Pilot Project: Mears Park

Public places are not only for play, but also provide beautiful green landscapes and quiet places where we can rest, gather, and celebrate life. Our city parks and green spaces reflect the natural environment that people are working to protect. As recycling is carried out in our beautiful public parks, we should consider the landscape aesthetic and fully reflect the environmental value that is at the heart of recycling. However, the practical side of public space recycling often presents a sight that is inconsistent with the refreshing landscape we seek. Recycling processes are generally industrial and mechanical, containers are commercial plastic, and recycling can sometimes be confused with trash, the stuff we no longer want.

Public art throughout the world has proven to stimulate environmental renewal and propose new ways to co-exist with our environment. For this project we asked, what role can artists play in promoting behavior among an urban population? Why can’t public space recycling be functional and beautiful? Can we create a public space recycling model that is consistent with the aesthetic of landscape design and the beauty of the natural environment? Can we elevate the act of recycling to clearly distinguish it from wasting? Can artists not only create a better more artful container but also foster the performance “ritual” of recycling?

Mears Park, one of Saint Paul’s greatest treasures, was the very best place to test these ideas. Co-designed by artist Brad Goldberg and landscape architect Don Ganje in the 1990s, it was honored by the America Society of Landscape Architects as a national landmark for outstanding landscape architecture. In Mears Park, converting plastic garbage containers to collect recycling seemed unworthy.

Stakeholders

A working group of stakeholders came together to set goals and to collaboratively design and implement all aspects of the program. The working group consisted of representatives from the City’s Parks and Recreation department and Public Works department, Eureka Recycling, and Public Art Saint Paul (a local nonprofit that engages artists in shaping the form and experience of Minnesota’s capital city). All levels of involvement were represented—from budgetary and staffing decision making to the logistics and implementation of collections in the park.

A Mears Park Green Team was established to contribute to the general direction and vision of the project and to aid with the community process. The Green Team members included the entire working group, and extended to include a wider range of stakeholders including active community members, the local business association, and representatives from other interested city departments.

To truly build a public art and public recycling project that engages the Mears Park community...
around Mears Park, the Capital River Council (the neighborhood association for the downtown area), Eureka Recycling and the artists met with the Friends of Mears Park, a volunteer organization of neighbors who tend the park’s gardens. We also polled those who use the nearby skyways (elevated walkways connecting downtown buildings) to get a clear sense of what people love about the park. The team was able to carefully listen, catalog, and respond to the concerns and ideas they heard in association with the addition of a recycling program to the park.

**An artistic approach**

By working with members of the Mears Park community, we learned that they deeply value art and creativity! The park is situated in the Lowertown area, home to more than 500 artists and studios. Artists Marcus Young and Seitu Jones (both of whom have long histories in Lowertown) were commissioned to creatively re-conceive the recycling container and the ritual of recycling.

Exploring the intersection of art and recycling was a greater process than anticipated. The artists had a steep learning curve for recycling and waste reduction, just as the City and Eureka Recycling had for the process of creating public art.

Seitu Jones, a Frogtown-based leader in public art, was responsible for the physical design of the containers. In this artistic team, Seitu focused on the sculptural integrity of the containers and was challenged with making sure the recycling containers could withstand the harsh Minnesota climate and function within the confines of the existing mechanized collection system used by Saint Paul Parks and Recreation to collect the recycling in the park.

Marcus Young, City Artist in Residence for Saint Paul and a conceptual artist, focused on what the recycling containers communicate to the neighborhood about art and sustainability, and how parkgoers are educated by these objects.

**Identifying what materials to collect**

Visitors to Mears Park generate from less than 20 pounds to more than 100 pounds of trash per day. This quantity fluctuates seasonally, as well as with the weather and with the schedule of events in the park.

**Baseline study**

A _baseline study_ is the documentation of information collected before any changes are made. At Mears Park, our baseline study included information about how much trash is generated in the park, which we learned by talking with the staff who service the trash containers. Our baseline study also included how much recyclable material was thrown away, which we learned by sorting the waste collected in the park before the recycling program was implemented.

