Institute of Transportation Engineers Inc.

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August 20th, 2016

Gregory G. Nadeau
Administrator, Federal Highway Administration
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Docket No. FHWA-2013-0054

Dear Administrator Nadeau,

The Institute of Transportation Engineers (ITE) respectfully submits the following comments in response to the Federal Highway Administration's (FHWA) notice of proposed rulemaking (NPRM) on "National Performance Management Measures; Assessing the Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program". ITE is a community of transportation professionals, including transportation engineers, transportation planners, consultants, educators, and researchers, with more than 13,000 members in 90 countries. ITE serves as a liaison for numerous stakeholder groups within the transportation community, especially focusing on enhancing communications between private industry, academia, local and regional transportation agencies, and the federal government.

The Performance Management NPRM is of particular relevance to ITE members, given the broad nature of impacts on the U.S. public road network. While the state DOTs will do much of the heavy lifting with respect to setting performance targets, investing in network capacity, and developing standards and procedures for implementation, local agencies and private firms will be expected to participate in a supportive capacity and will be directly impacted by these new performance management requirements. Thus, it is critical that they understand the methodology and implications of the proposed rules. Especially important to ITE stakeholders are measures that will impact metropolitan area transportation and the use of data sources such as the National Performance Monitoring Research Data Set (NPMRDS), which many ITE stakeholders may not have prior familiarity with.

Overall, ITE is supportive of FHWA's use of this rulemaking process to improve performance of public roadway infrastructure, and the included comments are intended to help FHWA in refining the strategies by which it seeks to meet this goal. While the proposed performance management strategies are generally suitable in the short-term, we recommend that FHWA

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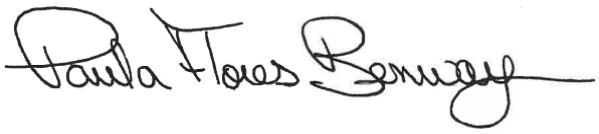
postpone the implementation of a delay-based measure for congestion management, until such time that a measure based on multimodal and person-level delay can be developed. Pursuant to this recommendation, we strongly encourage FHWA and its USDOT partners to begin developing a framework for data collection and analysis that will support performance management measures for across all modes of transportation, in order to ensure an equitable travel environment for all roadway users.

Sincerely,



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Overall Comments on the Performance Management Measures

In order to fully understand the implications of the proposed rulemaking, it is first necessary to consider where this rule falls within FHWA's broader strategic oversight of national transportation infrastructure. ITE recognizes the following national goals set forth by the MAP-21 legislation for the focus of the Federal-aid highway program, which enable FHWA to better define their role in the national transportation policy dialogue:

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced project delivery delays** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

In reviewing these goals individually, ITE and its membership believes that the first goal of improved safety and the supporting performance management requirements have largely been met through the Highway Safety Improvement Program (HSIP) rulemaking, under 23 CFR Part 924 and the companion Safety Performance Management rulemaking (now finalized). The HSIP and Safety Performance Management's rulemaking's effectiveness stems from its broad applicability to the public road network, the ease with which the included performance measures can be developed by public agencies using available data and the way in which the safety of all users are included.

ITE strongly encourages FHWA to keep this precedent in mind when developing the current performance management rulemaking intended to address the remaining, non-infrastructure national goals. There is some concern from ITE membership, which will be detailed in the following pages, that the proposed rulemaking contains certain elements which are too narrow in their scope or applicability, and which lack consistency across several policy areas laid out by

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the NPRM. Additionally, some of the performance measures, especially those pertaining to travel time reliability and user delay, are based on methodologies which many agencies may find overly burdensome to implement.

With these concerns in mind, ITE believes that FHWA is well-positioned to craft the final set of performance management rules in such a way that addresses the needs of a diverse transportation practitioner community, while providing a flexible framework that attains significant benefits for all roadway users. The way in which FHWA handled the comments to the HSIP and Safety Performance Management rulemaking can be looked to for guidance on how to achieve this success. For example, the final performance rulemaking should strive to maximize its effectiveness by including performance measures which are applicable over a majority of the National Highway System (NHS). The final performance measures should rely on commonsense methodologies that complement, rather than compete with, existing agency practices, and can be developed using data that is widely available, or can be collected with minimal additional effort.

While simplicity and ease of implementation are paramount concerns for FHWA to consider in the performance management rulemaking, the impact on societal trends in transportation must also be given significant weight. Throughout the current proposed rulemaking on NHS performance, traffic congestion, freight mobility, and air quality, an underlying theme is apparent: these measures speak largely to the experience of those in single occupancy vehicles (SOVs). While such a focus is understandable in the short-term, owing largely to the current availability of data from the NPMRDS and other national sources, ITE and its membership feel that FHWA should move quickly within the framework of the existing performance management legislation to begin developing performance measures that cater to multimodal transportation systems.

