

SEEDS

Ecology & Education Centers



National Cherry Festival

Waste Management Services Audit

2022

PREPARED FOR:

The National Cherry Festival

PREPARED BY:

SEEDS Ecology &
Education Centers

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Disclaimer

This report has been produced by SEEDS Ecology & Education Centers with reasonable skill and care. Audit findings are based on observations completed by SEEDS and information provided by the client or contractors during the period of the audit. SEEDS assumes auditees are trustworthy and have been honest to the best of their ability in response to SEEDS' questions and data requests. SEEDS is not accountable for the accuracy or completeness of available audit information prepared by other external parties. Any representation, statement, opinion or advice, expressed or implied in this publication is made in good faith.

Executive Summary

This report presents data provided by GFL Environmental Inc. (GFL) that has been verified and analyzed by SEEDS. This report describes the amount of waste generated at the festival grounds during the 2022 National Cherry Festival, how that waste was processed, the amount of waste diverted from landfills, and the resulting environmental impacts. This report will help the National Cherry Festival make appropriate waste management decisions and lessen the environmental impact of future events.

SEEDS found that GFL's management plan was carried out as proposed and that accurate records were kept throughout the process. GFL collected, hauled, and sorted commingled waste from the festival grounds. The total weight of the 2022 waste stream was 75,280 lbs. In 2022, the Festival diverted 100% of its waste stream from landfills. As a result, the National Cherry Festival reduced greenhouse gas emissions by 31.49 MTCO₂E which is equivalent to conserving 3,545 gallons of gasoline.

The National Cherry Festival continues to have a sizable positive environmental impact through their waste management policies. This is laudable, and when aligned with having a qualified third-party verifier demonstrates commitment to environmental goals and to authenticity. Therefore it is key to note that **there is still substantial room for improvement through the suggestions provided in this report.**

While the basis of these recommendations focuses on waste management practices, it is critical to **note that the Festival's climate impact extends far beyond its waste generation** and also includes vehicle emissions from its events (e.g. air shows) as well as the commute of its visitors. While a core value of the National Cherry Festival is to "demonstrate environmentally sound practices," there are no measurable goals against which to measure the success or failure of those practices. Auditing the full extent of Festival activities is critical to understanding the role the Festival and its waste management practices play in offsetting GHG emissions.

This report includes a list of suggestions that, if implemented, would allow the National Cherry Festival to better understand and further reduce the Festival's environmental impact. These suggestions include setting specific goals to improve waste management and reduce greenhouse gas emissions including,

1. Reducing the total weight of waste generated during the Festival through source reduction,
2. Educating volunteers and the general public about waste sorting, and
3. Implementing a waste disposal system with multiple bin types to improve the value of recyclables.

Partners



The National Cherry Festival

The mission of the National Cherry Festival (the Festival) is to celebrate and promote cherries, community involvement, and the Grand Traverse region. The Festival is a celebration of farmers, laborers, neighbors and anyone that comes together because of cherries. Over 500,000 visitors participate in the Festival over eight days. The National Cherry Festival is committed to improving cleanup at the festival each year.



GFL Environmental Inc.

GFL Environmental (GFL)'s Northern Michigan branch is a locally operated waste management firm with 50 years of experience in the Northern Michigan region. GFL remains committed to helping educate the region about ways to increase recycling while continuing to explore new ways of reusing materials and decreasing environmental impact. GFL processed the waste for the Festival.



SEEDS Education & Ecology Centers

SEEDS Education & Ecology Centers (SEEDS) is a 501c3 organization that implements local solutions to global challenges at the intersection of ecology, education and design. We help communities make durable, resilient decisions about their own future using ecological design principles for everything from educational curriculum to the monitoring of greenhouse gas emissions. SEEDS was engaged as a neutral third-party verifier for this study.

Waste Management Services Overview

In 2022, GFL processed all waste generated at the festival grounds during the National Cherry Festival. All waste materials, including recyclable materials and compostable materials, were collected in a single bin. GFL transferred all commingled waste from the festival grounds to their processing facility in Traverse City, Michigan. Commingled material was weighed-in as it was delivered to the GFL facility. GFL processed and sorted that material as it arrived. Potentially divertable materials were sorted and weighed, and the difference was accepted as landfill trash. GFL kept records for all waste entering their facility. Those records are included in the appendix to this report.



