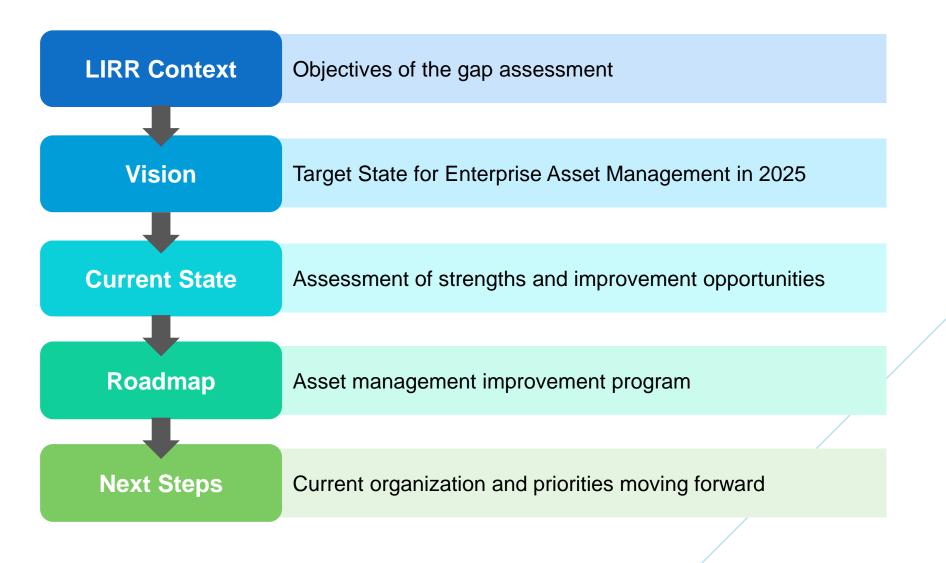
Developing the Long Island Rail Road Roadmap to Advance Asset Management Capability

TRB 11th National Conference on Transportation Asset Management

July 12, 2016



Presentation **Overview**



Gap Assessment **Objectives**

Long Island Rail Road (LIRR)'s Gap Assessment and Implementation Plan Project served to :

- Determine the maturity of LIRR's asset management capabilities
- Provide recommendations to LIRR to further develop its capabilities in line with current industry best practice, including ISO-55001:2014 and MAP-21
- Provide recommendations to LIRR to further develop its capabilities in line with the MTA's Asset Management Improvement Strategy



Asset Management Concept of Operations (ConOps)

- \rightarrow Describes the 2025 asset management **business model**:
 - Collection of asset management products and processes that must be undertaken in order for LIRR to manage its assets in the most efficient, effective and economical way to deliver service
- Aligned to best practices, MAP-21, ISO-55001:2014, and the MTA's Asset Management Improvement Strategy
- \rightarrow Executive visioning sessions held with:
 - President
 - EVP
 - SVP Engineering
- SVP Operations
- CFO
- Chief Planning Officer

Future Target State

- ConOps describes the 2025 target state for asset management
- Enables the 'gap' against current practices to be assessed
- \rightarrow Designed around eight specific areas:
 - 1) Alignment to Goals
 - 2) Control of Assets
 - 3) Asset Management Planning
 - 4) Capital Planning and Delivery

- 5) Maintenance Delivery
- 6) Defect Management
- 7) Informed Decisions
- 8) Resource Capabilities



Asset Management Business Model

 Encourage cross-functional coordination of activities to achieve common business goals



Current State: Gap Assessment

- Workshops/meetings held with over 21 groups/areas within Maintenance of Equipment (MofE), Engineering, and corporate support functions
- Overall LIRR was found to be actively developing its asset management capabilities
- Asset management activities are repeatable, becoming more consistent, are being defined & documented



Long Island Rail F

lagement Gap Assessment

Strengths Identified

- Demand analysis understanding of current and future forecast demand, including both seasonal and demographic, and is translated into service measures for asset classes
- Incident management demonstrable good practice in incident management, business continuity planning and performance management
- Maintenance Programming MofE's implementation of Reliability Centered Maintenance (RCM) principles to develop preventive maintenance programs for fleet



