Freight Webinar for the System Performance, Freight and CMAQ Measures NPRM

FHWA Office of Transportation Performance Management

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Presented by

Francine Shaw Whitson
Office of Transportation Performance Management

Jeff Lindley
Office of Operations

Rich Taylor
Office of Operations

Nicole Katsikides
Office of Operations

Pete Stephanos
Office of Transportation Performance Management

https://connectdot.connectsolutions.com/p3hvl1sx81o

http://www.fhwa.dot.gov/tpm/rule/pm3_nprm.cfm

Operator: Ladies and gentlemen, thank you for standing by and welcome to the freight webinar for systems performance. At this time, all lines are in a listen-only mode. If you do need assistance during the call, you may press star and then zero and an operator will assist you offline. I would now like to turn the conference over to Andrew Reovan, please go ahead.

Andrew Reovan: Thank you, Cynthia. Good afternoon everyone and welcome to the freight webinar for system performance freight and CMAC measures and PRM. My name is Andrew Reovan. I'm with the U.S. DOT's Volpe Center in Cambridge Massachusetts and I will be moderating today's webinar as well as facilitating our question-and-answer session and helping to troubleshoot any technical issues you may have. Before we begin, I'd just quickly like to orient everyone to the Webroom. On the top left of your screen you'll find the audio call in information. We expect that most of you are listening over your computer speakers, but for highest quality audio we do recommend that you mute your computer speakers and dial in with your phone. Below the dial-in information is a list of attendees including your host and presenters for today. Finally, on the bottom left is a chat box that you can use to submit clarifying questions for our presenters throughout the webinar. We can only answer clarifying questions about the content of the NPRM today. We do encourage you to submit any comments you have to the docket. A PDF copy of the slide presentation will be available for download at the end of the webinar. And, again, if you have any technical questions during today's webinar, please us the chat box to send a direct chat to me, Andrew Reovan. Today's webinar is being recorded. A copy of the recording, the presentation and the chat pod will be posted after today's webinar. And with that, I'd like to turn the webinar over to Francine Shaw Whitson from the FHWA Office of Transportation Performance Management to begin our presentation and discussion. Francine, please go ahead.

Francine Shaw Whitson: Thank you, Andrew. Good afternoon, everyone. My name is Francine Shaw Whitson. I'm with the Office of Transportation for Performance Management which is within the Office of Infrastructure. I'd like to welcome you to our third national performance management manager proposal on freight movement on the interstate. Today's discussion is part of a serious of webinars covering the national performance measures NPRM. A full list of all of our webinars in this series is going to be available on our website at www.fhwa.dot.gov/tpm, as well at the end of today's presentation. For today's discussion, we're going to provide you an in depth review of proposed measures to assess freight movement on the interstate system. And then we're going to open up to questions. I do want to remind you that this particular presentation and the notice for proposed rulemaking are both MAP-21, and FAST Act compliance. As we go through this presentation, please remember that we can only answering clarifying questions on the NPRM. We ask that you submit those questions into the chat pod. When you do so, if you could please indicate the topic that you're addressing and we'll try our best to try to get them responded to. As a reminder, today's webinar is being recorded and all questions-and-answers are going to be captured and posted to the docket. To get us started today, I would like to introduce you to Mr. Jeff Lindley. He is our associate administrator for operations. And he will start with a few opening remarks. Jeff.

Jeff Lindley: Thank you, Francine. It's a pleasure to be here today to just chat with you all for a few minutes. A great attendance on the webinar and I appreciate you all taking the time to be part of this, wherever you are, whether it's good morning or good afternoon. As Francine mentioned, the focus of today's webinar is on the freight performance measures that are part of the third rulemaking that's been done to implement the MAP-21 provision on performance management in order to make the federal aid highway program more performance based. These are the results of a lot of hard work by a lot of people. You're going to hear from some of those people today but really only a fraction of the people that have been involved in the discussion about performance metrics, and setting targets and reporting on performance. And we had to do a lot of thinking. And we had to do a lot of back and forth on these metrics, probably more so in the third rulemaking than with any other rulemaking simply because we were

trying to strike a balance between what Congress required us to do and required all of you to do. But also to strike a balance between how hard it would be to implement the requirement and how difficult it might be and how much it would cost. So we think we tried to strike that balanced, but we know we're going to hear from all of you as to how well we did. And we know we're going to hear a lot of comments on that and we expect that. And I would encourage you to provide comments on that balance between what Congress required and on difficulty of implementation. I also wanted to mention that we will continue to provide support for the national performance management data set or you'll hear referred to NPMRDS, which we've been providing for about the last three years. It's travel time data on the national highway system which, of course, includes the interstate system which is the subject of the webinar today. And the metrics that we are asking everybody or proposing that everybody collect and produce information on can be produced using the data that's available in the NPMRDS. So like I say, we will continue to support that data set. If you're a State DOT or an MPO that hasn't taken advantage of that data in the past, I would encourage you as part of this process to go and check that data source out because we believe it obviously is going to be very useful and very critical to be familiar with that as part of the metrics we've proposed and the process we've proposed. So, again, thank you for joining us. We know this rule is complicated. You'll get a lot of good information today. It may well be too much to take in all at once. As Francine mentioned the webinar is being recorded if you need to come back and refer to what's being said today. But please, participate in the webinar, ask any clarifying questions you might have. And please get us your comments through the docket by the deadline. That's it for me. Francine, I'll turn it back over to you.

