

Transportation Asset Management



CDOT
October 17, 2012

Agenda

Commission Retreat Report

Provide Input on FY14 Budget

Scheduling Future Meetings



Committee Meeting Purpose:

Commissioner input is requested in these areas:

Short-term:

- Provide input on the FY14 budget (September)
- Discuss pavement least cost analysis findings (October)
- Provide input on Long Range Plan (LRP) goals in coordination with the LRP committee (October/November)

Long-term:

- Establish targets for performance measures
- Incorporate tiering results as applicable
- Provide input on Asset Management Plan



Budget History

Asset:	Amount Budgeted		
	FY11	FY12	FY13
Surface Treatment	\$100,951,157	\$147,220,272	\$114,479,353
CDOT Bridge	\$41,202,138	\$40,620,170	\$47,473,872
MLOS (MPAs)	\$239,765,681	\$242,429,332	\$242,429,332
Road Equipment	\$18,938,634	\$14,191,591	\$14,191,591
ITS + ITS Investments*	\$9,751,238	\$14,682,307	\$14,385,068
Total:	\$410,608,848	\$459,143,672	\$432,959,216

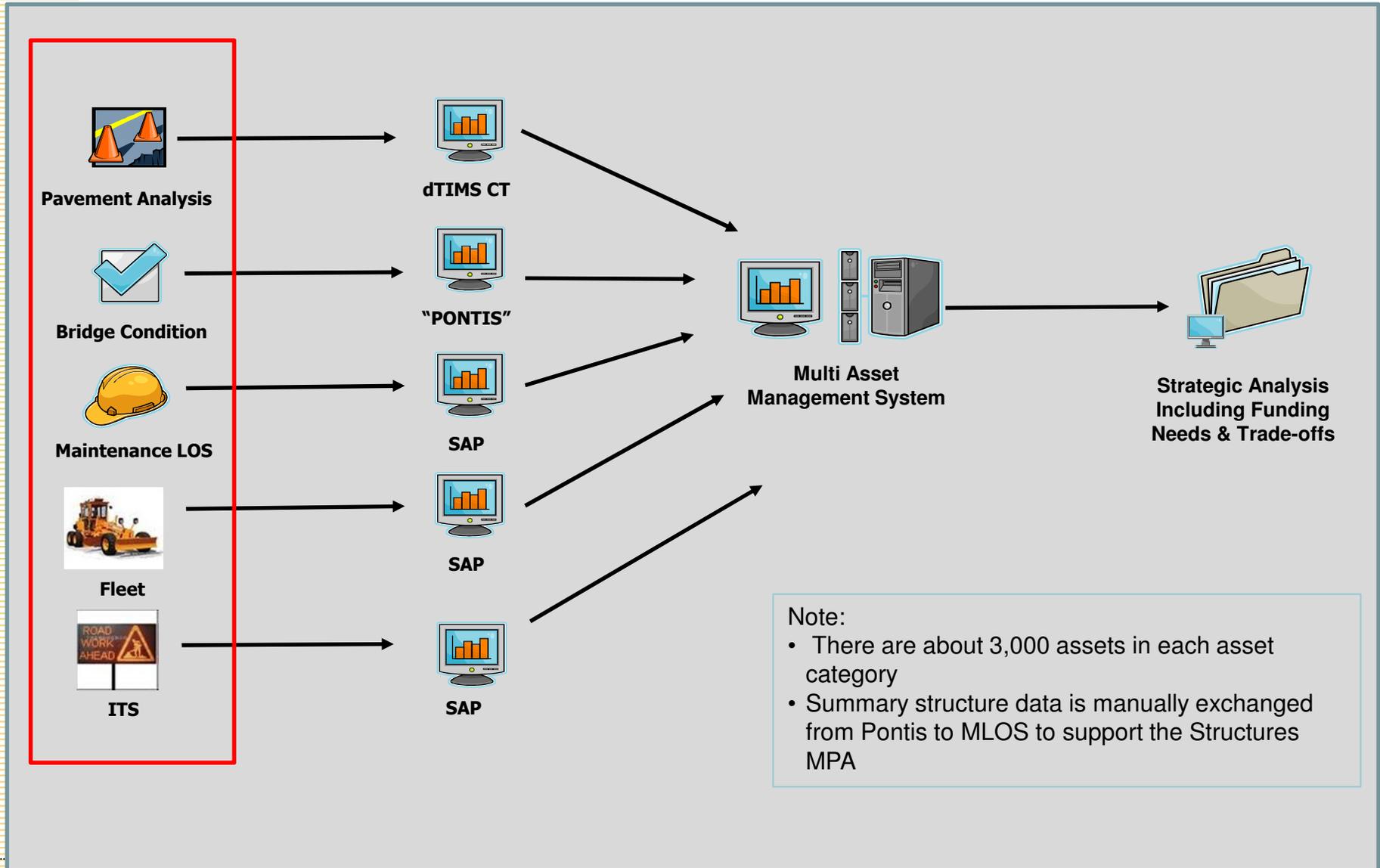
Note: CDOT Bridge does not include Local Bridge, Bridge Enterprise or HPTE Budgets

Note: The Amount Budgeted indicates the initial CDOT budget for each fiscal year, and does not include any budget adjustments made during the year.

*Note: FY12 was the first year since 2005 in which ITS received capital investment dollars, which results in the increased budget figure.



