

Practical Interface Opportunities Between Safety & Asset Management Systems

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Federal Guidance on the Nexus

A simple, philosophical summary:

Assets in poor condition can result in increased safety risk

Catastrophic Examples

- Feb 2007 Virgin Trains Grayrigg Derailment (Faulty Switch)
 - *1 fatality*
 - *88 injuries*
- Jun 2009 WMATA Red Line Collision (Faulty Track Circuit)
 - *9 fatalities*
 - *80 injuries*
- Jul 2013 SNCF Brétigny-sur-Orge Derailment (Faulty Tracks)
 - *7 fatalities*
 - *192 injuries*



The Need for a Broader Focus on All Modes of Public Transit

While rail incidents grab headlines, Bus modes experience higher overall incident rates:

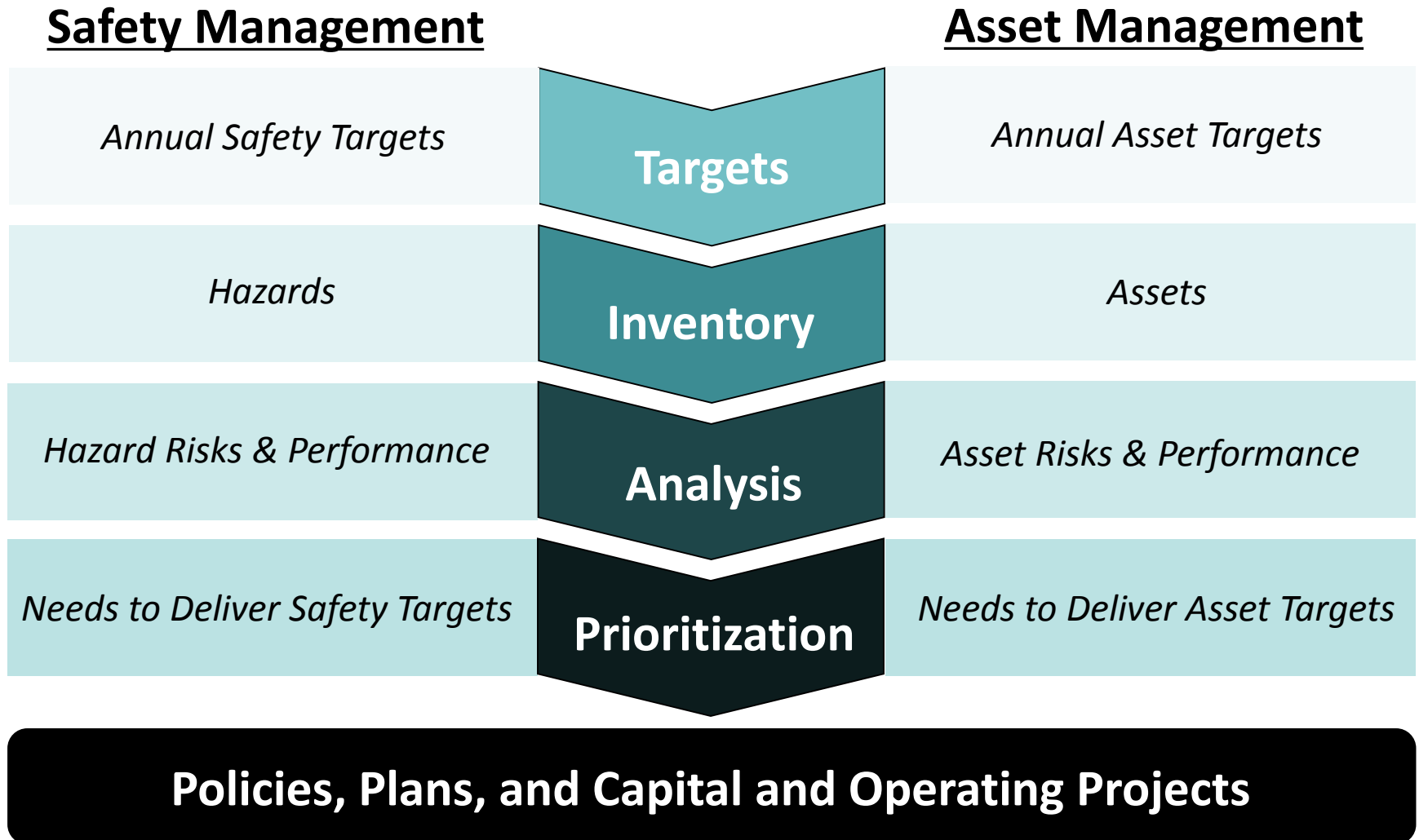
	Events*	Fatalities*	Injuries*
Rail	21.9	1.4	14.4
Bus	85.0	1.9	148.6

* Per 100 million Unlinked Passenger Trips, 2009 - 2013

Source: National Public Transportation Safety Plan, v. 1.0

The nexus goes beyond just asset condition...

A Simplified View of These Data-Driven Management Systems



A Foundation for the Nexus

- Ongoing dialogue between the agency's safety & asset management leaders on each of the following nexus opportunities
- How do we define "Safety Critical Asset"?

A working definition:

A Transit Asset, sub-system, or component whose failure may cause serious injury or death to human beings, loss or severe damage to property, or environmental harm. Criticality will be relatively designated by asset type, on a 1-5 scale, with "1" representing the smallest consequences of asset failure, and "5" representing the largest consequences of asset failure. An asset given a criticality score of "4" or above will be categorically considered Safety Critical.

Practical Interface Opportunity #1: Asset Inventory

How should inventories be modified to maximize utility in the SMS?

- *Designate criticality score by asset type?*
- *Indicate any associated safety risk assessments that have been completed?*
- *Indicate obsolete equipment and/or parts?*

Practical Interface Opportunity #2:

Condition Assessment

- **How should condition of safety critical assets (“4” and above) be assessed?**
 - *Age-based? Performance-based? Physical Inspection?*
 - *How frequently?*
 - *By whom?*
- **What kind of change in condition that should trigger a formal safety risk assessment?**

Practical Interface Opportunity #3:

Capital Project Prioritization

How should a formal safety risk assessment inform investment prioritization?

- *How can decision support tools like TERM Lite reflect the weight of formally-assessed safety risks?*
- *How can safety risk mitigations be “bundled” with other related capital projects for time and cost efficiency?*

Practical Interface Opportunity #4:

Lifecycle Management

Given resource constraints, what synergistic safety and asset management activities should take place at each lifecycle phase?

- *In the asset acquisition phase (planning, design, procurement, and construction)?*
- *In the O&M phase?*
- *In the Overhaul/Rehab phase?*
- *In the asset disposal phase?*

Practical Interface Opportunity #5: Competencies and Training

- **How are competencies determined and managed with respect to the nexus?**
 - *How to we modify job descriptions?*
 - *Do we hire new or train existing employees on these competencies?*
- **How should training programs be structured to reflect the nexus of safety and asset management?**
 - *Which existing training programs can be modified?*
 - *Which new training programs need to be developed for both initial and refresher purposes?*
 - *How do we prioritize the modification/creation of training programs?*

Practical Interface Opportunity #6:

Technology

- **What technologies are currently used for safety and asset management?**
- **What technology enhancements or acquisitions are needed in the future?**
- **How can these enhancements and acquisitions reflect the interface opportunities identified through previous meetings?**

Thank you

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