



MAP 21 TAM Requirements and the UTA TAM System

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Is this the reaction in your organization
when discussing Asset Management?





Chicago Sun Times

January 22, 2015

**RTA: \$36 billion needed for mass transit
maintenance**

MTA New York

Four Year Capital Program 2015-2019

Renew & Enhance

\$26.6 billion



“UTA gets it and should serve as a model to other transit agencies on utilization of TERM Lite and development of Asset Management.”

Robert J. Tuccillo
Associate Administrator for Budget & Policy
Federal Transit Administration
APTA General Conference Proceedings
Houston, Texas October 2014

5 Pillars of MAP 21 TAM Requirements

Define *state of good repair*, including objective measures of asset conditions

Require TAM Plans for all recipients and sub-recipients

Establish an SGR performance measures and report compliance to FTA annually

Report asset inventories and condition assessments in the NTD

FTA will provide technical assistance to agencies

Pillar 1

FTA is required to define *State of Good Repair*, including objective measures of asset conditions

The proposed FTA definition in the NPRM is “**SGR means the condition in which a capital asset is able to operate at a full level of performance.**”

The UTA definition is “**Asset Management is the key to identifying problems before failures occur that can cause unplanned outages and disruptions in service. An effective Asset Management program will maintain a safe, efficient and reliable transit system for our customers and keep the public investment in a State of Good Repair.**”



Pillar 2

Require TAM Plans for all recipients and sub-recipients

Required elements of a TAM Plan

- Each Tier 1 provider must provide their own plan
 - Inventory of capital assets
- Condition assessment of capital assets sufficient to monitor and predict performance
 - List or process for Decision Support Tool
 - Prioritization of investments
- The State must develop a group plan for Tier 2 providers and sub recipients



Pillar 3

Each agency is to establish SGR performance measures and report them to o FTA annually

FTA performance requirements in the NPRM are:

- Equipment (defined as non-revenue support vehicles) is the percentage that has met or exceed there useful life benchmark
- Rolling stock is the percentage that have met or exceed there useful life benchmark
- Infrastructure (includes fixed guideway, signals and systems) is the percentage that has performance restrictions
- Facilities is the percentage with an asset condition rating below 3.

Four Methods for Evaluating SGR

Age- based

Assets should be scheduled for replacement beyond a certain maximum age

Condition- based

Assets should be replaced once inspections identify deteriorated conditions

Performance- based

Assets should be replaced when their deteriorated condition reduces speed or reliability

Comprehensive- assessment

Combines age, condition inspections, performance data, and maintenance history

Beginning of an Asset Mgt System

Very Mature Asset Mgt System



Pillar 4

Report asset inventories and condition assessments in the NTD

FTA has developed a NTD TAM section.



Pillar 5

FTA will provide technical assistance to agencies

FTA has provided the following:

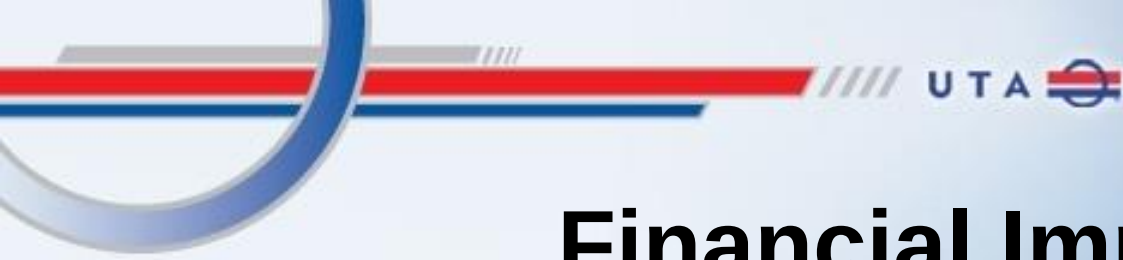
- Reports from the pilot program agencies
 - Asset Management Guide
 - TERM Lite
- Other Reports @ www.fta.dot.gov

What they didn't tell you!

Financial Impacts

FTA asserts no incremental cost for an agency to create an inventory or TAM





Financial Impacts

Proposed definition for equipment is:

“an article of nonexpendable, tangible property having a useful life of not less than one year”

The volume of items if this definition is approved is staggering.



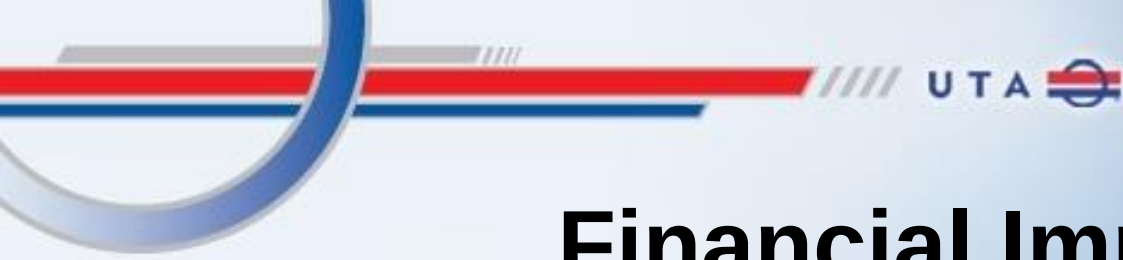
Financial Impacts

FTA asserts that the condition of assets will be determined by a purchasing agent.

