Active Transportation at the Regional Level

Greenhouse Gas reduction and housing and transportation infrastructure drive policy decisions related to long range planning and funding

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Regional Transportation Plan/Sustainable Communities Strategy Target Development

Policy Context

- Overview of Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS)
- Active Transportation Target Development
- Active Transportation Target in Practice
- Next steps in the RTP/SCS

Active Transportation Target

"Increase the average time walking or biking for transportation per person per day by 60%" (equivalent to an average of 15 minutes per person)

Regional Transportation Plan (RTP)

Sustainable Communities Strategy (SCS)

Plans 30 year investments for transportation and land use

New element required by SB 375 to reduce CO2 emissions

Per capita emission reduction from cars and light duty trucks by 15% from 2005 to 2035

1	Climate Protection	Statutory Targets (2)
2	Adequate Housing	
	Healthy & Safe Communities:	Voluntary Targets (8)
3	Reduce premature deaths from exposure to particulate emissions	
4	Reduce injuries and fatalities from collisions	
5	Increase walking and biking to improve health outcomes	
6	Open Space Preservation	
7	Equitable Access	
8	Economic Vitality	
	Transportation System Effectiveness:	
9	Improve system effectiveness	
10	Maintain the system in a state of good repair	

Scenarios for Future

- Initial Vision Scenario
- Bay Area's vision of future land uses and assess its performance relative to statutory greenhouse gas and housing targets as well as other voluntary performance targets.
- The Initial Vision Scenario serves as a starting point for the development, analysis and discussion of detailed SCS alternatives.

What is a travel model?

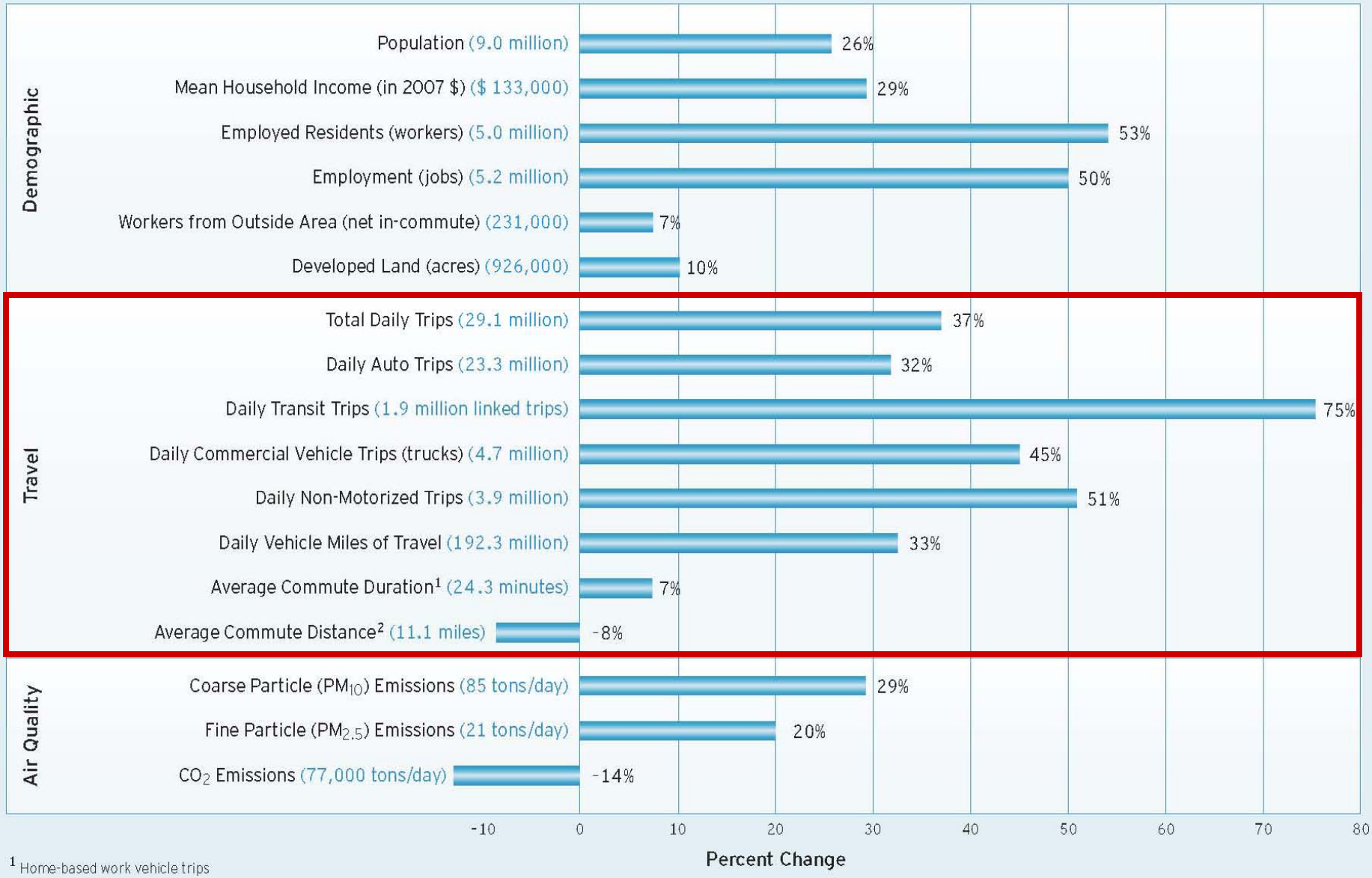
- **Mathematical model.** Of human travel behavior; of the interaction of vehicles and roadways.
- **Supply and demand.** We create abstract representations of roadway and transit *supply*; simulate the *demand* for travel of a synthetic population; and then compute temporally-, contextually-, and spatially-specific travel "prices".
- **Abstraction?** Webster: having only intrinsic form with little or no attempt at pictorial representation.
- **Simulation.** Individual agents (households and people in this case) make a series of decision; each viable option within each decision has a non-zero probability of occurring.