Francine Shaw Whitson: Thanks, Jeff. I appreciate your comments today. So I just want to let you guys know today's webinar is going to be in five parts, the five parts you see here on the screen. After the part three we're going to pause for questions and then we'll pause for questions, again, at part four to respond to any questions that we have not already answered in the chat pod. And then the last thing we'll do is we're going to wrap up by talking about a few little resources and other webinars that's coming up. Let's get started. First, we're going to do a quick view of our transportation performance management provisions that was initiated by MAP-21 as well as our approach to MAP-21. As you see here, a lot of people just ask why are we doing performance management? It's pretty new to this area of transportation although performance management has been around a while. But it's going to help us maximize the return of investment of public dollars that have been entrusted to us, to both transportation agencies, Federal Highway as well as to other planning organizations. What you see here is the current rulemaking schedule. It is actually open. You can see that it includes safety and HSIP rules. We have finalized those. The effective dates of those rules are April 15, last Friday. So we're through. You guys get to do all of the work now for that one, that was the first part of subpart 490. The statewide and metropolitan planning rule the final is anticipated in May of 2016. The pavement and bridge performance measures as well as the highway asset management plan, we anticipate having a final rule out on those in October. And then this particular NPRM we just published last Friday and it will be open for 120 days the closing date of this NPRM is August 20, 2016. Now, as far as a final rule is concerned we can't make that decision when the final rule is going to come out because it depends on how many comments you guys plan to us and how long it takes us to get through those comments. Thank you. So as you can see here, this is the new part 23CFR part 490. It is codified in the code of federal regulations. With the final rules finished it's going to be compromised of subparts A through H. Today, we're going to focus on part F, proposed measures to access freight movement on the interstate. We're going to have additional presentations that provide more details on the other parts of this NPRM and we're going to provide that information at the end of this presentation. So to get started, I'm going to turn it over to Rich. And Rich is going to begin talking about part two. Rich.

Rich Taylor: Thank you, Francine. This is Rich Taylor with the Federal Highway's Office of Operations. Now, we're going to start by introducing you to two proposed freight performance measures and the

concepts that underpin them. In this section, we'll cover the following topics, the two proposed measures, the concepts of metrics, thresholds, measures and targets, the reporting requirements and lastly we'll discuss the data sources including the proposed main data sets, the National Performance Management Research Data Set or NPMRDS and the key units of data used to calculate the metrics. FHWA is required under 23 USC Section 150C to establish performance measures for State DOTs to use to assess the performance of freight movement on the interstate system. FHWA is proposing to establish in subpart F a travel time reliability measure and a congestion measure for State DOTs and MPOs to use to assess freight movement on the interstate system. These two measures apply only to the interstate system portion of the national highway system. The two proposed measures are percent of the interstate system mileage providing for reliable truck travel times and a percent of the internet system mileage uncongested. Before we review the measures in more depth, we wanted to review a few key terms. The measures in subparts E, F and G of this proposed rule are comprised of a metric, a threshold by which the metric is measured and the ultimate measure. I'm going to define those three terms for you now. A metric is a quantifiable indicator of performance or condition as defined by Federal Highway and is applied to each travel time segment. Using a freight movement example, a metric would be average speed. A threshold is the level at which the performance of a reporting segment is included in a measure or not. For subpart C through G the threshold is applied to the metric for each travel time segment and is the same for each segment and for all State DOTs and MPOs. For this proposed rule each measure is calculated based on whether road segments are operating at a specified performance level using a threshold defined by Federal Highways. In this example, a threshold of 50 miles per hour is applied to each road segment so that when average truck speed is above this threshold for a given segment of the interstate highway that segment is considered uncongested. FHWA is requesting comment on the threshold used in each metric calculation. And finally, a measure is an expression based on a metric that is used to establish targets and to assess progress towards achieving the established targets. So in this example here on this slide the measure would be the percent of the interstate system mileage uncongested. By dividing the total number of uncongested miles in this example which is 2510 by the 3000 total miles in the system, the measure is calculated at 83.7 percent miles uncongested. The metric and threshold are applied to each individual travel time segment while the measure applies to the entire applicable network, the interstate system in this case. The State DOTs and MPOs would use this information in establishing their targets and evaluating if the targets have been achieved. In later slides, we'll review the proposed metrics, thresholds and measures for subpart F. Now, let's look at the differences between measures and targets. The measure definition is the same as on the previous slide. It's an expression used to establish targets and to assess progress. A target is a quantifiable level of performance or conditions expressed as a value for the measure to be achieved within a time period required by Federal Highways. In this example, the State DOT or MPO has established target as 80 percent of the road miles defined as uncongested. With over 83 percent of the network uncongested the State DOT or MPO achieved its target. Unlike metrics, thresholds and measures, which are defined by Federal Highways targets are established by State DOTs and MPOs. The State DOTs and MPOS will be required to work together to establish targets that would support the national transportation goals while improving investment decision making processes. All right, the following slides are going to review the geographic areas used by the proposed measures. The maps on the following slides are for illustrative purposes only. I wanted to note that. So basically, there are two primary geographic areas used when establishing targets for the freight movement measures: state boundaries and the MPOs metropolitan planning area. Freight movement measures would require State DOTs to establish state wide targets that represent performance outcomes of the transportation network or area within the respective state boundaries. And MPOs to establish targets that represent performance outcomes of the transportation network or area within their respective metropolitan planning areas. This map shows Illinois in green and two MPOs in Illinois in blue. Please note that Illinois has additional MPOs but the example in this and the following slides focuses only on these two MPOs. The MPO in the northeast which is in the Chicago