Commingled waste materials at the 2022 National Cherry Festival were hauled by GFL on a daily basis.

Definitions

The following set of definitions has been developed to provide clarity in how waste management services are described throughout this report:

Waste management - the collection and sorting of the waste stream based on disposal methods, including landfilling, recycling, composting, and waste-to-energy (WtE).

Recyclable materials - waste materials that can be processed by a materials recovery facility for reuse in the manufacture of new materials or products. In the National Cherry Festival waste stream, these materials include old corrugated containers, cardboard, paper, many kinds of #1-7 plastics, glass, and ferrous and nonferrous metals.

Compostable / organic materials - waste materials composed of organic matter that can be processed through controlled aerobic decomposition to form soil. In the National Cherry Festival waste stream, these materials include food waste, yard waste, and compostable food service materials (plates, napkins, utensils, etc.).

Waste-to-energy (WtE) - the incineration of waste materials to produce steam in a boiler that is used to generate electricity. Many organic and recyclable materials are energy-dense, including products derived from wood or petroleum.

Landfill diversion - the prioritization of alternative waste disposal methods over landfilling, including recycling, composting, and processing for WtE.

Waste Stream Analysis

The 2022 National Cherry Festival waste stream had a total weight of 75,280 lbs. 2022 marks the first year in which 100% of the waste stream was diverted from landfills. This milestone is a testament to the Festival’s commitment over the past several years to improve their waste management practices. Most of the waste generation at the festival comes from food vendors, who primarily used recyclable and compostable wares during their operation.

The Festival Green Team’s efforts, including the installation of new signage throughout the festival, should also be noted.

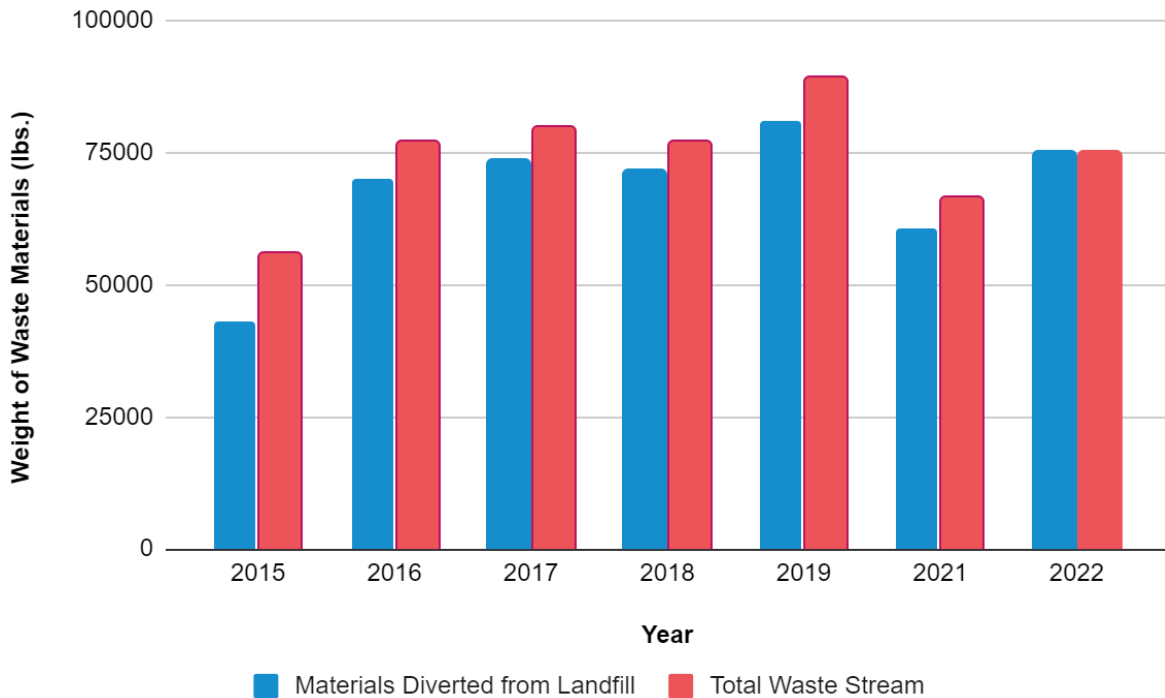


Figure 1. Diverted Materials vs. Total Waste Stream Over Time

Year	Percent of Materials Diverted from Landfills	Total Weight of Materials Diverted from Landfills (lb)
2015	76.5%	42890
2016	90.9%	70000
2017	92.5%	73740
2018	93.0%	71760
2019	90.9%	81135
2021	91.0%	60569
2022	100.0%	75280

