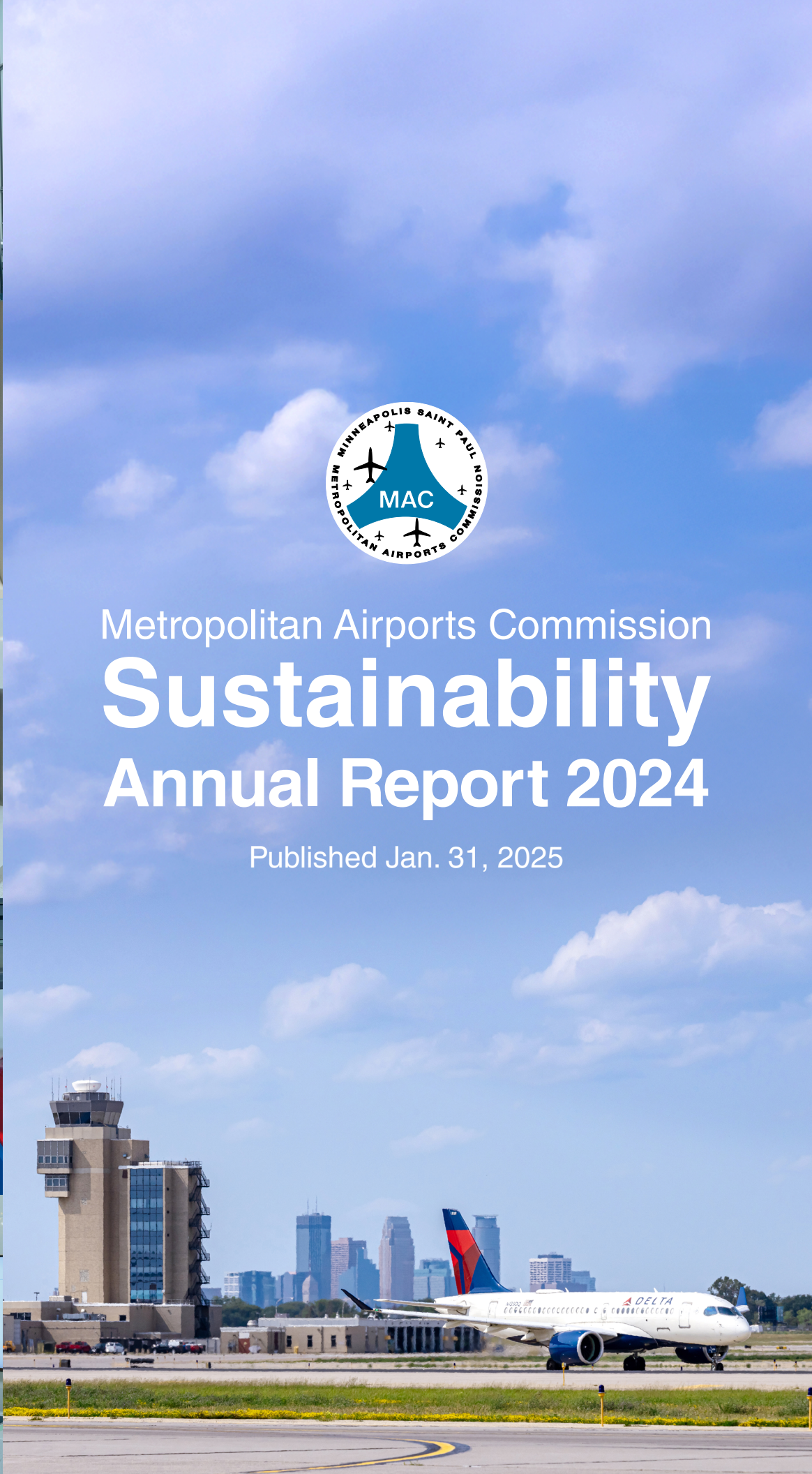




Metropolitan Airports Commission Sustainability Annual Report 2024

Published Jan. 31, 2025



Executive Summary

The 2023 Omnibus Transportation Bill passed by the Minnesota Legislature requires the Metropolitan Airports Commission (MAC) to provide an annual report on climate mitigation and adaptation. The annual report is to include a summary of activities and evaluation of performance at the Minneapolis-St. Paul International Airport (MSP) in support of the MAC's 2030 sustainability goals and a plan and timeline for the reduction of single-use plastics. A requirement to include the MAC's 2023 waste characterization study was published in the [2023 MAC Annual Sustainability Report](#). In its 2023 report, the MAC committed to including a decision on a single-use plastic water bottle ban in the 2024 report, following additional stakeholder engagement and research.

