

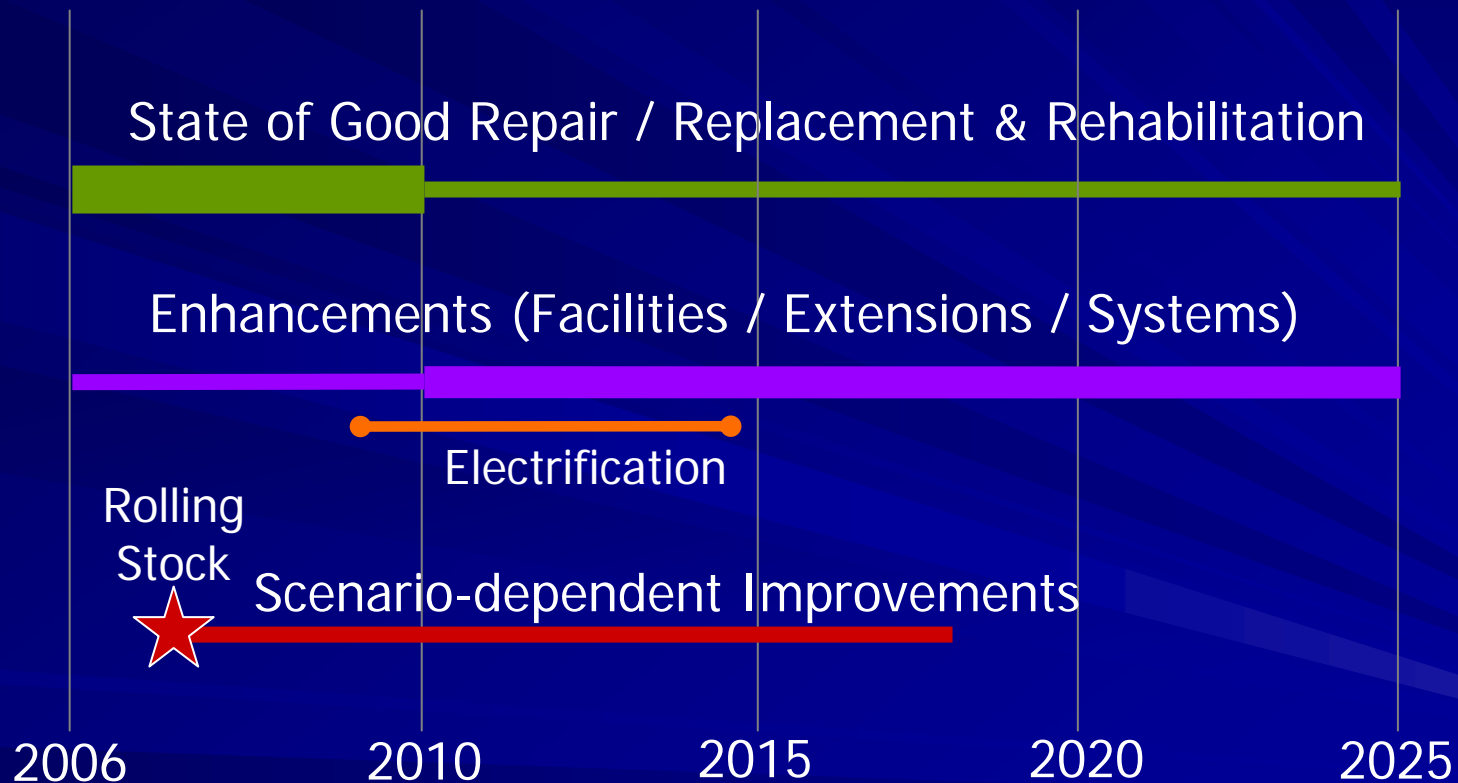
Project 2025

Presentation to the
Peninsula Corridor Joint Powers Board
January 4, 2007

Project 2025

- Implementation of the 2004 Strategic Plan
- State of Good Repair and Capital Improvement Program
- Critical Decision Points

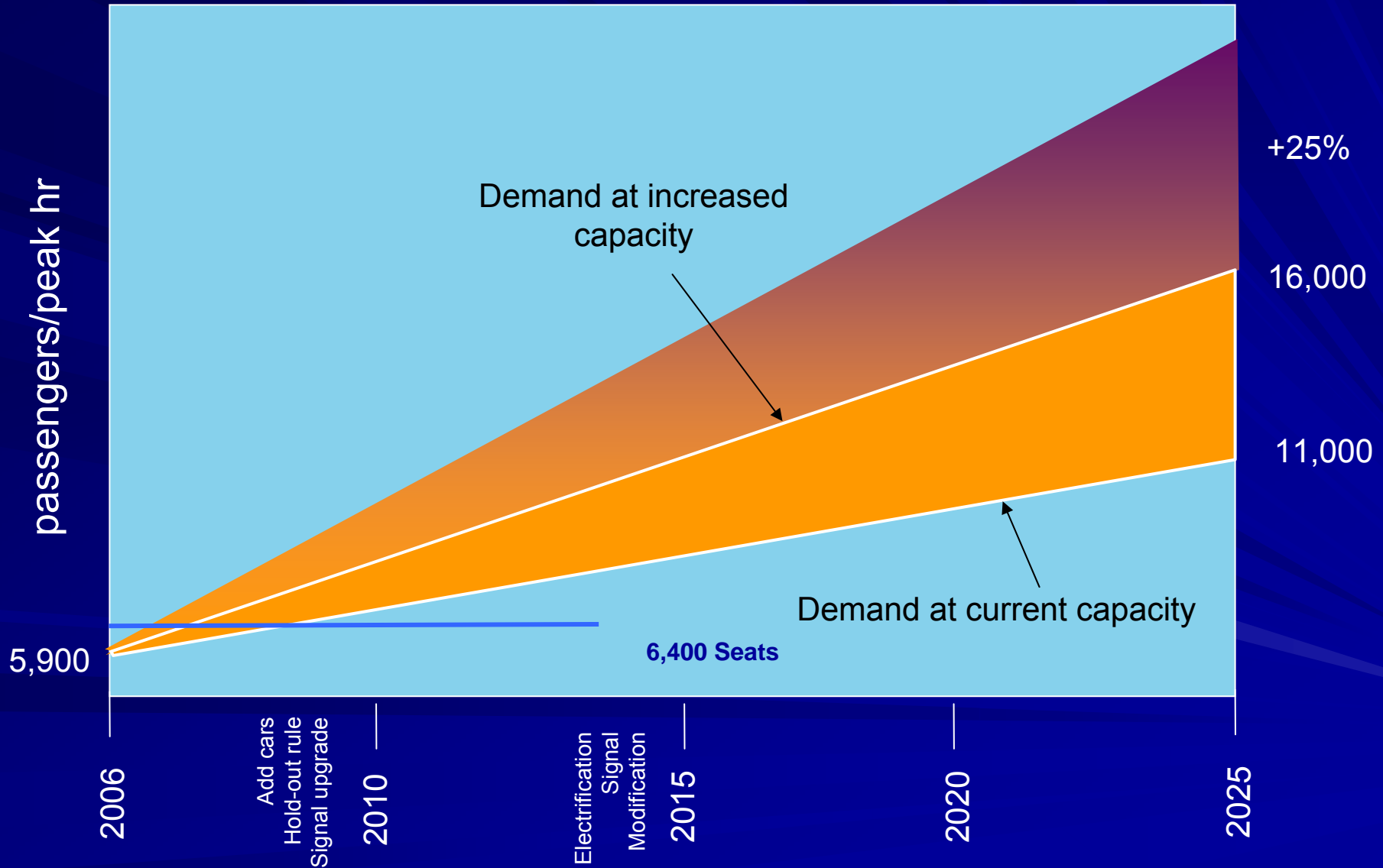
Capital Program Timeline



Project 2025

- Capacity and its effect on demand – the potential for Caltrain ridership
- State of Good Repair and scenario-independent improvements
- Scenario-dependent improvements – benefits, costs and risks

