



Houston Airport System

Infrastructure Division

International Facility Management Association

Airport Facilities Council

A Retrospective. . . .And Look Inside At What We Do



March 4, 2020



Happy Birthday, Sweet 16!

- Inaugural Airport Facilities Council Meeting
 - Sponsored By DFW Airport
 - March 25-26, 2004



DFW

DFW Airport Hosts First Ever Facilities Management Conference of Industry Executives

New Standards to Build, Maintain New Terminals & Major Construction Projects Is The Goal

DFW INTERNATIONAL AIRPORT, Texas (Feb. 23, 2004) – Skyscrapers and schools have them. So do hospitals and shopping malls. But in the airport business, there are no consistent benchmarks for airline terminals, no performance data for multi-billion dollar facilities and infrastructure construction projects built for millions of travelers.

DFW International Airport is leading the industry to make that change.

The Airport, in partnership with the International Facility Management Association (IFMA), will host the first-ever Airport Facilities Council for airport and airline executives March 25-26 with the goal of establishing industry-wide standards to measure and benchmark airport facility performance, and ultimately the potential development of industry facility design, operations and maintenance protocols. Executives from major U.S., Canadian and European airports are expected to attend.

"What we are all trying to do is make our facilities and our maintenance of them more cost effective, while providing the best customer experience we can," said Jim Crites, executive vice president of operations at DFW Airport, whose management staff will host the meeting. "Airport facilities must be operated in a way to exceed customer service expectations: they must be cleaner, more comfortable, and have all the latest customer amenities. If we can begin to define airport facilities standards that architects, consultants, contractors and airport managers can use as a guide of "how to" in design, it will indeed enhance the passenger experience at airports around the globe."

DFW will convene the meeting in the heart of its \$2.7 billion Capital Development Program, which includes opening the new International Terminal D, new SkyLink automated people mover system, and enhancements to the Central Utility Plant all in 2005. The terminal itself adds 2.1 million square feet of space to the Airport's Central Terminal Area, while the SkyLink project includes a 110,000 square foot Maintenance Storage Facility to support the 12 SkyLink stations. Construction of the first airport Grand Hyatt Hotel is also under way and is incorporated into the Terminal D structure. The Grand Hyatt is a 12 story, 298-room facility that includes 17,100 square feet of ballroom space. Industry leaders will see first-hand how DFW is using innovative benchmarking and performance standards in these three projects. The Airport is working closely with the International Facilities Maintenance Association to facilitate this industry-first forum. An Airport's unique uses as well as tough safety and security standards make industry benchmarks and protocols even more critical almost three years after the September 11 terrorist attacks.

"For years, we've studied standards for what it takes to operate or construct a shopping mall or high-rise office tower, but an airport terminal, cannot be compared to any other facility," says Rusty Hodapp, DFW Airport's

AVIATIONPROS

Facilities Council Formed

By John F. Infanger
May 2004

DFW AIRPORT – In March, more than 100 industry representatives from airports, consulting firms, and others met at the DFW International Airport energy center for the first meeting of the Airport Facilities Council. The goal: Build facilities that reduce cost, improve efficiency, and take into account life cycle issues, not just up-front design cost.

The AFC is being directed under the International Facilities Management Association (www.ifma.org), based in Houston, which actively promotes "green" design of facilities and has a reputation for collecting and disseminating data for various industries.

According to DFW's Robert Barker, who was named the first AFC president, a central theme for the new group is to design facilities that take into account level of service standards and integrate operations staff recommendations.

Eric Dillinger, a consultant with Carter & Burgess, a sponsor for the AFC event, says new design considerations focus on the total lifecycle cost of a building. Typically, he says, the construction of a building accounts for 25 percent of total lifecycle cost. More consideration needs to be given to how design ultimately affects operations and maintenance. He calls it "maintaining the Total Cost of Ownership balance sheet."

Comments James Crites, DFW executive vice president, "Smart design with the environment in mind is the order of the day." Such smart design, he explains, will increasingly involve criteria promoted by EPA and the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEEDS) standards. In fact, he says, airports are beginning to require LEEDS certification from respondents to requests for proposals for new structures. "We're going to reach out to EPA," he says.