Investment Tool: MAMS



Overview of 5 Assets

Current TC Goals in Policy Directive 14

Pavement: Achieve 60% good/fair pavement condition system-wide

Bridge: Achieve 95% good/fair bridge deck area condition system-wide

Maintenance: Achieve a B maintenance level of service grade for system quality measures

Fleet: N/A

ITS: N/A

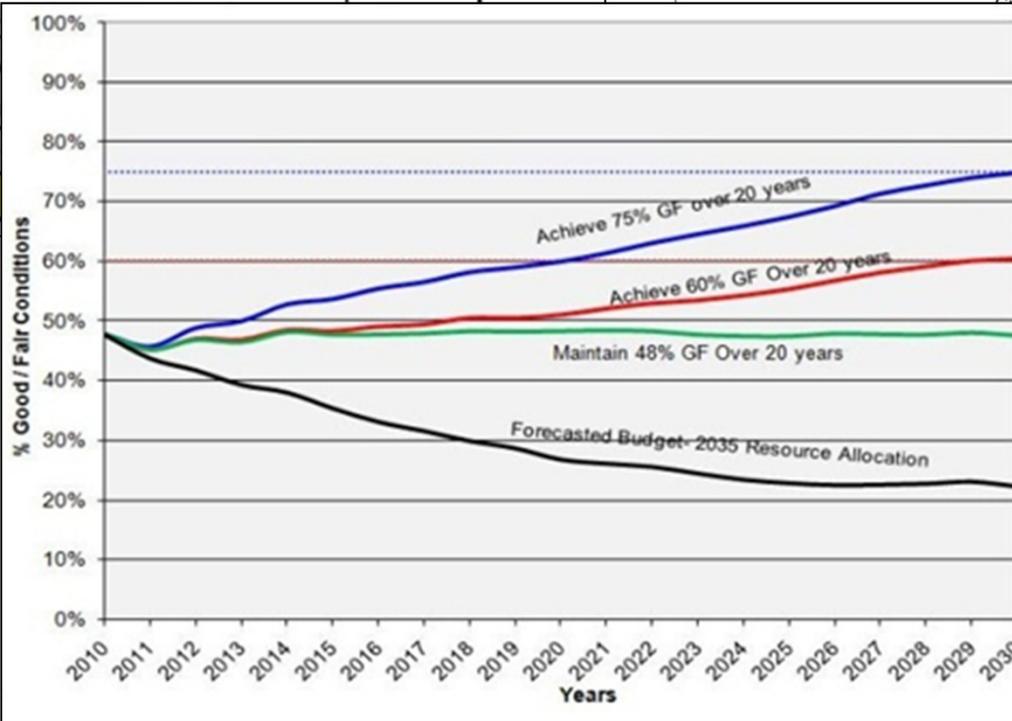
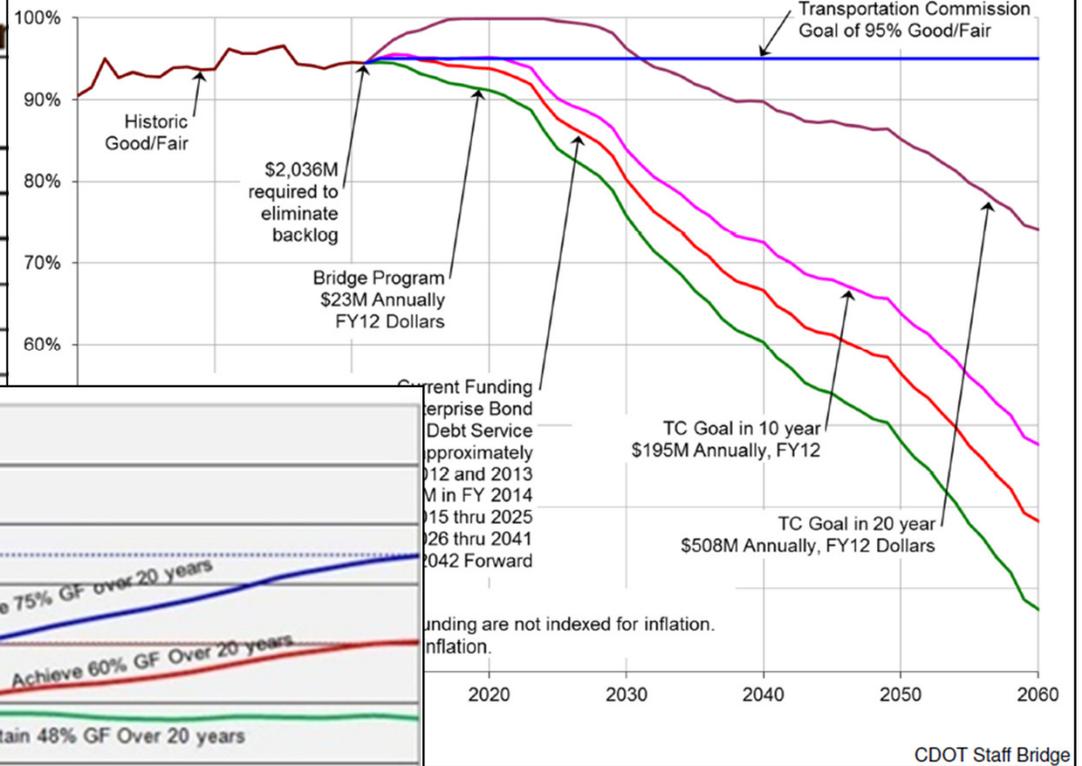


FY13 Budget Workshops - Last Year

FY 2013, Scenario 3 Maintenance

Planning, Scheduling and Training	C	
Roadway Surface	C+	
Roadside Facilities	C	
Roadside Appearance	C	
Traffic Services	C-	
Structure Maintenance	B-	
Snow		
Rest Area		
Ground		
Tunnel		

