

Asset Management

Aviation Market Sector

Contents

Intro	3
Why Asset Management?	4
How AECOM Implements Asset Management?	5
The 4-Pillar Approach	5
Aviation Asset Management	6
Stakeholder Workshops	7
Define Use Cases	7
Pavement Management	6
Aviation Asset Management Experience Map	8
AECOM Asset Management Project Experience	10
Enabling Activities	18
Spatial Data Registry & Gap Analysis	18
Systems Architecture	18
Roadmap	19
Data Development	19
Data Standards and Maintenance	19
Computer Maintenance Management Systems (CMMS)	19
Digital Offerings	20
Interior Scanning	20
Digital Twin	20
Benefits of Asset Management	22
Why AECOM?	23

AECOM’s Aviation Technology group is widely regarded as industry leaders in aviation technology implementations at airports. Over the last 20 years, we honed our map-based asset management expertise at airports worldwide.

We assist our airport partners achieve their asset management goals. Some are just beginning their journey into understanding asset management, while others may be more mature in the implementation process. Our implementations focus on enterprise systems and spatial data that yield business intelligence allowing our partners to realize significant operational efficiencies, enhanced decision-making and proactive asset management strategy.

Why Asset Management?

AECOM understands that our airport clients are under increasing pressure to gain additional value from their assets. As we help our clients plan, design and construct many of their assets, we are perfectly positioned to partner with our clients design and build their asset management programs.

Asset management is the systematic approach to the realization of value of an organization's tangible and intangible assets over their entire lifecycle. Asset management seeks to maximize "value from assets" to best achieve strategic goals. Wider benefits may include:

- Improved financial performance
- Informed investment decisions
- Asset failure/risk mitigation
- Demonstrated social responsibility
- Improved services and outputs
- Enhanced reputation
- Improved organizational sustainability
- Improved business processes

Maintenance Cost Reduction

Organizations that have not implemented asset management are often reactive, focusing on "worst first". Often times assets are only replaced when they fail and replacement costs fall within current budget allowances. AECOM's asset management team will identify and analyze alternative preservation, rehabilitation and replacement strategies that focus on preservation over the long term, yielding an overall net savings in life-cycle cost.

Holistic Framework

The AECOM asset management team collaborates with management to consider a wide range of decision factors, including:

- Financial costs, such as the acquisition and retirement costs of assets
- Economic costs, such as environmental effects, social costs, and political effects

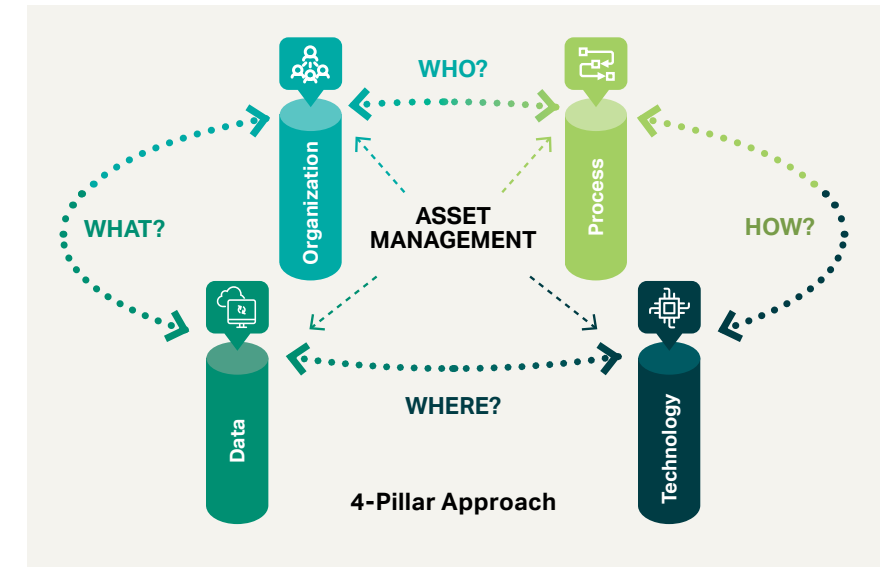
Improved Management Insight

The AECOM asset management team provides a comprehensive, integrated framework for undertaking the analysis of alternative budget, maintenance and capital investment strategies. We define and support a structured framework for investment planning that delivers the most cost-effective solutions for achieving acceptable levels of service over the entire asset life-cycle while minimizing risk.

How AECOM Implements Asset Management

The 4-Pillar Approach

AECOM's asset management approach draws on Institute of Asset Management, International Infrastructure Management Manual, and International Standards Organization to bring the best of all the processes to develop our 4-Pillar approach. Clients are becoming increasingly sophisticated in asset management and we have written the book/guidelines on many of these and we pull the best together to develop a concise methodology.



PILLAR 1 Organizational & Institutional

Challenge: Successful asset management requires people to work in teams and need to create organizational structures that are supported throughout.

AECOM Solution: We have a robust change management program, training experience and have assisted many agencies to understand and learn how to support asset management from the top down and bottom up.

PILLAR 3 Business Processes

Challenge: Biggest possible change for any organization is to move from reactive to proactive maintenance.