Table 1. Percent of Materials Diverted from Landfills Over Time

The gross weight of the festival waste stream along with the net weight of landfill trash and materials diverted from the landfill was calculated using information and records provided by GFL. The total festival waste stream included waste generated at the Open Space and contiguous festival grounds but did not include waste collected outside the festival grounds or from the amusement park grounds. Since 2018 additional bins to accept commingled waste material have been placed along the TART trail. These bins are placed as far east as Park Street and as far west as North Oak Street. Materials from those bins are included in the total festival waste stream.

2022 was an important year for the National Cherry Festival because it marked the return of several major events that had been absent since 2019, including the DTE Energy Foundation Cherry Royale Parade, the weeklong Bayside Music Stage concert series, and the US Navy Blue Angels air show. The National Cherry Festival was canceled in 2020 and did not include the previously mentioned events in 2021 due to the ongoing COVID-19 pandemic. The return of the Festival’s marquee events in 2022 coincided with a return to a typical attendance count and a waste stream weight that is comparable to previous years. **Figure 1** and **Table 1** show how the weight of waste generated in 2022 compares to previous years.

The suggested measures listed at the end of this report provide best practices and evidence-based strategies that have helped other open-air events reduce waste volumes and otherwise improve the environmental impact of their waste management operations.

Emissions Data and Equivalencies

100% of the National Cherry Festival's waste stream was diverted from the landfill preventing 31.50 metric tons of carbon dioxide equivalents (MTCO₂E) from entering the atmosphere.

Total Festival Waste Stream: **75,280 lbs.**

Material Diverted from the Landfill: **75,280 lbs.**

Total Reduction in GHG Emissions:
31.50 metric tons carbon dioxide equivalent (MTCO₂E)

31.50 MTCO₂E is equivalent to:



- The greenhouse gas emissions of 6.8 passenger vehicles driven for one year, or



- The CO₂ emissions from consuming 3,545 gallons of gas, or

- The CO₂ emission from 4 homes' energy use for one year, or



- The carbon sequestered by 37.3 acres of US forests in one year.

Equivalencies were calculated using the Waste Reduction Model (WARM) and the Greenhouse Gas Equivalencies Calculator created by EPA. Both are available at <https://www.epa.gov>.

Analyzing Emissions with WARM

SEEDS used the Environmental Protection Agency's (EPA) Waste Reduction Model (WARM) to quantify the environmental impact of the waste management procedures. WARM was created by the EPA to help solid waste planners and organizations estimate greenhouse gas (GHG) emission reductions from different waste management practices. WARM calculates GHG emissions for baseline and alternative waste management practices, including source reduction, recycling, combustion, composting, and landfilling. In addition to GHG emissions, the WARM tool factors in life-cycle greenhouse gas emissions. By considering the "raw materials extraction, manufacturing or processing, transportation, use, and end-of-life management of a good or service", the values produced by WARM communicate a more holistic, as well as a more realistic view of the environmental impact of the Cherry Festival's waste management practices¹.

Greenhouse gasses trap heat in the Earth's atmosphere. Greenhouse gasses include carbon dioxide, methane, nitrous oxide, and fluorinated gasses. Although GHG emissions can include all these gasses they are generally measured as metric tons of carbon dioxide equivalents (MTCO₂E). To convert GHG emissions to MTCO₂E each constituent gas is multiplied by its Global Warming Potential (GWP). The GWP accounts for other GHGs being relatively more effective than carbon dioxide at warming the Earth. The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP:

MTCO₂E (metric tons of carbon dioxide equivalents) is a useful tool for comparing different emissions and reduction activities.

$$\begin{array}{r} \text{Metric Tons of any Greenhouse Gas} \\ \times \text{ Global Warming Potential of that gas} \\ \hline = \text{MTCO}_2\text{E} \end{array}$$

¹EPA. (2016). *Life-Cycle GHG Accounting Versus GHG Emission Inventories*. <https://www.epa.gov/sites/production/files/2016-03/documents/life-cycle-ghg-accounting-versus-ghg-emission-inventories10-28-10.pdf>.

