



TERM Lite Update

Development Update and Demonstration

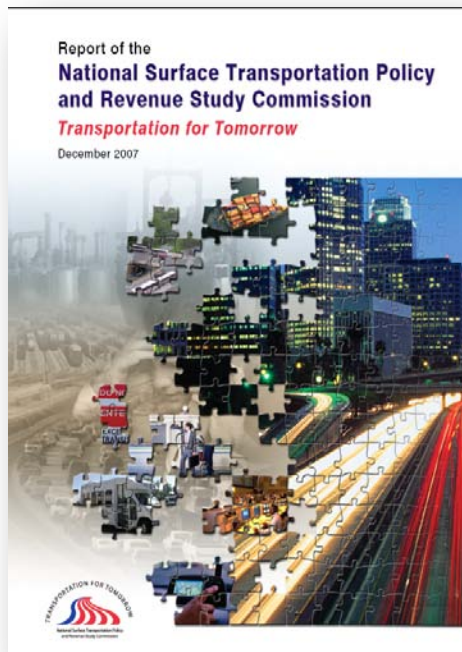
What is TERM?

- **Transit Economic Requirements Model**
 - FTA's Capital Needs Analysis Tool
 - National level analysis of:
 - State of Good Repair backlog
 - Asset conditions
 - 20-year projection of reinvestment needs
 - Impact of variations in funding
 - Supports biennial C&P Report to Congress and related studies
 - \$5 million in development since 1995

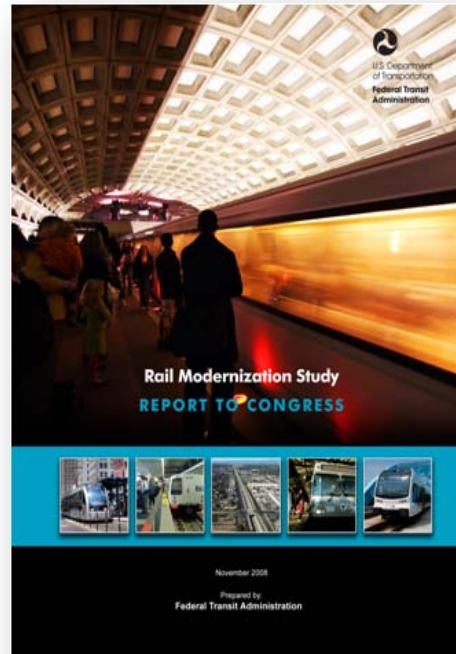


What is TERM? – Related reports

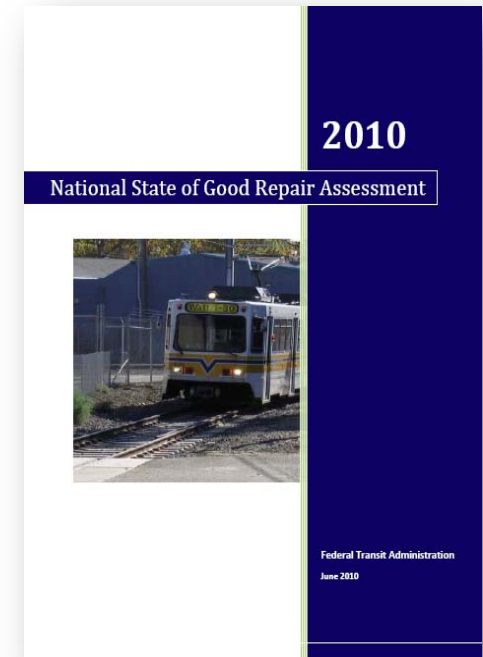
The ***National Surface Transportation Commission*** examined the condition and future needs of the nation's surface transportation system



The ***Rail Modernization Study*** assessed the investment backlog and capital reinvestment needs of the nine largest rail operators



The ***National State of Good Repair*** assessed the investment backlog and capital reinvestment needs of the transit industry



What is TERM “Lite”?

- Local Version of TERM
 - Designed for local long-term SGR needs analysis
 - Being developed in MS Access
 - Free through FTA website



TERM vs. TERM Lite		
Capability	TERM	TERM-Lite
Level of Analysis	National	Local / Regional
Intended User Group	FTA	Local operators
Life Cycle Driver	Condition (estimated)	Age
Prioritization	Benefit-cost analysis	User defined criteria
Output Format	Access Tables	Excel
Output (current and forecast)	<ul style="list-style-type: none"> ▶ SGR backlog ▶ Asset conditions ▶ 20-yr reinvestment needs 	

Why do I “Need” TERM Lite?

FTA would like you to know the answers to these questions

TERM Lite Capabilities

Function	Question Addressed	TERM Output
SGR Monitoring	Where are we today?	<ul style="list-style-type: none"> ▶ Current SGR backlog ▶ Asset conditions
SGR Management (“What if” Analysis)	Where can I be tomorrow?	<ul style="list-style-type: none"> ▶ Is backlog increasing / decreasing? ▶ What level of investment to attain SGR in 10 years? 20 years? ▶ How will change in backlog impact service reliability? O&M Costs?
Long-Term Capital Plan Support	How should I prioritize limited investment dollars?	<ul style="list-style-type: none"> ▶ Multi-criteria prioritization rankings ▶ Long term SGR plan

TERM Lite a complement to, not a substitute for traditional capital planning

How is TERM Lite Being Developed?

Cooperative Development

- Industry input

Chicago RTA



LA Metro



San Francisco MTC



Requirements Analysis

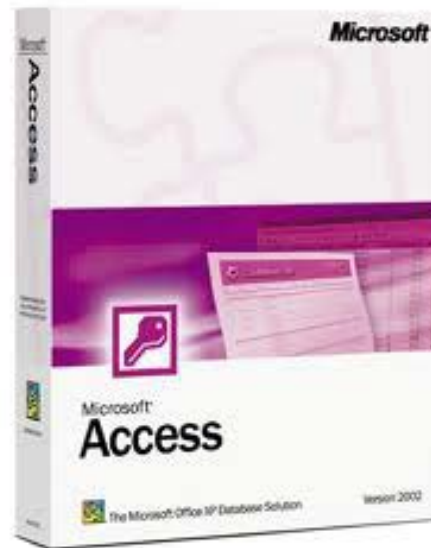
- What features do you need?
 - ✓ Ease of use
 - ✓ Local level asset definitions
 - ✓ Investment prioritization
 - ✓ Constructability constraints
 - ✓ Asset to project mappings

What do you need to run TERM Lite?