AECOM Solution: The 4-Pillar approach helps the organization to build objective back up that demonstrates the benefits of proactive care and AECOM assists with implementing, even if in incremental steps.

PILLAR 2 Data

Challenge: Clients are collecting so much data that it can be overwhelming and we need to understand what is truly needed and how to use it.

AECOM Solution: We know how to collect data efficiently and effectively and set data hierarchy. We have extensive experience collecting and assessing a wide range of assets and data.

PILLAR 4 Technology

Challenge: There are many great softwares that aid in asset management , so how do you pick one?

AECOM Solution: We know that one size does not fit all and we have experience with a wide range of softwares that allows us to help customize the right fit for any organization, including maximizing programs already in place.

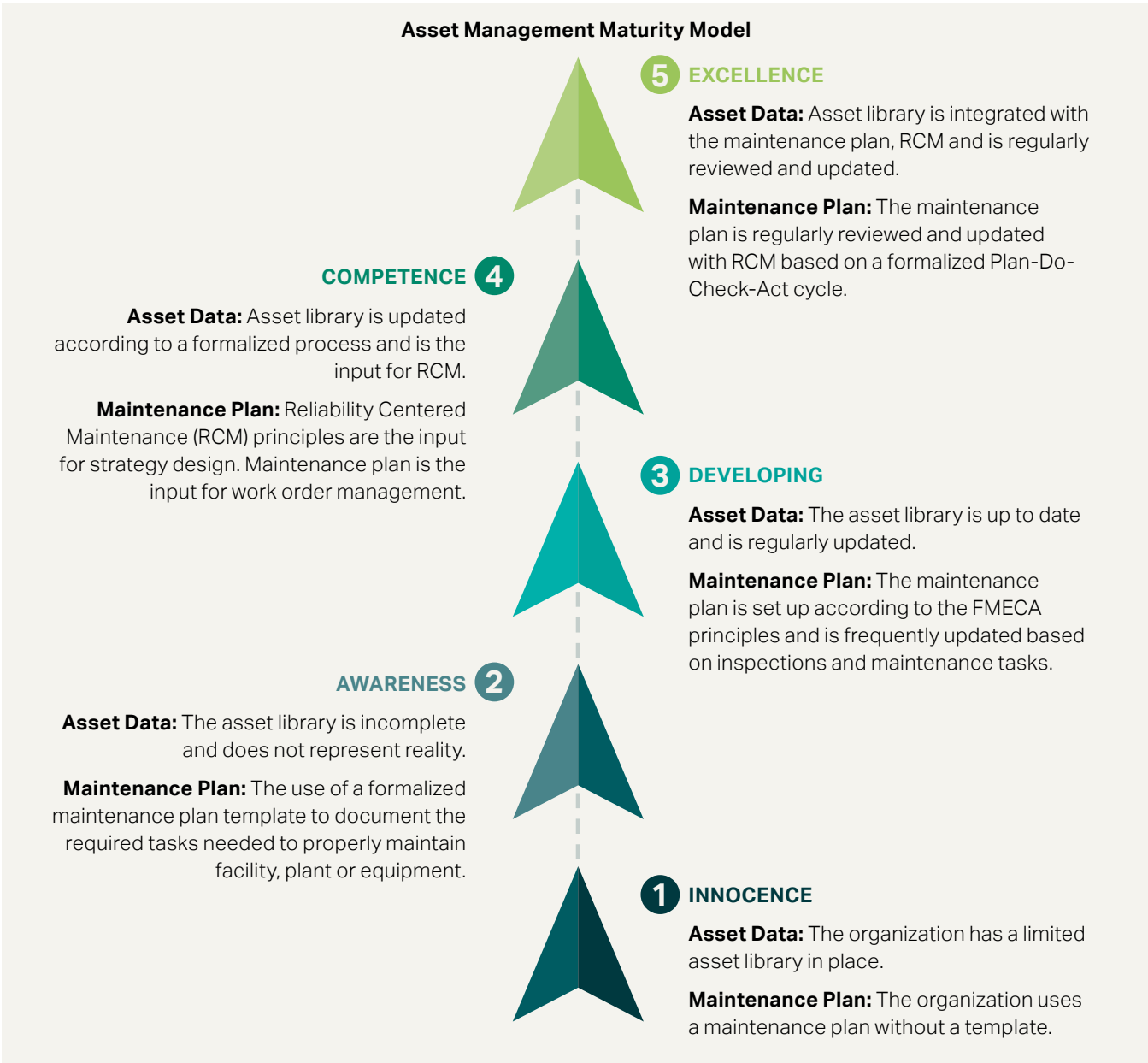
Aviation Asset Management

Asset information tied to spatial data is the most effective method for airports (or any campus) to truly understand and maintain assets in a fiscally responsible manner.

AECOM is a leader with embracing innovative technologies that introduce operational efficiencies into daily activities for our airport partners. We have industry leading expertise implementing enterprise spatial data systems such as geographic information systems (GIS) and building information modeling (BIM) at airports worldwide. Modern

airports leverage the strengths of these enterprise systems to simplify daily work activities and access to current, complete and accurate spatial data has become the foundation for map-based asset management. Knowing the precise location of your assets, displaying and assessing asset condition or asset performance within a map view, and spatially tracking work orders from inception to closure has become the norm.

