



# RTD – Denver’s status on MAP – 21 Proposed Regulations

# Presentation goals

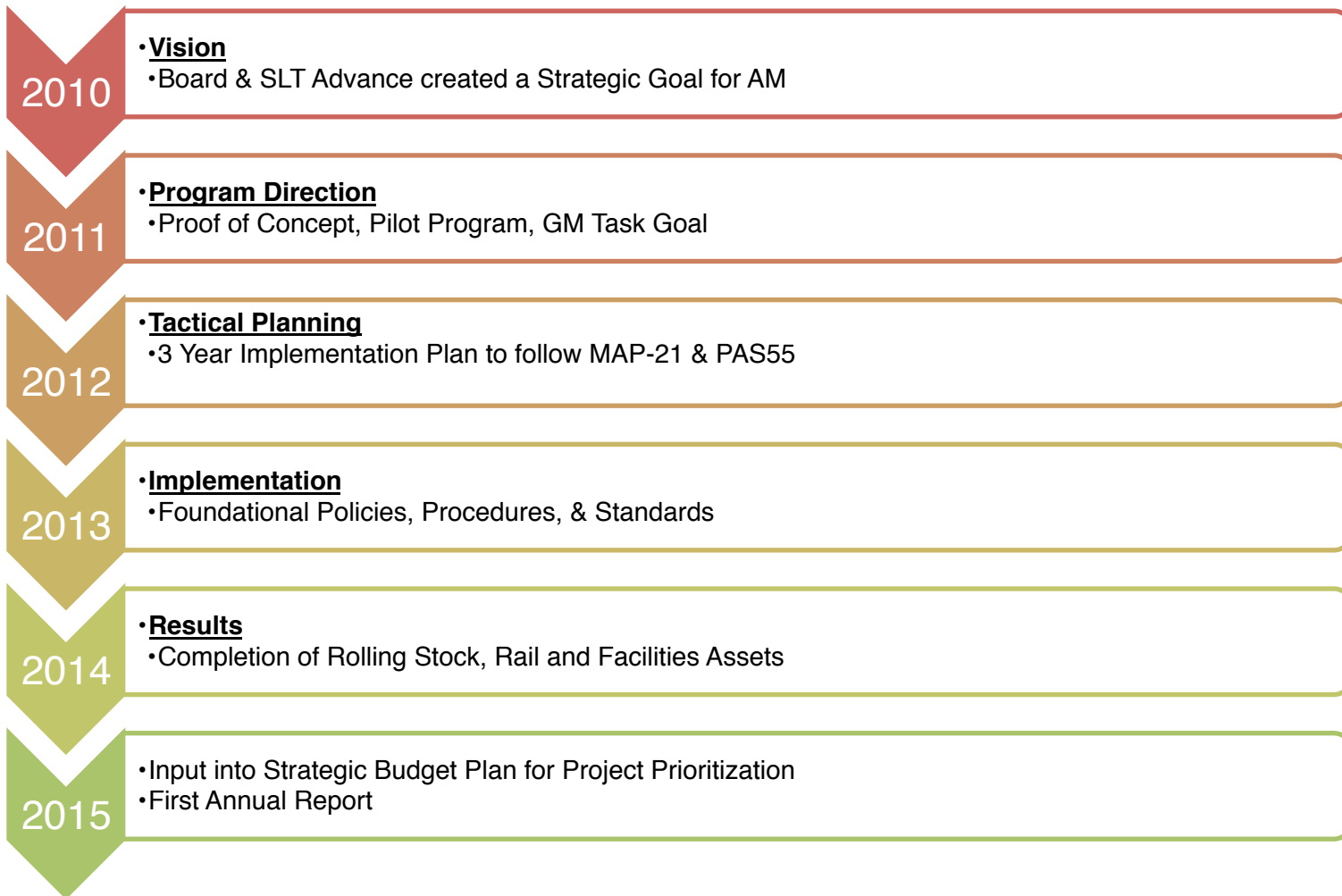
- Overview of RTD's Asset Management program
- TAM Plan Elements (Proposed)
- Performance Measurement (Proposed)
- Targets Required (Proposed)
- SMS/SSO (Safety) requirements
- NTD Reporting
- Dashboards and Internal Reporting