Effect of Capacity on Demand

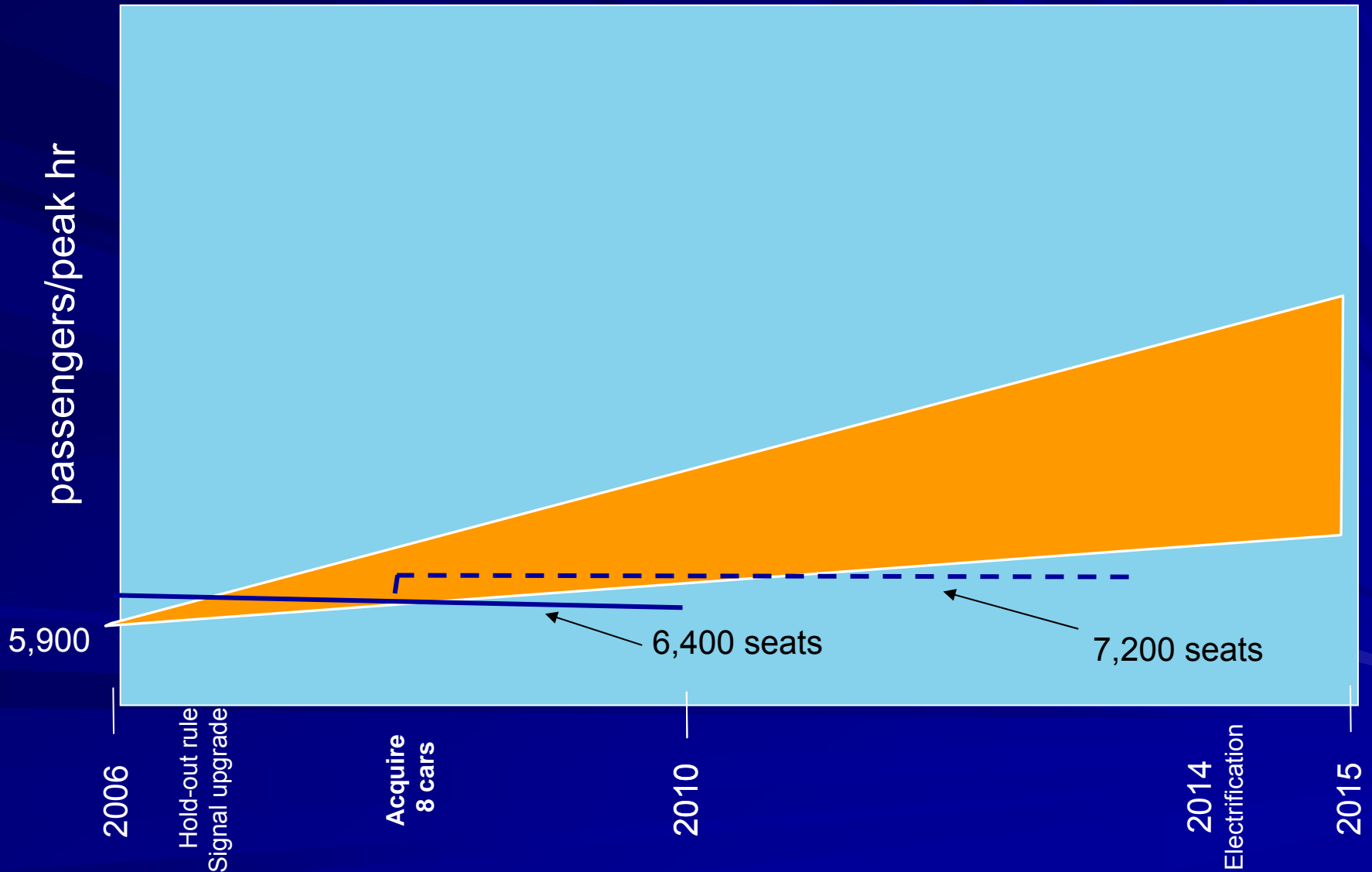


State of Good Repair

- Maintenance
- Bridge Replacement
- Station Improvements to remove hold-out rule
- Fencing
- Grade Crossing Program
- Track Rehabilitation
- Vehicle Component Replacement
- Vehicle Replacement

Current Service

Diesel Locomotives



Procure Vehicles

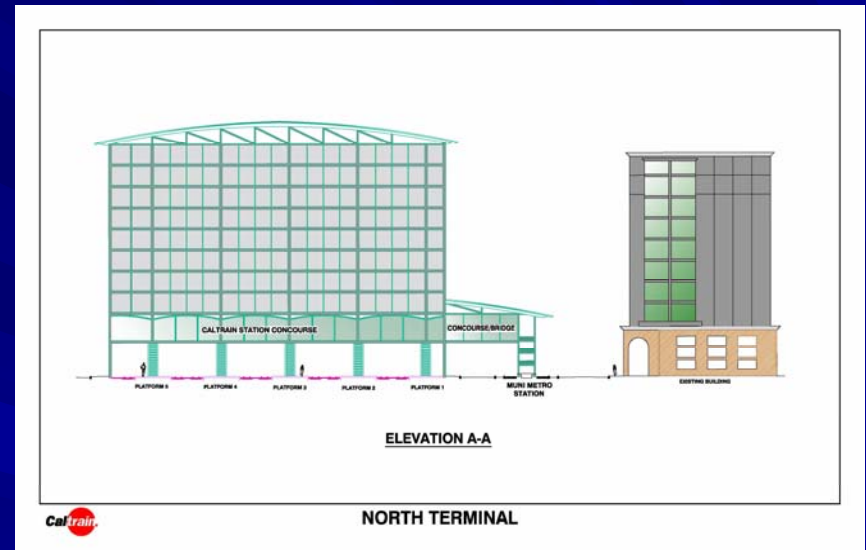
Immediate Need:

- 6 trailer cars
- 2 cab cars

Post-Electrification Improvements

Improvements are:

- Terminal Facilities – SF and SJ
- Stations – Level Boarding
- Signals – Positive Train Control