A successful asset management implementation project is comprised of many distinct phases, and we will work with you to understand your unique vision, assess the current level of asset management maturity and devise a plan to achieve both short and long-term goals.



Stakeholder Workshops

It is essential to engage stakeholders early in the asset management implementation process to ensure a shared understanding of the overarching asset management goals, and to facilitate a collaborative approach to obtaining that vision. At the onset of each project, we conduct a series of workshops to review asset management goals and to assess the asset management maturity of each airport partner. More often than not, we have found many of our partners are further along than they had believed. We account for previous achievements and document existing conditions of in-place systems and spatial data that support asset management functions. With a focus on data driven solutions, we will derive a tailored plan that will progress your vision through a multi-phase implementation roadmap. Workshops are an extremely valuable exercise that garner buy-in from the various user groups and typically yield a cooperative work environment.

Define Use Cases

A comprehensive list of Use Cases will be developed from the information relayed by stakeholders during the stakeholder workshops. While it is understood that specific asset management use cases will vary for each airport, maintaining the airfield is a ubiquitous goal for all airport asset management programs. We are experts in pavement evaluation and FAA regulated airfield inspection process.

Airfield and Pavement Inspections

Part 139 certified airports must agree to certain operational and safety standards defined by the FAA and they are evaluated for compliance annually. Movement area inspections are conducted multiple times each day to monitor the condition of pavement, markings, lighting, signage, abutting shoulders, and safety areas.

AECOM pioneered a mobile, map-based Part 139 inspection processes to log discrepancies at airports across the United States. Workorders are generated for each discrepancy and progress is tracked through completion. Typically, Maintenance managers will review and assign incoming workorders to the appropriate field maintenance personnel. Operations is notified once the required work has been completed so that it can be inspected, verified, and closed. A comprehensive Part 139 report is generated daily, listing each inspection that was conducted that day, any identified discrepancies, work orders that were opened and/or closed, outstanding work orders, wildlife issues, and other details as required by the airport client. The report is saved to a network share as well as emailed to Operations management.

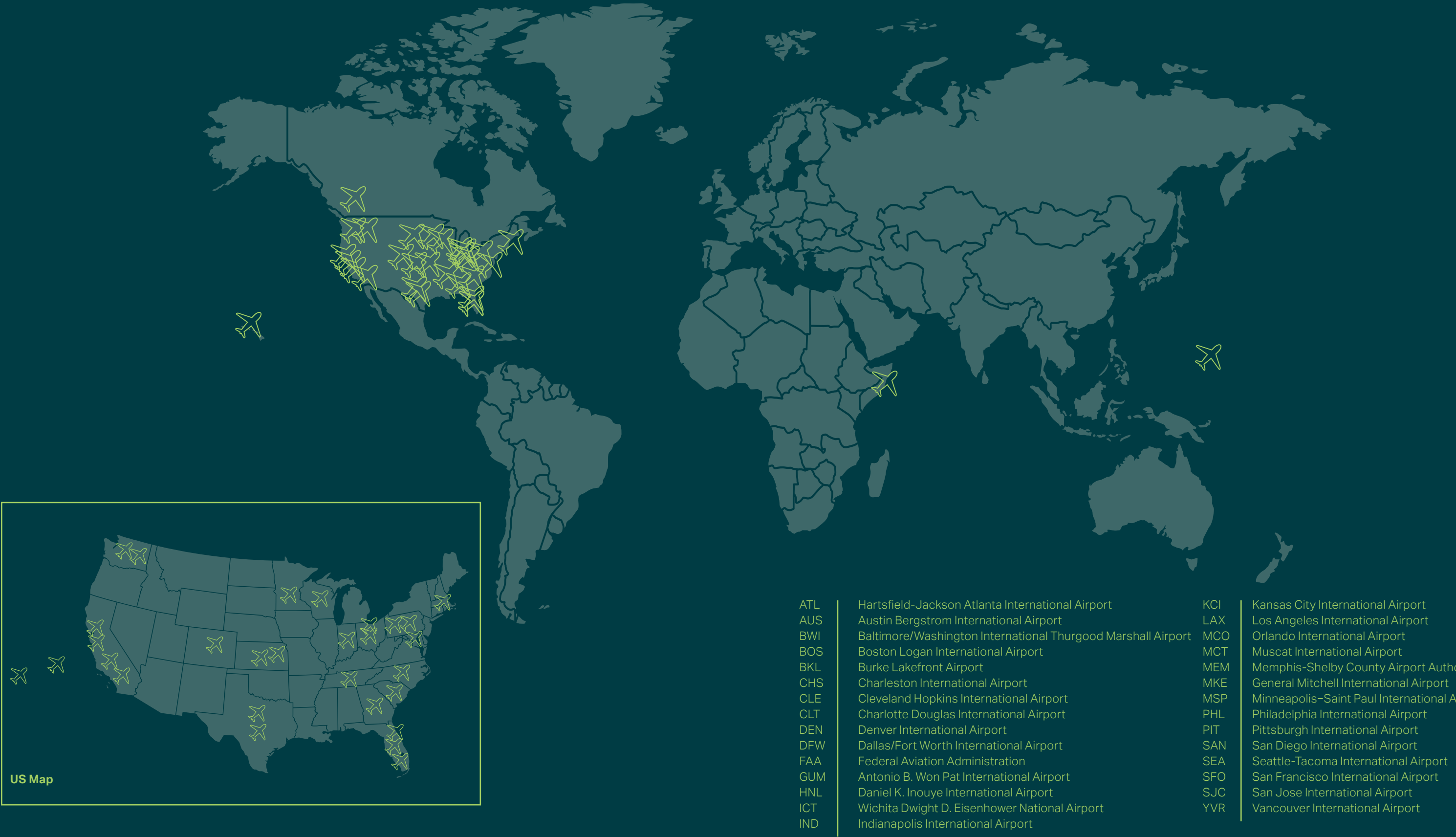
In addition, the AECOM Airfield Operations solution includes full Operational Logbook capability to track airside and landside events happening across the airport.

