

National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program

[Docket No: FHWA-2013-0054](#)

As the only national alliance of local elected officials, business, and civic leaders united to ensure that states and the federal government step up to invest in smart, locally-driven transportation solutions, Transportation for America (T4A) greatly appreciates the opportunity to comment on this important rule.

This document provides detailed comments from T4A on the proposed rule for system performance, freight, and CMAQ national performance measures. These comments were produced with the support and collaboration of state DOTs, MPOs, transit agencies, local elected officials, and advocacy organizations.

There is a direct connection between how we decide to measure transportation performance and how we choose to address it. If we focus, as this proposed rule does, on keeping traffic moving at a high rate of speed at all times of day on all types of roads and streets, then that priority will come at the expense of providing healthy, safe, affordable and reliable transportation options for all users, as required by federal statute. Secretary Foxx has so effectively demonstrated how a program overly focused on high-speed vehicle throughput often causes generational damage by isolating communities and undermining local economies. We cannot afford to repeat those mistakes. The movement of actual people and goods and their access to destinations, regardless of mode of transportation, should be our focus. With some changes to the proposed performance measures, U.S. DOT can move much closer to that goal.

We understand that U.S. DOT has also spent millions in taxpayer funds to develop a data set to support this rulemaking. Unfortunately, U.S. DOT chose to invest in vehicle-only data and is now citing the limitation of that data as an excuse to rule out measures that address the fundamental questions for why people travel or not in the first place (i.e. purpose of trip, trip origin and destination, mode, occupancy rate, and access). This information would best aid development of investment and operational strategies to achieve the nation's transportation goals (see Section 150(b) of Title 23). This mistake should and can be rectified by focusing and investing on enhancing existing data, such as the U.S. Census' American Community Survey, or developing a multimodal data set suitable for this purpose.

Primary Focus for Comments

- 1) Travel time/delay is felt by the people who travel, not by the vehicle, and U.S. DOT should propose a measure that focuses on people and not vehicles.
- 2) The percent of the Interstate/NHS providing for reliable travel times is a good measure. However, U.S. DOT has proposed five additional vehicle speed performance measures, many of which are duplicative and undermine safety initiatives by agencies that lower speeds on principal arterials. They also create an unnecessary burden on states and MPOs.

- 3) Across the country, transit, bicycling, walking and ridesharing are becoming an increasingly important part of our transportation system, and yet U.S. DOT's proposed performance measures for traffic congestion and NHS performance ignore these modes altogether. Reliability and congestion for non-vehicle transportation options centers on whether safe and accessible passage exists. For people using public transit and rideshare options reliability is an issue of both delay and safe access.
- 4) People use the transportation system overall to access a destination, yet the measures put forth by this rule does not include any discussion of U.S. DOT's plan to implement an accessibility performance measure – a critical omission.
- 5) A greenhouse gas (GHG) performance measure should be included in the final rule to enforce and track performance in achieving specific GHG emissions targets that implement regional, state or national GHGs emission policies.
- 6) U.S. DOT has allowed the perfect to be the enemy of the good when it comes to data sources for these proposed measures. More progress should have been made since 2012, and focusing on improving all modes data quality going forward is essential.

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

- **Annual Hours of Excessive Delay per Capita**

In choosing a congestion measure, it is important to recognize that congestion is experienced differently for travelers based on different trip lengths and transportation modes. Also, congestion can be mitigated by building more roadway, moving more people in the same number of vehicles or taking people off the roadway all together. We would like to see the U.S. DOT's congestion measure better capture this notion, and there are ways to tweak the proposed measure in order to do this.

The proposed annual hours of excessive delay per capita measure uses estimates of hourly vehicle volume and links these to observed travel times for a corridor to determine excessive delay. The excessive delay calculation would be normalized for population growth/decline and non-vehicle transportation options, to an extent, by comparing excessive delay to the total population for the state/region to determine the exposure rate of the excessive delay. While the measure benefits from calculating the level of exposure to the excessive delay, this measure still focuses more on vehicles than on people.

Congestion is realized when demand for the transportation facility or service - roadway lanes, buses, rail cars, etc - exceed the design or carrying capacity. It is not the delay of vehicles. The proposed congestion measure treats all vehicles the same, though a single occupant vehicle carries one person compared to a carpool or transit bus that carries significantly more people. By not assessing the true carrying capacity of a roadway (i.e. people centric), the proposed measure fails to capture the efficiency gained from investments made by states and regions in managing their roadway's demand and fails to direct resources to the congested corridors that impact the most people. As much as possible, this measure should use data sources available (e.g. National Transit Database, regional vehicle capacity, bicycle counts, etc.) to focus on the travel delay experienced by people and not their property.