# RTD Overview

- Regional Transportation District in Denver, or RTD, started operation in 1972
- RTD has a service area of 2,410 square miles in eight counties
- RTD employs about 2,500 people
- RTD has over 140 bus routes, 80 Park-n-Rides, 10,000 stops
- RTD has approximately 1,200 full size buses, 400 cut-a-way buses, 400 support vehicles.
- RTD has 6 light rail lines, 47 miles of track, 49 stations
- RTD has 174 Light rail vehicles.
- Accessibility services, call-n-Rides, seasonal rides and many other programs
- Fastracks is adding approximately 110 miles of track for light and commuter rail, over 40 new Stations and P-n-Rs along with 29 light rail vehicles and 56 commuter rail vehicles



# RTD's Asset Management program



# TAM Plan Elements (Proposed)

RTD is considered a Tier 1 provider

Proposed requirement from NPRM	Is RTD Compliant	Status
1. Inventory of Capital Assets	Compliant	Categories completed: Rolling stock, Facilities, Rail Infrastructure, Non-Revenue Equipment (Vehicles), Conveyances, Bridges In progress IT, ITS, SCADA, Equipment (non-vehicles)
2. Condition Assessment	Compliant	Categories completed: Rolling stock, Facilities, Rail Infrastructure, Bridges, Equipment (Vehicles) (age only), Conveyances (age only),
3. Decision Support Tools	Compliant	Dashboards available for all categories with more in progress
4. Investment Prioritization	Compliant	Process in place based on agencies goals For our Strategic Budget Plan RTD has a process where projects are graded against our Agency goals
5. TAM and SGR Policy	Compliant	Completed 06/2014 two annual reports completed (year to year comparisons, prioritized backlog, updates)
6. Implementation Strategy	Compliant	Included in TAMP
7. List of Key Annual Activities	Compliant	Included in TAMP
8. Identification of Resources	Compliant	Included in TAMP
9. Evaluation Plan	Compliant	Included in TAMP

# Performance Measurement (Proposed)

Asset performance would be measured by asset class, which means a subgroup of capital assets within an asset category. The following are the proposed performance measures for each of the four proposed asset categories:

Asset Category	Classes Measured	Performance Measures	RTD's status
<b>Rolling Stock</b>	All revenue vehicles	Percentage of revenue vehicles within a particular asset class that have either met or exceeded their useful life benchmark (ULB)	Age based ULB in place, also using condition and performance scoring
<b>Facilities</b>	All buildings or structures	Percentage of facilities within an asset class, rated below 3 on the Transit Economic Requirements Model (TERM) scale (1=poor to 5=excellent)	Condition based scoring in place using TERM scale. Also using age based score, while working on performance scoring
<b>Infrastructure</b>	Rail fixed guideway, track, signals, and systems	Percentage of track segments, signal, and systems with Performance restrictions	Working on slow zone performance tracking/scoring. Currently using age and condition scoring.
<b>Equipment</b>	Non-revenue vehicles	Percentage of vehicles that have met or exceeded their ULB	Age based ULB in place for vehicles. Working on adding other equipment types.

# Targets Required (Proposed)

Targets should be set by each transit provider or TAM plan sponsor for each applicable asset class for the coming year. Initial targets must be set within 3 months of the issuance of the final rule and then every fiscal year thereafter. It is recognized that Transit Providers may not have complete data while setting initial targets. To the extent feasible, targets should be supported by data such as the most recent condition data and reasonable financial projections for the future, but the overall end goal is to be in a system-wide SGR.

**RTD is currently exploring targets, we are looking at the following:**

- Rolling stock: 80% of assets in regular revenue service above 2.5 score (not in reserve fleet or in procurement)
- Facilities: 80% of assets above 3.0 condition score
- Infrastructure: No more than 10% condition/age related slow zones
- Equipment: 70% of assets above 2.5 score (not in reserve fleet or in procurement)

# SMS/SSO (Safety) requirements

What is the Relationship Between an Agency Safety Plan and a Transit Asset Management Plan? (NPRM)	RTD status
<b>An operator would consider the results of its condition assessments while performing safety risk management and safety assurance activities.</b>	Currently bringing scores below 2.5 with risk analyses to Executive Safety Committee for review
<b>The results of the condition assessments, and subsequent SMS analysis, would inform an operator's determination as to whether an asset meets the state of good repair standards.</b>	Same
<b>The Accountable Executive has the ultimate responsibility for decisions related to both plans.</b>	Considering the General Manager/CEO or the AGM of Safety Security & Asset Management as the Accountable Executive



# NTD Reporting

- Additional asset information
- Performance data
- Targets
- Using ABS data from EAM system
- Using data from EAM and BI systems
- Working on targets and tracking

# Dashboards – Performance Tracking

- Reporting is software agnostic
- RTD AM and SGR uses Oracles Business Intelligence Enterprise Edition (OBIEE 11.5) for reporting & analysis
  - ETLs (Extract, Transform and load process) from multiple software data bases to a central data warehouse

