

# Airport Sustainability Services



“ As an established aviation consulting and sustainability implementation company, we understand the challenges and opportunities for airports today and will help you achieve the vision and implement the goals of your sustainability program.

# We are different

**We've delivered industry-defining sustainability projects across the aviation sector – from small, regional and general aviation airports to the world's largest hubs.**

The aviation industry is increasingly adopting sustainability and resilience planning as an operational imperative. With public pressure growing to act on climate change, airports find themselves at the nexus of many challenging aspects of sustainability. This includes critical infrastructure adapting to energy, water and climate change constraints, implementing comprehensive resource efficiency programs, aligning capital programs with sustainable design and construction best practices, and working with airlines to address air quality and reduce greenhouse gases.

At the same time, airports must meet the needs of the communities they operate in and create a diverse and skilled workforce that is able to manage the transition towards a more sustainable operating model.

Successful sustainability programs should be customized to the needs and business objectives of each airport. While the industry has provided much guidance and best practices, by its nature, each airport should develop an approach and program that aligns with overall development and operational plans. The development of an effective, comprehensive sustainability program requires a balance between long and short-term goals and the prioritization of strategies that best fit the airport's business objectives.



Proud winner of the 2022 Climate Change Business Journal Project Merit Award for Airport Sustainability at Greater Toronto Airport

# Areas of expertise



**Air quality and greenhouse gases evaluation/inventory**



**Airport carbon accreditation**



**Alternative fuels assessment**



**Climate change adaptation/infrastructure resilience evaluations**



**Energy management system (EnMS, ISO 50001)**



**Energy planning, auditing, and performance contracting programs**



**Environmental management system (EMS, ISO 14001)**



**Grant assistance**



**Green building design, consulting, certification and administration (new and existing buildings)**



**Green procurement**



**Policy and communications**



**Renewable energy programs**



**Stakeholder engagement**



**Sustainability management plans**



**Sustainability reporting (Global Reporting Initiative)**



**Sustainable master plans**



**Waste/recycling opportunities assessment**



**Water management/efficiency programs**

# Sustainable Places for People



**Embedding sustainable development and resilience across our work**

Our services range from assessing vulnerabilities to climate adaptation strategies and resiliency planning.



**Achieving net-zero carbon emissions**

We can help you achieve your carbon targets through energy strategies, services to manage and reduce greenhouse gas emissions and nature-based solutions that work with and enhance the ability of natural habitats to sequester carbon.



**Improving Social Outcomes**

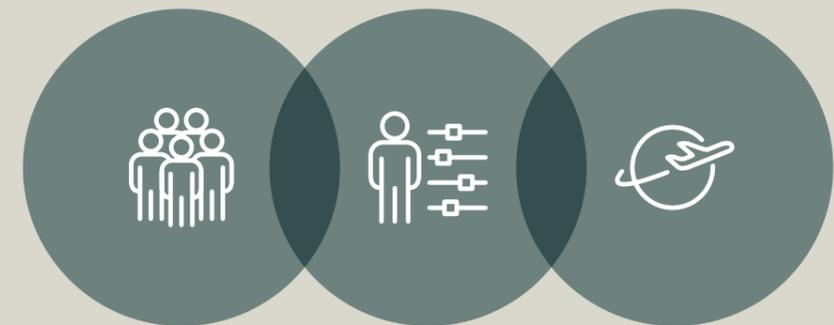
We will support your social value projects and programs and advise your organization on strategies to boost equity, diversity and inclusion (ED&I).



**Enhancing Governance**

We can assess the sustainability of your operations and help improve your environmental, social and governance (ESG) performance through target-setting, materiality assessments and benchmarking, lifecycle analysis and advisory services.