Emissions Under Different Waste Management Scenarios

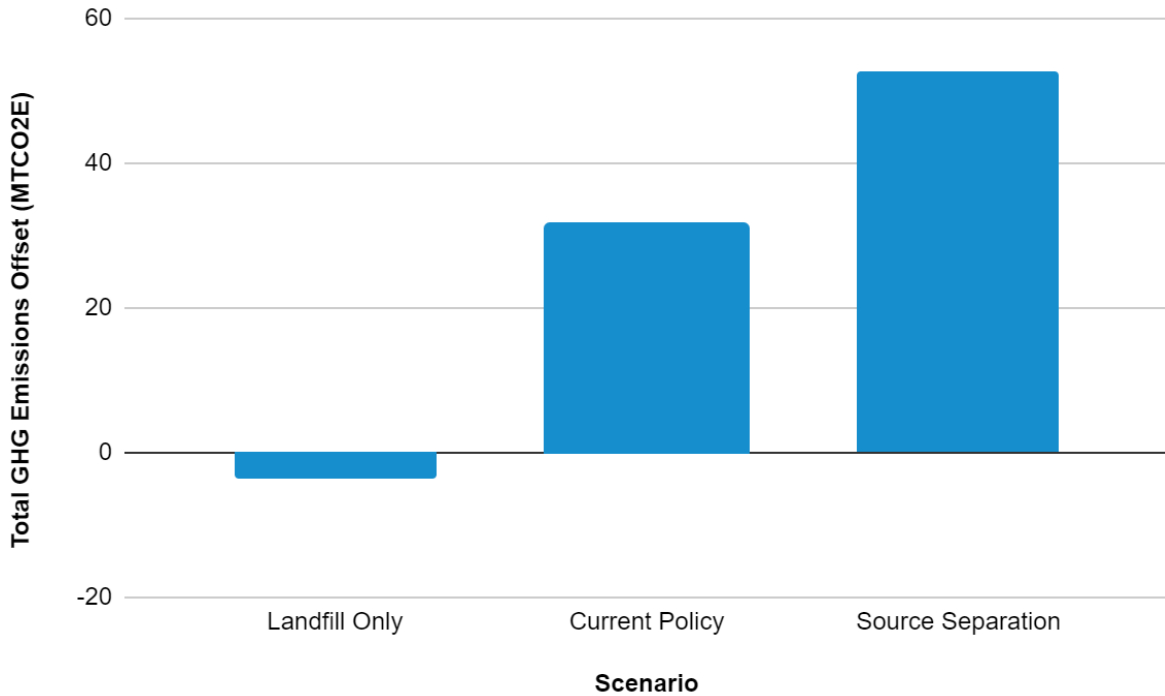


Figure 4. Total GHG Emissions Under Multiple Waste Management Scenarios

SEEDS ran multiple waste management scenarios based on the composition of the waste stream. These scenarios feature the same quantity and composition of waste, and differ only in how that waste is collected and processed by GFL. The “Landfill Only” scenario describes the GHG emissions if the entire 2022 Festival waste stream were to be landfilled. This is the baseline against which the other two scenarios are compared, and it is used to determine the net impact of the Festival’s waste management policies.

The “Current Policy” scenario is an estimate of the GHG emissions offset through the practices currently used for managing Festival waste. In this scenario, all organic materials and all contaminated recyclable materials, constituting 79.9% of the entire waste stream, are processed using WtE. Contaminated recyclables are potentially recyclable materials that have been exposed to food waste as a result of the single stream waste collection system employed by GFL. Even a small amount of contamination can degrade the economic value of tons of recyclable materials.

Contamination can also pose a health risk for recycling center workers.² Clean recyclable materials (20.1%) are instead recycled, while other materials, if applicable, are landfilled.

The “Source Separation” scenario is an ideal scenario under which recyclable, compostable, and other materials are sorted by Festival attendees into separate bins prior to collection by GFL resulting in recyclable and organic waste streams with minimal contamination. Under this scenario, all potentially recyclable materials (47.8%) are recycled, all organic materials (52.2%) are composted, and any other materials, if applicable, are landfilled.

The Source Separation scenario offsets 60% more GHG emissions than GFL’s current policies, indicating that there is still room for the National Cherry Festival and GFL to further decrease their carbon impact during future events by improving waste management practices.