Proposal:

1. Address person hours of excessive delay per capita.
2. Amend excessive congestion definition.
3. Apply the CMAQ measures consistently to states and MPOs.
4. Account for non-SOV mode share.

Per person hours of excessive delay per capita

This measure does not need to be a burdensome process. As proposed in the rule, the baseline assumption in the measure can be that all vehicles on the roadway are single-occupant vehicles. However, states and MPOs that possess carrying capacity data for vehicles (e.g. U.S. Census, crash data), time of day ridership for transit vehicles, and average pedestrian and bicycle counts could adjust the estimated people moving through a given segment using this data.

To make this amendment, an adjustment to the estimated hourly traffic volumes portion of the proposed congestion performance measure would be needed. For the example provided on page 23886 of the proposed rule, nothing would change for areas without person occupancy data – a 1:1 ratio of people to cars will provide an assumption that 5,200 people moved through this corridor segment on average for the 9:00 to 9:59AM hour. The measure should be amended voluntarily for states and MPOs with person occupancy data on private and transit vehicles, and average pedestrian and bicycle counts to include the additional people moving along the corridors that are not driving vehicles rather riding in a passenger vehicle, bus, bicycling or walking (e.g. 10 transit vehicles moved through the segment from 9:00 to 9:59AM carrying an average of 40 passengers per vehicle, which results in an additional carrying capacity for this corridor of 400 people for a total of 5,600 people for this AADT period).

It is also important that once the person hours of excessive delay is calculated that this measure continues to be normalized by dividing the calculation by the total population for the state or MPO. This allows all transportation users to be accounted for (i.e. bicyclists, pedestrians, rail transit users, and teleworking, etc.).

Consideration should be given to provide guidance in regards to the most appropriate methodology for the overall populations for this metric. Potential errors are present in states and regions of the country that witness time of day shifts in population (e.g. District of Columbia). In addition, America's urban areas are witnessing large population shifts that have the opportunity to be omitted from two four-year reporting cycles because of the reliance on decennial U.S. Census population estimates. We request discussion in the final rule for how states and MPOs could use population estimates from 5-year ACS estimates for each-year reporting cycle.

Amend excessive congestion definition

The excessive speed calculations need to be amended as well. A static speed threshold is unreasonable and does not consider the context of the expressways in some areas that use variable speed limits or the flow of vehicles for other non-expressway NHS facilities. Therefore we propose that excessive delay for expressways be amended to 50% of posted speed limits for the facility.

Average free flow travel speeds of non-expressway facilities can fall below 15 mph simply due to the presence of stop signs and traffic lights, even on roadways posted at much higher speeds.

Using speed for this measure may encourage states and MPOs to increase roadway speed limits to provide flexibility in meeting performance targets, which runs counter to local priorities and undermines safety of all transportation users. We are interested in hearing how US DOT plans to address the static speed threshold for non-expressways that are not consistent with many local and regional priorities, and its plans to improve the congestion measure in the future by removing a vehicle speed measure for non-expressway facilities.

Apply the CMAQ measures consistently to states and MPOs

The CMAQ measures are applied in an inconsistent and confusing way. The emissions measure is applied to areas in nonattainment of any size, while the congestion measure is applied to areas in nonattainment with a population over 1 million. There are many communities that are seeing rising emissions who might be able to avoid a nonattainment designation by measuring emissions early. At the same time, some communities with the worst congestion in the country have a population of less than 1 million (e.g. Honolulu).

This measure should not be restricted to states and MPOs in nonattainment or maintenance status or to regions with more than 1 million people. Section 149(l) of title 23, United States Code requires a performance plan for these mega-regions with more than 1 million people, but doesn't supersede section 150(c). Title 23 makes a distinction between areas above and below a population of 200,000, which might be applied here and may be an appropriate population threshold. But the 1 million population threshold is not found in Title 23 section 150.

