Update on Travel Forecasting/ Scenarios -- Chapter 7

PRESENTED TO:
CTP 2040 POLICY ADVISORY COMMITTEE

PRESENTED BY:
RON WEST, CAMBRIDGE SYSTEMATICS

California TRANSPORTATION PLAN 2040
Integrating California's Transportation Future

May 26, 2015

Overview

- Moving from draft to final CTP 2040 alternatives
  - Proposed changes from draft alternatives
  - Implications for newer SCSs (San Joaquin Valley)
- Comments received on Draft Report
- What is a million metric ton of CO2?

Moving to Final Chapter 7

COMMENTS ORGANIZED BY THEME

Final CTP Assumptions: Pricing

	Draft CTP Assumption	Evaluation Method: Source	Policy or Objective	Draft CTP VMT Reduction (estimated)	Changes for Final CTP Forecasts
Road User Charge	75% increase in auto operating cost	CSTDM	Policy	-17%	Reduce rural auto operating costs; combination of VMT fee + congestion fee in urban areas.

Final CTP Assumptions: Transportation Alternatives

	Draft CTP Assumption	Evaluation Method: Source	Policy or Objective	Draft CTP VMT Reduction (estimated)	Changes for Final CTP Forecasts
Telecommute/ Work at Home	2.1% increase in work at home rate	Off-Model: SACOG	Objective	-0.39%	Retain
Increased carpoolers	5% increase in carpool vehicles	Off-Model: Calculated using CSTDM data	Objective	-2.9%	Retain
Increased Car Sharing	Net 5% increase in adoption rates -- short distance travel	Off-Model: MTC, CARB Draft Policy Brief	Objective	-1.1%	Retain

Final CTP Assumptions: Mode Shift

	Draft CTP Assumption	Evaluation Method: Source	Policy or Objective	Draft CTP VMT Reduction (estimated)	Changes for Final CTP Forecasts
Transit Service Improvements	Transit services & Speeds doubled, free xfers, timed transfer	CSTDM	Policy	-6%	Transit speeds now 50% faster;.
High Speed Rail	HSR fares reduced by 50%	CSTDM	Policy		Retain
Bus Rapid Transit	Convert some Local Bus Routes to BRT	Off Model: TCRP 118, CSTDM Data	Policy	-0.07%	Retain
Expand Bike	Doubled bicycle shares	Off Model: CSTDM Data	Objective	-0.41%	Retain
Expand Walk	Double walk shares	Off Model: CSTDM Data	Objective	-0.43%	Retain
Carpool Occupancy	Change 2+ occupancy to 3+	CSTDM	Policy	-0.80%	Retain
HOV Lanes	Fill missing gaps (mixed flow → HOV)	CSTDM	Policy	TBD	Retain

Final CTP Assumptions: Transportation Alternatives

	Draft CTP Assumption	Evaluation Method: Source	Policy or Objective	Draft CTP VMT Reduction (estimated)	Changes for Final CTP Forecasts
Incident/ Emergency Management	Caltrans System Management and Operations Plan	Off Model: Caltrans	Policy	-1.0%	Retain
Caltrans' (TMS) Master Plan	TMS Master Plan	Off Model: Caltrans	Policy	-1.2%	Retain
ITS/TSM	ITS/TSM strategies	Off Model: SACOG	Policy	-0.62%	Retain
Eco-driving	Changes in driving habits	Off Model: ARB Policy Brief	Objective	-0.23%	Retain

Chapter 7 Comments – Road Pricing

- Congestion Pricing instead of generic road pricing
- Parking pricing should have also been included
- Stronger connection needed between funding issues and road pricing
- Road pricing (and transit) changes would lead to land use changes
- Road pricing strategy is too high – should be rolled back

Calculating Auto Operating Costs

Included:	AAA	CSTDM
Fuel	✓	✓
Maintenance	✓	✓
Tires	✓	
Insurance	✓	
License, Registration and Taxes	✓	
Depreciation	✓	
Finance	✓	
Auto Operating Cost	59 cents/mile	25 cents / mile

Increased cost of driving

- Project team – in consultation with PAC and TAC – considered three options:
  - Congestion pricing
  - Gas tax
  - Road pricing

- Congestion pricing was dropped - modeling complexity.
- Gas tax – Was not significant enough.
- Road pricing maintained as most effective strategy.