²Kent County Department of Public Works. (2020, November 3). *Why Is Contamination Bad for Recycling?* <https://www.reimaginetrash.org/why-is-contamination-bad-for-recycling/>

Suggested Measures

These suggested measures will help the National Cherry Festival better demonstrate environmentally sound practices and build on the festival's track record of proactive waste management. We encourage the National Cherry Festival to take the time to educate and engage festival goers and volunteers, to look more closely at data, and set measurable goals for improvement based on those measures.

While the basis of these recommendations focuses on waste management practices, it is **critical to note that the Festival's climate impact extends far beyond its trash production** and also includes vehicle emissions from its events (e.g. air shows) as well as the commute of its visitors. While a core value of the National Cherry Festival is to "demonstrate environmentally sound practices," there are no measurable goals against which to measure the success or failure of those practices. Auditing the full extent of Festival activities is critical to understanding the role the Festival and its waste management practices play in offsetting GHG emissions.

With respect to waste management practices only, the following is recommended with each suggestion further detailed on the following pages:

- Set Waste Management and Greenhouse Gas Emissions SMART Goals
- Reduce Total Waste Volumes
- Educating Volunteers and Festival Goers
 - Waste Management Training Program for Volunteers
 - Bin Labeling
- Prevent Contamination of Recyclables
 - Reconsidering Mixed Waste Processing
 - Dual Stream Recycling
 - Staff Bins
 - Compost
 - Disposal of Liquids and Other Materials
- Making Better Decisions with Comprehensive Data

Set Waste Management and Greenhouse Gas Emissions SMART Goals

Prior to 2021, the National Cherry Festival had a trend of increasing annual waste stream volumes. To keep making progress and increase accountability we suggest that the National Cherry Festival set waste management and greenhouse gas emissions

reductions goals that are specific, measurable, attainable, realistic and time-bound (SMART.)

Roskilde, the largest music festival in Northern Europe, has a list of SMART goals which specifically address minimizing resource consumption, reuse products and recycle waste. Roskilde's ambitious goals include³:

- Reduce their waste stream to 30% below the 2019 volume by 2024. This corresponds to reducing their waste stream by 600 tons.
- Sort 55% of their waste stream for recycling by 2024.

Roskilde is a larger festival than the National Cherry Festival but is similarly dependent on volunteers. Roskilde is run by a non-profit organization with 50 full-time staff but depends on thousands of volunteers.⁴ If the National Cherry Festival decides to set similar goals it will be necessary to involve and train additional volunteers.

We suggest using the Waste Management Hierarchy to help guide your planning and assist in the development of SMART Goals, with an emphasis on achieving Zero Waste.

Reduce Total Waste Generation Through Source Reduction

Zero Waste is a process, goal, and philosophy that involves the redesign of products and consumption so that all material goods can be reused, recycled, or not needed at all. While the National Cherry Festival may not achieve Zero Waste immediately, the festival can significantly impact the health of the planet by being mindful when making purchasing decisions, planning to reduce waste, educating its vendors, and considering how to better reuse, recycle, and recover material at the end of its useful life.

The Waste Management Hierarchy describes a series of steps and considerations that will help the festival



³ Roskilde Festival. (2020). *Circular Festival: Roskilde Festival's Resource and Waste Management Plan 2020 - 2024*. https://www.roskilde-festival.dk/media/3577/rf_circular-festival_2020-2024_eng.pdf.

⁴ Ibid.

make smarter choices about the materials it purchases.⁵

Source reduction, the elimination of waste before it is created (i.e. prevention), is the first and most impactful step towards achieving Zero Waste. When a material is source reduced, GHG emissions associated with producing the material, manufacturing the product, and managing the post-consumer waste are avoided. With respect to waste management at the National Cherry Festival, source reduction would involve planning to purchase and use fewer single-use plastics and other items. We encourage the National Cherry Festival to set a SMART goal to reduce waste volume, purchase fewer single-use materials, and encourage vendors to do the same.

One possible avenue for source reduction would be to implement a system such as TURN⁶, which supplies reusable cups to music festivals including Sea.Hear.Now and Lollapalooza. The TURN system includes mobile dishwashers for easy reuse, and technology-based incentives that provide festival-goers with sweepstakes entries in exchange for returning their cups. A system like TURN would be particularly effective at the Beer Tent and the Bay Side Stage, where festival-goers are likely to purchase multiple beverages.

Implementing a source reduction policy or program would reduce waste and support the National Cherry Festival's core value of demonstrating environmentally sound practices.

