



2014 BUSINESS PLAN CAPITAL COST ESTIMATE UPDATE

October 3rd 2013

2014 BUSINESS PLAN ESTIMATE SUMMARY COSTS BY PHASE

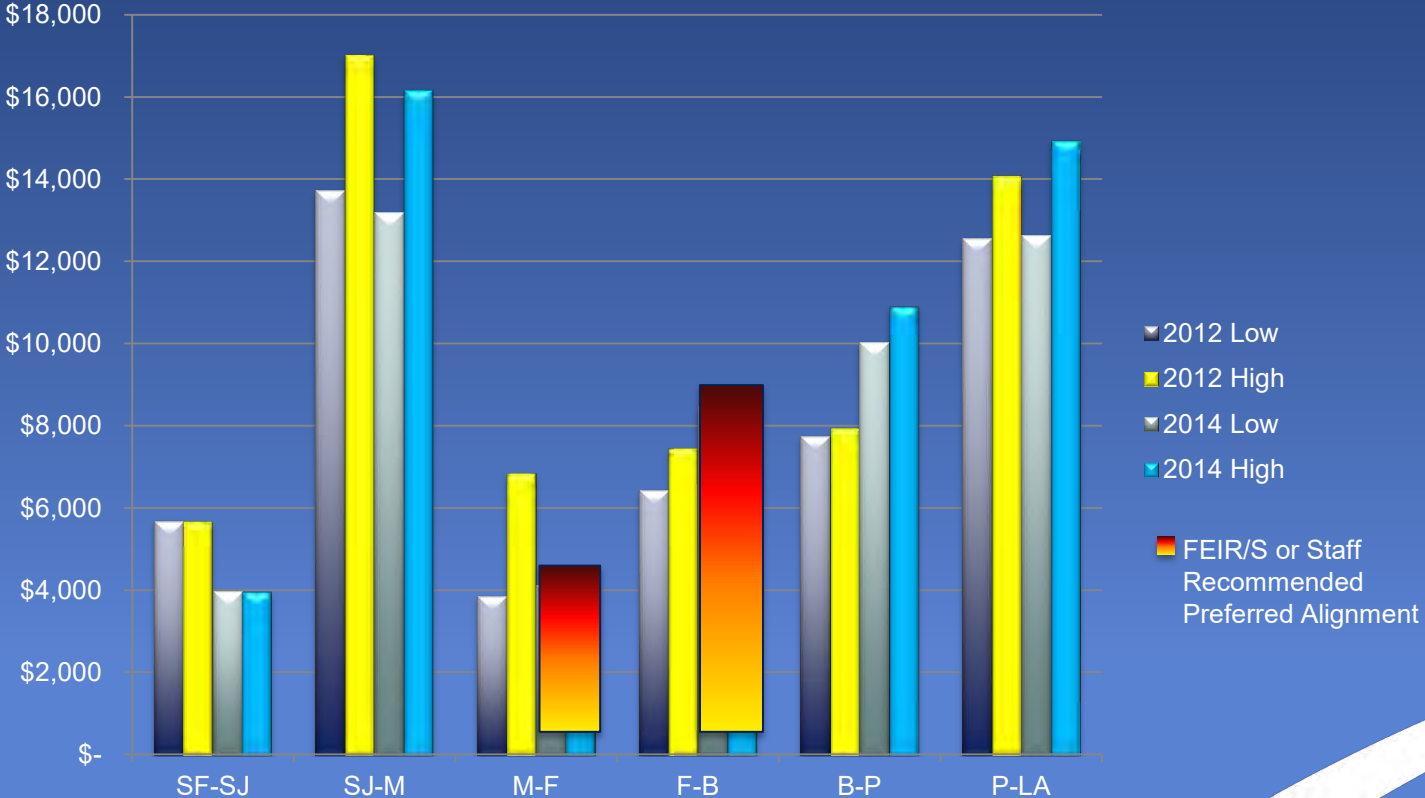
- High and Low Costs (millions, 2012 \$\$)

PHASE	2012 Low		2012 High		2014 Low		2014 High	
FCS	\$	5,444	\$	5,444	\$	5,672	\$	5,672
IOS	\$	27,344	\$	31,923	\$	35,754	\$	38,236
B2B	\$	42,042	\$	49,904	\$	49,984	\$	55,439
PH 1	\$	54,371	\$	63,441	\$	56,942	\$	63,091

- Phase I Low Cost increased \$2.6 billion or 4.7%
- Phase I High Cost decreased \$0.3 billion or 0.5%

2014 BUSINESS PLAN ESTIMATE SUMMARY COSTS BY SECTION

- High and Low Costs (millions, 2012 \$\$)



2014 BUSINESS PLAN ESTIMATE DESIGN DEVELOPMENT STAGE

Environmental Section	Design Stage 2012 BP	Design Stage 2014 BP
San Francisco to San Jose	5% Design	5% Design
San Jose to Merced	Draft 15% Design	Draft 15% Design
Merced to Fresno	Final 15% Design	15% - PE4P Design
Fresno to Bakersfield	Final 15% Design	15% - PE4P Design
Bakersfield to Palmdale	5% Design	5% - Draft 15% Design
Palmdale to Los Angeles	5% Design	5% Design

2014 BUSINESS PLAN ESTIMATE ALIGNMENT ALTERNATIVES

Environmental Section	Low Cost Alignment Alternative	High Cost Alignment Alternative
San Francisco to San Jose	Blended Operation	Blended Operation
San Jose to Merced	East of UPRR /Pacheco Pass SR152/Henry Miller Avenue 24	US101 trench/Pacheco Pass/Henry Miller Avenue 21
Merced to Fresno	Hybrid/Avenue 24 Alternative	Hybrid/Avenue 24 Alternative
Fresno to Bakersfield	Hanford East/Wasco- Shafter/Bakersfield Hybrid elevated alignment	Hanford East/Wasco- Shafter/Bakersfield Hybrid elevated alignment
Bakersfield to Palmdale	Oak Creek Alignment*	Tehachapi Alignment
Palmdale to Los Angeles	SR14West/Santa Clarita South/elevated LAUS approach	SR14East/Santa Clarita North/tunnel LAUS approach

*Low cost alignment was developed as a derivative of the high cost option reflecting potential cost saving measures being implemented in the Oak Creek alignment alternative currently under study.

