

Scenarios and Target Analysis Approach

RAPC Meeting

September 25, 2009

Terms Defined

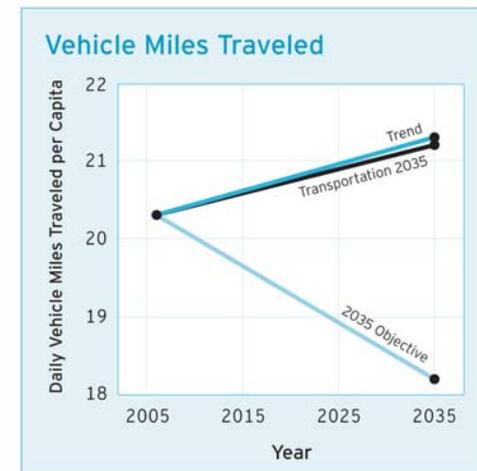
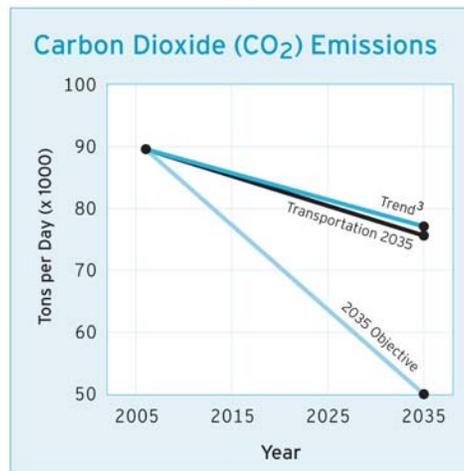
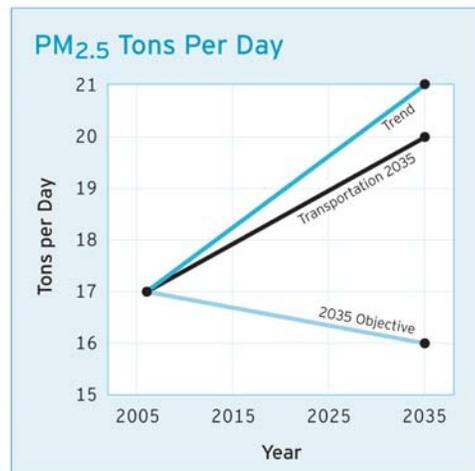
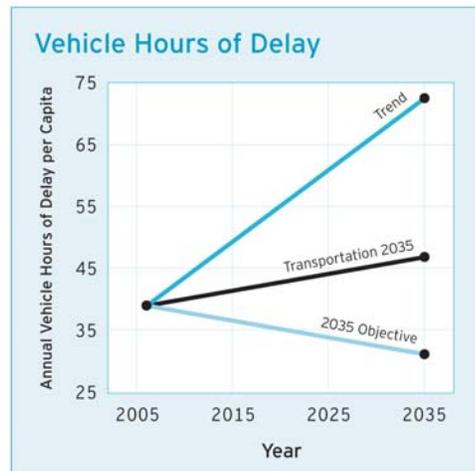
- Performance Measures are the “metrics” for the planning process
- Targets set a direction for our plan and feedback on the effectiveness of different planning and policy approaches
- Scenarios are the global planning strategies we will be looking at to address long-range aviation needs

Why Performance Measures and Targets?

- Performance measures help communicate with the public about our planning objectives
- Performance measures help highlight choices in terms of how we address key capacity and environmental issues
- OK to have ambitious targets; Not a Pass/Fail Test
- Shortfalls in meeting targets indicate a need for other approaches and actions

T-2035 Plan: A Recent Example

Putting the Plan to the Test



Source: MTC

¹ Decrease mileage in poor condition to no more than 13 percent. This is equivalent to the adopted objective to increase the average pavement condition index to 76.

² Includes all asset types.