**Baseline waste sorts**

For our baseline study we conducted two _waste sorts_ in Mears Park to help us understand the potential diversion of recyclables in the park and what materials we should target in our program. In our first waste sort, we looked at the quantity and composition of material collected. Because of inclement weather, use of the park decreased over the collection period for our waste sort and we had much less material to sort than we expected. We planned a second waste sort and collected several days of material. Though we increased quantity collected for our second waste sort, the composition remained similar to the first “rainy day” waste sort.

Our waste sort results indicated the potential to collect two recycling streams, one for commingled bottles and cans and one for papers. There was also a significant amount of compostable material. Although the waste sorts indicated a slightly higher composition of recyclable papers than bottles and cans and an even greater amount of compostables, we determined that the collection of bottles and
cans was the best place to start. Collecting bottles and cans was a better fit for Mears Park’s existing collection infrastructure, because the quality of the bottles and cans wouldn’t be damaged or compromised through the automated collection process. We also concluded that it would be harder to keep clean and dry for processing and sale to end markets, and would require further adjustments to the collection infrastructure. Furthermore, we focused on collecting recyclables rather than compostables because introducing a new practice like composting before the more familiar sorting system of recycling would present challenges for collection and education. The chart below illustrates the composition of discards by weight from our combined waste sorts for Mears Park.

Saint Paul Parks and Recreation currently operates two garbage collection vehicles, called Load and Pack, to pick up all the trash from city parks. The Load and Pack has an automated arm that “grabs” trash containers, picks them up and dumps them into a dumpster on the back of the vehicle. This system prevents the driver from having to lift any materials as well as prevents the City from needing to use bags in containers. The holding capacity of the Load and Pack unit is 7 cubic yards, but it can compact its contents at a ratio of about 3 to 1—effectively tripling its capacity. When the dumpster on the Load and Pack reaches capacity, the driver (traveling less than 25 mph) drives the Load and Pack to a central drop-off site within a few miles of Mears Park. The dumpster is detached from the body of the Load and Pack and is serviced with a front-load garbage truck, which empties the dumpster into the truck and hauls the material to its final destination. A full route can include as many as 272 trash containers at 35 locations spread over half of the city. On a full route, the Load and Pack dumpster may need to be emptied once mid route as well as at the end.

Occasionally, large events in Mears Park require the City to put out more trash containers. These additional trash containers use a bag liner and are serviced by hand by Parks and Recreation staff.

**Identifying the current infrastructure**

The current trash infrastructure at Mears Park includes eight trash containers located throughout the park. These containers are serviced daily during the peak summer months. Our baseline study showed an estimated two cubic yards of discards generated per day. During colder months, volumes drop to less than 1 cubic yard per week.
Designing the collection infrastructure

For the public space recycling program in Mears Park, the City decided to use the existing garbage collection equipment for recycling rather than invest in a new system. In the short term, this was a cheaper option for the City, especially considering that this was a small pilot and retrofitting the whole city's collection infrastructure for one small park would be unrealistic. In the long term, the City felt it could successfully use its investment of this equipment to collect more recycling and less trash. The four recycling containers were designed to work within this infrastructure, and be serviced by the Load and Pack (without using its compaction feature in order to protect the quality of the recyclable material).

Working within this garbage infrastructure for this project posed challenges in terms of efficiency. The automated Load and Pack system is designed to handle large amounts of trash en route throughout the city, not the small amount of recycling that is generated from just one park. In addition, the four containers in Mears Park are the only public space recycling containers in the city that use this equipment. In the end, because of this lack of efficiency and the need to use such a slow vehicle to travel to and from the central drop-off site to collect recyclables from only four containers, the City decided not to use the Load and Pack for recycling collection while the route is so small. So, although this pilot set out in part to test recycling collection with the Load and Pack, the City determined that the inefficiencies were too great to overcome. For now, the recycling containers in Mears Park are emptied as needed by hand. Staff then place the recyclables in bags and haul them by a pickup truck to the central drop-off site. The bags are emptied into 90-gallon carts and the carts are serviced as needed on route by Eureka Recycling’s collection trucks.

Although the hand collection of recyclables in Mears Park appears more labor intensive than the Load and Pack, we had a valuable opportunity for staff to monitor the materials collected. Collection staff reported that they saw minimal contamination. They reported the amount of contamination they removed from the recycling containers, and it was consistent with what we have found in our waste sorts (about 5%).

