



EXPERIENCE msp™

Sustainability in Aviation Presentation – 7:00



Welcome Remarks



Naomi Pesky

MAC Vice President,
Strategy and Stakeholder Engagement

Meet the Panelists

Daniel Lawse



Principal & Chief
Century Thinker
Verdis Group

Alan Howell



Senior Airport
Architect
MAC

Ashley Vlasak



Project
Manager
MAC

Jesse Miers



Director,
Global
Sustainability
Delta Air Lines

Dana Nelson



Director,
Stakeholder
Engagement
MAC

Presentation Outline

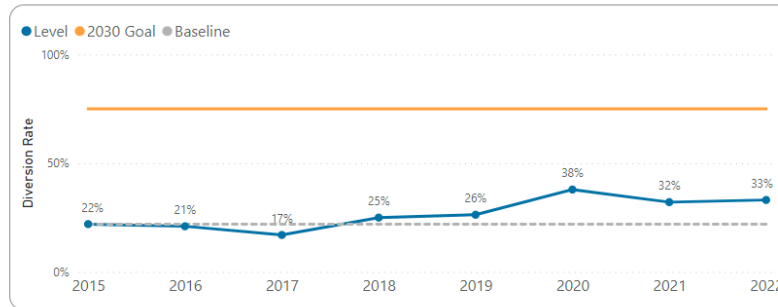
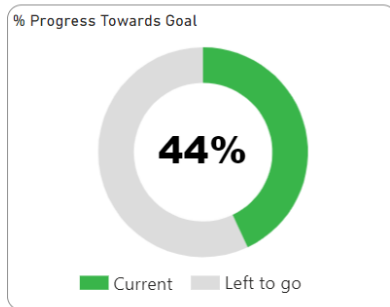
- MAC Sustainability Program
 - Daniel Lawse – Principal & Chief Century Thinker, Verdis Group
- MAC Airport Development
 - Alan Howell – Senior Airport Architect
 - Ashley Vlasak – Project Manager
- Delta Air Lines Sustainability Program
 - Jesse Miers – Director, Global Sustainability
- Questions

Sustainability Goals



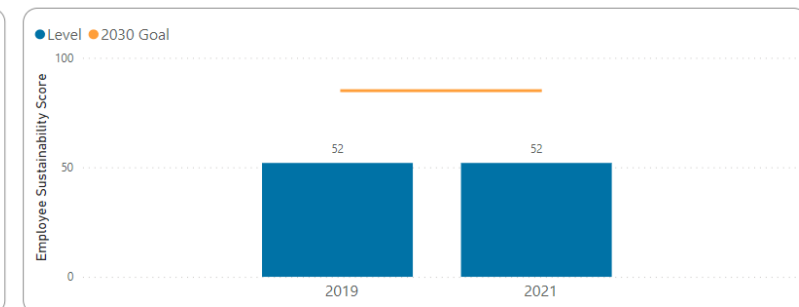
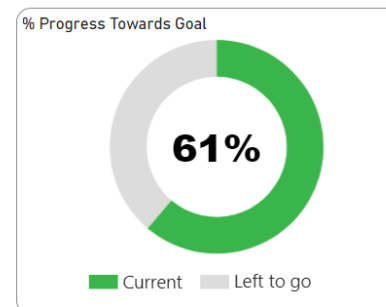
Waste

GOAL: Reduce, reuse, recycle or compost 75% of solid waste.



Engagement

GOAL: Achieve an Employee Sustainability Score of 85.

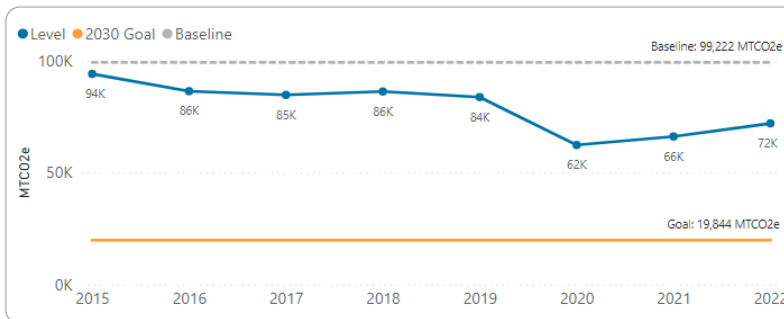
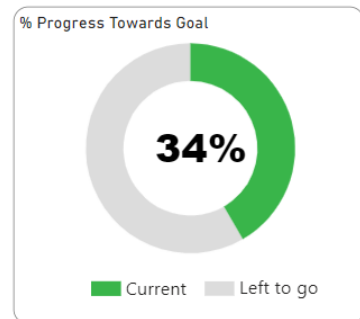


Note: This data is collected from an employee survey administered every other year. 52 is the baseline composite score.