FTA asserts it takes 30 minutes/per mile to do a performance evaluation on infrastructure.

FTA asserts that all facilities will have a condition based evaluation.

FTA asserts that all revenue vehicles have an age based evaluation.

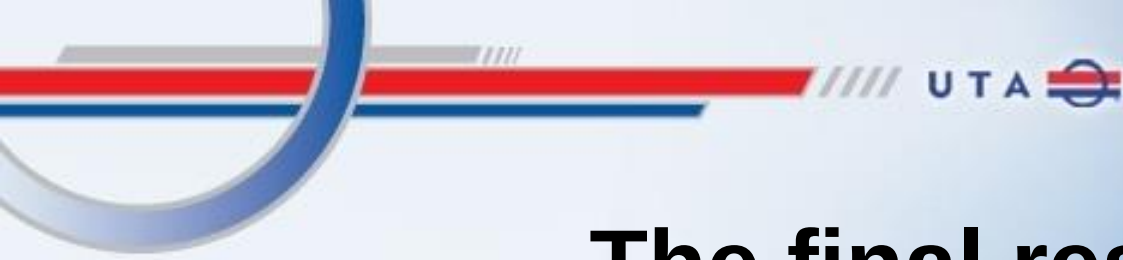


Financial Impacts

FTA asserts that the cost of yearly evaluation of structures, vehicles and infrastructure is only \$3.13 million for the entire transit community.

FTA asserts that stations and maintenance facilities only require evaluation on a triennial basis.

FTA believes that the cost of a decision support tool exceeds the cost of condition evaluation.