2014 BUSINESS PLAN ESTIMATE SIGNIFICANT ASSUMPTIONS

- Unit Price Elements reflect 25% markup for Contractor's overhead and profit;
- Allocated contingencies range from 10% to 25% per cost category;
- Unallocated contingency is assumed at 5% of construction and ROW acquisition costs;
- Soft costs assumed as % of construction costs:
 - 2% of total Construction for PE/E
 - 3% of total Construction for PM
 - 6% of total Construction for Final Design (3% for tunnels)
 - 4% of total Construction for CM
 - 0.5% of total Construction for Agency Costs
 - 6% of Systems and Electrification for Testing
- Temporary facilities and indirect costs at 4%

2014 BUSINESS PLAN ESTIMATE SIGNIFICANT INCLUSIONS

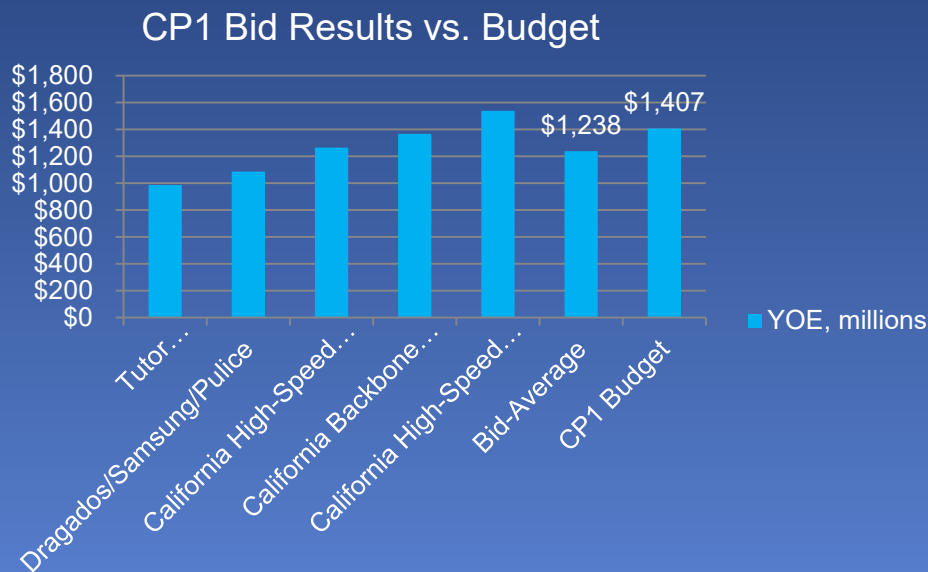
- CP1 award costs including provisional sums and approved contingency;
- SR 99 relocation costs per Caltrans agreement (\$225.9 million);
- CP1 agreements with 3rd parties (\$80 million);
- 'Sunk costs' (PM and PE/E, not including Authority's costs) from FY06/07 through FY12/13 (\$497 million);
- **Projected cost for PE/E effort going forward (\$539 million);**
- Connection to the Utility Grid costs (\$960 million);
- 'Early Projects' allowance for LA-ANA (\$519 million).

2014 BUSINESS PLAN ESTIMATE SIGNIFICANT EXCLUSIONS

- Escalation to Year of Expenditure;
- Overtime or accelerated schedule;
- Post-Construction Costs;
- Costs to implement interim service over FCS.

2014 BUSINESS PLAN ESTIMATE SIGNIFICANT ADJUSTMENTS

- Market Conditions – CP1 Bid Average Adjustment



- CP1 bid-average price is 88% of the CP1 Budget value;
- Adjustment factor of 12% was applied on the UPEs for similar project-wide scope;
- Accounts for \$2.3 billion adjustment to Phase 1 costs in 2012

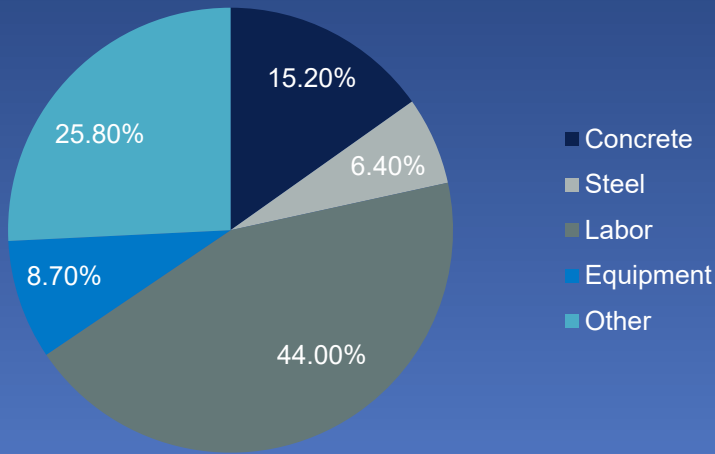
2014 BUSINESS PLAN ESTIMATE SIGNIFICANT ADJUSTMENTS

- Escalation to Base Year
 - Estimate is based on 2009 pricing
 - Escalation has been per ENR published CCIs:
 - Industry recognized historic escalation index
 - Based on a hypothetical assembly of:
 - 200 hour of common labor
 - 2,500 lb of structural steel
 - 1.126 tons of portland cement
 - 1,088 ft of 2x4 lumber



2014 BUSINESS PLAN ESTIMATE SIGNIFICANT ADJUSTMENTS

- Escalation by Component Weights*

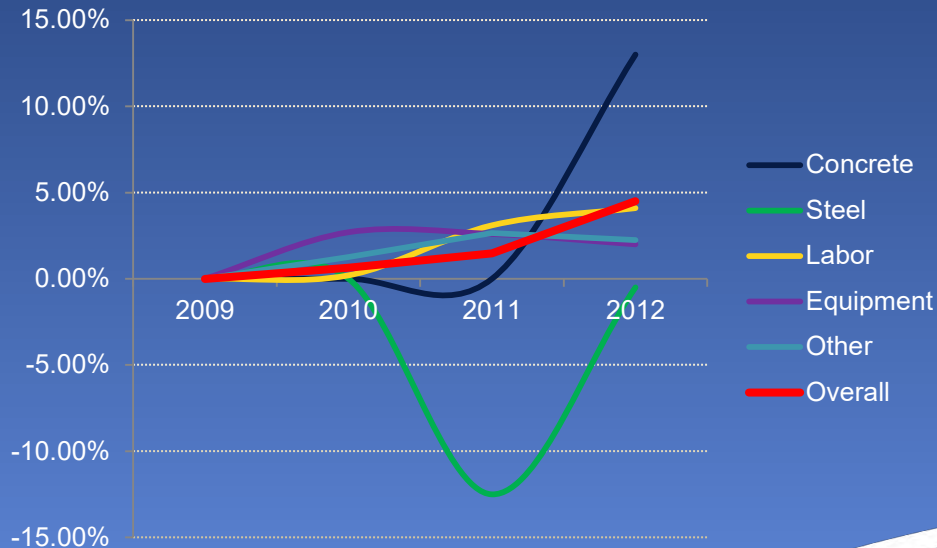


*Based on rail transit projects nation-wide.