☐ Asset Inventory

Code	Category	Element	Type	Quantity
51601	Vehicles	Heavy Rail	HR	3
51903	Vehicles	Motor Bus	BA	3
51903	Vehicles	Motor Bus	BA	300
51903	Vehicles	Motor Bus	BA	480
51901	Vehicles	Motor Bus	AB	226
51903	Vehicles	Motor Bus	BA	1010
51905	Vehicles	Motor Bus	BC	45
51903	Vehicles	Motor Bus	BA	10
51903	Vehicles	Motor Bus	BA	10
51901	Vehicles	Motor Bus	AB	73
53001	Vehicles	Car	-	84
53001	Vehicles	Car	-	4
53002	Vehicles	Truck	-	1
53002	Vehicles	Truck	-	116
53002	Vehicles	Truck	-	31
53002	Vehicles	Truck	-	31
53002	Vehicles	Truck	-	4
53002	Vehicles	Truck	-	6
53002	Vehicles	Truck	-	1
53002	Vehicles	Truck	-	28
53002	Vehicles	Truck	-	58
23003	Vehicles	Truck	-	7
23003	Vehicles	Truck	-	6
23003	Vehicles	Truck	-	9
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23003	Vehicles	Truck	-	27
23003	Vehicles	Truck	-	27

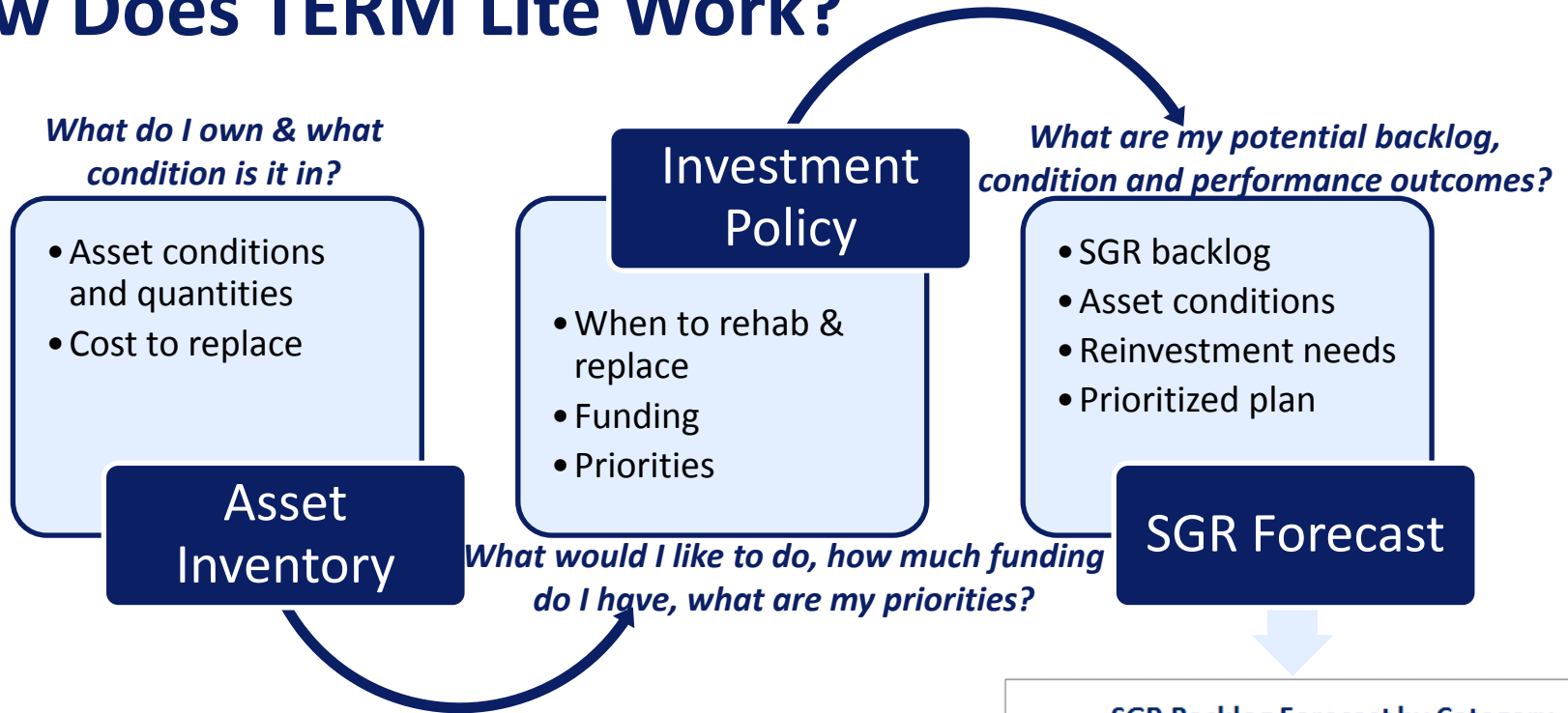
üMS Access (or use executable version)



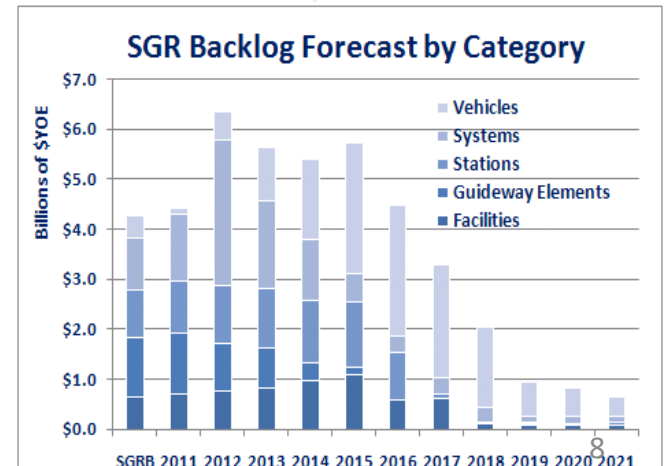
☐ User Training



How Does TERM Lite Work?



