead can commingle all material acceptable in the program into a single collection cart. The City of Madison has been performing collection in this manner since 2005.

Recycling began in Madison in 1968 by collecting bundled newspaper at the curb, making Madison one of the first communities to offer that service to residents. Newspaper recycling expanded citywide in 1970, and by 1986 became mandatory. In 1987, the City began a drop-off recycling program for households at 13 drop-off sites. Curbside collection of aluminum, corrugated cardboard, glass, steel cans, and #1 (PETE) and #2 (HDPE) plastics began. By 1994, magazines and catalogs were added to the program, and around this time, residents were asked to bag all containers intended for recycling and separately bind all cardboard and paper products. This material was then collected manually and placed into two separate compartments of the manual collection trucks. (See photo below)





*Image: Example of the circa 1994 collection style performed by Streets Division employee John Zumstein.*

The collection system remained unchanged until the adoption of single-stream automated collection in 2005. This change also allowed an expansion of recyclable materials, to include mixed paper, office paper, paper cartons, and plastic bottles of #3 through #7 plastic. In 2012, the program expanded yet again to include dairy tubs, other plastics number #1 through #7, empty paint cans, metal pots and pans, small metal appliances, miscellaneous scrap metal pieces, and properly packaged shredded paper and plastic bags.

Today, the range of material accepted into the program is quite extensive. See the inset chart that shows all the recyclable paper, plastic, metal, and glass items presently acceptable in the cart at this time.

### **Large Item Collection**

Large items are generically considered to be items too large for a collection cart, such as a mattress or piece of furniture. Curbside collection occurs every-other-week.

Large items are collected by a single-operator truck-mounted crane vehicle, colloquially referred to as a “clam truck” (see photo). The crane can load material into the vehicle’s truck bed or into a separate open-top five-ton truck. A separate five-ton truck is also used to collect metal items from the curb, which the city takes to a contracted metal salvager for recycling.

Large metal items are presently processed by Kruser Recycling. Kruser safely handles the hazardous materials that can exist within appliances collected at the curb, such as CFCs, PCBs, and mercury switches.

Since 2005, the Streets Division has been grinding wood, primarily wood furniture and lumber, collected as large items. The shredded wood is then used at the Dane County Landfill campus to be re-purposed as road base so vehicles can safely climb and dump on the actual landfill itself.

### **Drop-off Sites**

At present, the City of Madison operates two year-round drop-off locations and one seasonal yard-waste-only drop-off location. The year-round sites are located at 1501 W. Badger Rd., which is also the location of the west side Streets Division operations office and department-wide administrative offices, and 4602 Sycamore Ave., which also houses the east side Streets Division operations office. The seasonal yard-waste-only site is located at 402 South Point Rd. and is open from the last weekend in March to the first weekend in December. The seasonal site is also the location of a cold storage building.

The hours of the drop-off site fluctuate depending on the season. During the expanded “summer hours,” which lasts from the last weekend in March to the first weekend in December, the drop-off sites are open 8:30am to 4:30pm on Mondays, Wednesdays, Fridays, Saturdays, and Sundays. On Tuesdays and Thursdays during expanded hours, the sites are open 8:30am until 8:00pm.

During the limited “winter hours,” which lasts from the first Monday in December to the last Friday in March, only the Sycamore and Badger drop-off sites are available, and they are open from 7:30am until 3:00pm Monday to Friday.

At the Badger and Sycamore drop-off sites, City of Madison residents can bring refuse, recycling, large items, brush, and yard waste for recycling or disposal.

The drop-off sites also offer recycling services for electronics, household batteries, cooking oil, rigid plastics (such as laundry baskets), and Styrofoam. These materials are only accepted for recycling at the drop-off site.

Only residents and taxpayers of the City of Madison can use the drop-off sites. Residents must also restrict the size of the load of material they bring in to what will fit into the back of a standard pick-up or small trailer.

The drop-off sites are a critical component of the Streets Division’s solid waste services, and they are highly used city facilities. According to a 2017 traffic volume study performed during the expanded hours period, all three drop-off sites combined received approximately 1,100 visits a day on average.

### **Curbside Brush Collection**

The Streets Division provides curbside brush collection on a rotating schedule. While there is no pre-determined date for brush collection to occur, residents on average receive brush collection once every four to six weeks.

