

# Transportation / Environment Alert

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## Case Study: Sustainability

### Caltrans Offers Performance-Based Approach To Integrate Transportation, Land Use Goals

The California Department of Transportation has a new vision for integrating transportation and land use decisions that promises to combine a range of familiar solutions taking hold across the nation: smart growth, livable communities, context sensitive design, transit-oriented development, complete streets, and sustainability.

Caltrans' new "Smart Mobility 2010" framework answers a nationwide call for transportation investments that achieve balanced outcomes for mobility, environmental protection, social equity, and economic growth – all backed by specific performance measures.

The framework defines the agency's newly coined term as follows: "Smart Mobility moves people and freight while enhancing California's economic, environmental, and human resources by emphasizing: convenient and safe multi-modal travel, speed suitability, accessibility, management of the circulation network, and efficient use of land."

Developed using a smart growth program grant from the Environmental Protection Agency, the framework establishes six Smart Mobility principles to be applied based on specified place-types, each with its own set of performance measures.

The plan also calls for a "transformed state transportation planning process" developed through a new multimodal "Interregional Blueprint" process, incorporating transportation and land use planning efforts underway by regional and metropolitan planning organizations in the state.

The Smart Mobility framework "provides new tools and techniques to improve transportation by using performance-based measures to achieve sustainable outcomes," Caltrans Director Randell Iwasaki, said in an introduction to the report.

"By considering land use place types and modified performance measures, the benefits of smart mobility can be realized, both now and in the future," he said, noting that the plan "sets the stage for the California Interregional Blueprint and data improvement efforts that will transform transportation decisions."

#### Plan Seen as a 'Call to Action.'

Faced with increasing environmental and planning requirements, as well as the need to ensure mobility statewide under increasing budget challenges, Caltrans released its Smart Mobility framework in March as a "call to action" for the state.

California already is subject to some of the nation's most ambitious environmental and sustainability goals, including the landmark Global Warming Solutions Act (AB 32), under which the state must reduce greenhouse gas emissions to 1990 levels by 2020.

In addition, Senate Bill 375, enacted in 2008, requires regional targets for reducing greenhouse gas emissions from passenger vehicles. SB 375 – which has been touted as a possible national model for transportation planning – establishes a process and incentives for the creation of integrated regional land use, housing and transportation plans called "sustainable communities strategies." Building on these regional efforts, SB 391 passed in October of 2009, requires that the California Transportation Plan prepared by Caltrans identify the statewide multimodal transportation system that will achieve the state's climate change goals.

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To help meet these goals, the new Smart Mobility framework would focus the state's transportation decisionmaking around six principles:

- location efficiency,
- reliable mobility,
- health and safety,
- environmental stewardship,
- social equity, and
- robust economy.

Transportation planning and design would be conducted based on seven newly established place-types: urban centers, close-in compact communities, compact communities, suburban areas, rural and agricultural lands, protected lands, and special use areas.

For each place type, performance measures would be targeted to align with the principles – in some cases rejecting metrics historically used by the agency (see table below for measures and metrics).

For example, measures for mobility – including accident considerations, travel time, reliability, and level of service – would be multi-modal rather than auto-focused. This would measure mobility for not only for drivers, but for transit users as well as bicycle riders and pedestrians.

The use of “design speed” to determine features for roadways, which traditionally focuses on facility type, would be rejected in favor of “design suitability,” a context-sensitive approach that considers “adjoining activities, land use, place type, and the multi-modal users of the facility.”

The framework also introduces a measure for “activity connectedness” to account for the travel distances and modal connections available among all activity centers within a region of the state.

For environmental stewardship, performance measures include two metrics additional not currently taken into account in the agency's project development and environmental review process:

- climate change and energy conservation, which measures the effect of transportation and land use decisions on vehicle miles traveled (VMT) and compares resulting emissions to state-mandated regional targets; this measure also takes into account the speed and stability of traffic flow and the numbers and lengths of trips generated; and
- emissions reduction, which addresses greenhouse gas emissions and criteria pollutant impacts at the project and regional levels.

The report also provides three hypothetical examples to illustrate how the Smart Mobility approach could be used in different study scenarios: a regional transportation plan/sustainable communities strategy, context sensitive design of an arterial state highway, and a corridor systems management plan. It also provides a check list of activities to guide implementation of the framework.

The agency stressed that the Smart Mobility approach will require “significant shifts” in the role of Caltrans and other transportation agencies – including “support for lower personal vehicle use while meeting objectives for accessibility, equity, and economic growth,” as well as ensuring “secure funding sources” for transit.