Percent Good/Fair 50 Year Projected Trends

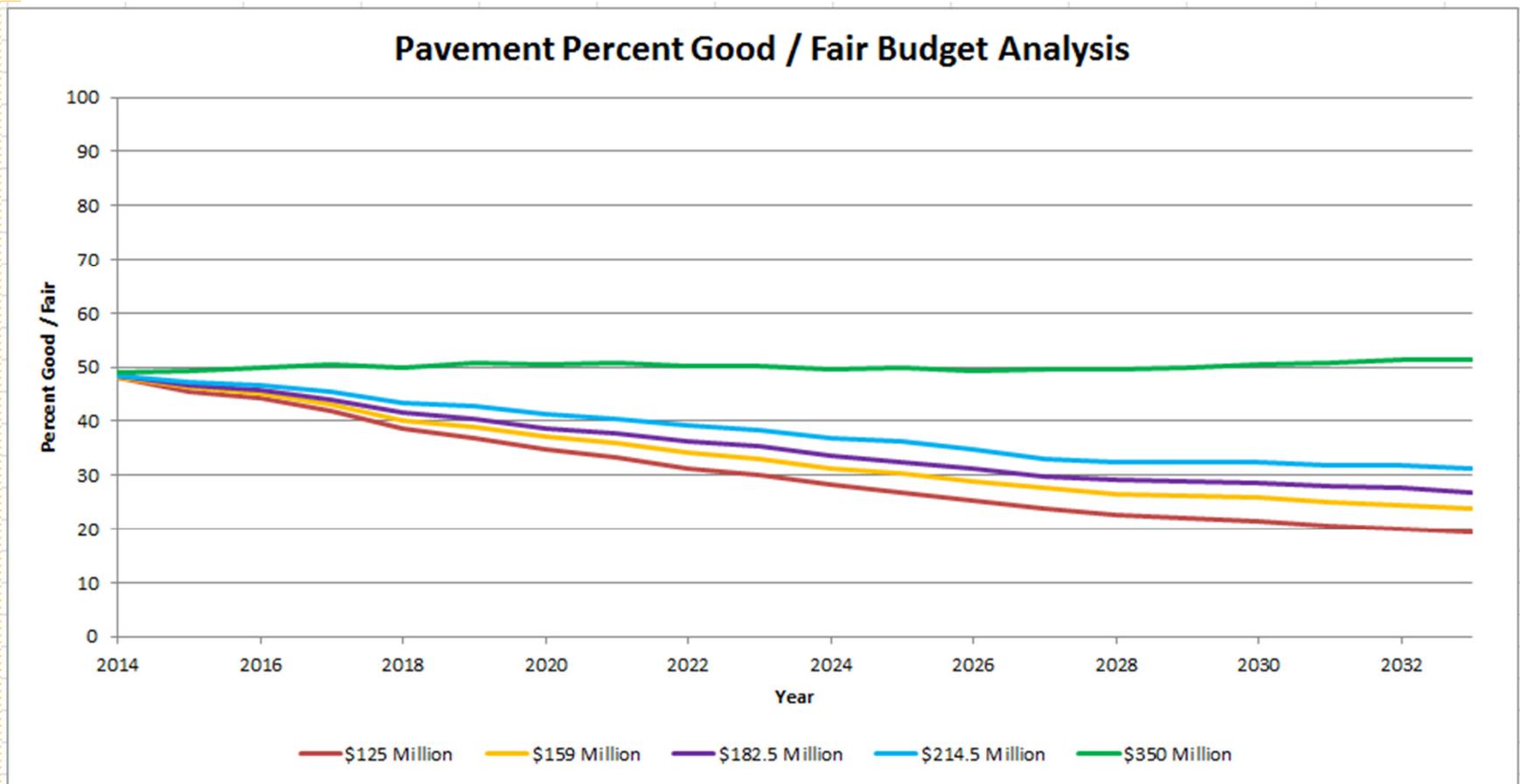


Pavement Management

Alternative Budget Scenarios

Analysis Assumptions

- Timeframe: 20 years
- Traffic (AADT) is factor in analysis
- Cost Inflation Rate: 4.87%
- Treatment Costs based on past 5 years of project data

