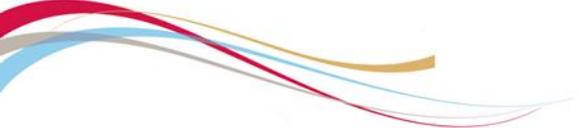




Airports Going Green Conference

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Agenda

- Asset Management
- Sustainability
- Airport Rankings
- Green Airports Self-Certification
- Airport EcoDistrict ATL
- Challenges & Recommendations

ATL Asset Management and Sustainability Division

Mission:

To lead the Department of Aviation to become one of the greenest airports in the U.S. and proactively manage our aging infrastructure based on life cycle analysis, total cost of ownership, and sustainable development.

Asset Management

Asset Management Vision

Vision:

Manage Hartsfield-Jackson Atlanta International Airport (ATL) at an agreed level of service in a sustainable manner, while increasing efficiency and optimizing life cycle cost of the core facilities and their systems.

Mission:

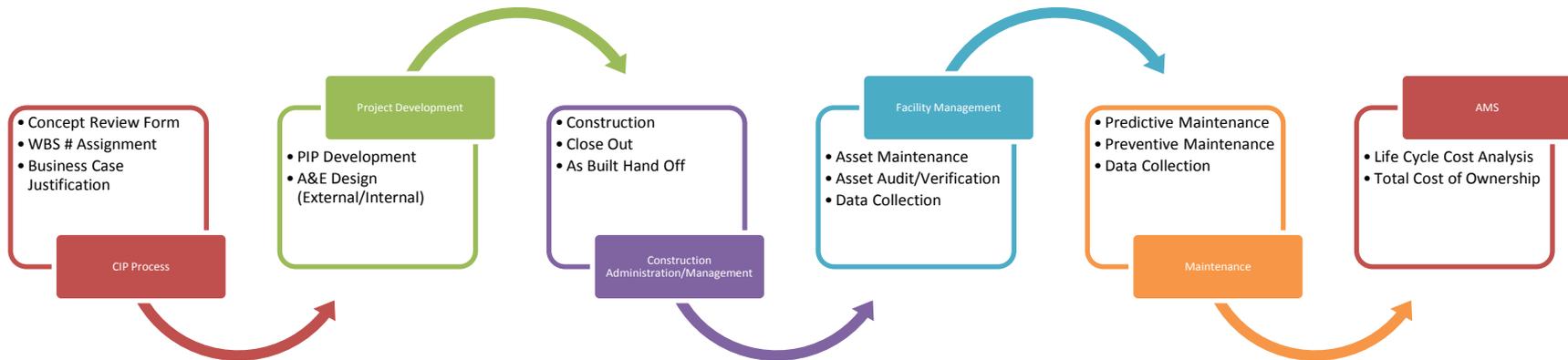
The mission is to develop an enterprise approach in managing ATL's assets by utilizing existing operating systems to provide Total Cost of Ownership (TCO) which allow for capital investment planning in a logical, sustainable and strategic manner.

Asset Management Approach

The vision, mission and goals would be achieved by developing and implementing an enterprise asset management system that integrates the ATL existing platforms including: VFA , MAXIMO, COA Utility Management System (UMS), EPMS (Oracle project database), PropWorks, Infor and GIS and to identify assets and guide reinvestment decisions.