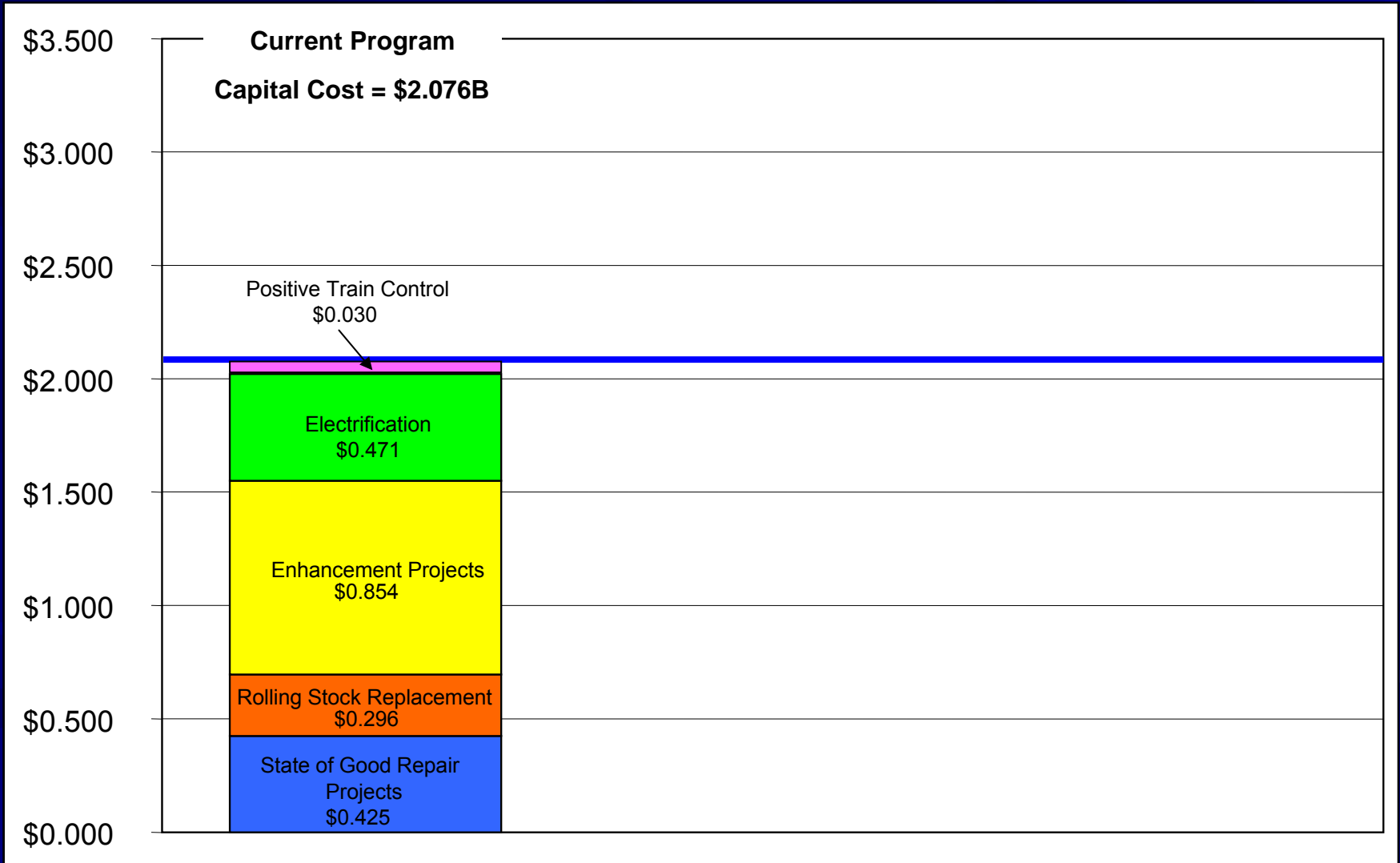
Post - Electrification Scenario-Dependent Improvements

Improvements are:

- Added Storage and Shop Facilities
- Extensions: DTX, Dumbarton and future HSR

Capital Cost – Current Program

Cost in \$B



Risks To Execution

- Large increase in volume of work
- Compressed time frame for execution
- Highly interdependent schedules
- Limited system access
- Increased activity at systems level
- High performance requirement
- Funding

Rolling Stock



Two Technology Options

FRA Compliant

MP 36 – Current Fleet

ALP 46 – Most Common in use

FRA Non-Compliant

Rapid Transit Equipment

“Compliant” refers to FRA required buff strengths, maintenance practices, operating protocols

Two Technology Options

Electric Locomotive - Compliant

One motor unit / 8 trailers

Train Size Affects Performance

Subject to 2% Gradient Limitation

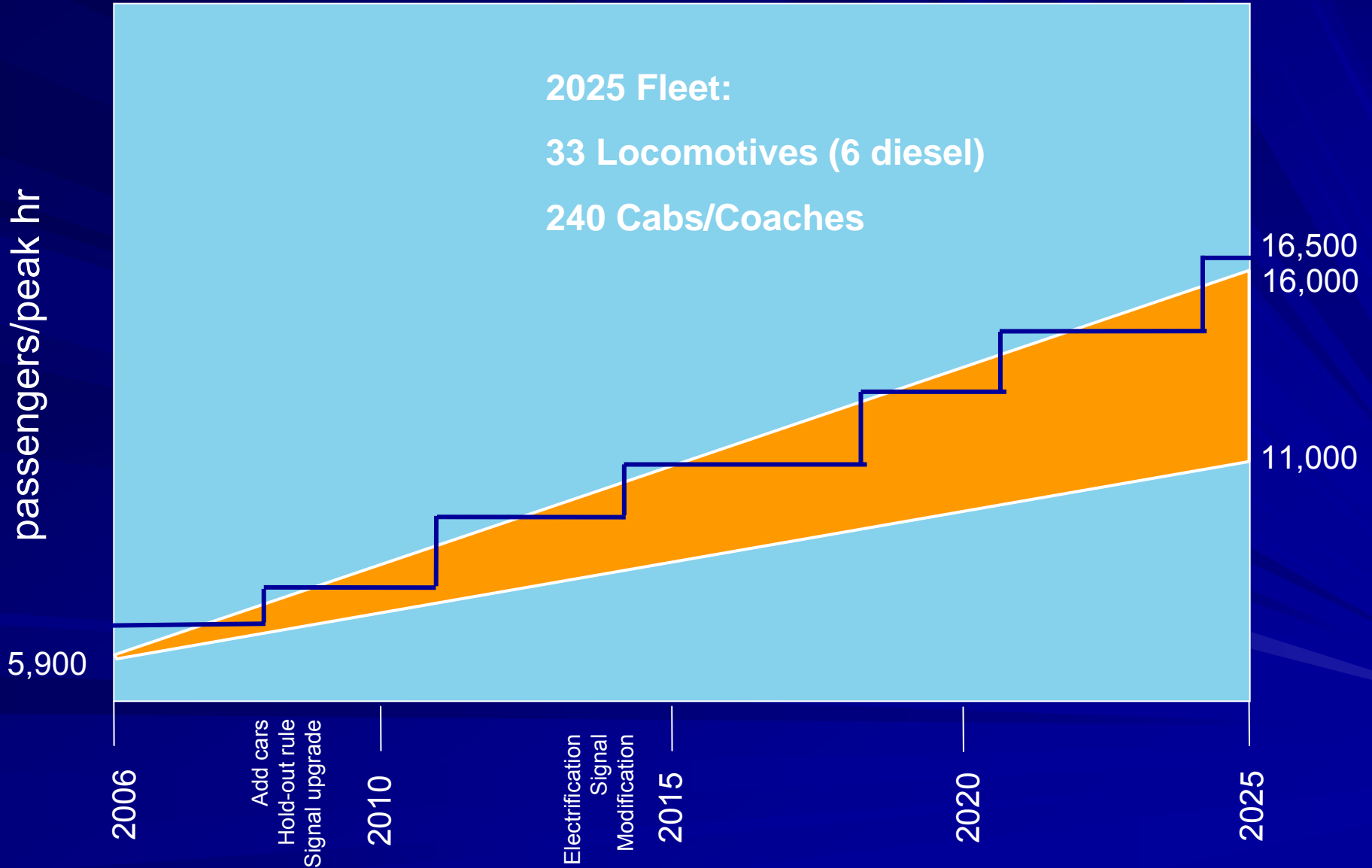
Electric Multiple Unit (EMU) - Non-Compliant