The following report provides detailed information on each of these items and showcases the MAC's industry-leading commitment to sustainability.

The MAC's 2030 Sustainability Goals

The MAC is committed to a sustainable future and has set goals and created organizational structures that reflect its commitment to sustainability. In February 2020, staff recommended and the commission unanimously adopted four sustainability goals to achieve by 2030:

- **Emissions:** Reduce MSP total emissions 80% from a 2014/2015 baseline.
- **Water:** Reduce MSP water use per passenger by 15% from a 2015 baseline.
- **Waste:** Reduce, reuse, recycle or compost 75% of MSP solid waste.
- **Engagement:** Achieve a MAC Employee Sustainability Score of 85.

Achievements and Milestones

In 2024, the MAC advanced its sustainability goals through a wide variety of initiatives, pilot programs and infrastructure planning.

Highlights from the report include:

- Achieved Level 3 of the Airport Carbon Accreditation program.
- Supported partners in achieving MSP's first flight fueled in part by sustainable aviation fuel (SAF).
- Began rainwater harvesting for toilet flushing in new construction and replacing aging, inefficient toilets.
- Leveraged the state's Conservation Improvement Program to complete new energy-efficient projects, which will save electricity comparable to the amount 41 homes use every year going forward.
- Increased use of water bottle refill stations by 27% in 2024 by executing a MAC-led educational campaign and entering into a strategic partnership with Pentair and Hope Hydration to add 10 highly visible, attractive refill stations to the existing 70-unit network.
- Increased organics recycling by 33% from 2023.
- Invited airport businesses to sign a voluntary pledge to eliminate single-use plastic bags, straws and stir sticks, and achieved 90% participation.
- Pursued on-site solar and battery storage for energy resiliency in two major new construction projects along with on-site geothermal for heating.

Next Steps

The MAC will continue to measure and share progress toward its 2030 sustainability goals on metroairports.org.

The MAC is proud to present this report and encourage full readership to learn about the many initiatives the MAC is leading to advance sustainability at MSP and beyond.

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About the MAC

The Metropolitan Airports Commission (MAC) owns and operates one of the nation's largest airport systems, including Minneapolis-St. Paul International Airport (MSP) and six general aviation airports. The MAC's purpose is to provide exceptional airport experiences so Minnesota thrives. The airport system connects the region to the world and showcases Minnesota's extraordinary culture to millions of passengers from around the globe who arrive or depart through MAC airports each year. Though a public corporation of the state of Minnesota, the organization is not funded by income or property taxes. Instead, the MAC's operations are funded by rents and fees generated by users of its airports.

In 2024, the MAC earned global recognition for customer experience and operations excellence. MSP was ranked #1 in customer satisfaction among mega airports by [J.D. Power](#)¹ and awarded the 2023 [Cirium](#) On-Time Performance Award. MSP was also named the top U.S. airport by [Travel + Leisure](#) and the Best Airport in North America in 2023 by [Airports Council International](#).

The MAC's Sustainability Commitment

The MAC is committed to a sustainable future.

In February 2020, staff recommended and the commission unanimously adopted four sustainability goals to achieve by 2030:

- **Emissions:** Reduce MSP total emissions 80% from a 2014/2015 baseline.
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- **Waste:** Reduce, reuse, recycle or compost 75% of MSP solid waste.
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Building upon its 2030 sustainability goals, the organization's [2023-2027 enterprise strategic plan](#) includes a focus area to "actively manage sustainability and stakeholder and community relations."

MAC staff established an internal structure that facilitates, guides and supports collaboration,

innovation and measurable progress in sustainability. In addition to an active Executive Sustainability Committee composed of leaders from across the organization, the MAC has dedicated working groups for water, waste and emissions that exist to develop roadmaps, action plans and strategies to advance our sustainability commitments.

