

MAP-21 NPRM for National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program

The Washington State Department of Transportation (WSDOT) appreciates the opportunity to work with AASHTO, FHWA, and USDOT in a collaborative fashion to prepare for MAP-21 rule making. In general, WSDOT supports the National Performance Management Measures relating to pavement and bridge condition (23 CFR Part 490, Federal Register Vol. 80, No. 2). The following comments are offered to AASHTO in order to support the response to the proposed rule. These comments are specific to perceived impacts to WSDOT. Additional analysis and comments may be forthcoming and may include input from Washington State's MPOs.

WSDOT BACKGROUND

WSDOT has a long history of pavement asset management. A systematic data collection process was started in the late 1960s, and Washington was one of the first states to implement pavement management systems in the late 1970s. Through the decades, WSDOT has been at the forefront of performance based asset management.

Pavement

The Washington State Pavement Network includes pavements on state highways managed by the WSDOT and pavements on local roads owned and managed by Local Agencies (mainly cities and counties) or managed by Metropolitan Planning Organizations (MPOs). The total number of lane miles reported is 14,718 on the National Highway System (NHS), 11,391 on state highways (including interstate), and 3,321 on local agency roads. The number of lane miles on the NHS Interstate is 3,999.

Bridge

WSDOT has also has a long history of bridge asset management. Inspections on bridges in Washington State were performed well before federal requirements mandated National Bridge Inventory standards in the 1970s. WSDOT developed unique bridge management system elements in the early 2000s that have allowed more efficient asset management. WSDOT has been innovative in new bridge design and in many preservation related techniques, resulting in an effective Bridge Management System for its overall network. The Washington State Bridge Network includes bridges on state highways managed by the WSDOT and bridges on local roads owned and managed by Local Agencies (mainly cities and counties). The total number of bridges as of June 2014 was 7,313 (61.8 million sq. ft. of deck area). The number of bridges on the NHS was 2,458 (43.0 million sq. ft. of deck area), with 90% being on state highways.

Implementation of MAP-21 Performance Requirements

WSDOT Agrees...

Effective date:

- WSDOT agrees with one common effective date for all rules - One common effective date for all the rules would streamline reporting; otherwise there may be many different dates to track for the 12 different reporting measures identified in MAP-21. Given how much the three different NPRMs are linked (Metropolitan Planning, Performance Measures for Pavement & Bridge, and Asset Management) it will be difficult to start reporting on any one of these without knowing the final rules of the others.

Thresholds:

- WSDOT agrees the performance thresholds should be reassessed - The performance threshold should be reassessed and adjusted after the first full performance period.
- The requirements for the Data Quality Management Program are adequate as listed in 490.319(c).

WSDOT Disagrees...

Thresholds:

- WSDOT disagrees that the minimum threshold should be more stringent over time. For the final rule, FHWA is suggesting that states “establish a minimum condition threshold that would become more stringent over time, to replace in the future the proposed initial 5% level, in order to reflect the improvements made to the system over time; and the lowest minimum condition level that could be maintained for Interstate System pavements in the future.” (See p. 371 of draft rule) This proposal assumes system improvement over time, which may or may not be possible depending on funding limitations.

Definition of significant:

- WSDOT disagrees with the definition of significant progress - the definition of “significant” progress is a change of 0.1% over a four-year period (or an average of 0.025% per year). This number seems arbitrary, and is likely less than the year-to-year variation caused by random noise. Will this 0.1% also be used to indicate a “significant” drop in performance? WSDOT proposes that “significant” change be based on a statistical evaluation of the data submitted by the state, so that the standard deviation of the data can be used to determine the level of significance.

Questions or Clarifications

Reporting and MPO engagement:

- Section 490.107(b) references paragraphs b (1), (2), and (3), which state that DOTs shall submit the first Baseline Performance Report to FHWA by October 1, 2016 (See p. 382, bottom of middle column). Would a rule finalized after October 1, 2015, result in less than 12 months to establish statewide targets for bridge and pavement conditions? WSDOT requests the full 12 months for DOTs to set targets and an additional six months for MPOs to set targets before the first baseline report is due. A shorter timeline would result in a much shorter timeframe to work collaboratively with MPOs to establish statewide targets.

Target setting:

- The proposed rule should include specific language stating that target levels may call for improving, holding constant, or declining conditions. FHWA's recognition that targets can indicate a decline in asset performance (whether due to inadequate funding or otherwise) is set forth only in the preamble of the NPRM but not in the proposed rule itself. WSDOT recommends that specific language be included in the rule itself to confirm this essential point.

Subpart A —General Information

§490.101 Definitions.

WSDOT Agrees...