All 8 units self propelled

Performance Not Affected by Length

Unaffected by +2% Gradient

Electric Locomotives (ALP46)



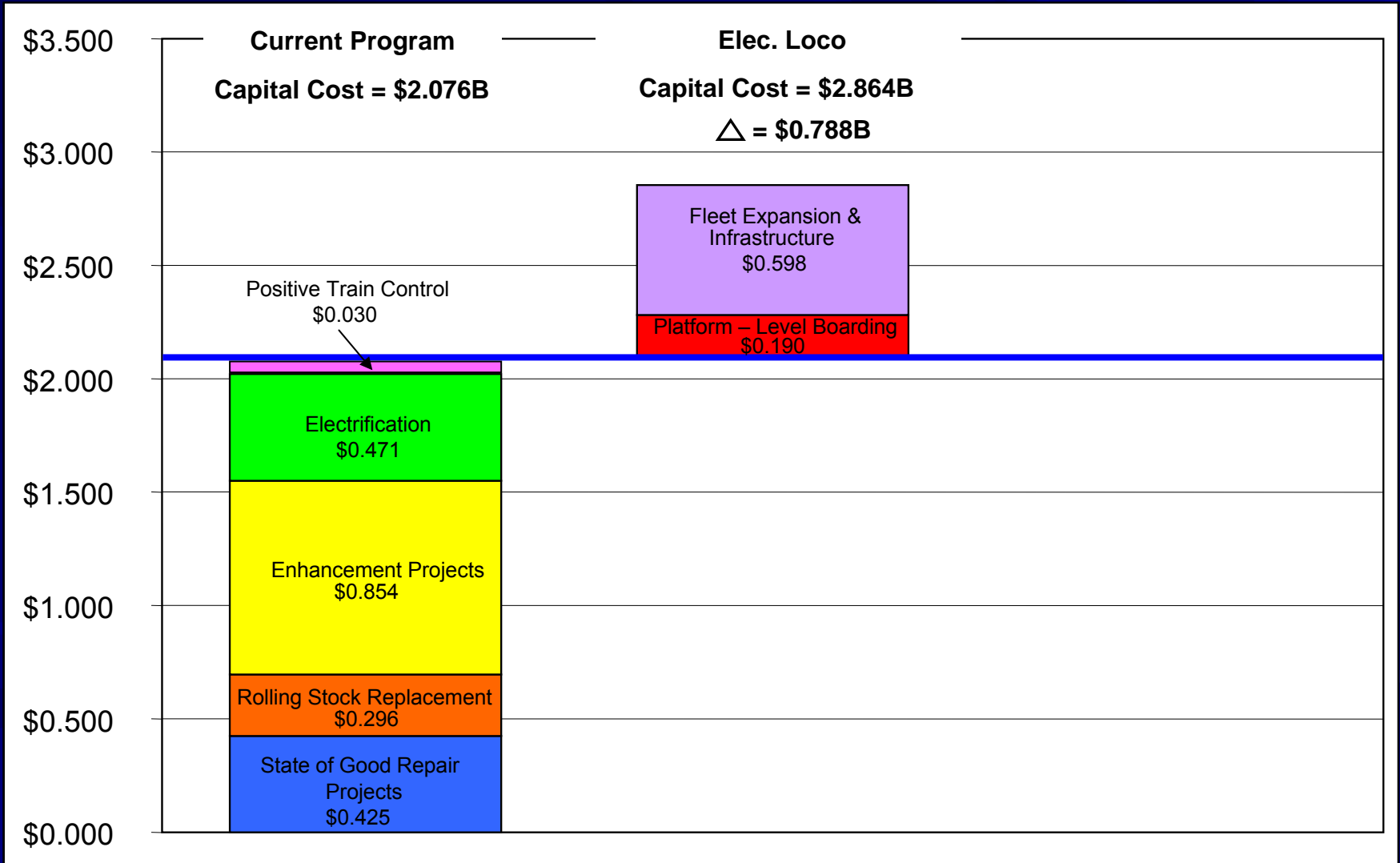
Electric Locomotive

FRA Compliant Equipment

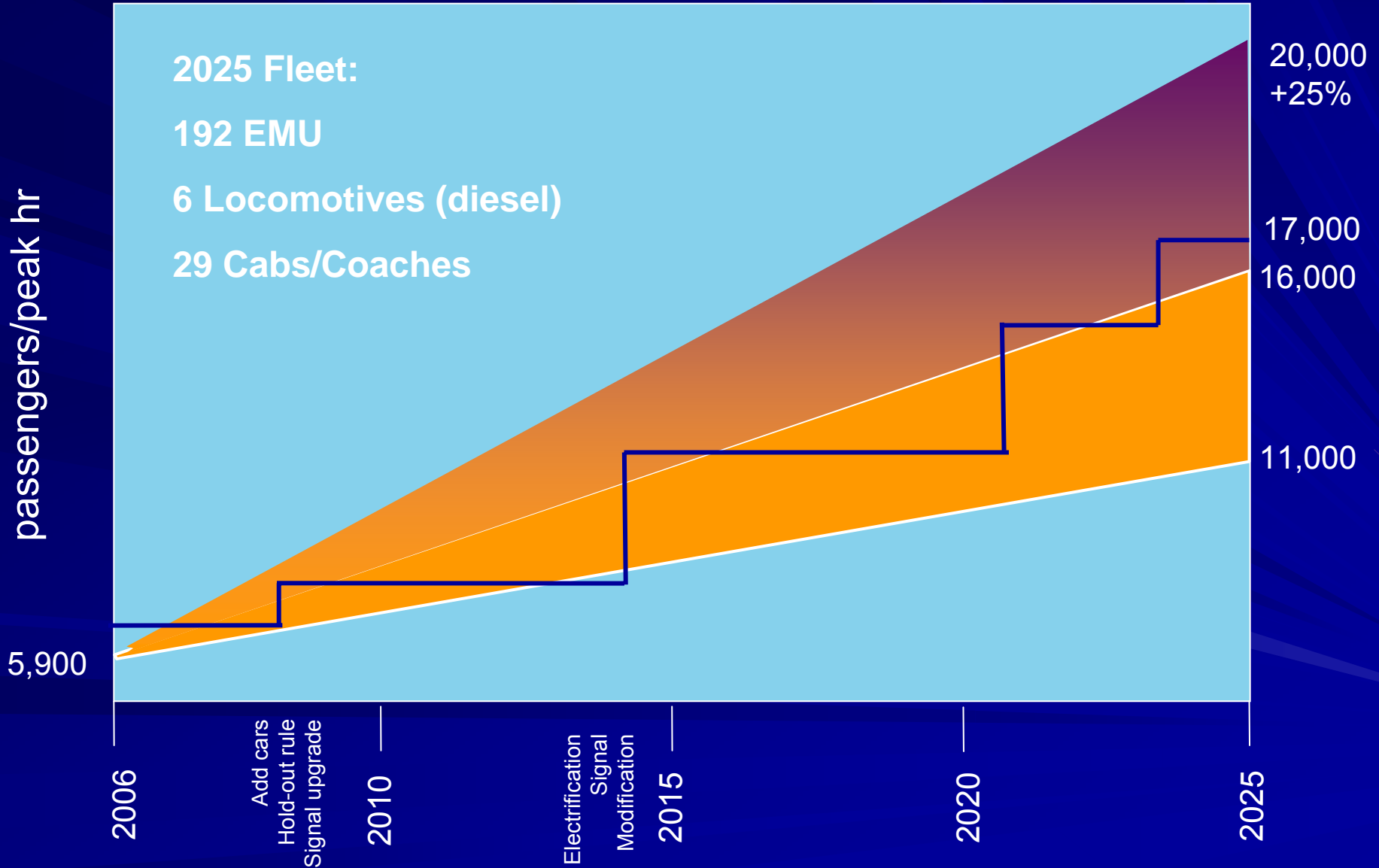
Benefits:	Risks:
<ul style="list-style-type: none">■ Reduction in end-to-end run time over diesel■ Simple transition■ Access by mini-highs/possible level boarding■ Potentially Compatible with DTX■ Lower operating costs than Diesel	<ul style="list-style-type: none">■ Not compatible with HSR■ Low operational flexibility■ Performance degrades as consists lengthen