The first step in this process is instituting a program to develop standards and procedures for data collection within this alternative modes of travel, an effort which ITE feels should be undertaken by FHWA and its USDOT partner agencies concurrent to the final performance management rulemaking under consideration. Once this multimodal framework is established, FHWA can work to develop a more comprehensive and holistic set of performance measures that accommodate multiple modes of transportation, while achieving secondary effects of improved public health, community livability, and economic development.

While ITE is supportive in moving forward with the majority of the proposed measures as the first step in this evolutionary process, we do not believe FHWA should postpone the adoption of an urban congestion measure until such time as this measure can represent all users of the system. The singular focus of the current proposed measure on vehicle-based travel may have the

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unintended consequences of focusing investment on the movement of SOVs at a time when the transportation industry has begun to aggressively support shared services and transportation choices. Rather than expending limited FHWA, State and local resources on implementing a measure of questionable value, we respectfully request that FHWA direct those resources toward the collection of multi-modal data and the establishment of multi-modal and person-based measures.

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Performance Management Measure Analysis

In submitting detailed comments on the proposed rulemaking with respect to the various performance measures, ITE and its membership have looked to FHWA's actions on previously finalized rulemaking (namely, with respect to safety and planning), to understand where the burden is expected to lie regarding data collection and usage for individual agencies. On the basis of this review, and a comprehensive reading of the NPRM, the following specific remarks are thus provided.

Comment #1: The current proposed rulemaking does not adequately balance the need to consider varying roadway contexts against opportunities to simplify the performance management process for public agencies.

ITE encourages FHWA, in developing its final set of rules for performance management, to ensure that the requirements for data gathering, system performance, etc. complement the previous rules for safety and planning wherever possible. Additionally, FHWA should seek to minimize the complexity of the proposed performance measures, by limiting the measures to use nationally-available data, and by ensuring the consistency of thresholds used to calculate the measures. By mandating overly complex calculations to support the proposed performance measures, agencies will be forced to choose between devoting resources to meeting the performance management rule, and maintain existing programs on their roadway network to address concerns with performance, safety, and asset management. To further simplify the calculation and use of the performance measures, **ITE recommends that FHWA offer states and MPOs the option to calculate the measures themselves, or else use values that are calculated directly by FHWA based on the NPMRDS.**

The NHS is a very diverse roadway network, comprising many different types of roadways. A large percentage of the highways on the NHS are rural highways; these vary from fully access-controlled interstate highways and limited-access expressways, to two-lane highways with the occasional passing lane. In urban areas, the highways are even more diverse. A typical urban setting, for example, may have NHS routes with 4-lane undivided roadways, 4-lane highways with medians and traffic signals, and one-way street pairs with on-street parking, each with a very different makeup of traffic and adjacent land uses.

Drivers on each of these facility types have different expectations of performance and congestion. It is unlikely that a single threshold can demonstrate the needs of the various roadway contexts. Indeed, the Level of Travel Time Reliability (LOTTR) threshold proposed (1.5) appears to be too high to capture the needs. In the sensitivity analysis provided by FHWA, it appears that a value between 1.2 and 1.3 may be more appropriate. Drawing a comparison to choosing a design hour volume for a highway, it is good practice to plot a graph of the highest

volumes and look for a volume where the slope of line begins to level off (often called the "knee" of the curve). For example, looking at the FHWA sensitivity and a similar graph of 10 Midwest states, the "knee" of the reliability threshold curve appears to occur around 1.2-1.3. Using the 1.5 threshold, almost all Midwestern states would be more than 95% reliable, with several more than 99% reliable. This level of reliability is not reflective of these state's needs, and does not provide a meaningful measure for demonstrating improvement.

Thus, **ITE recommends that FHWA consider developing different reliability thresholds for different types of roadways**, recognizing that congestion is viewed differently on rural, urban and recreational roads, as well as limited-access facilities and signalized corridors.

Additionally, in many areas of the country, the NHS is used to convey substantial recreational travel. These highways see significant increases in traffic during the peak recreational times, which do not necessarily line up with the analysis hours prescribed by the NPRM. In such cases, the proposed performance management rules will not provide a comprehensive and accurate picture of system performance for highways. Thus, **ITE recommends that FHWA consider establishing an exception process for state and local agencies to propose alternative evaluation periods, based on the makeup of traffic along specific routes**.

