Planning and Programming for Transit State of Good Repair at the Regional Level

Ninth National Conference on Transportation Asset Management

April 17, 2012

Glen Tepke, Metropolitan Transportation Commission

Oakland, California

Overview

Development of a Regional Transit Capital Inventory (RTCI)

Use of RTCI and FTA TERM to:

- **Project short-term and long-term asset replacement and rehabilitation needs**
- **Assess state of repair of region's transit system, set targets for improvement**
- **Inform priority-setting in Regional Transportation Plan**
- **Evaluate funding alternatives for capital needs**

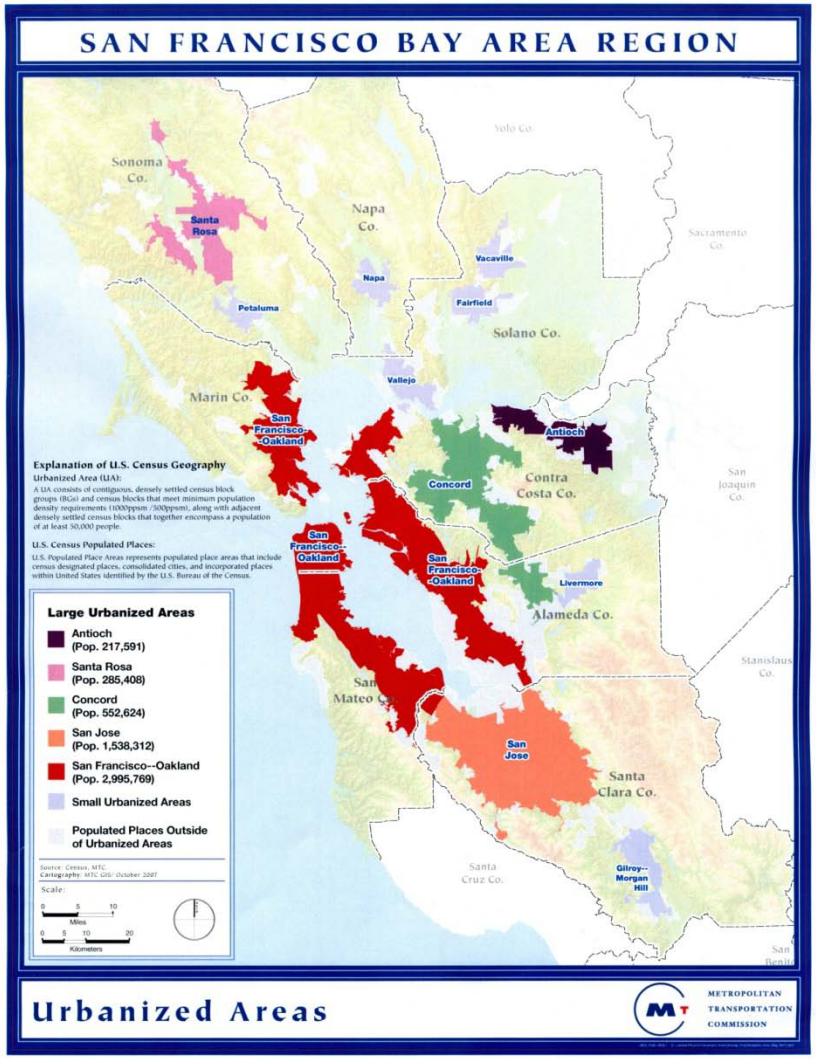
Coordination of asset management at regional and operator levels

Next steps

Metropolitan Transportation Commission (MTC)

Metropolitan Planning Organization for San Francisco Bay Area

- **9 counties, 12 urbanized areas, 101 cities & towns**
- **Population ~7 million**
- **Served by 27 independent transit operators**
- **MTC develops long-range Regional Transportation Plan - includes projected needs & funding for transit capital replacement & rehabilitation**



Metropolitan Transportation Commission (MTC)

Designated Recipient of federal formula funds:

- **FTA Urbanized Area & Fixed Guideway Modernization**
- **FHWA Surface Transp. Program**

MTC programs formula funds to 21 transit operators, including:

- **San Francisco MTA**
- **BART**
- **Santa Clara VTA**
- **AC Transit**
- **SamTrans**
- **Caltrain**
- **Golden Gate Transit**

Regional Transit Capital Inventory

Comprehensive & consistent asset inventory for entire region – 25 operators, ~80,000 assets:

- **Buses & vans, railcars, ferry vessels, trolleys, cable cars**
- **Tracks, guideway, bridges, tunnels**
- **Stations, fare collection equipment**
- **Facilities - operations & maintenance, equipment**
- **Systems - train control, traction power, communications**

Regional Transit Capital Inventory

Why? Improved basis for projecting region's preservation costs for RTP & annual funding programs

- **Limited funds, increasing reinvestment needs**
- **Systems reaching mid-life, e.g., BART car replacement**
- **Wide variation in asset data by operator & asset type**
- **Shift from project-based to asset-based need projections – more comprehensive & consistent**

Regional Transit Capital Inventory

Data included:

- **Year in service**
- **Useful life, rehab cycles**
- **Replacement & rehab costs**

Condition estimated based on age

Data from variety of sources:

- **Maintenance management systems**
- **Financial systems**
- **Condition assessments**

RTCI developed 2006 – 2007, updated 2010 - 2011

RTP Transit Capital Need Projections

RTCI data used with FTA Transit Economic Requirements Model (TERM)

- **Developed by FTA to project needs at national level**
- **Used for National SGR Assessment, C&P reports**

- **Uses empirically derived asset decay curves to estimate condition based on age & other factors**
- **MTC projections based on regional funding priority policy**