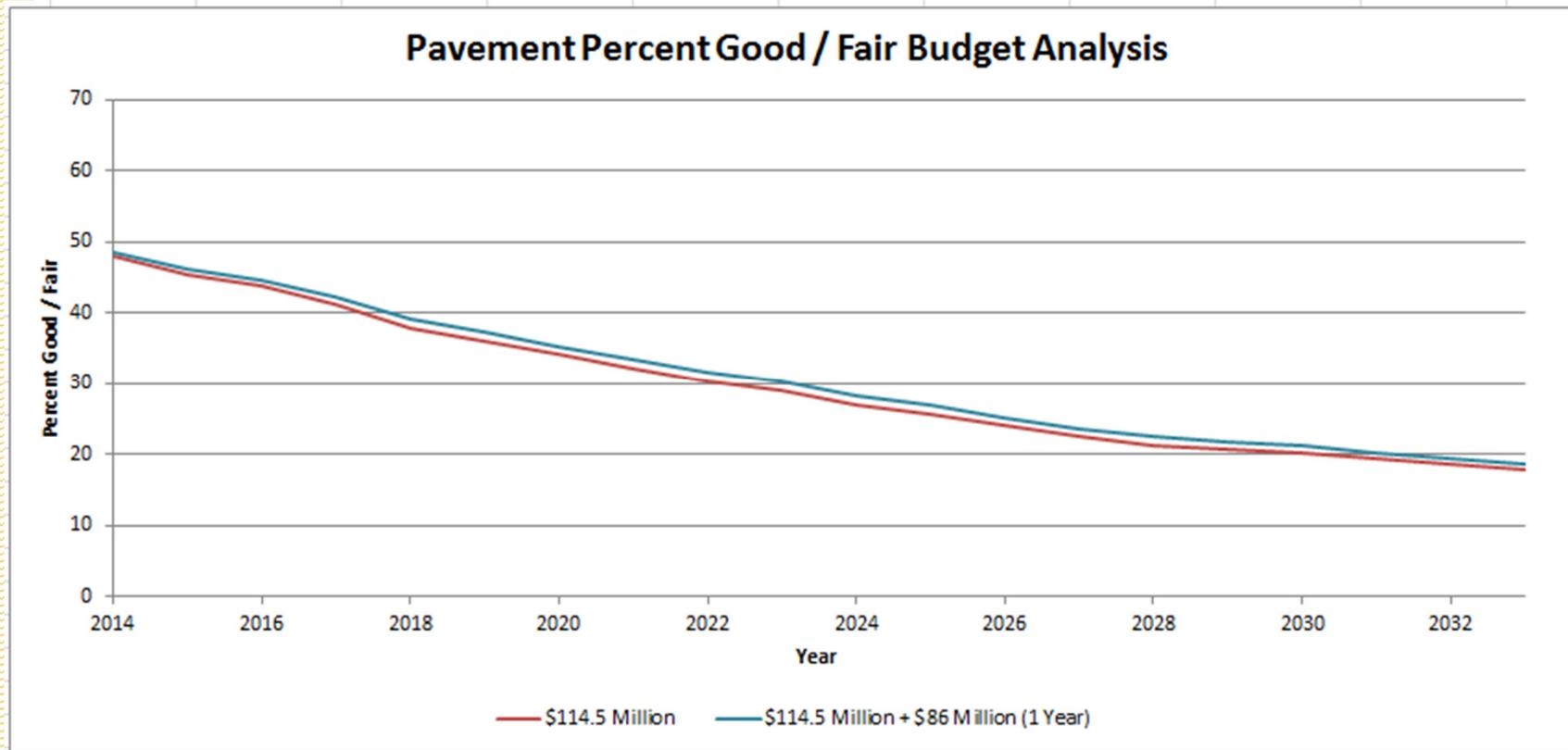


Pavement Management

One Time Infusion of \$86 Million

Analysis Assumptions

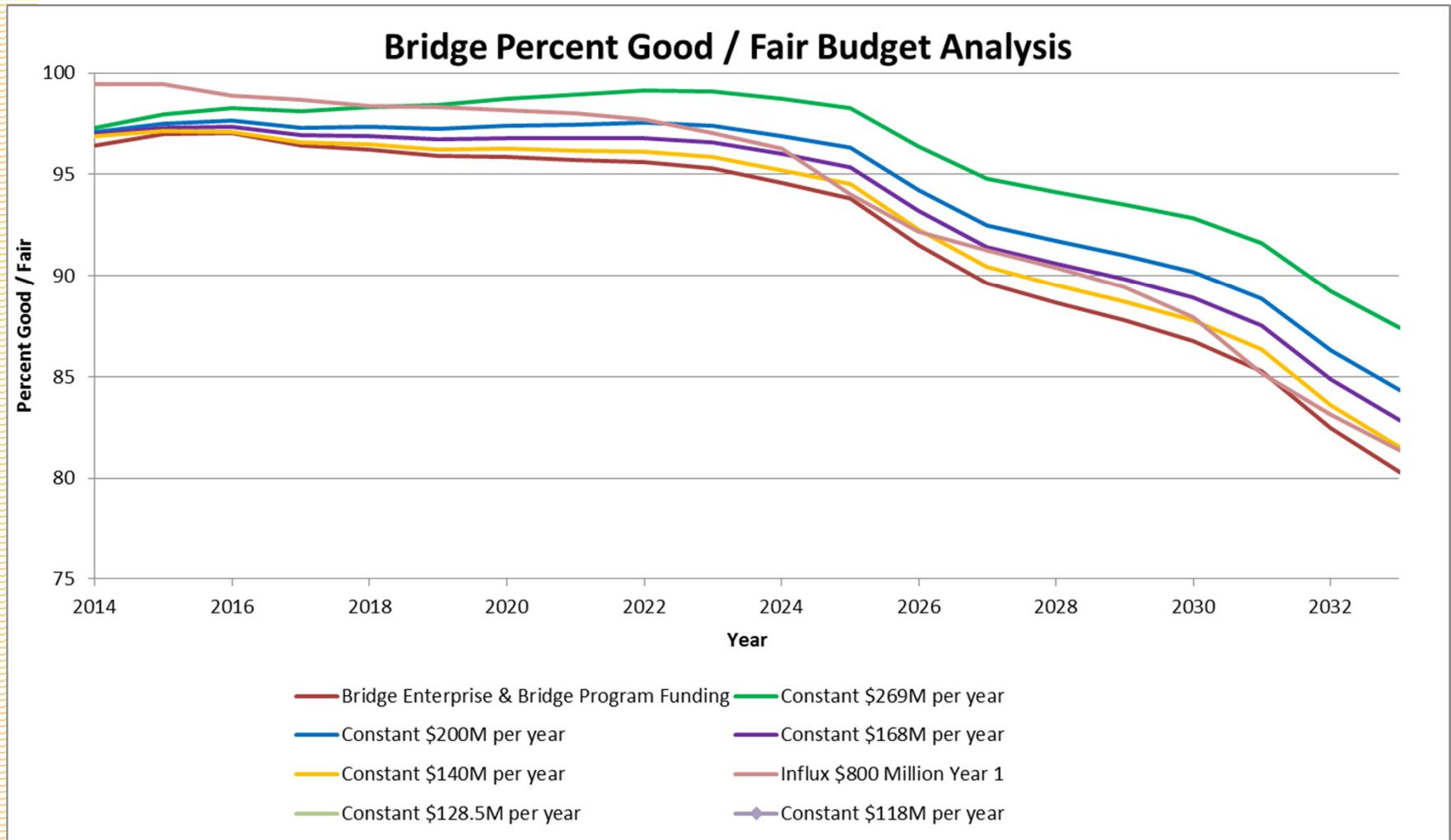
- Timeframe: 20 years
- Traffic (AADT) is factor in analysis
- Cost Inflation Rate: 4.87%
- Treatment Costs based on past 5 years of project data