Non-SOV Mode Share

We also recommend a measure of commuters traveling by modes other than single occupancy vehicles (SOVs), which is an outcome measure as it assesses the actual behavior of individuals' response to the transportation system. With this metric a state and MPO could more readily assess the average number of occupants per vehicle, and could support the prior measure. It is important to measure these individuals because transportation investments that maintain and improve these modes will help reduce the demand on auto lanes and therefore reduce congestion. This measure should use data sources available (e.g. National Transit Database, bicycle and pedestrian counts) to measure the number of SOV trips avoided.

- **Total Emissions Reductions for areas designated as nonattainment or maintenance for the ozone, carbon monoxide, or particulate matter (PM 10 and PM 2.5) NAAQS under the Clean Air Act Amendments of 1990**

U.S. DOT, in proposing the on-road mobile source emissions performance measure, has applied it to only those areas in nonattainment or maintenance and only to assess emission reductions projected from projects funded with CMAQ dollars. This limitation undercuts CMAQ's purpose to improve air quality and protect and enhance the environment and fails to recognize that air quality improvements can easily come from other programs, such as STP.

This restriction is not applied to other measures being proposed. For example, regardless of what funding was used to construct or rehab the public road, U.S. DOT requires states and MPOs to measure fatal and serious injuries for the roadway and strategically plan and direct HSIP funding towards projects if unable to make significant progress in the measure area as required by MAP-21 (see Docket No. FHWA-2013-0019). As evidenced above, Congress did not intend for the performance measures to be restricted to projects funded by programmatic funding – safety extends to where a collision occurs on public roadways – and therefore should not be narrowly construed for one performance measure area when not applied to all performance measures.

Proposal:

1. Total emission reductions should be measured by all recipients of CMAQ dollars and should be assessed at the state or region scale, and include emissions created in the construction of road projects.
2. The targets under this measure should be set to consider all capital and operational opportunities to reduce emissions and not be restricted to CMAQ funded projects.

Performance of the NHS/Interstate System

“System performance” is an extremely vague term and does not have a nationally identified best practice. Therefore, U.S. DOT has great latitude in setting the performance measures for system performance. Yet, in the NPRM, U.S. DOT has chosen to equate the performance of the NHS to the speed of vehicles and the reliability of roads for those vehicles, as measured through travel time. This creates unintended consequences for all other transportation users of these facilities, devalues the importance of efficiently moving people, and runs contrary to federal statute. The FAST Act *requires* (see Section 109(c) of Title 23) that all construction and rehabilitation projects for the NHS provide access to all transportation users—vehicles, bicyclists and pedestrians. Further, the NHS was expanded significantly by MAP-21 to include principal arterials, which frequently cut through population centers that currently accommodate all transportation users, including pedestrians, bicyclists and transit users. For all of these reasons, the focus of the NHS performance measures solely on vehicles and speed is not reflective of either Congressional intent or the performance of our transportation system all across the nation.

Additionally, the ease or difficulty of travel on the NHS differs depending on the travel mode. With vehicle travel, there is very rarely a total lack of road network available for drivers to use. It may be congested or the route may be indirect, but it exists. With transit, bicycling, and pedestrian-travel, major barriers are common as are a complete lack of transit service or safe bicycling and pedestrian accommodations. Time of travel may not always capture this absence: for example, a bus trip to a hospital may look promising at peak hours but may be non-existent for shift workers, or a walking trip may look good as the crow flies but requires the pedestrian to actually fly over a high-speed six lane road to make it to their destination. Therefore, it is essential to measure the existence of all transportation modes before we can even begin determining whether the NHS performance is satisfactory for those users. Until a true accessibility measure is established to understand both the time and distance required to access jobs, health care, education, and other essential services, U.S. DOT should measure the extent to which the NHS performs in providing alternative modes of travel at all.

A measure assessing the extent to which the NHS performs in providing alternative modes of travel is an output measure, and not an outcome measure. Transportation for America understands that an output measure is not ideal and runs counter to U.S. DOT's stated preference. However, after focusing solely on vehicle travel for the past 60 years, including in the development of data, the very presence of infrastructure to accommodate non-vehicles is a necessary question. In fact, on much of the NHS, we would have to significantly improve our accommodation of non-vehicles to be able to begin evaluating its performance. The only mistake larger than our failure to consider how the system works for non-motorized users of the transportation system in the past would be to use that failure as an excuse for failing to measure alternative modes of travel now.

