August 1, 2013

The Honorable Anthony Foxx
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Secretary Foxx:

California applauds the transition to performance-based decision making through implementation of the Moving Ahead for Progress for the 21st Century (MAP-21) national goals. Establishing national goals is an important first step toward improved system management and decision-making. To provide thoughtful recommendations to you, California assembled a multi-agency workgroup through the state's Strategic Growth Council, which considered a broad range of goals for our transportation system.

In partnership with the federal government, California is transforming the state's transportation system to meet the mobility, safety, and greenhouse gas reduction goals of the coming decades. Recent and future Regional Transportation Plans incorporate land use decisions and multimodal transportation investments to reduce greenhouse gas emissions to 1990 levels by 2020 and to achieve a further eighty-percent reduction by 2050. The state is embarking on a rail modernization program that includes high-speed rail and will increase the share of trips accomplished by mass transportation both regionally and inter-regionally. The state transportation goals also include targets for public health, infill development, and active transportation. The adoption of federal performance measurements and targets are fully consistent with these efforts.

Performance based decision making, and the use of performance measures, are key tools to be used in making high-performing, cost-effective investments in the right places and at the right times. We embrace this philosophy as part of an overall asset management approach as required by MAP-21. Investment made in our transportation system over the past 50 years has resulted in extremely high

annual costs of preservation, maintenance, and reconstruction. Performance measures for congestion and system performance highlight the importance of keeping our existing infrastructure in good working order, assisting us in choosing the best strategies to make our existing transportation network operate as efficiently as possible, while assessing where to invest the precious few resources we have to prepare for a growing population and increased goods movement in a safe, reliable, and cost effective manner.

As we develop our asset management plans, performance measures, and targets, we benefit in California from investments made in systems to collect data and provide information necessary to monitor the performance of the National Highway System (NHS) in urban areas. Performance monitoring of the recently expanded NHS will provide a more comprehensive picture of roadway performance and corridor throughput once we have data for the entire system. California also benefits from enhanced land use, transportation, and economic models used by our large Metropolitan Planning Organizations (MPOs) to evaluate the potential impact of a number of transportation, sustainability, and economic measures, and for use where data are limited. We have also partnered with other state departments and our MPOs to conduct a more comprehensive household travel survey for California than ever before to provide data necessary for modeling efforts.

We offer the following suggestions for the United States Department of Transportation's (U.S. DOT) rule-making development for the MAP-21 Status III performance measures of Traffic Congestion, Performance of the Interstate System, and Performance of the non-Interstate NHS (note that we will call the latter two measures "NHS performance" for the purposes of this letter). Suggestions regarding Status I and Status II performance measure areas under MAP-21 (e.g., Safety) have been or will be provided under separate cover.

While we understand that measures and obtainable targets will be considered for adoption in the near-term for the two areas of traffic congestion and NHS performance, California's longer-term, more comprehensive goals and multimodal transportation systems should be kept in mind. We want to identify performance measures that, as improvements in data collection, analysis, and

understanding are made, better capture the transportation benefits provided by improved land use, infill, and active transportation. Goals that require additional or improved monitoring or additional information from surveys will require heightened investment and focus in specific areas where gaps in data and/or information exist. We encourage consideration of additional federal investment to assist in the more comprehensive monitoring of performance.

## MEASURES FOR TRAFFIC CONGESTION

**Average Peak Period Travel Time.** Given that agencies throughout California are working to reduce the amount of time people spend accessing the people, jobs, goods, and services they need, evaluating average travel time enables us to understand if we are being successful at improving this access. In analyzing the amount of time people spend traveling, we evaluate both the distance and the speed at which they are traveling. Considering this measure along with other measures like delay provides a more complete picture of how our transportation system is meeting the needs of our population.

Ideally, we will one day be able to measure travel times for all origins and destinations and for all modes. For now, we can begin measuring the average peak period travel time per commuter with vehicle speed and volume data. California can currently calculate travel times for urban freeway corridors that are part of the NHS. To expand this capability to the full NHS, we will need travel time data for all other roads on the NHS besides urban freeways.

**Annual Vehicle Hours of Delay and Annual Person Hours of Delay.** Delay (vehicle- or person-hours) for a transit or roadway segment is the extra time spent traveling beyond what one would experience at a given threshold speed. Total delay in a corridor or an urban area is calculated as the sum of individual segment delays for each vehicle or person, and the delays experienced on each day are summed to determine the annual delay.

In California, we propose using 35 miles per hour as the threshold speed for measuring congestion on freeways. We propose this speed not because it is our goal for highway speeds, but because it is a

fair measure of the most severe congestion. Speeds less than 35 miles per hour represent significant lost capacity and have corresponding costs in terms of greenhouse gas emissions and economic productivity loss. We must conduct additional data collection and analysis to establish an appropriate methodology for calculating delay on signalized arterials on the NHS. Given that many states need to establish practices for calculating delay on arterials, we encourage FHWA to support additional research in this area with the hope of establishing a single, national standard for calculating arterial delay.

