

IFMA Airport Facilities Council – Spring Symposium

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Hartsfield-Jackson International Airport
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Understanding Gaps for Improved Asset Management: SEA-TAC's Gap Assessment

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Today's Agenda

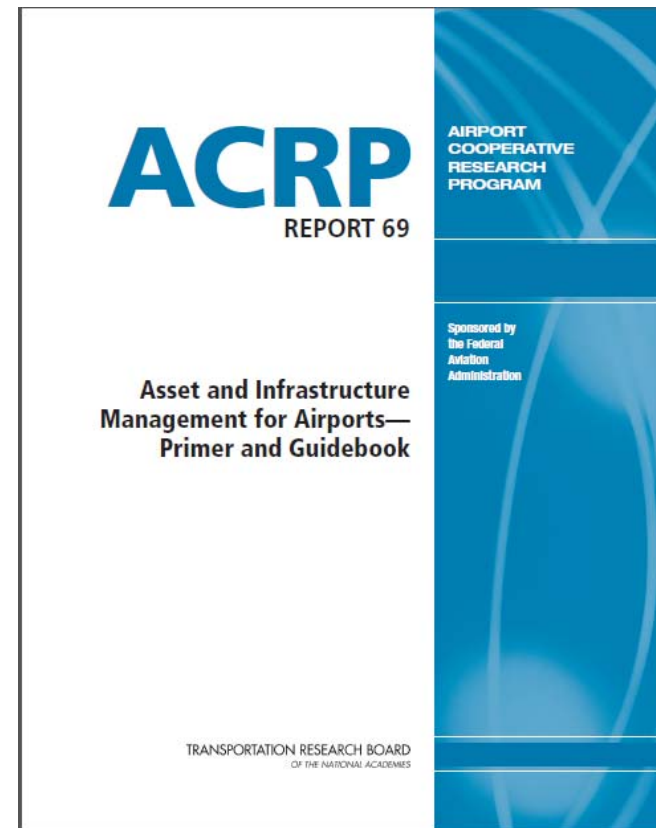
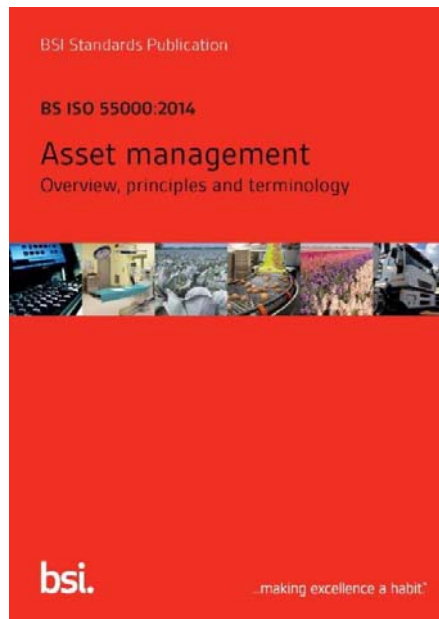
- Asset Management Overview
- Driver for SEA-TAC's Asset Management Assessment
- Gap Assessment Process and Findings
- Journey and Future of Asset Management at SEA-TAC
- Interactive Session
 - General Implementation Gaps
 - Challenges
 - Ways to Improve Success

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Asset Management Overview

- 1) ACRP Report 069 Asset and Infrastructure Management for Airports: Primer & Guidebook
- 2) ISO 55000