International Facility Management Association (IFMA) Airport Facilities Council (AFC)



- A Retrospective

- Why An AFC Was Established:

1. Recognition That No Aviation Facilities Management Industry-Specific Resources Existed
2. Make Our Facilities And Our Maintenance Of Them More Cost Effective
3. Provide The Best Customer Service We Can
4. Establish Industry-Wide Standards And Benchmarks
 - A. Measure And Benchmark Airport Facility Performance
5. Develop Industry Facility Design, Operations And Maintenance Protocols

➡ The AFC, As An Aspirational Goal, Was To Become **The** Industry Guiding Resource

- Open Question For Reflection:

- Has Our Reason For Existing, Or Goals, Changed?



Houston Airport System (HAS)

- Vision
 - Establish Houston Airport System As A 5-Star Global Air Service Gateway Where The Magic Of Flight Is Celebrated
- Mission
 - We Exist To Connect The People, Businesses, Cultures And Economies Of The World To Houston
- Strategic Priorities
 - Make Our Passengers Happy
 - Act Responsibly To Achieve Social, Environmental And Economic Sustainability
 - Build Platforms For Future Success
 - Invest In Our Partnerships And Our Employees

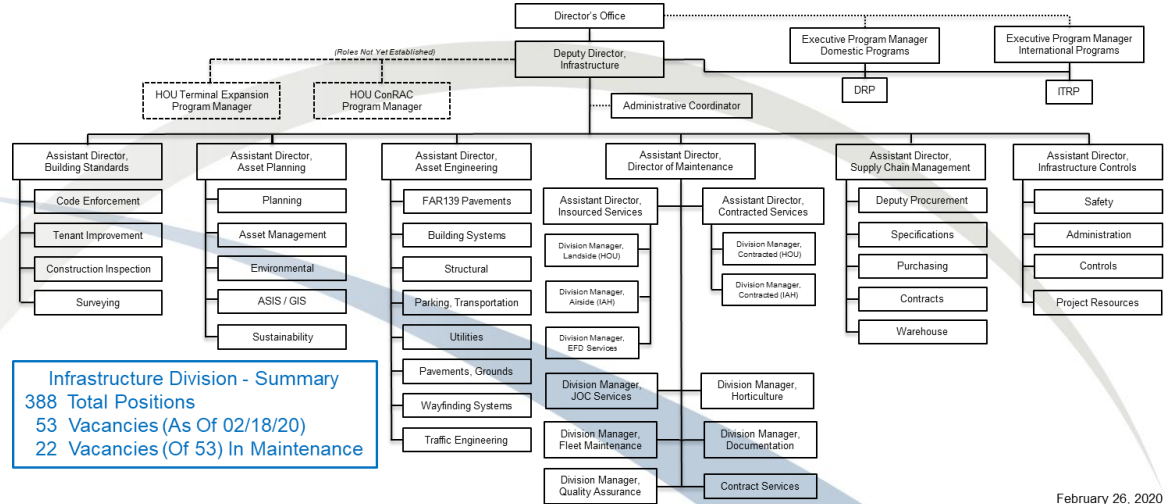
HAS Infrastructure Division



Who We Are And What We Do

Primary Responsibilities

- Sustainability
- Building Standards
- Asset Management
- Capital Development
- Capital Renewal
- Planning
- Environmental Management
- Facilities Maintenance
- Supply Chain Management



February 26, 2020

Infrastructure Division

Tactical Initiatives That Contribute To HAS Strategic Priorities



- Primary Initiatives Directly Tied To Strategic Priorities
 1. Achieve And Maintain Opening Day Fresh Asset Conditions
 2. Act Responsibly To Achieve Environmental Sustainability
- How We Approach “Opening Day Fresh” Conditions
 - Asset Condition Assessments
 - Capital Renewal Approach
 - Facilities Maintenance Key Performance Indicators