Capital Cost – Electric Locomotive

Cost in \$B



Rapid Transit EMU (Not FRA compliant)



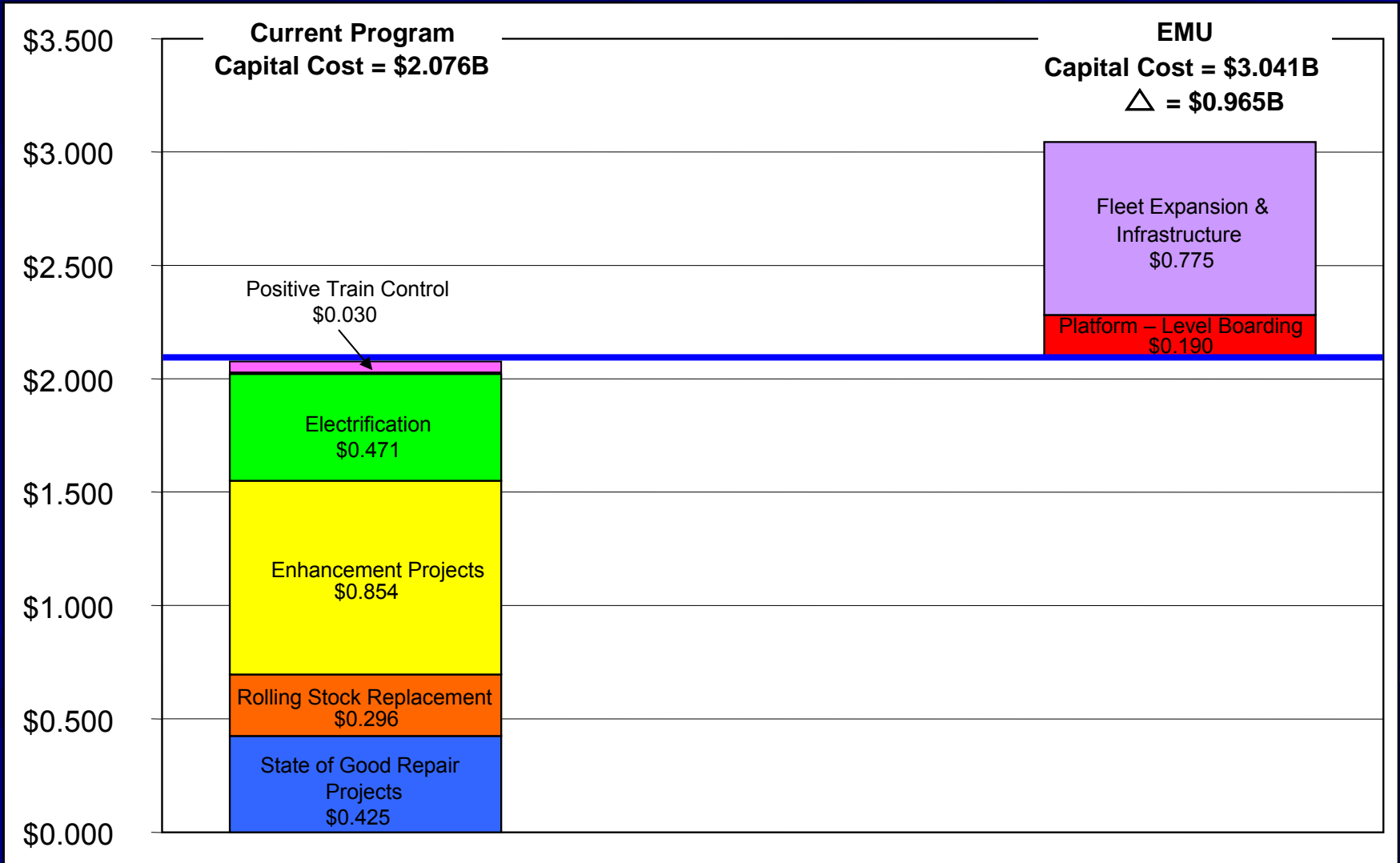
Rapid Transit

FRA Non-Compliant

Benefits:	Risks:
<ul style="list-style-type: none">■ Significant reduction in end-to-end run time over Electric■ Possible level boarding■ High operational flexibility■ Compatible with DTX and HSR■ Lower O and M cost than Electric locomotive■ Performance does not degrade with longer consists■ Reduced Infrastructure Impact	<ul style="list-style-type: none">■ Requires Positive Train Control Overlay & Regulatory Relief