region is completely within the state. And the MPO in the south which is in the St. Louis region is a two-state MPO that crosses into Missouri. The interstate system is highlighted in dark blue on the map. Freight movement measures only consider the interstate system, whereas other measures in this proposed rule consider the interstate system and the non-interstate NHS. So in the following slides we will zoom in on Illinois to see how the State DOTs and MPOs establish targets in the Chicago and St. Louis areas based on the MPO and state boundaries. So for freight movement measures MPOs would establish applicable targets for their entire metropolitan planning area regardless of state boundaries; while individual State DOTs would establish targets for only the area within their state boundaries. This map shows that the MPO in the St. Louis area and the MPO in the Chicago area would establish applicable targets for their entire metropolitan planning areas. The Illinois State DOT would establish the targets for the area within a state boundary, including the Illinois portions of both metropolitan planning areas. State DOTs and MPOs should coordinate on the selection of targets to ensure consistency to the maximum extent practicable. All right, on this map, the St. Louis are MPO crosses the Illinois/Missouri state boundary. For those measures that allow for separate MPO and State DOT targets areas with multistate MPOs such as St. Louis would require additional coordination between the multiple State DOTs and the MPO in establishing targets that are consistent and reasonable for each entity. The MPO target would cover the entire metropolitan planning area regardless of the state boundaries while each State DOT would adopt targets for the area within their state boundaries. In the case shown on this map the MPO in St. Louis would establish a target for its entire metropolitan planning area. Illinois would adopt a state wide target that takes into account only the Illinois portion of ST. Louis's metropolitan planning area. And Missouri would adopt a target taking into account the Missouri portion. This concludes our review of the geographic areas used by the proposed freight movement measures. Now, let's turn over to the data being used to do these measures. It is proposed that the freight movement measures be calculated using data from the National Performance Management Resource Data Set or NPMRDS or an equivalent source. The NPMRDS is a travel time data set. It's provided monthly by FHWA to State DOTs and MPOs for their use in performance management activities. It includes travel times represented of all traffic using the highway system for each segment of the road. The highway network is broken into contiguous travel time segments. The average travel times are derived from all vehicle probes traversing travel time segments every five-minutes throughout every day of the year. The five-minute time period is referenced in the proposed rule as a five-minute bin. In addition to recording the travel times of all traffic the NPMRDS also includes a breakdown of travel times for just freight vehicles which would be the data set used in these measures that we're covering in this webinar. Just to provide a sense of scale, there are over 100,000 five-minute bins from each road segment over the course of a year. That's a lot of data. So a little details about the NPMRDS. The segments or the road portions of the road are defined by the Traffic Message Channel or TMC, a location referencing system used by the private sector probe data providers. Travel times are recorded via anonymous vehicle probes of contiguous segments of roadway covering the entire mainline NHS. These segments are defined as travel time segments. Now, sources of the vehicle probes that provide the travel time data could include mobile phones, vehicle transponders or portable navigation devices. And just a note when no probes are detected during a five-minute bin no data is included in the NPMRDS. We'll discuss later how to handle times for these bins when calculating the metrics and measures. This proposed rule allows for the use of an equivalent data set in place of or in addition to the NPMRDS. State DOTs and applicable MPOs would need to agree to use the same equivalent data set for all applicable travel time segments for the entire calendar year. The State DOT would need to submit the data set that they would like to use and request Federal Highway's approval by October 1 prior to the beginning of the calendar year in which the data set would be used to calculate metrics. State DOTs and MPOs would not be able to use the data set until FHWA approves it. For the full detail on equivalent data set requirements, please refer to the proposed rule. In general, the equivalency requirements follow those of the NPMRDS with the focus on the data being actual observed travel times and not travel times derived from imputed methods such as historical travel times or other estimates. All

right, so State DOTs in coordination with MPOs should define a single set of reporting segments of the interstate system for use in determining each of the applicable measures within this NPRM Reporting segments should cover the full extent of the main lines of the interstate system for the freight measures and not interstate NHS for other measures required for reporting a given measure. Mainline highways include only the through travel lanes of any highway and specifically exclude ramps, shoulders, turn lanes, crossovers, rest areas and other payments routes that are not normally traveled by the traffic. Separate recording segments are needed for each section that's traveled. Now, travel time segment lengths as they are defined in the NPMRDS vary based on road features. They can be shorter than one tenth of a mile in urban areas and much longer in rural areas. As proposed in this proposed rule, State DOTs and MPOs can aggregate travel time segments provided by the NPMRDS into reporting segments if they so desire. Reporting segments and urbanized areas would have a maximum length of half a mile unless an individual travel time segment is longer. The maximum length in rural areas would be ten miles unless an individual travel time segment is longer. <inaudible> total segment. Now we'll look at examples of the NPMRDS travel times. So the State DOT would establish in coordination with applicable MPOs a single travel time data set that is comprised of the NPMRDS or equivalent data set that would be used to calculate the annual metrics proposed in this NPRM, that should be used for each year in a performance period. A State DOT and MPO or MPOs should use the same travel time data set for each reporting segment for the purposes of calculating the metrics and measures.

<break in recording from 0:24:58 to 25:20>

Rich Taylor: … every five-minute period of the day, again, which we refer to as five-minute bins in the proposed rule. State DOTs would be required to calculate the metrics for all applicable roadway segments for the required time periods and report them to Federal Highway's annual. This concludes our review of the data requirements and applicability of the proposed measures in this NPRM. Francine, at this time I would like to turn it over to my colleague Nicole Katsikides. Nicole.

Nicole Katsikides: Thank you so much, Rich. Good afternoon or good morning to all of you. I'm Nicole Katsikides with the Federal Highway office of freight and management operations. And I'm going to go through the calculation of the proposed measures for you. Okay. This part of our presentation is going to focus on how to calculate the freight measures in subpart F which are the measures to assess freight movement on the interstate system. As we discussed earlier, there are two measures proposed in the subpart both applicable to the interstate system within a state or MPA. Each measure is calculated using an associated metric which we will define and explain later. For each measure we will also walk through the steps of calculating both the metric and measure. We will base our examples on the data types and structure described in the last section that you heard from Rich as obtained from the NPMRDS. Note, that each example is only intended to illustrate how the metric and measure are calculated and it is not representative of actual data or performance. The proposed truck travel time reliability measure is percent of the interstate system mileage providing for reliable chart travel times. Federal Highway propose the metric threshold and measure in the NPRM. State DOTs and MPOs would use this information in establishing their targets and evaluating if their targets are met. The efficient use of resources to move goods is particularly critical for freight operations on the interstate system. For this reason, the reliability measure proposed in this subpart is designed to support freight trip planning where a high level of certainty is needed to assure on time arrivals for trips occurring at all hours throughout the year. Shippers, carriers, and receivers desire on time and just-in-time delivery of goods. To do this, they consider the longest travel times of a route by looking at the 95th percentile travel time or higher. To be consistent with the industry measures of reliability the Federal Highway proposes to use the 95th percentile travel time in comparison to the 50th percentile travel time as the truck travel time ratio metric. As a threshold Federal Highway proposes a reliability ratio below 1.5. This means that trips take no more than 50 percent longer than normal. Federal Highway recognizes that the freight industry does not find trips that takes