As part of its commitment to sustainability, the MAC continues to participate in influential sustainability collaboratives. The MAC is a supporting partner of the Minnesota Sustainable Aviation Fuel Hub (SAF Hub), which launched in 2023 and made great strides in 2024. The organization has been a member of the Minnesota Sustainable Growth Coalition since 2016. The MAC actively participates in Airports Council International-North America's sustainability working groups. The Airport Carbon Accreditation program, the industry certification committed to reducing carbon and increasing airport sustainability, has recognized the MAC for its carbon emissions reduction efforts at MSP every year since 2017.

¹ Minneapolis-St. Paul International Airport received the highest score among mega airports (33 million or more passengers per year) in the J.D. Power 2022 and 2024 North America Airport Satisfaction Studies of customers' satisfaction with the airport they traveled through. Visit [jdpower.com/awards](https://www.jdpower.com/awards) for more details.

These formalized MAC-wide commitments follow decades of signature projects and progress focused on environmental stewardship. Some examples of signature projects include building one of the largest rooftop solar energy facilities in Minnesota, installing water-saving fixtures in restrooms, and creating a successful organics recycling and food recovery program for airport businesses. The MAC is dedicated to achieving sustainable design certification on a selection of new projects, which includes LEED gold design on \$685 million in new building construction.

Minnesota Legislative Report Requirement

The 2023 Omnibus Transportation Bill passed by the Minnesota Legislature requires the MAC to provide an annual report on climate mitigation and adaptation. The annual report is to include a summary of activities and evaluation of performance at MSP in support of the MAC's 2030 sustainability goals and a plan and timeline for the reduction of single-use plastics. A requirement to include the MAC's 2023 waste characterization study was fulfilled in the [2023 MAC Annual Sustainability Report](#). In its 2023 report, the MAC committed to including a decision on a single-use plastic water bottle ban in the 2024 report, following additional necessary stakeholder engagement and research in 2024.

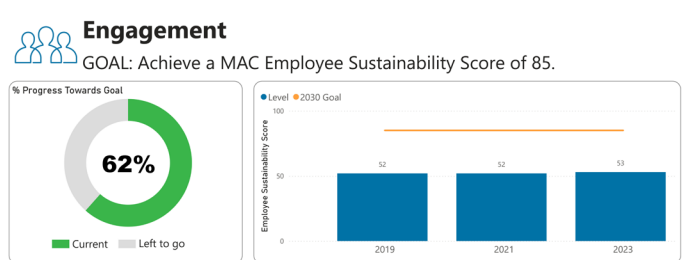
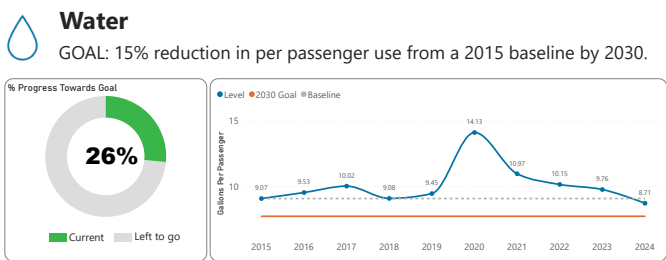
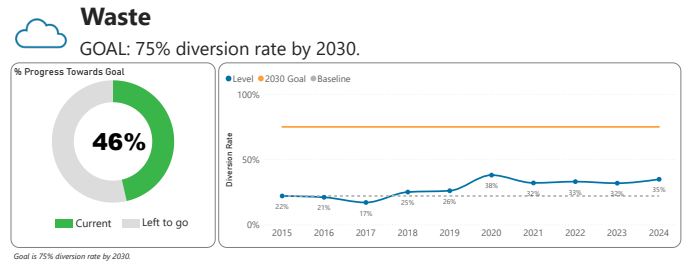
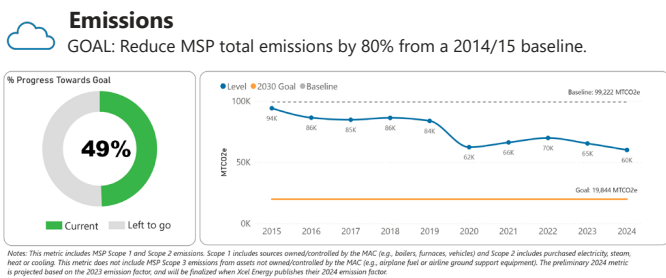
The following report provides detailed information on each of these items and showcases the MAC's industry-leading commitment to sustainability.