Price Indexes:

- Steel – ENR price index
- Concrete – ENR price index
- Equipment - BLS data
- Labor – Prevailing wage agreements
- Other – Consumer Price Index

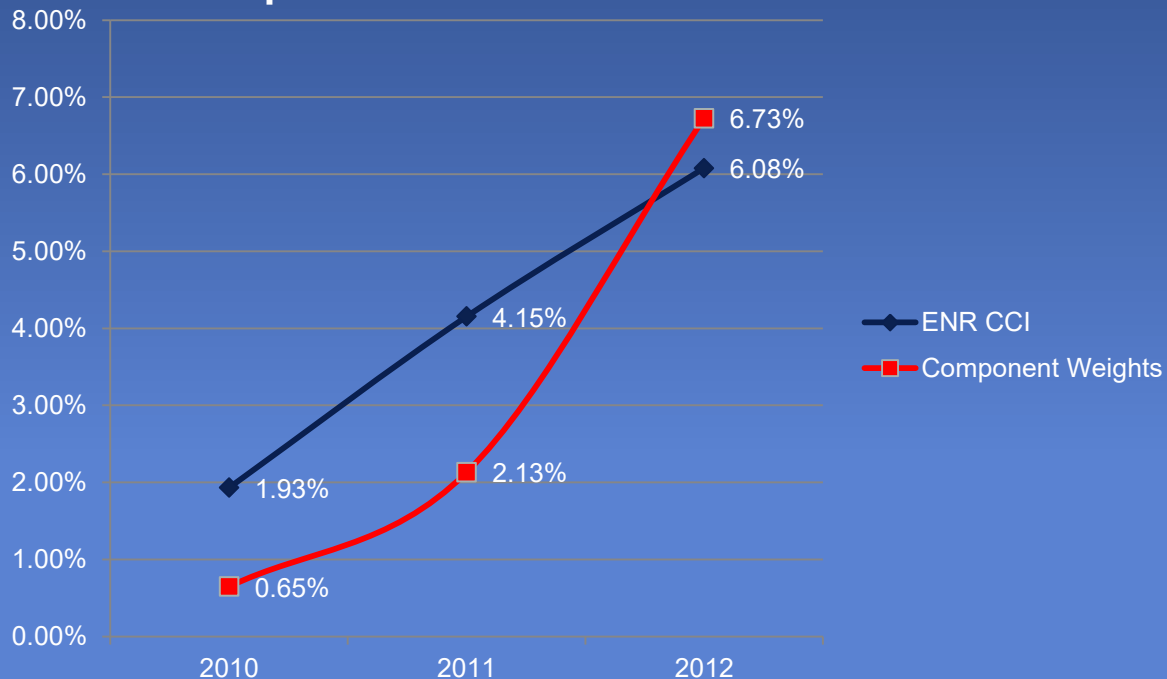
Aggregated Escalation Factor



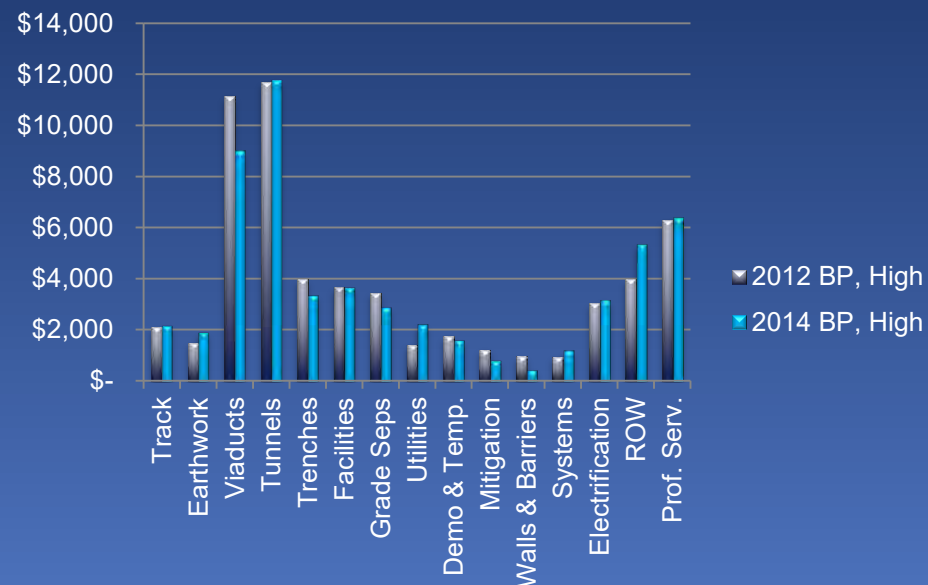
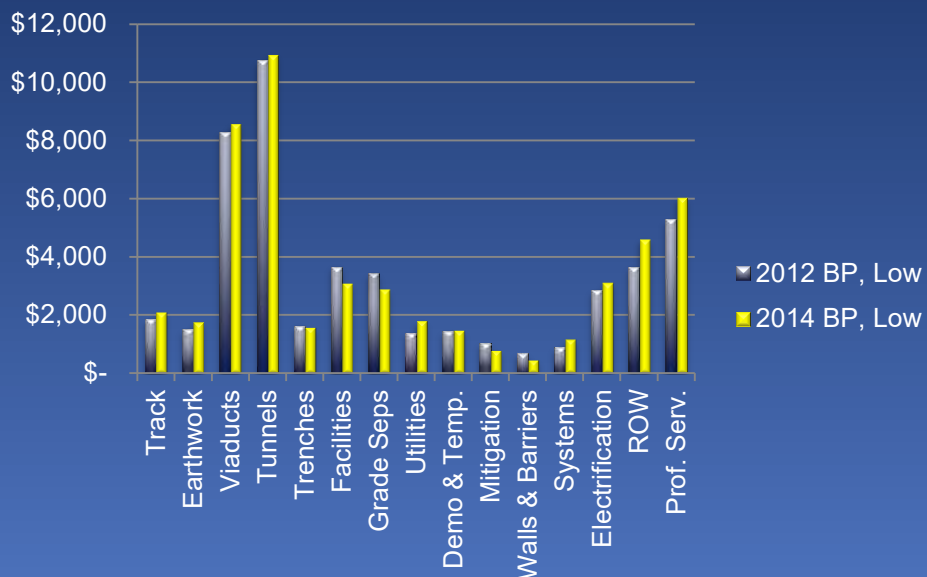
2014 BUSINESS PLAN ESTIMATE SIGNIFICANT ADJUSTMENTS