Educate Festival Goers and Volunteers

Utilize Green Team and other Volunteers to Educate Festival Goers

The National Cherry Festival features a team of volunteers known as the Green Team, who play an important role in maintaining cleanliness during and after the Festival. Historically, these volunteers also sorted commingled waste into separate waste streams (i.e. recyclables, compostable materials, and landfill trash). These volunteers, who are already knowledgeable about the waste management process at the Festival, present a valuable opportunity for educating festival goers about waste sorting. Studies have shown that posting volunteers at or near landfill and recycling bins improves the accuracy of waste sorting. Specifically, one recent study found that the presence of volunteer staff “reduced contamination by 96.1% on average in the organics bin, 96.9%

⁵ EPA. (n.d.). *National Overview: Facts and Figures on Materials, Wastes and Recycling*. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>.

⁶ TURN Systems. (n.d.). *Sea.Hear.Now Case Study*. <https://turnsystems.co/seahearnow-reusable-cups>.

in the recyclable containers bin, 97.0% in the paper bin, and 84.9% in the garbage bin.”⁷

Strategically placing volunteers in high traffic areas, such as near food vendors or the Beer Tent, would allow the Festival to most efficiently utilize them for public education. When throwing away their food or beverages, volunteers are able to interact with festival goers and educate them on how to separate their waste, recyclables, and compostable items.

Bin Labeling for Volunteers and Festival Goers

In 2022, there was no need for bin labeling since all waste material types were commingled into individual bins. The frustration of misplacing incorrect materials in certain bins is understood; however, to achieve further improvements, following the Waste Management Hierarchy will be required. Effective bin labeling and signage is an efficient way to avoid misplacement, guide volunteers on the job, and a chance to informally educate festival goers.



Individual waste bins were placed throughout the 2022 National Cherry Festival, featuring new signage that indicates that they accept and commingle all waste types.

⁷ Zelenika, I., Moreau, T., & Zhao, J. (2018, March 22). *Toward zero waste events: Reducing contamination in waste streams with volunteer assistance*. Waste Management. <https://www.sciencedirect.com/science/article/pii/S0956053X18301727>.

According to Recycle Across America, a nonprofit dedicated to creating society-wide standardized labels on recycling bins, standardization is more important than education when it comes to helping people “recycle right.”⁸ The hope, in implementing a standardized system across the country, is to reduce confusion when someone walks up to a bin to dispose of something. If the bins at someone's office look like the bins at the National Cherry Festival, that person may be more likely to correctly sort their waste. Recycle Across America claims their standardized labels are proven to increase recycling levels and significantly decrease contamination and costs associated with garbage thrown in recycling bins.⁹

As recently as 2017, the National Cherry Festival used a waste disposal system with three labeled bins. Intentional bin arrangement and replicating the signage used in 2017 could reduce festival goer confusion, promote the festival's commitment to reducing waste, and educate the public about an effective strategy for separating recycling, compost, and landfill trash.



A bin setup at the 2017 National Cherry Festival, with separated compostable, recyclable, and landfill waste streams.

To improve the signage from 2017 for educational purposes, SEEDS encourages adding descriptive visual aids to each bin. These help guide volunteers more effectively than written words, especially if they don't feel entirely confident with the material or with English. They would also provide attendees with a quick way to educate

⁸ Recycle Across America. (n.d). *Why the Standardized Label Solution Works*. <https://www.recycleacrossamerica.org/the-solution-about-us>.

⁹Ibid.

themselves when a volunteer isn't present. Visual aids help ease confusion, frustration, and misplacement and will hopefully leave a long lasting impact on whoever utilizes the Festival's bins.



An example of detailed signage in a multi-stream waste disposal system.¹⁰

Commercially available signage is available that is informative and easy to read. Well designed signage can help attendees separate waste or learn more about waste management and environmental impacts. We suggest creating signage with images that reflect the specific materials or waste items generated at the event.

¹⁰ Hillside Solutions. (n.d.). *Quickstart Guide*. <https://www.hillside.solutions/quickstart>.



Another example of visual aids for a multi-stream waste disposal system implemented at Changi airport in Singapore. Here the bins themselves are shaped like the sorted materials they are intended to collect.¹¹

¹¹ *Recycling bins at changi airport.* (2013). photograph.
https://commons.wikimedia.org/wiki/File:Recycling_bins_at_changi_airport.jpg.