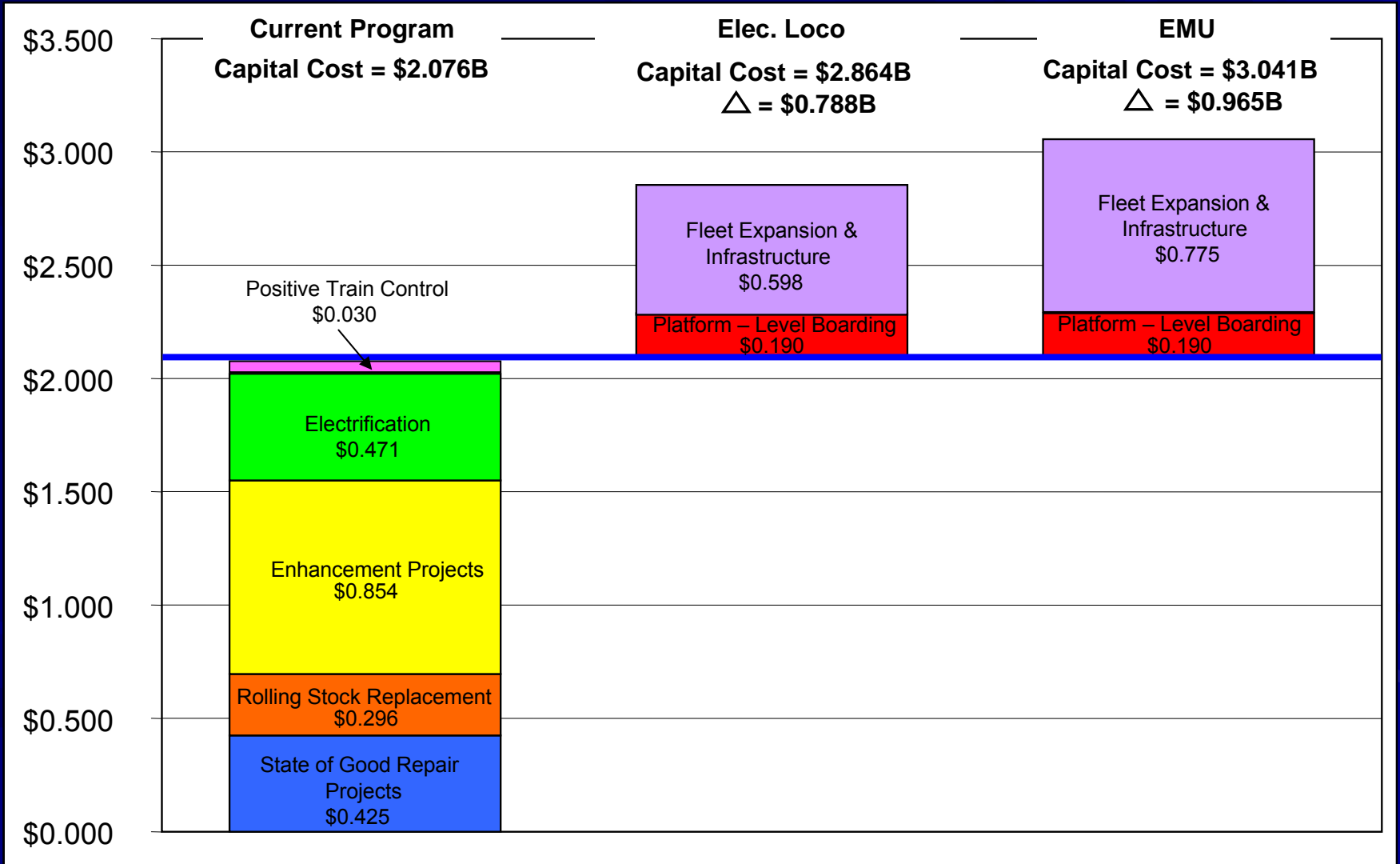
Capital Cost – EMU

Cost in \$B

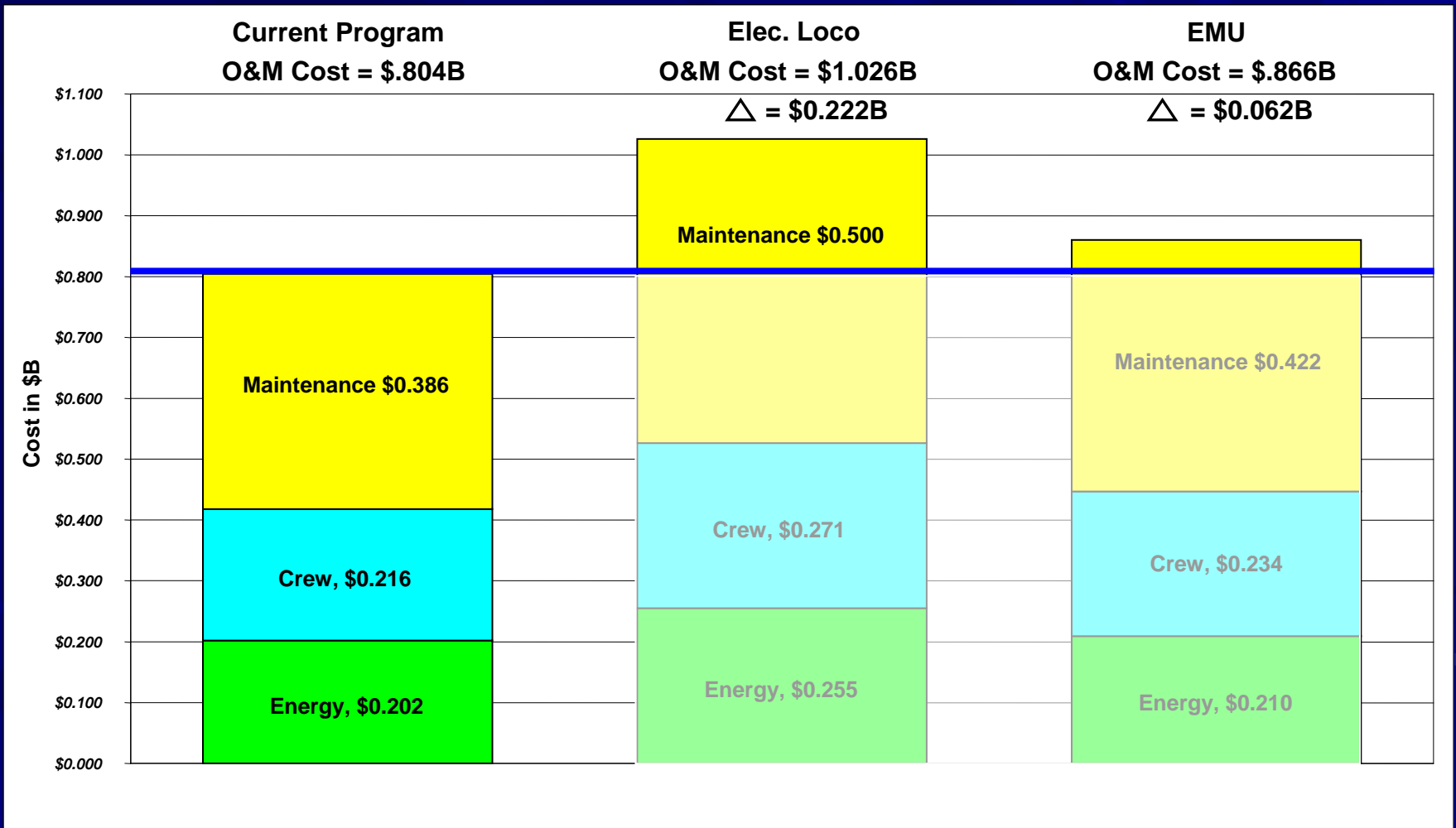


Capital Costs

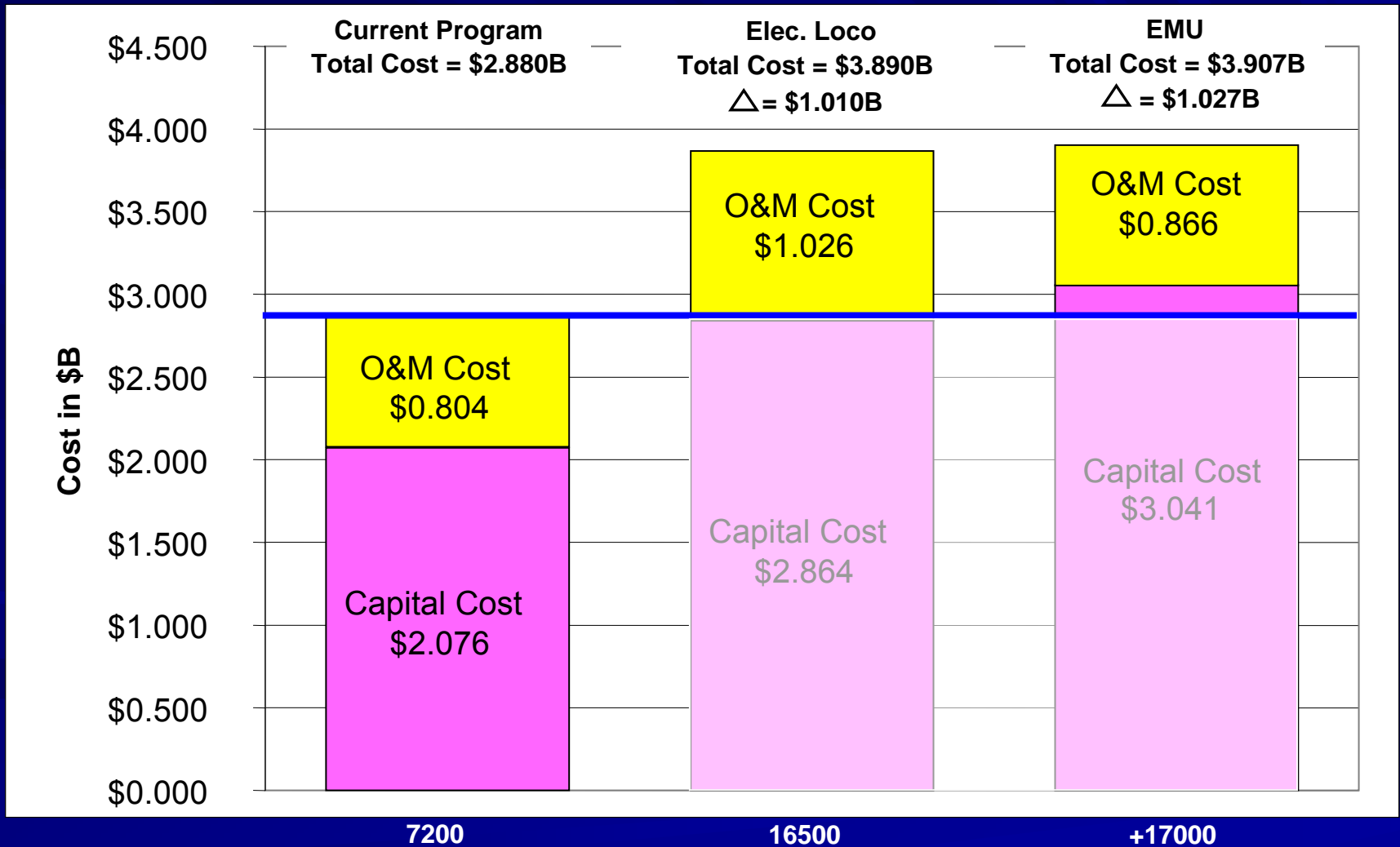
Cost in \$B



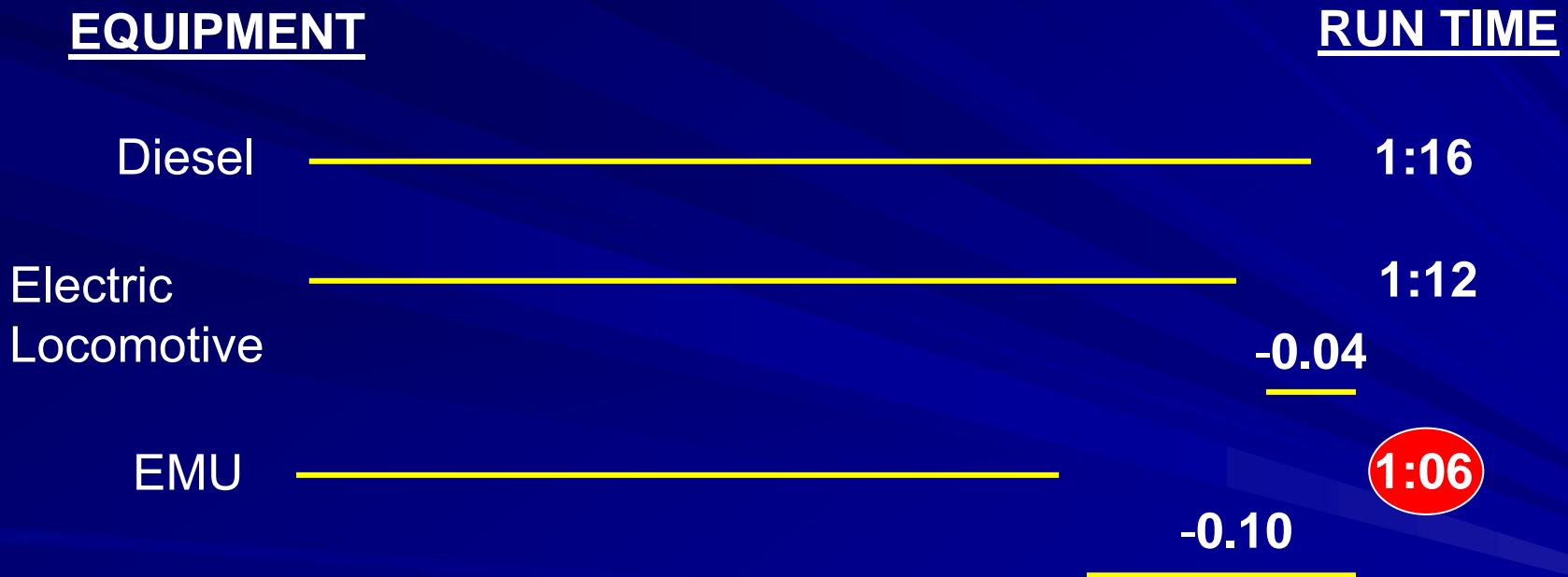
Operation and Maintenance Costs



Total Cost



Comparative Performance On 15 Stop Run



With Systems Modifications & PTC

Railroad Lifecycle Economics

Lighter rolling stock means:

- less wheel and track wear,
- lighter & less costly infrastructure,
- less fuel consumed,
- faster transit times,
- shorter blocks resulting in more trains,
- and more profit