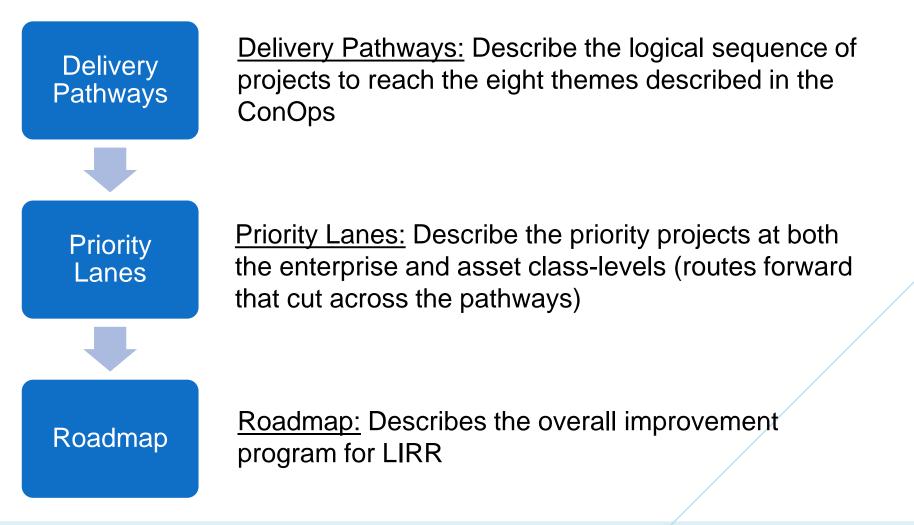
Improvement Opportunities

- → Assessment resulted in **86** recommendations
- Risk Management more formalized processes to capture, assess and monitor risks
- Preventive Maintenance for some asset classes more could be done to introduce planned/preventive maintenance regimes
- Asset Management Plans further work is needed to meet the requirements of ISO-55001:2014 and MAP-21
- Asset Information some areas are not fully utilizing information systems to support business needs
- Management System in some areas improvement opportunities for documentation of processes and procedures, and monitoring to ensure compliance



Roadmap to Move Towards Target State

→ Recommendations grouped into **38** projects



Enterprise-level Priorities

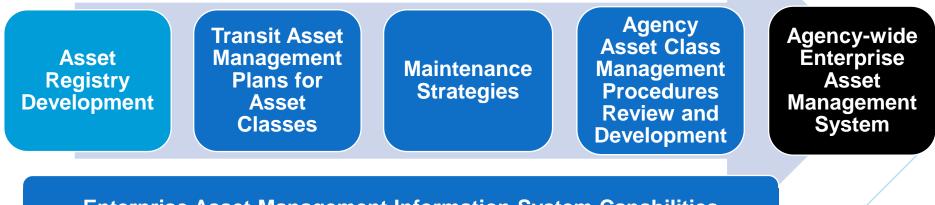
→ Guided by ISO 55001:2014



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Asset Class-level Priorities

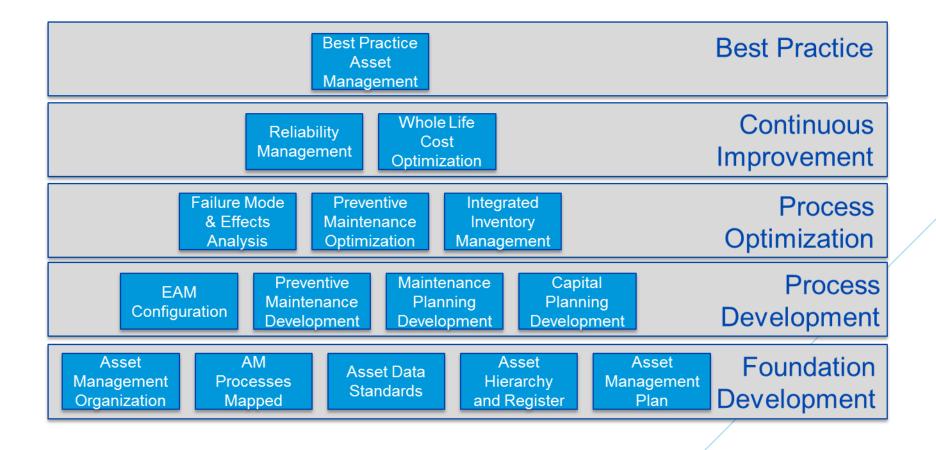
→ Based off the 'building blocks of best practice asset management'