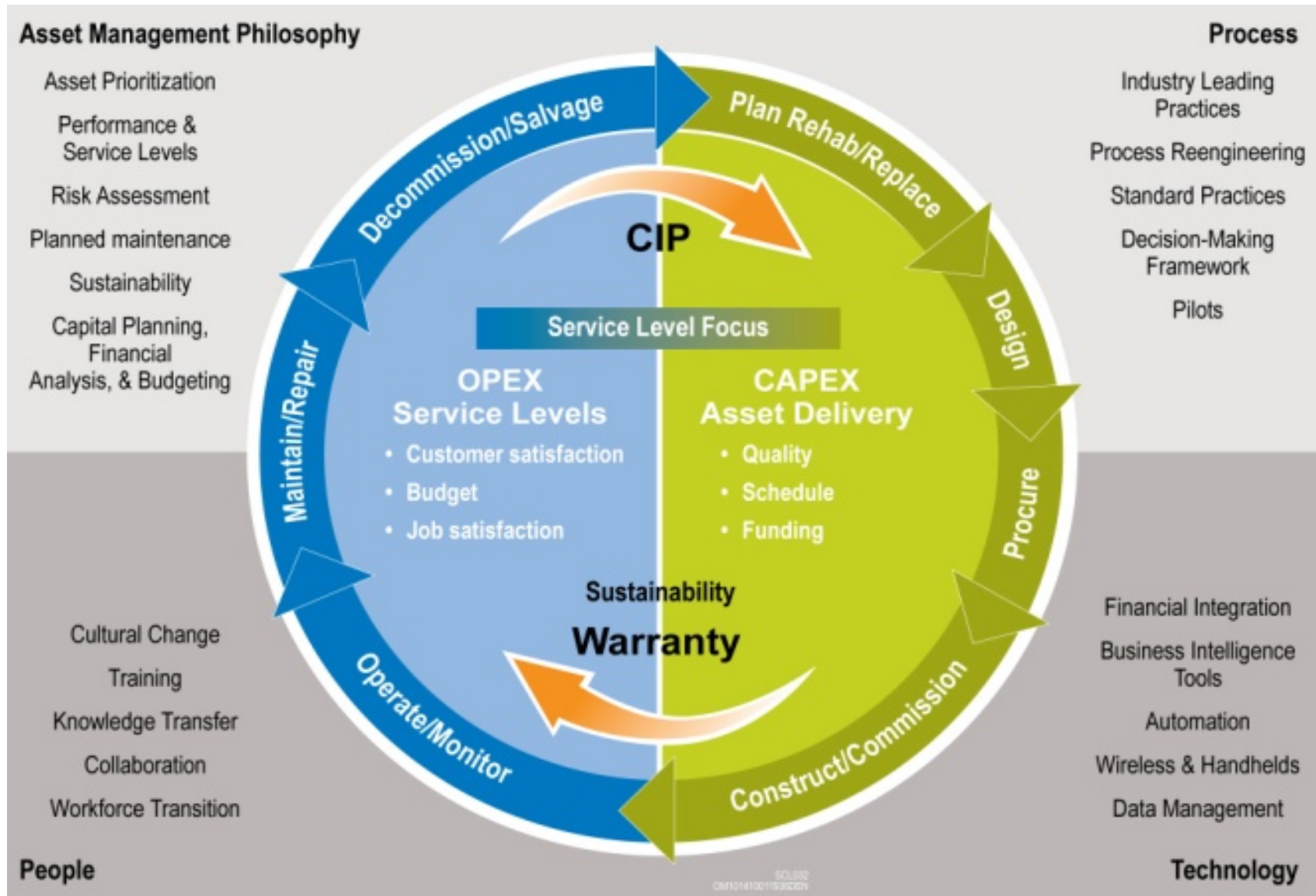


Asset Management Overview (Continued)

- Asset Management Definition (Per ACRP Report 069):

Systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks and expenditures over their lifecycles for the purposes of achieving its organizational strategic plan.

Asset Lifecycle Management



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Driver for SEATAC's AM Assessment

- Driver for Review / Update: Sustainable Airport Master Plan (SAMP)



Driver for SEATAC's AM Assessment



*Example Master Plan Work Flow only

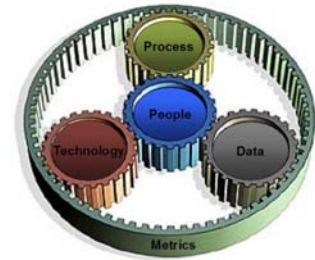
Driver for SEATAC's AM Assessment

- Sustainable Airport Master Plan: Subtask 6.12
 - ✓ Master Plan-Level
 - ✓ Testing Sustainability Objectives
 - ✓ Development of Total Cost Of Ownership (TCO) Metrics to Support Alternatives Analysis
 - ✓ **Buildings and Utility Performance** (energy conservation, water optimization, etc)
 - ✓ **Whole Life Costing** (existing and new systems, best practices in TCO calculations)
 - ✓ **Asset Management** (current state and inputs into SAMP to protect capital investments)