Opening Day Fresh Asset Conditions

Asset Condition Assessments



■ Assessment Approach

- Baseline Assessments Completed On All Assets
- Recurring Re-Assessments Conducted On 5-Year Cycle
- Standardized Assessment Approach, Format And Deliverables
 - All “Deficiencies” (Items That Affect Full Remaining Service Life) Are Documented As Open Work Orders Into Enterprise Asset Management System (EAMS)
 - Deficiencies Prioritized As “Immediate”, “Near Term” Or “Long Term”
 - Deficiencies Programmed As Operations & Maintenance-Level, Or Capital Renewal, As Appropriate
- Asset Condition Key Performance Indicators
 - Financial Condition Index:
 - $\text{The Cost To Restore An Asset To Full Service Life Condition Divided By The Asset's Replacement Value} = \text{FCI}$
 - Actual Condition Index:
 - An Objective Numerical Score Of The System's Condition Based On Its' Remaining Service Life, Operational Status And Design Intent Status

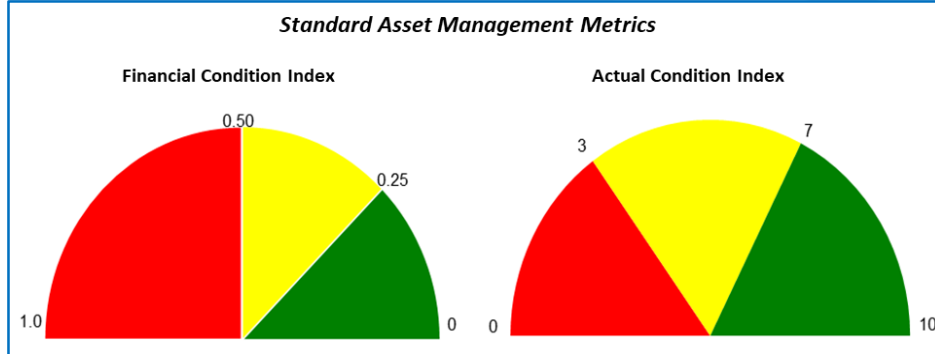
Opening Day Fresh Asset Conditions

Asset Condition Metrics



HAS Target Conditions

- FCI Less Than 0.25
- ACI Greater Than 7



Actual Condition Index	
Rating	Descriptive Criteria
10	Fully operational asset, fully meets mission requirements, like new asset, 20+years remaining service life.
7	Fully operational asset, fully meets mission requirements, 10+ years remaining service life except for specific components as may be identified
5	Fully operational asset, meets minimum mission requirements, 5+ years remaining service life except for specific components as may be identified.
3	Reduced operability and/or less than 3 years remaining service life for identified conditions, and/or near-term obsolescence of key system components or repair parts may impact maintainability.
0	Non-operational, and/or the asset does not meet mission requirements, and/or current design needs are not met by this asset's basis of design, and/or the asset cannot be adequately maintained due to obsolescence of key system components or repair parts.

Opening Day Fresh Asset Conditions Capital Renewal Approach



- Annual Infrastructure Renewal Metric
 - Fund Renewal At The Minimum Rate Annually Of 0.8-1.2% Of The Infrastructure (Fixed Assets) Book Value
 - Asset Condition Assessment-Identified Capital Renewal Deficiencies Provide The Prioritized “Work List”

Opening Day Fresh Asset Conditions

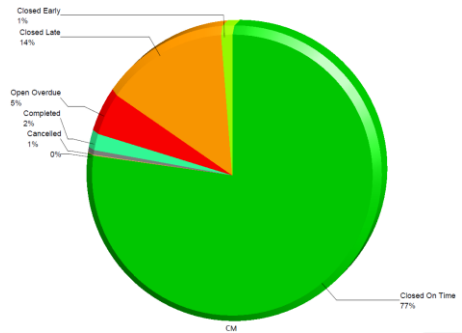
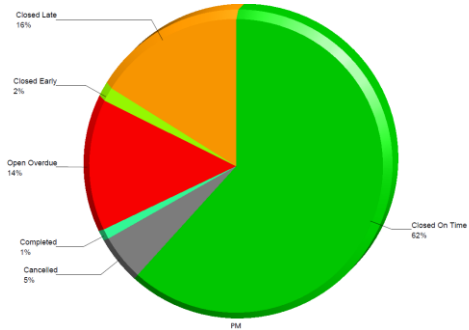
Facilities Maintenance Key Performance Indicators