Comment #2: FHWA should take additional steps to assist agencies with calculating the required performance measures

The proposed performance management rulemaking is one of the most extensive pieces of regulation in the history of FHWA, and it is incumbent on the agency to provide support, in terms of financial and technical resources, wherever feasible, to help agencies fulfill their obligations of target setting, data reporting, and execution of performance improvements. ITE and its membership echoes concerns from other associations (particularly AASHTO), that the current set of proposed performance measures, and the associated data required to fulfill them, places a significant burden on agencies that are already resource-constrained.

Consequently, ITE requests that FHWA give special consideration to the following areas:

- Providing technical support to State DOTs on the rulemaking implementation, and making this support available to other agencies whose systems or jurisdictions are potentially impacted by state- and MPO-level target setting and performance measurement.
- Providing a national-level tool to calculate performance measures based on the NPMRDS, and making this tool and the associated results available for all public agencies.

- Per the recommendation in Comment #1, offering an option for states and MPOs to use performance measurements directly calculated by the FHWA, using the same national tool as those wishing to calculate the measurements themselves.

By providing high-quality technical support and resources to agencies in implementing the requirements of the proposed rulemaking, FHWA can significantly increase the level of buy-in for the performance management measures, as well as improve the rate of compliance and reduce errors associated with the data reporting process. Furthermore, by making these resources available outside of state agencies and MPOs, FHWA can encourage the development of a more consistent set of performance standards across all levels of U.S. public road infrastructure.

Comment #3: The current SOV-focused performance measures should be considered as a short-term solution to roadway performance management

ITE is generally supportive of a SOV-based performance measure in the proposed rulemaking, notwithstanding the risk of marginalizing other modes of travel with such a measure. ITE feels that a vehicle-based measure will accurately capture the performance of much of the NHS, which comprises significant levels of infrastructure with little more than car and truck traffic (especially in rural areas). However, as part of the proposed rulemaking, ITE recommends that FHWA work with state and local agencies to improve performance measurement across multiple modes of travel in urban areas, without sacrificing the use of SOV-based performance measures for the rural portions of the NHS.

While several ITE respondents to the NPRM have pushed for FHWA to include person-level performance measures in the current rulemaking, this is simply not tenable, given current limitations with available data, and the often competing nature of automobile, transit, and pedestrian modes of travel. Rather than trying to incorporate these modes into the existing measurement framework, it may be better to have separate (but supporting) measures based on alternative criteria. For instance, bicycling delay depends on the fitness of the individual cyclist. Some cyclists bike at speeds in excess of 20 mph, while others are below 10 mph. A more appropriate metric might be the percentage of the NHS with provisions for bicycles and pedestrians. This is but one example of the alternative performance measures that FHWA should consider in future rounds of performance management rulemaking.

Comment #4: FHWA should immediately begin working with USDOT partners to establish a framework for a multimodal data repository to complement the NPMRDS

Although most travel data available to public agencies remains vehicle-based, there are growing sources of information, especially in large and medium metropolitan areas, available for the

other modes to provide a reasonable estimate of person-based travel activity. Furthermore, while some regions (particularly small metropolitan and rural areas) have limited data available on bicycle and pedestrian counts, this data could relatively easily (and cheaply) be supplemented by counts along key transportation corridors. On the transit side, most transit agencies have ridership information at the stop, corridor and/or route level, or else this information could be easily gathered for key corridors and or routes. These efforts could be complemented by the rapid promotion of more advanced (and automated) vehicle occupancy measurement technologies, including for SOVs, transit vehicles, and freight trucks. This technology could be developed alongside a host of additional sensor systems and protocols for connected vehicle applications, and may very well provide significant benefits beyond more accurate person-level measures of roadway utilization.

The NPMRDS is proposed to be used in conjunction with the Highway Performance Monitoring System (HPMS) and US Census data to support the various performance measures described in the NPRM. However, the data currently contained in the NPMRDS highly favors urbanized areas in terms of accuracy and level of details; it also furthers the problem of multimodal data disparity, by including only information for SOV-based passenger and freight travel. The current scope of the NPMRDS thus places an undue burden on agencies that have a significant amount of data-deficient road segments in their jurisdiction (particularly for rural and suburban agencies), and disadvantages those wishing to devote resources to incorporating transit, pedestrian, and bicycle usage into their transportation network databases.