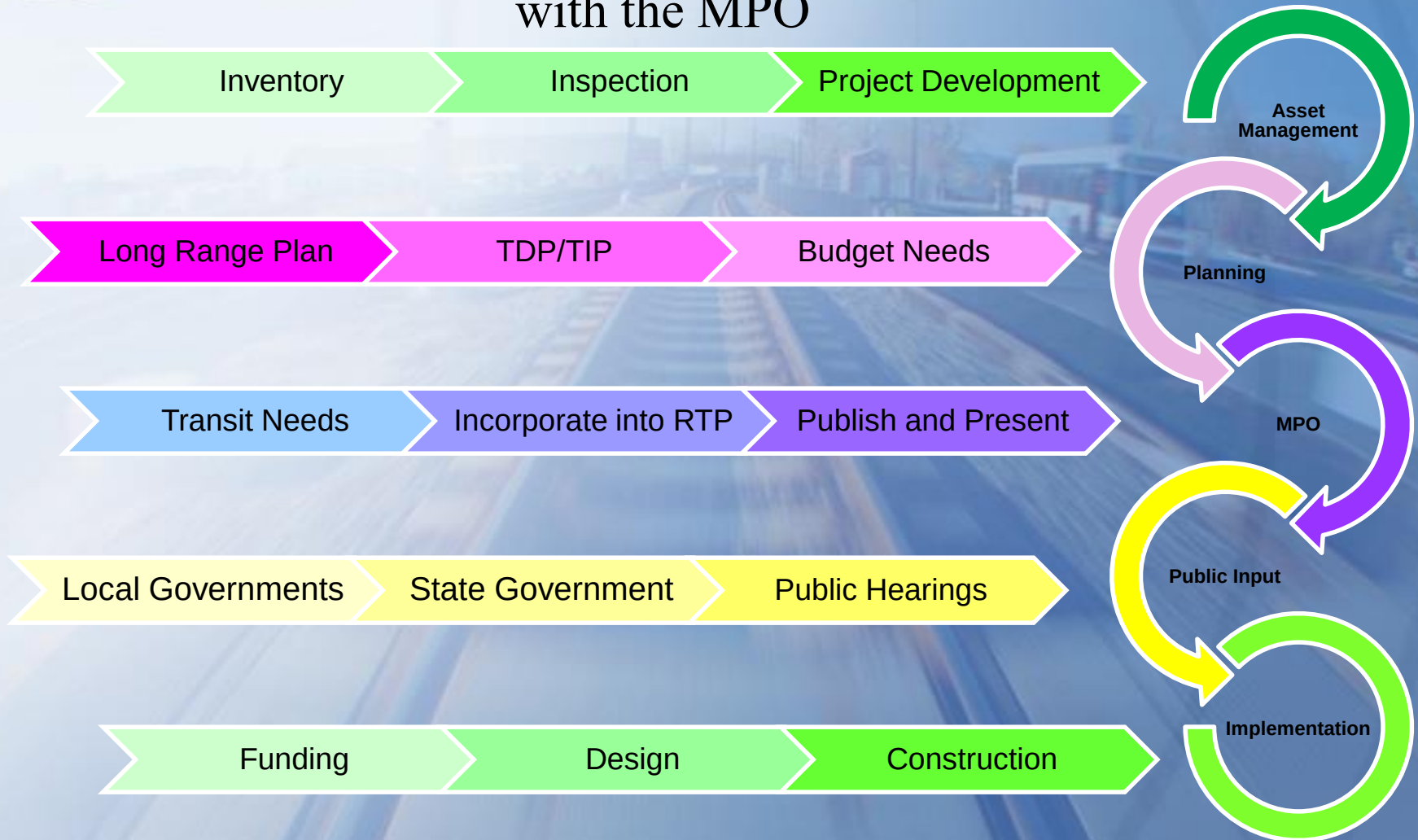


The final result?

No overall increase in cost for a transit to
have a complete Enterprise Asset
Management System

An unfunded mandate again!

Also required in MAP 21 is Coordination with the MPO





The Basics of the UTA System



UTA Original Project Goal:

Develop a Transit Asset Management System (TAMS) that will accommodate inventory and inspection of assets at a transit agency with deterioration modeling, maintenance modeling, and long term budget projections.



Evolution of Asset Management at UTA

- UTA recognized the need for an overall Asset Management System
- Reviewed available resources
- Recognized the need for outside assistance to develop a comprehensive system
- Identified that UTA used InspectTech to perform Asset Management on Structures
- Leveraged this relationship to begin development of comprehensive Asset Management System