- WSDOT agrees with the definitions for: Full Extent, HPMS, Mainline highway, Measure, Metric, NBI, Non-Urbanized Area, Performance period and Target.

§490.103 Data requirements.

WSDOT Agrees...

- WSDOT agrees it can submit data collected from HPMS on the Interstate System in calendar year 2016 by April 15, 2017.

§490.105 Establishment of performance targets.

WSDOT Disagrees...

- WSDOT disagrees with FHWA's proposal to hold State DOTs accountable for the condition of assets they do not control. WSDOT has concerns about including non-State DOT assets in the target setting and condition measurement process, including:
 - DOTs may not be able to collect data on assets they do not own. According to the proposed rule, segments for which no data is reported will be classified as "Poor" condition. This may result in penalties for not reporting data that DOTs cannot legally collect.
 - DOTs may have no authority to determine how funding is spent on non-State DOT controlled assets. In the event data is made available to State DOTs for reporting purposes, DOTs should not necessarily be held responsible for maintaining the assets or contributing to their improvement.
- WSDOT disagrees with the wording, "to ensure consistency, to the maximum extent practicable." WSDOT recommends changing this to, "to facilitate or encourage consistency." This modification would reduce the chances of unreasonable expectations on states during implementation. A similar change should be made in 490.105(f)(2).

Questions or Clarifications

Effective Date for bridge and pavement rule:

- FHWA anticipates the final rule for this NPRM to be effective no later than October 1, 2015. WSDOT would like to see a final rule that addresses how new dates are established if this deadline is not met. WSDOT would like to see one common effective date for all of the performance measures so there is not a staggered reporting process for the various rules.

- WSDOT suggests delaying MPO target setting until the start of the second full performance period, for the following reasons: first, full extent performance data for cracking, rutting, and faulting will only be collected for the second half of the first performance period (mid performance report). Until this data is collected and evaluated, the MPOs might have a difficult time understanding the complexities of this data to set targets. Second, this will allow for additional time for States and MPOs to further develop their collaborative efforts in response to this NPRM and Asset Management Plan NPRM (23 CFR Part 515).

§490.107 Reporting on Performance Targets.

WSDOT Agrees...

- WSDOT agrees with FHWA providing MPOs maximum flexibility in setting targets; using this process to encourage best practices rather than to implement penalties.

Questions or Clarifications

Templates:

- FHWA states they will provide a reporting template for state DOTs to use for reporting progress (See p. 383, 2nd column). The reporting template is another item that could greatly increase the workload without the opportunity for comment. WSDOT would like FHWA to share a draft template format prior to the final rule to ensure that states can populate it.

Baseline Performance Period Report:

- The NPRM text references the submission of the baseline performance report by October 1, 2016 (See p. 383 2nd – 3rd column & p. 384 2nd column). As mentioned under the comments for Section 490.105 noted above, this is the “hard date” within the NPRM that serves as the driving force for getting the rule finalized absolutely NO LATER than this date and submitting targets by the same date. WSDOT believes this is an unrealistic task and is concerned as October 1, 2016 draws closer. Also, the Mid Performance Period Progress Report (p. 383 3rd column) and the Full Performance Period Progress Report (p. 384 2nd column) are locked into October 1, 2018, and October 1, 2020, respectively per NPRM language. WSDOT would like to see the methodology explained or provided for changing these dates if the rule is not finalized by October 1, 2015.
- Will these reporting and data submission timelines apply to the other upcoming NPRMs?

§490.109 Assessing Significant Progress toward Achieving the Performance Targets for the National Highway Performance Program.

WSDOT Agrees...

Extenuating circumstances:

- WSDOT agrees that FHWA should consider extenuating circumstances documented by a state DOT in the assessment of progress toward the achievement of NHPP targets in the relevant State Biennial Performance Report (See p. 385, 2nd column).

WSDOT Disagrees...

Formula calculation:

- WSDOT disagrees and is concerned with the formulas for calculating the national performance measures for pavement where weighting is proposed to be based on lane-miles of roadway. WSDOT prefers using Vehicles Miles Traveled (VMT) as the formula for this calculation. When pavement conditions are shown by VMT, roadways with more traffic are weighted more heavily than less traveled roads. Also weighting pavement conditions by VMT better accounts for the higher preservation costs to maintain and preserve roads with more traffic.

Questions or Clarifications

- 490.109(e)(5)(B) states that “lack of funding” is considered an “Extenuating circumstance” that FHWA considers grounds to declare “progress not determined” for a DOT.
- Does the FHWA anticipate current national funding, and its distribution, are sufficient to maintain or improve the goals set forth in this new rule? Will added funds be made available if not?

§490.111 Incorporation by reference.