RTP Transit Capital Need Projections

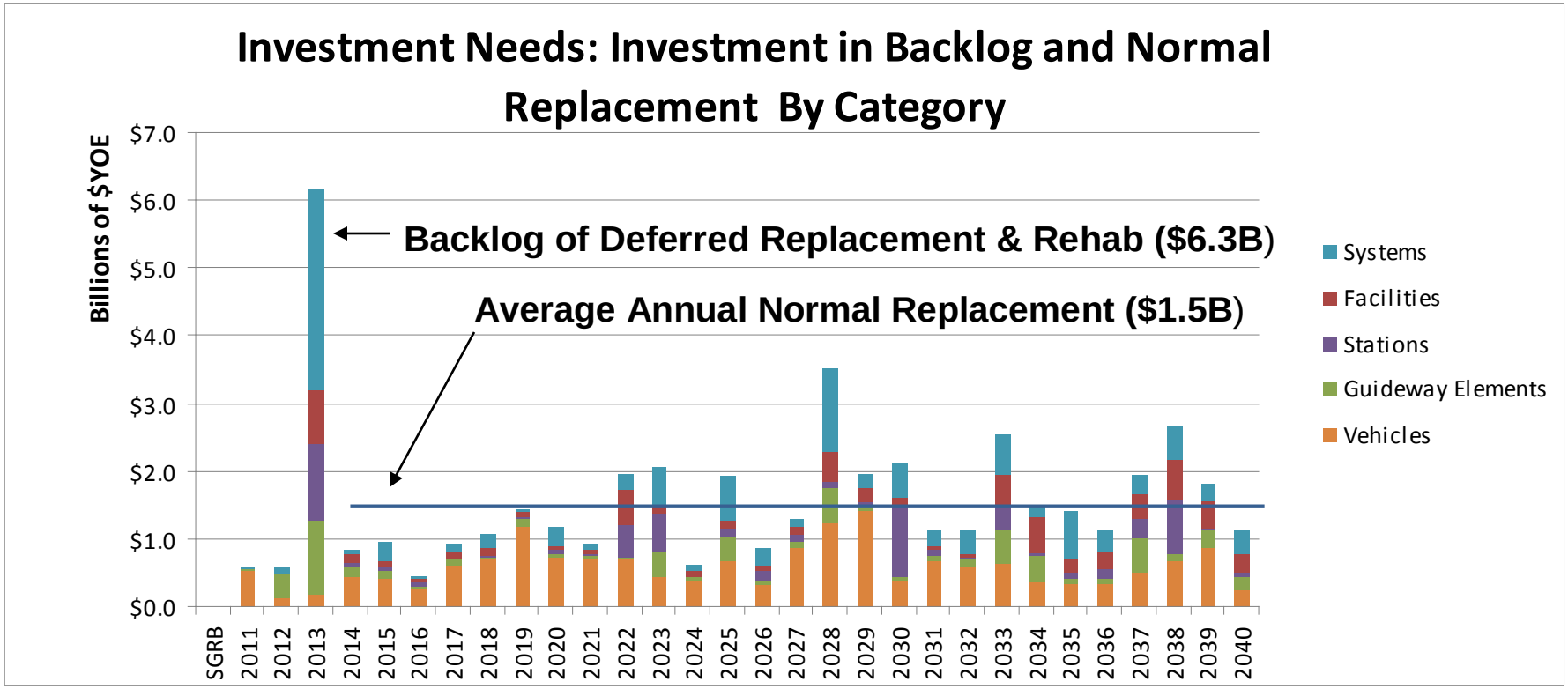
Two types of needs:

- **Backlog – assets already past useful life or missed scheduled rehabs at beginning of planning period**
- **Normal, recurring needs as assets come due for replacement or rehab during planning period**

Projected needs under alternative scenarios:

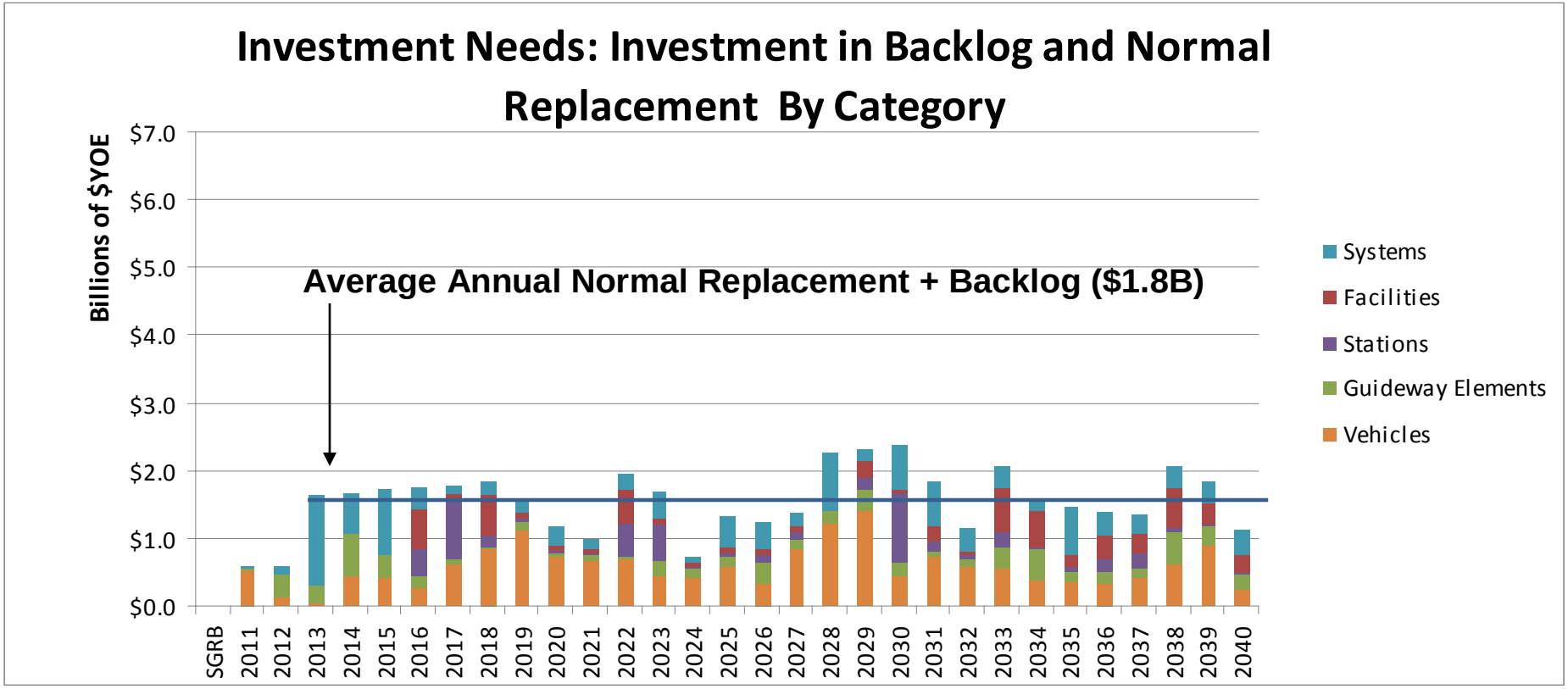
- **10 Years to SGR – backlog addressed over 10 years, meet normal recurring needs on schedule**
- **Maintain Current State of Repair – defer replacements & rehabs so backlog & other SGR measures remain ~ constant**
- **Revenue Constrained –SGR at projected funding level**