Why do we use travel models?

- **Insights.** Into the behavior of complex systems (e.g. humans interacting with a roadway widening).
- **Objective.** Travel models do not live in X county or use freeway Y; rational people (decision makers, advocates, public) often disagree about the impact of transport policies and projects.
- **Comprehensive.** Travel models have a framework that can be applied over a large geographic region.
- **Answers.** Insights, not answers. Travel models are designed to tell us "why" rather than "how much".
- **Multi-purpose.** MPOs do not have the luxury of building problem-specific analytical tools. We have a single analytical tool that must predict transit ridership in Sonoma one day, estimate the impact of ramp metering projects on carbon dioxide emissions the next, and on and on.

Regional Demographic, Travel and Air Quality Indicators

Bay Area Total in 2035 (future conditions, without Transportation 2035 Plan) and Percent Change From 2006



[1] Home-based work vehicle trips

[2] Home-based work vehicle driver miles

Sources: MTC; ABAG, *Projections 2007*

What Active Transportation Target Means to Planning

- Provides an inherent value to walking and cycling
- Context for how a scenario affects health behavior
- Tracks RTP progress over time
- Justification for investments

Development of Target

- AT new target for transportation
- Developed own target based on current activity levels and state and national physical activity guidelines
- No recommended amount of physical activity from transportation alone

Physical Activity Guidelines

- Is walking and biking for transportation included in baseline activity?
- Health enhancing activity added to baseline
- 30 minutes per day
- 150 minutes per week
- 10,000 steps per day

- **Baseline activity** *refers to the light-intensity activities of daily life, such as standing, walking slowly, and lifting lightweight objects. They may do very short episodes of moderate- or vigorous-intensity activity, such as climbing a few flights of stairs, but these episodes aren't long enough to count toward meeting the Guidelines.*
- U.S. Department of Health and Human Services Physical Activity Guidelines for Americans, 2008

- **Moderate-intensity** *aerobic activity is described in this paper as generally equivalent to a brisk walk, or activity that noticeably accelerates the heart rate. Examples of this type of activity include brisk walking, cycling at moderate speeds, mopping or walking with a purpose. Moderate-intensity activity is also indicative of "breaking a sweat" while remaining capable of carrying on a conversation.*

American College of Sports Medicine Physical Activity and Public Health Guidelines, 2007

10,000 Steps

- 6,000 steps from daily activity
- Transportation would be included

- 4,000 additional steps
- 2 miles or 30 minutes

Justification for Target

- Enough support for Active Transportation as a health enchanting physical activity
- 15 minutes per person per day (60% over current levels) seemed reasonable since other physical activity would contribute to daily target
- Half of daily recommended target

Data Sources of Target

- Target had to be developed before model run for basecase

Residents within ½ of rail or ferry	Station Area Residents Survey
Total walk/bike trips per/person/day	BATS
Average walk/bike minutes per/person/day	BATS
Transit associated walk/bike trips	2008 BART Station Profile Study (35% transit trips included walk trip)

Results

- Residents within ½ mile transit – 15.46 minutes
- Bay Area average 6.98 minutes
- Target to bring all Bay Area to most walkable neighborhood level
- Initially rejected since land use wouldn't change enough to affect behavior
- Model does not consider infrastructure

Pro Active Transportation Target

- Walking and cycling in model underrepresented
  - Includes walk/bike to transit – previously not accounted for
- Accounts for health impacts but still transportation metric based on model output

Cons of Active Transportation Target

- Region wide average - does not say who is benefiting
- Increased activity could increase collisions – not considered
- Health benefits not estimated directly
  - Working to address this with improved travel survey, benefit/cost and Woodcock model with CDPH
- Does not consider all other physical activity

Active Transportation in New Travel Model

- New travel model includes AT numbers
- Picks up walk and bike to transit
- Initial Vision (2005) 9 minutes of average AT
- Compared to 10.53 minutes of average AT from prior model

Input into Plan Development

- Large group of stakeholders
- Elected officials, environmentalists, health professions and advocates, bicycle coalitions, industry/business groups
- Focus groups
- Polling
- **Input from county health departments**
  - Bay Area Regional Health Inequities Initiative
  - CDPH – Health benefits of AT to reduce GHG (Woodcock model 2009)