In order to remedy these data deficiencies, **ITE encourages FHWA to immediately begin developing a framework for reporting data across multiple modes of travel, to support future performance management measures**. Understandably, this development process is a significant undertaking, and will necessarily involve other USDOT agencies outside of FHWA for the different modes (e.g., FTA for transit information). Additionally, the complexity of this task is increased by the need for this comprehensive dataset to be directly integrated with the NPMRDS, or else support it very closely. However, by committing resources and indicating a willingness to partner with other public agencies on this data development process now, FHWA will be well-positioned to support the development of performance measures in the future that are more inclusive and equitable to all roadway users.

Comment #5: Proposed performance management measures should be thoroughly evaluated for consistency across different program areas

Overall, ITE encourages FHWA, in developing its final set of rules for performance management, to ensure that the requirements for data gathering, system performance, etc. complement the previous rules for safety and planning wherever possible. More importantly,

several areas within the current proposed rulemaking either appear to be inconsistent with one another, or with established industry practice. These inconsistencies place significant additional burden on public agencies, and require unnecessarily complex and resource-intensive calculations to meet the rulemaking requirements. A few examples of these inconsistencies are as follows:

- *LOTTR Thresholds*: For passenger vehicles, the LOTTR is computed by comparing the 80th percentile travel time on a roadway segment against the median (50th percentile travel time). For freight vehicles on the same roadway, the LOTTR is computed by comparing the 95th percentile travel time against the median travel time. **ITE recommends that LOTTR for all vehicle classes on the same roadway segment be measured using the same thresholds.**
- *Peak Hour Travel Time (PHTT) Intervals:* The reporting requirements for PHTT include six one-hour time bins, between 6AM and 9AM, and 4PM and 7PM. These one-hour time bins are inconsistent with other areas of the proposed rulemaking, such as the time bin requirements for the LOTTR calculations, as well as established industry practice (many signal timing plans, for example, define a single set of alternative timings for these entire 3-hour AM and PM Peak periods). **ITE recommends that FHWA reduce the number of reporting bins for any PHTT performance measures, and align them with best industry practices.**
- *TMC-based Segment Reporting:* The proposed rulemaking includes language to define urban road segments at ½ mile intervals, and non-urban road segments at 10 mile intervals. This is inconsistent with the TMC-based segmentation that many agencies use for their current roadway performance management, and could result in significantly misleading measures of congestion and user delay, particularly for the shorter urban segments. **ITE recommends that FHWA establish TMC-level segmentation for the purpose of reporting travel time reliability and other performance management data.** Wherever possible, this TMC segmentation should match that currently utilized by public agencies and private data vendors alike (many of which provide TMC- or sub TMC-level segmentation to public agencies that supersedes previously-developed systems).

Comment #6: FHWA should remove the current language on defining a separate congestion management performance measure for urban areas, pending further study and development.

The proposed congestion measure of annual hours of delay per capita is based only on vehicle-based travel. While ITE understands the difficulty of collecting data on occupancy, transit usage, and pedestrian and bicycle usage, without these data jurisdictions will only be able to

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understand and tell part of the transportation performance story. Moreover, we believe that a singular focus on vehicle movement runs counter to the goals of most major metropolitan areas over 1 million in population and of the CMAQ program itself.

To appreciate the opposition to the current proposed congestion management measure, it is necessary to understand its context. There is significant concern that by focusing on delay minimization for vehicle travel, the vast majority of which involves SOVs, other modes of travel may suffer. This is especially true of pedestrians and bicycles, which are often accommodated within developed urban areas by reducing the amount of available infrastructure (and thus, the capacity) for SOVs. Even transit-based modes, such as buses, may cause minor to moderate additional delay for SOVs as their usage increases, given the unique operating characteristics of these vehicles. While few would argue that the expansion of these non-SOV modes of travel do not bring with them significant benefits to public health and community livability, these benefits are marginalized by distilling the congestion performance of a roadway down to the sole ability of SOVs to move quickly through the corridor. Such a measure harkens back to the previous 50 years of SOV-centric policy development, and has the potential to reduce (or even reverse) the investment in multimodal transportation infrastructure, for the sake of meeting this performance target.

The solution to the deficiencies in the current proposed congestion management measure is to **develop a measure based on person-level delay across all modes, rather than vehicle-level delay for one specific mode**. However, as previously noted, there is significant challenge associated with gathering person-level travel data and occupancy information, based on currently available resources. Furthermore, certain modes, such as pedestrian and bicycle travel, do not lend themselves well to traditional notions of user delay. For example, as discussed in Comment #3, bicycle delay depends significantly on the fitness level of the rider, in addition to the behavior of other roadway users. Perhaps for these modes, and in line with the broader public health goals of the CMAQ program, a measure such as percentage of NHS routes with provisions for pedestrian and bicycle travel could be integrated with person-level vehicle and transit delay for a comprehensive assessment of congestion performance.