RTP Transit Capital Need Projections



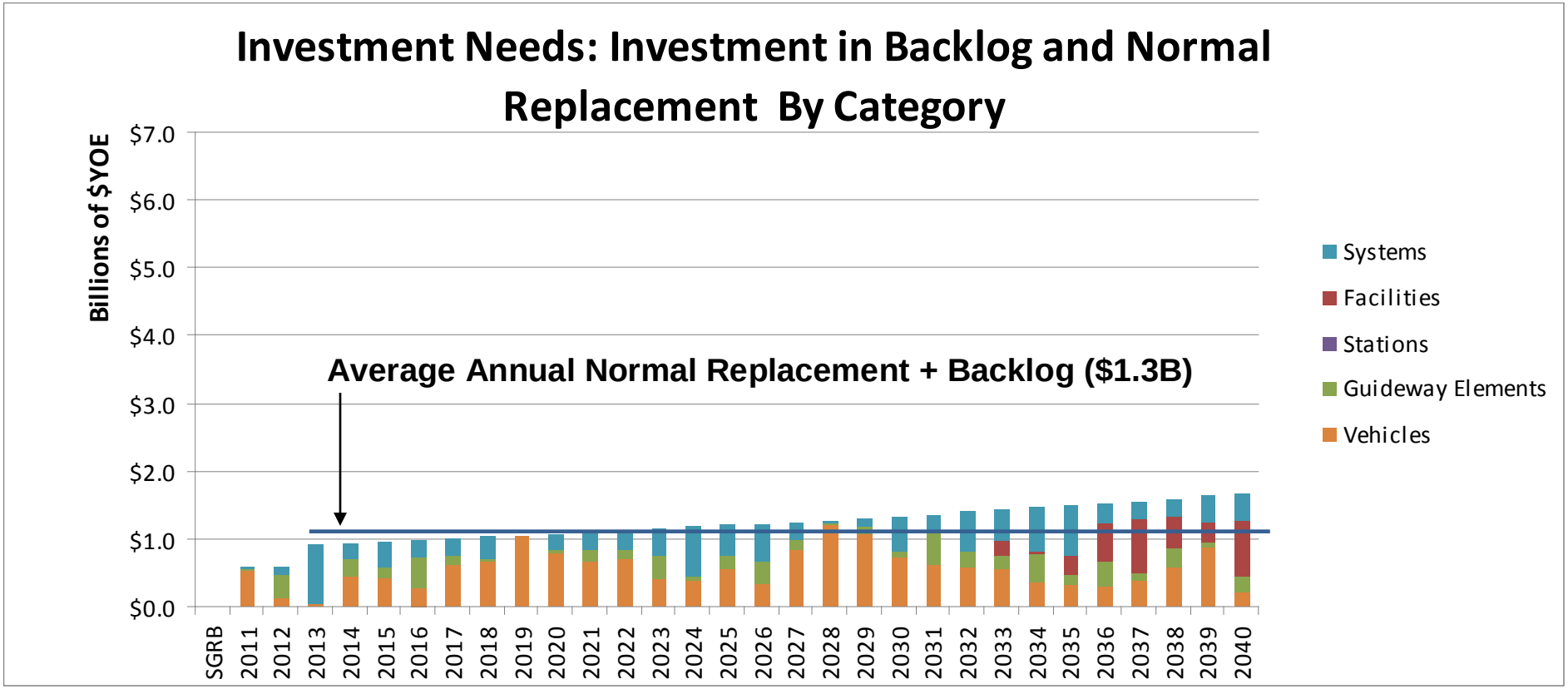
RTP Transit Capital Need Projections

Attain SGR in 10 Years Scenario



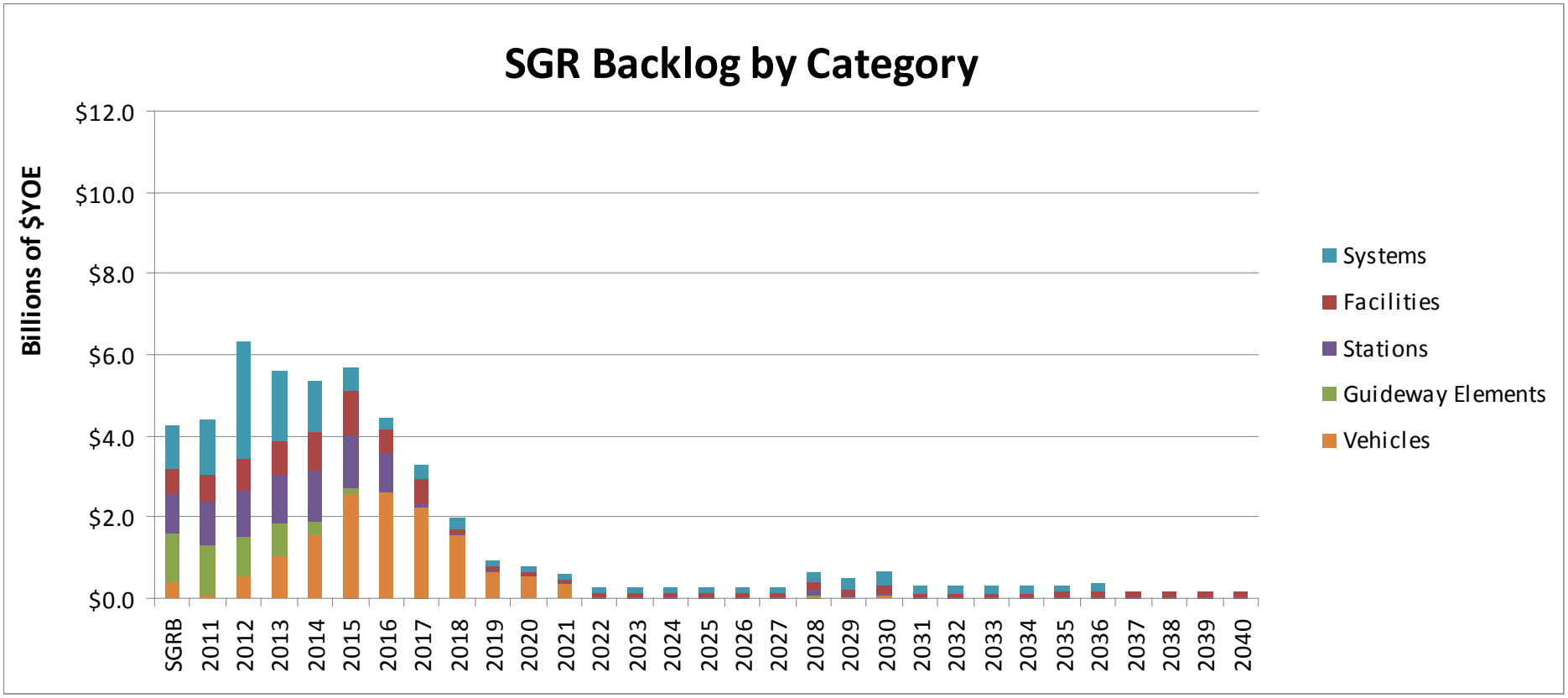
RTP Transit Capital Need Projections

Maintain Current State of Repair Scenario



