

# Objectives

## Background

- MTA Facts
- MTA EAM Video

## Building an Enterprise Asset Management Organization: Key Components

- Integrated Management Frameworks
- Organizational Design
  - The MTA Perspective
  - The Operating Agency Perspective– focus on MTA Bridges & Tunnels
  - The Department Perspective
- Managing Organizational Culture and Change
- Managing Workforce Competencies and Capabilities

**The MTA operates one of the largest transportation systems in the world with physical assets valued at nearly \$1,000,000,000,000**

The MTA owns and operates 6,300 subway cars and 2,400 commuter rail cars. This is greater than all other US metro rail and commuter railroads combined. The MTA's 5,600 city buses comprise America's largest bus fleet.



# Bridges & Tunnels

- Operates seven bridges and two tunnels in New York City
- Dual mission:
  - *Provide critical transportation links*
  - *Subsidize transit*
- 297 Million paid vehicles in 2015
- Largest toll collector in the US - \$1.81 Billion in 2015
- In 2015, provided over \$1.0 Billion to support MTA mass transit
- 1,727 employees
- \$534 Million 2016 Operating Budget
- \$2.86 Billion Capital Program for 2015-2019



**Henry Hudson Bridge**



**Bronx - Whitestone Bridge**



**Throgs Neck Bridge**



**Robert F. Kennedy Bridge**



**QUEENS**

**Queens Midtown Tunnel**



**Hugh L. Carey Tunnel**

Battery Parking Garage  
Brooklyn-Battery Tunnel

**BROOKLYN**

**Verrazano - Narrows Bridge**



**Marine Parkway Bridge**



**Cross Bay Bridge**



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A photograph of a train yard at dusk. Multiple tracks run parallel, with several trains visible. The sky is dark with some clouds, and city lights are visible in the background. The text "MTA" is centered in large white letters, with a horizontal line underneath it. Below "MTA" is the text "ENTERPRISE ASSET MANAGEMENT" in smaller white letters. A white right-pointing triangle is positioned below the text.

**MTA**  
ENTERPRISE ASSET MANAGEMENT

# The MTA has been laying the groundwork for its EAM “Journey” for a few years now...

2013	• MTA All Agency Kick-off
2014	• Proof of Concepts and Program Definition
2015	• Gap Assessments, Improvement Strategies and Plans
2016	Phase 1 – Basic EAM
2018	Phase 2 – Advanced EAM
2020	Phase 3 – World Class EAM