Emissions

GOAL: Reduce total emissions by 80% from a 2014/15 baseline.

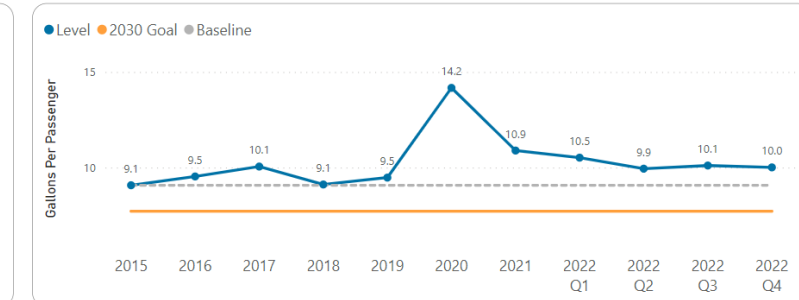
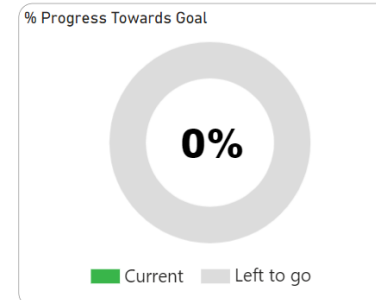


*2022 emission data for electricity was calculated using Xcel Energy's 2021 emission factor and will be updated when the 2022 factor is published.
Notes: This metric includes MSP Scope 1 and Scope 2 emissions. Scope 1 includes sources owned/controlled by the MAC (e.g., boilers, furnaces, vehicles) and Scope 2 includes purchased electricity, steam, heat or cooling. This metric does not include MSP Scope 3 emissions from assets not owned/controlled by the MAC (e.g., airplane fuel or airline ground support equipment).



Water

GOAL: Reduce water use *per passenger* by 15% from a 2015 baseline.



Note: This metric is updated quarterly, using a rolling average from the past four quarters. Quarterly reporting began in 2022.

MAC Sustainability Program

Strong Internal Structure

- Sustainability Department
- Executive Sustainability Committee
- Emissions, Water + Waste Working Groups