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Infrastructure Costs

Green Field Construction

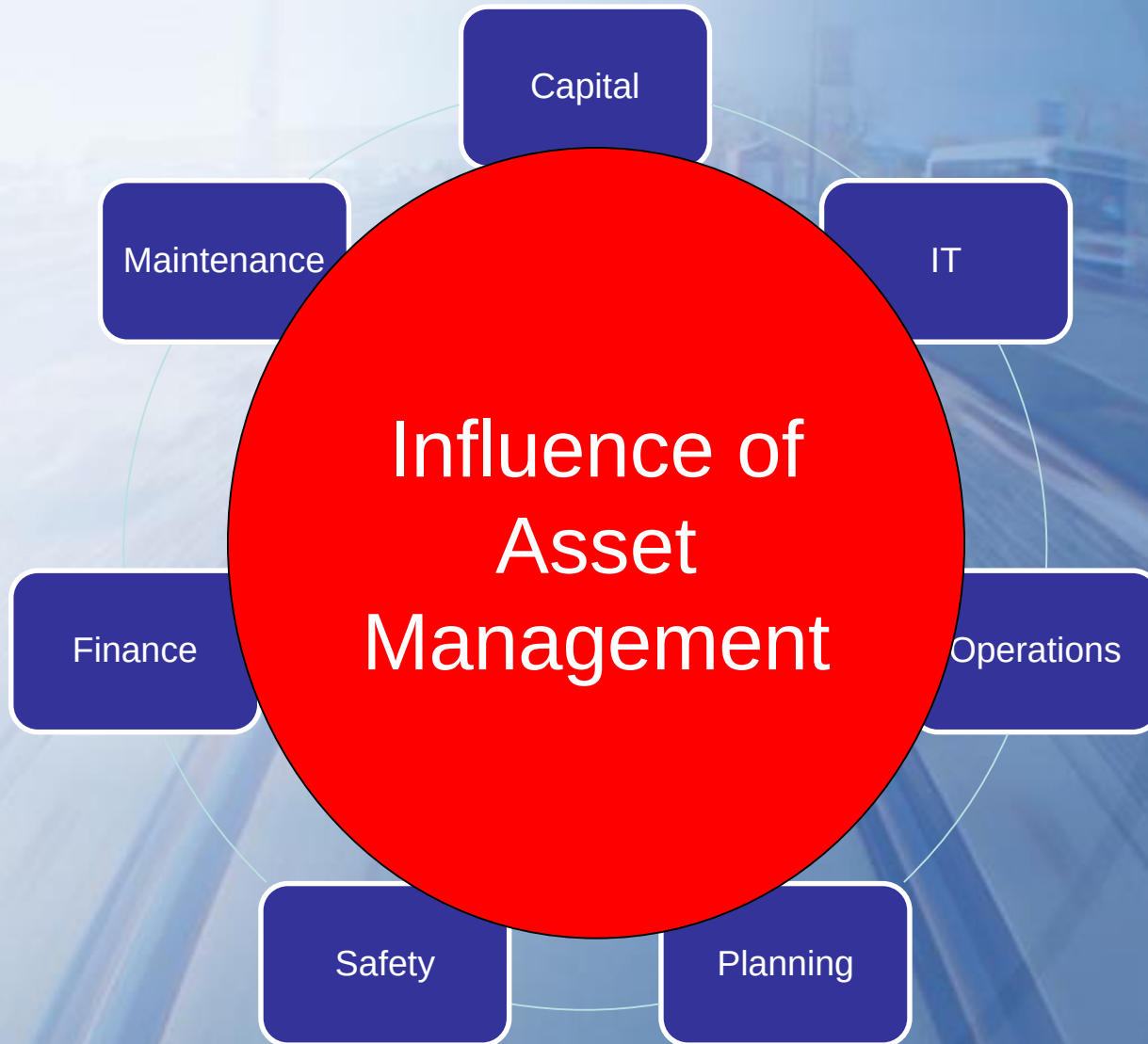
SGR Maintenance



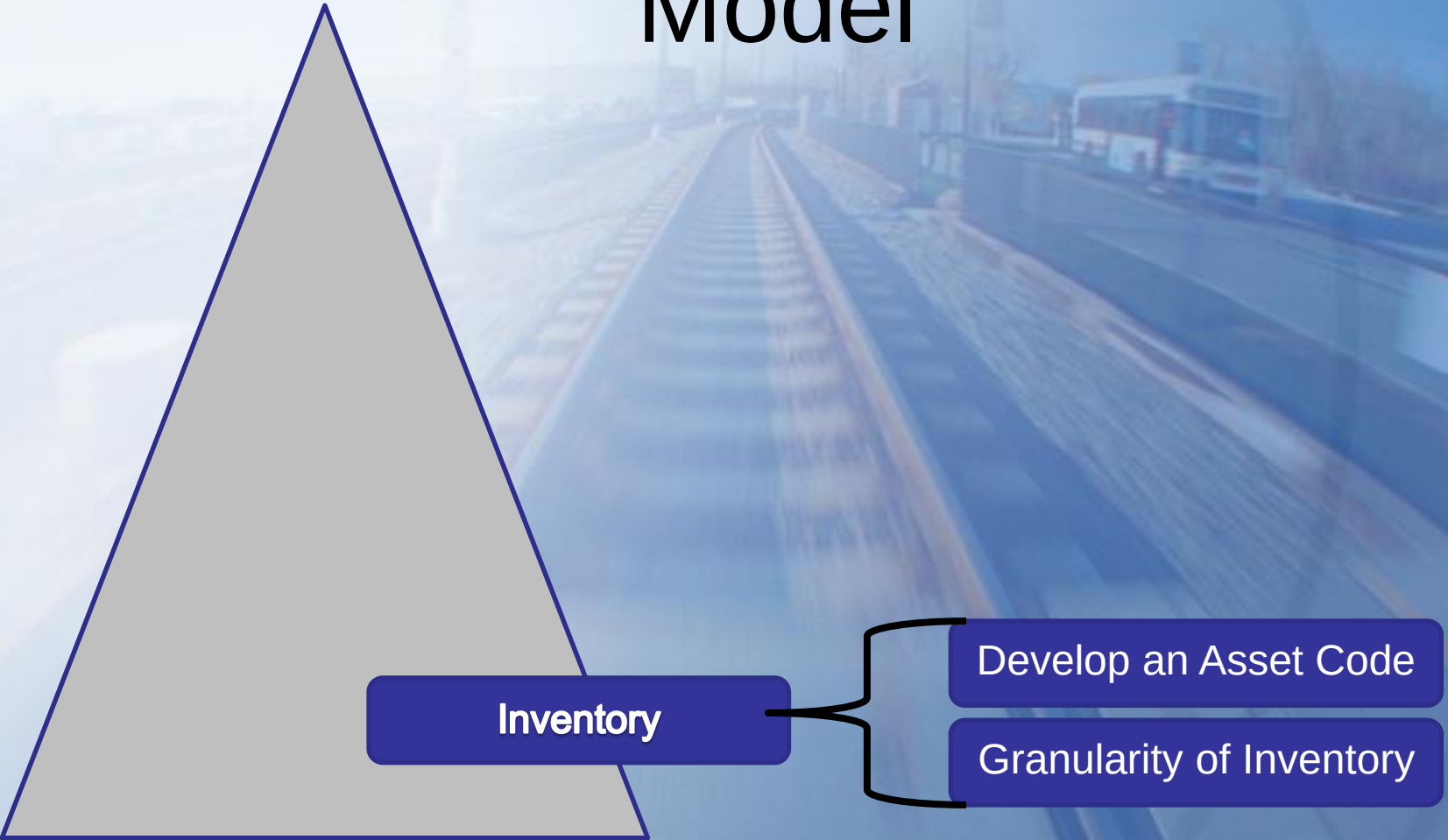
3300 South Grade Crossing



Adjustment to Organization



UTA/Bentley Asset Management Model



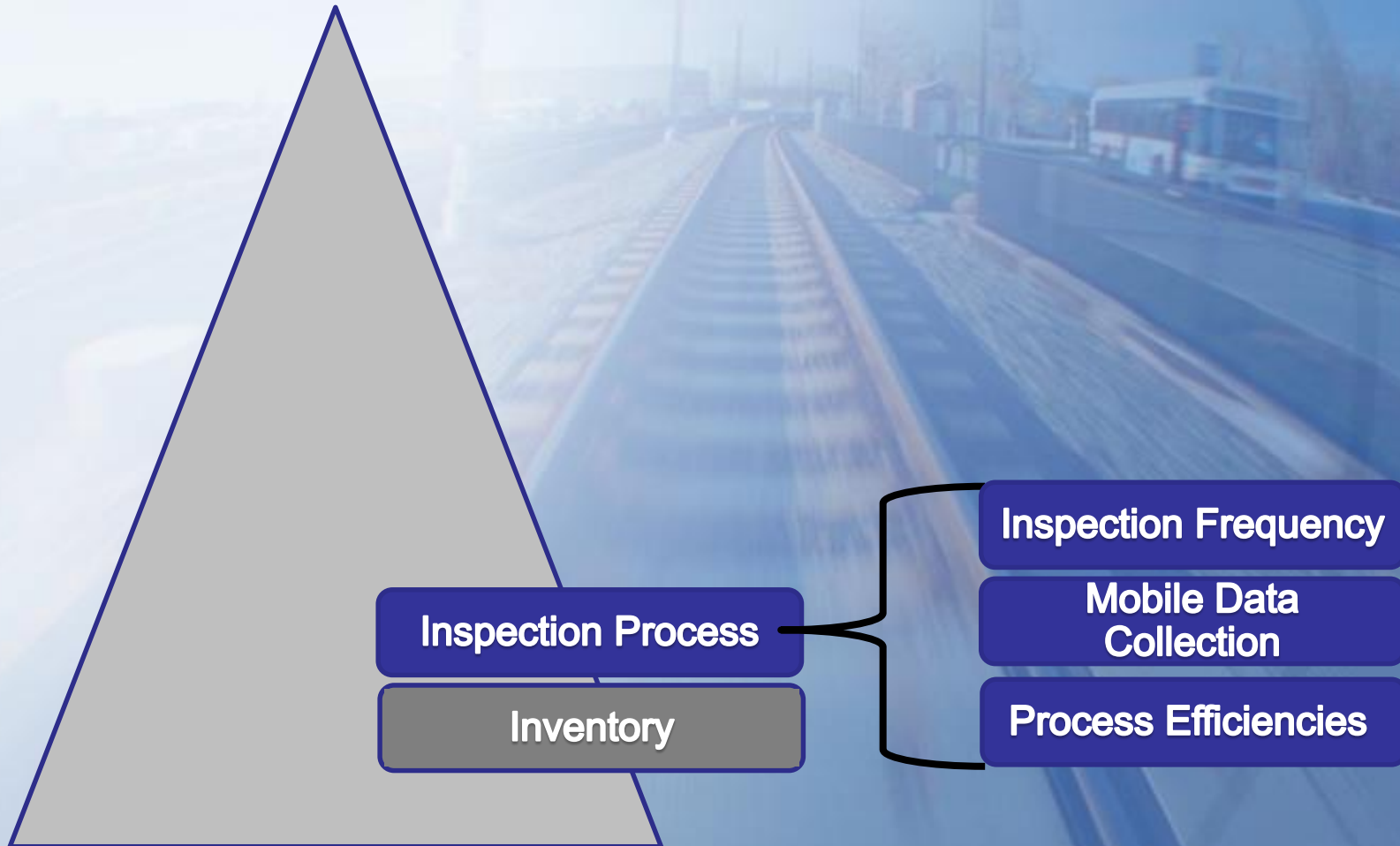
The diagram features a large, light gray triangle on the left side of the slide. A dark blue rectangular box labeled 'Inventory' is positioned at the base of the triangle. To the right of this box, a black bracket connects it to two stacked dark blue rectangular boxes. The top box is labeled 'Develop an Asset Code' and the bottom box is labeled 'Granularity of Inventory'. The background of the slide is a blurred image of a train track with a train in the distance.