# Rolling Stock

Oracle BI Interactive Dashboards - Windows Internet Explorer

http://bi.rtd-denver.com/analytics/saw.dll?Dashboard

ORACLE Business Intelligence

SGR BUS Dashboard

SGR Scores by Criteria

SGR Overall Average

CATEGORY is equal to / is in BUS and LATEST\_PHY\_INS\_FLG is equal to / is in Y and ASSET is not LIKE (pattern match) %R

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Current SGR Scores by Category for BUS

Time run: 4/16/2014 10:17:55 AM

Report (SGR Current Scores by Category for BUS): This report is a breakdown of the individual scoring components that make up the overall State of Good Repair score for the Bus category. The scores are based on the latest physical scores recorded for each Bus.

CATEGORY BUS

CATEGORY	SGR Overall Average by Asset	SGR Incident Score by Asset	SGR Roadcall Score by Asset	SGR Life Miles Score by Asset	SGR Cost Miles Score by Asset	SGR Physical Rating Score by Asset
BUS	2.2	2.4	2.2	1.1	2.1	3.1

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SGR Scores by Category for BUS

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Report (SGR Scores by Category for BUS): This report displays SGR Scores for a BUS category by year. The report shows the current year plus scores for the previous 4 years. The Average Score is made up of adding SGR scores for Incident Counts, Road Calls, Physical Inspection Average, Life Miles and Cost Per Mile, then averaging the total by the available scores.

CATEGORY is equal to / is in BUS and LATEST\_PHY\_INS\_FLG is equal to / is in Y and ASSET is not LIKE (pattern match) %R

Calendar Year	Category	SGR Overall Average by Asset	SGR Cost Miles Score by Asset	SGR Incident Score by Asset	SGR Life Miles Score by Asset	SGR Physical Rating Score by Asset	SGR Roadcall Score by Asset
2014	BUS	2.0	2.2	2.5	0.5	3.0	2.0
2013	BUS	2.3	2.1	2.4	1.4	3.5	2.0
2011	BUS	2.2	2.1	2.4	1.3	2.8	2.6

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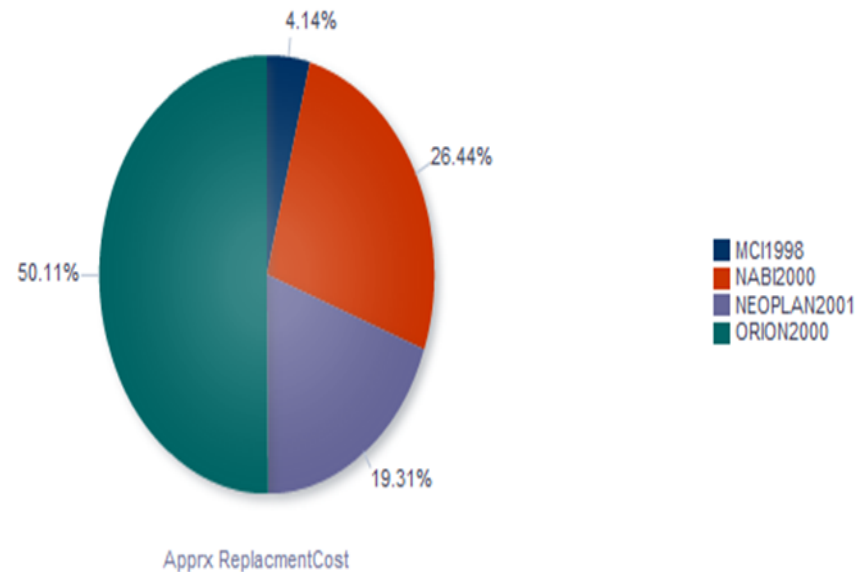


# Backlog for Rolling Stock

- Replacement Cost for Assets that fall under SGR backlog will be around \$ 74,408,000

*[Assumed replacement per bus = \$524,000]*

SUBCATEGORY	Assets-SGR Backlog	Apprx ReplacementCost
MCI1998	9	4,716,000
NABI2000	58	30,392,000
NEOPLAN2001	3	1,572,000
ORION2000	72	37,728,000
<b>Grand Total</b>	<b>142</b>	<b>74,408,000</b>



# Summary

- With the exception of Targets we feel comfortable RTD is compliant with the known requirements
- RTD is working on refining the processes around all aspects of MAP-21 & the FastAct
- RTD is beginning the Gap Assessment for ISO-55000 compliance
  - Decision about certification after completion

# Thank You

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