No comment

Subpart C—National Performance Management Measures for Assessing Pavement Condition

§490.301 Purpose.

WSDOT Agrees...

- WSDOT agrees that states should be given flexibility for non-Interstate NHS targets.

§490.303 Applicability.

WSDOT Agrees...

Definitions:

- WSDOT agrees with defining mainline highways by excluding ramps, shoulders, turn lanes, crossovers, rest areas, and non-normally traveled pavement surfaces that are not part of the roadway normally traveled by through traffic.

§490.305 Definitions.

No comments

§490.307 National Performance Management Measures for Assessing Pavement Condition.

No comments

§490.309 Data requirements.

WSDOT Agrees...

- WSDOT agrees that the IRI values are appropriate because they have been used by FHWA for a long time.
- WSDOT agrees that a 0.1 mile uniform section length is appropriate.
- WSDOT agrees with the FHWA conclusion related to evaluated lane-mile distribution of the Interstate System pavement conditions among different traffic volumes, climatic conditions, and terrain types. The data shows no evidence to conclude that there are significant differences in percent lane-miles of the Interstate System in Poor pavement condition among the Interstate System pavement sections in these various areas.
- WSDOT agrees to reduce the current frequency of data collection for IRI on the non-Interstate NHS from annual data collection to biennial data collection.

WSDOT Disagrees...

- WSDOT disagrees that the FHWA method for addressing missing or invalid data would provide an accurate assessment of network level conditions. A better solution may be to allow states to have missing data up to 5% of total due to construction zones and problems with data quality.
- WSDOT disagrees with the following clause related to the method for the collection of pavement data "...or one consistent lane if the rightmost travel lane is not accessible." WSDOT recommends simply using the term "one consistent lane." WSDOT's current practice is to consistently pick the second lane from the rightmost in cases where there are more than three lanes in the same direction of travel, in order to find the lane with the most truck traffic.

Questions or Clarifications

Data collection and costs:

- WSDOT has IRI data for the MPOs for the first four years when only IRI is required. For additional performance measures like rutting, cracking, and faulting, data collection and analysis will take additional time and resources. With the current process that WSDOT uses to analyze cracking, rutting and faulting data, the added analysis would require additional new resources.

§490.311 Calculation of Pavement Metrics.

WSDOT Agrees...

- WSDOT agrees with reporting metrics for the entire Interstate System by April 15 of each calendar year.

§490.313 Calculation of Performance Management Measures.

WSDOT Disagrees...

- 490.313(b): WSDOT agrees that although the Good/Poor criteria are somewhat arbitrary, this is mitigated by the fact that two criteria must fail in order to be considered Poor, and that targets can be set high or low to offset the effects of the criteria. WSDOT does not see the need for a "fair" category.
- 490.313(b)(1): WSDOT disagrees with FHWA's proposal to assign IRI thresholds based on area population. Speed limit, rather than population, should describe variations in IRI thresholds for urban and rural roadways.

It is difficult to collect and interpret IRI data from urban areas because of traffic and roadway features.

- In stop-and-go driving conditions, operational limitations of current data collection equipment can introduce errors that are misinterpreted as higher roughness. These measurement errors may contribute to an inaccurate assessment of pavement condition.
- Urban roadways are rougher than rural roadways due to surface drainage, intersections, curb and gutter, and utility accommodations. A higher IRI ride quality may be acceptable to the public since traffic speeds are lower and movement is intermittent.

WSDOT recommends using IRI thresholds based on speed limit to delineate condition thresholds, e.g. non-Interstate NHS pavements with IRI \geq 220 in areas with posted speed \geq 45mph, are considered to be in Poor condition. WSDOT recommends this change because it would account for the lesser impact that roughness has on slower moving vehicles, and the greater impact it has on faster moving vehicles. WSDOT recommends separating the IRI metric ranges by Interstate and non-Interstate NHS (see table).

The State DOT may still set optional performance targets for urbanized and rural areas based on 23 USC 150(d)(2) – “Different approaches for urban and rural areas.”

WSDOT recommends the following IRI threshold/metric ranges and the associated speed limits to assess Poor condition on NHS roads.