11

senior staff and directors serve on ESC



33

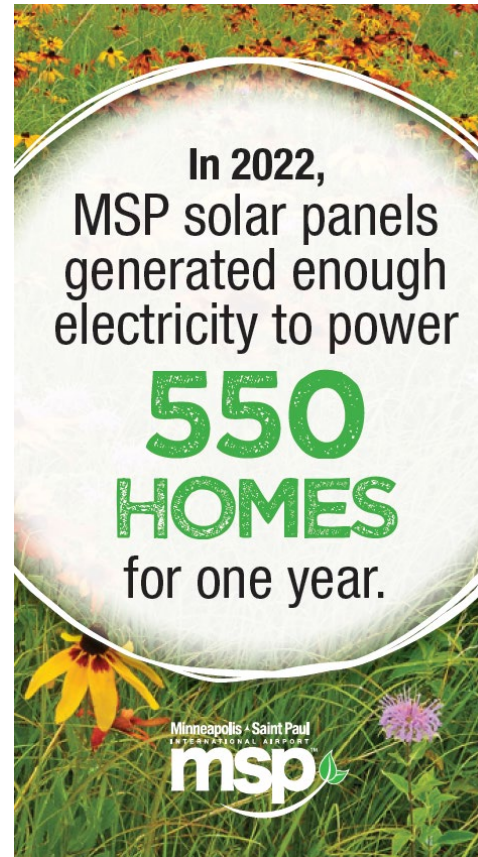
members on working groups



Strong Industry Alignment and Leadership



Flagship Initiatives



Waste Goal Progress



Waste Diversion

Paper Towel Composting Pilot: Collaborative + Circular Solutions

10%

potential trash
reduction



MSP's Waste Recycling Program Featured in
National Spotlight

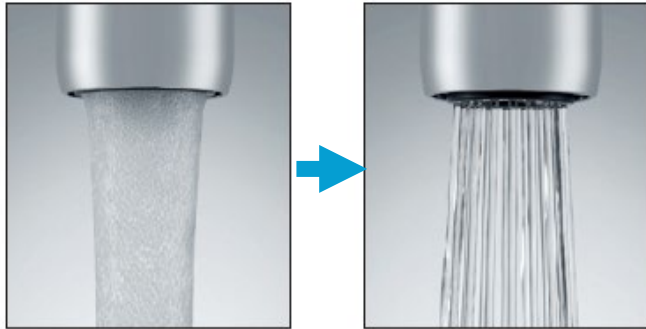
metroairports.org • 2 min read



Water Goal Progress



Water Aerator Replacement Roll-Out:
Expertise + Engagement



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50%

water reduction use
in faucets

Inventory of Water Uses and Fixtures:
The Power of Data



