ENVIRONMENTAL & SUSTAINABILITY MANAGEMENT SYSTEM

TPB Regional Public Transportation Subcommittee

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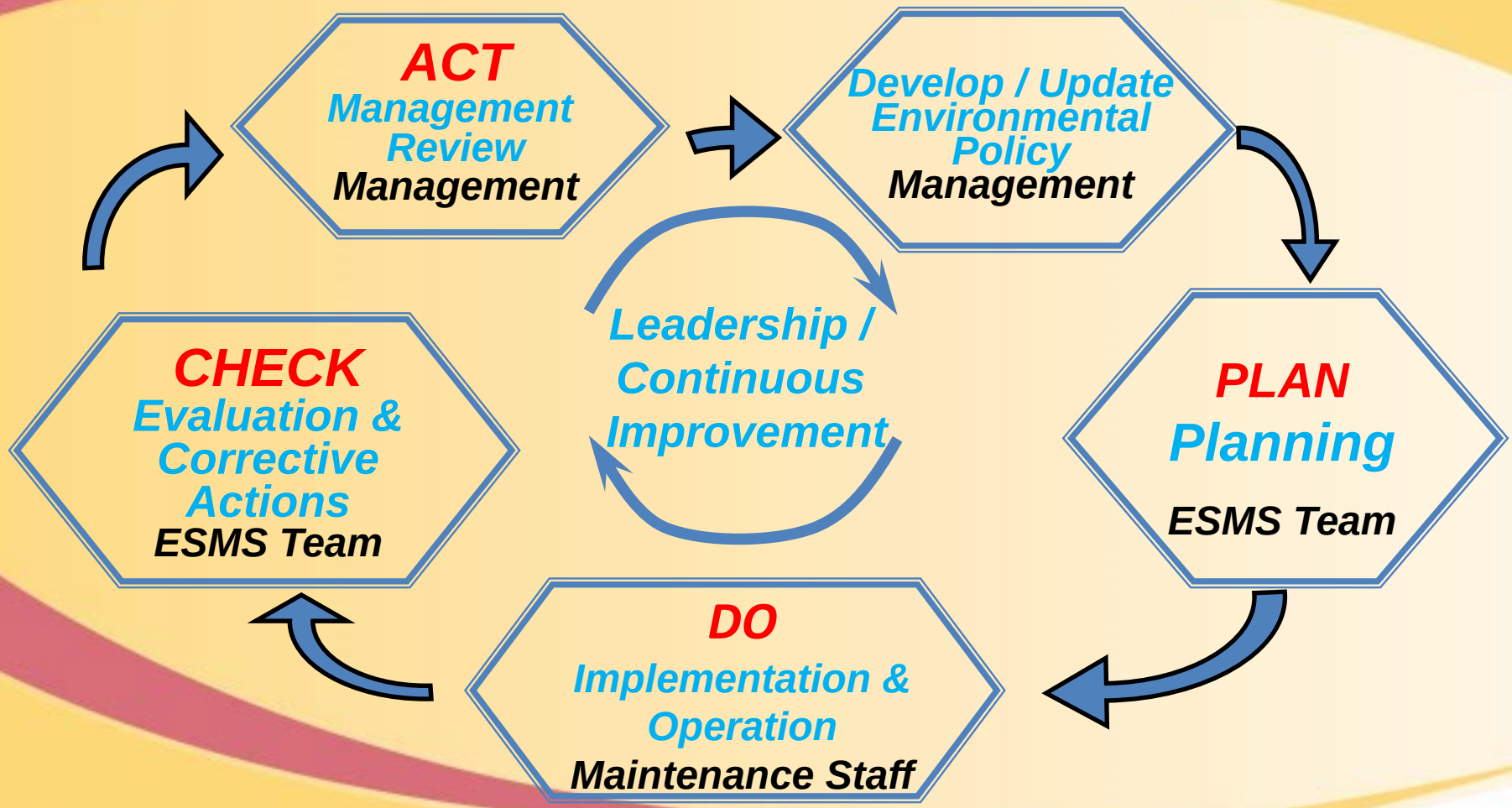
What is ESMS?

- An **Environmental and Sustainability Management System (ESMS)** is a set of management processes that allows an organization to **analyze, control, and reduce the risks** and environmental impact of its activities and operate with greater efficiency and control.
- ISO 14001:2015, the standard we are following for developing ESMS for MTA, includes these key elements:
  - **Plan, Do, Check, Act approach**
  - **Greater Focus on Leadership**
  - **Increase Prominence of Environmental Management within an Organization's Strategic Planning Processes**

Key Elements to Managing the ESMS



MTA and ESMS

- MTA attended training through the Federal Transit Administration/Virginia Tech partnership.
  - 2009 - Training for ISO 14001:2004 - EMS
  - 2016 - Training for ISO 14001:2015 - ESMS
- Developing an ESMS for the Cromwell Light Rail Maintenance Facility as part of the training.
- Incorporates elements of MTA's Sustainability, Energy and Asset Management Plans.