Looking forward to when the City expands public space recycling, we are working with the City to identify solutions to the challenges of working within the garbage infrastructure. In the broadest sense, efficiencies will be gained by using the Load and Pack for collection once the recycling route is filled out. At that point, the City is committed to modifying the system as necessary to ensure that the materials collected using the Load and Pack can be transferred for processing at Eureka Recycling’s facility. Currently, the Load and Pack dumpsters are designed to be serviced by front-load garbage trucks. However, in the Twin Cities, there are no front-load recycling trucks for commingled containers (aluminum cans, plastic bottles, etc.) The City has researched options to modify the dumpster and will implement these changes so the dumpster can be serviced by a local recycling truck.

Designing public space recycling containers

Public space recycling containers for Mears Park needed to withstand collection by the Load and Pack and function in the same way as the trash containers so they could hold materials without the use of bags and have operating hinged lids that open when the containers are tipped upside down for collection. These requirements posed limitations for the artists in terms of form and material. As the artists grappled with the tension between form and function in their creative process, the working group met several times to address the balance between creativity and function, and to revisit the shared
mission of project by using the Humphrey Diamond (see page 18).

Local engineering and product design firm Brooks Stevens, stepped forward to lend expertise to marry form and function. With an office a block from Mears Park and a keen interest in designing for sustainability, Brooks Stevens’ enthusiasm for the project and engineering expertise were a strong catalyst to keep the project moving forward.

**Designing education**

Education at the point of discard was included on the lids and around the outside of the containers, with the following characteristics:

- The recycling “chasing arrows” cut out along the outside of the container
- The words “Please recycle bottles and cans” sandblasted on the lid and painted blue to stand out against the metal container
- Inspirational language “recycle at peace with all things” which is an excerpt of the poem distributed by This is for You, the education ritual for the Mears Park recycling program
- Sandblasted images of an aluminum can and plastic bottle, painted blue to stand out against the metal container
- Circular restricted opening on the lid of the container, and cut-out circular holes around the container
- Blue enamel in the inside of the container appears through the cut-out circular holes around the container, further distinguishing the recycling from the trash and representing the water elements at the park

**Education beyond the container**

Mears Park is situated in the center of a high-density mixed-use residential and business district. Many people buy lunch from nearby businesses and bring it to the one-city-block park to enjoy the beautiful green space. Because much of the material that is discarded in the park originates from these businesses, it made sense to get their support and to get them involved in the project. Gathering this support also helped make the program more visible to the community.

Businesses within a one- to two-block radius of the park and in the skyways were contacted via phone and then visited in person just before the launch of the new containers. They were given the background of the project, offered resources to help them answer customers’ questions about recycling and asked that they show support for the program by displaying posters in their establishments, and if possible, placing small stickers on beverages they sold in bottles and cans that might make their way into the park. Four businesses agreed to take rolls of 200 of the stickers that said, “New! You can now recycle this in Mears Park!”
The Ritual

Artist Marcus Young assembled a team of Lowertown artists to create a set of whimsical secret “gifts” titled *This is for You*. Designed around the idea that the art of recycling is very much like the art of giving, the intention was to engage people in the thoughtful ritual of recycling as opposed to the mindless habit of wasting.

Ten gifts were created and “seeded” in the Mears Park community following the launch. Each gift consisted of a plain hand-crafted wooden box that contains a beautifully glazed ceramic mold of a plastic water bottle. Removing the cap from the bottle pulled out a series of cloth flags that contained a poem about recycling in Mears Park, and instructions for how to log on to the website to track the journey of that particular gift at www.RecyclingInMearsPark.org.

Local web design firm Bicycle Theory designed a site that would best support *This is for You* in a way that is fun and accessible. People who receive a gift could log on with the password on the gift, enter their name, which building they live or work in, and their comments. Anyone who logged on could then follow the journey of each gift from person to person, building to building, and read what their neighbors have to say about the project.