Prevent Contamination of Recyclables



Examples of contamination of recyclable materials in bins at the 2022 National Cherry Festival.

The 2022 National Cherry Festival provided a single stream waste disposal system in which all materials are disposed of in the same bin. GFL utilized mixed waste processing, a management technique in which all materials are commingled and then sorted following collection, in order to sort this waste stream. While mixed waste processing is convenient for festival attendees, it inevitably leads to contamination of recyclable materials with food waste, liquids, and other nonrecyclable materials.

Reconsider Mixed Waste Processing

SEEDS highly recommends different containers for trash and recycling at a minimum and we encourage composting and liquid disposal bins as well. Even though much of the waste stream is being processed for WtE, **Figure 4** demonstrates that maximizing recycling and composting would be *more* beneficial to the environment by moving up the Zero Waste Hierarchy. With the use of signage, proper educational training, and volunteer monitoring, the Festival can do even better.

The mixed waste process is relatively inefficient, recovering only 10-30% of waste as commodity grade recyclables.¹² Being able to separate the materials in the correct bins will substantially reduce contamination and substantially reduce the Festival's overall environmental impact.

Dual Stream Recycling

While the inclusion of a single stream recycling system (i.e. individual recycling bins) would be an improvement for festival operations, it is not an optimal solution. The National Waste and Recycling Association suggests that about 25% of recyclable materials placed into single stream recycling programs end up contaminated at the processing stage. This contamination can result in single stream system systems recycling less total material despite collecting more material than dual-stream or multi-stream systems.¹³ Thus, SEEDS encourages the National Cherry Festival to implement a dual-stream recycling system.

Dual-stream recycling can be defined as a waste management system in which attendees sort their recyclable goods into two categories before they are processed by a materials recovery facility. These two categories are typically made up of (1) paper/cardboard, and (2) metals/glass/plastic. A dual stream system results in easier sorting of recyclable materials and fewer opportunities for error or contamination.¹⁴

Staff Bins

Having volunteers at the Cherry Festival monitor bins and assist festival goers in sorting their waste could significantly reduce the amount of contamination in recycling bins. The Cherry Festival already has the potential to implement this strategy using their existing Green Team program. Based on research conducted at Arizona State University's baseball stadium, the placement of volunteers at recycling and trash receptacles can reduce contamination rates by 34%.¹⁵ Similarly, the Ann Arbor Summer Festival achieved an 81% landfill diversion rate in 2019 by facilitating conversations and providing educational programs around waste diversion.¹⁶

¹² Peacock, D., & Bedarf, A. (n.d.). *ReLoop: What is Mixed Waste Processing Or "All In One/Dirty MRF" Recycling?* GreenBlue ReLoop.

<https://greenblue.org/reloop-what-is-mixed-waste-processing-or-all-in-onedirty-mrf-recycling/>.

¹³ Koerth, M. (2019, January 10). *The Era Of Easy Recycling May Be Coming To An End*. FiveThirtyEight. <https://fivethirtyeight.com/features/the-era-of-easy-recycling-may-be-coming-to-an-end/>.

¹⁴ Reeves, D. (n.d.). *How Do Single and Dual Stream Recycling Differ?* General Kinematics. <https://www.generalkinematics.com/blog/the-argument-single-stream-vs-dual-stream/>.

¹⁵ Hottle, T. A., Bilec, M. M., Brown, N. R., & Landis, A. E. (2015, February 07). *Toward zero waste: Composting and recycling for sustainable venue based events*. Waste Management. <https://www.sciencedirect.com/science/article/pii/S0956053X15000562?via=ihub#!>.

¹⁶ Sloan, W. (2019, August 12). *Summer Music Festivals Set Sights On Waste Diversion*. Waste360. <https://www.waste360.com/waste-reduction/summer-music-festivals-set-sights-waste-diversion>.

Compost

Discarded food that is thrown into bins contaminates recyclable material. One way to maximize diversion from landfills while minimizing contamination would be to provide compost bins.