Benefits of an ESMS

- Operational Efficiency, Reliability and Sustainability **(*cost savings*)**
- Integrates Environmental Policy into Mission
- Improved Environmental Stewardship and Resource Conservation
- Enhanced Public Image With System Users and the Public
- Increased Staff Productivity and Safety
- Reduced Risks and Liabilities
- Improved Compliance Relationships with State and Federal Regulators
- Improved Awareness of Potential Environmental Impacts of Work Activities
- Documentation of Standard Operating Procedures

What can an ESMS Do?

Without ESMS

- Leaking drums
- Waste not properly stored
- No secondary containment
- Spills uncontained

With ESMS

- Labeled waste disposal
- Secondary containment for potential leaks

Without an ESMS

- Improper storage
- Leaking tanks
- No oversight
- Not in compliance with state and federal regulations
- Results in environmental contamination and potential fines

With an ESMS

- Proper storage of materials and hazardous materials
- Secondary containment
- Defined roles and responsibilities for compliance
- Opportunities for environmental stewardship
- Reduced likelihood of fines

How Does an ESMS Reduce Risk?

- Identifies areas of potential environmental risk and develop plans to minimize.
- Track compliance obligations.
- Assign responsibility to specific people and positions.
- Review and update SOPs.
- Conduct training for all staff.
  - Annual environmental awareness training, safety meetings, tool box talks, etc.

ESMS Project Focus: ASTs

- Identified Aboveground Storage Tank (ASTs) as a significant risk.
  - Potential for environmental impact = **High**
  - Potential for community impact = **High**

- Developed an Action Plan to assess and reduce risk.
  - Inspections to identify tanks needing repairs.
  - Prioritize and track repairs and replacements.
  - Fiscal planning for routine maintenance.

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ESMS In Motion

- Tanks identified as a high risk asset.
- Development of a tank management program.
- Annual inspection of tanks.
  - Reporting and ranking of deficiencies.
  - Increased risk identification and regulatory compliance.
- Prioritization of repairs.
  - Identified and ranked deficiencies can be forwarded to other departments for input and assistance.
  - Needs of project can be assessed.
- Financial planning.
  - Highest risk projects get priority.
- Close-out of deficiencies = reduced risk.

The ESMS Springboard

- AST management branches into other organizational areas.
  - Asset management
  - Sustainability
  - Energy Management
  - Training
  - Procurement

- The ESMS cycle of **Plan, Do, Check, Act** can be applied to each for effective management.
- Combines data and provides analytical tool for these programs to determine if objectives and goals are being met.

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Early Benefits

- Best foot forward approach.
- ESMS helps to drive MDOT policies; above and beyond regulations; helps to capture new incentives and incorporate changes.
- Improved relationship with public and community groups.
  - Air pollution and water pollution concerns.
- Foundation of these early benefits is increased communication:
  - With the public
  - Internally between departments

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Early Benefits: Improved Efficiency

- Planning, engineering, and environmental departments all involved in tanks via regulatory obligations, asset management, energy conservation, and sustainability.
- Improved fiscal management and manpower management through inter-departmental cooperation.
  - Defining financial resources and planning execution of projects across all departments.
  - Leads to cost savings and more efficiency – not doubling efforts.

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Early Benefits: Cost Savings

- Tank repairs and preventative maintenance before issues become larger – initial realization for MTA.
- Management of repairs and fiscal planning through asset management.

  - Total cost of needed tank repairs and replacements at the selected facility: **$128,000**
    - Cost of replacing structurally deficient 6,000 gallon AST: **$85,000**
    - Other repairs to facility ASTs:**$43,000**

  - Fines previously incurred due to leaking tanks:
    - EPA consent decree total cost: **$2.7 Million**
    - On going costs for monitoring and remediation: **~$500,000**

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Conclusion: Continual Improvement!

- Realizing improvement to inter-departmental project cooperation.
  - Increased communication
  - Better fiscal planning and management
- Risk reduction:
  - Increased requirement for inspection and maintenance.
  - Data management of inspections .
  - Open/close cycle for deficiencies.
- Cost of previous fines, etc.

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Next Steps

- MTA is moving forward with the full implementation of our ESMS structure to all modal maintenance facilities.
  - First expanding to all of Light Rail and Metro, then Bus.
  - Ultimate goal of an agency-wide ESMS.
- Exploring the potential for ISO certification for Cromwell.
- Continuing culture change within the organization.

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