FY14
Budget

Bridge Management

Typical and Alternate Budget Ranges, with 1 Time Infusion of \$800M



Maintenance Management

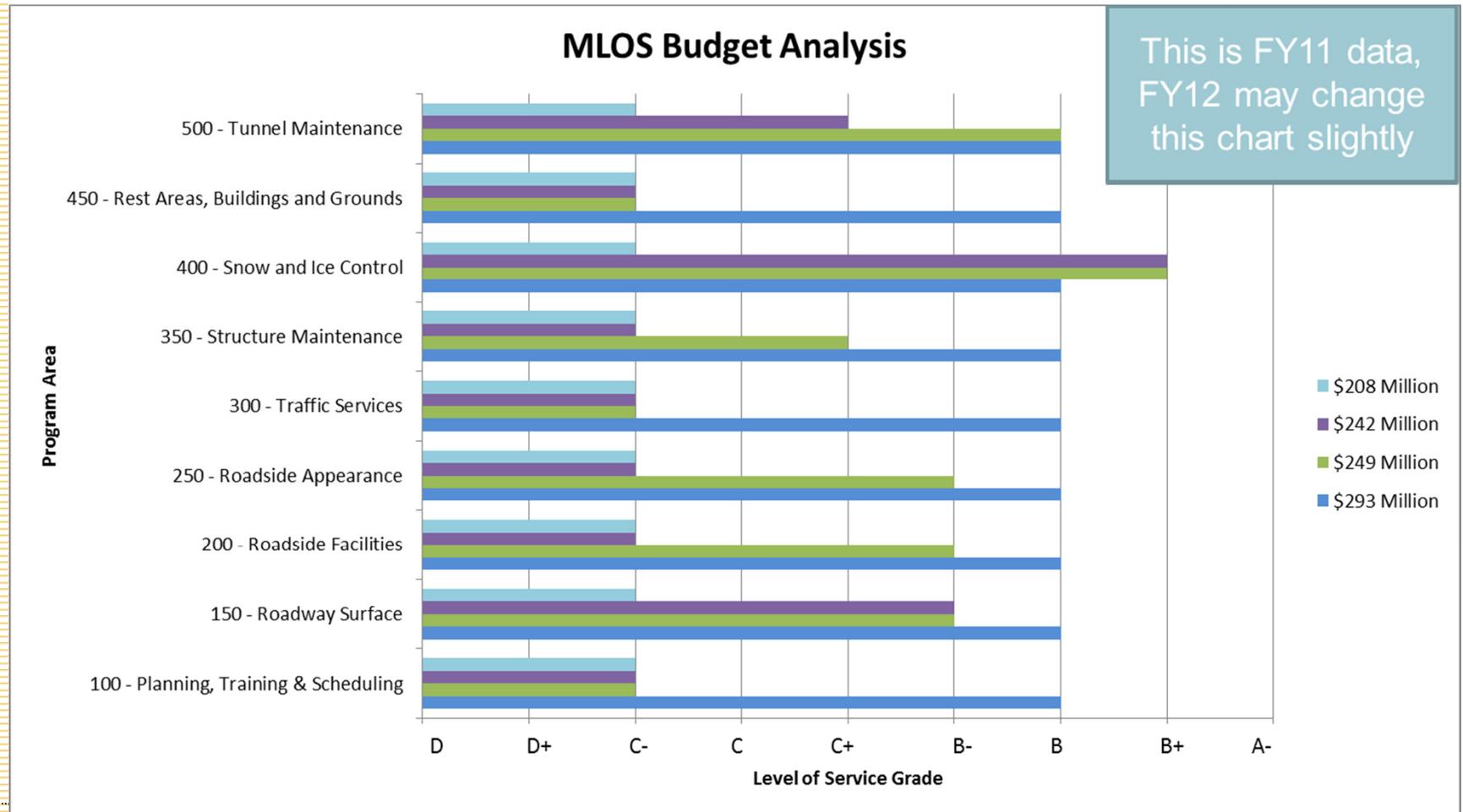
Typical and Alternate Budget Range

Analysis Assumptions

- Timeframe: 1 year
- Cost Inflation Rate: 0%

Analysis Assumptions cont.

- Based on 9 MPA areas
- MPAs are prioritized (weightings)