100%

of potential solutions identified
in water audit



Emission Goal Progress



Efficiency Programs + Electrification Studies

Comfort Settings Full Roll-Out:
Expertise + Engagement

65

vehicles assessed

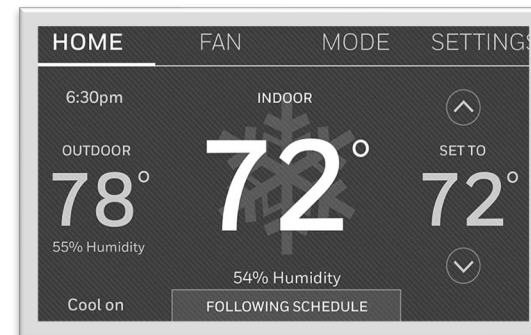


From advisory services to installing charging equipment and setting rates, we can help you save money by electrifying your fleet.



ELECTRIFY YOUR FLEET VEHICLES →

Fleet



5%
Emissions Reduction

Engagement Goal Progress



Professional Groups + Employee Engagement



AIRPORTS GOING GREEN®

**SUSTAINABLE
GROWTH
COALITION**



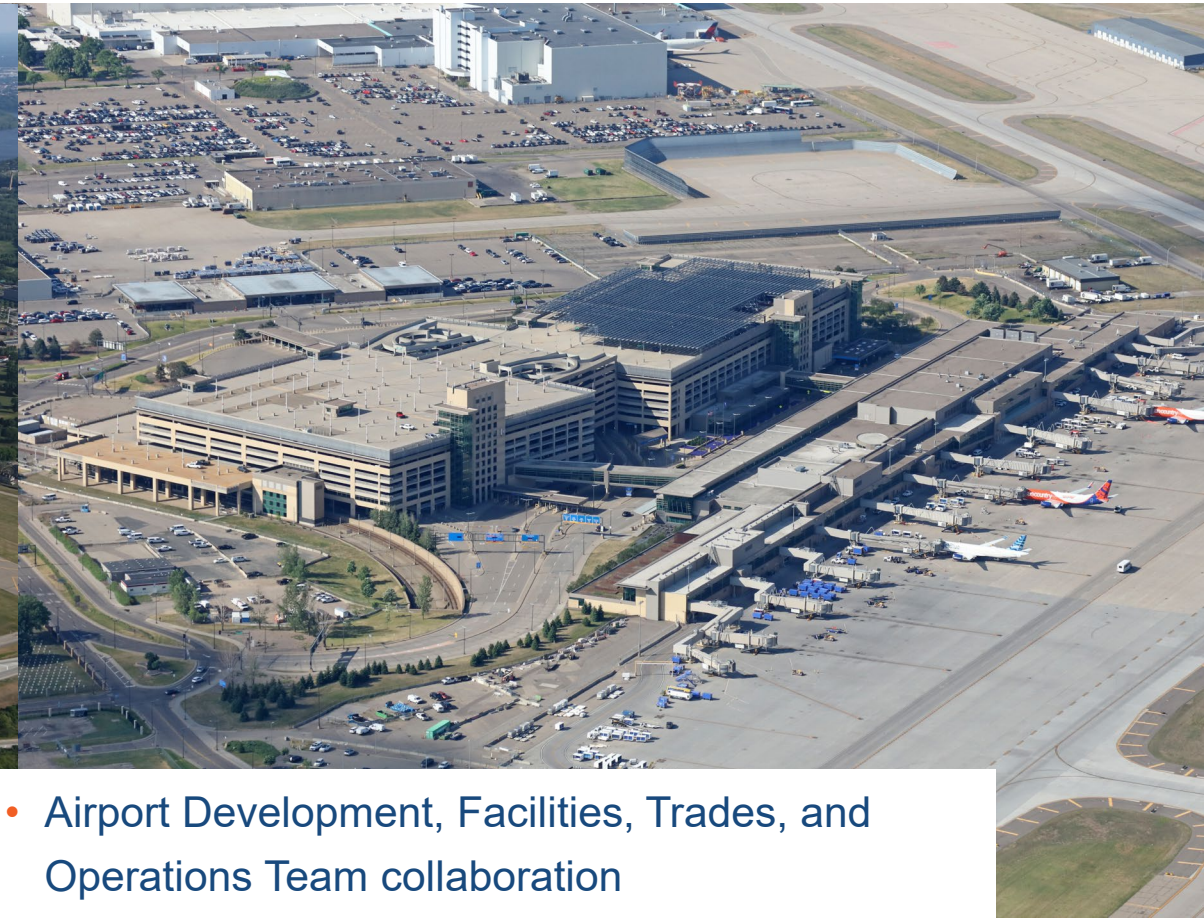
Sustainability Workshop:
Reflection and Communication