Pavement Management

AECOM is a global leader in Aviation pavement management with more than 30 years of specialized experience conducting airfield pavement inspections and developing pavement management plans for airports. In the last five years, the Aviation Pavement Management team has implemented pavement management systems at over 30 airports, and more than 100 roads and parking networks, in accordance with FAA and American Society for Testing and Materials (ASTM) standards. We will work with you to coordinate airfield inspections, collect, assess and analyze pavement inspection data and develop a tailored pavement management plan.

AECOM's group of pavement specialists have extensive experience inspecting and analyzing pavement distress data, implementing pavement management software and developing work plans for different budget scenarios. AECOM's approach to pavement management is to bring full-service pavement expertise to the process, addressing client-specific needs, and provide cost-effective solutions and/or design alternatives, within set time and budget constraints. Our goal is to provide an appropriate engineering solution and full technical support through its implementation. Working with the knowledge that pavement management goes hand-in hand with other assets, such as airfield lighting and drainage, AECOM takes into consideration multiple variables and factors while planning. We understand capital improvement planning (CIP) to be an integral aspect of maintaining assets in a cost-effective manner. Using the data captured in the pavement management process, we plan and program long term and short-term pavement repair projects accounting for multiple decision making factors.

Aviation Asset Management Experience Map



AECOM Asset Management Project Experience

Aviation Market Sector

AIRPORT	Asset Management	Building Information Modeling (BIM)	Mobile Applications	Cityworks EAMS	GIS Assessments and Studies	GIS Data Development	GIS Applications	Training and Support	Operations Management	Property Management	Safety Management	System Architecture
A.B Won Pat International Airport					✓		✓				✓	
Austin-Bergtrom International Airport			✓		✓	✓	✓					
Baltimore/Washington International Airport					✓	✓	✓					✓
Boston Logan International Airport		✓		✓								
Burke Lakefront Airport	✓		✓	✓	✓	✓		✓				
Charlotte-Douglas International Airport	✓		✓	✓		✓	✓	✓	✓			✓
Cleveland Hopkins International Airport	✓	✓	✓	✓	✓	✓		✓	✓	✓		
Daniel K. Inouye International Airport					✓	✓		✓				
Denver International Airport	✓	✓	✓		✓	✓	✓	✓		✓		✓
Federal Aviation Authority					✓		✓					
General Mitchell International Airport	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
Hartsfield-Jackson Atlanta International Airport			✓				✓	✓				
Hong Kong International Airport		✓	✓									
King County International Airport	✓		✓	✓			✓	✓	✓			✓
Los Angeles World Airports		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Magic Valley Regional Airport	✓			✓			✓	✓	✓			
Melbourne Airport		✓			✓	✓	✓					✓
Memphis-Shelby County Airport Authority	✓		✓	✓	✓	✓		✓	✓			✓
Metropolitan Airports Commission			✓		✓	✓	✓	✓				✓
Minneapolis-Saint Paul International Airport			✓		✓	✓	✓	✓		✓	✓	✓
Normal Y. Mineta San Jose International Airport						✓	✓	✓				✓
Orlando International Airport	✓				✓	✓	✓	✓		✓		✓
Philadelphia International Airport		✓			✓	✓	✓	✓				✓
San Diego International Airport		✓	✓				✓					
San Francisco International Airport		✓	✓									
Seattle-Tacoma International Airport		✓										
Southwest Florida International Airport					✓	✓	✓	✓		✓		
Tallahassee International Airport	✓	✓					✓	✓			✓	
Vancouver International Airport						✓	✓	✓				✓
Washington Dulles International Airport						✓	✓	✓				
Wichita Dwight D. Eisenhower National Airport									✓			✓

Charlotte-Douglas International Airport (CLT) Cityworks® Implementation

Charlotte, NC



At CharlotteDouglas International Airport, AECOM has implemented the Cityworks® AMS solution, in conjunction with the Cityworks® Storeroom inventory management solution that closely integrates with the Cityworks® Server software to provide full asset and inventory management.