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Gap Assessment Process and Findings

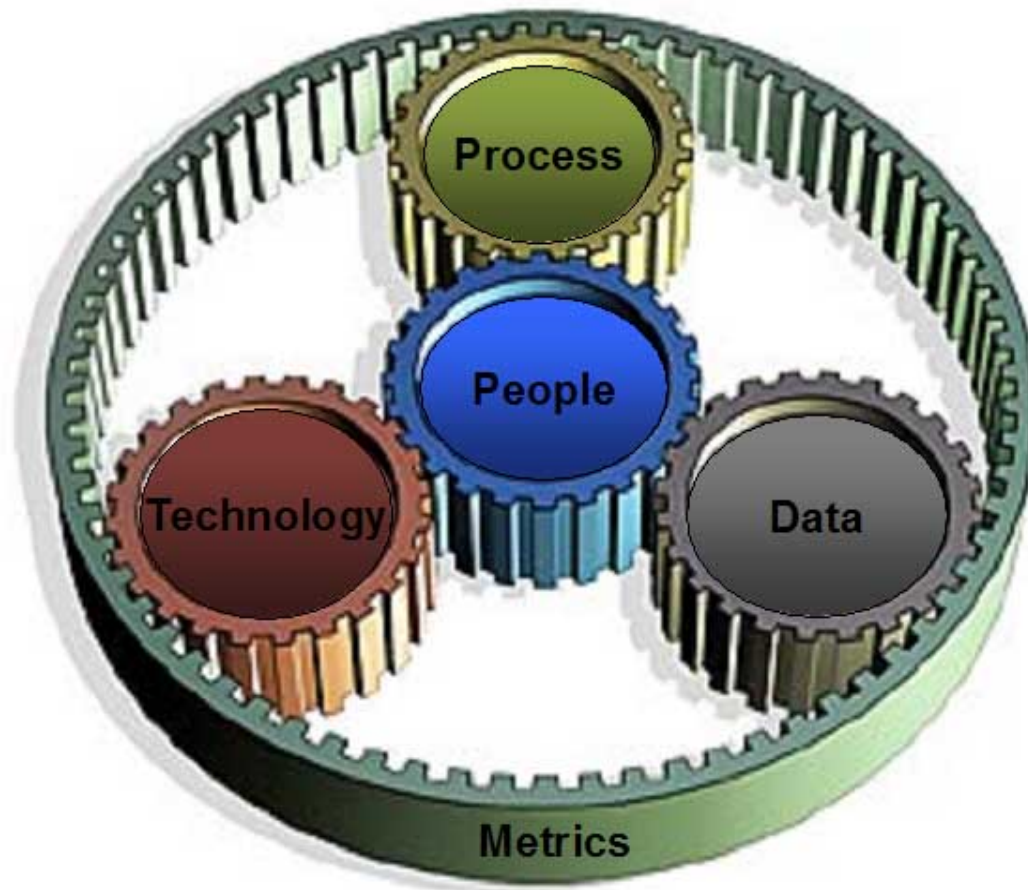


The Gap Assessment Process - Focused on 5 Key Areas:

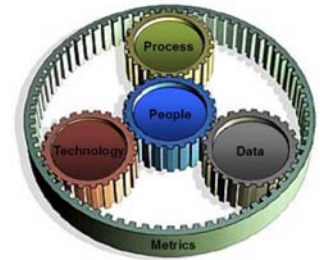
- 1. People:** organization framework with documented roles and responsibilities
- 2. Process:** published work flow policies and procedures
- 3. Data:** data quality assurance/control programs
- 4. Technology:** facilities staff have appropriate technology and training
- 5. Metrics:** regular department reporting against performance measures/metrics

Gap Assessment Process and Findings

The Gap Assessment Process - Focused on 5 Key Areas:



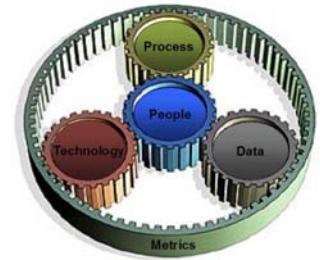
Gap Assessment Process and Findings



The Gap Assessment Process – Interviews and Reporting:

- Identified Six (6) Key Stakeholders
- Held 1:1 Interviews
- Utilized a Standard Interview Format
- Collected Background Documentation
- Captured / Analyzed / Summarized Results

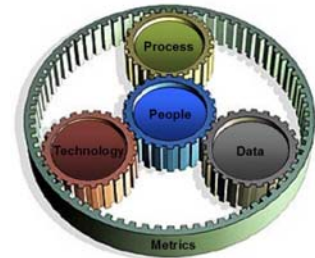
Gap Assessment Process and Findings



Cross-Functional Input:

- Environmental
- Aviation Maintenance
- Continuous Process Improvement
- Facilities and Infrastructure

Gap Assessment Process and Findings



Interview Questions:

Staff Interview Questionnaire

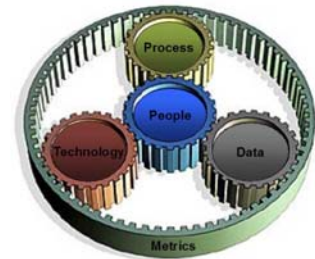
General Questions:

- **Asset Management Program** – In your own words - please describe the SEATAC's AM Program:
 - How long has it been in place?
 - Are there guiding documents such as an Asset Management Policy/Framework/Roadmap (including Mission/Vision/Values)?
 - Is there a cross-functional steering committee (planning, facilities, operations, finance, etc.)?
 - Does SEATAC have an interest in the new ISO 55000 standard for Asset Management?
 - Can you highlight 2-3 general strengths of the Asset Management Program?
 - Can you highlight 2-3 areas for opportunity for the Asset Management Program?

5-Key Elements Questions/Comments (People, Process, Data, Technology, and Metrics):

- **People/Organizational** – Do you have any organizational/staffing thoughts to improve the Asset Management functions? (i.e., centralized vs de-centralized staffing, competencies and training needs, etc.)

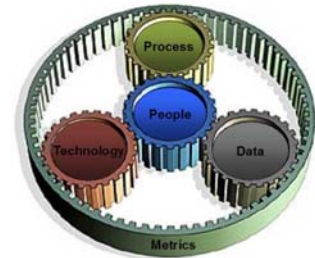
Gap Assessment Process and Findings



Interview Questions:

- **Process** – Are there published asset management policies and procedures (i.e., SOP's, workflows) in a book/binder? Is there formal training for each?
- **Process** – Regarding the Maintenance Work Order, Preventive Maintenance and Corrective Maintenance processes? Can you identify any “pain points” that could use some attention?
- **Process** – Regarding the Capital Planning processes? Can you identify any “pain points” that could use some attention (Whole Life Costing, robust Business Case Evaluation (BCE) process, etc.)?
- **Data** – A few questions regarding physical assets:
 - Do you have a good asset register?
 - Do you have a good sense of their condition?
 - Do you have a good Preventive Maintenance program for critical assets?
 - Can you describe any Predictive Maintenance programs at SEATAC?
 - Is there a good process that links the condition and PM program data to the CIP process?
 - Are there staff dedicated to performing data analysis / asset failure analysis?
- **Data** – Please explain any data quality programs that are in place to protect the data being entered into SEATAC software systems.

Gap Assessment Process and Findings



Interview Questions:

- **Technology** – What 2 or 3 things would you improve with Maximo and/or PeopleSoft?
- **Technology** – Is there an Asset Management focused Information Technology (IT) Master Plan?
- **Metrics** – Is there a comprehensive suite of a) Customer Service Levels and/or 2) Performance Measures in place to measure effectiveness of Asset Management or Preventive Maintenance programs?
- **Metrics** – Are Asset Management programs results / benefits being captured and communicated to staff?
- **Overall** - Are there any other thoughts, suggestions or comments you may have in improving Asset Management needs in the context of this 20-year Master Planning effort?