Inventory

Develop an Asset Code

Granularity of Inventory

UTA/Bentley Asset Management Model



UTA/Bentley Asset Management Model

Maintenance

Inspection Process

Inventory

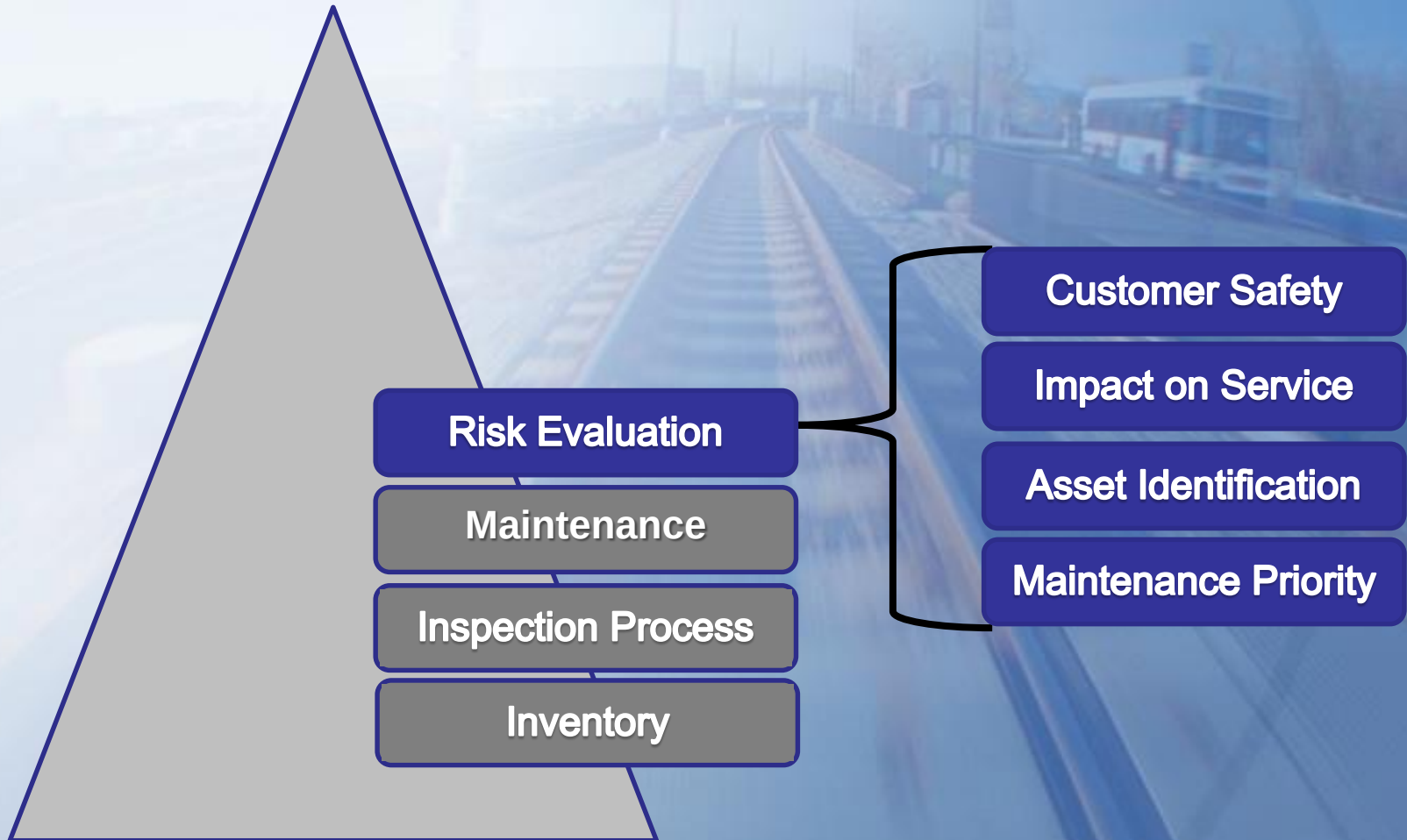
Improved Safety

Reduce Service Interruptions

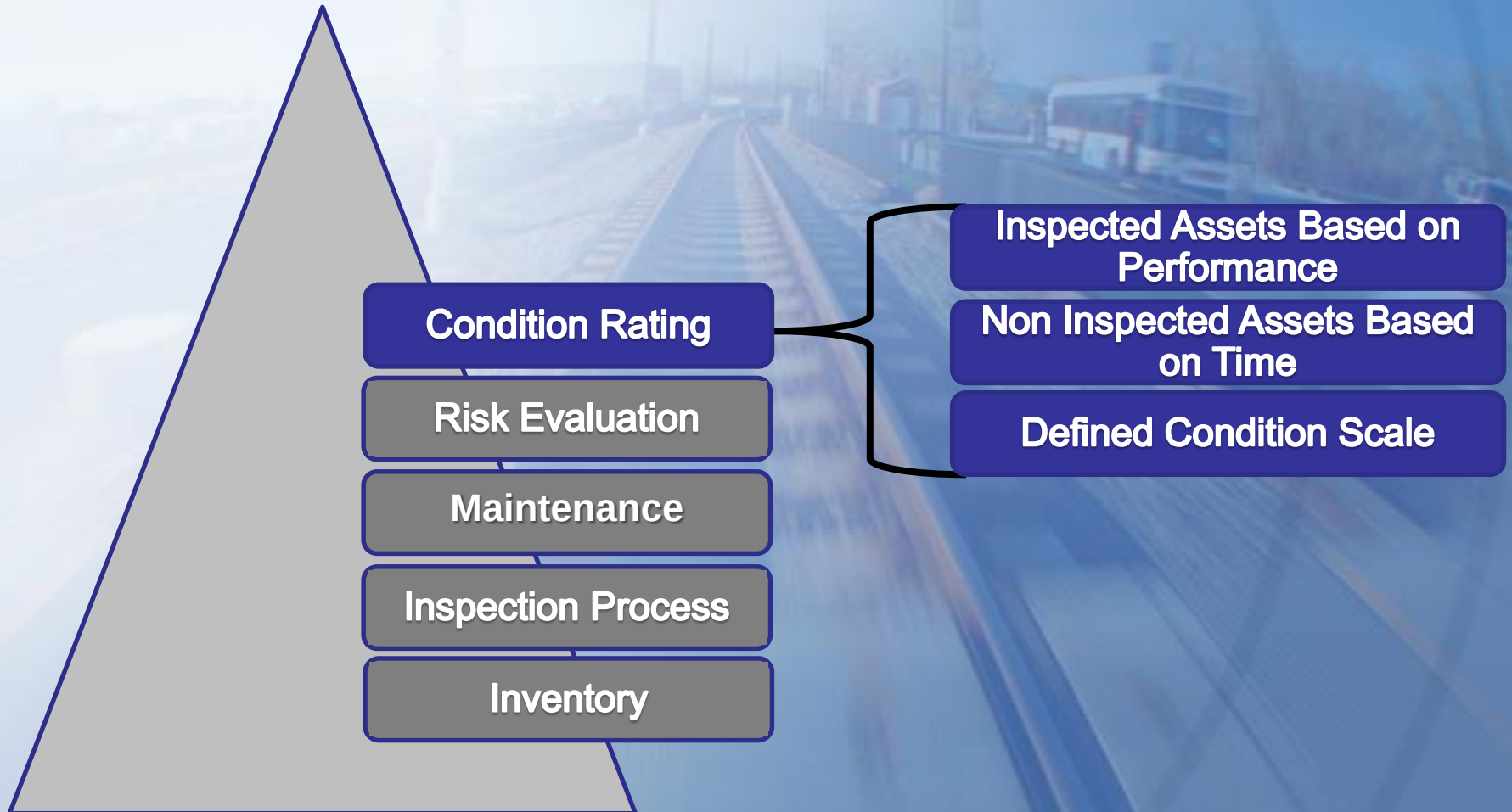
Extend Useful Life

Improved Efficiencies

UTA/Bentley Asset Management Model



UTA/Bentley Asset Management Model



UTA/Bentley Asset Management Model

**Deterioration
Forecasting**