It is difficult to analyze how far reaching this grassroots, person-to-person effort was. Although we are not sure of its potential and whether we reached it, we know it helped to raise awareness in the Mears Park community about public space recycling. The journey of the gifts was tracked online. After five months, only two or three people posted updates for each gift before they disappeared into the community. In an attempt to determine where the gifts were, we contacted the last reported recipients, all of whom reported that they had passed the gifts along. The website itself received over 1,000 unique visitors from August to December 2009.

Launching the program

On June 26, 2009, recycling in Mears Parks was launched with a press event that was attended by more than 60 community members who felt connected to this project, as well as visitors in the park who were learning about the project for the first time. This launch event was evidence that the more effort you put into involving the community and gaining support, the bigger the impact. We celebrated the first day of recycling in Mears Park with everyone who had a hand in the project the past couple of years. In the park with us were City staff, park visitors, community members and many interns and volunteers—all representing their stewardship and investment in the program. The highlight of the launch event was a dedication ritual for the containers in which community members and project partners and park visitors lined up and passed bottles and cans hand to hand, ending with the bottles and cans being recycled through using one of the new containers.

Four containers were placed in the park’s four
corners, each next to a trash container, and the remaining four trash containers were rearranged in the center of the park. For five months following the launch, Eureka Recycling and the City of Saint Paul tracked, monitored, and analyzed the entire system in Mears Park—from the containers in the park to collection to the recycling facility and beyond.

**Business outreach follow-up**

Several weeks after the launch we followed-up with the businesses around the park to see what they heard from customers about the program, and to collect any additional feedback they had. Business owners reported that customers noticed the posters and stickers and that they helped bring attention to recycling in Mears Park.

The businesses thought the posters were self-explanatory. However, details about what could be collected through the recycling program in Mears Park were unclear. One business was confused about what could be recycled and had put stickers promoting the program on non-recyclable products (paper cups). We spoke with the business owner (and all of the other participating businesses) to clarify that the recycling program in Mears Park is collecting bottles and cans only. This misunderstanding reminded us of the importance to reiterate the details of the program because many people have different assumptions about what can and cannot be recycled.

We know that changes “upstream” are necessary to make public space recycling a success. A crucial way to reduce waste and increase recycling in public spaces involves working with businesses and vendors that sell the single-use, to-go items that are discarded in public spaces. Working with businesses and vendors to help them make different purchasing choices (e.g., selling more beverages in bottles or cans instead of Styrofoam cups) could result in less trash and more recyclable items in the park. We have started this work in Mears Park by connecting with businesses in the surrounding community, but there is more that could be done to connect their purchasing choices to the vision of reducing waste and increasing recycling in Mears Park.

**Tracking data collection**

From our baseline study, we already had information about the potential *diversion rate* in Mears Park, the percentage of discards by weight that were getting diverted to the recycling. However, to measure the actual diversion rate, we needed information about the collection of both the trash and the recycling in the park. We worked with Parks and Recreation to implement a tracking system for Mears Park maintenance staff to track and report the trash and recycling volumes when the containers were serviced.

**Identifying tracking opportunities within the infrastructure**

We have more than twenty years of experience in tracking recycling collection and applying our data to demonstrate the value and benefits of recycling. However, we faced some challenges at Como and Mears Park as we learned about working within a garbage infrastructure to identify roles, and balance efficiencies.
In most cases, a public space recycling program is likely to be implemented internally, by city or county staff. In our pilots, we worked with Parks and Recreation staff to navigate the internal structure from an external position. Having a removed role caused challenges for us to identify maintenance staff roles and levels of access. It took more time than anticipated for us to understand the infrastructure, and identify the roles and responsibilities of staff involved. We were still learning after the program launched.

Parks and Recreation understood the importance of tracking information and holds a vision to expand public space recycling throughout the city. The department agreed to have maintenance staff provide this data for the first six months of the program.

**Tracking trash and recycling volumes**

Park staff used tally sheets that we provided to track both the recycling and the trash. After maintenance staff recorded collection information on the tally sheets, the sheets were faxed or emailed to us for data entry and analysis. We combined this data with information gathered from waste and recycling sorts to calculate the diversion rate over five months of the program. We tracked the volume of recycling and trash at each container for most of the first five months of the program.