Gap Assessment Process and Findings



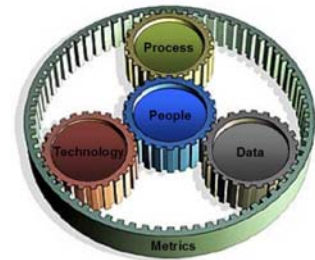
Standard Interview Format:

- Same set of questions per interviewee
- 22 probing questions (open ended) following 5 Key Areas
 - People / Process / Data / Technology / Metrics
- Total of 132 responses
- Some background documents collected
- Captured / Analyzed / Summarized Results

Gap Assessment Process and Findings

General Findings:

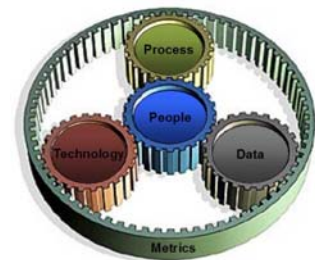
1. Comparing Master Planning process needs with the current Asset Management Program elements.
2. Gap Assessment Findings and Recommendations



Gap Assessment Process and Findings

General Findings:

- 1. Comparing Master Planning process needs with the current Asset Management Program elements.**
2. Gap Assessment Findings and Recommendations



Comparing Master Planning Needs

Master Planning Step	General Finding	Comment
Facilities Inventory	<ul style="list-style-type: none"> • 3 different databases • 3 different asset definitions 	<ul style="list-style-type: none"> • Inventory information informs current capacity analysis.
Demand & Capacity Review	<ul style="list-style-type: none"> • Assessed condition on 15% of assets (currently at 35%) 	<ul style="list-style-type: none"> • Condition information informs current capacity analysis.
Review of Alternatives	<ul style="list-style-type: none"> • Total Cost of Ownership (TCO) Process: <ul style="list-style-type: none"> a) pockets of good historical data b) no formal process for large program Capital Investments • Business Case Evaluation (BCE) Process: <ul style="list-style-type: none"> a) in place, but could be updated to reflect current best practices 	<ul style="list-style-type: none"> • TCO process and information used in alternatives decision making process. • BCE process used to select best appropriate project alternative(s).

Comparing Master Planning Needs (Continued)

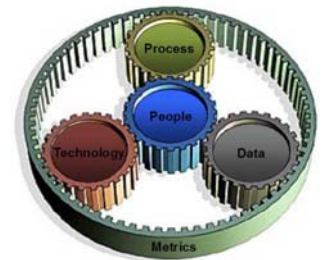
Master Planning Step	General Finding	Comment
Costing of Preferred Alternatives	<p>Whole Life Cost (WLC) Modeling Process:</p> <p>a) no current process, WLC added to SAMP scope.</p>	WLC modeling used to run scenarios in an effort to select best appropriate project alternative(s).
Airport Layout Plan (ALP)	<p>Sustainable Operations Plan (OPEX functions, processes and technology):</p> <p>a) A current plan exists, a future layout plan hasn't been developed</p>	A Sustainable Operations Plan ensures that new capital plan is supported by appropriate staffing/skills, business processes, and technologies / training.
CIP Projects	<p>New Asset Turnover Process:</p> <p>a) in place, but could be updated to reflect current best practices</p>	A New Asset Turnover Process ensures that the Facilities Inventory remains current and that a preventive maintenance plan is defined to protect the investment, maximize life, control costs and risks.

Gap Assessment Process and Findings

General Findings:

1. Comparing Master Planning process needs with the current Asset Management Program elements.

2. Gap Assessment Findings and Recommendations



Gap Assessment Findings (People)

Identified Issue / Opportunity	Recommendation
<p><u>People:</u></p> <ul style="list-style-type: none">• There is a resource limited program in place. There is a need for director-level leadership, with a holistic approach coupled with a clear path forward.• The asset management functions are being done in a schedule available manner with very limited resource availability.• There is a need for asset management training across SEA in an effort to ensure alignment across the organization.	<ul style="list-style-type: none">• Consider identification of a director-level staff member to sponsor an inter-departmental asset management program.• Consider the creation and formal chartering of an inter-departmental steering team.• Conduct an organizational review to understand gaps and needs. Develop formal roles and responsibilities for required functions.• Provide formal asset management training for all SEA departments.