- **Percent of the Interstate/NHS providing for reliable travel times (Level of Travel Time Reliability—LOTTR)**

The proposed LOTTR represents a user-centered measure that is understood and valued by drivers—the reliability of a trip. This measure provides for realistic travel performance evaluation by using the 50th percentile travel times as the normal travel time measure. This is far better than using free-flow conditions or conditions not seen during normal commuting hours. This measure also proposes to compare the 80th percentile travel time to the normal 50th percentile travel time, which provides the state DOTs and MPOs realistic opportunities to improve operational strategies at this threshold compared to higher travel times.

This is a good measure that can continue to get better. We are interested in hearing U.S. DOT's plans to improve trip and destination data in order to better evaluate the extent and intensity of unreliability on trips of different lengths and for those using different modes. With the expansion of the NHS under MAP-21 many shorter trips that were previously not on NHS roads, are now on that system. Measuring trip distance, as well as existing networks within versus through communities could create new solutions for reducing congestion.

- **Percent of the Interstate system in large urbanized areas over 1 million in population where peak hour travel times meet expectations (Peak Hour Travel Time Reliability—PHTTR)**

The proposed PHTTR does not adhere to FHWA's own performance measure development principles, which include providing for a national focus and ensuring consistency (see 81 FR

23822). The proposed PHTTR restricts this measure to metro regions over 1 million people, which is not consistent with federal statute that places added responsibility and decision-making authority for areas with more than 200,000 people. The proposed measure also allows each region with a population over 1 million to develop its own preferred expected travel time (i.e. free flow conditions preference) during peak travel for each NHS facility. This would diminish the ability to compare PHTTR calculations at a national scale on the national dashboard and within states for regions that use different travel time expectations.

Additionally, this proposed PHTTR is not a reliability measure. It is a delay measure, which is more appropriate as a congestion measure. In fact there is another, totally different, delay measure proposed as a congestion measure making it challenging to understand which would control. Having a second, conflicting delay measure applying to the same roadways provides no benefit, would confuse planning efforts, and burden state DOTs and MPOs unnecessarily. Further, this particular delay measure was roundly criticized by commenters early in your rule-making process for making above speed limit, free flow speeds the goals of roadways, among many other issues.¹²³

Proposal:

1. The PHTTR be vacated.
2. In its place, U.S. DOT should take the time to develop a multimodal system performance measure by January 1, 2019 that takes into account safe and accessible transit, bicycling, walking and car sharing, especially in light of the expansion of the NHS included in MAP-21.
3. In the interim, U.S. DOT should require that DOTs and MPOs simply measure the presence of safe alternative modes of transportation on the NHS, such as the percentage of the NHS system that meets the required level of FHWA's own sidewalk guidance⁴.

Interstate Freight Movement

Congress unwisely restricted U.S. DOT's ability to propose measures that effectively assess the movement of freight. Preposterously, Congress required a freight measure that only looks at the movement of goods on Interstates, which is neither the origin nor the destination of any truck trip. Further, while freight relies on an efficient and interconnected multimodal freight system, as evidenced in U.S. DOT's thoughtful draft National Strategic Freight Plan, MAP-21 does not allow U.S. DOT to consider goods movement by other transportation modes such as trucks, rail, water, etc. Still, within the flawed structure of MAP-21, there are ways to improve the proposed freight rules.

¹ See: http://www.vtpi.org/UMR_critique.pdf

² See: http://cityobservatory.org/wp-content/uploads/2015/08/Measuring_Urban_Transportation_Performance.pdf

³ See: <http://www.t4america.org/2013/02/07/congestion-rankings-make-news-but-what-do-they-really-mean-very-little-for-most-residents/>

⁴ See: "Guidelines for New Sidewalk Installation" Table 4.2,

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks204.cfm

Additionally, while MAP-21 directed U.S. DOT to only measure the movement of freight on the Interstate, the final rule should be consistent with the draft National Strategic Freight Plan and provide guidance to states and MPOs in developing measures to be adopted voluntarily that assess the reliability of a region's multimodal freight network and more comprehensively determines bottlenecks on all facilities.

- **Interstate System Mileage providing for Reliable Truck Travel Time (TTTR)**

The proposed TTTR uses a near identical calculation as LOTTR. However, the measure proposes to compare the 95th travel time percentile to the 50th for trucks on the Interstate, compared to LOTTR using the ratio of 80th of the 50th travel time percentile for vehicles on the Interstate. We do not support having separate reliability thresholds for freight and all vehicles. However, upon review of data for the New York, New Jersey, and Connecticut region, due to the different times being measured for freight (every minute of everyday) and all vehicles (6am – 8pm), the reliability thresholds for freight and all vehicles on the Interstate often produce near identical results. In addition, using the 95th percentile diminishes states' ability to make operational improvements that can have the most impact on improving reliability (see 81 FR 23874).