The trash collection in Mears Park was designed to be efficient and had a set route with the Load and Pack collection vehicle. Asking staff to track the volumes of trash at eight containers in the middle of a route with as many as 272 containers caused inefficiencies. Additionally, since the driver was on route all day and showed up at Mears park any time in a two-hour window, our only access to drivers was through their supervisor.

Thus it took awhile for route sheets to get from the driver to his supervisor and then to us (frequently going to the supervisors’ supervisor before getting to us). Additionally, if there was an error or a question about the tracking sheets, it took a while for us to get a response as to what happened. Because of this long communication chain, there were several weeks in the middle of the tracking period for which no trash data was collected. By the time we identified the missing tracking sheets, the staff person who was collecting trash during those weeks was no longer available.

To track the recycling, maintenance staff recorded the volume of the recycling when the containers in the park were serviced. Collection (and therefore tracking) occurred five times during first six months of the program. We used these five data points to evaluate the first six months of the program.

**Using the data we collected**

In addition to the trash and recycling tracking by maintenance staff, our driver continues to track the volume of recycling each time it is collected from the central holding location (where Mears Park staff haul the materials when they empty the containers). We are able to combine this total quantity of recycling collected with data gathered during waste sorts to regularly calculate the social and environmental benefits of the program. By continuing with the ongoing tracking by our driver we will be able to keep updating partners and stakeholders as to the benefits of the public space recycling program in Mears Park.

**Recycling collection and program evaluation**

**Recycling collected**

Recycling is typically measured and evaluated by weight. From this measurement we are able to calculate both the environmental and economic benefits of recycling by allowing program managers to calculate cost and energy savings from avoiding disposal.

In the case of Mears Park, the first six months
yielded a total collection of 191 pounds. With this minimal collection, economic benefits are difficult to quantify. However, the energy savings and environmental benefits of recycling are so great that even 191 pounds has significant impact that can be shown using EPA’s Waste Reduction Model (WARM) and the Greenhouse Gas Calculator, which takes carbon equivalents and translates them into everyday examples that are easier to relate to.

Using these tools provided by the EPA, we can show that the bottles and cans recycled at Mears Park saved the equivalent of 0.6 metric tons of carbon dioxide from being released into the atmosphere, the energy equivalent of 67.5 gallons of gas.

Beyond diversion and the energy savings and environmental benefits of recycling, it is also important to acknowledge and celebrate the shift in awareness and behavior of recycling. Measuring how often the public uses a recycling container (and uses it correctly) is another gauge of success. By calculating the quantity of recyclables not only by weight but also by the number of individual bottles and cans recycled, we can evaluate how the public actively uses public space recycling containers.

Knowing the composition of Mears Park recycling and the average weight of individual bottles and cans, we estimate that the 191 pounds of recycled materials collected is about 89 glass bottles, 647 plastic bottles, and 2,184 aluminum cans. This means that in the first six months of the Mears Park recycling program park visitors chose to recycle nearly 3,000 times!

**Evaluative waste and recycling sorts**

After the launch of the recycling program, we did four waste sorts during the six months we measured recycling to evaluate the program. These sorts helped us assess contamination and learn more about what was still getting thrown in the trash. Additionally, we weighed and sorted all the recycling collected during the first four months of the program. These sorts confirmed that contamination was minimal, ranging from non-existent to 6%.

However, we did find a significant amount of bottles and cans still being thrown in the trash. While evaluating material by weight is important, evaluating these results by individual bottles and cans was even more illuminating. We learned that 88% of all glass was being thrown in the trash (both by weight and by bottle type), while just under half of the plastic bottles and aluminum cans were being discarded in the trash containers. Due to the heavy weight of glass, when we measure by weight it accounts for a higher percentage of the weight and tends to skew the data. For example, the capture rate of all bottles and cans (percentage that is recycled) when measured by weight is only 27%. However, when we measure individual bottles and cans, the capture rate increases to 47%. While the former rate is important for evaluating the overall recycling potential of the program, if we want to look at the percentage of people using the containers compared with those who throw their recyclables away, the latter rate is more valuable.