Assessing State of Good Repair

Attain SGR in 10 Years Scenario



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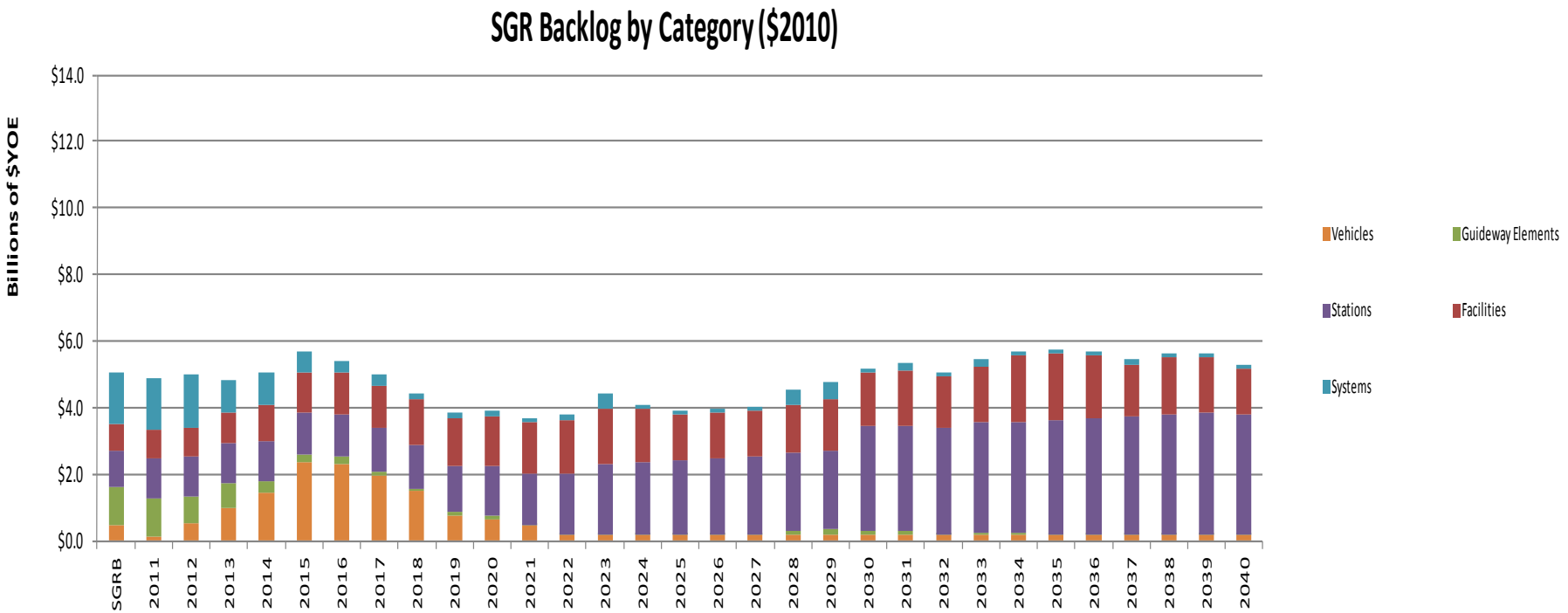

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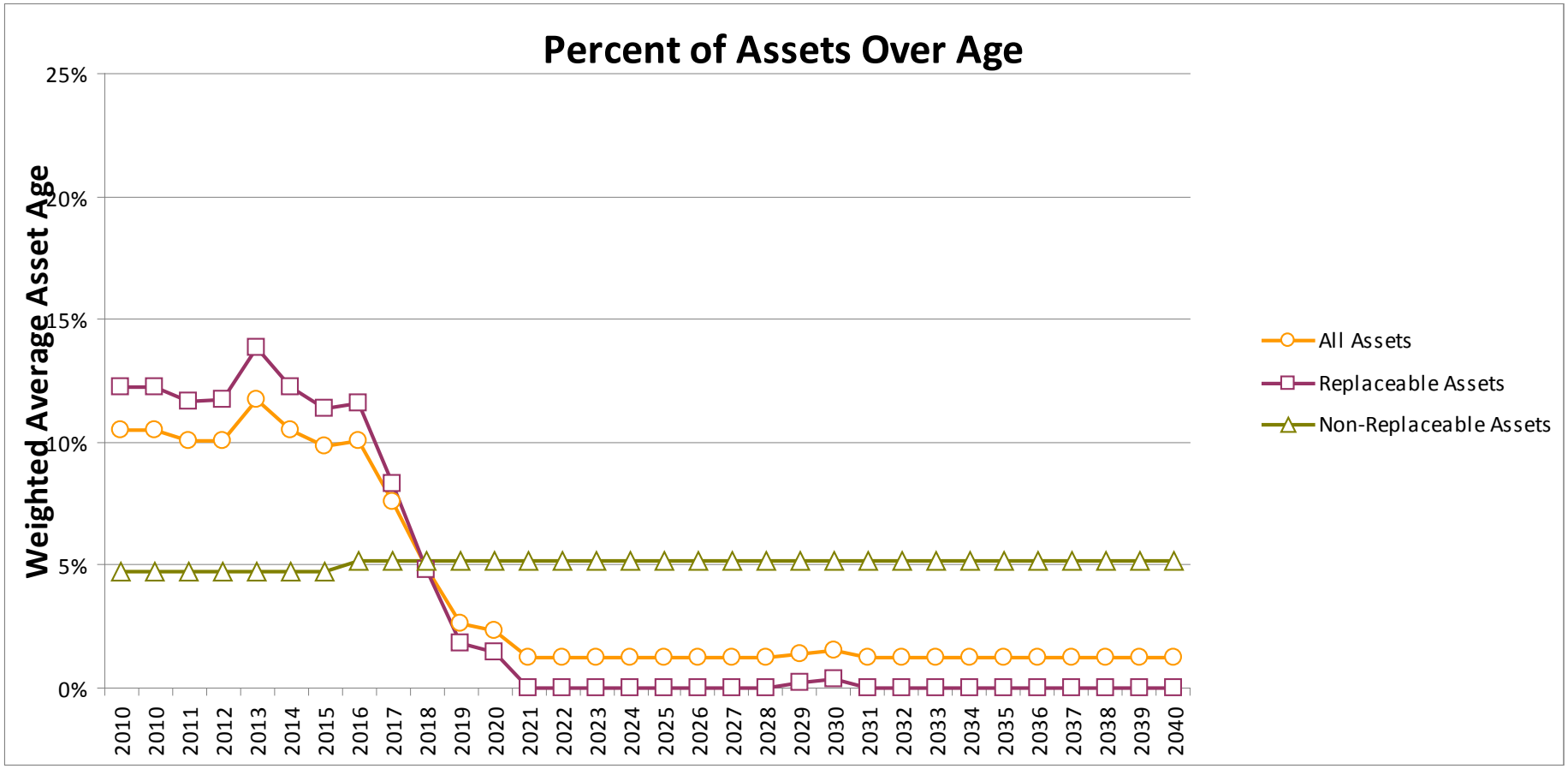