The solution is used extensively by over 200 CLT employees. The application is used by Building Maintenance, Field Maintenance, and Fleet to facilitate work order tracking and maintenance workflows, the scheduling of preventative maintenance work orders, asset management, and a variety of inspections. Additionally, the Airport Operations group uses Cityworks® in the field to conduct Part 139 inspections and track discrepancies and their resolutions.

The CLT Logistics team uses Cityworks® Storeroom to facilitate their inventory management and the assignment of materials to individual work orders, and the IT department uses Cityworks® to track the variety of service requests

they receive from their clients across the airport, and their associated work orders. The solution provides an extensive set of on-demand and subscription reports.

Key features:

- Over 30,000 work orders have been tracked since implementation in April of 2015.
- Cityworks® Storeroom is used by the CLT Logistics group to manage inventory and materials.
- Cityworks® AMS solution for maintenance, operations, IT, and fleet work orders, inspections, and logs.

Cleveland Airport Systems, Asset Management GIS & BIM

Cleveland, OH



AECOM has been working with the Department of Port Control (DPC) to implement an enterprise asset management solution at both Cleveland Hopkins International Airport (CLE) and Burke Lakefront Airport (BKL). This project began with the development of a Needs Assessment that documented the need for an asset management system, as well as use cases for many of the DPC departments. A multi-year roadmap was developed to guide strategic project activities for the asset management implementation.

During the first year, AECOM advanced DPC along the Asset Management Maturity Model from the state of Innocence to Awareness. The project team implemented our aviation

focused Cityworks® asset management solution to track work orders and service requests. We have developed GIS data for tens of thousands of assets and worked with CLE to define an asset hierarchy. Priority assets were tagged with QR codes so that they could be scanned using an iPad during a field inspection, simplifying the asset inspection and work order processes. Airfield Operations now uses Cityworks® to perform Part 139 inspections in the field, to record and track airfield discrepancies, and to generate FAA Part 139 reporting. Operations also uses the Operational Logbook portion of AECOM solution to track events and wildlife concerns across the airfield.

The CLE inventory management team uses Cityworks® Storeroom to manage inventory and costs associated with their work orders. We conducted a mobile LiDAR scan of a facility that will be reconfigured to demonstrate scan to BIM capabilities and introduce the enterprise information management (EIM) process. We will be working with DPC to implement EIM standards and specifications that will allow design/build and as-built deliverables to be readily consumed into a production model, then pushed to GIS so that the asset registry remains current and complete. This effort included the development of spatial data schemas that work across platforms (BIM, GIS) so that bilateral data updates can occur, while adhering to a single source of truth data management philosophy.

King County International Airport

Seattle, WA



AECOM implemented and configured Cityworks at KCIA incorporating maintenance management, inventory management, and operational management.

The solution is used by KCIA office staff as well as field staff to track work orders and service requests related to maintenance work. KCIA also makes use of two Operational Logbooks, one specific to the needs of Airside Operations, and the other aimed at the needs of the Landside coordinators. Additionally, KCIA Airside Operations uses Cityworks for Part 139 inspections, reporting, and compliance.

Key Features

- Cityworks AMS used for work order management across all maintenance groups at the airport.
- Provides Part 139 reporting capability and an Operations Logbook for the Airport Operations group.
- Mobile devices implemented during late 2018.
- Cityworks Storeroom implemented for inventory management, purchasing, and reporting.

Relevant Applications & Tasks	
✓	Asset Management
✓	Inventory Management
✓	Mobile Applications
✓	Operations Management
✓	Systems Integration
✓	Software Implementation

Digital Transformation Memphis-Shelby County Airport Authority

Memphis, TN



Memphis-Shelby County Airport Authority (MEM) contracted AECOM to provide professional services for the digitization of workflow processes to introduce efficiencies into airport operations and processes. These service include the implantation of an enterprise geographic information system (GIS) and deployment of a map-based asset management (AM) system and computerized maintenance management system (CMMS) for Memphis International Airport.

MEM is at the onset of an exciting new chapter refining how operations and business will be conducted at the airport for the foreseeable future. Daily activities for many MEM staff will be positively affected by process improvements and managing this cultural shift requires a strong partnership with AECOM. Scopes of work executed under this project include the review and recommendation for an Airport Operational Database (AODB), PROPworks for contracting and billing, Cityworks for enterprise asset management, as well as defining requirements for a cloud-hosted enterprise GIS environment.

In addition AECOM has conducted vendor outreach to determine the viability of Parking Access Revenue Control System (PARs) offerings in order to make a recommendation that addresses the needs of the airport AECOM worked

with stakeholders to facilitate requirement gathering workshop to define use cases and user requirements to be embedded into the process improvements related to asset management and GIS data collection, refinement and development processes. Once implemented, this multitiered platform will provide MEM with an effective CMMS and AM solution that will enable dependable, efficient, cost-effective planning and management of airport assets.