# Our approach



**We provide highly qualified staff to assist with every aspect of sustainability**

**We develop customised services that can be used to achieve an airport's vision**

**We help implement the goals of an airport's sustainability program**

CASE STUDY



# San Diego International Airport

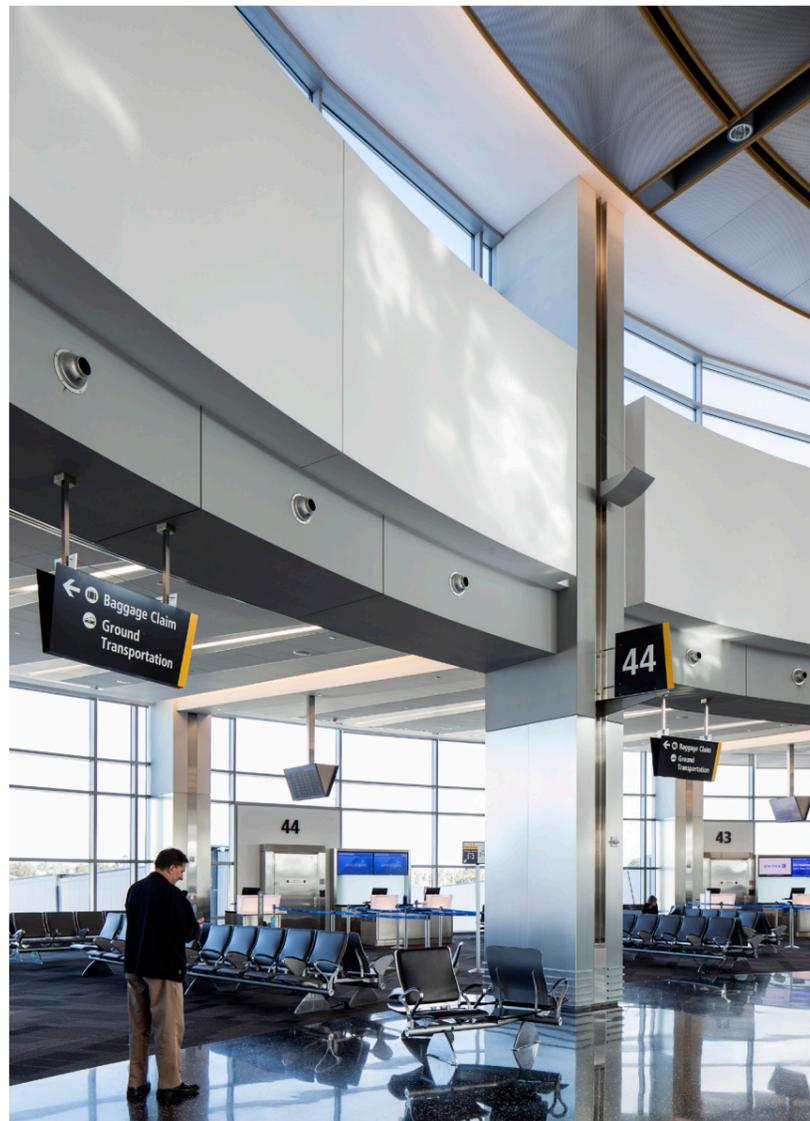
San Diego, CA, U.S.A.

## CARBON NEUTRALITY

We were instrumental in helping San Diego International Airport (SAN) become the second airport in North America to achieve Airport Carbon Accreditation neutrality through our sustainability plans. We helped develop the SAN Strategic Energy Plan (STEP) and Sustainability Management Plan (SMP), which together provide a portfolio of action plans to address the airport's primary areas of sustainability which include: carbon neutrality, sustainable energy, clean transportation, climate resilience, zero waste and biodiversity.

Our cross-functional team operationalized resource and

cost-saving initiatives, allowing SAN's commitment to aggressive sustainability targets including 80% greenhouse gas emission reduction and a 67% increase in waste diversion. The STEP contains an action-focused roadmap leading to 30% energy cost reduction, 66% reduction in onsite greenhouse gases emissions, and ability to reduce reliance on grid energy by 70%. The plans serve as a model for the effective identification, management and communication of sustainability issues. Each plan sets an industry precedent, collectively establishing SAN's vision and roadmap for zero carbon, zero waste, and more resilient operations.



CASE STUDY



# Sydney Airport

Sydney, Australia

## GREEN STAR COMMUNITIES RATING MASTERPLAN

As a trusted advisor, we have worked closely with Sydney Airport to develop the Sydney Airport 2039 masterplan. Works included embedding sustainability into planning and design through an integrated and innovative approach to cater for future expansion and airport needs in alignment with the Sydney Airport Sustainability Principles and Green Building Council Australia's (GBCA's) Green Star-Communities rating.

Through this work, the airport was awarded a 4-star Green Star-communities rating, one of

the first airports in Australia to do so. We also continue to support the airport in the analysis and reporting of Scope 3 emissions to maintain its Airport Carbon Accreditation (ACA) Level3 status.