**Diversion rate**

The percentage of the discards diverted from the trash (most frequently through recycling though it can also be through reuse or composting) is the **diversion rate**. Diversion rate is usually calculated by weight because trash volumes fluctuate significantly either through compaction or based on the density of the material thrown away. This calculation is used frequently by cities to demonstrate how much they recycle. However, we found that in public spaces, especially spaces that have fewer recycling containers than trash cans, and where the trash can fluctuate significantly based on weather and other park use factors, the diversion rate is not the ideal measure of success for the program. The number of bottles and cans recycled or other measures of social behavior (using a survey, for example) may be a better gauge of the impact and success of a public space recycling
In Mears Park we were able to calculate the diversion rate at eight data points, either from the tracking sheets the maintenance staff provided or from waste sorts where we collected and sorted trash and recycling collected from a set amount of time. These data points show the diversion rate ranged from 2% to 6% (see chart below). This seemingly low rate is primarily because of the large amount of glass discarded in the trash and the composition of the trash, which was very heavy due to the amount of pet waste discarded (one-third of the trash by weight was pet waste) as well as a considerable amount of leaves and brush (15% of the trash by weight was leaves and brush from the volunteers who maintain the park’s gardens).

The chart at top lists all the data points we collected, either from waste sorts or from the tracking sheets provided by the maintenance staff who collect the trash and recycling in the park.

The overall recycling rate for the first six months of the program was 3%, much lower than the 7% potential shown in our baseline study. However, we know from the waste sorts that this discrepancy is because much recycling is still being thrown in the trash. The data collected by Mears Park staff also shows that recycling and trash quantities generated in the park fluctuate greatly and decrease significantly during the winter.

**Visitor questionnaires**

Questionnaires were used as an evaluation tool in order to obtain meaningful feedback from the public that visits Mears Park. One of the most notable findings from our interviews with 112 park visitors was the overwhelming support they expressed for the recycling program and the interest they had in seeing recycling in other parks throughout the city. Feedback included:

- *This is great! We love it!*
- *This is a great way to get people thinking more about recycling.*
- *Great—I love the bins, very creative!*  
- *It’s a good idea, people are happy about it.*
- *This is a good program, it should be in other parks as well.*
- *I think Saint Paul needs recycling in all parks.*

The questionnaire results showed that Mears Park visitors care about recycling in their personal lives and are glad when it is an option in public spaces.

- 30% of visitors identified with being avid recyclers who carry their recycling home if it is not available in public.
- 62% of visitors identified with being glad when recycling is an option at public spaces.

Visitors were asked an open-ended question...
about what they thought was the purpose of implementing a recycling program in Mears Park. Of those who responded,

- 55% indicated that recycling improves the environment by reducing waste and conserving resources, space, and energy;
- 23% indicated that recycling is the best way to reduce litter in the park;
- 8% indicated that recycling keeps the upscale neighborhood clean;
- 5% indicated that recycling is Saint Paul’s way to set a good example for the public while teaching about the benefits of recycling;
- 5% indicated that a lot of people eat their lunch at the park and can reduce the volume of recyclables from entering the trash by using the recycling containers;
- 5% indicated other reasons including the market value of recyclables.

The results of the questionnaires showed that nearly 70% of visitors we spoke with were already aware of the recycling program. The most prominent ways they learned about the program was by seeing the containers in the park and by hearing about the launch of the program on the news.

When asked to comment about the design of the containers, the majority of the visitors we spoke to indicated that the recycling containers are more noticeable, they stand out and the design is eye-catching. Many visitors said the container design fits in well with the décor of the park, that the design of the container engages the community, and that the containers are aesthetically pleasing and add to the architecture of the park. Feedback included:

- The recycling containers add to Mears Park artistically and environmentally.
- The art design of the containers encourage people to recycle.
- Supporting local artists helps get people more interested.
- The design adds to the beauty of Saint Paul.

Some of the concerns we heard from visitors included that from far away they found it difficult to tell that the containers were for recycling, and that we should consider adding more containers so they weren’t so far apart or adding large signs or larger lettering on the containers.

These conversations confirmed that the public is using the recycling containers in Mears Park. Of those who had recyclable items in the park, 93% reported that they did recycle it. The questionnaires also confirmed that the area businesses contribute greatly to the packaging that is disposed of in and around the park. Overall, 61% of the visitors we spoke with brought and/or purchased food or beverages near the park. Of these items, 25% were in recyclable packaging that could be recycled in the park: 58% were plastic bottles, 47% were aluminum cans, 5% were milk cartons or juice boxes, and 3% were tin cans.