- Escalation Index – ENR vs. Component Weights
 - Reflects an escalation approach targeting linear rail construction
 - Founded on published cost indexes in California and nationally
 - **Accounts for \$370-\$410 million increase to Phase 1 costs in 2012 dollars.**

Compound Escalation Rates



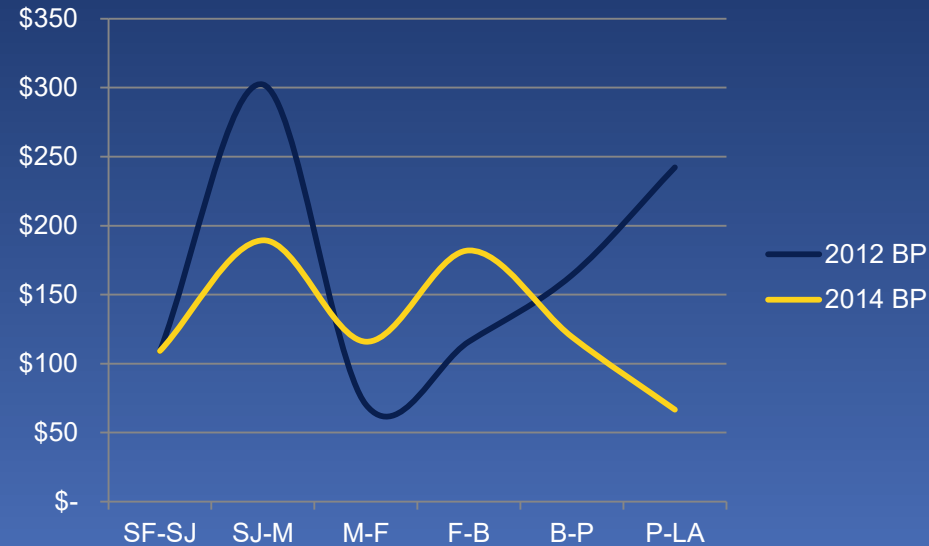
2014 BUSINESS PLAN ESTIMATE COMPARISON TO 2012 BY CATEGORY



Env. Section	2012 Low	2012 High	2014 Low	2014 High
SF-SJ	\$ 5,686	\$ 5,686	\$ 3,977	\$ 3,977
SJ-M	\$ 13,733	\$ 17,017	\$ 13,195	\$ 16,168
M-F	\$ 3,863	\$ 6,859	\$ 4,110	\$ 4,110
F-B	\$ 6,425	\$ 7,460	\$ 8,479	\$ 8,479
B-P	\$ 7,733	\$ 7,953	\$ 10,023	\$ 10,906
P-LA	\$ 12,557	\$ 14,092	\$ 12,645	\$ 14,937

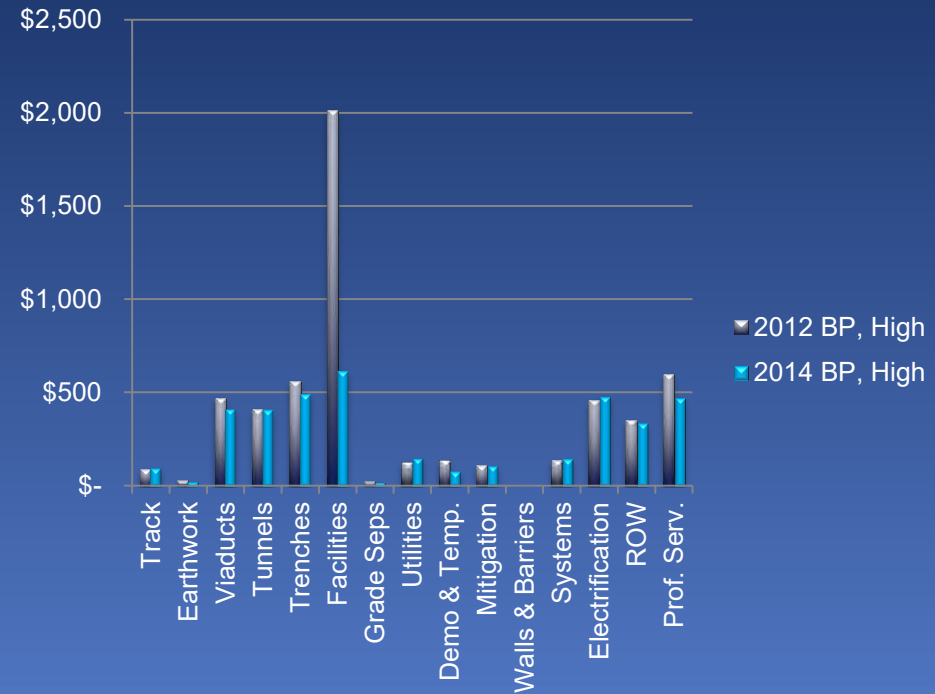
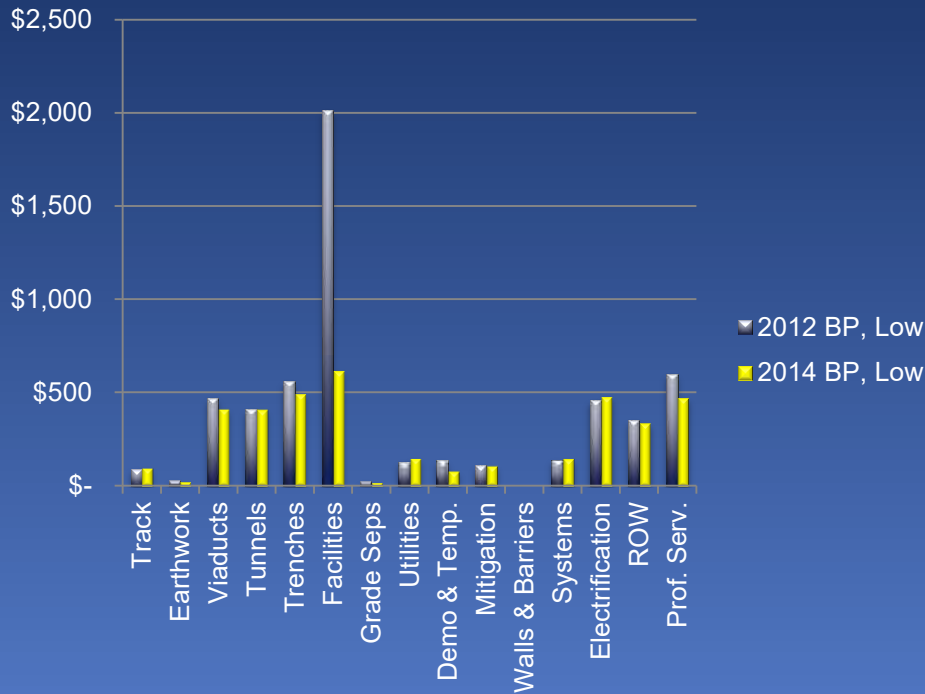
2014 BUSINESS PLAN ESTIMATE PROGRAM-WIDE UPDATES

