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Denver International Airport  
**2020 Annual Environmental  
Performance Report**

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## Introduction

2020 was a year like no other. It's no secret that the aviation industry was hit hard when terms like "social distancing" and "essential services" became a part of our daily lives last spring. Despite the immense challenges, the aviation industry is recovering, and DEN is rebounding quickly due to a number of factors: strong financial positioning, a robust domestic network, innovative leadership, committed employees, and equally committed business partners, tenants, and airlines. This coordinated effort has resulted in tremendous progress despite extraordinary conditions, all without compromising our dedication to minimizing our environmental impact through careful planning, strategic thinking, and perseverance.

## Vision

DEN will strive to be America's favorite connecting hub, where the Rocky Mountains meet the world.

## Environmental Policy

DEN renewed its Environmental Policy in April of 2020 to reaffirm our environmental commitment, to comply with the most recent 2015 ISO Standard and to align with the City of Denver's policy. The Environmental Policy states:

*Denver International Airport (DEN) is dedicated to working with our partners to promote strong environmental performance. Our organization and employees are committed to business practices, policies, actions, and programs that enhance our performance by:*

- *Protecting the environment*
- *Conserving energy and natural resources*
- *Preventing pollution*
- *Meeting or exceeding all compliance obligations and voluntary commitments*
- *Continually improving the Environmental Management System*

## Environmental Leadership

DEN's environmental leadership is proven, time honored, and recognized. DEN's strong environmental performance is validated through external certification to the ISO Standard for Environmental Management Systems and the State of Colorado's strict compliance requirements for participation in their Environmental Leadership Program (ELP). DEN was the first commercial airport to design and implement an EMS and DEN has sustained EMS certification and recognition by the State of Colorado as a Gold Leader for the past 16 years.

## Passenger Recognition

According to the 2019 JD Powers Airport Satisfaction Survey, passengers recognize DEN as the most environmentally responsible of airports in its category.

## Other Awards

In 2020, DEN's Fleet Maintenance division received awards for being the **#1 Mid-Sized Fleet** as well as the **#6 Overall Government Fleet!** Each year, Government Fleet Magazine's program, [Leading Fleets](#), recognizes public sector fleet organizations across the country for their leadership, efficiency, ability to overcome challenges and vision for the future.

In addition, the NAFA Fleet Management Association ranked DEN 2nd in their Green Fleet Awards for 2020. DEN was the only airport named to the list.

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## Environmental Performance/ Key Accomplishments

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## EMISSIONS REDUCTIONS

**\$2.6M** in Voluntary Airport Low Emissions (VALE) grant funding

was awarded to DEN for purchase of

**27** ground-power units (GPUs) and **12** pre-conditioned air systems (PCAs)

and now DEN is working to procure and install the equipment.



PCA and GPU utilization is a key strategy to reduce air emissions by allowing aircraft to turn off their Auxiliary Power Units (APUs) when parked at the gate.

Estimated emissions savings using VALE funds are

**609** tons of ozone precursors (NOx & VOC) and **430** tons of CO over the useful equipment life.

## ALTERNATIVELY FUELED VEHICLES



DEN PROVIDES

**52** electric vehicle charging stations

across the parking garages, lots, and the DEN parking lot at 61st and Peña Station.

OF THE 1681 ASSETS IN DEN'S FLEET, THERE ARE

**19** hybrid vehicles

**2** electric buses

**4** CNG buses

**97** sweepers and light duty vehicles powered by CNG



## SOLAR ARRAYS

# DEN hosts 8 solar arrays

with 5 more (3 rooftop and 2 ground-mounted) to be installed in the next year.



## 6 ground-mounted photovoltaic solar arrays

are currently operating on DEN's property under public-private partnerships. Under these arrangements, a private entity owns and operates the arrays, and DEN purchases the solar electricity that is generated.

## 1.6-megawatt (MW) 61st & Peña parking canopy

is part of a microgrid pilot project partnership with Xcel Energy and Panasonic. We lease the canopy to Xcel, and Xcel owns the solar, battery energy storage system, and all the electricity produced.