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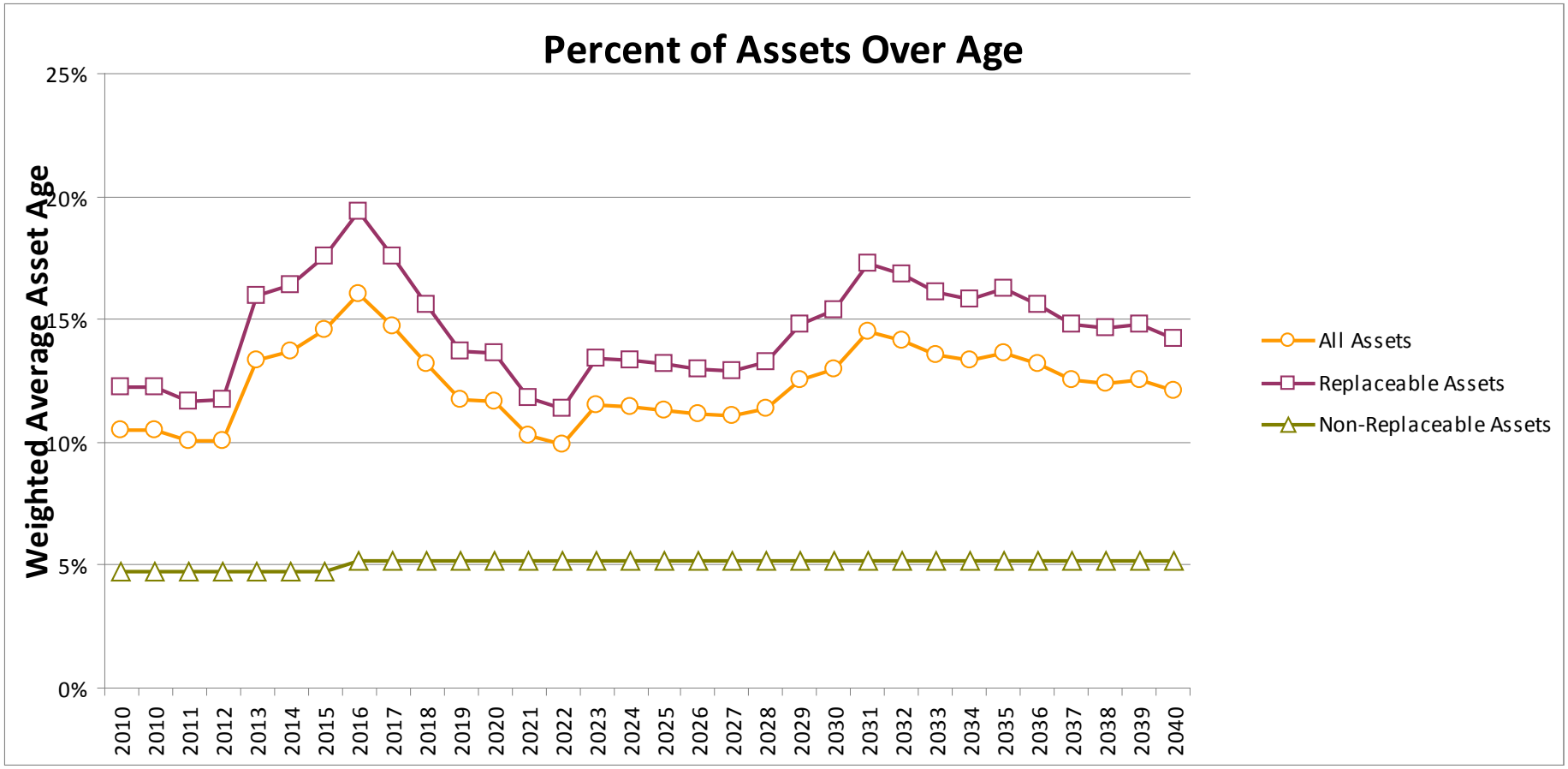

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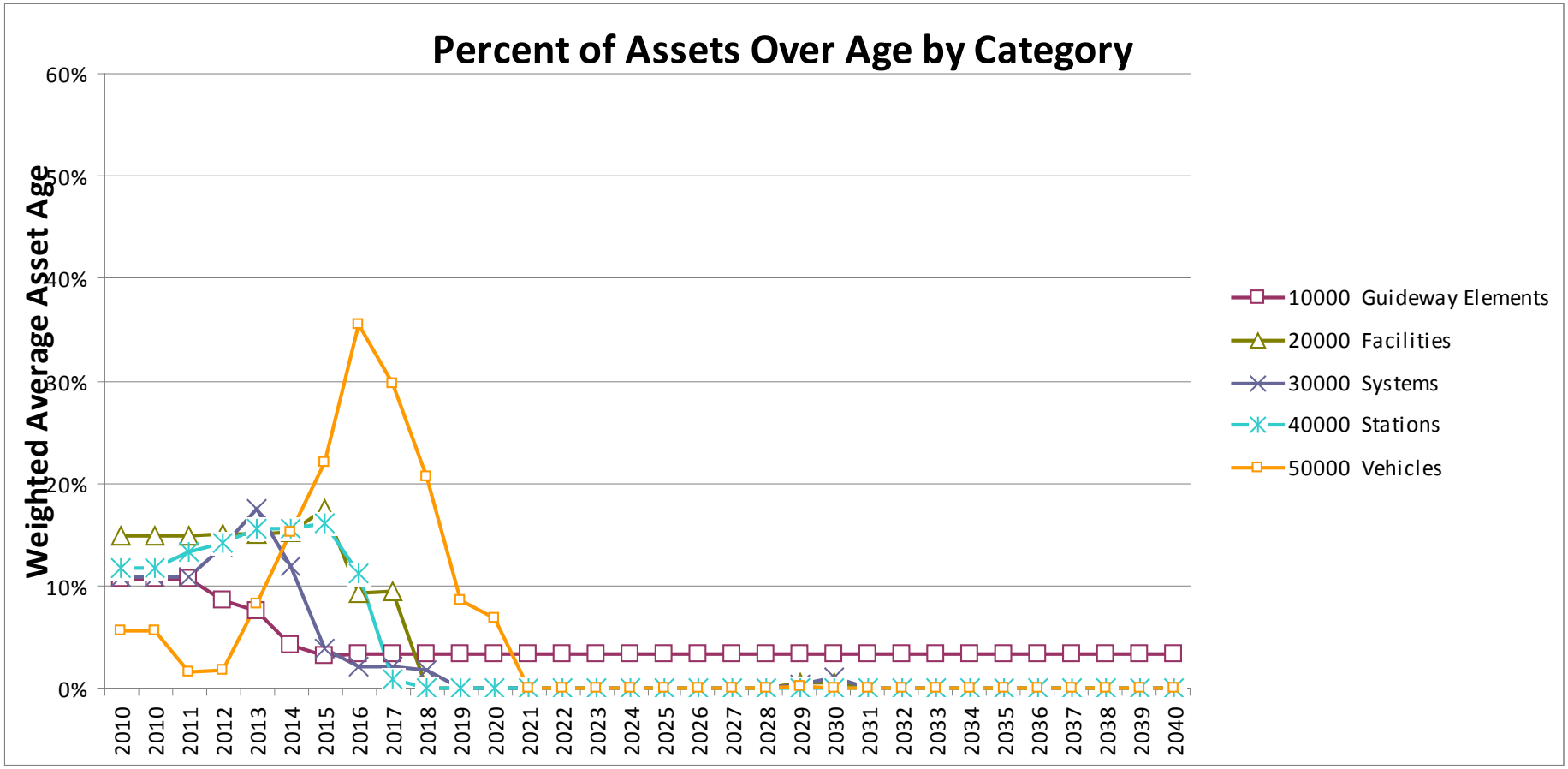
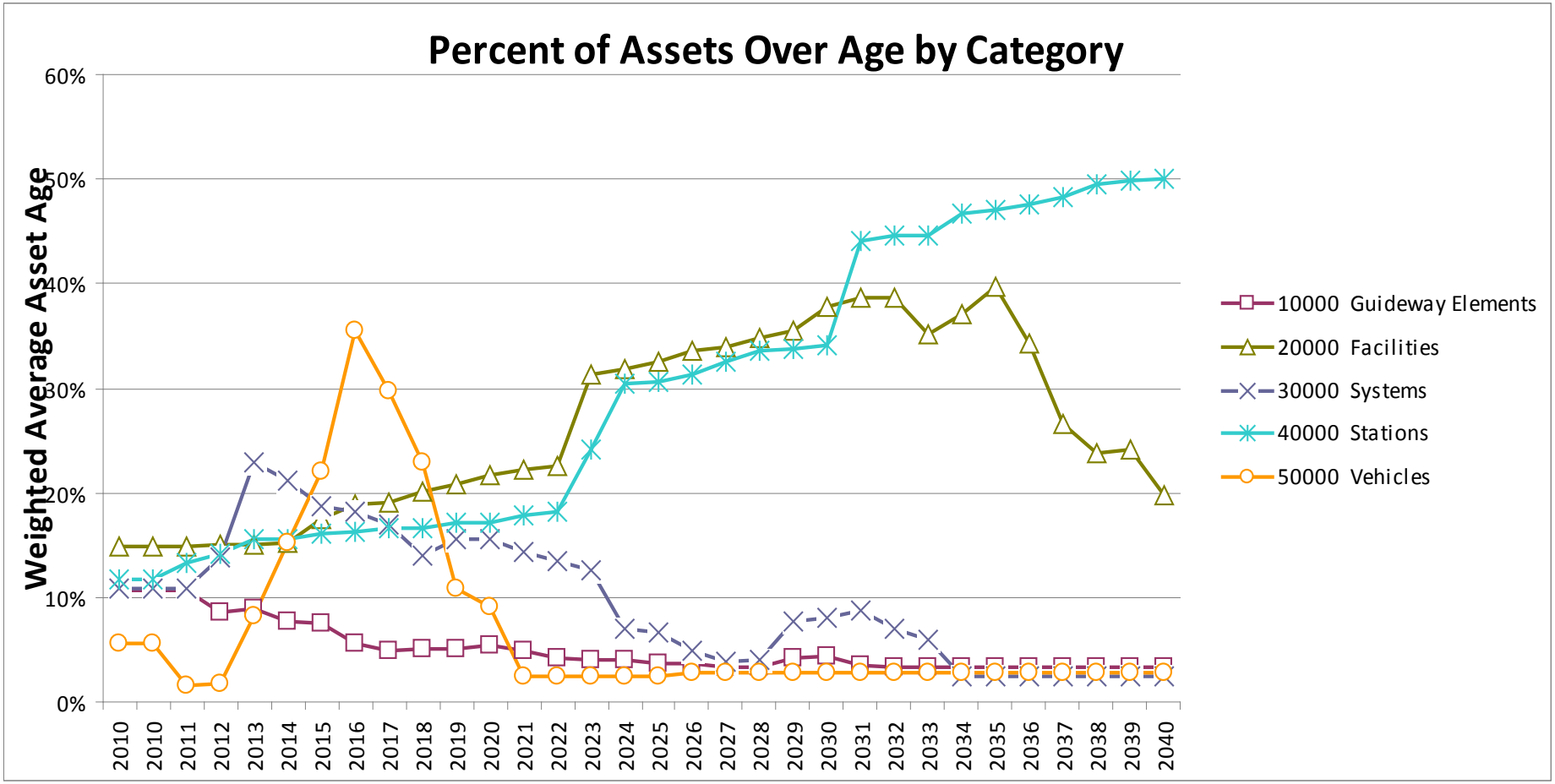