Additionally, we supported Sydney Airport in climate resilience, providing advisory support to identify a pathway to strengthen the airport's approach to climate change risk management, including trigger points to embed climate resilience in decision-making and assist the airport in its climate-related financial disclosures [i.e., through the Task Force on Climate-Related Financial Disclosures (TCFD)].

CASE STUDY



## Hong Kong International Airport

Hong Kong

**Built on reclaimed land on the island of Chek Lap Kok, Hong Kong International Airport opened in 1998 with a mission to maintain Hong Kong's status as the leading international aviation hub and a key engine of economic and social growth. In an era of rising temperatures and sea-levels, validating and continuing to enhance the resilience of one of the world's busiest airports is critical.**

AECOM has been supporting Airport Authority Hong Kong (AAHK) to proactively manage the physical risks of climate change and embed climate resilience across its assets and operations. Based on published climate change projections, we conducted a Climate Resilience Study evaluating different risk scenarios associated with climate change. This covered all infrastructure related to the airport, including a preliminary review of independent assets such as power and transport networks through engagement, and involved consulting with 20 AAHK departments as well as key external stakeholders. To read the complete Sustainability report 2020/21, please visit here.

### Setting a TCFD Statement precedent

A key finding of the study was that AAHK had already embedded climate considerations into the planning and design of critical assets, but it required a structure for reporting and forecasting climate-related risks that typically lie outside traditional risk analysis. The Task Force on Climate-Related Financial Disclosures (TCFD) provided an effective structure for AAHK.

Of the available climate reporting guidelines and initiatives to enhance disclosure and mitigation of climate-related financial risk, the TCFD, created by the G20's Financial Stability Board in 2015, has risen to the fore as a go-to framework for financial climate risk, and Hong Kong International Airport has become one of the first airports in Asia to publish a TCFD Statement, setting precedence for other airports and demonstrating AAHK's commitment to its Greenest Airport pledge.

The TCFD offers extensive guidance on recommended disclosures in the areas of governance, strategy, risk management, metrics and targets, as well as principles for effective

disclosure and advice on assessing resilience across a range of scenarios. While businesses can use such guidelines to understand the kind of things they need to report, deciding what is material and how to accomplish meaningful climate risk disclosure remain big challenges for individual organizations. However, this is where the real value lies.

### Taking action

As published in its TCFD statement, AAHK has undertaken a number of actions as a direct result of the report. These include continuing systematic reviews of business continuity protocols, reviewing the implications of extreme heat and humidity events on staff performance and welfare and updating Personal Protective Equipment policy, undertaking a review of the lightning protection system following lightning events, and continuing regular monitoring and inspections of sea level gauge and drainage systems. We also helped AAHK decide on a system for engaging with other critical asset owners to review system resilience through the development Climate Adaptation and Resilience Plan which was endorsed at the senior management level.

### Reducing Airport Authority Hong Kong's carbon footprint

Our study also assessed the potential impacts associated with the transition to a low-carbon economy, including those related to the construction of the Three-Runway System and the impacts of carbon pricing on flight volumes and costs across the aviation sector. Complementing the actions AAHK has in place to manage the physical risks of climate change, AAHK also has implemented many initiatives to reduce its carbon footprint. These efforts are driven by the organization's airport-wide carbon reduction program and its 2050 Net-Zero Carbon target. Initiatives include, establishing a systemic approach to monitor compliance with local and international standards and treaties, and working with airlines seeking to use sustainable aviation fuel. Further examples are outlined in its TCFD statement.





CASE STUDY



# Toronto Pearson International Airport

Canada

**AECOM was retained by The Greater Toronto Airports Authority (GTAA) to produce its long-term environmental master plan focused on six key areas: climate change, carbon neutrality and emissions, strategic energy use, water management, natural environment, and waste management.**

AECOM is helping with each strategic plan, focusing on high-level capital projects and operational changes to meet environmental goals by conducting baseline assessments; overseeing peer review and analysis of current strategies; identifying priority areas and related goals; preparing cost/benefit analysis for programs and targets; and recommending systems to monitor performance and communicate key metrics. The team recently developed a performance target tool for carbon and energy, as well as forms for integrating climate change resilience adaptation with the planning process. The International Aviation Waste Management Association is collaborating on the waste management plan, and GeoProcess Research Associates is supporting the natural environment management plan. Toronto Pearson's leadership will help define environmental and sustainability goals paving the way towards innovative, best-in-class practices for the aviation industry.