Asset Management Approach

Enterprise Solution

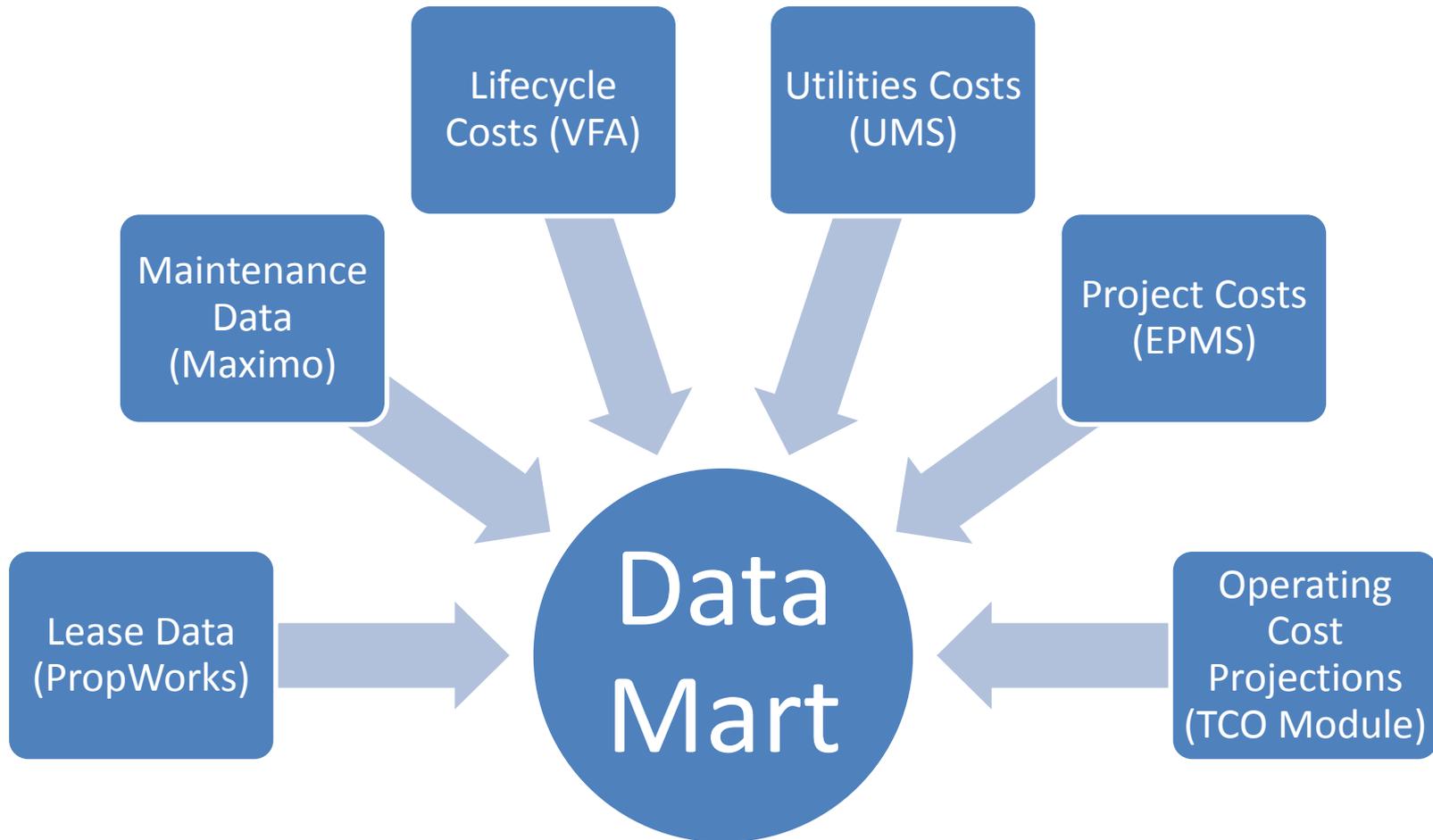


The asset management enterprise solution is integrated into a Geographic Information Systems (GIS) platform as shown above.

GIS Ties It All Together For The Common User

- The 'gateway' to most AMS data for the common Department of Aviation user is via the GIS-based Asset Management Viewer web map
- The Asset Management Viewer provides an easy to use and easy to navigate map interface that provides the user access to key AM&S and TCO data
- The mapping (GIS) data is developed and maintained by the Department of Aviation GIS Group, with links back to the GIS database and the TCO module
- Since GIS data is maintained in Oracle it makes cross-database ties much easier

Data Mart





Sustainability

Why Sustainability Rankings

- Improve visibility of airport mission and operations
- Encourage good stewardship among internal (airlines/tenants) and external stakeholders (passengers)
- Improves opportunity to secure funding for more costly, leading edge technologies

Airport Sustainability Performance Indicators

Common Performance Indicators

(all ranking organizations include)