- Environmental Mitigation
 - Based on scope definition in M-F section;
 - Adjusted for level of development;
 - Adjusted for relation to grade.
- ROW Acquisition



Section	ROW Cost Update	Contingency
SF-SJ	June, 2011	20%
SJ-M	June, 2011	10%
M-F	April, 2013	25%
F-B	August, 2012	10%
B-P	June, 2013	10%
P-LA	April, 2013	25%

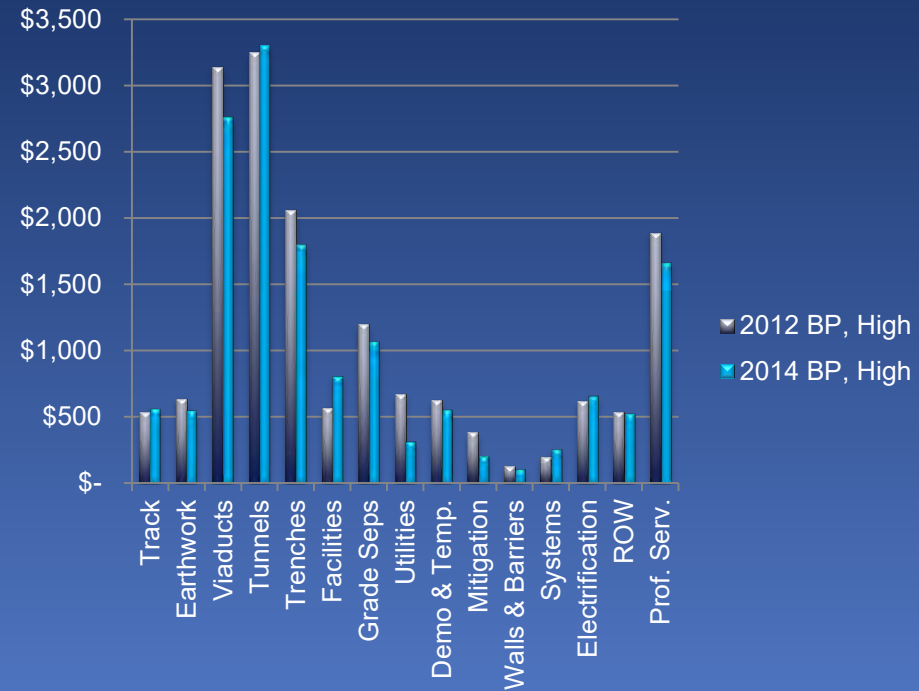
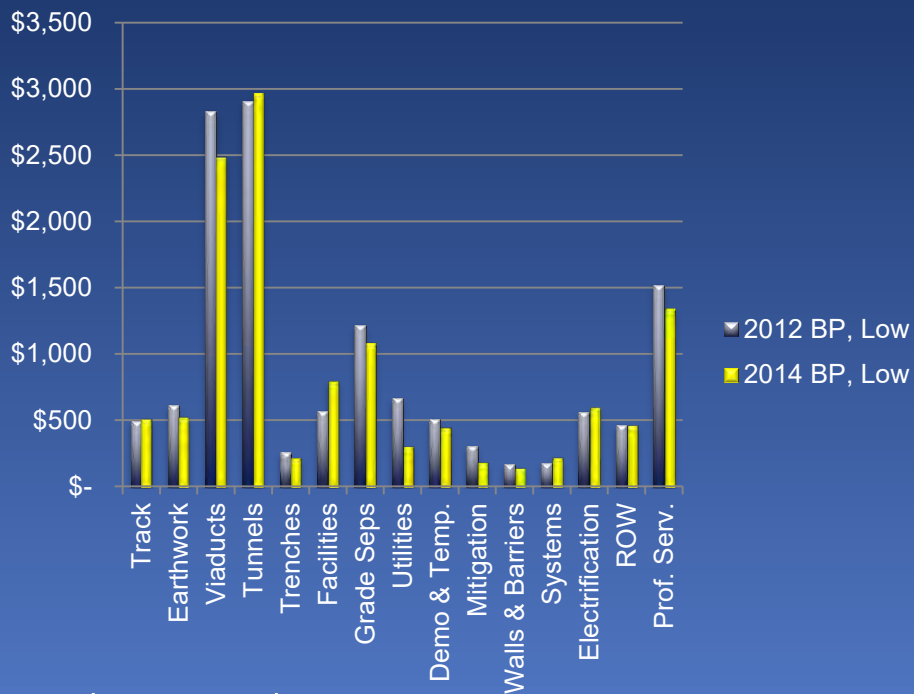
2014 BUSINESS PLAN ESTIMATE SAN FRANCISCO – SAN JOSE



- **\$1,710 million reduction:**

- Reduction in Transbay allowance to \$500 million
- Transfer of TSMF to SJ-M section
- Reductions in viaducts and walls due to CP1 adjustment