With its detector data, California can currently calculate delay on urban freeway corridors that are part of the NHS. To expand this capability to the full NHS, we will need speed/travel time data for all other roads on the NHS besides urban freeways.

## MEASURES FOR NHS PERFORMANCE

**Travel Time Reliability.** Travel time reliability is concerned with the consistency or dependability of travel times from day to day, most often measured during weekday peak periods. Reliability is a useful measure in that it can inform transportation agencies about their success in managing congestion, including system management, incident management, and demand management strategies. It also reflects an important aspect of the traveler's experience. Reliability is a way of expressing how predictable travel times are such that travelers can correctly allocate the appropriate amount of time for their trip. It can be frustrating to travelers to have unexpected delays, resulting in them being late for work or appointments—events with potentially negative consequences. Shippers and freight carriers have repeatedly named reliability as the single most important issue with regard to moving goods in California. Just-in-time delivery is heavily dependent on reliable travel times.

California can currently calculate travel time reliability for urban freeway corridors that are part of the NHS. To expand this capability to the full NHS, we will need travel time data for all other roads on the NHS besides urban freeways.

**Person Throughput per Lane Mile.** Transportation system throughput is the number of people that pass through a location, a segment, or a corridor by all modes over a specified time. To the extent possible, an efficient system uses the maximum amount of available capacity. Thus, total person throughput measures how efficiently the available transportation resource has been used and indicates when efficiency improvements may be necessary. To calculate this measure for the full NHS, California can use traffic volume data from its urban freeway detectors and from the Highway Performance Monitoring System (HPMS), but we anticipate needing additional volume information in non-urban areas and on Strategic Highway Network routes, intermodal connectors, and principal arterials. Passenger count data from transit services and walking and bicycling data are necessary for a complete picture of person throughput.

## MEASURES TO CONSIDER IN DATA ANALYSIS

Evaluating the relationship that these recommended measures have to other measures reflecting travel demand is useful in understanding true success in managing congestion and system performance. A valuable indicator of travel demand is **vehicles miles traveled per capita**. A vehicle mile traveled is defined as one vehicle traveling the distance of one mile. Total vehicle miles traveled, thus, is the total mileage traveled by all vehicles in a defined area. In order to evaluate system usage in relationship to travel demand, taking the extra step of calculating vehicle miles traveled per capita provides a picture of the trend in statewide transportation service consumption relative to population growth.

Recognizing that population change and economic indicators such as the unemployment rate, gross state product, personal income levels, and gasoline prices, among others, are factors to consider in analyzing transportation network performance, selected performance measures should not be applied in such a way as to penalize a state or region for the impact on travel demand associated with economic or population growth.

**DATA FOR MEASURING TRAFFIC CONGESTION AND NHS PERFORMANCE**

As we have discussed appropriate performance measures for evaluating traffic congestion and NHS performance, an important consideration has been the availability and quality of data. Currently, Caltrans collects a relatively large amount of vehicle traffic volume and speed data from vehicle detectors deployed on Interstates and other freeways that are part of the NHS in urban areas of the state. These data enable us to calculate a variety of performance measures for this subset of the NHS. The quickness and ease of calculating different measures varies based on the sophistication of the tools we have built into our Performance Measurement System (PeMS) for each particular measure.

In order to calculate performance measures related to congestion and performance for the entire NHS, one solution is to use third-party speed and/or travel time information. We understand that U.S. DOT may assist states in procuring speed and/or travel time data for the entire NHS, and this would help expedite reporting on many NHS facilities where we currently have no data. However, the data procurement is only a first step towards performance measure reporting. Currently, Caltrans does not use third-party speed data for performance analysis and we will face challenges in terms of data storage, processing, and analysis as we familiarize ourselves with the new data. We hope to integrate any new data sets with existing data systems to fully leverage investments we have already made. We also caution that there is still much to learn about third-party data and we anticipate needing to pay close attention to the quality of speed information on lower-volume segments of the NHS. Insufficient traffic volume data on these same segments may also be an issue.

Additionally, as we strive to build sustainable communities, we must obtain more vehicle occupancy data, transit data, and particularly walking and bicycling data to measure our success in encouraging multimodalism and implementing strategies like Complete Streets. More frequent (at least every two years) community or household travel surveys are necessary to fill in data gaps in each MAP-21 reporting cycle. To develop a robust national performance measurement program, Federal assistance in collecting these additional data will be required.

**OTHER CONSIDERATIONS**

We appreciate the opportunity to comment on the performance measure areas of MAP-21 before the Notice of Proposed Rulemaking (NPRM). Because this performance-based approach is new and will require many states to reallocate resources to organize staff and create systems and procedures to do the necessary reporting, we hope that we will also have the opportunity to make substantive comments after the NPRM is released.

Sincerely,

Brian Kelly
Secretary
California State Transportation Agency

John Laird
Secretary
California Natural Resources Agency

Diana Dooley
Secretary
California Health & Human Services Agency

Matt Rodriguez
Secretary
California Environmental Protection Agency

Ken Alex
Director
Governor's Office of Planning & Research