Brush is woody material trimmed from trees and bushes measuring over 18 inches in length. Brush must be less than 8 feet long, and be less than 8 inches in diameter.

Brush is collected by a five-ton truck pulling a tow-behind wood chipper. Residents pile brush to the curb, and a two-man crew puts it into the wood chipper. There is no set maximum on the amount of brush residents can set to the curb.

Piles that will take the two-man crew more than 10 to 15 minutes to collect are instead assigned to a clam truck. The clam truck is the same style of vehicle used to collect large items.

This service is only available to residents who have cut their own brush. Residents who employ private contractors must make arrangements with the contractor to haul the material off site for proper disposal.

The collection season begins in the spring after the winter thaw and continues throughout the year until stopping in the fall when additional personnel is needed for leaf collection. The season starts with crews collecting brush from areas of the city with a Monday refuse collection day. Crews pick brush from each street within that district one time, and once all sections of the Monday area have received a collection, the crews rotate into the area of the city with a Tuesday collection day. After the Tuesday area has been completed, collection crews move into the Wednesday, then Thursday, and then Friday collection districts. Upon completion of the Friday area, crews begin another cycle through the city and start over in the Monday collection district. Crews complete as many cycles through the city as possible during the collection period.

After the brush is collected by either the wood chipper or clam crews, it is hauled to the city's transfer station facility at 121 E. Olin Ave. for further processing.

The Streets Division takes the brush and wood chips and sends them through a large industrial wood shredder to create mulch. The shredding process creates pieces of wood too small for the emerald ash borer to survive, so there is no risk of spreading that invasive species.

The mulch is then available to the public for small fee depending on the amount of material needed. Semi-truck loads of mulch are popular with area farmers and landscapers to use for their businesses, whether to be used as mulch, animal bedding, or compost.

### **Curbside Yard Waste Collection**

The Streets Division performs curbside yard waste collection during two separate periods: first in the early spring after the winter thaw and again in the autumn when the leaves fall. There is no summer curbside collection of yard waste material. Having two separate collection periods has been the Streets Division's practice since 1980.

Yard waste is considered plant material such as grass clippings, weeds, leaves, and other plant/garden debris. Also, twigs that are too small to be considered brush are collected as yard waste.

Yard waste is collected by small trucks or tractors equipped with a custom

## **Section 6 - The Goals**

### **A. Establish South Point as a full-service drop-off facility and Streets Division operations site**

- Goal 1: Design a full-service site to include adequate equipment storage and well-considered drop-off services with easy customer access.
  - Goal date: 2019
- Goal 2: Re-map services provided by the Streets Division so that services can be split among three locations and make staffing plans accordingly.
  - Goal date: 2019
- Goal 3: Build South Point facilities.
  - Goal date: 2020, budget dependent
- Goal 4: Open fully staffed and operational South Point facility to the public.
  - Goal date: 2021, budget dependent

### **Background and Additional Information**

A full-service Streets Division facility at South Point Rd. has been an idea gestating for decades. As the city continues to sprawl westward, it is becoming increasingly clear that in order to ensure equitable access to services provided by the Streets Division, having a South Point Rd. facility is a necessity.

As of the writing of this plan, the entire west side of Madison is serviced by the Streets Division office located at 1501 W. Badger Rd. This facility also acts as the sole public drop-off site for recycling services.

Streets Division drop-off sites provide access for residents to recycle items that cannot go into their recycling carts. As of this writing, these items include electronics, household batteries, Styrofoam, cooking oil, and rigid plastic items.

The drop-off sites present the most likely opportunity for recycling services expansion. For example, if carpet recycling were to be attempted again, having it as a drop-off site-only service could be best way to provide this recycling service, since dropping off carpets at a drop-off site presents the best option to keep the carpets from getting wet, which would render them non-recyclable.

With 1501 W. Badger Rd. being the only west side location for Streets Division services, residents within the newer western developments are left with a 20-mile roundtrip drive to recycle electronics, batteries, Styrofoam, cooking oil, and rigid plastics. That considerable distance is a disincentive for these residents to recycle these items, and would be a disincentive for participation in future expansions of recycling services stationed at the current drop-off sites.