VMT Pricing – Previous Modeling Tests

- CTP 2040 Draft VMT Pricing Strategy
  - Year 2040 73% increase
    - 17% VMT decrease (16 cent/mile increase in auto operating costs)
  - Other Tests included
    - Year 2010 100% increase (22 cents/miles) – 23% VMT decreases
    - Year 2040 36% increase (8 cents/mile) – 11% VMT decrease
    - Year 2040 9% increase (2 cents/mile) - 3% VMT decrease

Model Tests: Road Pricing and VMT Changes

	Auto Operating Costs	VMT Decrease
2010	+100%	-23%
2040 (CTP Draft Alt 2)	+73%	-17%
2040	+36%	-11%
2040	+9%	-3%

Draft CTP 2040 Alt 1 VMT Shares by Region

SANDAG	8.8%
SCAG	46.6%
San Joaquin Valley	14.0%
Central Coast	3.1%
MTC	16.0%
SACOG/TRPA	6.8%
Rest of State	4.6%
Total State	100%

Chapter 7 Comments – Road Widenings

- CTP Should not preclude road widenings
- CTP should not have any road widenings
  - Note: MPO SCSs contained road widenings, which in turn were included in CTP.

Chapter 7 Comments - Transit

- Transit Improvements are unrealistic
  - Especially, doubling of transit speeds across the board
  - How can we afford transit improvements?
  - Proposal: Transit speed increases – 50% above Alt 1
    - Draft Alt 2 speed increases were 100% above Alt 1

Assumptions for …

- Bicycle, walk, telecommute & some other strategies were too modest

Issue of Older SCSs (San Joaquin Valley)

- Population and Employment Forecasts have all been updated since the CSTDM was prepared
  - Socio-economic forecasts reviewed for four counties

San Joaquin County Demographic Changes

	Population Growth			Employment Growth		
	2010-2020	2020-2040	**2010-2040**	2010-2020	2020-2040	**2010-2040**
CSTDM	20%	**48%**	**77%**	4%	**50%**	**56%**
StanCOG 2014 RTP	18%	**33%**	**56%**	16%	**28%**	**49%**

** 2040 Population > 140,000 difference, 2040 Employment > 60,000 jobs*

Additional Comments Received

COMMENTS ORGANIZED BY THEME

Chapter 7 Comments – Land Use

- Land use alternatives should have been analyzed
- Add statewide land use model

Chapter 7 Comments – Env. Justice

- Equity Analysis was incomplete
  - Request that federal and state equity analyses be used
    - Intention for CTP 2040 has been to reflect increased cost of driving
      - Lower income residents will be more affected by VMT pricing
      - Note: CTP 2040 does not have a CEQA/NEPA component

Road Pricing Equity Analysis

- Analysis of road pricing for households by three income groups.
  - Road pricing equity issues mitigated somewhat by transit improvements.
- Equity impacts for rural travelers were not assessed.
  - Reduced road pricing in rural areas for final CTP.
    - Assumes additional congestion pricing for urban areas.
  - Congestion pricing is too complicated to analyze.
    - Modeling capabilities do exist – can be done, but too time consuming.

Chapter 7 Comments – VMT & GHG

- Focus on VMT per capita
- Why does GHG increase between 2040 and 2050?
- Show air toxics emissions

Chapter 7 Comments – Interregional Travel

- Will CSTDM interregional travel forecasts be made available to MPOs for future SCS updates?

Chapter 7 Comments – GDP Reduction

- Is reduced state GDP acceptable?
- GDP analysis would benefit from a land use model

Chapter 7 Comments – Scenarios

- Chapter 7 was unclear which scenario was selected
- Baseline (business as usual) scenario would be helpful
- Support for Alternative 3

Chapter 7 Comments – Regions

- Show results by region

Chapter 7 Comments – Costs

- Why were costs not considered?

Chapter 7 Comments – Performance Measures

- Add/consider Travel time, delay, congestion, effects on productivity, network performance, reliability, and speed
- Drop return on investment
- Stronger connection to Chapter 6 performance measures needed

Chapter 7 Comments – Tech Appendix

- Greater documentation of tools (CSTDM, Vision, etc) should have been included.

What is a MMT of GHG?

What are a million metric tons of CO_2?

- One million metric tons represents the annual CO_2 emissions of over 200,000 automobiles.
- Over one billion auto VMT / year
- One metric ton of CO_2 ~ 103 gallons of gasoline

Source: US EPA, [*http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results*](http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results)

One million metric tons represents the annual CO^2 emissions of over 200,000