- ü Safety
- ü Reliability
- ü Performance
- ü Cost Effective



What will TERM Lite Look Like?: User Interface

FTA Transit Economic Requirements Model: Lite-- 2011

TERM Lite

Quit

Model Setup

Start Year: Forecast Length (yrs):

Useful Life Factor:

Run Model

Run Status:

Current Record: Replacement Year: Hit "Ctrl/Break" to Halt Run

Model Output

Run Notes:

Output Exportable to Excel

Tool Parameters

What do I control?

- ✓ Period of analysis (1 to 50 yrs)
- ✓ Annual expenditure levels
- ✓ Timing and cost of asset:
 - Replacement
 - Rehabs (up to 5 per type)
 - Annual capital maintenance
 - Soft costs / contingencies
- ✓ Annual inflation assumptions
- ✓ Prioritization criteria (up to 5) and weights
- ✓ Output (export to Excel)



Third State of Good Repair Roundtable

TERM Lite User Interface

Scenario Settings

Scenario Settings

Prioritization Settings Expenditure Constraints

Prioritization Criteria Settings

Expenditure Constraints

Annual Expenditure Constraints

Backlog	\$500,000,000,000
Year 1	\$500,000,000,000
Year 2	\$500,000,000,000
Year 3	\$500,000,000,000
Year 4	\$500,000,000,000
Year 5	\$500,000,000,000
Year 6	\$500,000,000,000
Year 7	\$500,000,000,000
Year 8	\$500,000,000,000
Year 9	\$500,000,000,000
Year 10	\$500,000,000,000
Year 11	\$500,000,000,000
Year 12	\$500,000,000,000
Year 13	\$500,000,000,000
Year 14	\$500,000,000,000
Year 15	\$500,000,000,000
Year 16	\$500,000,000,000
Year 17	\$500,000,000,000
Year 18	\$500,000,000,000
Year 19	\$500,000,000,000
Year 20	\$500,000,000,000

Input Data

Input Data

Asset Inventory Ridership by Location Life Cycle Costs Agency Mode Statistics Inflation Annual Equipment Expenditures

Asset Inventory Update

Input Data

Asset Inventory Ridership by Location Life Cycle Costs Agency Mode Statistics Inflation Annual Equipment Expenditures

Inflation Assumptions

Input Data

Asset Inventory Ridership by Location Life Cycle Costs Agency Mode Statistics Inflation Annual Equipment Expenditures

Ridership By Location

Input Data

Asset Inventory Ridership by Location Life Cycle Costs Agency Mode Statistics Inflation Annual Equipment Expenditures

Annual Equipment Expenditures

Input Data

Asset Inventory Ridership by Location Life Cycle Costs Agency Mode Statistics Inflation Annual Equipment Expenditures

Life Cycle Cost Assumptions

Asset Type:

Code: 10000

Category: Guideway Elements

Sub-Category: Guideway

Element: -

Sub-Element: -

Replacement Policy:

Useful Life (Years; Default): 30

Replacement Not Permitted: ☐

Note: (1) Default useful life value only used for those asset records for which a specific useful life has not been assigned. (2) If the Replacement Not Permitted box is checked, assets of this type will not be replaced upon attaining their useful life age. Otherwise, these assets can be rehabed or undergo capital

Rehabilitation Policy:

Number of Rehab Allowed: 0

	First	Second	Third	Fourth	Fifth
Rehab Age (% of Useful Life):	0%	0%	0%	0%	0%
Rehab Cost (% of Replace Cost):	0%	0%	0%	0%	0%
Annual Capital Maintenance Cost (% of Replacement Cost):	0.00%				

Unit Cost (Default):

Unit Cost: \$4,543

Units: Linear Feet

Unit Cost \$Year: 2008

Soft Cost: 22.70%

Contingency: 20.00%

Note: Default unit costs only used for those asset records that are not assigned a unit cost, soft cost or contingency value

Select Another Asset:

Record: 1 of 560 No Filter Search

TERM Lite Reports

TERM Asset Conditions Forecast: 2009 - 2029

14-Sep-10

Summary Report

By Asset Category

		Condition Rate										
Investment Type	Asset Cat	2009	2011	2013	2015	2017	2019	2021	2023	2025	2027	2029
Replace/Rehab												
10000	GuidewayElem	3.86	3.82	3.77	3.71	3.67	3.65	3.59	3.54	3.48	3.43	3.38
20000	Facilities	3.35	3.30	3.23	3.13	3.04	2.97	2.94	2.93	2.89	2.84	2.81
								3.13	3.07	3.01	2.95	2.93
Transit Investment Requirements								3.49	3.45	3.44	3.39	3.36
								3.97	3.91	3.85	3.79	3.73
Asset Type	Asset Category	Average Annual Expenditures (\$M)						3.10	3.09	3.11	3.13	3.10
Maintain or Improve Conditions								3.55	3.51	3.47	3.43	3.38

Average Annual Transit Investment Requirements

Investment Category Mode Type Asset Category Average Annual Expenditures (\$M)

1. Rehab-Replace (Maintain or Improve Conditions)

1. Rail	10000	Guideway Elements	\$874.06
	20000	Facilities	\$172.38
	30000	Systems	\$739.62
	40000	Stations	\$643.68
	50000	Vehicles	\$1,203.98
	Total: 1. Rail		\$3,633.72

2. Non-Rail	10000	Guideway Elements	\$208.69
	20000	Facilities	\$778.81
	30000	Systems	\$22.20
	40000	Stations	\$45.90
	50000	Vehicles	\$2,520.20
	Total: 2. Non-Rail		\$3,575.81

Total: 1. Rehab-Replace (Maintain or Improve Conditions) \$7,209.53

2. Asset Expansion (Maintain Performance)

1. Rail	10000	Guideway Elements	\$534.39
	20000	Facilities	\$57.46
	30000	Systems	\$126.70

TERM Lite: Excel Export

Excel Export Function

- ▶ Exports model output to Excel
 - ✓ Predefined, “presentation ready” charts and tables
 - ✓ “Raw output data” for user defined post-processing
 - ✓ Users more comfortable in Excel