Gap Assessment Findings (Process)

Identified Issue / Opportunity	Recommendation
<p><u>Process:</u></p> <ul style="list-style-type: none"> • Some key standard operating procedures require an update review. • The Condition Assessment process needs a more timely execution plan. • The Preventive Maintenance Optimization (PMO) program pilot was a success and needs to be re-launched. 	<ul style="list-style-type: none"> • Convene an interdepartmental committee to review and develop an SOP review and update plan. SOP categories identified include the following: <ul style="list-style-type: none"> ○ Asset Management ○ Maintenance ○ Capital Improvement Planning including Life Cycle Costing (LCC), Whole Life Cost (WLC) modeling, and Business Case Evaluation (BCE). ○ New Asset Turnover • Conduct a status review and develop a Condition Assessment program execution plan. • Conduct a status review and develop a PMO program execution plan.

Gap Assessment Findings (Data)

Identified Issue / Opportunity	Recommendation
<p><u>Data:</u></p> <ul style="list-style-type: none">• There are various formal and informal asset registers with varying degrees of information and accuracy.	<ul style="list-style-type: none">• Convene an inter-departmental committee to review the various asset registers to determine the following:<ul style="list-style-type: none">○ Definition of an asset○ Asset data/information requirements○ Asset register ownership, management, data/information standards, and integration requirements.○ Asset data/information linkages to Key Performance Indicators (KPIs). (see Measures below)

Gap Assessment Findings (Technology)

Identified Issue / Opportunity	Recommendation
<p>Technology:</p> <ul style="list-style-type: none">• There are various “systems of record” for asset information making it difficult to establish a formal asset register.• There is a need for a Maximo / PeopleSoft interface.• Us of Maximo mobile field tools has improved data collection and should be rolled out to all appropriate staff.	<ul style="list-style-type: none">• Convene an inter-departmental committee to review the various systems of record (i.e., Maximo, PeopleSoft, Excel spreadsheets) and develop a “system of record plan” that meets asset management objectives. (See Data above)• Convene an interdepartmental committee to review and develop a Maximo / PeopleSoft interface plan to meet asset management objectives.• Review current status of Maximo mobile field tool usage and develop rollout execution plan.

Gap Assessment Findings (Measures & Other)

Identified Issue / Opportunity	Recommendation
<p><u>Measures:</u></p> <ul style="list-style-type: none">• There are a variety of Environmental key performance indicators (KPIs) in place in some groups within SEA, but there is no formal or consistent performance management process/system in place.	<ul style="list-style-type: none">• Convene an inter-departmental committee to review and recommend the following:• Appropriate asset management service level definitions and associated KPIs• A formal performance management process/system.
<p><u>Other:</u></p> <ul style="list-style-type: none">• There is a need to co-invest in business process improvements (i.e., asset management / operational sustainability) while also investing in the capital infrastructure to ensure a robust sustainability model.	<ul style="list-style-type: none">• Convene an inter-departmental committee led by a director-level staff member to conduct a review of the current SAMP to identify investment and program requirements to support a robust asset management / operational sustainability program.

Airport Master Planning:
Don't Forget the People and Processes

There is a need to co-invest in business process improvements (i.e., asset management / operational sustainability) while also investing in the capital infrastructure to ensure a robust sustainability model

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Journey and Future of AM at SEA-TAC

- Identify organizational enhancements to ensure successful execution of the action plans.
- Establish important foundational aspects
- Establish clear goals and success factors to measure progress
- Develop a multi-year Asset Management Program and Implementation Plan including recommended action plans.
- Communicate and engage executive leadership as plan sponsors.

Journey and Future of AM at SEA-TAC

- Use a “team-based” approach for implementation and create a steering committee, tactical team and sub-teams to monitor and execute the work. The teams-based approach builds creates involvement and change ownership leading to sustainable practices. Example roles/responsibilities of this framework follow.
 - Steering Committee – management team to set goals, remove obstacles and monitor progress
 - Tactical Team – day-to-day core team focused on managing Sub-teams towards goals and objectives. Report monthly progress to the Steering Committee.
 - Sub-teams – cross-functional teams with focused optimization effort (ex. SOP improvement teams, Maximo / PeopleSoft integration team, Condition Assessment best practices team)

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Interactive Session

- Attendee Roundtable Discussion
 - Brainstorm and Capture Ideas (from SEA-TAC Case Study or Own Experiences)
- Topic 1: General Implementation Gaps
- Topic 2: Challenges
- Topic 3: Ways to Improve Success



Thank You

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