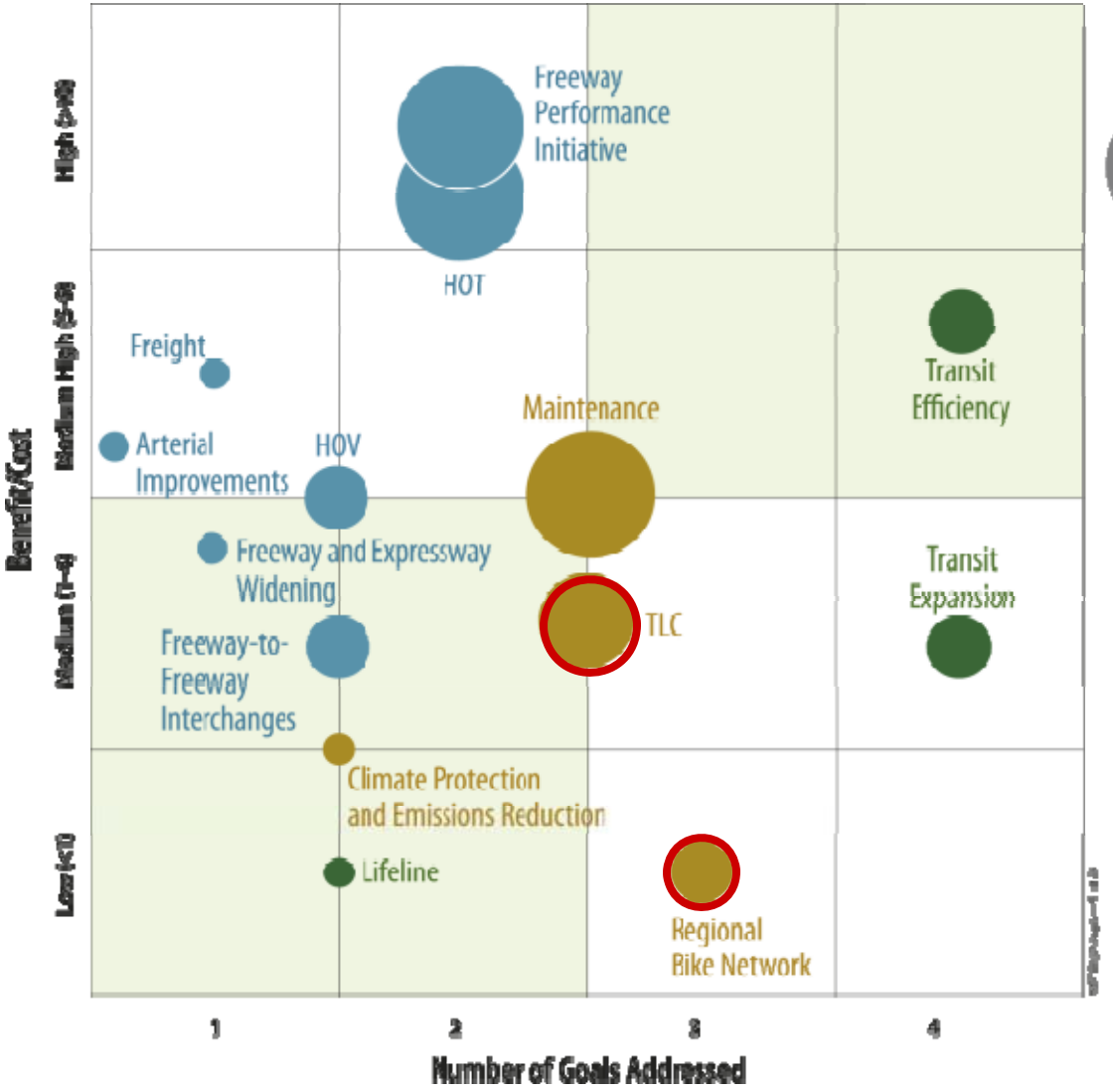
Health input into transportation planning

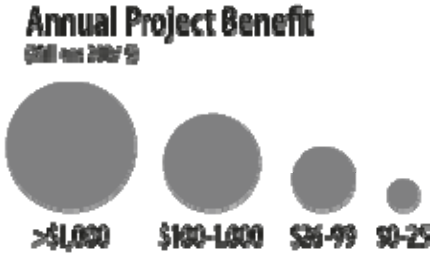
- Participation in performance measurement and evaluation
- Clear co-benefits of health impacts
- Relationship with city or county for project submittal

Project Performance Assessment

- Goals Assessment (Qualitative)
  - How projects address plan goals
- Benefit-Cost (Quantitative)
  - Large projects $50 million or greater
  - B/C ratio for
  - Travel time, CO_2, PM_{10} & $PM_{2.5}$, health costs with changes in AT, injuries and fatalities, direct user costs, cost savings for on-time maintenance

Project Assessment Quantitative and Qualitative





Benefit/Cost Measures

- Delay & travel time
- Particulate emissions
- CO_2 emissions
- Collisions
- Direct user costs

For more information

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