**BUILDING AN ASSET MANAGEMENT ORGANIZATION:**  
**KEY COMPONENT #1: INTEGRATED MANAGEMENT FRAMEWORKS**

# Asset Management Means Different things to Different groups...



**Asset management** is the “coordinated activity of an organization **to realize value from assets**” (ISO 55000)

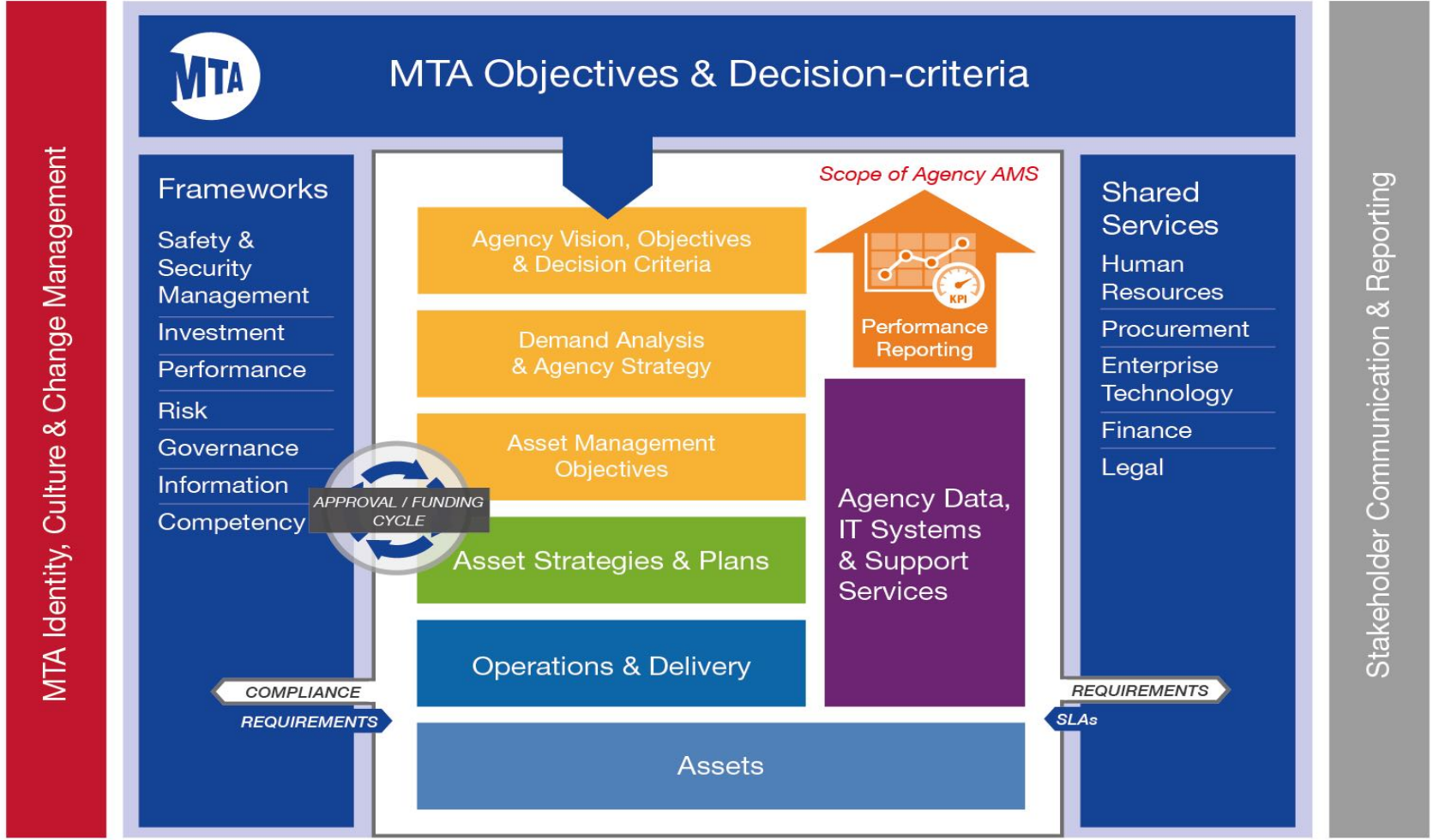


**An Asset Management System** is the organization’s asset management policy, strategy, objectives, plan(s) and the activities, processes and organizational structures necessary for their development, implementation and continual improvement

**For the MTA, it is all about a Total Management System as defined by ISO55000 Standards.**



# MTA Asset Management Framework



MTA People, Capability & Communities of Practice



# **Building an Agency Management System**

## **MTA B&T's EAM Improvement Program 2015-2019**

- **People and Culture**

- Governance, Policies & Strategic Asset Management Plans
- Training
- Change Management & Communication Plans

- **Business Process Improvements**

- Asset Handover Protocols
- Inspections & Condition Monitoring

- **Systems, Tools, Technology, Information**

- Data and Systems Consolidation & Integration into a single system of record

**All of the above are integrated and designed to deliver a Total Asset Management System for B&T**

# **BUILDING AN ASSET MANAGEMENT ORGANIZATION:**

## **KEY COMPONENT #2 ORGANIZATIONAL DESIGN**

### **THE MTA PERSPECTIVE**

# The MTA Perspective – Corporate Level

## MTA EAM Program Management Organizational Structure



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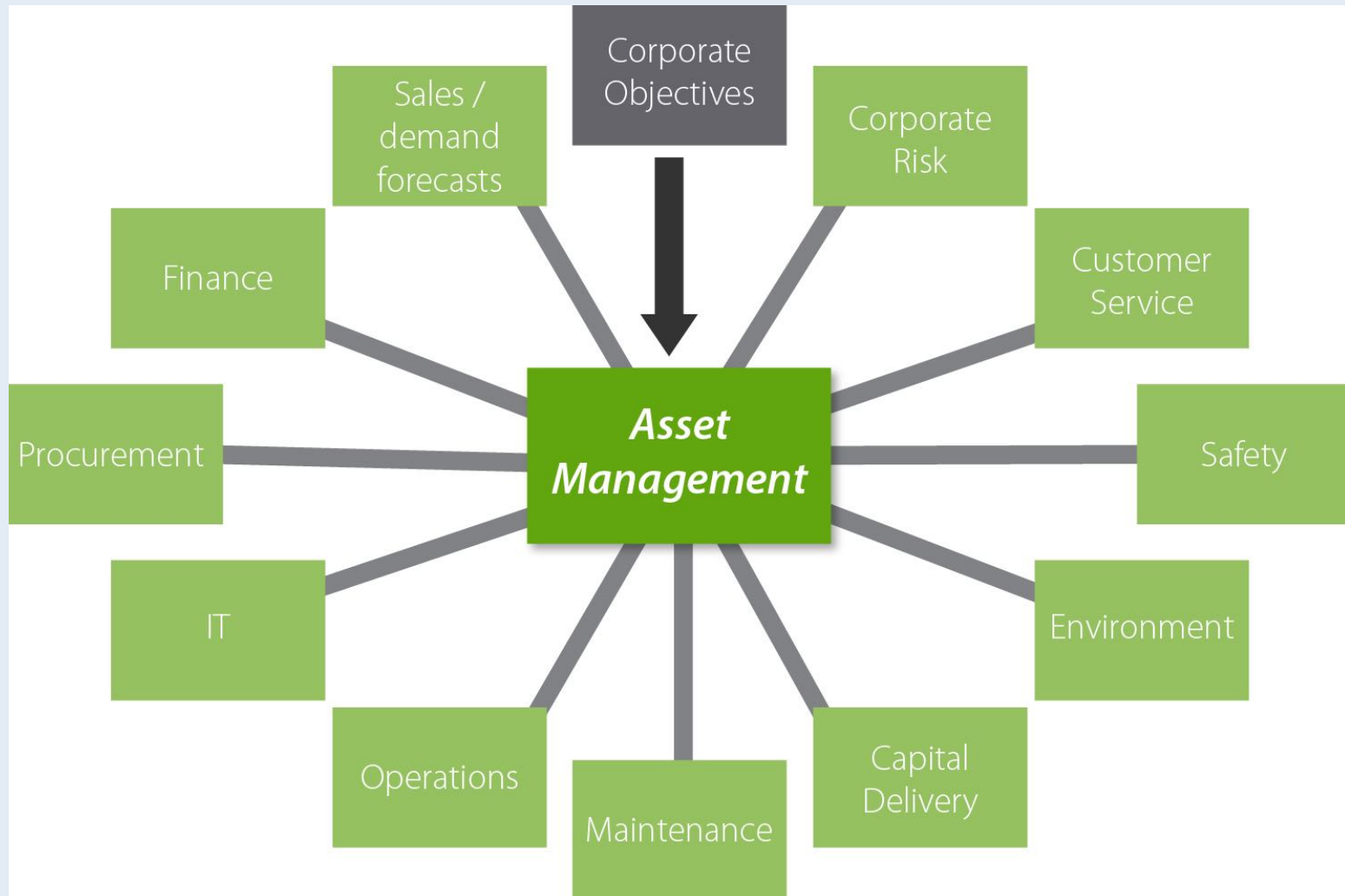
# **BUILDING AN ASSET MANAGEMENT ORGANIZATION**