Assessing State of Good Repair

Maintain Current State of Repair Scenario



Regional Transportation Plan

Regional SGR Target: Replace all assets at end of useful life

2013 – 2040 Total projected needs for 10 Years to SGR scenario - $47B

Regional priorities - fund assets most directly related to safety and reliability of services:

1. **Revenue vehicle replacement - $16B**
2. **Tracks, guideway, train control, traction power, communications, & fare collection systems - $17B**
3. **Stations, facilities, maintenance equipment - $14B**

Regional Transportation Plan

Regional Transportation Plan

Investment Strategy #2:
Fix-It First

Proposed Approach

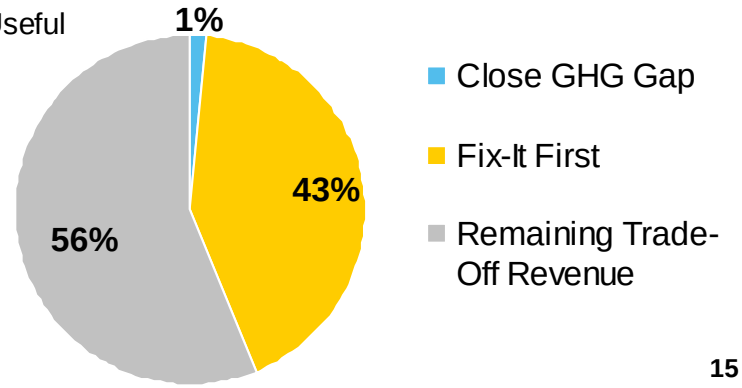
- Continue T2035 Functional Investment Approach
  - Maintain existing pavement conditions
  - Fully fund revenue vehicles and 70%+ of total other Score 16 assets
- Fully fund operating needs for existing transit services
- Invest in State Bridge Rehab & Retrofit
- Falls short of new Plan Bay Area targets (see below)

Related Performance Targets

- Maintain transportation system
  - Local Streets & Roads – Pavement Condition Index of 75 and corresponding Non-Pavement State of Repair
  - Transit Rehab – Replace All Assets by End of Useful Life
  - Reduce distressed state highway lane miles