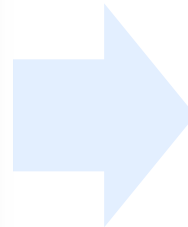
Sample Analysis

- ▶ Slides below demonstrate TERM Lite funding impact analyses
 - ✓ Examines four funding levels
 - Financially unconstrained
 - 10 Years to SGR
 - Maintain backlog
 - Current spending
 - ✓ Operator data

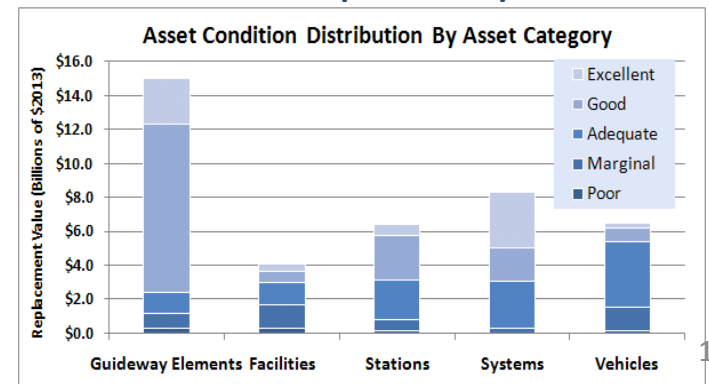
TERM-Lite: MS Access

The screenshot shows the 'TERM Lite' window with the following sections:

- Model Setup:** Start Year: 2010, Forecast Length (yrs): 20, Useful Life Factor: 100.0%. Buttons: Scenario Settings, Modify Input Data.
- Run Model:** Run Status: Idle, Current Record: 0, Replacement Year: 0. Buttons: Run Model, Hit "Ctrl/Break" to Halt Run.
- Model Output:** Buttons: Export to Excel, Print Reports.
- Run Notes:** Development version of TERM Lite.

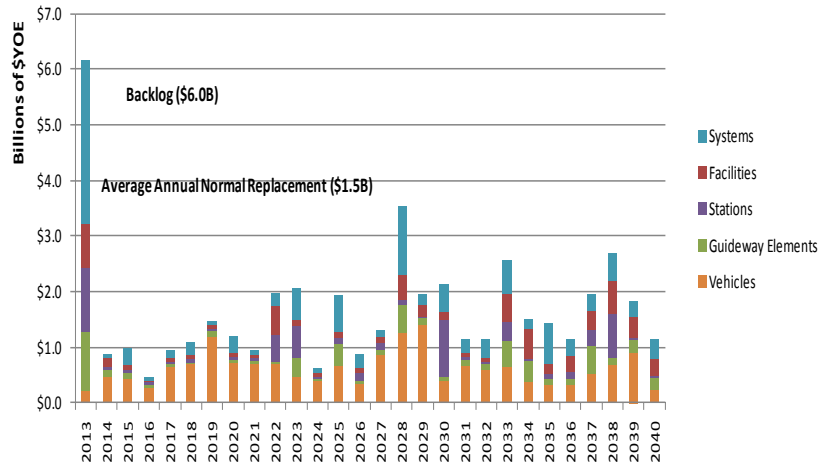


Excel Export Example

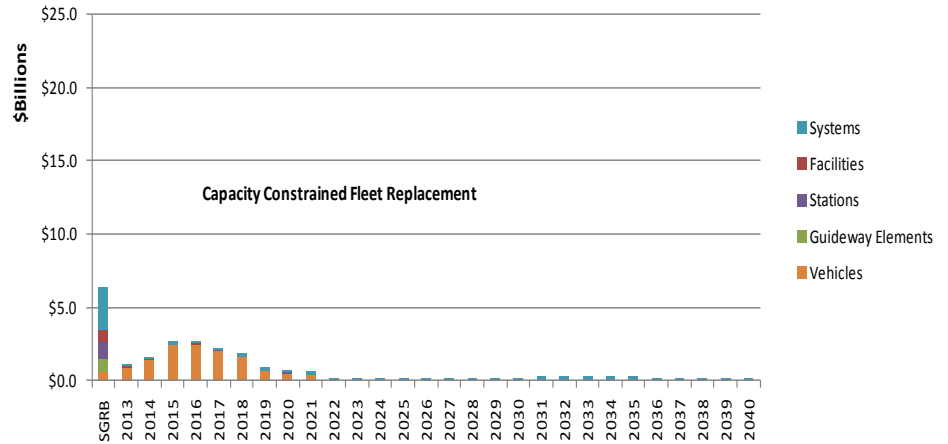


Sample Output: Financially Unconstrained (\$1.7B Avg.)