We are starting pre-construction on Solar VII (12.4 MW) and Solar VIII (6.2 MW). These will provide power to multiple DEN buildings and any excess energy generated will flow to other DEN electric meters.

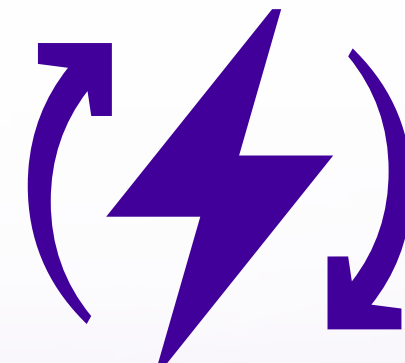


### RENEWABLE\* CONNECT

Renewable\*Connect is an Xcel Energy program that allows businesses to purchase a blend of locally sourced wind and solar energy from off-site energy facilities, and the Renewable Energy Credits (RECs) associated with the purchased energy are retired on the customer's behalf.

DEN Subscribed to 5 MW in 2018, which generates approximately  
**13 million kWh annually**

The program is currently fully subscribed, but there will likely be new opportunities to increase our participation soon.



### ENERGY PERFORMANCE CONTRACT (EPC)



DEN partnered with McKinstry, an energy services company to conduct an Energy Performance Contract (EPC) Investment Grade Audit of almost 10 million square feet of DEN facilities.

This audit has so far identified energy conservation measures that could

**reduce energy usage by 20%**







### PEÑA BOULEVARD LIGHTING UPGRADES:

DEN is in the process of converting the streetlights along Peña Boulevard to LED lights.

**90 lamps were replaced along Peña in 2020**

between 52nd Avenue and Tower Road. By the end of 2021, additional streetlights along Peña Boulevard near the Jeppesen Terminal will utilize LED fixtures.

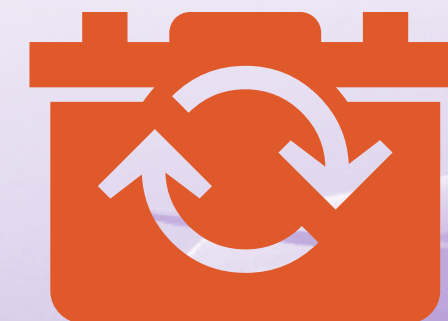


### XCEL COMMUNITY RESILIENCY INITIATIVE:

The Xcel Community Resiliency Initiative is a pilot program designed to create “microsites” which host battery storage solutions that are powered by local renewable energy sources.

**DEN was 1 of 7 sites selected to participate**

in this program for a project that will create on-site battery storage to back up the airport’s interconcourse train system. This battery system will be able to provide backup power for up to an hour when the primary power source fails. In addition, these batteries would be charged by one of DEN’s on-site solar farms.





**GATE EXPANSION:**

DEN is adding gate capacity to its concourses to allow airlines an opportunity to grow and to accommodate new airlines, including international carriers.

**Increase gate capacity by 30%**

The gate expansion project will increase DEN's gate capacity by 30 percent and all new gates will be operational by 2022. The upgrades and additions will support DEN's continuing passenger growth.



**30% less energy**

All concourse additions are projected to use about 30% less energy than a typical airport building due to design elements that capitalize on natural daylight, high efficiency heating and cooling equipment, and photovoltaic energy generation.



**5 Buildings**

The Concourse B West expansion was completed in November 2020 and will become our fifth building on campus with a LEED certification.



## 34,000 butts were collected!



Through a new partnership with Teracycle, DEN now collects and recycles cigarettes that are disposed of in specialized containers on the plaza and passenger loading area. Teracycle is able to recycle the cigarette filters and leftover tobacco is composted. In 2020 over 34,000 butts were collected!



## 30+ water bottle filling stations

have been located throughout the facility to reduce plastic waste.



Liquid dumping stations are located at each security checkpoint, so that passengers may reuse bottles and/or recycle their bottles without the liquid contents.