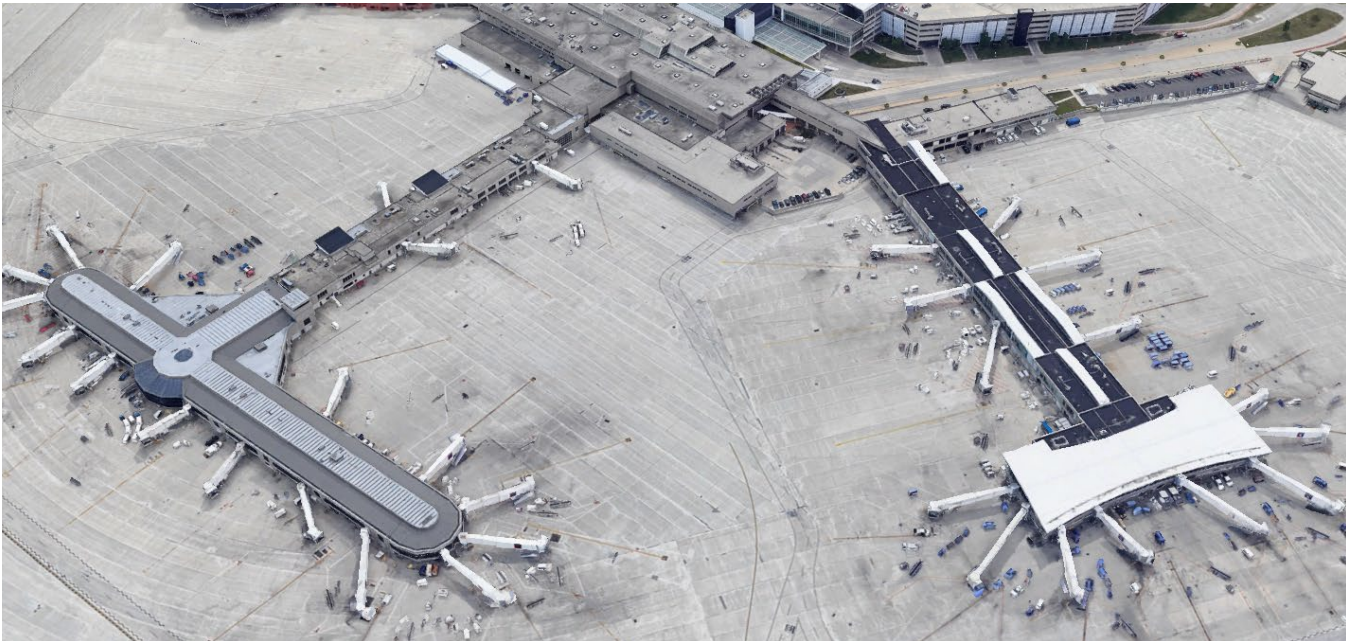
AECOM kicked this project off in May of 2019 and after gathering requirements during task Order 1, was sidelined due to the global pandemic. Travel restrictions forced the project team to be nimble with the project approach and conduct much of the preliminary delivery and client engagement remotely. The content collected during initial meetings was used to develop a phased project roadmap spanning several years.

Milestones:

- Stakeholder Meetings
- Software Validation and Recommendation
- Enterprise GIS
- CMMS
- PARCs
- AODB
- Contract Management
- Configuration and Workflows
- Develop of GIS Data Registry
- GIS Data Gap Analysis
- GIS Data Development
- Define eGIS Architecture
- Mobile Data Collection
- Training & Change Management
- The AECOM team has met or exceeded the disadvantage business goal (DBE) of 15% on each of our completed task

Milwaukee County General Mitchell International Airport GIS, Asset Management, SMS, and Cityworks®

Milwaukee, WI



AECOM deployed and customized Cityworks at MKE to address all maintenance activities, replace the paper airport operations log, track SMS information, and manage the Airport's assets.

MKE staff now leverage their existing GIS data within Cityworks to create work orders against assets or locations spatially represented on an airfield or terminal map. AECOM converted the existing paper airport operations log into a Cityworks based logbook, and migrated Part 139 and other key airport inspections from their previous paper-based system into Cityworks.

The Cityworks database contains virtually all airfield assets and many terminal assets, and visually displays work orders associated with each asset on a map. This capability provides both the airfield inspection staff and airport management with a real-time "state of the airport" view.

Operations Coordinators use mobile technology to enter Part 139 and other discrepancies found during their FAA-mandated inspections in real time to the Cityworks database for immediate logging and tracking of the discrepancy. All field inspectors and maintenance workers use these electronic mobile tools to request, respond to,

and complete work assignments. Recently, AECOM has extended the Cityworks application at MKE to manage all data required under the FAA's SMS initiative.

Key Features

- All work orders, log book entries, and inspections are managed 100% electronically and on mobile devices.
- More cost effective and simpler than many traditional, large asset management platforms.

Awards

Esri Special Achievement in GIS (SAG) Award, 2014

Relevant Applications & Tasks	
✓	Asset Management
✓	Enterprise GIS
✓	Systems Integration
✓	Software Implementation
✓	Safety Management Systems
✓	Operations Management

Denver International Airport: On-call Asset Condition Assessments

Denver, CO



The Denver International Airport (DEN) contracted with AECOM to perform ongoing facility condition assessment services for the largest land area airport in the U.S. covering over 54 square miles and 5.7 million SF.