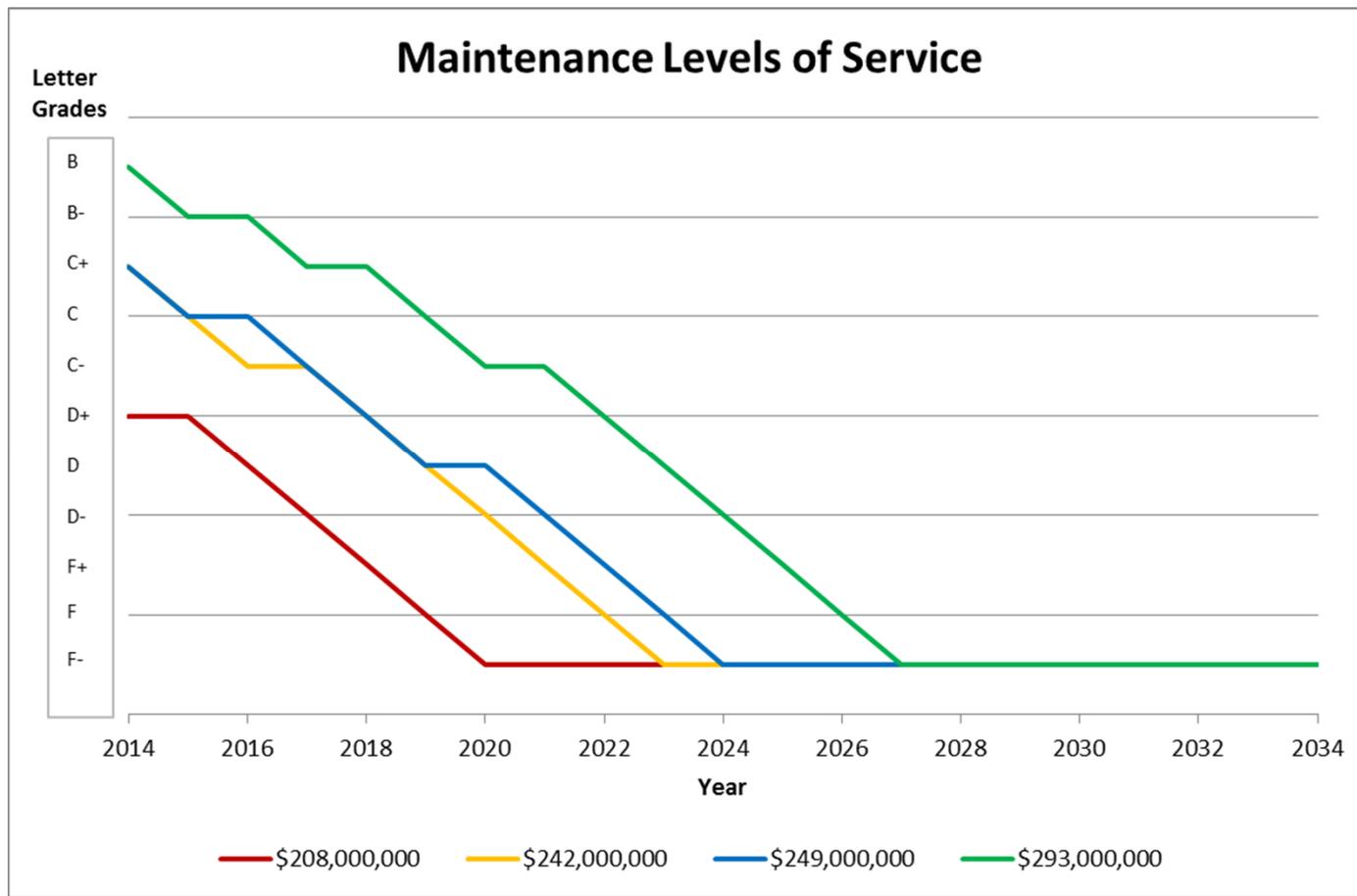


Maintenance Management

Typical Budget Range

Analysis Assumptions

- Timeframe: 20 years
- Based on overall MLOS grade
- Cost Inflation Rate: 4.87%



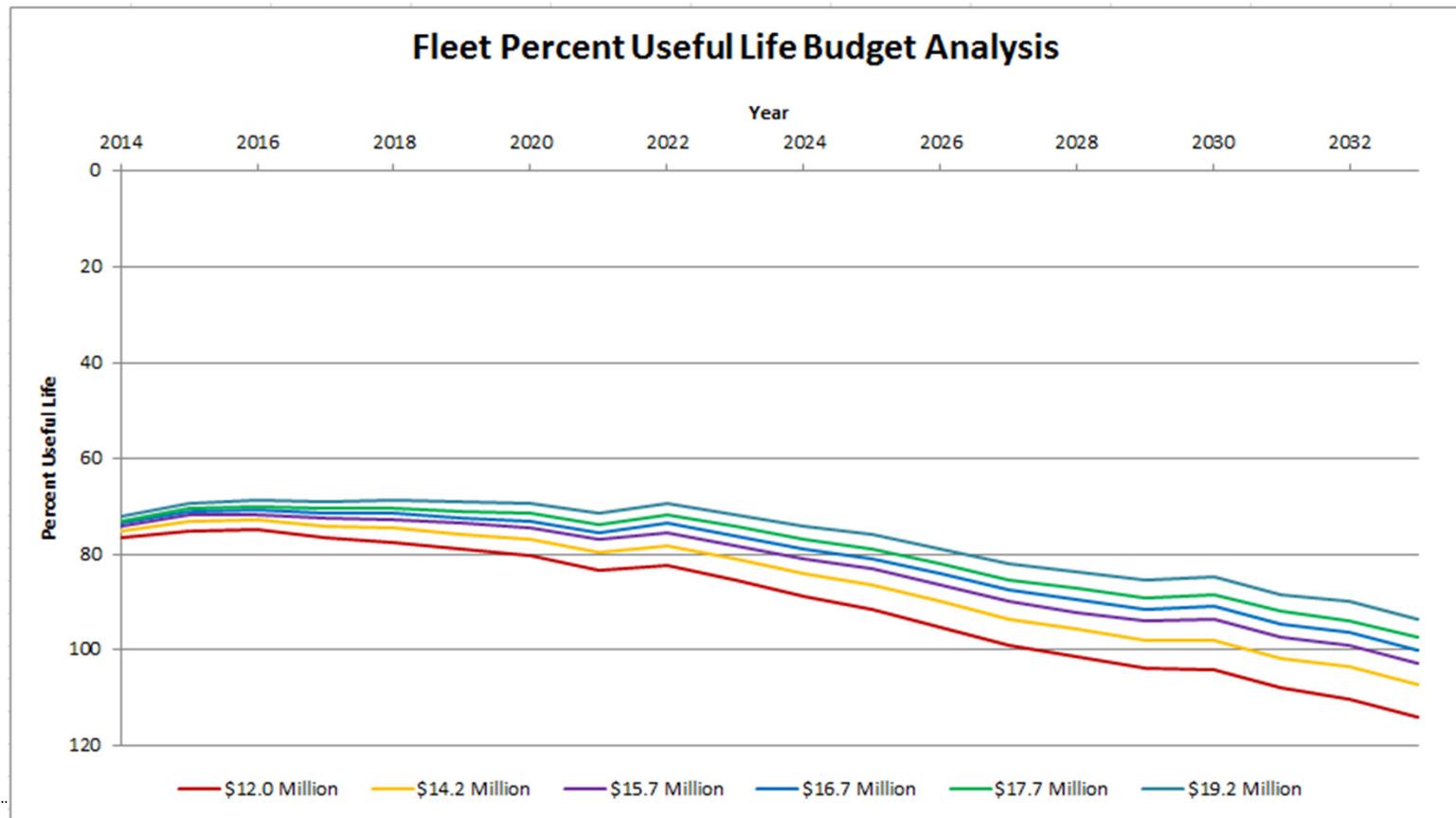
Fleet Management

Typical and Alternate Budget Range

Analysis Assumptions

- Based on % useful life
- Timeframe: 20 years
- Maintenance costs include materials/equipment and not labor