- Energy Use and Conservation Measures
- Water Quality Protection and Conservation
- Greenhouse Gas Emission Reduction Initiatives
- Waste Reduction, Reuse and Recycling
- Transportation and Mobility (Planning and Design)
- Workplace Learning and Career Paths
- Diversity and Equal Opportunity
- Sustainability Education and Stakeholder Engagement

Airport Ranking Organizations

- Envision
- Global Reporting Initiative (GRI)
- International Council for Local Environmental Initiatives Star Community Index
- Sustainable Aviation Guidance Alliance (SAGA)

Sustainable Management Plan

Matrix Criteria

Economic [Weighted Score: 1]		Environmental [Weighted Score: 1]		Social [Weighted Score: 1]	
Cost to implement	0 High cost to implement (> \$250k)	Amount of materials used	0 Increase or no change in the amount of materials used	Noise levels	0 No impact on noise levels
	10 Medium cost to implement (\$50k-\$250k)		10 Minor decrease in the amount of materials used		10 Minor positive impact on noise levels
	20 Low cost to implement (< \$50k)		20 Major decrease in the amount of materials used		20 Major positive impact on noise levels
Cost to operate and maintain	0 High cost to operate and maintain	Energy consumption	0 Increase or no impact on energy consumption	Employee education	0 No impact on employee education
	10 Medium cost to operate and maintain		10 Minor decrease on energy consumption		10 Minor opportunity for employee education
	20 Low cost to operate and maintain		20 Major decrease on energy consumption		20 Major opportunity for employee education
Cost savings	0 No to low cost savings (0-5%)	Use of renewable energy	0 No impact on the use of renewable energy	Health and safety program	0 No change in health and safety program
	10 Medium cost savings (5-25%)		10 Minor increase on the use of renewable energy		10 Minor positive impact on health and safety program
	20 High cost savings (> 25%)		20 Major increase on the use of renewable energy		20 Major positive impact on health and safety program
Ease of implementation	0 Difficult to implement	Water quality	0 Negative or no impact on impact on water quality	Community involvement/education	0 No change in community involvement and education
	10 Moderately difficult to implement		10 Minor positive impact on water quality		10 Minor opportunity for community involvement/education
	20 Easy to implement		20 Major positive impact on water quality		20 Major opportunity for community involvement/education
External funding Opportunities	0 No external funding opportunities	Water consumption	0 Increase or no impact on water consumption	Impact on local communities	0 No change or negative impact on local communities
	10 Some external funding opportunities		10 Minor decrease in water consumption		10 Minor positive impact on local communities
	20 Many external funding opportunities		20 Major decrease in water consumption		20 Major positive impact on local communities
Revenue Generation Opportunities	0 No revenue generation opportunities	Water recycled/reused	0 No impact on the amount of water recycled/reused	Impact on local suppliers	0 Negative or no impact on local suppliers
	10 Some revenue generation opportunities		10 Minor increase in the amount of water recycled/reused		10 Minor positive impact on local suppliers
	20 Many revenue generation opportunities		20 Major increase in the amount of water recycled/reused		20 Major positive impact on local suppliers
Incorporates life-cycle analysis	0 No incorporation of life-cycle analysis	Impact on biodiversity	0 Negative or no impact on biodiversity	Impact on local hiring	0 Negative or no impact on local hiring
	10 Minor incorporation of life-cycle analysis		10 Minor positive impact on biodiversity		10 Minor increase in local hiring
	20 Major incorporation of life-cycle analysis		20 Major positive impact on biodiversity		20 Major increase in local hiring
Enhances capacity	0 No capacity enhancement	Greenhouse gas emissions	0 Increase or no impact on greenhouse gas emissions	Enhances customer experience	0 Negative or no impact on customer experience
	10 Minor capacity enhancement		10 Minor decrease in greenhouse gas emissions		10 Minor improvement in customer service
	20 Major capacity enhancement		20 Major decrease in greenhouse gas emissions		20 Major improvement in customer service
Cost/Benefit	0 Low benefits vs costs	Waste sent to landfills	0 No impact on the amount of waste sent to landfills		
	10 Medium benefits vs costs		10 Minor decrease on the amount of waste sent to landfills		
	20 High benefits vs costs		20 Major decrease on amount of waste sent to landfills		
Improves Efficiency	0 No improvement to efficiency	Waste recycled	0 Decrease or no impact on the amount of waste recycled		
	10 Minor improvement to efficiency		10 Minor increase in the amount of waste recycled		
	20 Major improvement to efficiency		20 Major increase in the amount of waste recycled		
		Hazardous waste	0 Increase or no change on the amount of hazardous waste	Consistent with SMP	-10 Not consistent with SMP
			10 Minor decrease in the amount of hazardous waste		10 Consistent with SMP
			20 Major decrease in the amount of hazardous waste		
		Noise abatement	0 Negative or no impact on noise abatement	Consistent with ATL's Master Plan	-10 Not consistent with ATL's Master Plan
			10 Minor positive impact on noise abatement		10 Consistent with ATL's Master Plan
			20 Major positive impact on noise abatement		
		Landscape management	0 Negative or no impact on landscape management		
			10 Minor positive impact on landscape management		
			20 Major positive impact on landscape management		
				Other [Weighted Score: 1]	