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The value of art

While there are challenges to incorporating art, we found many benefits. Artists bring a certain sensibility and capacity to stretch thinking in both directions – bringing holistic, long-term and cutting-edge vision about the system and program design, as well as the brass tacks of turning concept into
functional object and creatively problem solving challenges on the ground. Moreover, thinking artistically about recycling allows us to address and inspire the culture shift and behavior change that will be required of all residents for any city to achieve zero waste.

The containers created for Mears Park were a success in many ways, but we think the process through which we incorporated public art into the Mears Park recycling program could be improved. We learned a great deal about the many contributions artists have to offer a project. For example, if an artist is going to play the role of a container designer/fabricator for automated collection, more time and money must be allotted in anticipation of the challenges that come with designing and engineering an industrial product with such specific requirements (like equipment compatibility). Outside of container fabrication, artists can play a valuable role at the planning table to design the program as a whole, and/or to creatively address specific questions or challenges such as contamination, awareness, community buy-in, and more as evidenced by the success of the ritual and community education portion of this project.

**Summary and next steps**

From the data provided by the maintenance staff and what we learned through waste sorts, we identified the following discernable patterns:

- Quantities generally declined as the weather became colder and the days became shorter.
- The amount of recycling and trash generated in the park varies greatly with no clear pattern other than the weather.
- The recycling collected has an extremely low contamination rate of 0 to 6%.
- More than half (by individual container) to two-thirds (by weight) of the recyclables still get thrown in the trash.
- The recycling rate varies between 2% and 6%.

The public is using the recycling containers in Mears Park and is using them appropriately. These are two successes we can celebrate. There is still much room for improvement in increasing the amount of recyclables recycled in the park. Glass gets thrown away more than any other material, but many plastic bottles and aluminum cans are also discarded in the trash. To help increase recycling, the City could add more recycling containers in Mears Park and place at least one in the center of the park. Ideally, there should be a recycling container by every trash container.

Implementing recycling in Mears Park is a significant step in providing recycling in Saint Paul’s public spaces, especially throughout downtown parks. This pilot project provided the opportunity to explore the implementation of recycling in a garbage infrastructure and helped us to understand what is needed to make the collection process more efficient. As we recommend the City bring public space recycling citywide, we learned through this pilot project the need to identify containers and education that will work within the collection infrastructure, generate minimal contamination, and fit within the City budget.
Saint Paul has six large urban park pavilions throughout the city: at Lake Phalen, Newell, Lake Como, Streetcar, Highland, and Harriet Island. The pavilions are locked facilities with kitchen amenities and are staffed by maintenance when in use. There are many other open pavilions in the city, but it was more manageable for Parks and Recreation to start recycling in the handful that have more monitored and controlled environments.

The city’s pavilions are used widely and are generally rented through a reservations system (except on holidays). Most reservations are for gatherings of 200 people or less for celebrating family events, clubs events, or workplace gatherings. For events with more than 100 people, an additional charge covers the cost of extra garbage removal.

Eureka Recycling worked with the City of Saint Paul’s Department of Parks and Recreation to add recycling at the park pavilions in the summer of 2008. Five pavilions were successful in adding recycling. Parks and Recreation decided to hold off on adding recycling containers for the sixth pavilion, Harriet Island, until they had room in their budget to purchase containers that matched the upscale décor of the pavilion, which is frequently rented for events such as weddings and proms.

### Identifying the current infrastructure

Before the recycling containers were added, the pavilion garbage infrastructure was designed for trash collection by hand-pulling bags and replacing new liners in the receptacles. Maintenance staff then transported the garbage bags to a dumpster located nearby, within walking or driving distance (in the latter case the trash is transported via a golf cart or pickup truck to the dumpster).

Parks and Recreation has a reservation system for park pavilions. At the point of registration, residents are informed of rules for alcohol and trash, but currently they are not instructed about the recycling program. This reservation system has been identified as an opportunity to raise awareness about the program and build in accountability for participation through a deposit system.