With the creation of a new full-service drop-off site in a more convenient location for these residents, it would be reasonable to expect increased diversion of recyclable material by residents in this outlying region.

Access to a place to recycle electronics is very important as many common household electronics items, such as printers, VCRs, and cell phones, are banned from the landfill, which means residents should not place them into the tan refuse cart. These items also cannot be recycled in the green recycling cart. This leaves few, if any, convenient options for mandatory electronics recycling.

A third Streets Division location would also speed brush and leaf collection as crews would be able to focus on smaller sections of Madison, providing an increased level of service. This would be especially useful for leaf collection in the fall as leaves in the streets are a major contributor to phosphorus levels in area lakes. By providing more frequent collection and street sweeping during the fall and spring periods, leaves would not remain in the street as long, which therefore should reduce the phosphorus load created by this material.

The third location would also provide an opportunity to reassess and strategically locate Streets Division assets to better serve the communities within their service regions.

### **B. Expand organics collection to new neighborhoods**

- Goal 1: Increase organics diversion to be 1% of total refuse hauled by the Streets Division.
  - Goal date: 2018
- Goal 2: Expand to new collection routes where each side of Madison has one route of organics collection each day of the week.
  - Goal date: 2020, depending on budget availability
- Goal 4: Expand food scraps collection program/organics to collect material citywide and operate organics/food scraps drop-off services.
  - Goal date: 2025, depending on budget and processing availability

### **Additional Information**

Diverting food waste from the landfill will be a key component of overall efforts to increase diversion from the landfill. According to a 2010 waste sort, nearly 40% of the city's refuse is organic material. Food waste by itself comprises 25% of the overall refuse delivered to the landfill according to the same study.

Using the recorded 2016 refuse weight tonnage collected by the City of Madison (44,866.15 tons), the City could prevent an estimated 17,946.46 tons of material from going into the landfill if all organics material, such as soiled paper products, diapers, and pet waste, were diverted. If only food waste is kept from the landfill, an estimated 11,216.54 tons would be diverted. Adding diversion of just food waste would raise the overall diversion percentage from 58.4% to 64.3%. Including diapers and pet waste would raise the overall diversion percent further, to 67.9%.

Since pet waste and diapers present considerable logistic and regulatory hurdles at the present, it would not be wise to assume this material could be diverted in the near future. However, soiled paper products, such as used paper towels and greasy pizza boxes, would be readily acceptable in food waste diversion systems, such as composting or an anaerobic digester. Therefore, the expected tonnage for a citywide program would be somewhere between the high and low numbers quoted above. For a more accurate estimate, a waste sort would need to be performed.

As of the writing of this report in 2017, the Streets Division hauls organics to Blue Ribbon Organics of Caledonia, WI for composting. Food waste and soiled paper products are collected by the City of Madison from participating households and businesses that are within prescribed areas of the City. The collections areas were selected by Streets Division operations staff to maximize the number of participants and ease of collection routes for our automated collection.

To expand collection beyond its current capacity, there will need to be two major developments.

First, there will need to be an increase in collection capacity through additional operators and collection vehicles. The chief concern about this would be the budgetary impact of the cost. The second goal noted above - which would require increasing collection by one operator and one collection vehicle by 2020 - would be the first step toward ramping up the investment necessary to perform citywide organics material collection by 2025 (as noted in goal 3).

Second, there will need to be a reliable and cost-effective location to perform composting and/or anaerobic digestion of the organics collected by the City while also providing adequate contamination control. Despite previous plans, it is unlikely that the City would be able to make the investment in the timeline noted above to own and operate an anaerobic digestion facility. However, that may not cause any significant delay in the eventual expansion of this program.

As of the writing of this report, many entities, both private and public, have discussed the possibility of undertaking organics diversion – including potential anaerobic digestion facilities. The organics program may be able to expand and meet the needs of Madison without the City itself investing in a processing facility. However, considering the importance of this element of waste diversion and broader sustainability goals, the City

should not completely abandon the possibility of needing to invest in either composting food waste or anaerobic digestion.

Part of this goal will be for the Streets Division to foster relationships with private food waste entities to ensure organics diversion continues and expands along the timeline stated above. Any agreement made with these entities must also meet the values of the Streets Division and the City of Madison, not come with any environmental trade-offs, and must prove to be a practical and convenient service for the residents of Madison.