### **Interregional Blueprint Process**

A key element of the Smart Mobility framework is development of the California Interregional Blueprint, a statewide land use-transportation plan that will integrate the state's various modal plans and incorporate individual blueprints developed by regions across the state.

Caltrans currently administers the California Regional Blueprint Planning Program for regional transportation planning agencies to conduct comprehensive scenario planning, bringing together a range of stakeholders to develop preferred long-range growth scenarios.

“The Interregional Blueprint will aggregate planned interregional highway, transit, rail (including high-speed and intercity rail), intelligent transportation system, goods movement, and other State project concepts and strategies to complement the projects already included in Regional Transportation Plans (RTPs),” the document said. The Interregional Blueprint will incorporate the Smart Mobility principles and improve modeling and data gathering, serving as the foundation for the next update of the California Transportation Plan.

The Interregional Blueprint planning process is underway, and has been the subject of a series of workshops that concluded in April.

Information on the planning process may be accessed at <http://www.californiainterregionalblueprint.org/>. For additional information on the framework, link to the [Smart Mobility 2010: A Call to Action for the New Decade](#), on the Caltrans website.

### Smart Mobility Performance Measures

Goal	Performance Measure	Recommended Metrics
<b>Location Efficiency</b>	<b>1. Support for Sustainable Growth</b>	Consistency with regional Sustainable Communities Strategy or Alternative Planning Strategy meeting regional performance standards. Comparison of alternatives based on acres of land consumed, and relative reductions in induced VMT through: compact land use strategies, demand management, and network management.
	<b>2. Transit Mode Share</b>	Percentage of trips within a corridor or region occurring by bus, rail or by other form of high-occupancy-vehicle.
	<b>3. Accessibility and Connectivity</b>	Number of households within 30 minute transit ride of major employment center, within 20 minute auto ride of employment, within walking distance of schools. Weighted regional travel time and cost among trip producers and trip attractors.
<b>Reliable Mobility</b>	<b>4. Multi-Modal Travel Mobility</b>	Travel times and costs by mode between representative origins and destinations, aggregated over corridor or region.
	<b>5. Multi-Modal Travel Reliability</b>	Day-to-day variability of travel times between representative origins and destinations by mode, aggregated over corridor or region.
	<b>6. Multi-Modal Service Quality (Level of Service: LOS)</b>	Mode-specific and blended LOS measures of pedestrian and bicycle accommodation and comfort, transit availability and reliability, and auto travel efficiency.
<b>Health and Safety</b>	<b>7. Multi-Modal Safety</b>	Collision rate and severity by travel mode and facility, compared to statewide averages for each user group and facility type.
	<b>8. Design and Speed Suitability</b>	Conformance with guidance identifying suitable design elements and traffic speed with respect to mix of modes and adjoining land uses and area character. <sup>(2)</sup>
	<b>9. Pedestrian &amp; Bicycle Mode Share</b>	Percentage of trips within a corridor or region occurring by walking or cycling.
<b>Environmental Stewardship</b>	<b>10. Climate and Energy Conservation</b>	VMT per capita by speed range relative to State and regional targets.
	<b>11. Emissions Reduction</b>	Quantities of criteria pollutants and GHGs
<b>Social Equity</b>	<b>12. Equitable Distribution of Impacts</b>	Impact of investments on low-income, minority, disabled, youth and elderly populations relative to impacts on population as a whole.
	<b>13. Equitable Distribution of Access and Mobility</b>	Comparative travel times and costs by income groups and by minority and non-minority groups for work/school and other trips.
<b>Robust Economy</b>	<b>14. Congestion effects on Productivity</b>	Time lost to congestion by trips that are economically productive and/or sustaining of essential mobility, measured as vehicle hours of delay (VHD).
	<b>15. Efficient Use of System Resources</b>	Additional VMT that are associated with economic productivity and/or sustaining of essential mobility compared with system expansion cost and impact.
	<b>16. Network Performance Optimization</b>	VHD per capita, per lane mile, per private vehicle mile, per freight vehicle mile, per transit revenue mile, and in total.
	<b>17. Return on Investment</b>	Person miles and revenue per lane mile of road, per transit revenue mile and per dollar invested (from all public and private funding sources). Comparison of alternatives based on benefits per dollar invested relative to: a) system user benefits (time and expense), and b) other Smart Mobility Performance Measures.