Trade-Off Investment Proposal

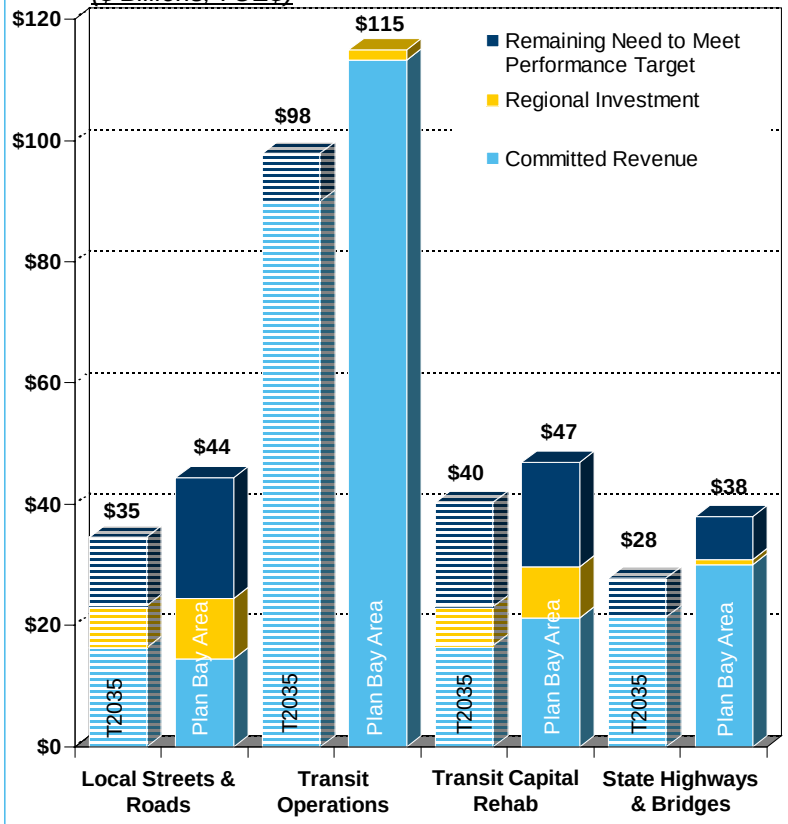
$24 Billion



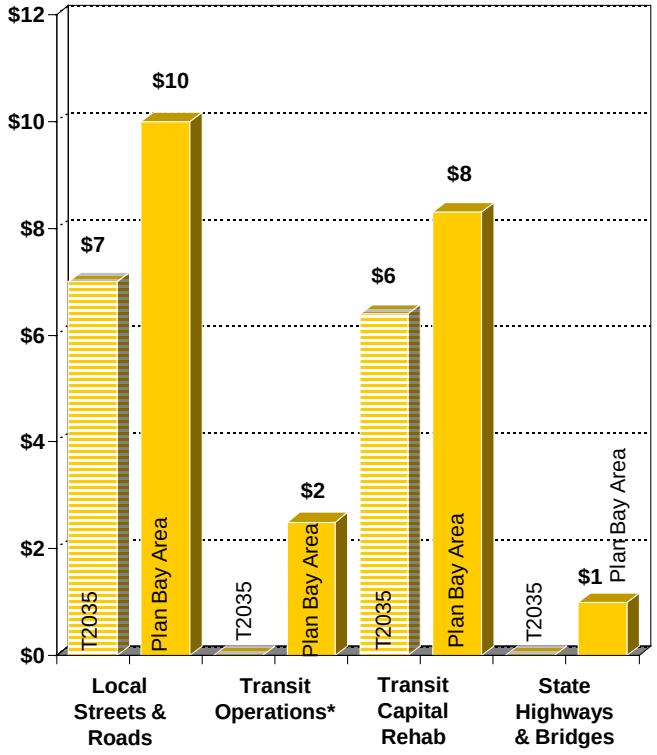
Regional Transportation Plan

Investment Strategy #2:
Fix-It First

Maintenance & Operations Needs and Revenues Summary
($ Billions, YOE$)