- **Planned Maintenance v. Corrective Maintenance**
 - Our Goal: 80% Or More Maintenance Labor Hours Should Be Consumed Through Performance Of Planned Maintenance
- **Planned Maintenance On Time Completion**
 - Our Goal: 95% Or More Planned Maintenance Should Be Completed As Scheduled
- **Open Work Order On Time Completion**
 - Our Goal: 95% Or More Open Work Orders Should Be Completed As Scheduled
- **Labor Utilization**
 - Our Goal: 65% Or More Expended Labor Should Be “Effective”



Opening Day Fresh Asset Conditions Facilities Maintenance Key Performance Indicators



Work Orders By Airport

Work Order Total		Open Overdue	Completed	Closed On Time	Closed Late	Closed Early	Cancelled	Total	
IAH.George Bush Airport	CM	2	85	33	1347	246	22	9	1,744
	EMERGENC	0	2	0	2	0	0	1	5
	PM	0	262	20	1119	292	28	92	1,813
	SREQUEST	8	28	29	36	61	0	6	168
Summary		10	377	82	2,504	599	50	108	3,730

Booked/Estimated Hours by Work Order Type

	Actual Booked Hours	Estimated Hours
SREQUEST	1,063.48	1,316.5
CM	10,096.1066664	9,136.53
PM	9,129.2	4,389.96
EMERGENC	0.5	0.5
Total	20,289.29	14,843.49

Act Responsibly To Achieve Environmental Sustainability

What Environmental Sustainability Means To Us



- Remember “EONS”?
 - **E**nvironmental Stewardship – Emissions. Renewables. Water Quality. Solid Waste.
 - **O**perations – Resilience. Climate Action
 - **N**atural Resources – Energy Conservation. Renewables.
 - **S**ocial – Be Good Neighbors. Air Emissions. Noise. Storm Water



Act Responsibly To Achieve Environmental Sustainability


Specific Initiatives – What We Are Doing

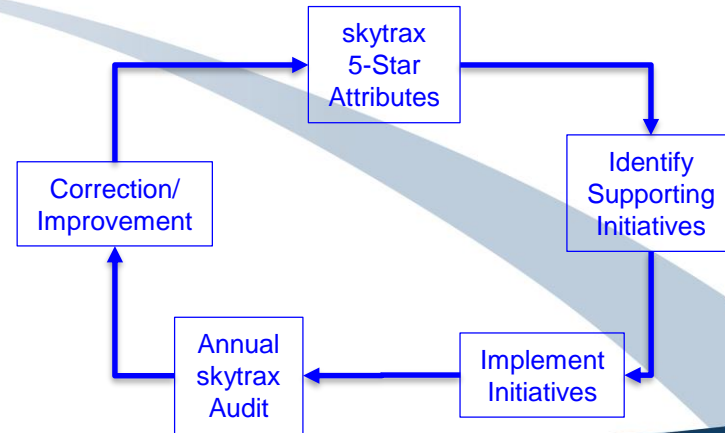
■ Specific Initiatives – What We Are Doing

- Climate Change, Airport Resiliency Project
- IAH Energy Initiatives Project
- State Energy Conservation Office, Texas A&M University Energy Projects
- Capital Development Net Zero Energy Initiative
- Fleet Vehicle Electric And Hybrid Vehicle Conversion Project
- IAH Water Reuse Initiative
- Solid Waste Diversion – Consolidated Receiving Project