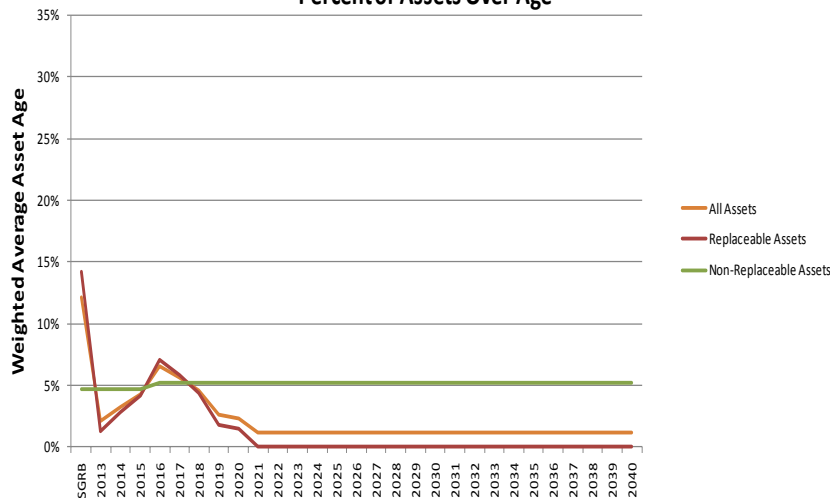
Investment Needs by Category



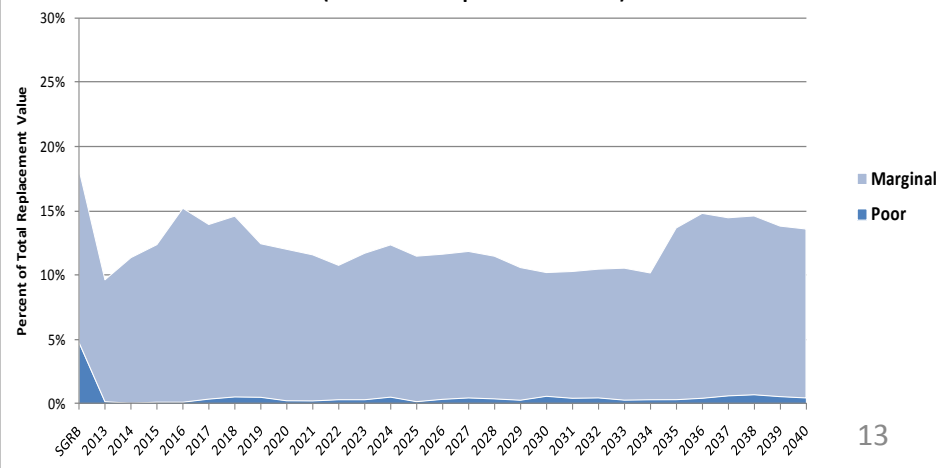
SGR Backlog by Category



Percent of Assets Over Age

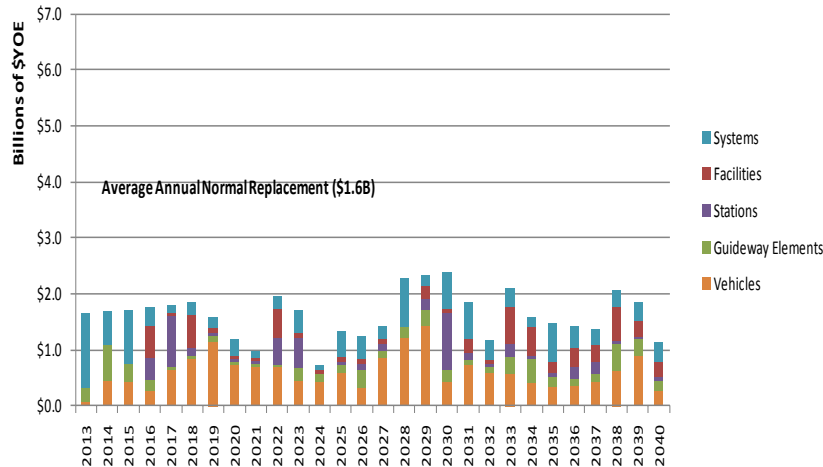


Assets in Marginal or Poor Condition
(Excludes Unreplaceable Assets)

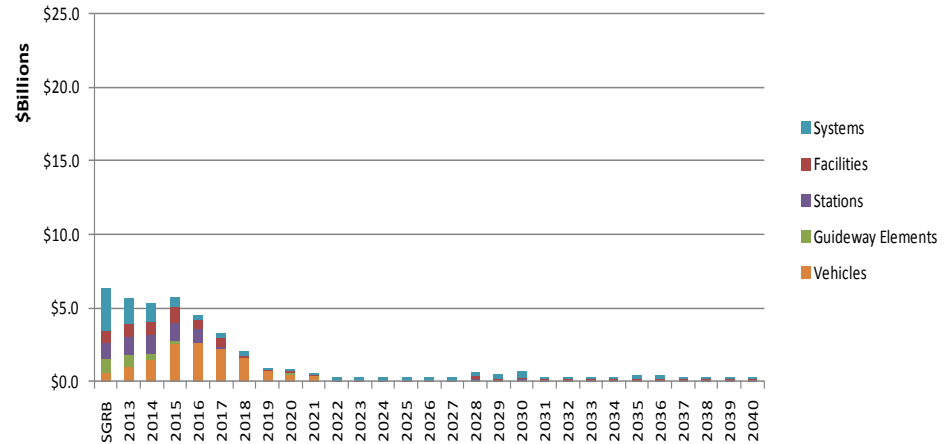


Sample Output: 10 Years to SGR (\$1.6B Avg.)