92%

agree workshop
will advance 2030
sustainability goals

MAC Airport Development



- Airport Development, Facilities, Trades, and Operations Team collaboration
- Capital Improvement Program facilitates replacement, repair, and expansion of facilities

Reusing Airfield Concrete

- Crush existing airfield concrete and reuse as concrete base for new concrete
- Reduces hauling trips for trucks for disposal
- Reduces carbon footprint of airfield



Smart Landscaping

- Irrigation system monitors the moisture level in the ground only turn on when needed in specific areas, optimizing water use
- Install low or no irrigation planting areas that use native plants
- Landscaping reduces mowing



Green Roofs

- Vegetative roof that supports a variety of succulents and grasses
- Reduces heating, cooling needs in spaces below
- Increases the life of the roof membrane
- Reduces heat island effect
- Reduces runoff speed of rainfall



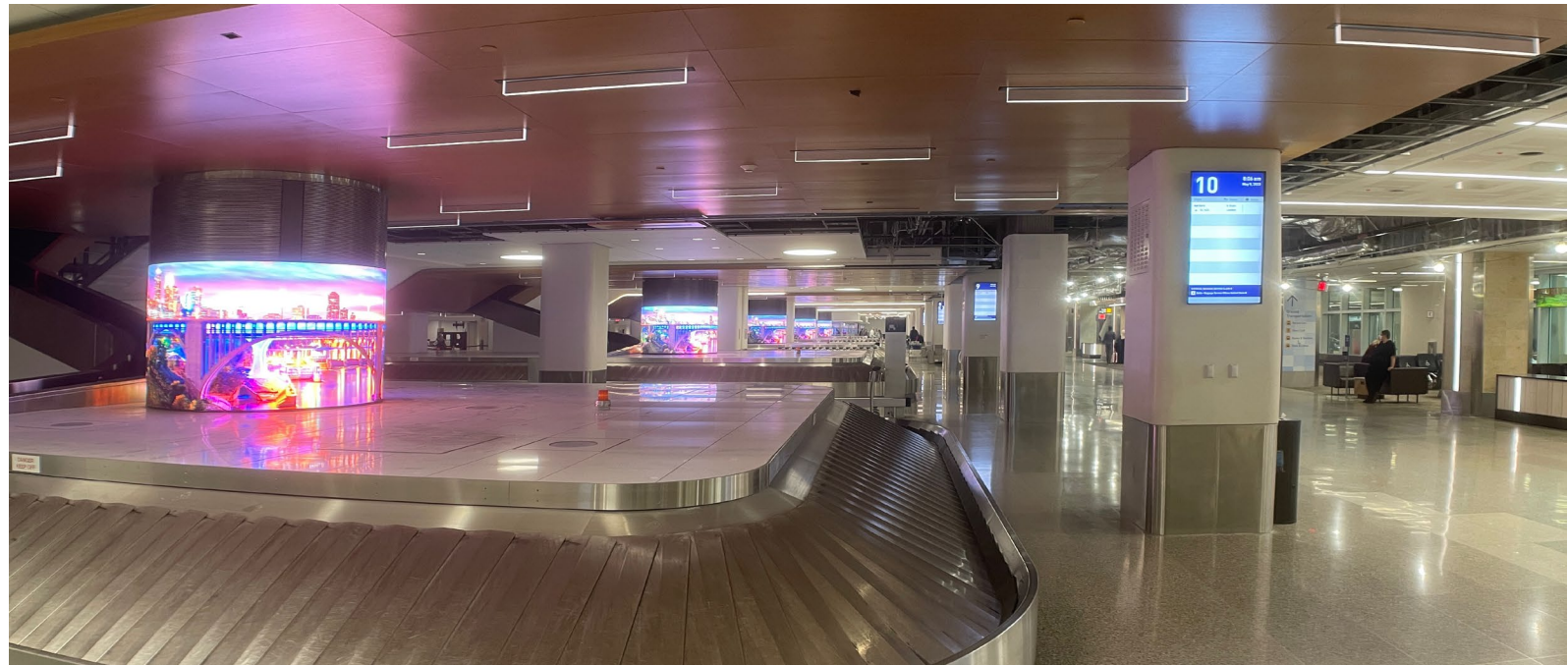
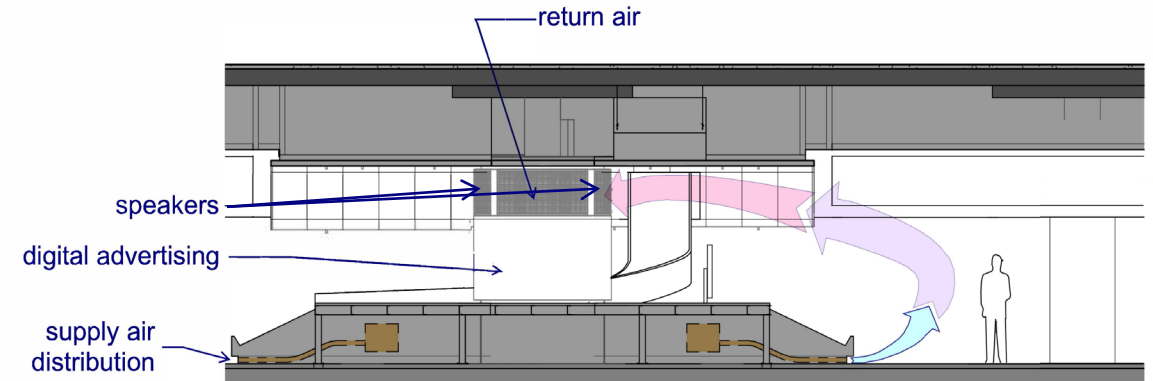
Thermal Performance

- Glazing with high thermal performance
- Smart windows adjust tinting throughout the day
- Reduces glare
- Repairs and improvements to existing systems



Displacement Ventilation

- Supplying outdoor conditioned air flow at passenger level
- Exhaust high above the use zone
- Increases ventilation efficiency



Restrooms

- LED lighting
- Displacement ventilation
- Low-flow fixtures for faucets and toilets
- Water metering to reduce water use per passenger
- Interior Finishes
- Acoustics



Metering & Building Automation

- Building Automation monitors heating, cooling, and ventilation needs to ensure buildings are functioning at optimum levels for passenger comfort and efficiency
- Track data and trends on how the airport systems are being used and problem areas
- Metering electrical use allows the airport to determine areas of efficiency and opportunities



Electric Ground Service Equipment



LEED



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Delta Air Lines Sustainability Program