## **KEY COMPONENT #2 ORGANIZATIONAL DESIGN**

### **THE AGENCY PERSPECTIVE**



# Asset Management cuts across many functions



# Key Relationships to Consider

**Central relationship with Maintenance-** who provide much of the key asset information

**Partnership with Operations** – are a key input on requirements, and for planning access to assets

**Client-Supplier relationship with Engineering and Project Delivery Teams** – asset acquisition, build and handover

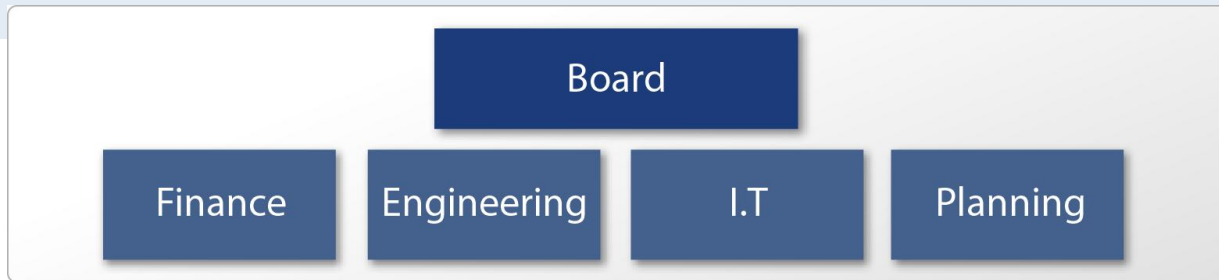
**Good relationship with Finance**– better understanding of asset investment optimization and life-cycle cost management and decision making

**Demand Forecasting**–close coordination with Asset Planning efforts

**Management of culture change**–the “People” side of change to achieve the required business result and ultimate sustainability of the effort.

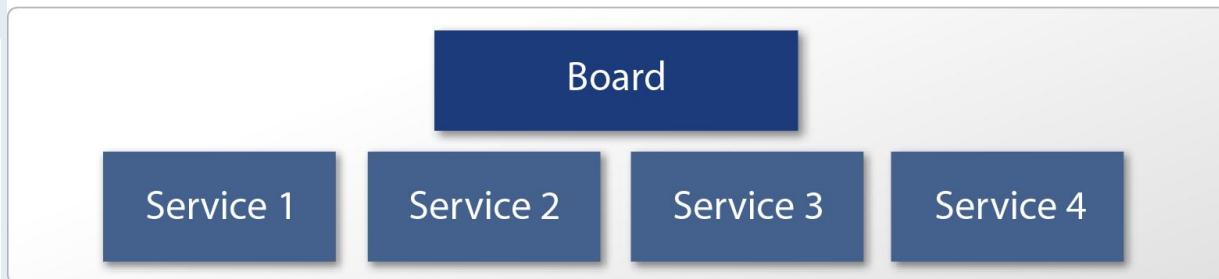
# Some Common Structures that Exist at the Agencies