Green Airport Self Certification

Green Airports Self Certification

Some airports have taken steps to play their part in reducing their footprint and impacts to sustainability:

- Chicago O'Hare has developed a Sustainability Airport Manual (SAM) which yields a green airplane rating system
- Hartsfield-Jackson Atlanta International Airport has a Leadership in Energy and Environmental Design (LEED) certified gold international terminal
- San Diego International Airport was first to launch its comprehensive sustainability report that met the rigorous requirements of the Global Reporting Initiative (GRI). ATL has subsequently met a GRI of B+.
- The Sustainable Aviation Guidance Alliance (SAGA) has produced a guide for aviation to implement sustainable measures
- Many airports have completed or are in the process of completing either Sustainable Management Plans or Sustainable Master Plans

Green Airports Self Certification



So what does LEED, SAM, GRI, SAGA and now, as of late 2012, Envision all mean and how do they compare?

Are some “greener” than others? With so many avenues for championing sustainability measures, it’s easy to see how some could get overwhelmed.

In an attempt to simplify the green standards let’s examine how these entities compare and see if there is a simpler comprehensive solution for green reporting.



Green Airports Self Certification

	Unites States Green Building Council (LEED)	Green Reporting Initiative (GRI)	Sustainable airport guidance alliance (SAGA)	Sustainable Airport Manual (SAM)	Envision-Sustainable Infrastructure rating system
When was it established	1993	2000	2008	2009	2010
Type of system (points, rating, performance etc.)	points	reporting based on performance	not a rating system. This is more of a sustainable guidance tool for the aviation industry	points	Scoring system based on percentage in each category
Area of popularity	U.S	Global	North America	U.S	U.S
Airport specific	no	Has a category dedicatd for airports under the trasportation system	yes	yes	Has a category dedicatd for airports under the trasportation system
# of certifications issued	44,998 in the US	has a data base of sustainable practices	900 case studies	50+ projects	2
Categories of measurement	Sustainable Sites, Water efficiency, Energy, Materials and resources, indoor environmental quality, regional priority, Innovation in design	Sustainable Sites, Water efficiency, Energy, Materials and resources, indoor environmental quality, regional priority, Innovation in design	LEED and GRI	Sustainable sites, water efficiency, Energy and atmosphere, materials and resources, Indoor environmental quality, education and training	Quality of Life, Leadership, resource allocation, natural world, climate and risk

Green Airports Self Certification

Methods which measure sustainable efforts run the gamut. With all of these systems there is limited consideration for the size, jurisdiction, local and state laws or type of airport.

- For example, let's say a nonhub aerodrome airport that is city government owned and operated, surrounded by water on 3 sides and has 50,000 enplanements a year would have very different needs and environmental impacts than than of a large landlocked hub airport owned and operated by a port authority.
- Although the entities above strive for success and are headed in the right direction, where they fall short is comparing entities to each other and not to themselves. It's great that Airport A received LEED platinum rating and Airport B received 4 Green Airplane rating, but Airport C doesn't compare to the size or geographical location of airport A or B. Does this mean Airport C is not as green?