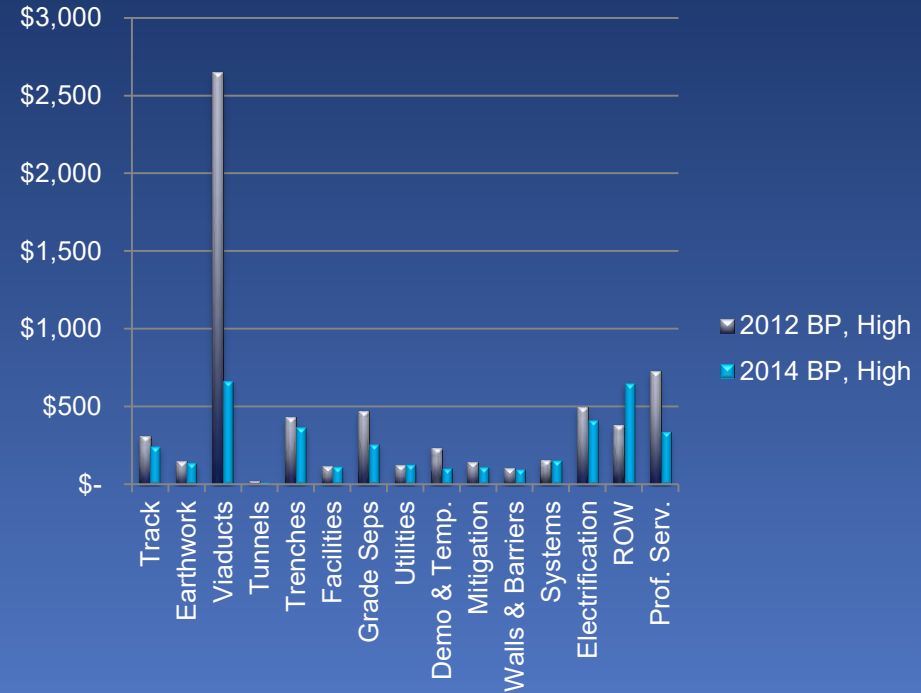
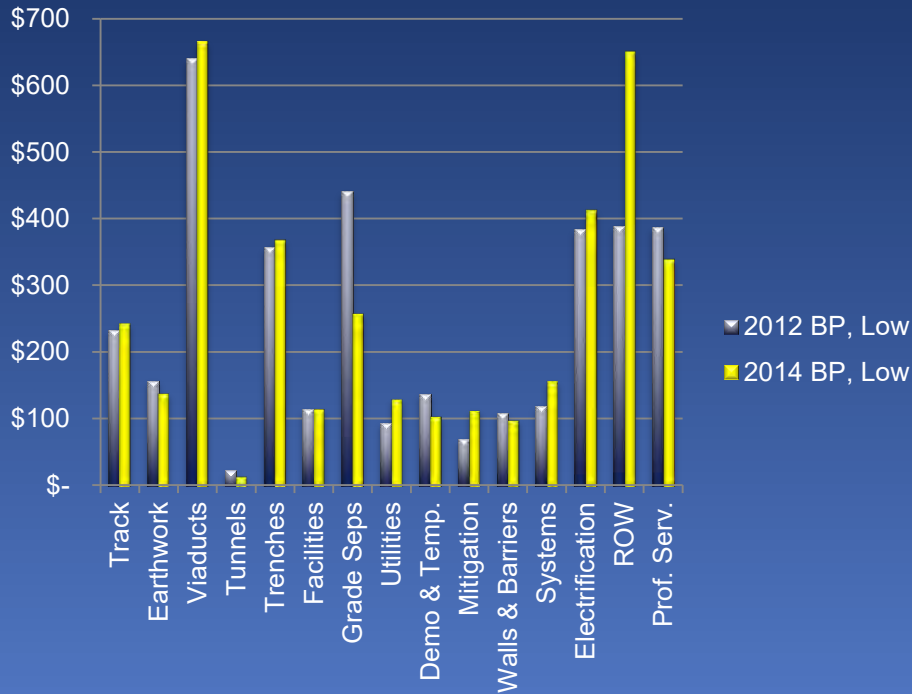
2014 BUSINESS PLAN ESTIMATE SAN JOSE - MERCED



- \$540 - \$850 million reduction:

- Reduction in viaducts due to CP1 adjustment
- Reduction in grade separations due to CP1 adjustment
- Reduction in utility relocations
- Reduction in mitigation due to tunneling
- Added Sunk Costs and PE/E allowance