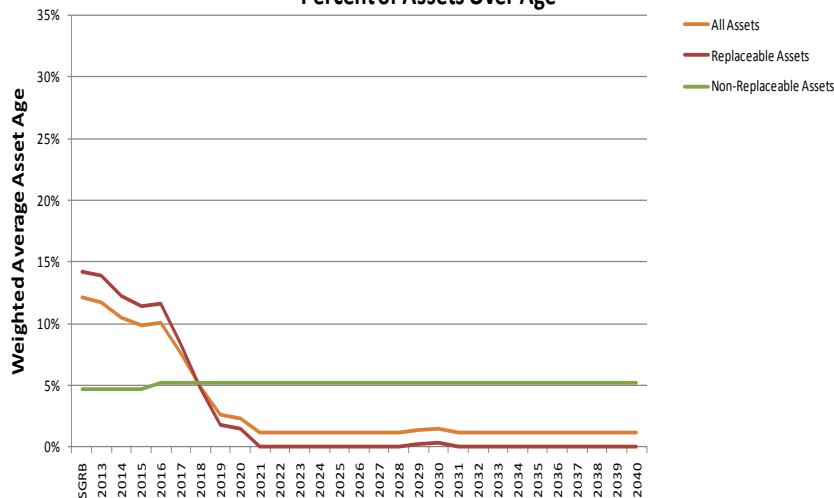
Investment Expenditures by Category



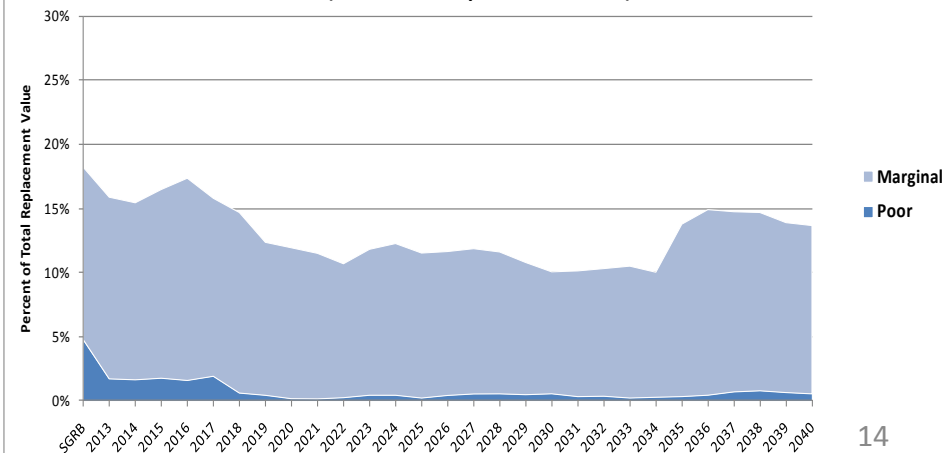
SGR Backlog by Category



Percent of Assets Over Age

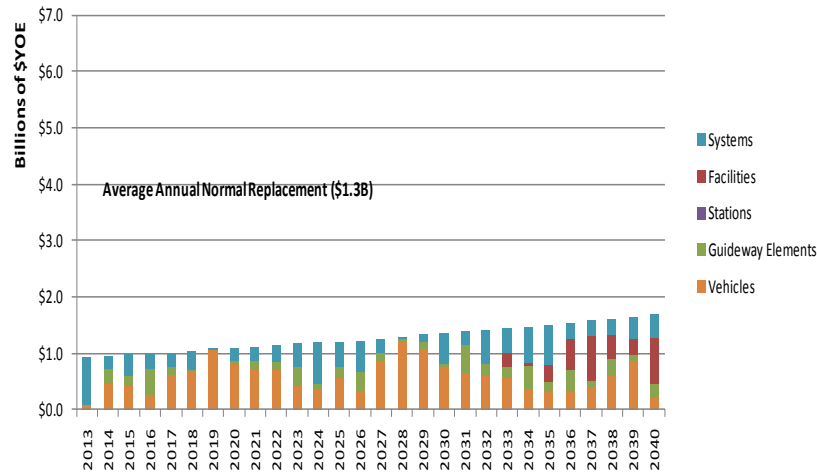


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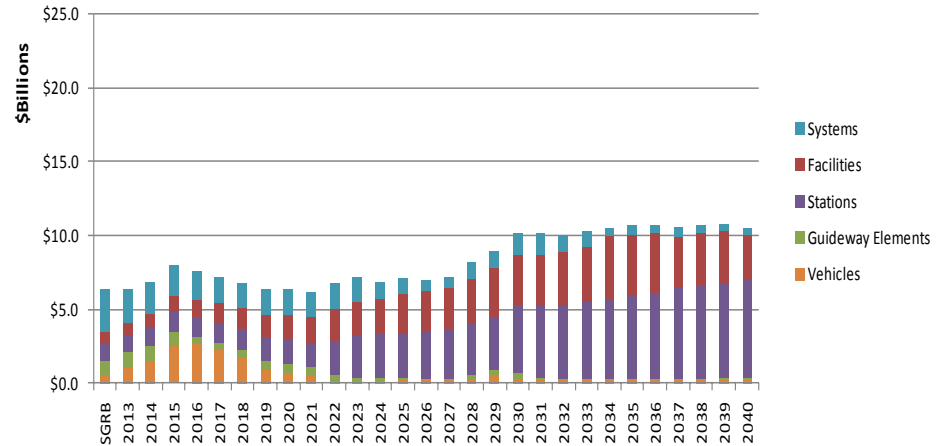


Sample Output: Maintain Backlog* (\$1.3B Avg.)