IN 2020, DEN COLLECTED

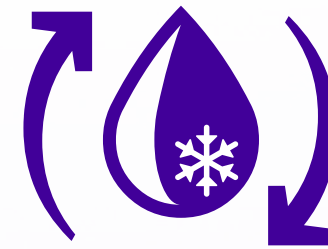
**30 TONS** of compost, recycled **88 TONS** of glass,  
and overall diverted over

**1,571 TONS** of landfill waste

through recycling and re-purposing. Despite the challenges associated with greater use of single-use products during the pandemic, DEN's overall waste diversion rate ticked up slightly.



## Over 74% of all deicing fluid was collected two-thirds of which was distilled and repurposed for industrial use.



As DEN continues to “refresh” the existing concourses, standard fixtures within public restrooms are replaced with low-flow toilets and urinals.

IN 2020, DEN COLLECTED AND DONATED

**120 TONS** of food



**1,226 LBS** of unused toilet paper  
and **361 PIECES** of luggage  
for the Denver Rescue Mission.



**38** abandoned  
car seats, boosters, strollers,  
and other baby gear to Weecycle.



Currently there are over 40 businesses in the Certifiably Green Program, which is awarded to businesses who implement sustainable practices.



**WE DON'T WASTE**  
INNOVATIVE FOOD RECOVERY FOR THE HUNGRY

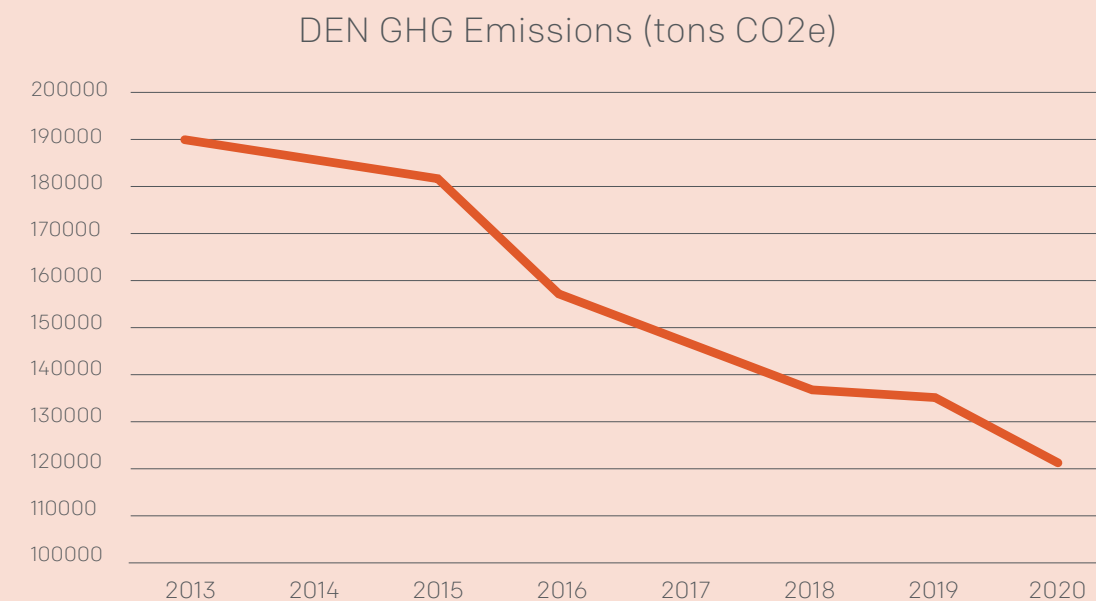
## 2020 Environmental Objectives

### THE FOLLOWING OBJECTIVES WERE KEY AREAS OF FOCUS IN 2020:



**AIR POLLUTANT EMISSIONS:** Air pollutant emissions have become a core area of focus for DEN. The airport has taken a two-prong approach: actively managing and reducing the air pollutant emissions under DEN’s control; and building partnerships to track and influence other sources of emissions that occur on the premises. The key pollutants in the airport’s scope include health-based criteria pollutants, greenhouse gases (GHG), ozone depleting substances, and visibility impairing pollutants.