In 2022, AECOM's project team prepared the GTAA's Strategic Energy Use (SEU) Master Plan, Climate Change Resilience (CCR) Plan, and Carbon Neutrality & Emissions (CNE) Action Plan. In addition, AECOM provided the GTAA with a Cogeneration Decarbonization Feasibility Study

to determine possible greenhouse gas emission reduction strategies through technological innovation.

The SEU Master Plan and CNE Action Plan incorporated strategies and capital works projects to enable net-zero decarbonization by 2050 or sooner, as well as a significant increase in clean energy provision to the airport through both direct behind-the-meter installation and front-of-meter offsetting options. A performance targets tool was created to help the GTAA monitor, upgrade, and track progress on project works and their impact on the net-zero and clean energy strategy.

The CCR Plan projected climate change impacts up to 2050 horizon, evaluated their impact on the airport, and suggested measures of adaptation following the steps outlined in the Public Infrastructure Engineering Vulnerability Committee (PIEVC) High-Level Screening Guide (HLSG) based on the ISO 31000 Risk Management Standard using a down-scaled climate modelling to identify potential impacts of climate change on the runways, high-voltage network, and the airfield electrical network. The CCR Plan also established fact sheets for fifteen different climate indicators and their relational impact on the airport and suggested an adaptation measure strategy. Finally, the Impact Assessment Act Environmental Review and project procedural forms were modified to account for future accounting of climate change principles within the project planning process at the GTAA.

CASE STUDY

LAX

# Los Angeles International Airport

Los Angeles, CA, U.S.A.

**AECOM's program management team is fully integrated with LAWA staff. When the program management contract was first awarded, the LAX capital improvement program (CIP) was not yet defined; therefore, AECOM began a dual-track approach to simultaneously define and begin implementing the CIP.**

As a first step, a visioning program was undertaken with key airport stakeholders which resulted in an operating concept and physical model for the entire central terminal area of LAX, including the international terminal, a new central passenger processing facility, an automated people mover serving all terminals, a new midfield satellite concourse, and a connector bridge from the processor to the international terminal and midfield terminal and replacement of the airport-wide Central Utility Plant. Concurrent with the programming and definition work, design began on a new crossfield taxiway system and was completed. This also allowed for future construction. Because of the complicated phasing of the program, various project delivery methods are being utilized, including traditional design-bid-build, construction manager at risk, and design-build.

For each phase of the program, AECOM is responsible for assisting LAWA in advancing the project definition from planning concepts to defined project scopes, preparing design contract scopes of work, managing and administering design contracts, bidding and awarding construction contracts, and providing construction management services through commissioning, activation and project close-out.

The first phase of the CIP has now been fully defined and consists of a \$4.1-billion program that provides the new taxiway systems, new concourses for the international terminal which are capable of serving the next generation of aircraft, expansion of passenger processing and concession facilities in the international core building, utility relocations and new utility services, and a new central utility plant and distribution and control system serving the entire six million square feet of LAX terminals. While advancing the phase one program, the team conducted an airport-wide needs assessment, scoped, and performed preliminary definition on the total CIP, which is in excess of \$6 billion.



CASE STUDY

JFK

# John F. Kennedy International Airport, Terminal 5

New York, NY, U.S.A.

## ELECTRIC VEHICLE CHARGING INFRASTRUCTURES

The New York Power Authority, in collaboration with JetBlue Airways Corporation (JetBlue) and the Port Authority of New York and New Jersey, competitively awarded AECOM the project to design and install a complete, reliable, and fully functioning electric vehicle charging infrastructure system at Terminal 5. The charging stations designed and installed by AECOM

support JetBlue's efforts to improve energy efficiency and will save \$500,000 per year in fuel cost by converting their vehicles from diesel to electric.

By converting to an all-electric, ground-handling fleet including fuel trucks, container loaders, tugs, etc., JetBlue is expected to save 200,000 gallons of fuel and four million pounds of greenhouse gas emissions per year.



## ABOUT AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from advisory, planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical and digital expertise, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of \$13.1 billion in fiscal year 2022. See how we are delivering sustainable legacies for generations to come at [aecom.com](https://aecom.com) and [@AECOM](https://twitter.com/AECOM).

## CONTACTS

### **Dwight H. Pullen, Jr.**

Senior VP, Global Director of Aviation  
[dwight.pullen@aecom.com](mailto:dwight.pullen@aecom.com)

### **Clint Laaser**

National Planning Practice Leader  
[clint.laaser@aecom.com](mailto:clint.laaser@aecom.com)