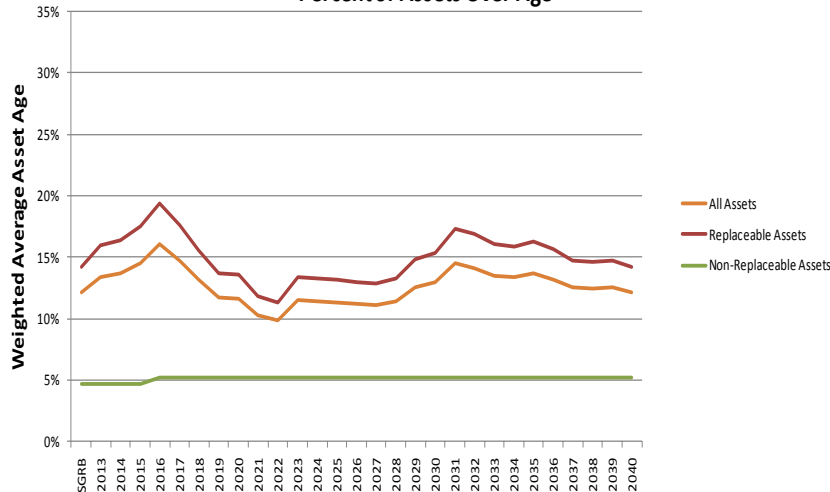
Investment Expenditures by Category



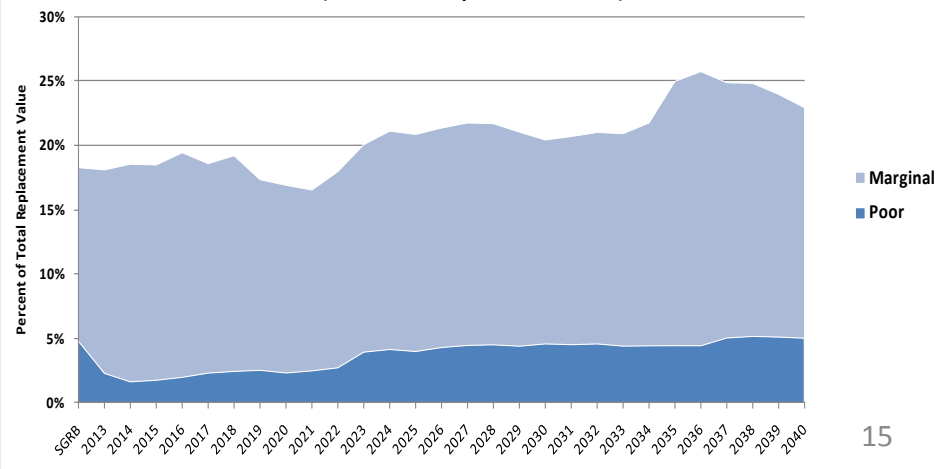
SGR Backlog by Category



Percent of Assets Over Age

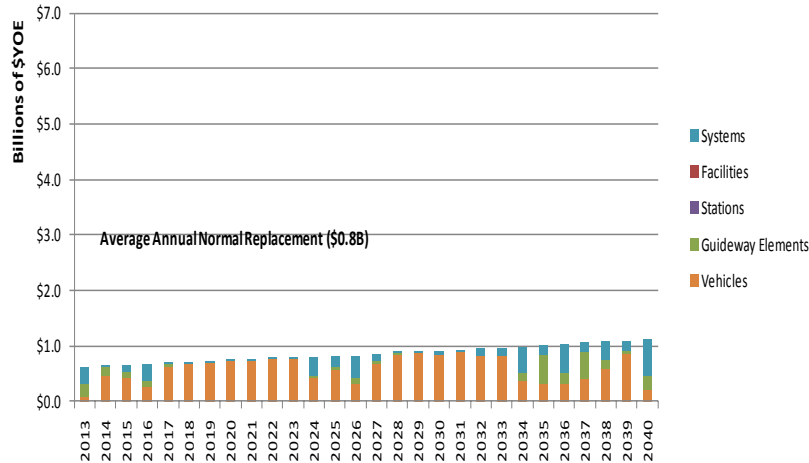


Assets in Marginal or Poor Condition
(Excludes Unreplaceable Assets)

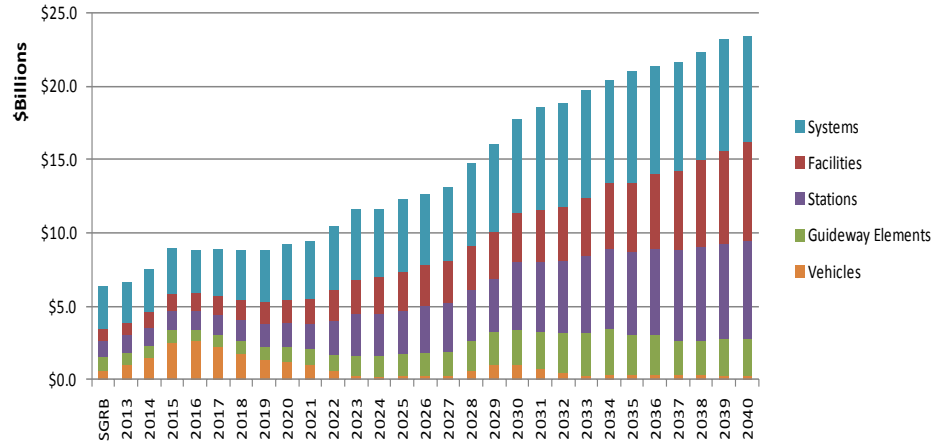


Sample Output: Historic Spending* (\$0.8B Avg.)