- Cost Inflation Rate: 7%: Industry standard (econ/mat/regulations)

Fleet Equipment will be a focus of the November, 2012 Committee Meeting



ITS Management

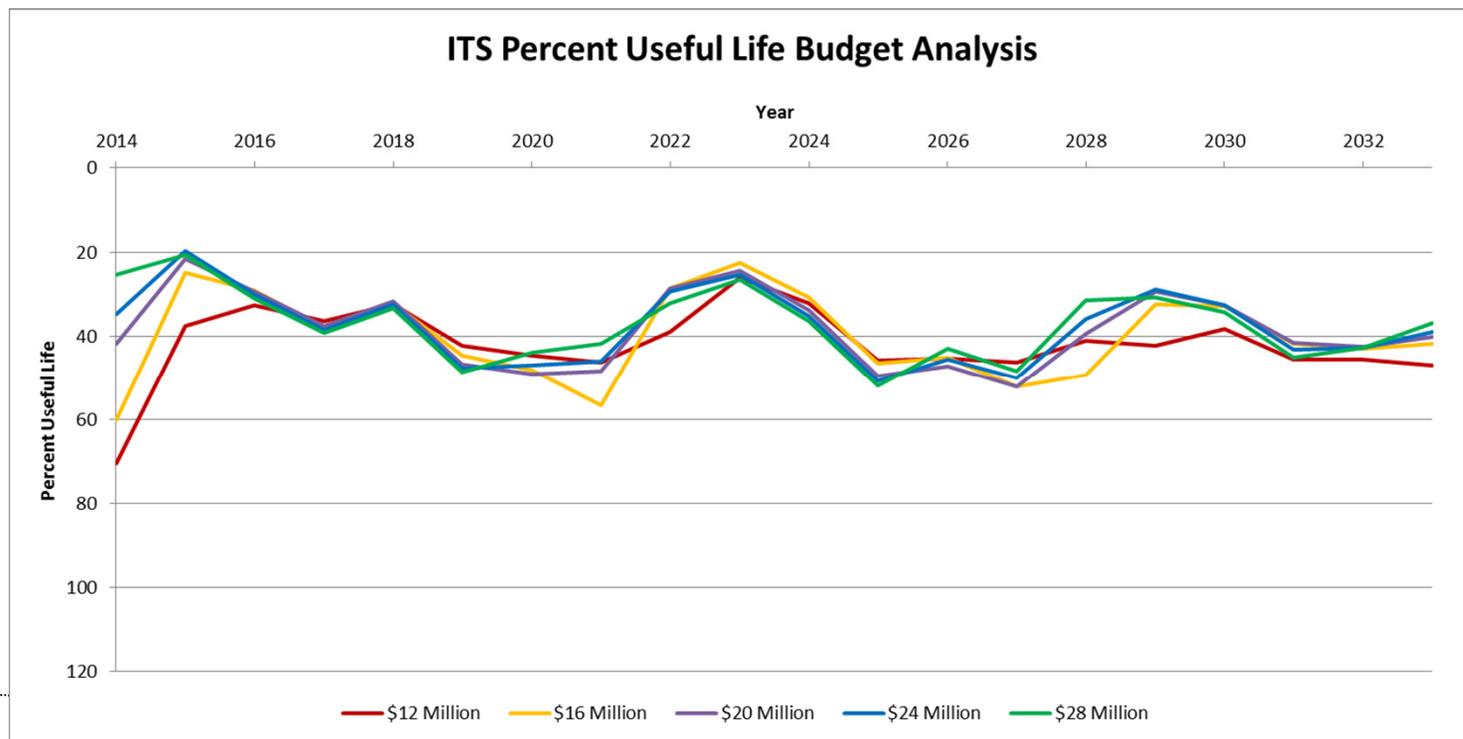
Typical Budget Range

Analysis Assumptions

- Based on % useful life
- Timeframe: 20 years
- Cost Inflation Rate: 4.87%
- If expected useful life is ≤ 4 years then replace at 100%; replace between 80-100% for all other devices.