significantly longer than expected acceptable. Therefore, for the purpose of this measure Federal Highway proposes that trips that are longer than 50 percent above normal travel times would be unacceptable to the trucking industry. For calculating the truck travel time reliability metric. The truck travel time reliability measure is focused on the variability in travel times experienced by trucks during all hours of the day and all days throughout the year including weekend days. The method to calculate this measure proposes that State DOTs assemble and organize, a complete year of travel time data for each reporting segment to calculate the metric. The assembled data would include for each reporting segment in each travel direction the average truck travel times to the nearest second for five-minute periods of the day or five-minute bins. This information in those 5-minute bins would be collected throughout the day for every hour of every day from January 1 through December 31 of the same year. So looking at the example in this table which shows data for one segment of the road, you can see a subsample of travel times from February 3 and November 7, a portion of the travel times covering the entire year. Average truck travel times are those travel times to the nearest whole second for freight vehicles shown in the freight vehicles column. Travel times for all traffic, are all also shown to the right of that column. Note that a couple of travel times are not reported and shown as blanks in the table. For those data points that were not reported for a given five-minute interval State DOTs should replace the missing value or not reported value with an observed travel time that represents all traffic on the roadway during the same five-minute interval provided this travel time is associated with travel speeds that are less than the posted speed limit. In this example travel times for freight vehicles were not reported from 7:30 to 7:35 P.M. while travel times for all traffic were listed as 28 seconds. The State DOT would therefore replace the travel time for freight vehicles with the time of 28 seconds. Note, that if the all traffic travel time is associated with a travel speed that is not less than posted speed limit, the State DOT would not replace that travel time. In cases where the five-minute bins for travel time segments are not reported within the data set as shown from 6:10 to 6:15 A.M. in this example, and those times do not include all traffic travel times or the all traffic travel times are nor representative of speeds less than posted speed limit, then a truck travel time would be used that represents travel at the posted speed limit, abbreviated as TTT@PSL. TTT@PSL is calculated to the nearest whole second as shown in the formula on this slide. Truck travel time at posted speed level in seconds equals the segment lengths and miles divided by the posted speed limit miles per hour, by 60 by 60. Note that multiplying by 60 twice converts the speed limit reported in miles per hour to seconds which are the units in the NPMRDS. State DOTs would be required to calculate the metrics for all applicable roadway segments for the required time periods and report them to FHWA annually. Once the full data set has been assembled the normal truck travel time 50th percentile should be determined from the truck travel time data set as the time in which 50 percent of the travel times-- of the times in the data set are shorter in duration and 50 percent are longer in duration. The 50th percentile was chosen based on an analysis of reliability measurement and how it compares to using the 20th percentile which freight operators often reference as the expected travel time. The 50th percentile is the median and the distribution and Federal Highway finds that this makes a reasonable point of comparison. Federal Highway analyzed travel times for several regions in the nation with different population characteristics and found that the 50th percentile provided the most accurate picture of reliability. The 95th percentile truck travel time should be determined from the truck travel time data set as the time in which 95 percent of the times and the data set are shorter in duration. The basis for the 95th percentile travel time is that it represents more certainty of on time arrival for freight stakeholders. As a side note, the 80th percentile was used for calculating the level of travel time reliability for performance of the NHS in subpart E. However, Federal Highway believes that less variation would be acceptable for the freight industry. Both the normal and 95th percentile truck travel times can be determined by plotting the data on a travel time cumulative probability distribution graph or using the percentile functions available in spreadsheet and other analytical tools. The truck travel time reliability metric should be calculated for each interstate system reporting segment as the 95th percentile truck travel time divided by the normal truck travel time, the 50th percentile truck travel time rounded to the nearest hundredth. To determine whether a segment of

the interstate system provides for a reliable truck travel times Federal Highway is proposing the threshold of a TTTR below 1.5. This level represents a condition where travel time could be no more than 50 percent longer than what would be expected during normal travel time conditions. Reliability levels greater than or equal to 1.5 are considered in this rulemaking to be unreliable due to the impact of the additional time that freight operators would need to consider and provide for during trip planning to assure on time arrival. Federal Highway also considers a threshold of 2.0 or twice the normal travel time but determine that these travel times would be longer than most users would consider reliable. Again, Federal Highway welcomes comments on the proposed thresholds. The last step is to calculate the truck travel time reliability measure which is defined by the equation on the top of this slide. See the NPRM for a full detail of this equation. The general format for the calculation of the travel time reliability measures is illustrated by this slide. In this example, the full extent of the interstate system required for reporting of this measure is 8.0 eastbound miles. In most cases, the full extent of the system would be much longer including uniquely defined segments for each direction. But we are using the short length for simplicity of explanation. The first step in calculating the measure would be to consider whether the TTTR meets the defined threshold of less than 1.5. In the example marked with red X's are the road segments that were not providing for reliable trucks travel times. The road segments that did provide reliable travel times are shown with green checkmarks. Based on the definition of reliable truck travel times you can see that the second and third road segments do not provide for reliable travel times. The measure is calculated by summing the segment lengths providing for reliable travel to the nearest thousandth of a mile then dividing that total by the sum of all miles within the full extent of the interstate system. In the example 6.5 miles provided reliable truck travel times dividing 6.5 by the total length of 8 miles we find that 81.3 percent of the interstate system in the example provides for reliable truck travel times. The measure would be reported to the nearest tenth of a percent. Once the State DOT or MPO has calculated the truck travel time reliability measure for all interstate mileage within its boundaries it could compare that mileage to its target percentage of interstate mileage providing for reliable truck travel times. In the illustrative example in this slide, the measure was calculated to be 81.3 percent of the interstate system mileage providing for reliable truck travel times. The State DOT had established a target of 80 percent reliable miles for the calendar year. Therefore, the State DOT achieved its target for the example calendar year shown. In the last section of today's presentation we will review how the state's or MPOs target relates to Federal Highway's determination of significant progress. For now, this concludes our review of the truck travel time reliability measure. So that provides an overview of the calculation for the travel time reliability measure. And before we move on to the peak hour travel time measure are there any questions?

Francine Shaw Whitson: And Nicole, we're actually going to go ahead and we're going to take questions at the end.

Nicole Katsikides: Okay, thank you Francine. Okay. Well, then I will turn it over to Rich Taylor at this time. Thank you.

Francine Shaw Whitson: Actually, it's you.