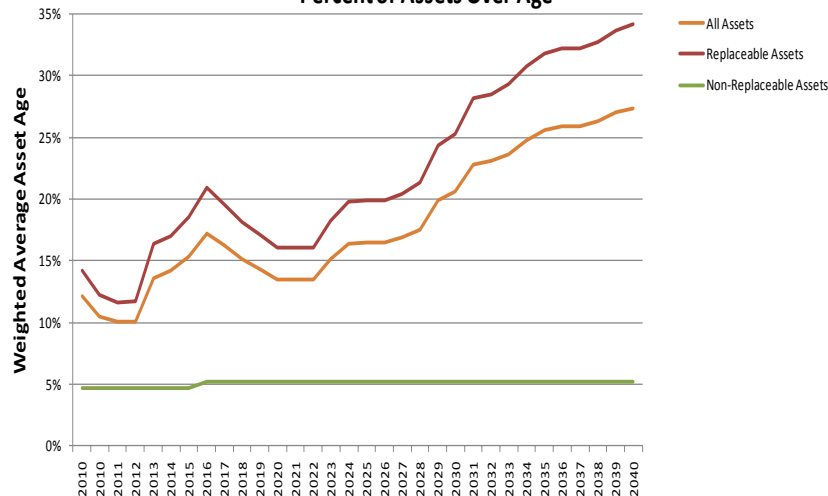
Investment Expenditures by Category



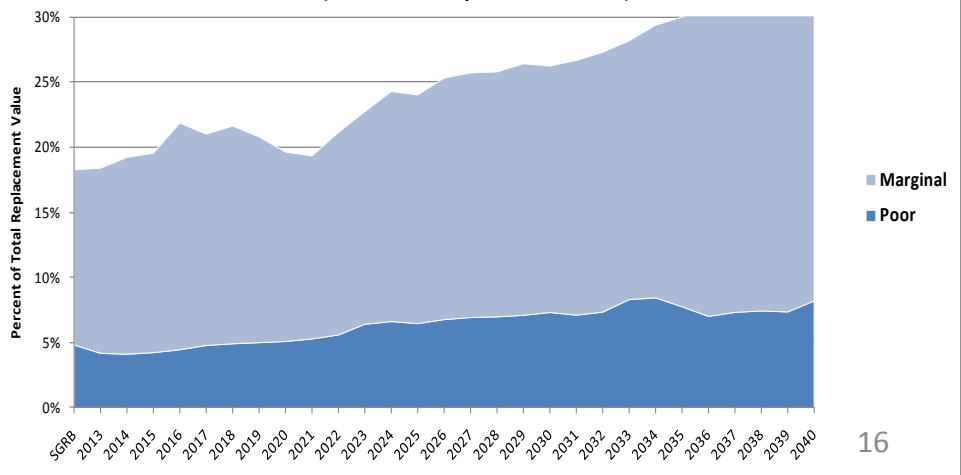
SGR Backlog by Category



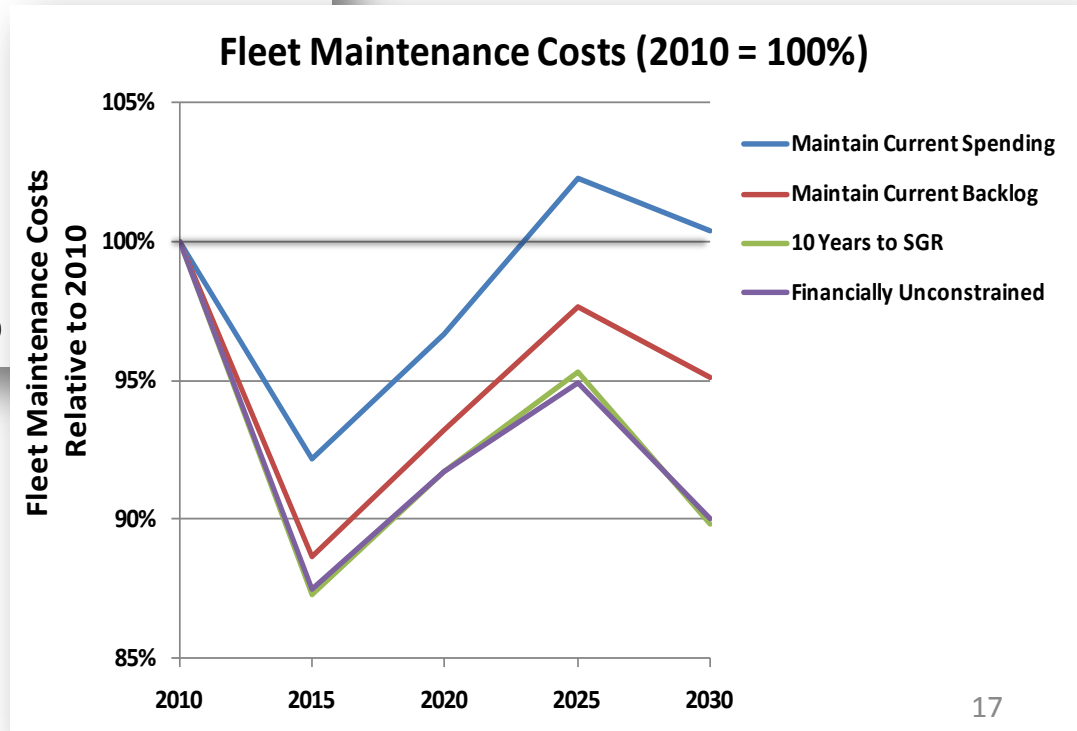
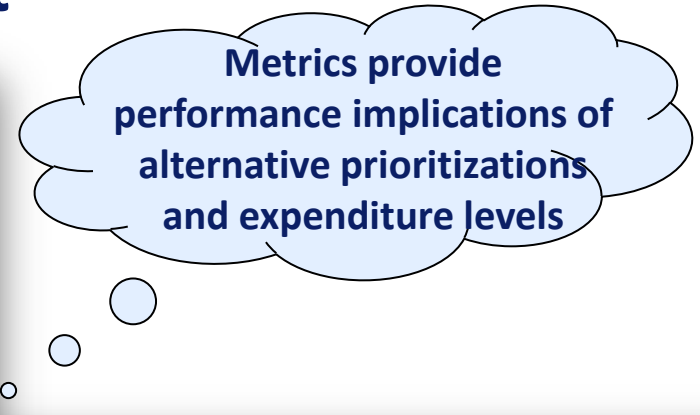
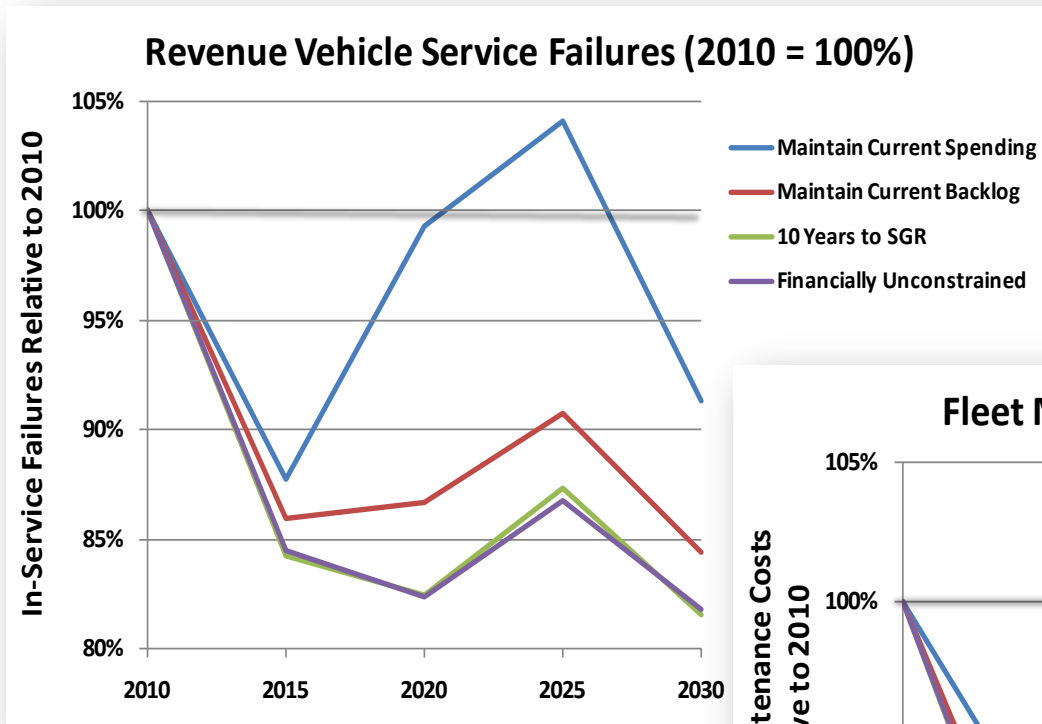
Percent of Assets Over Age



Assets in Marginal or Poor Condition
(Excludes Unreplaceable Assets)



Excel Export: Performance Forecast



When Will TERM Lite be Released and How?

Release Schedule

- Beta release late 2011
 - ✓ User training / support 2012
 - ✓ Application and testing with expanded user group 2012
 - ✓ Update release for Late 2012 and roughly annually thereafter

Web Based Release

- How to Access...
 - ✓ Users to request copy via web
 - ✓ Copy will be e-mailed or FTP'd to user
 - ✓ Record maintained of active user group for updates, training, user comments, user group interaction

Questions?

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