If the purpose is to capture off-peak evening/early morning freight movement reliability then this should be stated clearly. Failure to do so would result in the TTTR overriding the LOTTR and would seem to prioritize the movement of freight over the movement of people in vehicles on the same roadway.

Proposal:

1. The TTTR measure should specify the time period for this performance measure's calculation to show it is intended to capture off-peak freight flows and not meant to override or conflict with the LOTTR.
2. If this is not the intent, U.S. DOT should provide guidance as to how to set targets for the LOTTR for non-freight vehicles while setting targets for a different standard (TTTR) for freight vehicles on the same roadway at the same time.

- **Interstate Freight Mileage Uncongested**

U.S. DOT proposes a second truck performance measure, which is best suited for non-urban and non-mountainous Interstates where freight bottlenecks are less likely. This measure again uses different measures for vehicles moving people and trucks, even though these vehicle groups use the same roadway and are part of the same flow. The proposed rule would determine that freight traffic on an Interstate segment is congested when the average truck speed is below 50 miles per hour on the segment, which is only 5 miles per hour lower than legal truck speed limits on urban Interstates in 17 states across the country.⁵

⁵ See: http://www.ghsa.org/html/stateinfo/laws/speedlimit_laws.html

On some urban Interstates and in some states that use variable speed limits the speed limit is 50 mph or below. In mountainous areas, Interstate freight travel is often restricted to speeds below 50 mph and variable speed limits are much lower than 50 mph during inclement weather. Efforts to enhance fuel efficiency and safety by moderating excessive truck speeds (e.g. through speed governors) also result in states setting lower speed limits for trucks. The proposed measure would count traffic going the speed limit as congested.

Even where the speed limit is higher, it is not possible to meet different standards for cars and trucks on the same highway. Either the states will have to build to the truck measure for all vehicles or they will be forced to build large truck-only capacity expansion investments often in physically constrained urban areas. That is quite a mandate and is unlikely U.S. DOT's intention.

Moreover, using average speed is not a sound measure of congestion, as it reflects high (and often excessive) speeds in periods of low volume as well as low speeds during congested travel times. Adverse consequences of this approach include:

A fixed threshold of 50 mph will automatically and inappropriately result in poorer performance on segments with lower speed limits found in urban areas where congestion exists and borders on overriding states' rights to set lower speed limits.

Proposal: We recommend that this performance measure be vacated. The proposed uncongested Interstate freight mileage introduces far more challenges than benefits.

Accessibility

At its core, America's transportation system is supposed to provide access to essential destinations such as jobs, education, food, and health care. U.S. DOT has been exploring accessibility performance measures, and Secretary Foxx has made access to opportunity one of his highest priorities. Congress has also encouraged U.S. DOT to develop an accessibility performance measure, most recently by including language in the report accompanying the draft House FY2017 Transportation, Housing and Urban Development (THUD) Appropriations bill by stating:

Accessibility performance measures.—The Secretary of Transportation, in coordination with the Federal Highway Administration and the Federal Transit Administration, is encouraged to establish an accessibility performance measure to be available to states, metropolitan planning organizations, and transit agencies to assess the degree to which the transportation system, including public transportation, provides multimodal connections to economic opportunities, including job concentration areas, health care services, child care services, and education and workforce training services, particularly for disadvantaged populations.

Access is defined as the ease or difficulty involved in reaching destinations, such as job destinations or non-work destinations such as grocery stores, transit stops, health care facilities,

parks or schools. Unlike vehicle delay measures that simply account for the speed of cars at points in the system, access accounts for the ability of people to actually reach destinations, across modes. Access can apply to auto, transit, walk or bike modes, and it can be affected by changes to transport networks or land uses.

Access is measured differently for different modes but should include time required and availability of transportation options to a destination. Time cannot be the primary focus for transit users, bicyclists and pedestrians if transit doesn't serve an individual's origin or destination, or if sidewalks, crosswalks or bicycle lanes are unsafe or don't exist.

