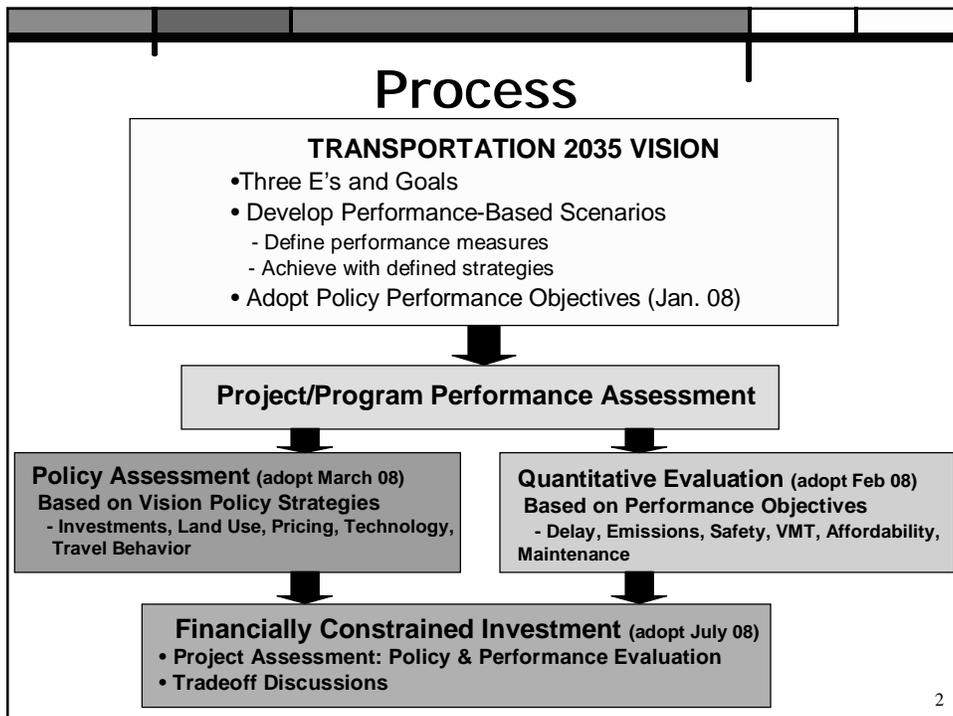




**Project Performance Assessment
Draft Results**

MTC Advisory Council
June 11, 2008



Qualitative Policy Assessment

- All potential discretionary investments (beyond committed)
- 21 project types representing 700+ projects
- Assess support for Vision Policy Strategies
 - Investments
 - Land Use
 - Pricing/Affordability
 - Technology
 - Travel Behavior

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Qualitative Assessment

Strong Support
 Support

Project Type	Goals Met	Maint.	Congest. Relief & Safety	Emissions Reduction	Focused Growth	Access & Safety
Transit efficiency/expansion	4		Strong Support			Strong Support
Bike and pedestrian	3					Strong Support
TOD	2.5					Support
Maintenance	2.5	Strong Support				Support
Fwy & arterial technology	2			Strong Support		
HOT	2		Strong Support	Support		Support
Lifeline transportation	1.5			Support		Strong Support
Fwy-to-fwy interchanges	1.5	Support	Strong Support			
HOV	1.5		Support	Support		Support
Climate/emissions reduction	1.5			Strong Support		Support
Freeway expansion	1		Strong Support			
Local interchanges	1		Strong Support			
Arterial expansion	0.5		Support			

Quantitative Evaluation

- **Compare costs and benefits relative to Performance Objectives**
 - Reduce delay, emissions, collisions, VMT
 - Improve affordability and system maintenance
- **Similar to Corridor Mobility Improvement Account I-Bond analysis**
- **Identify outliers**
- **Focus on key investment decisions**
 - 75 higher-cost projects/programs evaluated (beyond committed)
 - Transit & roadway expansion and efficiency – regional travel model
 - Regional programs – alternative methods

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Performance Measures

- **Benefit-cost measure (monetized)**
 - Delay/travel time
 - Particulate and CO₂ emissions
 - Collisions
 - Direct user costs (vehicle operating or ownership)
- **Additional metrics**
 - Cost per VMT reduced
 - Cost per low-income household served (transit only)
- **Annualized benefits & costs in year 2035**

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Benefit-Cost for Regional Programs