It must also be acknowledged that any expansion of the organics program must come with the means to control for contamination problems. Non-compostable items finding their way into the food scraps stream has been a problem since organics diversion was first piloted in Madison. The presence of non-compostable items, such as plastics, metals, and glass, hurt the likelihood that the food scraps can be turned into a usable compost product. Compost that contains metal, glass, or plastic would not be desirable, and therefore would be difficult for a processor to sell or otherwise use – which could result in the material winding up in the landfill because there is nowhere else for it to go.

Other communities that have pursued food waste diversion have invested in depackaging or other sorting technologies to try to control for contamination. Expansion of this program, especially on the citywide scale, will need to have sufficient contamination controls to be successful.

### **C. Improve communication from the Streets Division regarding recycling and other services provided**

- Goal 1: Establish a social media presence for the Streets Division to take advantage of free media opportunities.
  - Goal date: 2018
- Goal 2: Better utilize current web-based resources to better share recycling information and diversion opportunities.
  - Goal date: Continuous
- Goal 3: Create a formal strategic communications plan, or message calendar, and outreach targets for the Streets Division to be sure department objectives and services are understood and shared.
  - Goal date: 2019 implementation

#### **Additional Information**

Clear, consistent, and engaging communication is an essential part of any successful program. The Streets Division would especially benefit from quality communication because its services are varied and impact every resident within the City of Madison.

Increasing the diversion percentage will, as noted above, require residents of Madison changing their behavior, which will be a great challenge. The media landscape is

fractured, making it increasingly difficult to reach and persuade residents to change their habits to reach sustainability goals. Creating messages and sharing information in a variety of ways that embraces both digital and traditional media is important to continue meeting Streets Division goals.

Since communication is a key part for residents to gain compliance and knowledge of Streets Division and City of Madison goals, it is equally important to be sure a plan with clear objectives is in place. Too frequently, Streets Division communications have been reduced to being responsive, or to achieve only immediate goals rather than being carefully planned to achieve long-term success.

Any communication plan would also need to include outreach considerations for the growing diversity of the City of Madison, and be certain that communications reach and impact those audiences.

The cost of a widespread communications program must also be considered. Advertising on traditional and digital media can prove to be expensive. The Streets Division must leverage all no-cost and low-cost resources, such as social media, and utilize the City's media team to help spread awareness of departmental and sustainability goals and programs.

#### **D. Strengthen construction and demolition recycling practices**

- Goal 1: Improve data collection within the City of Madison regarding construction and demolition debris.
  - Goal date: 2018
- Goal 2: Strengthen city ordinances regarding construction and demolition recycling reporting, if necessary.
  - Goal date: 2019
- Goal 3: Strengthen city ordinances regarding remodeling recycling reporting for projects costing over \$20,000, if necessary.
  - Goal date: 2020

#### **Additional Information**

Waste is measured by weight, and weight is how diversion statistics are generated. By far, the heaviest material entering Madison waste stream relates to construction and demolition projects. Better management and tracking of these materials would result in improved diversion statistics.

As of this writing, reporting of this material is acquired from processors/recyclers of construction material in the area. While these weights accurately depict what they are processing, it does not necessarily accurately depict what projects within the City of Madison are doing, since these processors also work with projects outside of Madison.



In Madison General Ordinance 10.185, there is a requirement that demolition and construction projects divert 70% of their waste from landfills, and remodeling projects that cost more than \$20,000 are also required to recycle. The same ordinance also requires reporting the recycling total within 60 days of the completion of the project.

Since a gap exists between this ordinance and current data collection methods for this material, improvements should be made to be sure that projects within the City are meeting the values and expectations of Madison.

If efforts to improve data collection within current ordinances do not produce results in capturing this information, taking steps to strengthen the ordinances surrounding construction and demolition recycling would be the next logical step.

Any changes to the ordinance, however, must be carefully considered to be sure that they are both practical and not a hindrance to development within the City of Madison. Nor must any changes in the ordinance be done to be punitive, but rather solely to increase recycling practices and reporting of the construction sector of Madison.