Nicole Katsikides: Oh, I'm sorry. There was an error in the directions. So moving on, measures to assess freight movement on the interstate system mileage and congestion. The proposed mileage uncongested measure in subpart F is percent of the interstate system mileage uncongested for freight traffic. In general, the truck travel time reliability measure reflects any travel delays that can occur when the mileage uncongested measure considers the additional travel time caused by excessive delays as measured by the metric of average truck speed. As proposed, excessive delays occur when travel speeds are below 50 miles per hour on a segment of the interstate system. So the measure is calculated as the percentage of all segments of the interstate where travel speeds are on average for a full year above the 50 mile per hour fresh hold for freight vehicles which would be considered uncongested. Federal Highway is looking for feedback as to whether 50 miles per hour is an appropriate threshold and

we encourage you to submit comments about this threshold to the docket. The proposed mileage uncongested measure applies to all interstate system roadways. This measure would use the same travel time data set as for truck travel time reliability including average truck travel times to the nearest second for five-minute periods of the day or five-minute bins. And once again the information in those five-minute bins would be collected throughout the day for every hour of every day from January 1 through December 1 of the same year. So to revisit our example in the right side of the table average truck travel times are those travel times to the nearest whole second for freight vehicles shown in the freight vehicles column here. As before, data from 6:10 to 6:15 A.M. and 7:30 and 7:35 P.M. were not reported. And just as before the same rules apply for adjusting data in the travel time data set for the measure as for the truck travel time reliability travel time data set. When truck travel times are not available in the travel time data set for a given five-minute interval State DOTs should replace the missing value with an observed travel time that represents all traffic on the roadway during the same five-minute interval provided this travel time is associated with travel speeds that are less than posted speed limit. In cases where the five-minute bins or travel time segments do not include all vehicle travel times representing speeds less than the posted speed limit a truck travel time would be used that represents travel at the posted speed limit TTT@PSL to the nearest second. So that's just like what you saw in the last-- for the last measure on reliability. Using the travel times for each segment State DOTs and MPOs would calculate the average travel speed during each five-minute bin. The average travel speed in miles per hour is defined as the segment length to the nearest thousandth of a mile divided by the travel time converted from seconds to hours. To convert a travel speed from seconds to hours State DOTs would divide the value in seconds by 60 twice. The result is rounded to the nearest hundredth in miles per hour. As shown in this example the travel time of 32 seconds equates to a travel speed of 56.25 miles per hour. State DOTs and MPOs would repeat this conversion for each average travel time for each 5-minute bin throughout all 24 periods and all days from January 1 to December 31 in the calendar year. Using the average truck travel speeds for each segment State DOTs and MPOs would then determine the average truck speed for the segment, for the full calendar year. To calculate the average for the truck speeds State DOTs would sum the average truck travel speeds for each five-minute bin and divide by the total number of segments in that calendar year; to convert seconds to hours they would multiply this by 60 and then 60. The formula on the left summarizes the process for calculating this metric. The mileage uncongested metric would be calculated to the nearest hundredth. The average truck speed of 50 miles per hour or less is proposed to define the light on interstate system highways. It is based on the assumption that posted speed limits on the interstate system highway are typically 50 miles per hour greater. Federal Highway is considering any travel speeds occurring at or below 50 to be representative of congested conditions for freight flow. Federal Highway is seeking comment on the appropriateness of this speed threshold to indicate congested conditions. So similar to how we have determined the truck travel time reliability measure to calculate the congestion measure State DOTs and MPOs would divide the sum of all segment lengths that provided for uncongested travel by the total system mileage in the example that you see. The full extent of the interstate system is, once again, only eight miles and then segment C and D shown in red did not provide for uncongested travel since the average travel speed for each fell below the threshold of travel speeds greater than 50. As you can see in segment C a travel speed of exactly 50 does not meet the threshold. It is equal to but not greater than 50. The remaining three segments shown in green were considered uncongested. So six total miles were uncongested. This means that overall 75 percent of the system mileage in the example was uncongested. The measure would be reported to the nearest tenth of a percent. The State DOT or MPO could compare the percentage of interstate miles calculated by the measure to its target percentage of interstate mileage uncongested. The example in this slide shows that the measure was calculated to be 75 percent of total interstate miles were uncongested. The State DOT had established a target of 75 percent miles uncongested for the calendar year. Thus the State DOT achieved its target for the example calendar year shown. Note, that if the measure equals the target the State DOT is considered to have achieved the target. This concludes our review of the proposed mileage

uncongested measure. Now, that we've talked about the measures, let's quickly review a couple of the proposed data submittal requirements for the metrics in this subpart. Federal Highway is proposing for State DOTs to report annually on truck travel time reliability and average truck speed metrics for each reporting segment on the interstate system. State DOTs would report the annual outcomes to HPMS by June 15 of the following year, for example, metrics for calendar year 2017 would be reported no later than June 15, 2018. Specifically, Federal Highway is proposing that State DOTs would report annually the information on this slide. Federal Highway would use the data contained within HPMS on August 15 of each calendar year to make a determination of significant progress towards the achievement of the National Highway Freight Program targets as applicable. Please note that if a State DOT does not provide sufficient data and/or information for Federal Highway to make a significant progress determination for the NHFP targets then the State DOT would be considered to not have made significant progress. We will get into the details of the significant progress determination in subsequent slides. This concludes our discussion of the proposed measures and data submittal requirements. In this next section, Francine, would you like to take questions at this time?

Francine Shaw Whitson: Yes, thank you Nicole. Andrew, we're going to take questions now. As you guys saw in the chat pod we are responding to your questions as quickly as we can. But we did not get to all of them so we have a few we're going to pick up. Andrew, can you facilitate that?

Andrew Reovan: Sure thing. I will change the layout so we can see them. So I'm going to start up here with the question from Ben Orsbon. The fifth national goal related to performance management concerns freight movement and economic vitality to improve the National Highway Freight Network to strengthen the ability of rural communities to access national and international trade markets and support regional economic development. What measures does the FHWA intend to use to ensure rural areas are connected to national and international trade markets if they are not located on the interstate system or do not have congestion or significant freight reliability concerns?

Pete Stephanos: I can start with that. This is Pete Stephanos, and Nicole if you want to add in. This, as we mentioned earlier on, this proposed rulemaking includes a measure to assess freight movement on the interstate. The statutory requirement for the establishment of this measure is limited to just freight movement on the interstate. So we actually cannot propose a measure that would require targets and reporting and progress achievement that goes beyond that. So to answer the question we aren't proposing another measure that goes beyond the interstate for this proposed rulemaking. However, it does not prohibit a state to develop a measure on their own or to use similar measures to address rural movements beyond the interstate. Outside of this rulemaking we have a national freight strategic plan that address performance in sort of a more multimodal approach. I don't know, Nicole, if you want to add anything to that?