- **Focused Growth: TLC, Bike Network**
 - Reductions in VMT, emissions and congestion based on research
- **Affordability: Lifeline, Means-Based Transit Discount**
 - Direct private savings in auto ownership and transit fares only
- **Emissions Reduction: Climate Protection, Truck Retrofit**
 - Emissions reductions only
- **Transit and Roadway Maintenance Shortfalls**
 - Avoided public costs and private costs to users
 - Savings to local agencies are potentially huge: \$2 to \$40 billion

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Draft Findings: Benefit-Cost

High: B/C 10 or Higher

Transit efficiency

- SFMTA & AC Transit transit priority meas.
- Van Ness BRT

Roadway expansion: SR 84 widening

Freeway efficiency

- Freeway Performance Initiative (FPI)
- HOT lanes + express bus (Santa Clara, Regional)

Medium-High: B/C between 5 and 9

Roadway maintenance

HOV Lanes

- Marin-Sonoma Narrows
- I-680 Contra Costa and Solano
- I-80 Airbase to I-505 (Solano)

Freeway efficiency: HOT lanes + express bus (Alameda)

Roadway operations/expansion

- I-580 Truck climbing lanes
- Sol-80 reliever route
- Jepson parkway connection (Solano)

Fwy-to-fwy interchange: SR 237/US 101

Transit efficiency: Geary BRT

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Mid-Range: B/C Between 1 and 4	
<u>Transit maintenance</u> <u>Transit expansion/efficiency</u> <ul style="list-style-type: none"> • BART to Livermore • Marin County Transit • I-80, I-580, I-680 express bus • Geneva/Harney BRT • Capital corridor • MTA historic streetcar <u>Fwy-to-fwy interchanges</u> <ul style="list-style-type: none"> • I-80/I-680/SR12 • I-580/US 101 • I-680/SR4 • 237/SR 85 • SR 25/US 101/Santa Teresa Blvd • I-680 NB/I-580 WB interchange 	<u>HOV Lanes: I-80 from Carquinez Bridge to SR 37</u> <u>Roadway expansion</u> <ul style="list-style-type: none"> • I-80 Airbase to SR12 • SR 12 widening • SR 92 uphill passing lane • SR 239 Brentwood/Tracy expressway • SR 152 new alignment • US 101 widening south Santa Clara County • Jepson parkway phases 1 and 2 • Widen SR 4 to San Joaquin County Line • Dumbarton Bridge access (San Mateo) <u>Regional programs</u> <ul style="list-style-type: none"> • TLC • Port Emissions/Truck Retrofit
Low: B/C Under 1	
<u>Regional Programs</u> <ul style="list-style-type: none"> • Lifeline • Regional Bike Network • Climate Protection 	<u>HOV Lanes: I-80 Red Top Rd to SR 37</u> <u>Roadway</u> <ul style="list-style-type: none"> • Single, direct HOV connectors/ramps • Upgrade SR4 West to freeway

Draft Findings: CO₂ Specific

	Tons CO ₂ Reduced in 2035 (000s)	Cost per Ton CO ₂ Reduced
Most Effective/Cost-Effective		
HOT networks + express bus	100 to 600	\$200 - \$800
Climate Protection Program	300*	\$200
Freeway Performance Initiative	200	\$300
TLC	100	\$800
Limited Impact/Less Cost-Effective		
"Reliever" routes	10 to 20	\$500 to \$2,000
Transit exp./efficiency Selected roadway exp./ interchanges	2 to 5	\$1,000 to \$45,000
Increase CO₂ Emissions		
Selected roadway expansion	-3 to -15	NA

* For year 2015

Equivalent CO₂ Emissions Reductions

- Reduction of 100,000 tons/year is equivalent to*
 - One year of electricity use by 18,000 California households
 - Replacing 1.2 million standard light bulbs with compact florescent lamps
- 100,000 tons is 1.7% of total transportation emissions in 2035 (15,000 tons is 0.04%)

* Adapted from ARB Fact Sheet, Conversion of 1MMT CO2 to Familiar Equivalents (10/07)

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Draft Findings: VMT Specific