**E. Continue supporting successful programs that increase diversion, equity, and recycling, such as the NRT neighborhoods, sharps collection underwriting, the roll-out assist program, and so on.**

- Goal date: continuous

**Additional Information**

The Streets Division provides excellent service to all City of Madison residents. This goal is intended to underline the commitment to keep providing services to everyone and finding ways to lift up the traditionally underserved and vulnerable communities who need help keeping their homes and communities safe and environmentally responsible.

**F. Continue to search for other recycling and diversion opportunities where practical and affordable**

- Goal date: continuous

**Background and Additional Information**

Waste streams are always changing, especially as packaging material changes and global markets and consumer habits evolve. These natural fluctuations will create both challenges and opportunities for recycling, and it is important to be sure that the opportunities that are available can be leveraged and the challenges minimized or overcome.

Pursuing new opportunities for recycling material will be an important role for the recycling coordinator, especially as diversion expectations tick upward over time. And this pursuit will not end as long as waste is a result of our consumption-based economy.

The recycling coordinator and the Streets Division must stay committed and attuned to what advancements and opportunities exist, and how best to bring them to Madison in a manner that is cost effective and practical to end users.

This also serves as a catchall goal to improve diversion practices when new opportunities are revealed.

#### **G. Pursue increased public place recycling efforts**

- Pilot recycling litter containers in select areas, and monitor these cans for contamination.
  - Goal date: 2018
- Expand recycling opportunities in parks and other community spaces.
  - Goal date 2019
- Pilot food waste diversion for neighborhood festivals and events.
  - Goal date 2020
- Pilot food waste collection points at neighborhood farmer's markets located within the City of Madison.
  - Goal date 2021
- Require food waste diversion and a waste reduction plan be a part of any street use permit for events.
  - Goal date 2022

#### **Additional Information**

Public place recycling is a significant challenge due to the likelihood of contamination. Yet it also is a public statement regarding a community's commitment to recycling. Therefore, it is worth the effort to make recycling visible while taking all appropriate measures to guard against contaminating otherwise valuable recyclables.

Currently, Madison's only recycling litter containers are located within the Business Improvement District (BID) along State Street. This particular area is unique in that it receives regular collection from the Parks Department as part of the maintenance of this highly utilized and visible corridor of Madison.

The level of attention afforded these recycling containers cannot be met by the Streets Division, so careful consideration of container placement will be necessary for early success. Any carts would be placed in high foot traffic areas that are likely to also generate recyclable waste based on the businesses in the area. Litter container location would also need to be based on ease of collection by Streets Division trucks.

The containers would need to be carefully monitored, and the waste diversion achieved by these recycling litter containers must also be considered before it can be expanded.

Other expansions of public place recycling services include recycling options within city parks and other public places. Recycling within parks is a service provided by the Parks Department, so any expansion of these services would need to be done in conjunction with that agency, and also done with the same strategic, watchful rollout as recycling litter containers.

#### **H. Perform regular waste sorts of materials in refuse and recycling carts**

- Set a regular interval to assess materials contained within refuse and recycling carts.
  - Goal date: 2019, repeating as necessary at regular intervals

#### **Additional information**

As of this writing, the last waste sort analysis performed by the City of Madison occurred in 2010. Information gleaned from that report revealed the need for food waste diversion practices and provides the basis for the continued pursuit of the food waste goal.

As the waste stream changes, and as diversion expectations climb, it makes sense to regularly re-evaluate what materials residents are placing into their refuse carts or trying to recycle in their recycling carts.

Using the 2016 diversion numbers, and assuming the implementation of a successful food scraps diversion program, that would leave 26,000 to 33,000 tons worth of material annually in just the refuse collection that is still destined for the landfill. The percentage of that material that can be recovered cannot be known without performing waste sorts.

These sorts can reveal areas for potential expansion of recycling services, and also potential items that residents need additional information on how to recycle. Expanding recycling options will be critical as the goals for waste diversion increase over time. Sorts can also reveal material that cannot be recycled, but could be avoided if proper education efforts were in place.

The waste sorts could also be used as a regular checkup on the recycling programs to be sure they are functioning as necessary.

The sorts should also consider large item material as a way to gauge recyclability options or prevention strategies for that waste as well.

Waste sorts and their subsequent analysis are expensive, however, so budget constraints may preclude regular inspection of waste. However, at a minimum, setting a goal of a waste sort once every five years, in line with the diversion percentage increases, may be the most reasonable option.