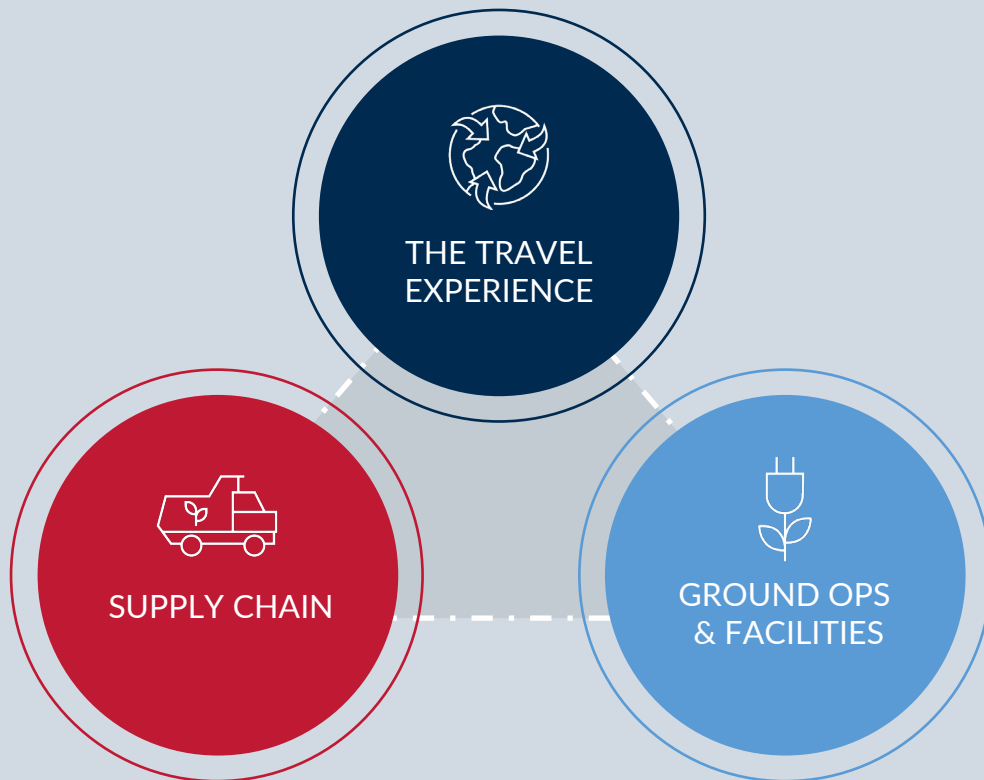


OUR STRATEGY

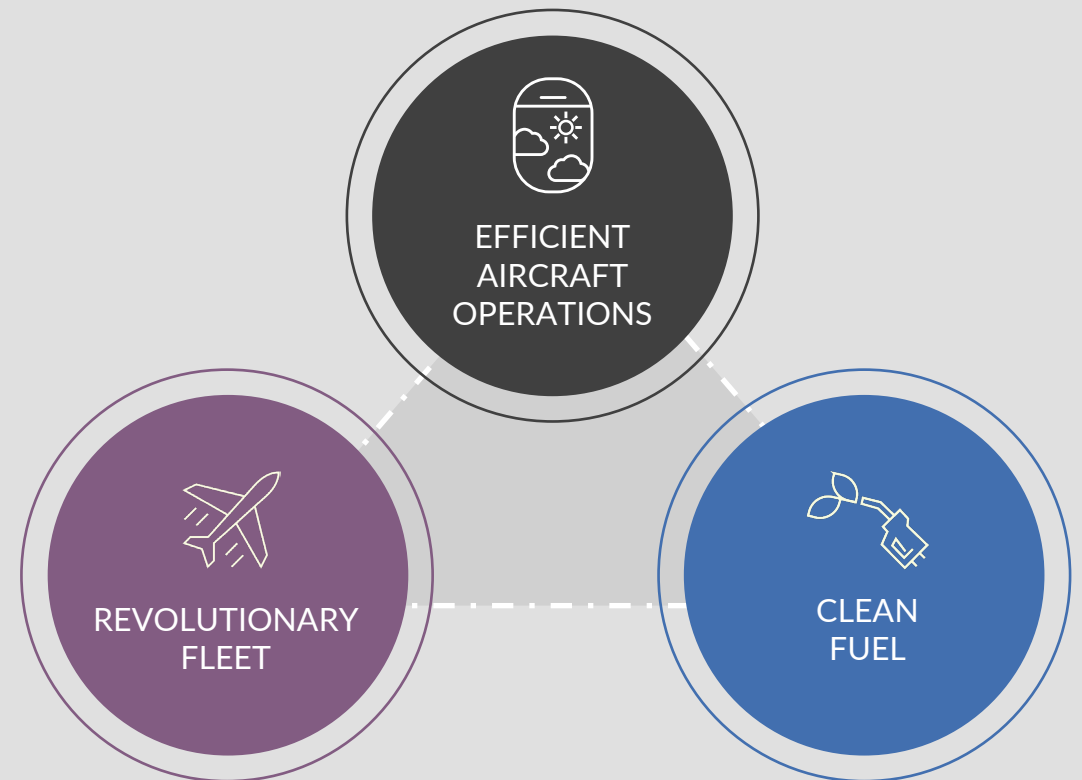
Coalesce new and existing partners, customers and employees to accelerate a new future of flight.