NHS Pavement Conditions, WSDOT	Interstate	Speed ≥ 60 MPH	IRI ≥ 170	Unacceptable (Poor)
	Non-Interstate	Speed ≥ 45 MPH	IRI ≥ 220	Unacceptable (Poor)
	Non-Interstate	Speed ≤ 40 MPH	IRI ≥ 300	Unacceptable (Poor)

- 490.313(e): WSDOT disagrees with the proposal that full extent IRI be the indicator of condition during the phase-in period (initial 2 years) for non-Interstate NHS roads. This creates measurement and target setting inconsistencies within the first four year period.
 - Alternative 1: All four metrics, samples only - Use Highway Performance Management System (HPMS) Samples, including cracking, rutting, faulting, and IRI, for non- Interstate NHS in order to keep condition reporting consistent across the entire four year performance period.
 - Besides receiving the benefits of consistent reporting, the sole reporting of full extent IRI may exaggerate the “Poor” condition. In WSDOT’s case, when using just an IRI based assessment, the preliminary percent poor are 17%. When using the HPMS Sample Sections criteria of cracking, rutting, faulting and IRI, the preliminary percent poor calculated is 6.4%. Since all states are currently required to collect sample sections for all these criteria according to HPMS requirements, there should be no additional burden to states.
 - *Note: MPO would need to adopt the statewide targets; they could not set their own specific targets using sample data, the sample data would not be sufficient to represent their Metropolitan Planning Area.*
 - Alternative 2: Exempting non-Interstate NHS from performance measurement and target setting until 2020, full performance progress report.

Questions or Clarifications

VMT vs. lane miles:

- “The performance measures for pavements on the Interstate System and the non-Interstate NHS would be the Percentages of lane-miles classified in Good and Poor Condition.” (See p. 363, column 2). WSDOT has moved toward reporting pavement conditions by VMT rather than by lane miles, as this is a better reflection of the impact of overall pavement condition on the traveling public. WSDOT would like VMT used instead of lane-miles.

§490.315 Establishment of minimum level for condition of pavements.

WSDOT Disagrees...

- WSDOT disagrees with a 5% threshold for the level of allowable poor pavements on the Interstate. Such a threshold assumes states will have adequate funding to maintain system conditions at the 5% level, which may not be possible. Instead WSDOT proposes a 10% threshold for Poor pavement conditions. FHWA’s 5% proposed threshold may result in states taking a worst-first approach, forcing states to reduce the amount of lane miles

in Good condition to pay for their ability to decrease the percentage of pavements in Poor condition. FHWA's proposed 5% threshold would encourage this trade-off. WSDOT suggests allowing the asset management and state target setting process to guide the proper decisions.

§490.317 Penalties for not maintaining minimum Interstate System pavement condition.

No comment.

§490.319 Other requirements.

WSDOT Agrees...

- WSDOT agrees with the data quality measures to assess pavement conditions.

Questions or Clarifications

- WSDOT can meet the October 1, 2016, Baseline Performance Report deadline - However, WSDOT will need to work with MPOs to develop and agree to performance targets that must be reported in October 2016. The relationship of timing of the final rules and the timeline for working with MPOs is a concern. A webinar given on January 8, 2015 mentioned that guidance would be provided to state DOTs if the pavement and bridge performance rules became effective later than October 1, 2015, however this type of guidance is not mentioned within the NPRM. WSDOT requests the full 12 months for DOTs to set targets and an additional six months for MPOs to set targets before the first baseline report is due.

Subpart D—National Performance Management Measures for Assessing Bridge Condition

§490.401 Purpose.

No comment

§490.403 Applicability.

Questions or Clarifications

- **Bridge assessment** The ownership of each of the border bridges between Oregon and Washington has been defined. It would be appropriate for the state that has been assigned the primary ownership to include those bridges in their calculations.

§490.405 Definitions.

WSDOT Agrees...

- WSDOT agrees with the definition for structurally deficient bridges to be consistent with the NBI condition rating of 4 or less.

§490.407 National performance management measures for assessing bridge condition.

WSDOT Agrees...

- WSDOT agrees with submitting current NBI data on highway bridges to FHWA no later than March 15 of each year (See p. 376, 2nd column).

§490.409 Calculation of National performance management measures for assessing bridge condition.

- No comment

§490.411 Establishment of minimum level for condition of bridges.

WSDOT Agrees...

- WSDOT agrees with the use of structurally deficient in setting the minimum condition level for bridges on the NHS.
- WSDOT agrees with the minimum condition rating/requirements method

WSDOT Disagrees...

- WSDOT disagrees with FHWA's proposal to classify bridges according to bridge Condition and Appraisal Ratings. Bridges should only be classified according to bridge Condition Ratings, including superstructure, substructure, deck, or culverts. Appraisal Ratings, including structural evaluation and waterway adequacy, are not standard measures of structural condition.

§490.411 Establishment of minimum level for condition for bridges.

WSDOT Agrees...

- WSDOT agrees with the use of structurally deficient in setting the minimum condition level for bridges on the NHS.
- WSDOT agrees with the minimum condition rating/requirements method.

§490.413 Penalties for not maintaining bridge condition.

No comment