### Designing the collection infrastructure and selecting the containers

To modify the garbage infrastructure to accommodate recycling, Saint Paul Parks and Recreation added recycling containers inside the pavilions to collect bottles and cans. These containers were primarily bottle-shaped recycling containers, which the city obtained at no cost. The City also used an occasional blue tote with a restricted opening and simple label on the lid. All containers used are lined with a bag, which City staff pull by hand and haul to a 90-gallon cart. Eureka Recycling provided a set of 90-gallon carts for each location to hold the recycling for collection. These carts are serviced by our recycling trucks and the materials are hauled to our facility for processing.
Evaluation

To learn about recycling at pavilions, we worked with Parks and Recreation to identify a system for tracking. Parks and Recreation decided to keep most of the carts at its headquarters, which are centrally located, and haul the recycling back from the pavilions in a pickup truck. At their headquarters these bottles and cans are mixed with recycling from the office and other programs. Because we were unable to learn about quantities generated from individual park pavilions, we conducted three waste sorts to gather detailed information about what is being collected through this program.

Waste sorts

We used our three waste sorts to look into some specific assumptions about behavior and accessibility. Two waste sorts were done on days when the pavilions were reserved by one specific person or group. This provided more accountability than the other waste sort we conducted on a holiday weekend. On holidays, no reservations are accepted and the pavilions are open to the public as they arrive.

Ideally, recycling should be as accessible as trash, with both types of containers next to each other. However, new programs rarely have the budget to roll out a new recycling container for every trash container already in existence. Thus, we attempted to quantify exactly how recycling rates are associated with container ratios.

All of the waste sorts indicated that a considerable amount of compostable material is generated at park pavilions. One environmentally minded church group had even used compostable utensils, cups, and plates, indicating the growing awareness about compostables and the potential to add composting to the infrastructure in the future. (Waste sort results by weight at bottom.)

When we compare the results of 10 trash containers to 3 recycling containers with 10 trash containers to 10 recycling containers, we can see the recycling rates dramatically increase. However, contamination rates increase as well from 0 to 10%. One-tenth (1% overall) of this contamination was cups, which people frequently think are recyclable. This could be addressed with targeted education.
Discards were collected over a holiday weekend for the third waste sort. On this day contamination was minimal (2%) but less than one-third of the recyclables were recycled. See graph to the left of waste sort results by weight.

Lastly, while the bottle-shaped recycling containers used in the pavilions proved effective at capturing bottles and cans with minimal contamination, it did not capture any aluminum foil or pans. Many public spaces do not have a significant amount of this material, but we found considerable amount at the pavilions because picnics are a common activity at these venues. Aluminum pans and foil are convenient disposable containers to hold large volumes of warm food (or whole pies) served to many people on disposable dinnerware. During one waste sort, these pans consisted of 18% of all the recyclables thrown in the trash (2% of total trash) by weight. Not all recycling facilities are able to sort and sell this grade of aluminum, but in cases where this is possible, this is an important item to consider.

Summary and next steps

From these waste sorts we conclude contamination is minimal and even during holidays many recyclables are making it into the correct containers. We found that an increase in recycling containers does increase recycling rates. In fact, when the ratio was one to one (seven recycling containers paired with seven trash containers), and the pavilion was reserved, 85% of the recyclables were captured. In contrast, during a free-for-all holiday where there were ten trash containers available and only seven recycling containers, only 30% of the potential recyclables made it into the recycling.

Furthermore, pavilion maintenance staff who are at the park throughout all reserved event (though not always in the pavilion) have indicated that when the trash is not serviced regularly visitors will take the lids of recycling containers and use them to collect trash. By increasing service levels (or even self-service levels) and education, or using containers where the lid cannot easily be removed, this issue can be averted.

The next steps to expand this program will include adding recycling education to the reservation process, training for the maintenance staff who are onsite when pavilions are reserved, expanding the program to include unmonitored pavilions, and considering the addition of the composting infrastructure in the long term to enable select groups to hold their own zero-waste events when they rent pavilions. However, as long as there is no tracking of the recycling collected at the pavilions, Parks and Recreation will be unable to identify if changes have any effect on the recycling collected.