Almost 50% of solid waste produced worldwide is organic or biodegradable. When organic material and food waste end up in landfills, that material decomposes in the absence of oxygen and produces methane. Methane is a greenhouse gas that is more efficient at trapping radiation than carbon dioxide. Pound for pound, the comparative impact of methane is more than 25 times greater than carbon dioxide over a 100-year period. Rather than generating methane, the composting process converts organic material into stable soil carbon, while retaining water and nutrients of the original waste matter.¹⁷

A successful festival composting system also requires buy-in from vendors, since they have the option of using compostable plates and serviceware during the Festival. Compared to plastic silverware, compostable materials will contribute less to polluting the environment. The Five Points Jazz Festival in Denver, CO found that mandating vendors use compostable materials was essential for implementing a successful composting system.¹⁸ The waste stream at the National Cherry Festival is several times larger than the Five Points Jazz Festival, meaning that implementing a composting system with mandatory participation from vendors has the potential to have a much larger impact on waste diversion and GHG emissions.

Disposal of Liquids and Other Materials

Recycling contamination is partially the result of materials being disposed of without being properly cleaned. If viable recyclables aren't properly disposed of, there is a high probability that they will be rejected during the materials recovery process.¹⁹ In order to reduce the volume of rejected materials that are potentially recyclable, SEEDS suggests giving people the option to dump out any leftover liquids by providing an extra bin or providing a sign to raise awareness. If recyclables aren't emptied, cleaned and dried, contamination not only lessens their value but also the materials surrounding them. Liquids in particular can leak, potentially resulting in malodors, mold, and pests.

¹⁷ Project Drawdown. (n.d.). *Composting*. <https://www.drawdown.org/solutions/food/composting>.

¹⁸ Sloan, W. (2019, August 12). *Summer Music Festivals Set Sights On Waste Diversion*. Waste360. <https://www.waste360.com/waste-reduction/summer-music-festivals-set-sights-waste-diversion>.

¹⁹ Rachelson, D. (2017, December 4). *What is Recycling contamination, and Why does it matter?* Rubicon. <https://www.rubicon.com/blog/recycling-contamination/>.

Appendix 1: GFL Waste Tonnage Records

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226104
Date: 7/3/2022
Time: 07:40:15 - 07:41:06
Scale

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Gross: 53500 LBS In Manual Wt M
Tare: 43000 LBS Out Manual Wt M
Net: 10500 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day# 1

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	5.25	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: 07-13-2022 07:41

Deputy Weighmaster: Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226105
Date: 7/4/2022
Time: 07:42:29 - 07:42:55

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 52620 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 9620 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#2

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	4.81	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: _____
07-12-2022 07:42

Deputy Weighmaster: Ann Wilkins _____

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226106
Date: 7/5/2022
Time: 07:43:12 - 07:44:03

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 51800 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 8800 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#3

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	4.40	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: 87120002 07 12

Deputy Weighmaster: Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226107
Date: 7/6/2022
Time: 07:44:32 - 07:44:58

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 50860 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 7860 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#4

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	3.93	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: _____

Deputy Weighmaster: Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226108
Date: 7/7/2022
Time: 07:45:25 - 07:45:54

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 51280 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 8280 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#5

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	4.14	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: 071570032 07 48

Deputy Weighmaster: Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226109
Date: 7/8/2022
Time: 07:46:11 - 07:46:34

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 51000 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 8000 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#6

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	4.00	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: _____
37-12-2022 17:40

Deputy Weighmaster: _____
Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226111
Date: 7/9/2022
Time: 07:46:54 - 07:47:33

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 47940 LBS In Manual Wt M
Tare: 43180 LBS Out Manual Wt M
Net: 4760 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#7

Materials & Services	Quantity	Unit	Est TNs
Commingled Recyclables	2.38	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: _____
2019 0802 01 11

Deputy Weighmaster: Ann Wilkins

2022 National Cherry Festival Waste Management Services Audit

Traverse City MRF & TS
280 Hughes Dr
Traverse City, MI
(231) 943-8088

Ticket: 623000226112
Date: 7/10/2022
Time: 07:47:54 - 07:48:14

Truck: 29869
Customer: 002092151
GFL Traverse City Residential

License: 595
Truck Type: Rear Loader

Scale
Gross: 60460 LBS In Manual Wt M
Tare: 43000 LBS P.T.
Net: 17460 LBS

Origin: 623MI055/Grand Traverse County

PO: CHERRYFESTIVAL

Comment: Cherry Festival Recycling Day#8

Materials & Services	Quantity	Unit	Est TNs
Commingle Recyclables	8.73	TON	

I hereby certify that this load does not contain any unauthorized waste.

Driver: 231078022 07 48

Deputy Weighmaster: Ann Wilkins