Progress Toward 2030 Sustainability Goals

The MAC annually reports progress on its 2030 sustainability goals. This information is publicly available on the [MAC's website](#). The scorecard below depicts progress as of December 31, 2024. Note that the emissions progress is preliminary, calculated using the MAC's 2023 emission factor, and will be updated when Xcel Energy publishes its 2024 emissions factor (anticipated in mid-2025).

The MAC is proud to have made significant progress on its emissions, water and waste goals in 2024. This progress can be attributed to many factors. More than a dozen energy-efficient equipment replacements contributed to emissions reductions. Additionally, emissions reductions resulted from continued contributions from Xcel Energy in cleaning the grid, as well as a mild winter which required less fossil fuels used for snow removal and heating. The MAC reduced water use by decreasing irrigation, installing faucet aerators and replacing aging equipment which, combined with a rainy spring, resulted in less water use overall. The MAC also reduced solid wasted by initiating a new restroom paper

Scorecard



towel collection process and improved organics sorting. The Employee Sustainability Score is measured by a biannual survey, which will occur again in mid-2025.

2024 Initiative Highlights

The MAC executed several sustainability initiatives over the course of 2024, many in partnership with airlines, tenants and employees. These initiatives included infrastructure and capital improvements, as well as researching and studying potential technologies and solutions for future projects.

Emissions

Advancing through the Airport Carbon Accreditation program

The MAC achieved Level 3 of the Airport Carbon Accreditation program. Progressing from Level 2 to Level 3 certification required the MAC to engage with airlines and other tenants to accurately track, report and reduce emissions. This work builds on the MAC's long-standing commitment to support tenants' sustainability efforts. For example, the MAC has collaborated with airlines to develop charging infrastructure for electric ground support equipment (GSE). These efforts enabled Delta Air Lines to reach its goal ahead of schedule to electrify 50% of its GSE at MSP by 2025 and Sun Country Airlines to begin procuring electric GSE in 2024.

Reducing reliance on fossil fuels

The MAC has focused on reducing emissions from fuels used for vehicles, equipment and heating. The MAC plans to explore additional opportunities to shift to electric, hybrid electric and other renewable options as the electrical grid continues to get cleaner.

- **MAC fleet and equipment:** The MAC is replacing fleet vehicles with zero or low emission options, and increasing efficiencies in fleet management. The MAC is also replacing gas equipment with electric for landscaping and other applications.
- **Commercial kitchen equipment:** The commercial kitchen spaces are specified to be electric-ready in the Terminal 2 expansion, giving new restaurants the choice to electrify their operations and avoid natural gas use.

- **Shifting to geothermal:** The MAC is designing geothermal systems for a selection of new construction projects, shifting from a reliance on natural gas to the use of renewable thermal energy beneath MSP. In 2024, the MAC applied for and received \$4 million of Federal Aviation Administration supplemental funding to install a geothermal system at Terminal 2.

Energy efficiency

The MAC continues to invest in efficient equipment and controls to save energy and reduce greenhouse gas emissions. In 2024, the following projects saved as much electricity as 41 homes use in one year:

- HVAC upgrade projects will reduce 123,800 kWh annually.
- Lighting upgrades will reduce 234,000 kWh annually.
- Efficient design components incorporated in new construction.

Energy planning

Throughout the year, the MAC advanced major decarbonization projects, including assessing renewable energy procurement options, initiating a study to improve utility metering, preparing for growth in electrical demand at MSP and developing plans to replace the MAC's original central utility plant.

Water

Rental car companies

The MAC has been working with rental car companies to reduce the amount of water used for washing vehicles, which makes up 10% of the MAC's total water usage. In 2024, the MAC benchmarked each of the 20-plus car wash bays used across the rental car companies and took steps to establish continuous review and feedback loops for water usage.

Water reclamation

In 2024, the MAC designed systems to collect rainwater from rooftops for toilet flushing. Water reclamation systems will be included in the new Safety and Security Center, which will be completed

in 2027, and in the Terminal 2 north expansion project, which recently began construction.