Providing a metric that allows states and regions to assess their network coverage by mode is a baseline starting point for this measure. Once network coverage is assessed, states and MPOs can calculate accessibility with three things: the modal networks in GIS; locations of households, jobs and other points of interest; and a method for calculating times between points on the networks. There are now commercially available tools that provide all three, and states (e.g. Virginia), MPOs (e.g. SEMCOG), and cities (e.g. Austin, TX) nationwide are adopting accessibility performance measures.

Proposal:

1. U.S. DOT should identify a timeline for concluding its internal research to develop and test a national accessibility performance measure in the final rule. We propose that U.S. DOT implement this measure no later than January 1, 2019. In developing this measure, we recommend that states and MPOs measure multimodal access to essential destinations, setting targets by mode and geography (e.g. Transportation Analysis Zones from regional models). Such targets might include better non-auto access to jobs, education, and health care.
2. In the interim, before the accessibility performance measure is finalized, we recommend that U.S. DOT provide guidance in the final rule for states, MPOs and cities to voluntarily adopt a multimodal performance measure⁶.

Data

U.S. DOT relies heavily on the National Performance Management Research Data Set (NPMRDS) paid for by taxpayers and developed by U.S. DOT upon passage of MAP-21 to support implementation of this rulemaking. Sadly, U.S. DOT seems to have developed a dataset to support its intended outcomes for these measures - the movement of vehicles along highways. The narrative in the NPRM clearly expresses a desire by U.S. DOT to conduct multimodal performance measures for system performance, truck movement, and congestion, but continually states its inability to propose these measures due to lack of data. U.S. DOT's conclusion is that all states and MPOs should use NPMRDS to measure vehicles speeds only. The outcome from relying solely on the NPMRDS undercuts other performance measures such as safety (i.e. higher speed vehicles increase risk of serious injury and death) and U.S. DOT

⁶ See: Bicycle Level of Stress and Bicycle Level of Service in FHWA's Guidebook for Developing Pedestrian and Bicycle Performance Measures, http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/

initiatives such as Ladders of Opportunity and the Mayors' Challenge for Safer People, Safer Streets.

Data does exist to incorporate other modes of transportation in these measures such as the National Transit Database, the U.S. Census American Community Survey, cell phone network data, and all other sources of big data⁷.

Proposal:

The final rule should include a description and plan for U.S. DOT to improve data sets to incorporate accurate roadway volumes, strategies to develop and implement safe and accessible multimodal networks, accessibility, and trip origin and destination. In addition, U.S. DOT should explore ways to partner with the U.S. Census Bureau to improve the American Community Survey to understand trip purpose, multi-mode trips, and avenues to lower cost and improve survey collection efficiency by telecommunications sources. The answers to this work will undoubtedly improve U.S. DOT's own National Household Travel Survey as well.

In addition, U.S. DOT should take steps to integrate data sets compiled within the Department. The most pressing opportunity is to link data from the National Transit Database to the Highway Performance Monitoring System to allow states and MPOs to easily link transit routes and ridership with roadway segments.

Greenhouse Gases

Our transportation system produces more than 30 percent of total U.S. carbon emissions, generates more greenhouse gas pollution than all countries aside from China, India and Russia, and, according to the U.S. Department of Energy, the U.S. transportation sector has recently surpassed the energy sector in carbon emissions for the first time in more than 30 years.

The nation's transportation law calls for states and MPOs to adopt and implement plans that "accomplish" the objectives set out for those plans, including to "minimize transportation-related fuel consumption and air pollution." In 2007 the Supreme Court decided that GHGs are within the statutory definition of "air pollutants" under the Clean Air Act. Therefore, we recommend U.S. DOT include a performance measure for the primary transportation air pollutant causing global warming – greenhouse gases – in the final rule. Similar to the on-road mobile source emission measure, an effective GHG measure should address not just tailpipe emissions but also avoided emissions from projects that shift individuals out of cars into non-polluting walking or bicycle trips or less-polluting transit trips. It makes sense that this measure would use vehicle miles traveled estimates at the regional and state levels as a surrogate for GHG emissions and would be tracked on a per capita basis.

Proposal:

1. U.S. DOT should include a performance measure for measuring greenhouse gases emissions from the transportation sector in the final rule. It makes sense that this

⁷ See: FHWA-JPO-14-157, http://ntl.bts.gov/lib/55000/55000/55002/Big_Data_Implications_FHWA-JPO-14-157.pdf

measure would use vehicle miles traveled estimates at the regional and state levels as a surrogate for GHG emissions and would be tracked on a per capita basis.