Some ITS equipment has short life cycles (2 years), consequently there are devices at 300% and 400% of life cycle. The software parameters have been set to replace these right away, and with a higher budget this can happen earlier. The data converges when these devices have all been replaced, and then we get into a regular cycle of replacing at 80% for most devices, or 100% for devices with shorter life cycles.

ITS will be a focus of the December, 2012 Committee Meeting



Combining Five Assets into Budget Analysis



Alternate Budget Scenarios

	Alternate Budget Scenarios (in millions)				
Asset	Status Quo	Scenario 1A	Scenario 1B	Scenario 2	Scenario 3
Surface Treatment	\$114.5	\$125.0	\$159.0	\$214.5	\$350.0
CDOT Bridge & B.E.	\$128.5	\$118.0	\$118.0	\$128.5	\$269.0
MLOS (MPAs)	\$242.0	\$242.0	\$208.0	\$242.0	\$293.0
Road Equipment	\$14.2	\$14.2	\$14.2	\$14.2	\$19.2
ITS + ITS Investments	\$14.4	\$14.4	\$14.4	\$14.4	\$28.0
Total:	\$514	\$514	\$514	\$614	\$959

Note: CDOT Bridge does not include Local Bridge or HPTE Budgets

Note: CDOT Bridge & B.E. includes \$47M for Bridge based on FY13 and \$93M for B.E., then adding \$6M for the Build America Bonds subsidy and subtracting \$18M for Debt Service

*Note: FY12 was the first year since 2005 in which ITS received capital investment dollars, which results in the increased budget figure.



Alternate Budget Scenarios

Summary of budget scenario and condition in 2030

Asset:	Status Quo	2030	Scenario 1A	2030	Scenario 1B	2030	Scenario 2	2030	Scenario 3	2030
Surface Treatment	\$114.5	20% GF	\$125.0	22% GF	\$159.0	26% GF	\$214.5	32% GF	\$350.0	51% GF
CDOT Bridge & B.E.	\$128.5	87% GF	\$118.0	87% GF	\$118.0	87% GF	\$128.5	87% GF	\$269.0	93% GF
MLOS (MPAs)	\$242.0	F-	\$242.0	F-	\$208.0	F-	\$242.0	F-	\$293.0	F-
Road Equipment	\$14.2	98% UL	\$19.2	85% UL						
ITS + ITS Investments	\$14.4	38% UL	\$28.0	34% UL						
Total:	\$514		\$514		\$514		\$614		\$959	



Budget Scenarios: Status Quo

	Status Quo					
Asset	Status Quo (\$M)	2014	2015	2020	2025	2030
Surface Treatment	\$114.5	48% GF	45% GF	34% GF	26% GF	20% GF
CDOT Bridge & B.E.	\$128.5	97% GF	97% GF	96% GF	94% GF	87% GF
MLOS (MPAs)	\$242.0	C+	C	D-	F-	F-
Road Equipment	\$14.2	75% UL	73% UL	77% UL	86% UL	98% UL
ITS + ITS Investments	\$14.4	70% UL	37% UL	44% UL	46% UL	38% UL
Total:	\$514					



Budget Scenarios: Scenario 1A

	Scenario 1A					
Asset	Scenario 1A (\$M)	2014	2015	2020	2025	2030
Surface Treatment	\$125.0	48% GF	46% GF	35% GF	27% GF	22% GF
CDOT Bridge & B.E.	\$118.0	97% GF	97% GF	96% GF	94% GF	87% GF
MLOS (MPAs)	\$242.0	C+	C	D-	F-	F-
Road Equipment	\$14.2	75% UL	73% UL	77% UL	86% UL	98% UL
ITS + ITS Investments	\$14.4	70% UL	37% UL	44% UL	46% UL	38% UL
Total:	\$514					



Budget Scenarios: Scenario 1B

Asset	Scenario 1B					
	Scenario 1B (\$M)	2014	2015	2020	2025	2030
Surface Treatment	\$159.0	48% GF	46% GF	37% GF	30% GF	26% GF
CDOT Bridge & B.E.	\$118.0	97% GF	97% GF	96% GF	94% GF	87% GF
MLOS (MPAs)	\$208.0	D+	D+	F-	F-	F-
Road Equipment	\$14.2	75% UL	73% UL	77% UL	86% UL	98% UL
ITS + ITS Investments	\$14.4	70% UL	37% UL	44% UL	46% UL	38% UL
Total:	\$514					



Budget Scenarios: Scenario 2

	Scenario 2					
Asset	Scenario 2 (\$M)	2014	2015	2020	2025	2030
Surface Treatment	\$214.5	49% GF	47% GF	41% GF	36% GF	32% GF
CDOT Bridge & B.E.	\$128.5	97% GF	97% GF	96% GF	94% GF	87% GF
MLOS (MPAs)	\$242.0	C+	C	D-	F-	F-
Road Equipment	\$14.2	75% UL	73% UL	77% UL	86% UL	98% UL
ITS + ITS Investments	\$14.4	70% UL	37% UL	44% UL	46% UL	38% UL
Total:	\$614					



Budget Scenarios: Scenario 3

	Scenario 3					
Asset	Scenario 3 (\$M)	2014	2015	2020	2025	2030
Surface Treatment	\$350.0	49% GF	49% GF	50% GF	50% GF	51% GF
CDOT Bridge & B.E.	\$269.0	97% GF	98% GF	99% GF	98% GF	93% GF
MLOS (MPAs)	\$293.0	B	B-	C-	F+	F-
Road Equipment	\$19.2	72% UL	69% UL	69% UL	75% UL	85% UL
ITS + ITS Investments	\$28.0	25% UL	21% UL	44% UL	52% UL	34% UL
Total:	\$959					