By function: AM subsumed into Engineering, Operations or other



1

By product or service – AM distributed across internal businesses



2

By function: AM as separate directorate, perhaps controlling asset budgets

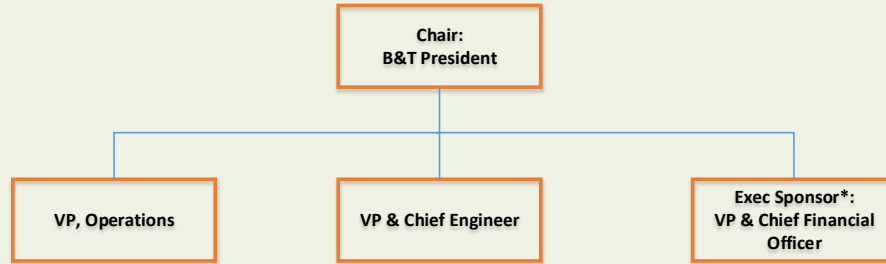


3

**B&T's formal structure like #1 but has elements of #2. The long-term goal is to move towards #3.**

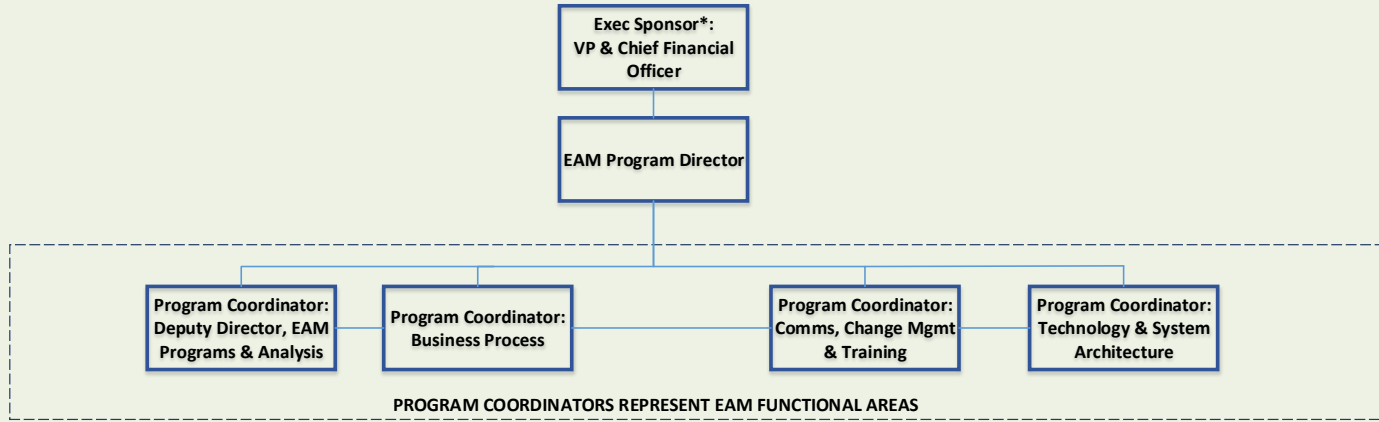


**B&T EAM EXECUTIVE STEERING COMMITTEE**  
(Meets Quarterly)



*\*Represents B&T on the MTA Asset Management Coordinating Committee, which is comprised of Executive Program Sponsors from MTA HQ and each of the operating agencies.*

**B&T EAM PROGRAM MANAGEMENT OFFICE**  
(Meets Weekly)



**B&T EAM PROGRAM WORKING COMMITTEE**  
(Meets Biweekly)

**B&T DEPARTMENT ASSET MANAGEMENT CHAMPIONS**



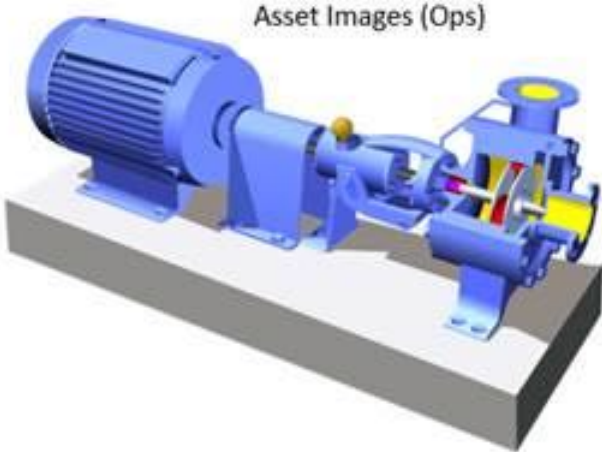
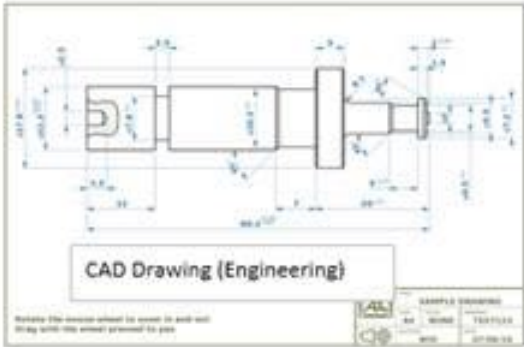
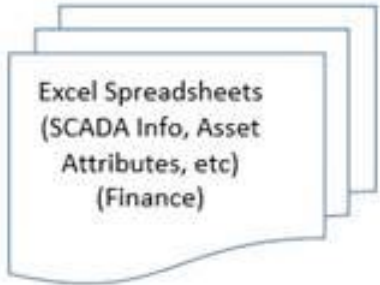
# **BUILDING AN ASSET MANAGEMENT ORGANIZATION**