DEN has measured and tracked Scope 1 and 2 GHG emissions, which are those under DEN control, since 2013, and emissions continue to be reduced year over year.



The Energy Performance Contract (EPC) audit is another important emissions-reducing initiative. This audit has already outlined energy conservation measures that could save approximately 39,400 metric tons of CO<sub>2</sub>e annually.

## 2020 Environmental Objectives

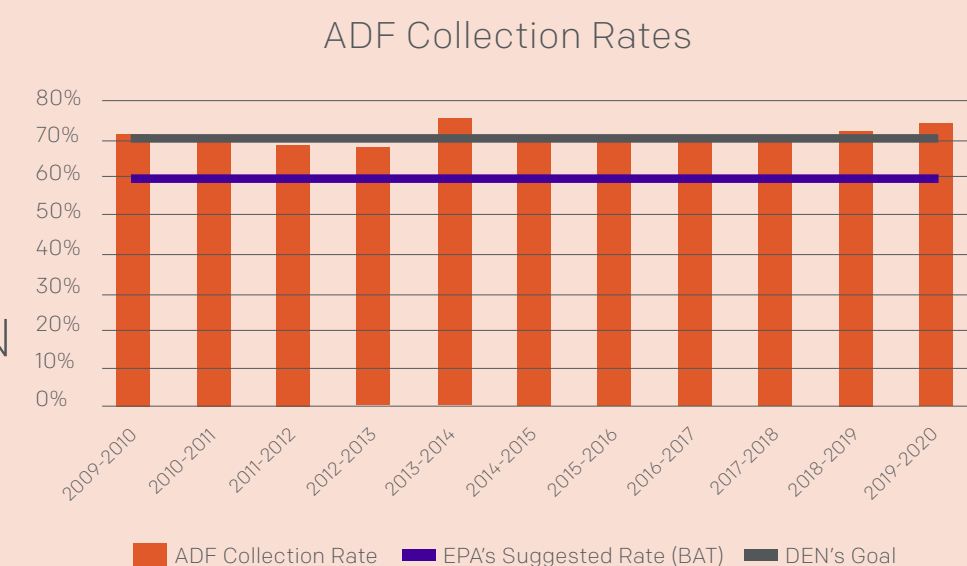


**LAND AND WATER QUALITY:** DEN continually receives top marks in emergency preparedness, and it is critical that the airport responds appropriately in these scenarios. While potential environmental impacts may not be the only priority in the case of a fire or emergency landing, it's still critical that we are cognizant of any materials or substances that pose a risk to our land and water.

Fire-fighting foam is one substance that is under increasing scrutiny as it's known to contain per- and poly-fluoroalkyl substances (PFAS). These substances are incredibly effective at suppressing fires; however, they also have been linked to adverse health effects and they are categorized as "forever chemicals" because they persist in the environment and do not break down.

DEN's objective in this area was to minimize risks related to the application and storage of fire-fighting foams, as well as stay abreast of the science and policy related to PFAS chemicals. Success in this category would have been impossible without our strong partnership with the Denver Fire Department (DFD). DEN has continued work with DFD and business partners toward phase out of the use of fire-fighting foams which contain PFAS, elimination of the use of fire-fighting foam in system testing and training exercises, and recovery of foams used. In addition, DEN leaders participated in national seminars and conferences to better understand the long-term impacts and emerging policies of PFAS.

Aircraft deicing continues to be an important objective for DEN due to the environmental risk that this operation poses. Regardless of traffic levels, certain weather conditions require the application of deicing fluid and DEN has infrastructure in place to capture and distill those fluids at a rate that exceeds many cold-weather airports.



## 2020 Environmental Objectives



**WASTE MINIMIZATION:** DEN has consistently maintained the objective to minimize contributions through reducing, reusing, and recycling. This objective faced significant challenges due to the pandemic, but DEN remains committed to existing diversion methods and exploring new opportunities.

Many high diversion contributors like our glass valet program, food donation, and compost collection are down significantly due to impacts of COVID-19. However, total landfill waste dropped through much of 2020 so DEN was still able to meet our 18% diversion goal.