Increasing toilet efficiencies

In 2024, the MAC's Restroom Upgrade Program included the replacement of aging 3.5 gallon per flush toilets with 1.6 gallon per flush toilets. The MAC estimates that replacing all aging toilets will reduce overall water use at MSP by 7%. Additional reductions could be achieved through other efficiencies. In 2024, the MAC conducted a study regarding accidental "nuisance" flushing during cleaning and piloted a new localized water pressure solution. Localized water pressure equipment is being integrated into design standards for new restrooms, and conversations with flush valve manufacturers about optimization are underway.

Sustained changes

The MAC saw significant progress on the water goal in 2024, reducing use by nearly 16 million gallons compared to the year before. This was due to sustained changes such as reducing irrigation, removing outdated cooling equipment, installing faucet aerators, implementing leak detection and reducing the amount of water the Airport Fire Department used in training exercises.

Waste

Donation of surplus food and other items

The MAC strives to donate surplus food and other items to nonprofits where possible. The MAC continued a long-standing partnership with Loaves and Fishes and recently entered partnerships with two additional nonprofits, Mano a Mano and Bridging. In 2024, the MAC donated:

- 73,250 meals (87,900 pounds) to Loaves and Fishes.
- 600 retired sleeping mats (6,000 pounds) to Mano a Mano.
- 2,500 pounds of medical donations such as canes and walkers to Mano a Mano.
- 3,000 pounds of items being replaced by tenants, such as tables, chairs, plates, bowls and utensils to Bridging.

Increasing organics collection

From 2023 to 2024, the MAC increased organics collection by 33%. This increase is largely attributable to the MAC's new restroom paper towel collection program and concerted efforts to reduce waste sorting errors by custodial and concessions employees. The MAC will continue to expand this program in the upcoming years, and paper towel composting will contribute an estimated 10% increase in the MAC's overall diversion rate.

Food court composting pilot

The MAC has composted food scraps from MSP kitchens since 2015. In 2024, the MAC piloted collecting food scraps from diners at the MSP food court. The pilot project integrated an artificial intelligence technology named Oscar AI to assist people in properly sorting waste. Findings from the pilot project, including AI analytics, will inform future initiatives to capture organics. Food waste makes up 15% of all trash at MSP.

Deplaned waste

In 2024, the MAC conducted a study of waste coming off airplanes at MSP. This effort included a waste sort, discussing opportunities and infrastructure needs with airlines, and meeting with LSG Sky Chefs, which manages a significant amount of deplaned waste. As a result, the MAC made immediate improvements to create easier access for airlines to recycle at Terminal 2. The MAC used its communication channels to promote an Alaska Airlines Reuse effort in October.

Engagement

Employee sustainability engagement

MAC employee engagement efforts in 2024 included an annual plate-to-garden event, achieving zero-waste at the MAC all-employee event, providing space for a community garden, coordinating two Adopt-a-Highway volunteer days, outreach to MSP employees and resuming the MAC bike-share program. The MAC will conduct its biannual Sustainability Engagement Survey in 2025.

Metropolitan Council Intern Day

The MAC's Water Working Group hosted the Metropolitan Council's environmental interns to learn about the MAC's water conservation and compliance programs. The interns toured the MAC's stormwater and glycol infrastructure and learned about environmental and sustainability careers.

SAF Hub events

The MAC is a supporting member of the Minnesota Sustainable Aviation Fuel (SAF) Hub, a public-private partnership led by the GREATER MSP Partnership, which aims to bring low-carbon aviation fuel to MSP. In 2024, the MAC helped to organize multiple events at MSP to support the SAF Hub, including one to celebrate several achievements: 1) the first SAF blending facility in Minnesota; 2) the creation of a demand consortium to make SAF cost-competitive; 3) a federal grant for a SAF production facility in Minnesota; and 4) making SAF out of next-generation novel feedstocks including cover crops through partnership with the University of Minnesota. An additional celebration was held at MSP for the first flight fueled by SAF in September.

Single-Use Plastics

The 2023 Omnibus Transportation Bill passed by the Minnesota Legislature required the MAC to include a plan and timeline for the reduction of single-use plastics, including but not limited to a potential ban on plastic water bottles.