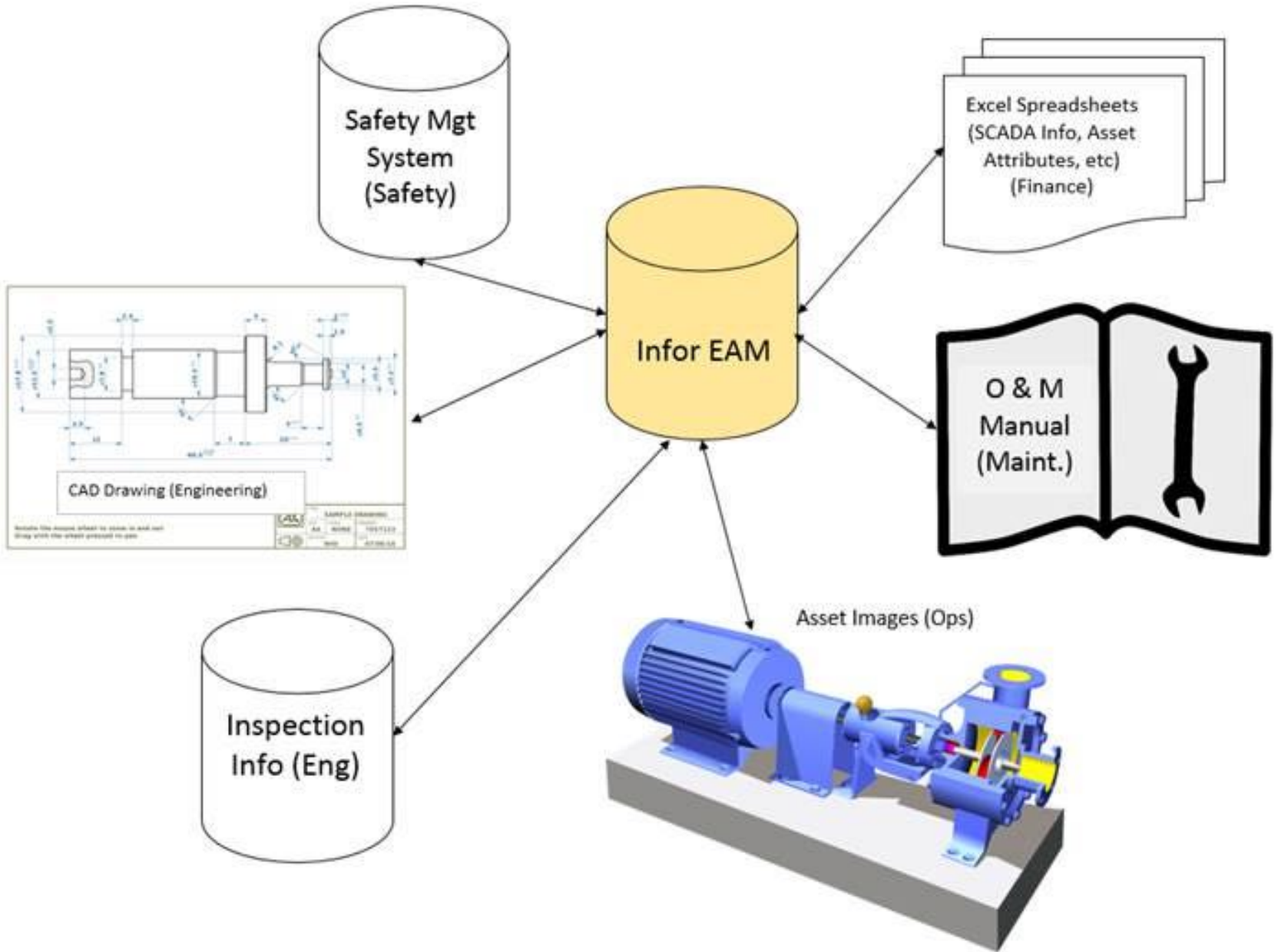
## **KEY COMPONENT #2 ORGANIZATIONAL DESIGN**