AECOM's work includes on-call condition assessments of airport facilities, infrastructure, and equipment systems. This includes condition evaluation, deficiency identification, recommended actions, costs to correct and inventorying of systems investigated across the diversity of airport facility and system types.

Unique airport facilities and systems assessed:

- All Terminal and Concourse public restrooms
- Electrical vaults
- Flight Kitchen and Food Service
- Glycol Collection System facilities & transmission
- Central Utility Plant Dry-type transformers and Concourse switchgear
- Tenant spaces and Cargo buildings
- United Worldport
- Terminal, Administrative Office Building and Concourse roofs

The AECOM team navigated the logistics of conducting field work within the operational environment of the fifth busiest airport in the United States coordinating security aspects, Federal agency oversight, scheduled access and shutdown requirements, system performance testing for glycol and electrical distribution systems, barcoding and stakeholder engagement and reporting. All work was completed without any impact to the customers and employees of DEN, a primary objective of the airport supporting its drive for excellent customer experience.

The Denver-based AECOM Team maintains a 20% M/ WBE commitment. These select team partners provide specialized expertise and are a part of the local Denver business community.

Analyzing the data, AECOM performs maintenance planning and strategic facilities planning by facility type for use by DEN. The AECOM Team delivers strategic investment planning recommendations to support DEN's proactive capital planning efforts.

Following an initial contract period of three years, AECOM was selected to continue work for an additional five years.

Key Features

AECOM has customized our data collection to align with DEN's existing Revit, Maximo and TRIRIGA system requirements. This integration introduces diversity of building-related management items into the decision-supporting programs. It provides immediate access to building inventory, current building conditions, probabilistic condition predictive models, and functionality-based mission, compliance, and obsolescence issues.





Philadelphia International Airport, Philadelphia, PA

Enabling Activities

While the FAA is primarily focused on the airfield, airports must also consider landside asset management Use Cases. It is to be expected that Use Cases will evolve over time, and additional Use Cases will emerge as the adoption of map-based asset management is embraced.

Several key enabling activities are required to implement an enterprise asset management system that takes advantage of accessible and accurate spatial data. AECOM will work with you to define which enabling activities are required for your preferred solution. The successful completion of enabling activity becomes the foundation for effective map-based asset management.

Spatial Data Registry & Gap Analysis

Access to current, complete, and accurate spatial data (GIS, BIM and CAD) is the cornerstone of map-based asset management. AECOM works with our partners to collect and inventory all existing spatial data representing asset location and the resulting Geospatial Data Registry will be contrasted with previously defined Use Cases to determine if there are any data gaps that must be filled. Our analysis will examine commonalities across gaps between the current state of geospatial information and envisioned user requirements.

Systems Architecture

We work with our clients to define the appropriate on premises or cloud-hosted architecture and required resources to support asset management. Our proposed solutions are designed to address the immediate needs of the organization and can be easily modified to support growing airport needs. Many of our clients have elected to pursue a cloud-based solution due to the high level of uptime reliability, embedded security, automated backups and recovery, and configuration options. We have designed and implemented enterprise GIS solutions that run on Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform (GCP). These platforms are elastic and can be easily expanded when needs arise.

Roadmap

The Use Cases, Geospatial Gap Analysis and System Architecture findings will be used to develop a Roadmap of prioritized activities to realize your asset management goals. Our multi-phased roadmaps focus on actionable tasks, realistic timelines and provide an achievable plan to systematically address and close identified gaps. High priority activities that simultaneously address many user requirements and/or provide the most value to the organization will be prioritized on the roadmap.

Data Development

Access to current, complete and accurate spatial data is the cornerstone of map-based asset management. Today, GIS and BIM are the two predominant spatial data authoring platforms that are leveraged industry-wide to display and share spatial information. AECOM is well versed in developing meaningful spatial data using a variety of methodologies including – GPS and field survey collection, Light Detection and Ranging (LiDAR) collection and model development, data translation, photogrammetry, etc. As spatial data representing known assets is developed, it will be made available through various enterprise platforms. Keep in mind that immediate access to accurate and complete spatial data will benefit more initiatives than asset management. Design and Construction, Planning, Airside and Landside Operations, Environmental, Security, and Maintenance applications can be enhanced through the share of spatial data.

Data Standards and Maintenance

Although both GIS and BIM datasets represent airport assets, traditionally data for each enterprise platform is developed independent of the other. In order for production spatial data to remain trusted and useful for asset management, it must remain current and consistent across platforms. We work with our partners to understand how asset data is authored in each platform and build process and policy to ensure a bidirectional flow of information between GIS and BIM. This integrated flow of information is possible only through well thought out data standards and data maintenance processes.

Spatial data standards are the mechanism to ensure incoming data deliverables are developed in support asset management initiatives. Many airports share a common geospatial data framework and pertinent airport elements are well defined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5300-18B. We have found that

supplementary data elements and attribution needed for successful airport asset management are not included in this model.