Nicole Katsikides: Sure. Yes, the Federal Highway Freight Office has a number of resources to help states and MPOs and rural areas measure and understand ways in which they can be connected. In fact, in addition to the state freight planning guidance work that our office has done in terms of freight performance measurement, we've done a lot in terms of how to measure accessibility and economic competitiveness and cost. And we've just recently put out some reference documents so an economic competitiveness and bottlenecks and measuring bottleneck arterials and volumes and a few other things. So one very good piece of work on measuring freight accessibility that does some case study work in rural areas to show how these measures can be used to assess accessibility and then complement with economic development. So that work isn't published yet. It's in the processing phase and so I'm sure Federal Highway will have that available in the coming month or two. But there are a number of resources, if you look, on the Federal Highway freight website and you can google FHWA freight performance and a lot of the resources come up and I encourage you to take a look at that.

Andrew Reovan: Great. Thank you, Nicole. Thank you, Pete. So the next question that we are going to read comes from Terry. How will slow travel times during snow and ice conditions be factored?

Francine Shaw Whitson: There's also a question related to that about extreme weather events from Bruce Lambert. So those two sort of go together.

Nicole Katsikides: Pete, do you want me to take that? or do you want to take it?

Pete Stephanos: Sure, go ahead, Nicole.

Nicole Katsikides: Okay. What we propose does not differentiate for or pull out the weather events or unusual traffic events. It is averaged over the whole year. And looking at the average over the whole year, that one event may not be-- rise up and be as impactful when it's mixed with the congestion of the whole year. So we would definitely welcome comments because we definitely looked at trying to figure out what kind of-- and trying to figure out the most meaningful, yet, simplest measures that we could do here that had that segment level detail. We tried to consider a number of those things. So certainly in the docket, we would welcome any comments on any ideas that you may have to address those types of things.

Andrew Reovan: Great, thank you, Nicole. So the next question comes from Kip. How do you distinguish speed for trucks versus traffic in general?

Nicole Katsikides: So in the NPMRDS data set the freight traffic is not-- so the NPMRDS data set includes data for all traffic, vehicle traffic and freight traffic. And the contractor HERE Traffic, formerly Nokia, what they do is they use their probes that they get for the vehicle traffic but they use the American Transportation Research Institute freight probe data that was developed with Federal Highway as the truck data. So what you're getting, we verify, we know are actual truck probes. And so when you analyze any of that data, you're analyzing only what's coming from an embedded device on a truck that that data is definitely coming from a truck. So that's what is in the NPMRDS. And that's how you know that that's a truck speed versus all traffic.

Andrew Reovan: Great. And the next question is from Dave. Will measures and metrics take into account oversized vehicle speed restrictions?

Pete Stephanos: Nicole, can you try to take that one?

Nicole Katsikides: Sorry. Andrew, could you repeat that please? The sound cut out for me.

Andrew Reovan: Sure. It's from Dave from Wisconsin DOT. Will measures and metrics take into account oversized vehicle speed restrictions?

Nicole Katsikides: I see it. So, again, kind of like the weather, we did not-- when we were considering what to include and what to do that made sense and was very meaningful the measures do not differentiate for different types of speed restrictions or oversized vehicles. We definitely would welcome any ideas or comments that you have in the docket about that.

Andrew Reovan: Great. And it looks like the questions from NC DOT and Bruce were mentioned. There was a conversation between Paul from New Mexico DOT and Dave. So Paul says, "Dave, what percentage of truck traffic on the NHS in Wisconsin is oversized? Just wondering as I'm looking into this in New Mexico." Dave replied, "Paul, not sure, perhaps one percent but that can throw off a segment or a corridor that's near the margin." Paul said, "Thanks and good point." Then Dave said, "Paul, we also have some segments of interstate that are grandfathered for overweight operation. And that will also add complications to the calculations." Did you all want to add to that?

Francine Shaw Whitson: No, I think they've done a good job.

Andrew Reovan: Great.

Francine Shaw Whitson: One last question, and then we get back.

Andrew Reovan: Okay. So it looks like the next question is the one from Oregon DOT. HPMS data is reported at the section level but the TTTR seems to be reported at the system level. How will TTTR be included in HPMS?

Pete Stephanos: This is Pete. I'll start this. We actually are proposing that it's reported at the reporting segment level as Rich described what a reporting segment is either one TMC or a group of TMCs. And it will be reported and the HPMS will be providing additional guidance on how that will be reported to the HPMS. But it will be similar to how other data is reported to HPMS today. So it's not a system level. You're reporting it for the section. So a section of road will have a truck travel time reliability value.

Francine Shaw Whitson: Thanks, Pete.

Andrew Reovan: Great, so I'll turn it back.

Francine Shaw Whitson: We're going back to the presentation and keep those questions coming. We're going to continue to answer them as much as we can and we'll answer some during later on we have more Q&A. So thank you guys. We're going to go ahead and start with part four of our presentation and we're going to talk really quickly about target establishment, reporting and the National Highway Freight Program significant progress determination. All of that's included under subpart A. Keep in mind it builds off the proposal that is finalized that's the part for the safety proposal. And it builds off of what we proposed for payment in bridge. All of it is FAST Act compliance as mentioned earlier. And so we're going to continue covering reporting requirements as they apply to subpart F. So before we get into details we thought it would be real good to provide a really quick a high level overview of different aspects of proposals that we're discussing. We're proposing to use four-year periods of performance in which State DOTs and MPOs would establish, report and assess performance. State DOTs and MPOs would establish the targets for each measure as applicable to the network and in this case they're talking about the interstate system. Two-year targets are going to represent the anticipated performance at the midpoint of each four-year period in the next two years. And the four-year targets are going to represent the anticipated performance at the end of the performance period. State DOTs will be required to establish both two-year and four-year targets for the freight measure. So for the measures in this subpart MPOs would only need to establish four-year target. The MPOs will report their performance targets to their respective DOTs at the beginning of the performance period and then will report on the progress they've achieved in system performance report in the metropolitan transportation plan. So let's get on with the rest of the proposal. So one of the things that's very important for this whole proposal is State DOT and MPO coordination. So we're saying that State DOTs would need to coordinate relevant MPOs on a selection of targets to ensure consistency for all of the measure areas. So for State DOT under the NPRM all State DOTs will establish two-year and four-year targets. The State DOT targets will be established between one year of the effective date of the final rule. Adjustment of the four-year targets will be allowed at the midpoint and, as I said, that's two-years into your performance period. And you would have to report that in your mid-performance period progress report. Now, State DOTs are only required to establish targets for the measures specified in the rule. However, State DOTs do have the option of establishing any additional urbanized targets or non-urbanized targets if they like. Keep in mind, if you establish targets-- any additional targets you established does increase the number of performance targets that you would have to report. So for MPO targets, MPO would establish those targets not more than 180 days after the DOT establishes their targets. MPOs can establish their targets in two ways. They can agree to plan a program project so they contribute towards the achievement of a relevant State DOT target. Or they can commit to their own unique quantifiable targets for the metropolitan planning area. That quickly goes over what's proposed. So this slide summarizes the measures and the target establishment requirements for State DOTs and MPOs. Let me repeat what I just said. State DOT targets