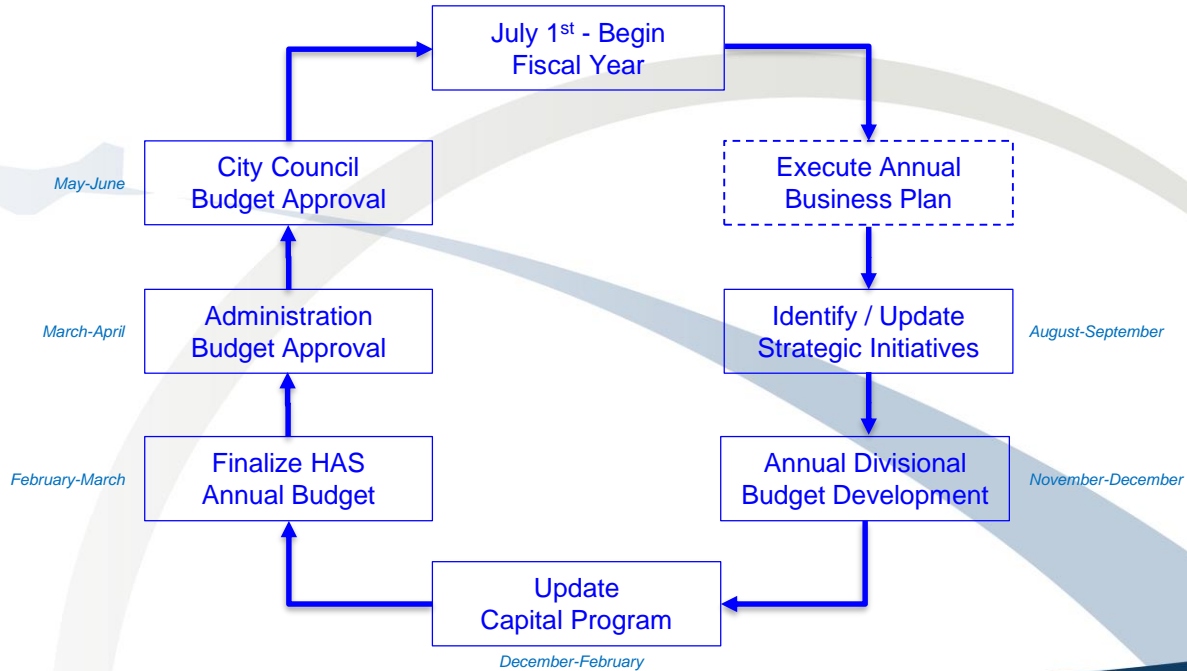
Tying It All Together Processes And Cycles



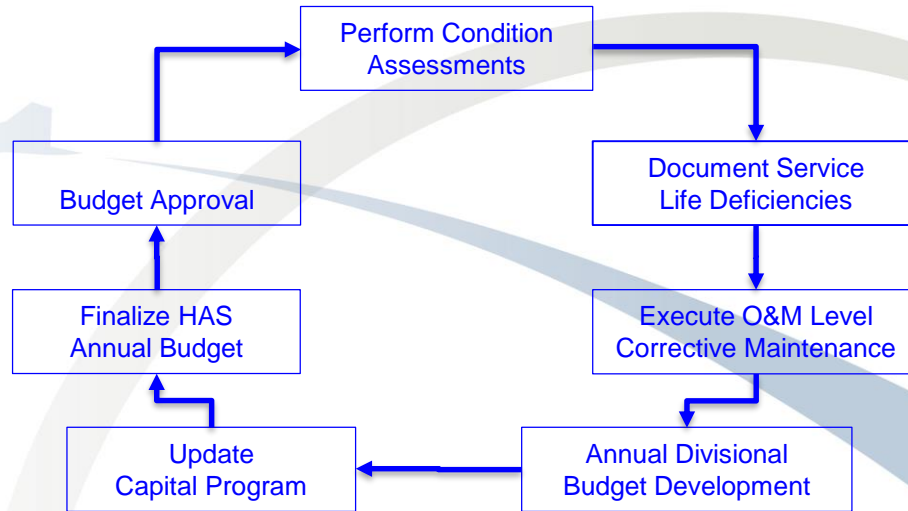
- How We Incorporate skytrax *And* Asset Management Into Our Business Processes
- Remember Our Vision – Establish Houston Airport System As A 5-Star Global Air Service Gateway Where The Magic Of Flight Is Celebrate
 - **skytrax**  Annual Cycle



Tying It All Together Processes And Cycles – Business Cycle



Tying It All Together Processes And Cycles – Asset Management





Question And Answer Opportunity

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Thank You

We Sincerely Appreciate The Opportunity To Host The
IFMA Airport Facilities Council 2020 Spring Conference.

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