	Millions VMT Reduced in 2035	Cost per Thousand VMT Reduced
Most Effective		
HOT networks + express bus	200 to 800	\$100 to \$500
TLC	200	\$500 to \$800
Less Effective		
Regional Bike Network	60	\$1,000
High volume transit (e.g., transit priority, SFMTA BRT, BART to Livermore)	7 to 50	\$200 to \$7,000
Roadway projects that provide direct routing (e.g., I-80 reliever, SR84)	6 to 8	\$500 to \$1,000
Increase VMT		
Most roadway expansion projects	-1 to -40	NA
Freeway Performance Initiative	- 66	NA

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Draft Findings: Cost Per Low-Income Household Served*

Cost per low-income household served < \$1,000	
<u>Transit Efficiency</u>	• Van Ness BRT
• AC Transit priority measures	• Geary BRT
• SF MTA transit priority measures	<u>Transit Expansion</u> : I-80 express bus
Cost per low-income household served \$1,000 to \$5,000	
<u>Transit Efficiency</u>	<u>Transit Expansion</u> : SF historic streetcar
• Marin County transit priority measures	
• Geneva Harney BRT	
Cost per low-income household served \$5,000 to \$40,000	
<u>Transit Expansion</u>	• I-580 express bus
• Marin County transit	• Capital Corridor expansion
• I-680 express bus	
Higher than \$40,000: BART to Livermore (no households within walking distance of proposed alignment)	

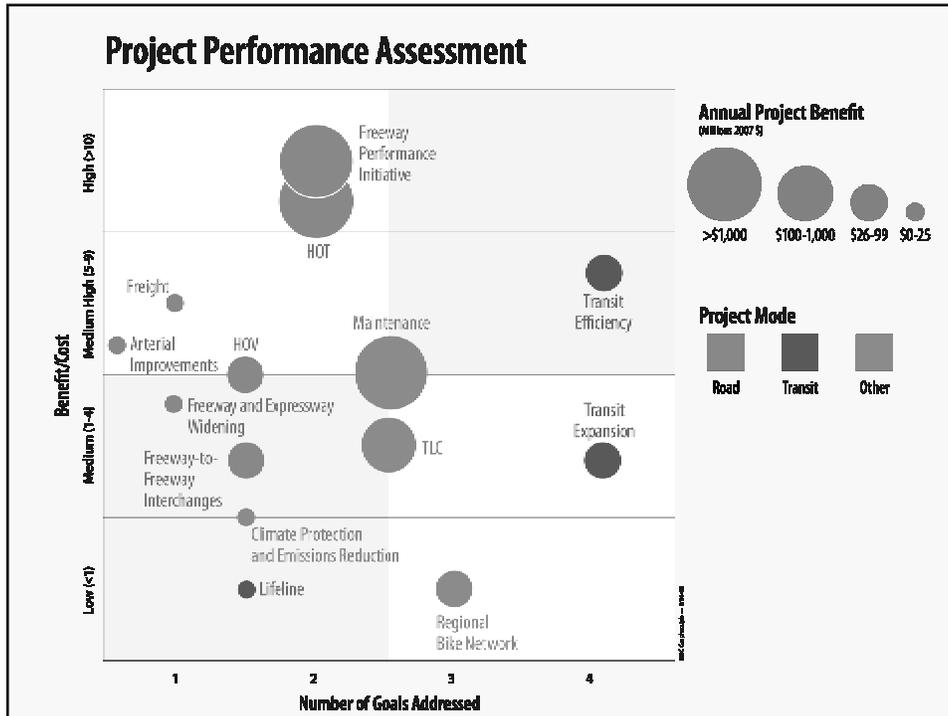
* Transit-riding low-income households within 1/2 mile of stops

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Cost Per Low-Income Household Served

- **Background**
 - Trial measure for Equity
 - Transit projects only
 - Estimate low-income households within walking distance in 2035
 - Adjust for transit using households based on survey data
- **Observations**
 - Reasonable measure for frequent bus service
 - Overly simple to look at walking distance only
 - Misses transfers and kiss and ride for rail
 - Seek refinements or alternative measures for future analyses

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Informing Trade-Off Discussions

1. **Ensure high-end performers are in the plan**
 - Multiple goals and high benefit-cost ratio
2. **Include low-end performers only if compelling case is made**
 - Few goals and/or low benefit-cost ratio
 - Other considerations may be compelling (e.g., cost-effective for CO₂ reduction)
3. **Some goals could be weighted higher than others**

Transportation 2035 Schedule

May	Review Performance Evaluation Results Public Workshops (9 counties) Discuss Investment Tradeoff Options
June	Preliminary Investment Plan
July	Approve Investment Plan