### **THE OPERATING DEPARTMENT'S PERSPECTIVE**

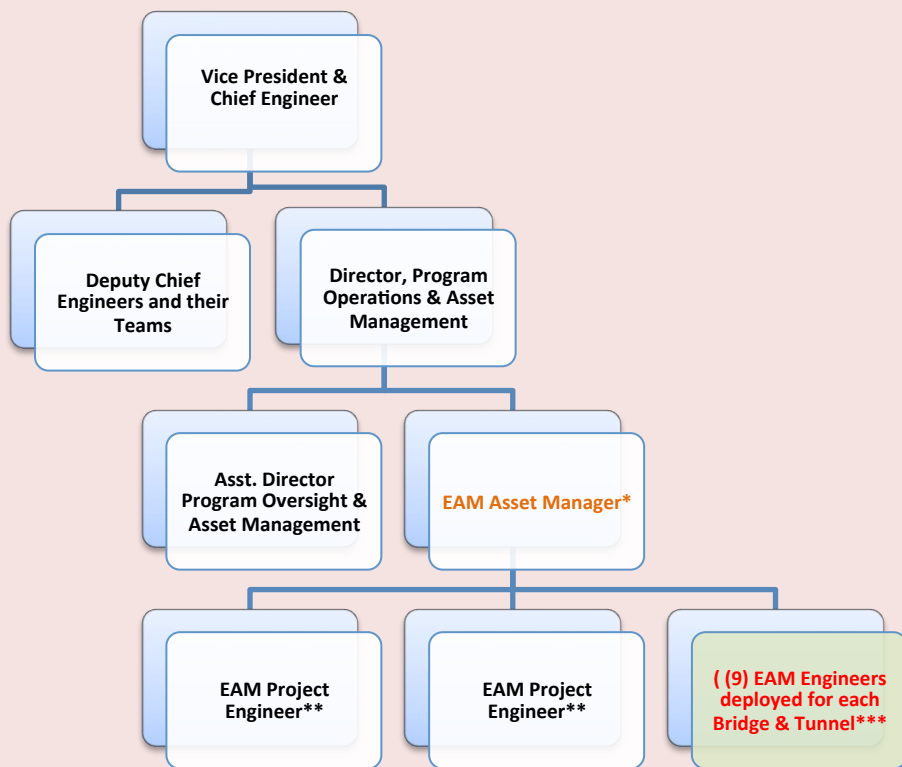
# Current Focus of Efforts at the Department Level

- **Continue implementation of Data Integration & Consolidation efforts within and across all departments**
  - **Migration of data in legacy system to Infor EAM**
- **Business Process Re-engineering of major core EAM processes**
  - **Asset Handover**
  - **Bridge & Tunnel Inspections, Condition Monitoring and Reporting**
- **Focus on an EAMS Pilot at Henry Hudson Bridge**
  - **Establish a comprehensive asset management system at this facility by integrating departmental work streams that across the agency**
    - » **Asset Management Strategies**
    - » **Asset Management Plan Development**
    - » **Whole Life Cycle Cost Models**
  - **Will serve as a template for future build-out at all other B&T facilities**

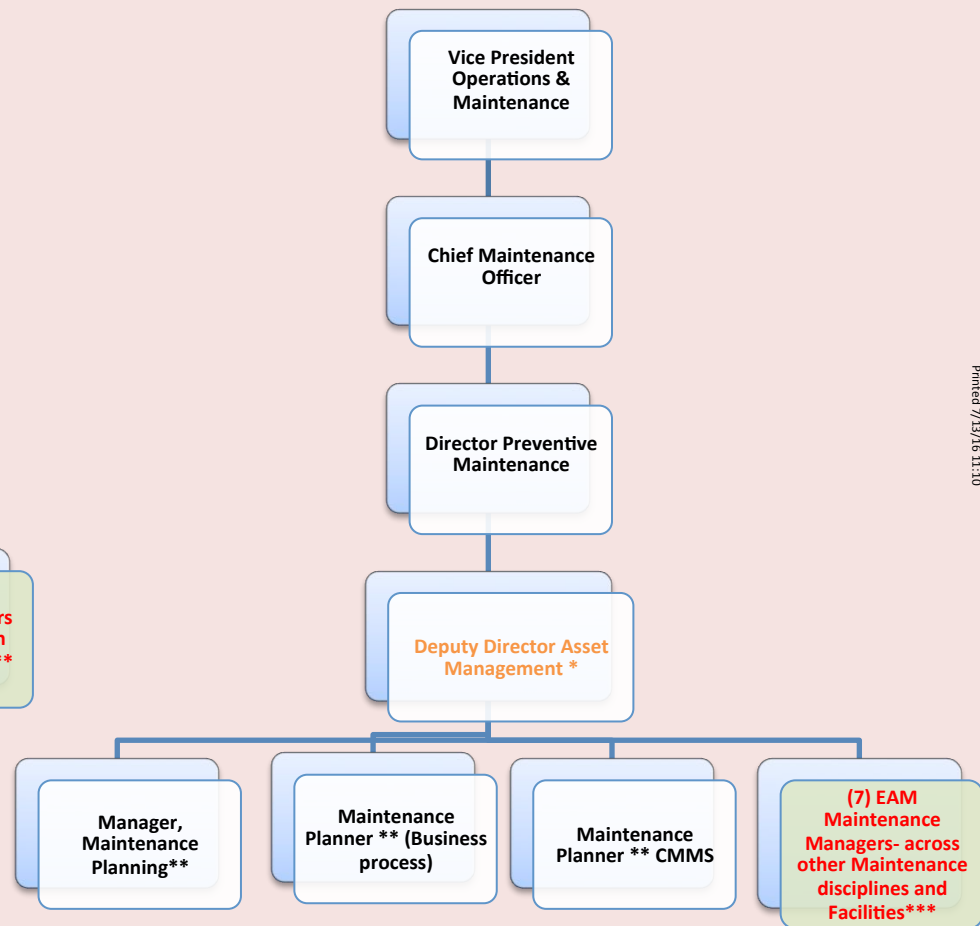




# SAMPLE DEPARTMENT STRUCTURE TO SUPPORT EAM IMPLEMENTATION ACTIVITIES



## Engineering & Construction



## Maintenance

- \*Departmental EAM Lead
- \*\*Members of B&T Working Committee
- \*\*\*Members of tactical project teams