Therefore, we will work with our partners to understand their unique organizational needs and will develop supplemental data models to capture additional features and relevant attribution.

Computer Maintenance Management Systems (CMMS)

Tracking asset workorders on a map is key component of an asset management system and there are many computer maintenance management systems (CMMS) solutions available today that assist with automating airport maintenance operations. AECOM is software agnostic but has collaborated with Cityworks (a Trimble company), the leading GIS-centric CMMS, to develop an aviation-specific asset management solution. Our Aviation asset management solution for Cityworks includes aviation-oriented Service Request, Logbook, Work Order and Inspection templates, as well as Part 139 compliance. We have implemented Cityworks for aviation at BFI, BKL, CLE, CLT, KCIA, MEM, MKE, TLH and TWF. Cityworks is in use at more than 800 municipalities and airports worldwide and AECOM is a Gold Level Cityworks Implementation partner.

The Cityworks Aviation asset management solution also incorporates:

- Map-centric Integrated GIS functionality and the ability to share maps inside and out of your organization
- Powerful intuitive mobile and tablet-oriented tools
- Proactive maintenance and inspection scheduling
- Labor, Materials, and Equipment costs against work activities
- Full inventory management using Cityworks Storeroom
- Powerful management reporting & dashboards
- Operational Insights to Identify and Evaluate Risk
- OpX for managing large-scale infrastructure projects
- Bi-lateral data exchange with PAVER for Pavement Management
- A full suite of APIs to integrate with other airport enterprise management systems

Digital Offerings

In addition to our map-based asset management and CMMS capabilities described above, the Aviation Technology group offers digital services that directly relate to asset management services.

Interior LiDAR Scanning

We work with airport partners to coordinate and schedule the collection of LiDAR point cloud data and spherical imagery of interior spaces. The collected data is tied to control and post-processed to remove overlapping or redundant data to minimize the raw data file size. Using pre-establish Revit standards, BIM models representing the current conditions for each facility are generated

from the point cloud data. Our airport partners have used the resulting data to help with space management, lease management, vendor and concession outreach, maintenance and asset management, planning activities, emergency response and safety training.

Digital Twin

Capitalizing on the investment made through the development of accurate and current spatial data, we will work with you to develop a Digital Twin of your airport. A Digital Twin is a realistic digital representation of physical assets including building spaces, linear infrastructure, processes and systems. Owners and project stakeholders will be able to view spatial content, asset data and dynamic information to improve project understanding in real time, reduce risk and increase the resilience and sustainability of the asset portfolio. Digital Twins surface real-time data in a model to improve insights that support informed decisions that can then be applied to the real world.

Unmanned Aircraft Systems

AECOM’s UAS Team will ensure that all flight operations comply with FAA regulations and data collection surpasses quality standards for each project. We will work with the FAA and Air Ops to coordinate project activities and our UAS services include:

Aerial Mapping and Photogrammetry

Create 2D orthomosaic maps and 3D models of sites, contours and digital terrain models development, distance, area and volume calculations.

LiDAR Collection

Generate dense point clouds (200-400 points per square meter), penetrating vegetation to capture ground surface detail.

Infrastructure Inspection

Inspect critical infrastructure such as bridges, facades, high mast lighting standards, pipelines, and transmission towers.

Thermal Inspection

Temperature variation detection to identify deficiencies such as water leakage, ground water seeps, delamination in concrete, or short circuits in solar panels and other electrical equipment.

Photography and Videography

Document site conditions and progress with high resolution aerial imagery and videography.

Data Analysis and Integration

Integration of UAS data with software applications to support asset condition assessment, quantifying deterioration and identifying change.



Orlando International Airport, Orlando, FL

Benefits of Asset Management



Improved financial performance



Informed asset investment decisions



Managed risk



Improved services and outputs



Demonstrated social responsibility



Demonstrated compliance



Enhanced reputation



Improved organizational sustainability



Improved efficiency and effectiveness

Why AECOM

- We simplified and pulled the best from all asset management frameworks and developed 4-Pillar approach.
- We are a full service firm, with experience across all asset types and processes and cover all four pillars: Organization, Data, Business Process, and Technology.
- AECOM staff contributed to federal and international field guides in asset management.
- We know the clients' assets because we already work with them whether it is for condition assessment or capital planning.
- AECOM applies a collaborative process to engage our clients and we believe in empowering you!
- We are an industry leader in Aviation Asset Management and electronic Part 139 compliance at airports.

Services Offered:

- | | |
|--|--------------------------------------|
| - Asset data collection and assessment | - Training |
| - Data integration | - Decisions support tools |
| - Deterioration modeling | - Financial planning |
| - Risk | - System selection |
| - Gap analysis | - Performance measures |
| - Change management | - Preventative maintenance and more! |

AECOM Differentiators



LIFECYCLE

Full service, cradle-to-grave lifecycle of a project



DESIGN

Asset management dictates our designs



INTEGRATION

Whole project integration

About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from 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 expertise and innovation, 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 \$13.3 billion in fiscal year 2021. See how we are delivering sustainable legacies for generations to come at aecom.com and [@AECOM](https://twitter.com/AECOM).

Contact

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