will be two and four-year targets. MPOs would do only four-year targets for each of the proposed measures. Let's talk about reporting real quick. To meet statutory deadlines this first State DOT performance report, believe it or not, is due October 1, 2016. Realizing that you guys will not be able to meet an October 1, 2016 report because the rule will not be final, we will be issuing guidance on this initial state report. What you see here on this slide is the requirement in section 150 E of MAP-21 and we'll be providing further guidance on how to prepare that 150E report starting this summer. So look forward to seeing that. And that's only for State DOTs. The NPRM proposes that three types of reports be submitted. They're called biannual performance reports across the whole four-year period. It will be your baseline report, your mid performance period progress report, and that's when states can adjust their targets at that point. And then a full period progress report and that will be when the states will report on all of the targets they've established. For MPOs, they have to-- they're required to submit certain reports to the State DOTs and in some cases to Federal Highway. Those required reports are listed on this slide and is detailed in an NPRM. The two reports are system performance reports and the CMAQ performance plan report. You'll see more details in the NPRM. So just quickly I want you to see the timeline for the reporting. The four-year performance period, the majority of the measures in this NPRM is supposed to begin January 1, 2018 and end December 31, 2021. That's your first period. As shown, biannual reports will be submitted every two-years on October 1. The full report will be submitted by the same deadline as the baseline report for the next performance period. So just as you're finishing up your full report on December 31, 2021 you'll be also submitting your baseline report for 2022. Okay. Let's talk about significant progress. Under the FAST Act, a requirement for significant progress determination was added. We're going to review that now what was proposed in our proposal. So this slide, this is the proposed freight measure that would be applicable for a significant progress determination. As proposed, FHWA will assess each of the State DOTs targets separately. Each proposed measure in this NPRM is part of a measured group and this is the freight group. So the two measures are truck travel time reliability and the mileage uncongested measures form a single measured group. So if we were to determine that the State DOT did not make significant progress towards winning the measures, that State DOT would need to report the steps it would take to improve performance for all of the targets in this particular group. The State DOT will report their targets in the metric data to FHWA. We will use this information to calculate the measures for the purpose of significant progress determination. We will make a determination of significant progress towards the achievement of the state's two-year and four-year targets after the State DOT submits this full performance period report. So it will be a significant progress determination after the first two-years and then another one at the end of the four-year performance period. If the state does not provide sufficient data or information necessary for us to do a significant progress determination for each of the targets, Federal Highway will determine that the state has not made significant progress towards the achievement of the applicable targets. We will take into consideration extenuating circumstances as documented by the State DOT in the assessment of progress towards the achievement of targets in a relevant state biannual performance report. Now, if we do notify the state that they did not make a significant progress determination then the state will have to describe in the next report or sooner and we recommend at least within six months the steps you're going to take to improve the target achievement by the next report. So we propose that significant progress is made for each two-year, for year target, when either the target is achieved which means actual performance is better or equal two what you established. Or the actual performance is better than baseline performance. So if a target is a declining target, meaning the target is actually equal or worse than baseline performance the target must be achieved in order to make significant progress. If a target is set to be an improvement over baseline performance then significant progress is made if the performance is better than baseline, even if the state did not actually make the target. So we propose that any improvement over baseline which represents a 0.1 percent improvement is going to be viewed as significant progress. So this concludes our introduction on target establishment reporting and the National Highway Freight Program significant progress determination. Next, we're going to review some of the

findings from the regulatory impact analysis. And this is based on what we did for-- excuse me. The regulatory impact analysis listed here is just focused on the freight portion of it. So FHWA first determines that this is a significant action under Executive Order 12866 and within the meaning of our own policies and procedures. And the reason we thought it was significant is because of the widespread public interest in the transformation of the program to be performance based, although, under this order it is not economically significant. So we prepared the regulatory impact analysis and we're going to go over that real quick. So to estimate the cost of proposed rule for freight movement only, freight movement on the interstate, we assess the level of effort expressed in labor hours and in labor categories and the capital that's going to be needed to comply with each component of the proposed rule. As you can see we estimated the cost of proposed rule according to two scenarios. The first scenario assumes that FHWA will continue to make available to State DOTs and MPOs the date sets from the NPMRDS. The second scenario assumes the State DOTs and MPOs will use equivalent data sets of their own. And the cost in terms of the level of effort and labor hours with a calculation of the freight movements include metric calculation costs. It also includes measure of calculation costs. As you can see here on this slide, the total just for the freight is 18.12 million for costs associated with metric and measured calculations. We also looked at doing a breakeven analysis on the change that's needed to justify this cost. More detail in the regulatory impact analysis can be found on the document that's placed on the docket. So this concludes all of the information you ever want to know about freight movement on the interstate and the regulatory impact analysis. We're going to go back to question-and-answer now. But first before we go to question-and-answer I'm going to review some of our resources just so you know and maybe that will help answer some of your questions. How about that? So the Office Of Transportation Performance Management have a website set up where we put fact sheets, published NPRMs, registration for the webinars and all kinds of good information. We also have listed here, as you can see, other webinars we're going to be doing. Tomorrow, we'll performance of the national highway system subpart E. On May 3, we'll have the webinar on CMAQ which includes both your traffic congestion and on-road mobile and that's part G and H. Please note, we're going to have a separate session for the industry, for the freight industry and we haven't yet scheduled that. But if you have signed up for that delivery you'll get a notification. Again, the fact sheets are published on the website. So with that, we're going to pause now, Andrew, and take any other questions.