# **BUILDING AN ASSET MANAGEMENT ORGANIZATION**

## **KEY COMPONENT #3**

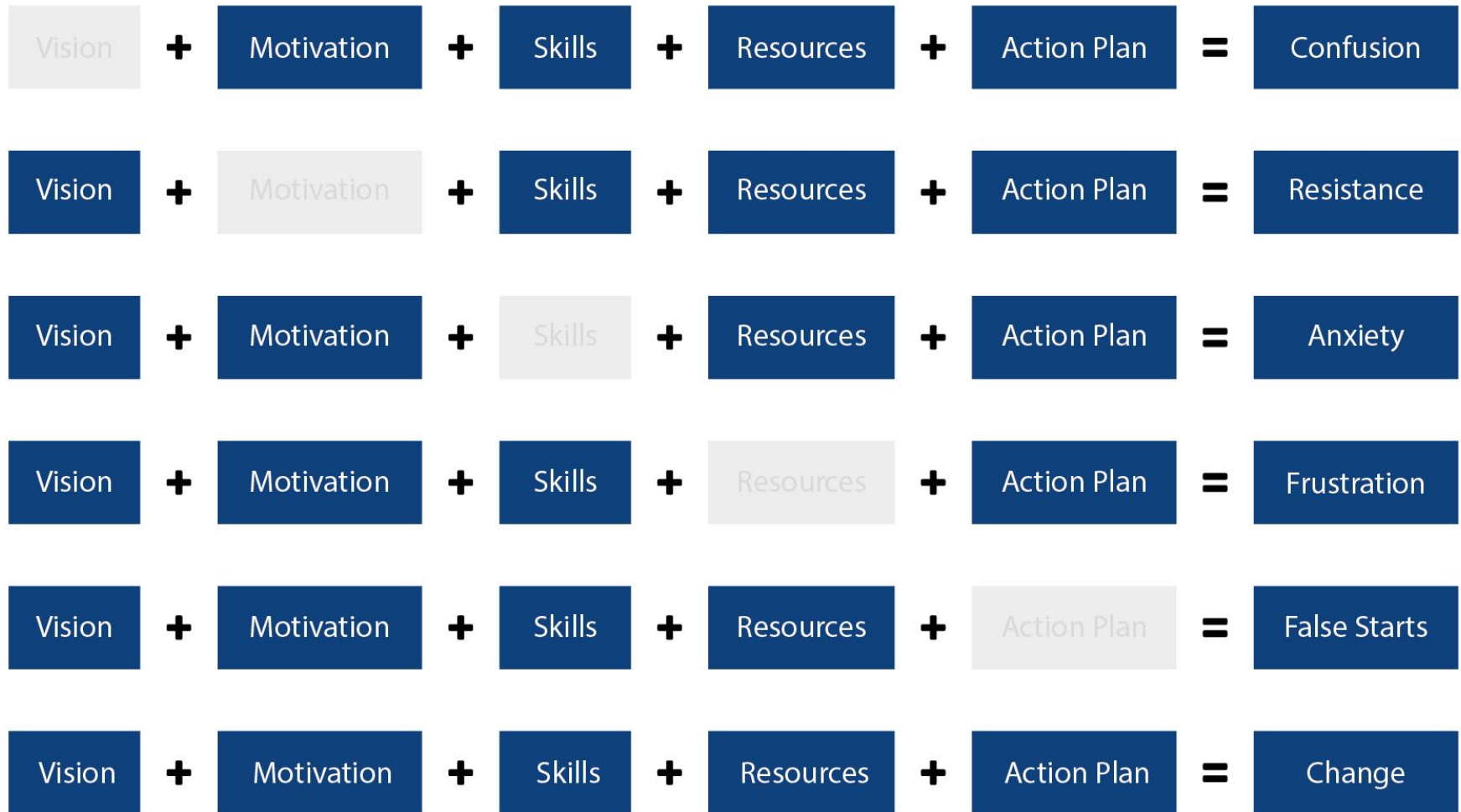
### **MANAGING CULTURE AND CHANGE MANAGEMENT**

# What is Change Management?

*Change Management is the application of a set of processes, tools and techniques to manage the people side of change to achieve the required business result and the ultimate sustainability of the effort*



# The Elements of Change



Adapted from Knoster, T., Villa R., & Thousand, J. (2001). A framework about systems change in R. Villa & J. Thousand (Eds), Restructuring for caring and effective education: Piecing the puzzle together (pp.93-128) Baltimore: Paul H Brookes Publishing Co.