TRANSPARENT, COLLABORATIVE, DATA-DRIVEN AND NIMBLE

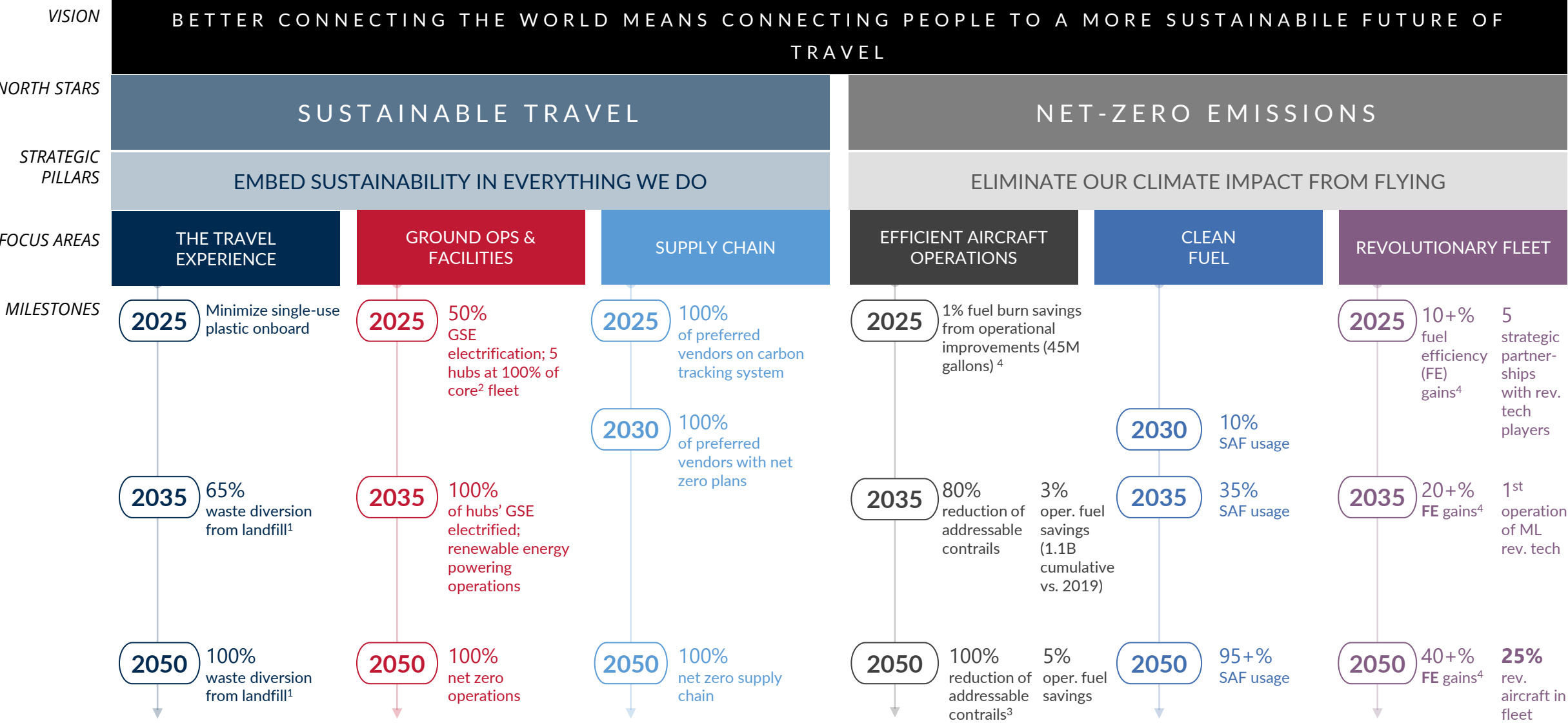
EMBED SUSTAINABILITY IN EVERYTHING WE DO