Single-Use Plastic Water Bottles

Choosing alternatives to a ban

The MAC has decided not to ban the sale of single-use plastic water bottles at MSP, following more than a year of engagement and research, detailed in the section below.

The MAC determined that all single-use water bottles have environmental, social and economic trade-offs. As a result, the MAC plans to proactively

work to increase options for consumers at MSP and to reduce single-use plastic waste by:

- Increasing aluminum single-use bottles and other reusable options at MSP.
- Promoting the MSP water bottle refill stations and encouraging passengers to use reusable bottles.
- Focusing on reducing single-use plastics which cannot easily be recycled.
- Using aluminum bottles at MAC events.

The MAC will monitor changes to the supply chain, recycling infrastructure and circularity, emerging research on microplastics and other contaminants of concern, partnership opportunities, and product or material innovations and will reexamine this decision periodically.

Engagement and research to support decision making

The MAC engaged with stakeholders in 2023 through group discussions, individual interviews, surveys and polling. Refer to the [2023 MAC Annual Sustainability Report](#) for details.

Recognizing the need for additional research and stakeholder engagement, the MAC commissioned a firm in 2024 that specializes in life cycle analysis to analyze the environmental, social and economic impacts of single-use plastic water bottles and potentially available alternatives. The scope of the study included the use of the following water bottle types within MSP: single-use plastic, single-use aluminum, single-use glass, single-use laminated carton and reusable water bottles. The criteria used in the evaluation included:

- **Environmental:** The study used the Environmental Protection Agency Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts (TRACI) method for a quantitative assessment of ozone depletion, global warming potential, smog, acidification, eutrophication and fossil fuel depletion across the life cycle of a product.² Life cycle phases

² Disclaimer: While the study was conducted using best practices from life cycle assessment (LCA) methodology, it is not an ISO 14040/14044 compliant report. This LCA has not undergone formal peer review, as is required by ISO 14040 Standards, for external release. It should not be provided externally or be used as a sole basis for claims.

considered for single-use options included raw material extraction; transportation and processing; bottle production; transportation of bottles from the manufacturer to MSP; and end-of-life disposal. The environmental analysis included a sensitivity analysis for recycled content of bottles.

- **Social and economic:** The study included qualitative assessments of social and economic impacts, including recycling behaviors, potential for circularity, ecosystem health, health of consumers, source location, price for consumer, supply chain, cost to vendor and profit margin for vendor.

The study determined that all single-use water bottles have environmental, social and economic trade-offs. Key findings included:

- Reusable bottles and water refill stations have the least environmental impact at MSP.
- Of the single-use options, the plastic bottle had the least environmental impact over its life cycle, largely due to its lightweight nature.
- Alternatives to plastic have less impact when considering material circularity, consumer and ecosystem health, and the prevalence and harm of pollution.
- Aluminum bottles are relatively lightweight and are recyclable across the country. However, the supply chain is limited in terms of volume and local production.
- Glass and laminated cartons are not recyclable in many areas of the country. Glass is heavy, contributing to environmental impacts. Laminated cartons have a plastic liner, and their impact to ecosystem health and pollution is similar to plastic bottles.

Single-Use Plastic Reduction Plan

The MAC began implementing a Single-Use Plastic Reduction Plan in 2024 in conjunction with a broader Waste Roadmap (**see Table 1**). The MAC achieved all activities identified in its 2024 roadmap. Single-use plastic reduction highlights in 2024 include:

Promoting reusable bottles and refill stations

The MAC executed a marketing campaign to promote water bottle refill stations and encourage passengers and MSP employees to bring their own bottles to the airport. The MAC also entered into a strategic partnership with Pentair and Hope Hydration to install 10 highly visible, attractive refill stations to the existing 70-unit network. In 2024, MSP refill stations were used 27% more times than in 2023. The stations were used 8.5 million times, reducing an estimated 755 pounds of single-use bottles every day.

Single-use plastic pledge

In 2024, the MAC invited more than 100 airport businesses to sign a voluntary pledge to eliminate single-use plastic bags, straws and stir sticks, which are items that cannot be recycled at MSP's recycling facility. Of businesses asked, 90% signed the pledge and implemented the changes in time for America Recycles Day on November 15, 2024.