Green Airports Self-Certification

It's time to rethink what green accountability means for the aviation industry. It is safe to say that sustainability is about doing measurably better than the past and is always seeking to exceed today's goals. So let's start there.

What about a system that measures you against yourself and your past in the following categories. To qualify for the "green airport" self-certification the airport would have to meet 75 points.

- Construction Management 20 points
 - Materials and Resources 20 points
 - Energy Efficiency 20 points
 - Water Efficiency 20 points
 - Operations and Maintenance 20 points
- 100 points available

Green Airports Self-Certification

Construction management (20 points)

- Site development protection, including erosion control and low impact landscape management plan (10 points)
- Reduce heat island effect by 50% for new development – any new development should have 50% of the developed surface should meet a SRI of at least 29 (5 points)
- Construction master plan, including laydown area and employee transportation (5 points)

Green Airports Self-Certification

Materials and Resources (20 points)

- Waste management – 20% of waste stream from airport operations is recycled (10 points)
- Construction waste management plan - 80% of all development debris does not end up in landfill (5 points)
- Materials purchased (30% of new materials purchased should fall into at least one of the following categories below) (5 points)
 - Regional materials
 - Recycled content
 - Materials reuse
 - Low emitting materials

Green Airports Self-Certification

Energy management and efficiency (20 points)

- Reduce purchase of energy, per passenger, annually through a combination of efficiency and use of alternative energy by 5% (10 points)
- Develop an energy plan (5 points)
- Have a refrigerant management plan in place (5 points)

Water management and efficiency (20 points)

- Water use reduction, per passenger, annually by 5% (10 points)
- Water efficient landscaping reduction by 20% (10 points)

Green Airports Self-Certification

Energy management and efficiency (20 points)

- Reduce purchase of energy, per passenger, annually by through a combination of efficiency and use of alternative energy by 5% (10 points)
- Install a metering system for tenants and develop an energy plan (5 points)
- Have a refrigerant management plan in place (5 points)

Water management and efficiency (20 points)

- Water use reduction, per passenger, annually by 5% (10 points)
- Water efficient landscaping reduction by 20% (10 points)

Green Airports Self-Certification

Short- and Long-term Operations and Management (20 points)

- Green procurement program (10 points)
- Green cleaning program (5 points)
- Employee training on sustainability initiatives (5 points)



Green Airports Self-Certification

- A score of 75 points out of 100 will yield a green airport declaration. To hold accountability for the self-certified airport, the airport should publish a public annual report.
- This is a self-reporting solution that is simple, global with regards to size, jurisdiction and geographical location.

Green Airports Self-Certification

- This project is in its beginning stages of development. It attempts to create a green standard for airports that is inclusive and as well comprehensive of sustainable initiatives.
- The details from other ranking agencies and policies provide excellent design detail, assist with capital decisions and priorities and set standards for energy efficiency.
- By no means does this replace the other green agencies and certifications they have in place. It's just a system that cast a wider net to capture all airports. This system offers a no cost and non exclusion method of championing green efforts at airports.

Airport EcoDistrict ATL

Airport EcoDistrict ATL

- Airport EcoDistrict ATL is the first airport EcoDistrict in the world.
- The Airport EcoDistrict ATL is committed to achieving ambitious sustainability performance goals, implementing both infrastructure and behavior change projects and tracking the results over time.



Airport EcoDistrict ATL

- Defined by its stakeholders
- EcoDistricts are public-private partnerships
- Creating an Airport EcoDistrict helps to achieve the goals of ATL's Sustainable Management Plan
- Airport EcoDistrict ATL was officially established on September 10, 2013

Challenges and Recommendations

Challenges and Recommendations

Challenges

- How do airports measure their performance (e.g., energy use per square foot or per passenger)?
- Are currently measured performance indicators representative of airport priorities world-wide?

Recommendations

- Choose universal and realistic performance indicators
- Develop standard metrics for measuring performance
- Determine how to universally engage the software side of sustainability and report on that engagement

QUESTIONS ?????

cleaner
Working toward a greener future
brighter