³ Trend line from 2006 to 2035 is simplified. Passenger and light-duty vehicle fuel economy improvements required by AB 32 are phased in between 2009 and 2020. CO₂ will continue to increase until about 2010, with a gradual decrease to 2035 as AB 1493 standards phase in and the existing vehicle fleet turns over with cleaner vehicles.

Proposed Performance Measures

- Average Aircraft Delay (capacity, quality of service for passengers, economy)
- Greenhouse Gas Emissions (climate change)
- Aircraft Emissions (smog, TACs)
- Airport Noise (regional population affected)
- Other ideas?

We Start with a Trend line

- Trend line defined by our 2035 Base Case Forecast (expected growth 2007-2035)
 - Air passengers: +67%
 - OAK (+ 42%); SFO (+82%); SJC (+ 52%)
 - Air cargo: + 92%
 - All aircraft operations: + 24%
- Trend line includes changes in fuel efficiency and noise characteristics of aircraft fleet

We Will Analyze Six Scenarios

- These will be combined after Mid-Point screening for greatest regional consensus
 - Traffic Redistribution (among SFO/OAK/SJC)
 - Alternate Airports (GA/ military/external)
 - Reliever Airports (alternates for biz jets)
 - HSR
 - New ATC Technology (TBD-Working Group)
 - Demand Management (TBD-Working Group)

Average Aircraft Delay

- Target: Average annual aircraft delay not to exceed 12 minutes
 - OAK=12 minutes
 - SFO=12 minutes
 - SJC=12 minutes
- Also consider delay targets for peak period at each airport as well (Task Force suggestion).

Greenhouse Gas Emissions

- CO₂ is primary GHG produced by aircraft operations (tons per day)
 - CO₂ summed up regionally for aircraft operations at all major, Alternative, and Reliever Airports
- Target: 40% below 1990 levels (AB 32, Global Warming Solutions Act, 2006)
- Will also estimate reductions from Continuous Descent Approaches

Aircraft Emissions

- Emissions of NO_x and HC (tons per day)
 - Emissions summed up regionally for aircraft operations at all major, Alternative, and Reliever Airports
- Target: Emissions in 2035 no greater than 2007
- Will also analyze emission reductions from Continuous Descent Approaches

Airport Noise

- Population within 65 CNEEL airport noise contour
 - Population summed up regionally for aircraft operations at all major, Alternative, and Reliever Airports
- Target: Population in 2035 no greater than in 2007
- Consider additional noise levels, such as 60 or 55 CNEEL (Task Force suggestion)

Main Factors Affecting Scenario Performance

- Number of aircraft takeoffs and landings
- Fleet mix
- Delay (input to GHGs, emissions)
- Day/Evening/Night flights (noise)
- Continuous Descent Approaches (GHGs, emissions)

Scenario Comparison Matrix

Scenario	Delay	GHGs	Emissions	Noise
1. Traffic Redistribution	<ul style="list-style-type: none">• 2007• 2035			
2. Alternative Airports	<ul style="list-style-type: none">• 2007• 2035			
3. Reliever Airports	<ul style="list-style-type: none">• 2007• 2035			
4. High Speed Rail	<ul style="list-style-type: none">• 2007• 2035			
5. New ATC Technology	<ul style="list-style-type: none">• 2007• 2035			
6. Demand Management	<ul style="list-style-type: none">• 2007• 2035			

Summary

- Target Analysis used in MTC's latest Transportation Plan, but new for RASPA
- Fits well with RAPC's adopted work scope, but some concerns expressed by Task Force
- Helpful for discussing choices with public
- Still room for new Targets
- Comments and Questions?

Other Measures of Delay

- 2007 was the second worst year for aircraft delays (only 73.3% of flights arrived on time)
- Sources of delay (DOT statistics for busiest airport)
 - 8.1%-flight arrived late from previous airport
 - 8 % -national system problems
 - 7%-airline responsible
 - 2.4% cancelled or diverted flights
 - 1%-significant weather problems