Increasing availability of aluminum options

The MAC supported a pilot with one airport business location to replace all single-use plastic water bottles with aluminum options. Consumer purchasing behaviors inform further efforts to integrate aluminum and refillable bottle options into MSP stores. Separately, the MAC began sourcing aluminum bottled water at many MAC-led events in 2024 to signal the importance of reducing single-use plastics.

Waste Roadmap and Single-Use Plastic Reduction Plan

The MAC developed a waste roadmap and single-use plastic reduction plan based on the results of the 2023 waste characterization study and guided by the MAC's goal to reduce, reuse, recycle or compost 75% of waste from MSP by 2030. **Table 1** on the next page summarizes the roadmap's new initiatives and categories they will address. This roadmap builds upon the progress made to date, defining additional initiatives to close the gap to reach the goal. Success will require collaborative efforts between MAC staff, tenants and passengers.

Table 1. 2030 Waste Roadmap and Single-Use Plastic Reduction Plan (updated in 2024)

DIVERSION RATE GOAL BY CATEGORY	INITIATIVE	SINGLE-USE PLASTIC REDUCTION COMPONENT	PERCENT OF TRASH IN 2023	TIMELINE OF ACTIONS
Employee sorting error 10%	Multi-faceted tenant engagement program, including expanding and improving ongoing training, auditing; launch reward/recognition programs	Yes	15%	2024: Training/auditing program (COMPLETE) 2024: Deplaned Waste Study (COMPLETE) 2025: Reward/recognition program
Food waste 10%	Implement public-facing organics collection	No	15%	2024: Pilot composting program (COMPLETE) 2025-2027: Phased roll out
Restroom paper towels 10%	Divert restroom paper towels to organics	Yes — eliminates plastic liners used for receptacles	12%	2024: Limited launch (COMPLETE) 2025-2027: Full roll out
Passenger sorting error 5%	Test new assistive techniques and educational campaigns	Yes	10%	2024: Assistive technology pilot (COMPLETE) 2024: Further research on single-use plastic water bottles (COMPLETE) 2025: Test new assistive techniques
Single-use food service ware 4%	Reduce non-recyclable single-use plastic service ware	Yes	5%	2024: Invite tenants to pledge to eliminate plastic bags, straws, stir sticks (COMPLETE) 2025-2027: Increase recyclable or compostable products, synced with public-facing organics collection
Plastic film 3%	Reduce and recycle plastic film waste	Yes	3%	2024: Roll out to logistics and operations (COMPLETE) 2025: Launch back-of-house areas

Data Source: May 2023 Waste Characterization Study and November 2023 small-scale plastic water bottle audit.

Climate Adaptation and Resilience

As the owner and operator of seven airports, the MAC monitors and adjusts to short-term weather patterns and longer-term climatic shifts.

The MAC integrates an up-to-date Climate Resilience Plan into planning and processes. The plan's intent is to ensure the MAC is prepared for and responding to climate change.

The MAC Executive Sustainability Committee and Director of Reliever Airports oversee the plan, which includes consequences, risks to functional areas and vulnerabilities associated with the climate impacts at MSP. The most recent assessment determined that the MAC had a high level of ability to adapt to the changing climate and respond to potential consequences associated with climate impact. Opportunities were identified to further enhance organizational and operational resilience, including integrating climate change into planning mechanisms, design and construction, monitoring, training and staff capacity, funding opportunities, and public safety.

In 2024, the MAC undertook the following efforts to prepare for and respond to climate changes:

- Pursued on-site solar and battery storage in two major new construction projects to reduce risk of disruptions from power outages and improve energy resilience.
- Advanced the organization's enterprise risk management framework, which includes climate changes as a risk factor to be monitored and addressed.

Conclusion

A commitment to a sustainable future is key to achieving the MAC's purpose of providing exceptional airport experiences so Minnesota thrives.

The MAC continues to prioritize its efforts to lessen its environmental impact both within its airports and as partners across the industry and region, from supporting GREATER MSP Partnership's Sustainable Aviation Fuel Hub that launched in 2023 to participating in Airports Council International-North America's sustainability working groups to engaging with the Minnesota Sustainable Growth Coalition. The MAC is committed to working in partnership with staff, stakeholders and the community to meet its sustainability goals.



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