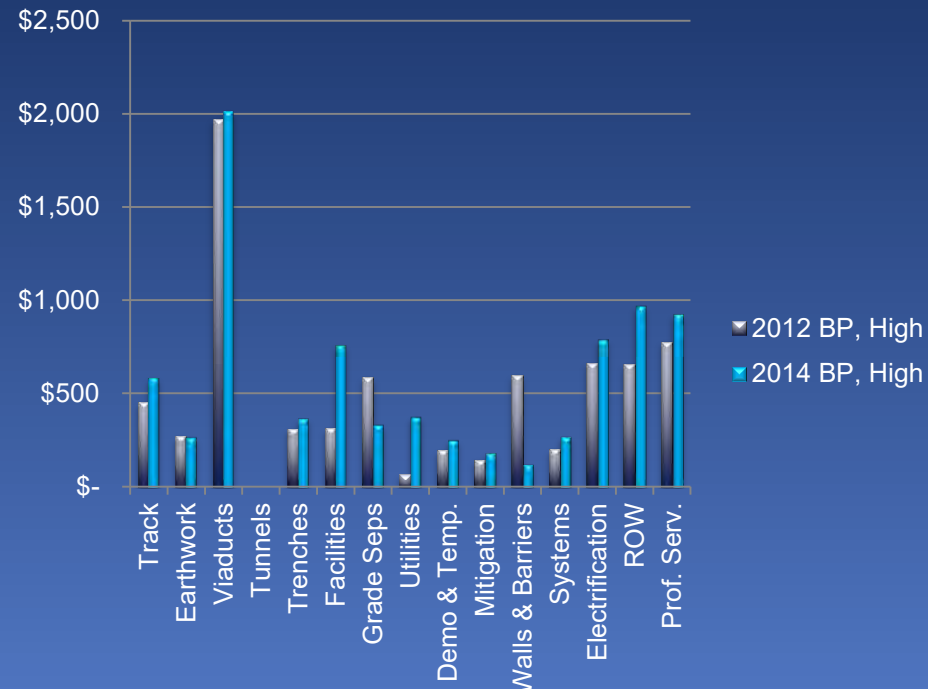
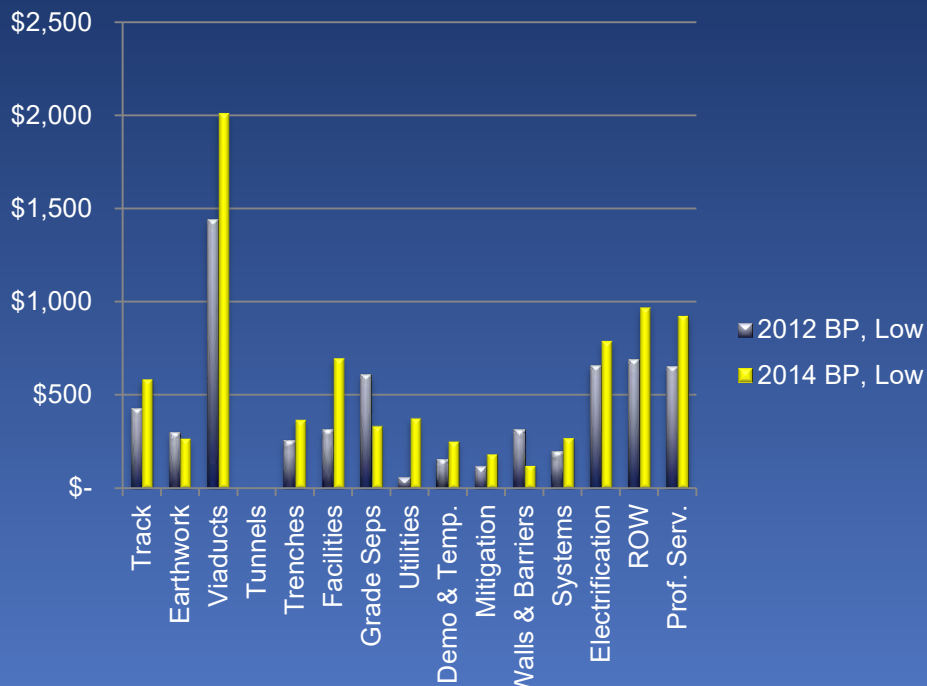
2014 BUSINESS PLAN ESTIMATE MERCED - FRESNO



- \$250 million increase to \$2,750 million decrease:

- Increase in ROW acquisition costs
- Reductions in grade separations due to CP1 adjustment
- Significant cost reduction by adoption of Hybrid Alternative

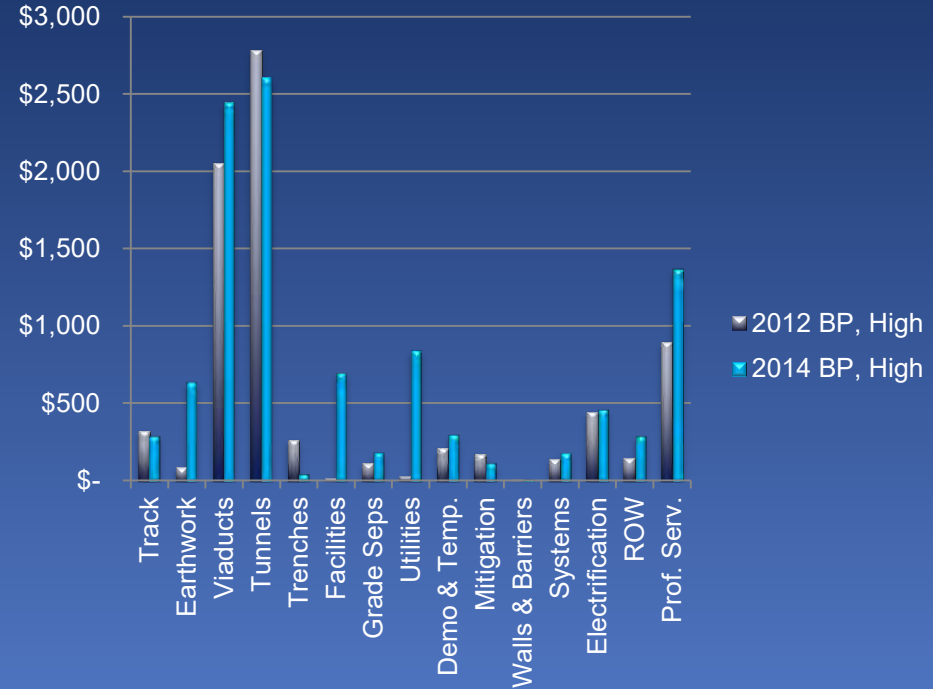
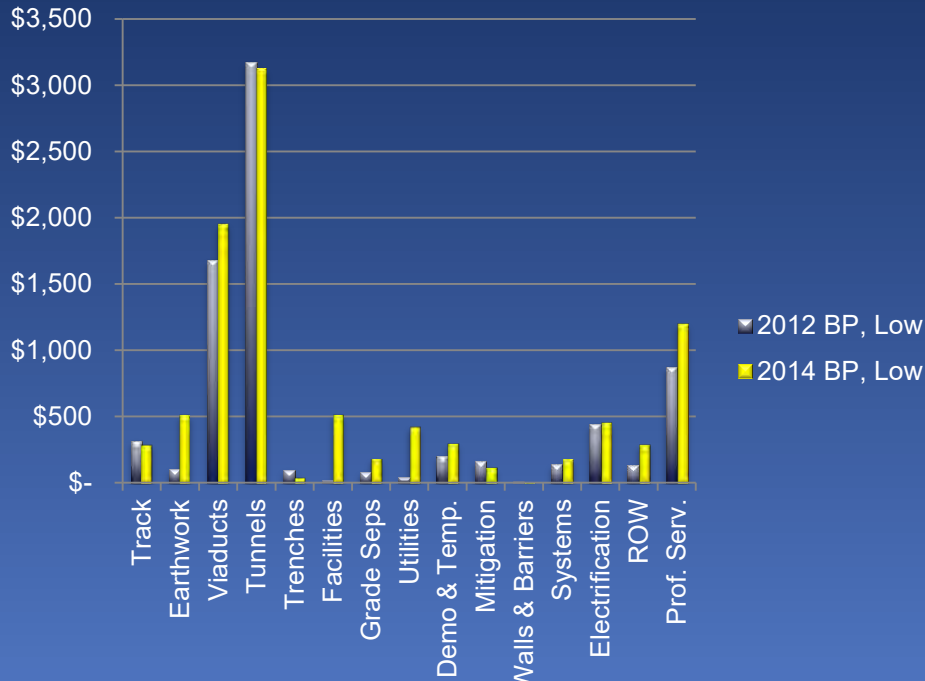
2014 BUSINESS PLAN ESTIMATE FRESNO - BAKERSFIELD