Enterprise Asset Management Information System Capabilities

Asset Management Building Blocks Approach

→ Focus on the basics first



Roadmap

		2021-2025
Timeline	2016 2017 2018 2019 Q1 Q2 Q3 Q4 Q2 Q3 Q4 Q2 Q3 Q4 Q3 Q4	2020 2021 2022 2025
Alignment to Organizational Goals		
URR-02 LIRR Agency Asset Management Strategy (AAMS) URR-03 Network Asset Management Strategies (NAMS)	AM Strategy NAMS	
Control of Assets (establishing policies, processes and controls)		
LIBR, Adapasement System for Asset Management LIRR-Qasers Vasset Class Management Framework LIRR-Qasers Vasset Class Management framework LIRR-Qasers Vasset Class Nik Assessment LIBR-Qaser Vasset Class Nik Assessment LIRR-Qaser Classet Or Procedures Review and Development LIRR-11 Change Control Procedures Review and Development LIRR-12 Business Continuity Plans Revision		Strategic RM Framework - Update Acted Tass RiskAsses Internal Audit & Procedure Review BCP Revision
Asset Management Planning		
URR-12 Transit Asset Management Plans (TAMPs) for Asset Classes MOE(=0) Obsolescence Management Plan URR-10 Maintenance Strategies URR-14 Buiness Architecture and Capability to Capture Asset Life-cycle Costs URR-15 Asset Performance and Reliability Measures	TAMPs (2) TAMPs (3) TAMPs	
Capital Planning and Delivery		
URR-18 Standardized Asset Condition Assessment Process Eng-02 Asset Condition Assessment Nethodologies URR-19 Condition Assessment Guideline and Porcedure Documentation URR-20 Design Review Board (DRB) URR-21 Asset Commissioning / Transitioning Procedures URR-22 Asset Commissioning / Transitioning Procedures URR-23 Asset End of Life Decision Criteria and Decommissioning / Disposal Procedures	Std. Condition Assessment Engineering Asset (Jasses - Asset Condition Assessment Methodologies Casita Planing Guidelines Launch of Capital Needs Inventory DRB	Commissioning & Transitioning
Maintenance Delivery		
URR 13 Maintenance Planning UR8-16 Material Availability and Supply Chain Optimization UR8-27 Enterprise Asset Management Information System Capabilities UR8-28 Operating and Maintenance Procedure Review, Documentation and Improvement UR8-25 Incident and Failure Prioritization Guidelines UR8-26 Labor Cost Capture Technology		Maintenance Planning lupdate) Supply Chain
Defect Management		
URR-27 Formal FMECA Procedures to Support Advanced RCM Capabilities URR-28 Failure Analysis and Planned Maintenance Program URR-29 Condition Monitoring Technology Review Eng-01 Technical Assistance for the Application of RCM Eng-03 Unified Trouble Ticket System	Formal FMECA (Mold)	fallure Analysis → >[Fallure Analysis and Planned Maintenance]
Informed Decisions		
Eng-04 Linear Asset Management Strategy URR-30 Asset Information Strategies URR-31 URR Information Enchology (IT) Systems Strategy and Implementation Plan URR-32 Geographic Information Systems (GIS) Strategy and Implementation Plan URR-33 Track Visualization Tool Strategy and Implementation Plan URR-34 Decision Support Tools to Support Reliability Analysis and Inventory Optimization Moft-02 Analytics Moft-03 EAM Mobile Requirements	Unear AM Strategy	
Resource Capabilities		
URR-35 Asset Management Organization Improvement URR-36 Asset Wanagement Training URR-37 Asset Management Communications URR-38 Review Resource Requirements URR-39 Competencies Register	AM Org. Improvement - Update AM Training AM Competencies Register	
MTA HQ Projects		
MTA-01 MTA-HI Job Classifications/Compensation MTA-02 MTA TStrategy MTA-03 MTA TStrategy MTA-04 MTA Capital Planning Process Development MTA-04 MTA Standard Asset Condition Assessment Process MTA-05 MTA Strategy (if: Management Famework MTA-07 MTA Strategring Kits Management Technolology	MTA HR MTA ITStrategy MTA Union Engagement & Negoliations MTA Capital Planning MTA Stand Asset Cond. Assets. MTA Strategic RM Framework MTA Enterprise RM Technology	>
Long Island Rail Road	14	WSP PARSONS BRINCKERHOFF

Long Island Rail Road

Evolution of EAM at LIRR

2013

- Centralized EAM Office initiated
- Director of EAM accountable to the Chief Planning Officer/Executive Sponsor

2015

- Parsons Brinckerhoff conducted EAM Gap Assessment – initial Roadmap
- Planning for and developing the LIRR EAM Improvement Program (EAMIP)

2016 and Onward

- Director of EAM accountable to Executive VP (who reports to the President)
- Implementing the LIRR EAMIP – 48 work streams over 10 years \$50 million (internal and external)
- EAM governance and controls



MTA and LIRR EAM Governance

MTA EAM Governance

- MTA EAM Program Management Office
- Asset Management Coordinating Committee

LIRR EAM Governance

- Executive Steering Committee
- EAM Governing Board

LIRR EAM Program Management

- LIRR EAM Office
- MofE
- Engineering
- Other Stakeholder Departments





Continuous Improvement

- Responsibilities of the LIRR EAM Office include ongoing management and improvement of:
 - EAM technology requirements, alignment and standards
 - LIRR Asset Management Strategy
 - LIRR EAM Strategic Plan
 - Network Asset Management Plans
 - Integrated Transit Asset
 Management Plans

- Strategic Risk Management Framework
- Asset Criticality Framework
- Asset Condition Standards
- EAM Management System & Governance
- EAM Budget & Financial Plans
- GIS Strategic Plan



Thank You

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