Andrew Reovan: Great. And let me just switch the layout. So let's see. It looks like the first question that we have not yet addressed comes from AY from Wash DOT. If certain segments are missing in data often throughout the year like more than 70 percent missing and we use the proposed calculation to estimate and fill most of it, is that acceptable?

Pete Stephanos: Yes. So what we're proposing is that if there is missing data as Nicole illustrated in her presentation that it be replaced with either or it be first replaced with the all traffic travel time. And if that's not available replace it with the travel time that would be-- the travel time at posted speed limit or TTT@PSL. If a scenario exists as you-- the question noted where the majority of the data is missing for the five-minute bin then what we're proposing is that all of the data would be filled in with that-- with one of those two values I just mentioned. We do have a white paper that's on the docket that indicates sort of the impact of missing data. Most of it is off the interstate, not on the interstate. But we will refer you to that white paper and we did look at a couple of different alternatives outside of replacement with the posted speed limit, one of them just being ignoring that missing data. So I encourage you to look at the white paper to consider alternatives and if you have any suggestions to post them to the docket.

Andrew Reovan: Great. And the next question comes from Wenjuan from Wash DOT. What do you propose for removing bad travel time data? We have seen excessive long travel times in the NPMRDS data set for some epochs. And when converted to travel time-- travel speed lower than one 1 KPH. Those are anomalies and do not represent average traffic condition.

Pete Stephanos: I'll start, again, and Rich, you can add in, if you want, or Nicole. But, again, just as I mentioned before, this is very similar to when there's missing travel time, if there is a-- travel time represents a very slow speed or a very fast speed, maybe you consider them outliers or anomalies. For the measures that we're talking about today they are to be considered in the calculation. We did do test runs and found that for on the interstate this situation doesn't really occur very much at all. And if it does, it does not impact-- we did not feel it impacted the overall measure. Again, the white paper does look at different approaches to filter out some of those outliers and the impacts. We do have a measure that does filter it out but we're not talking about that measure today. We'll talk about that in the webinars coming up in the future. So to answer the question, you do not remove those they come-- as we're proposing those would be included in the calculation of less than one kilometer per hour of speed.

Andrew Reovan: Great. All right. And the question from PPACG it looks like was answered by the further responses on construction. The next question looks like from NC DOT. In an earlier slide it showed using the travel time based on speed limit to fill in for missing epochs instead of interpolating. Is this correct? Also NPMRDS includes some very high travel times, regarding Wash DOTs comment. Can these epochs be removed or replaced with the speed limit travel time?

Pete Stephanos: Again, as mentioned in the previous response, they are-- no, they will be-- we take them as we are. As I mentioned before, we did look at, again, in the white paper at approaches that do not use posted speed limit. And we did have some results from that so you can look at that white paper. And if you feel like you have something to offer and a comment, please, submit that to the docket.

Andrew Reovan: All right. And then we have a question that also from AY of Wash DOT. We have completed NPMRDS geometry to Washington HPMS roadways. Do we report performance measures based on our completed geometry? Or original NPMRDS geometry? Does it matter to you? Completed geometry segment links may be slightly different from the original which might effect when they're converted to miles per hour.

Pete Stephanos: We don't cover that specific scenario in the NPMRDS. So I encourage the question to be posted on the docket, so we can consider it in the final rule.

Andrew Reovan: Great. And then we have a question from Matt Hardy. Will there be a separate webinar on the GHG measures/questions? It is not part of the subparts or anything. Will that be discussed in the CMAQ webinar?

Francine Shaw Whitson: Hi, Matt. The GHG measures, greenhouse gas measures will not have a separate webinar. We have outlined questions that we are looking for input and feedback on but there will not be a separate webinar on that particular proposal. Nor will it be included in the CMAQ webinar.

Andrew Reovan: Great. All right. And then from Brian Shay [ph?] from ITD. What if we have interstate sections where the current trucks speeds are less than 50 miles per hour due to steep grades?

Pete Stephanos: Yeah, Nicole, you can add in if you want here. We addressed some of these questions in our first webinar. As Nicole already mentioned all of that data would be included in the actual measure. And if you have any suggestions on how we would better consider these particular situations please send it to the docket.

Andrew Reovan: Great. And then AY, again, asked about the link to the white paper which I believe is posted below. It looks like we also have a question from VDOT, will you have a format for the October 1, 2016 submittal? And apologies there's a response in there in the chat pod.

Francine Shaw Whitson: Yeah, I caught that. I know a lot people are concerned about that, once they see the report the interstate report, we call it the 150E report it's not going to be a whole big burden on states the guidance that we put out. We're going to be putting it out this summer. We just want to check

some legalities and things before we actually issue the guidance. But you will be seeing that probably in early June.

Andrew Reovan: All right, well, I don't see any other questions in the chat pod. So I'll turn it back to you Francine.

Francine Shaw Whitson: Thanks, Andrew. And so as we've been talking about commenting and stuff we thank you very much for all of the clarifying questions that you asked on this webinar. If you have particular comments that you would like to submit, please submit the comments directly to regulations.gov. You see the link there FHWA.2013-0054. You must put that into reuglations.gov in order to comment. If you find you still have clarifying questions after this webinar, you can send them directly to me at my email address or to performance measure rulemaking email address. We will respond to you at that time. Thank you very much. We appreciate all of the time you guys gave us this afternoon to listen about freight measures. And we look forward to getting all of your comments on the docket. Have a great afternoon or late morning, whichever time zone you're in. Thank you, Andrew.

Andrew Reovan: Thank you, Francine. And that concludes today's freight webinar for the system performance freight and CMAQ measures NPRM. I'll just note that a download of today's slides is available on the left of your screen. Feel free to click on the file and select download files to save a copy to your machine. Thank you everyone and that concludes the webinar.

Operator: Thank you. And ladies and gentlemen, that does conclude your conference call for today. Thank you for participation and for using AT&T executive teleconference service. You may now disconnect.