- **\$2,050 million increase (low vs. preferred):**

- More viaducts in through town alignments
- Allowance for taller viaducts over Kings River complex
- Added station access roadways at Hanford
- Increased Utilities and ROW acquisition costs
- Added Sunk Costs and PE/E allowance

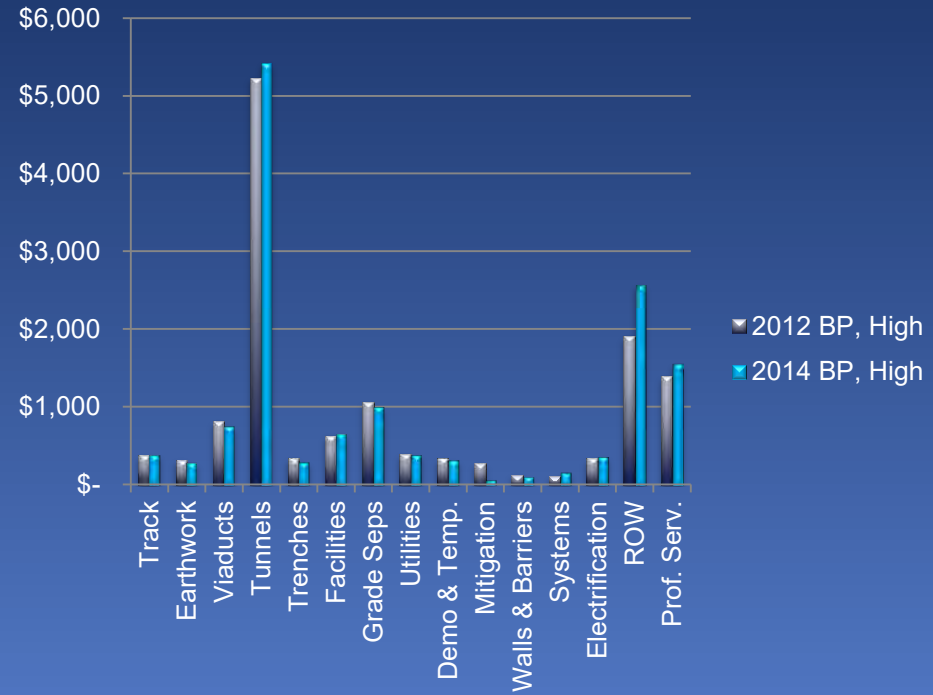
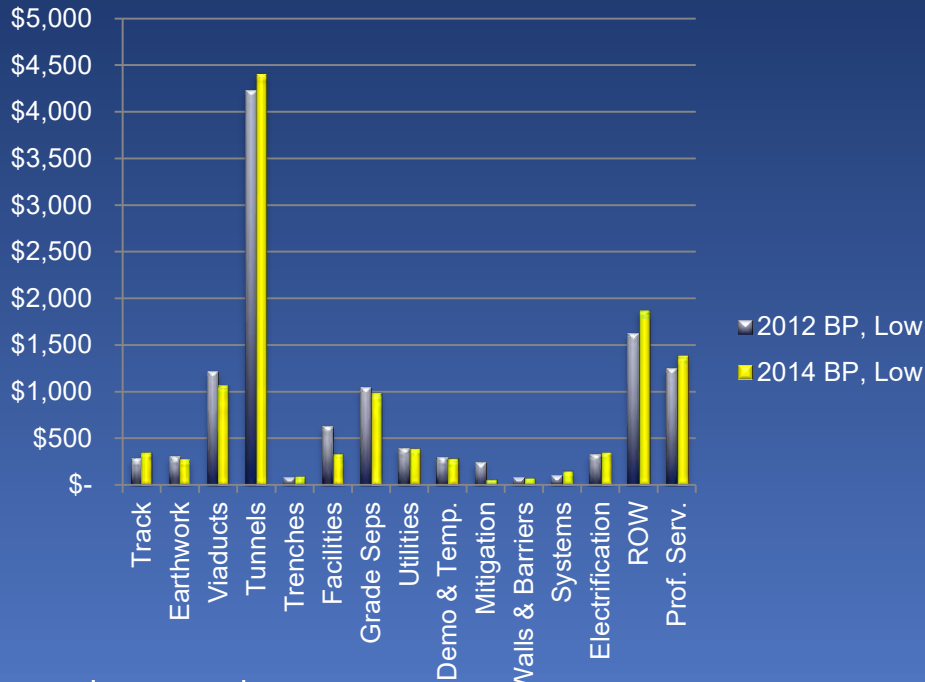
2014 BUSINESS PLAN ESTIMATE BAKERSFIELD - PALMDALE



- **\$2,290 - \$2,950 million increase:**

- Significant increases in cut/fill quantities
- Very tall and long span viaduct structures
- Access roadways, lateral and along alignment
- Included TSMF from P-LA section
- Increased Utilities and ROW acquisition costs
- Added Sunk Costs and PE/E allowance

2014 BUSINESS PLAN ESTIMATE PALMDALE – LOS ANGELES



- \$90 - \$845 million increase:

- Increase in tunneling costs due to unit price update
- Transfer of TSMF to B-P section
- Reduction in environmental mitigation due to tunneling
- Increased ROW acquisition costs
- Added Sunk Costs and PE/E allowance

2014 BUSINESS PLAN ESTIMATE FOLLOW UP ACTIONS

- Escalation to YOE – in P6 utilizing KPMG inflation rates
- Confirm limits of implementation stages – IOS terminus
- Arrange for Independent Cost Estimate (ICE)
- Implement sensitivity analyses where feasible

THANK YOU!
QUESTIONS?