# Change Management (3-hour) Introductory Sessions are provided – MTA-wide



Produced by:

**EAM**  **Change Management Team**  
*Implementing Change That Lasts.*

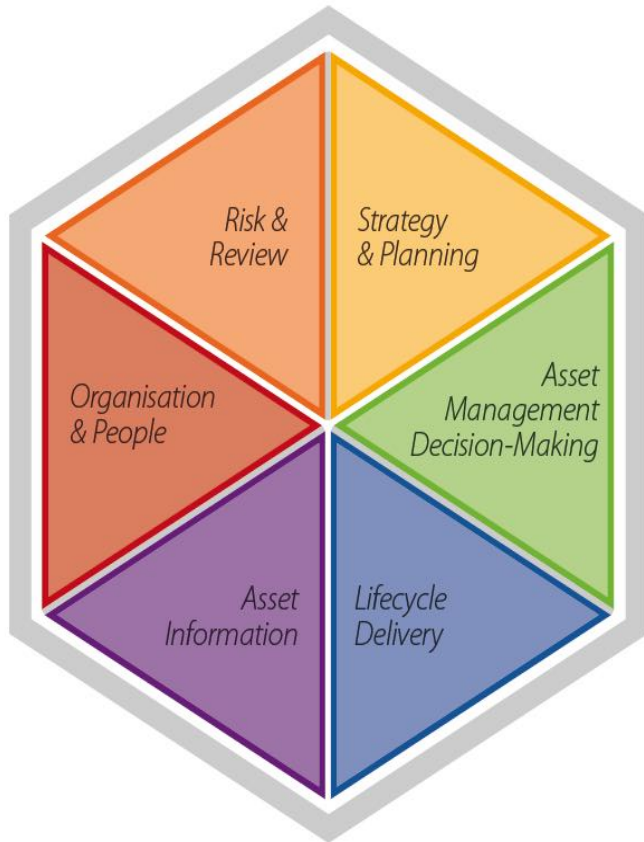
[tens.nyct.com](https://tens.nyct.com) > Quick Links > EAM

# **BUILDING AN ASSET MANAGEMENT ORGANIZATION**

## **KEY COMPONENT #4**

### **MANAGING THE COMPETENCE AND CAPABILITIES OF ASSET MANAGEMENT STAFF**

# Assessing Asset Management Capability



## Strategy & Planning

- Asset Management Policy
- Asset Management Strategy & Objectives
- Demand Analysis
- Strategic Planning
- Asset Management Planning



## Asset Management Decision-Making

- Capital Investment Decision-Making
- Operations & Maintenance Decision-Making
- Lifecycle Value Realisation
- Resourcing Strategy
- Shutdowns & Outage Strategy



## Lifecycle Delivery

- Technical Standards & Legislation
- Asset Creation & Acquisition
- Systems Engineering
- Configuration Management
- Maintenance Delivery
- Reliability Engineering
- Asset Operations
- Resource Management
- Shutdown & Outage Management
- Fault & Incident Response
- Asset Decommissioning & Disposal



## Asset Information

- Asset Information Strategy
- Asset Information Standards
- Asset Information Systems
- Data & Information Management



## Organisation & People

- Procurement & Supply Chain Management
- Asset Management Leadership
- Organisational Structure
- Organisational Culture
- Competence Management



## Risk & Review

- Risk Assessment & Management
- Contingency Planning & Resilience Analysis
- Sustainable Development
- Management of Change
- Assets Performance & Health Monitoring
- Asset Management System Monitoring
- Management Review, Audit & Assurance
- Asset Costing & Valuation
- Stakeholder Engagement

# Managing Competencies and Capabilities for a Sustainable EAM Organization

## Training

- Basic Asset Management Training (AMCL)
- Application of Reliability Framework to Critical Infrastructure Assets
- Specialized Training & Certifications

## Knowledge Management

- Preserving Institutional Knowledge and Transfer to Next Generation of Stewards
- Succession Planning
- Mentoring
  - Management Associates Program
  - Internships

# Summary

## Enterprise Asset Management is about a Total Management System

### Building Blocks for a Successful EAM Organization

- Integrated Management Frameworks at all levels of the organization
- Supportive Organizational Design
- Management of Organizational Culture and Change
- Management and Maintenance of Staff competencies and capabilities

### Successful Outcomes

- Clear Line of Sight - from policy and strategy down to lifecycle delivery activities
- Asset Management goals and organizational design are fully integrated
- An organizational culture of Continuous Improvement
- Organizational sustainability for the MTA as a whole.



**Mildred M Chua**

Email: [mchua@mtabt.org](mailto:mchua@mtabt.org)  
Phone: (646) 252-7107

**David Kraft**

Email: [dakraft@mtabt.org](mailto:dakraft@mtabt.org)  
Phone: (646) 252-7852

**Manny Leon**

Email: [mleon@mtabt.org](mailto:mleon@mtabt.org)  
Phone: (646) 252-7550