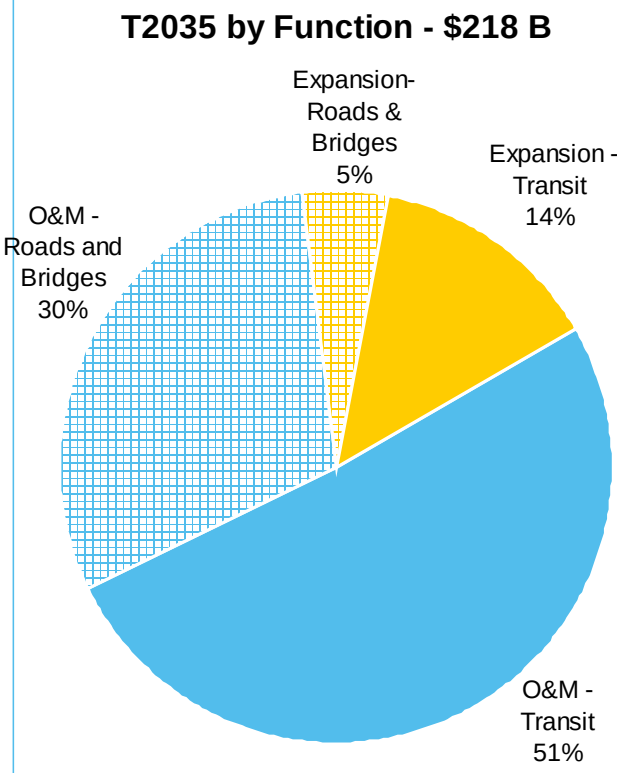
Regional Investment Detail

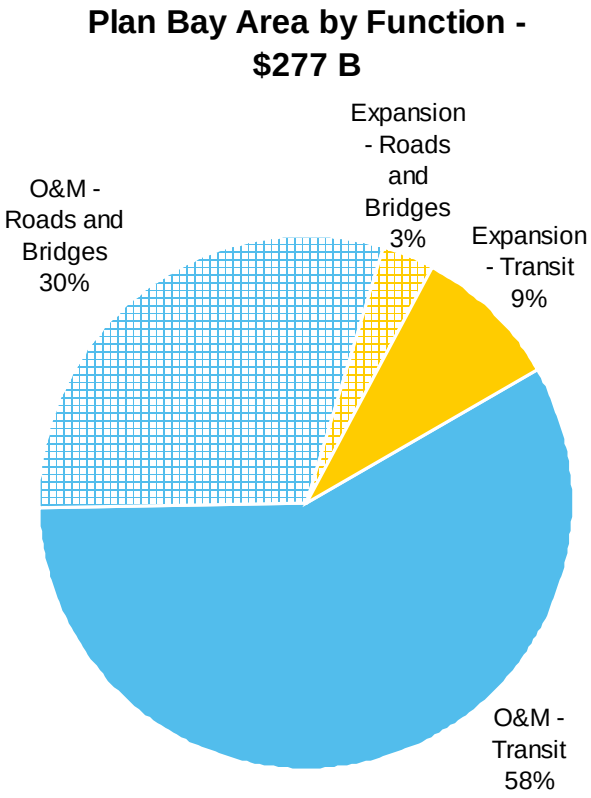


*Includes funding for Lifeline

Regional Transportation Plan

Plan Bay Area Summary



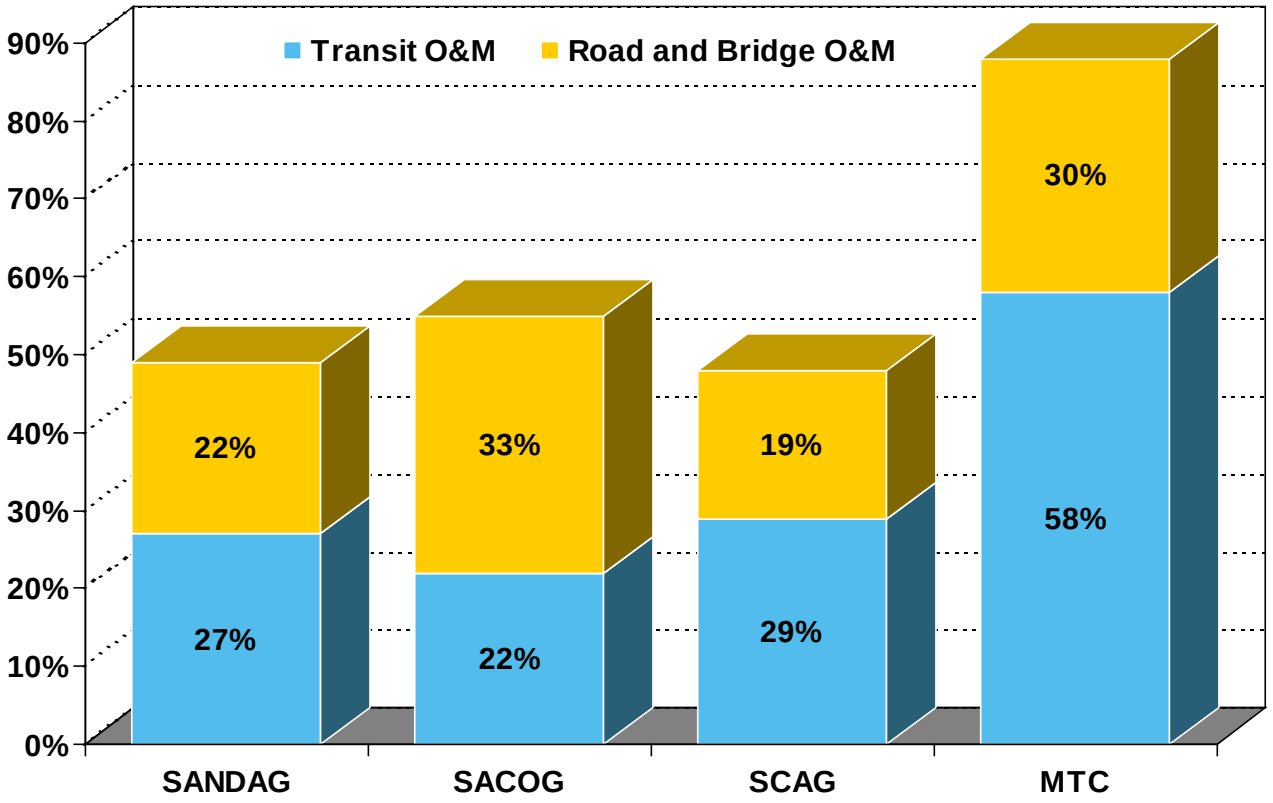


- See detail in Appendices 1-3

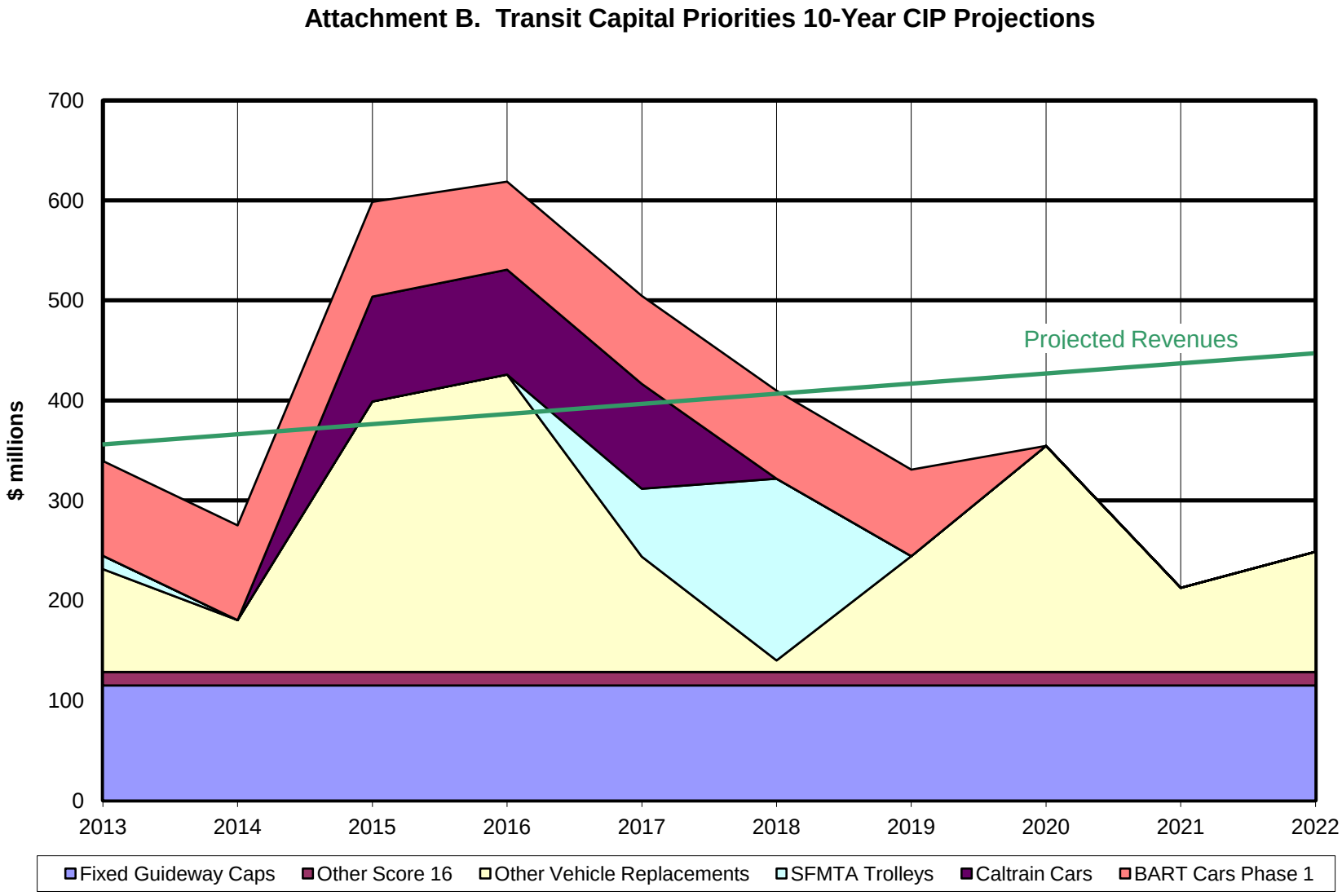
Investment Strategy #2:

Plan Bay Area Emphasizes Fix-It First

Comparison of O&M Expenditures with other Regions



Programming FTA Formula Funds for SGR



Coordination of Asset Management at Regional & Operator Levels

BART

- **Integrating maintenance management & financial system data with TERM Lite to improve capital planning**

SFMTA

- **Developed inventory for SGR analysis for New Starts application & CIP development, using MBTA SGR model**
- **First step in broader TAM program, including asset condition assessments**

VTA

- **Refined inventory using RTCI template & construction data, used for SGR analysis for New Starts application**

BART & SFMTA projects supported by FTA SGR grants

Next Steps

- **Implement TERM Lite – MTC & operators**
- **Make RTCI data & analysis more accessible for operator asset management**

- **Use RTCI data for upcoming NTD asset reporting**
- **Incorporate condition assessment data**
- **Outcome analysis – tie reinvestment level → SGR → reliability & quality → ridership → GHG emissions, air quality & congestion – SGR is a means to an end**