Condition Rating

Risk Evaluation

Maintenance

Inspection Process

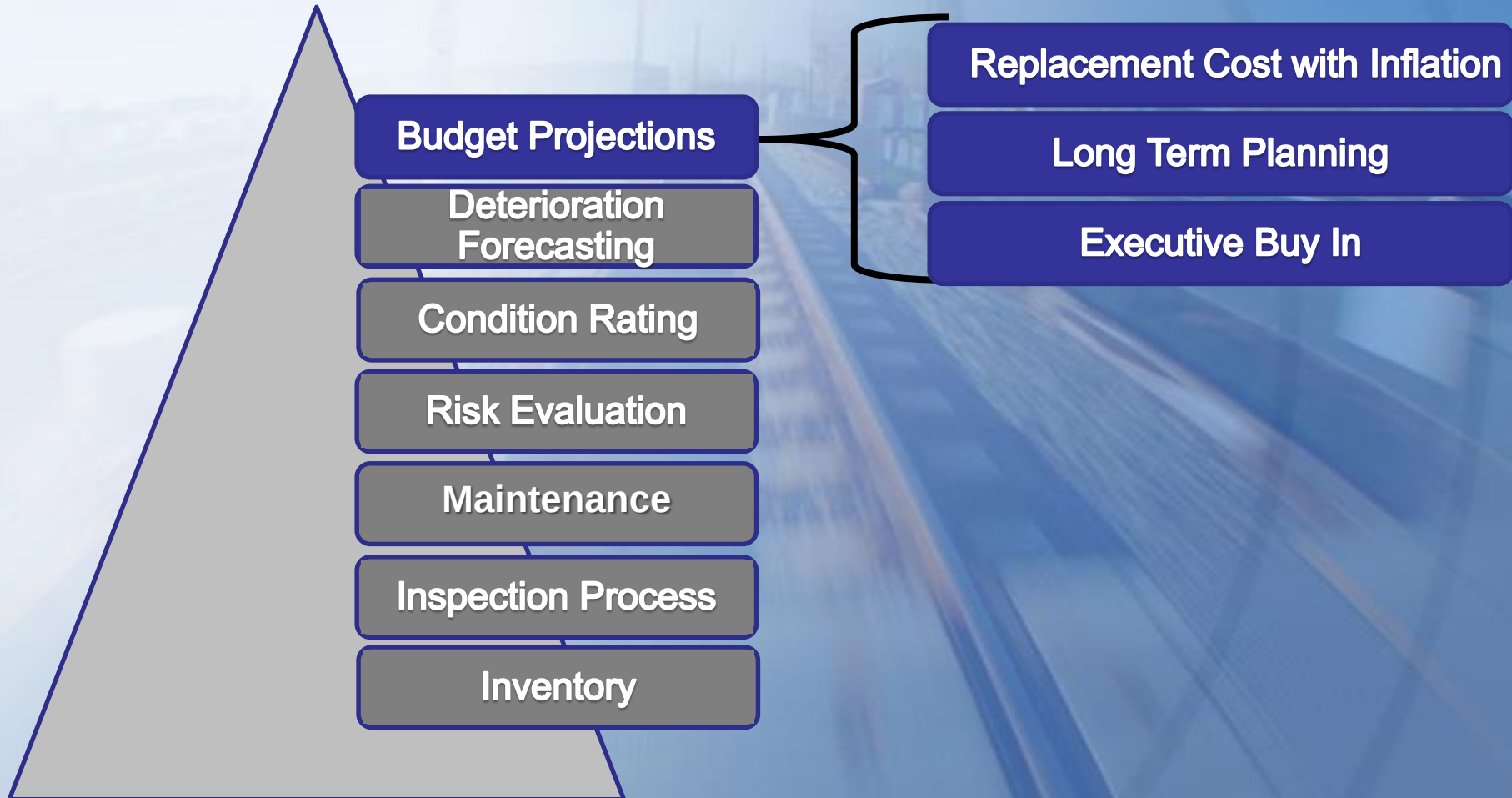
Inventory

**Curves Based on Data From
TERM Lite**

**Curves Adjust to Maintenance
Activities**

**Lead Time for Budgeting
Activities**

UTA/Bentley Asset Management Model



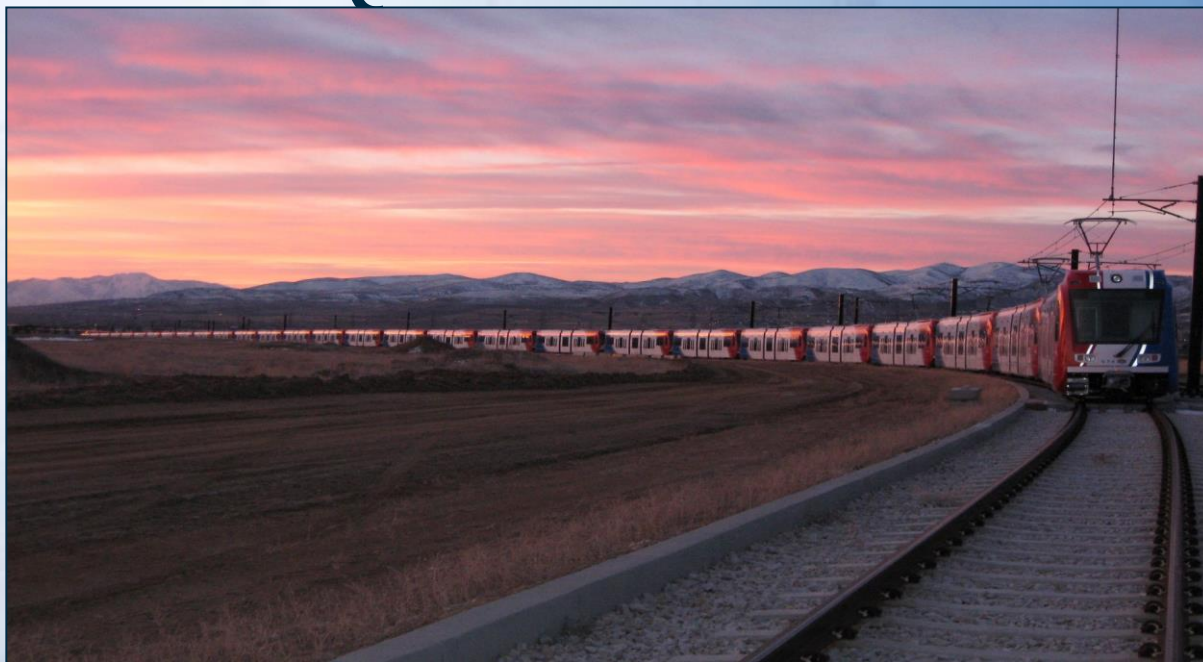
Development of a comprehensive Asset Management System is a journey not a destination. Paul Edwards



Future steps on the Journey

- Refine and improve internal processes to feed the correct data into the system
- Develop direct data connection to National Transit Database (NTD) reporting requirements
- Continue to educate internal customers on the validity of the process
- Ongoing development
 - Smart phone inspection applications
 - Tie to RFID data collection
- Create software links to mine data from other systems that will improve the accuracy of the budget projections

Questions?



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