ELIMINATE OUR CLIMATE IMPACT FROM FLYING



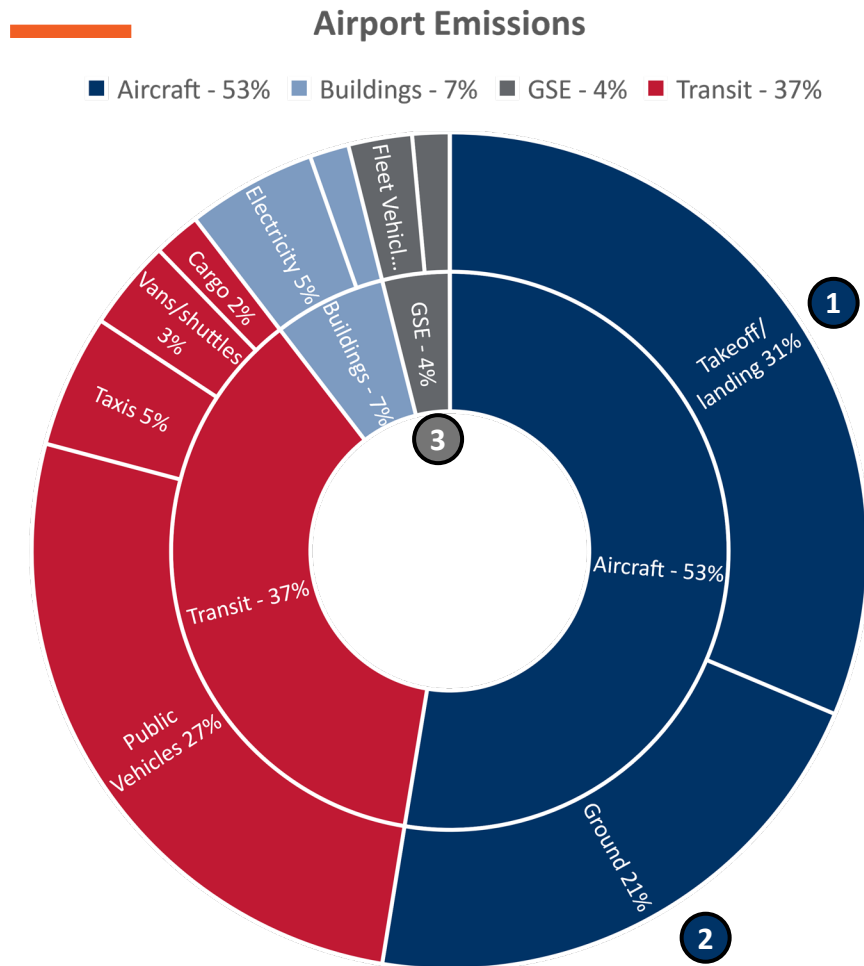
BELIEF #1: PROGRESS OVER PERFECTION



1. Relating to our customer onboard and in-airport travel experience; other airline operations (e.g., maintenance) are excluded.
2. Core fleet consists of baggage tractors, belt loaders and aircraft tow tractors
3. Subject to successful completion of MIT contrails study, and provided that contrail avoidance can be done in a way that is consistent with Delta's ops, economic and environmental objectives
4. Compared to 2019



Sustainability at Delta Air Lines



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MSP Collaboration Success Stories

- 1 Takeoff/landing
 - Optimized profile descent: ~30k MT CO₂ annually
- 2 Ground
 - Pre-Conditioned Air units at each gates
 - APU Ambassador – dedicated employees focused on reducing Auxiliary Power Unit (APU) usage
- 3 Ground Service Equipment Electrification
 - GSE chargers supporting fleet electrification
 - ~50% electrified as of July 2023

Future Collaboration Opportunities

- 2 Ground
 - APU Reduction via maintenance pad electrification
 - End around taxiways (EAT)
 - Green taxi solutions

WE CAN'T DO
THIS ALONE.
COLLABORATION
IS ESSENTIAL.



Questions



Guidelines for Audience Questions

- Walk up to a microphone at the front of the aisle
- Please begin with your name, city and any affiliation or group you represent
- Each speaker is requested to keep their questions to 2 minutes to allow everyone the opportunity to speak
- The Plan may not incorporate all public input due to other considerations, such as:
 - Conforming to design standards
 - Federal and state policies
 - Safety
 - Maintaining a high level of service
 - Operational feasibility
 - Project costs
 - Achieving the established goals of the Plan

MSP Long-Term Plan (LTP) Next Steps

- Written comments on the Draft LTP will be accepted until **August 21, 2023, at 5:00 PM**
- Visit www.mspairport.com/long-term-plan or scan the code below to view the draft document
- Written comments may be submitted:
 - By filling out a written comment form tonight
 - Online by visiting the web address above
 - Email to MSPAirportLongTermPlan@mspmac.org
 - Mail to: Metropolitan Airports Commission
Attn: Airport Planner
6040 28th Avenue South
Minneapolis, MN 55450