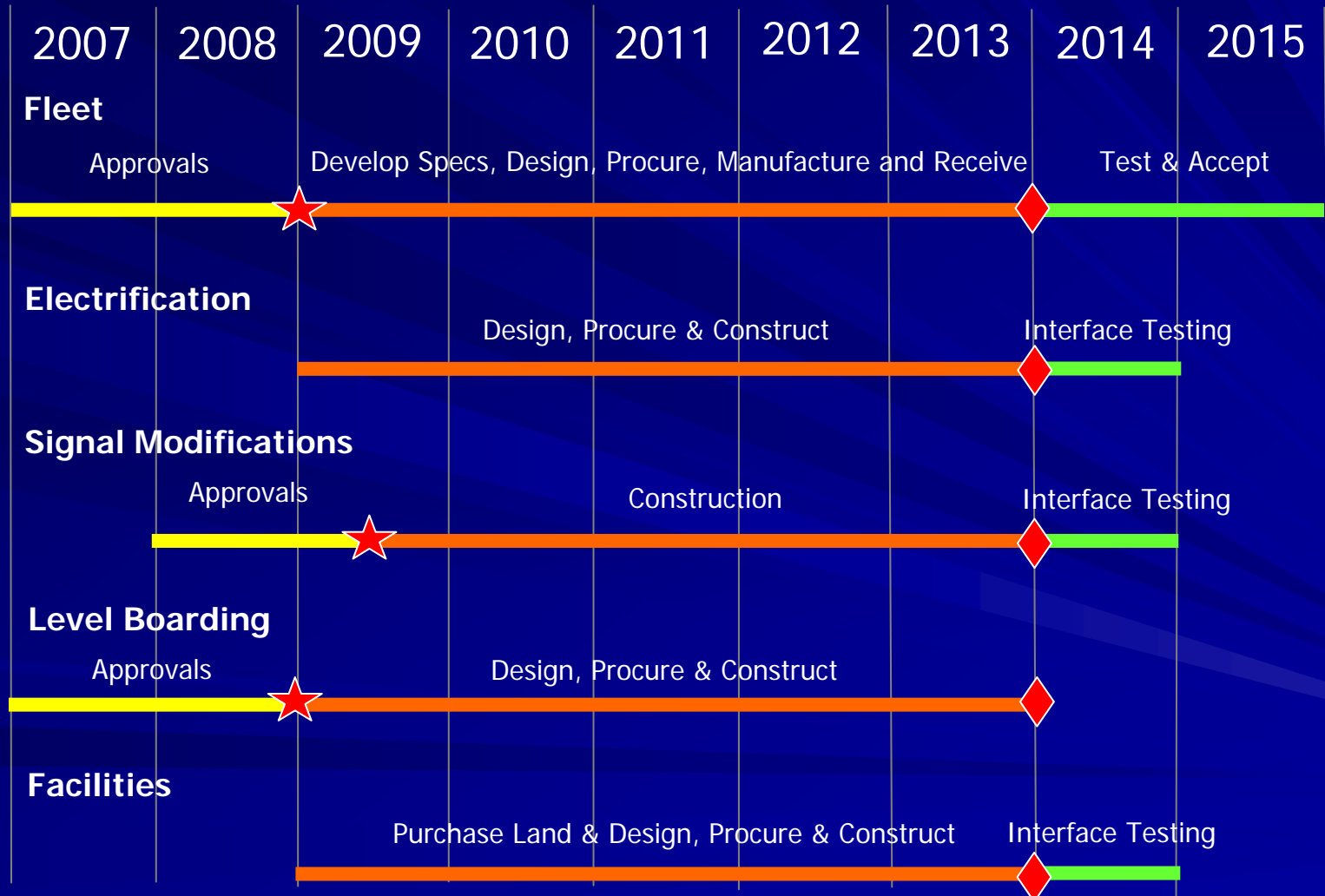
Comparative Criteria

Criteria	Electric Locomotive	EMU
Market Availability	√	√
Performance Specifications		√
Terminal Turn Times		√
Demand Potential		√
Capital Cost	√	
Operating and Maintenance Cost		√
Energy Usage		√
Reliability		√
DTX Compatibility	√	√
HSR Compatibility	(with regulatory waiver)	√
Transition Risk	√	

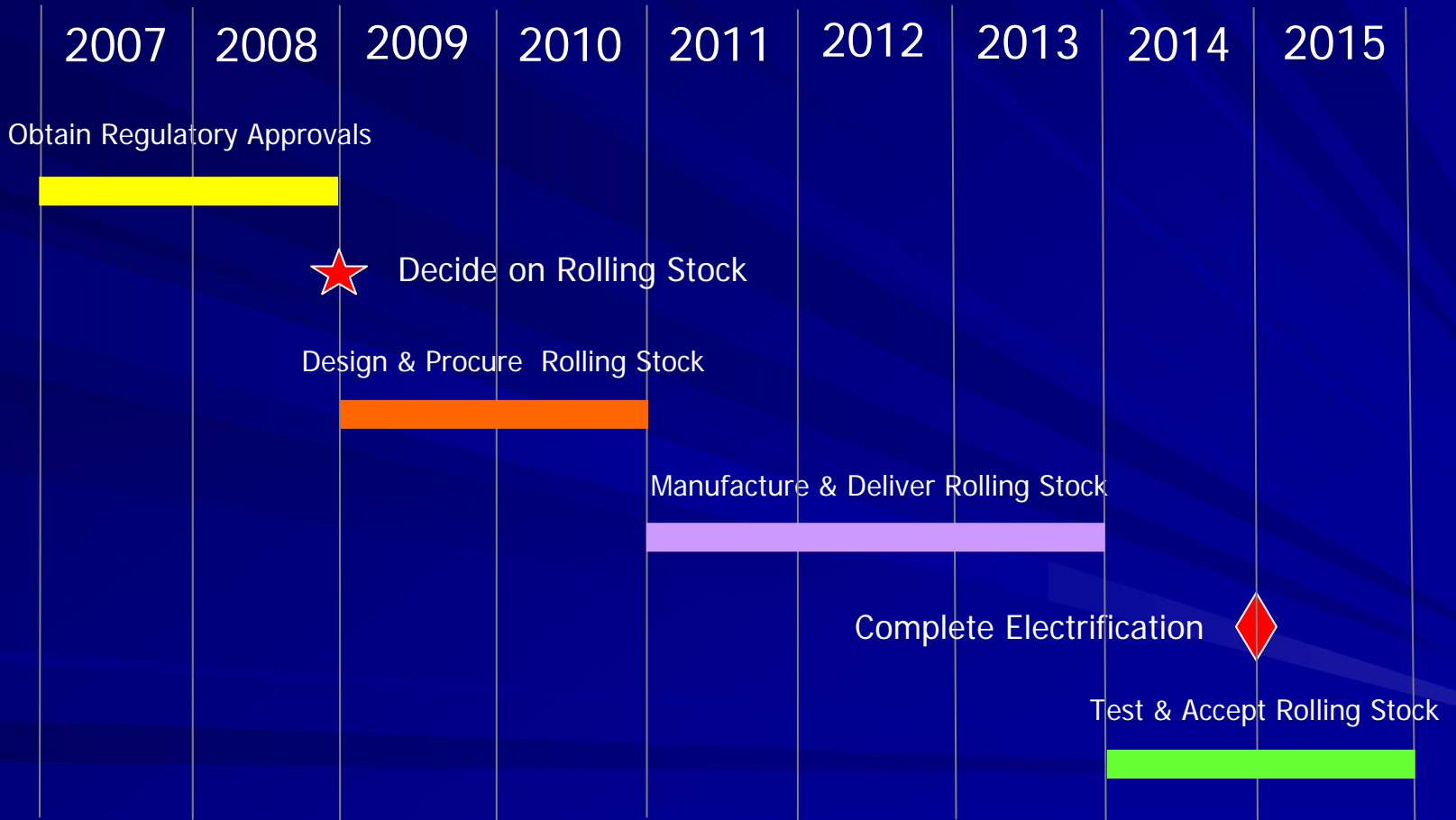
Interlinked Decisions

- Type of fleet drives system design
- Critical design/construction processes are interlinked:
 - Electrification
 - Signal Modifications
 - Fleet
 - Facilities (yards, shops and test tracks)
 - Platform Design (level boarding)

Critical Time Frames



Critical Decision Point



Whatever you can do,
Or dream you can,
Begin it.

Boldness has
Genius, power
And magic in it.