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National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program; Proposed Rule

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Part 490

[Docket No. FHWA–2013–0053]

RIN 2125–AF53

National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of proposed rulemaking (NPRM); request for comments.

SUMMARY: Section 1203 of the Moving Ahead for Progress in the 21st Century Act (MAP–21) declared that performance management will transform the Federal-aid highway program and refocus it on national transportation goals, increase accountability and transparency of the Federal-aid highway program and improve project decisionmaking through performance-based planning and programming. Section 1203 of MAP–21 identifies the national transportation goals and requires the Secretary to promulgate a rule to establish performance measures in specified Federal-aid highway program areas. The FHWA is issuing three separate NPRMs to meet this requirement, and this is the second NPRM.

This NPRM proposes to establish measures for State Departments of Transportation (State DOTs) to use to carry out the National Highway Performance Program (NHPP) and to assess the condition of the following: pavements on the National Highway System (NHS) (excluding the Interstate System), bridges on the NHS, and pavements on the Interstate System. The NHPP is a core Federal-aid highway program that provides support for the condition and performance of the NHS and the construction of new facilities on the NHS, and ensures that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. This NPRM proposes regulations for the new performance aspects of the NHPP, which address: measures, targets, and reporting. The FHWA intends to make these performance aspects of the NHPP available to the public in a format that is easily understandable and accessible for download.

This second NPRM also includes a discussion of the collective rulemaking actions FHWA has or intends to take to implement MAP–21 performance-related provisions.

DATES: Comments must be received on or before April 6, 2015. Late comments will be considered to the extent practicable.

ADDRESSES: You may submit comments identified by the docket number FHWA USDOT–2013–0053 by any one of the following methods:

Fax: 1–202–493–2251;

Mail: U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590;

Hand Delivery: U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays; or

Electronically through the Federal eRulemaking Portal: *http://www.regulations.gov.* Follow the online instructions for submitting comments.

Instructions: All submissions must include the agency name, docket name and docket number or Regulatory Identification Number (RIN) for this rulemaking (2125–AF53). Note that all comments received will be posted without change to *http://www.regulations.gov,* including any personal information provided. Please see the Privacy Act heading in the **SUPPLEMENTARY INFORMATION** section of this document for Privacy Act information related to any submitted comments or materials.

Docket: For access to the docket to read background documents or comments received, go to *http://www.regulations.gov* at any time or to U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Francine Shaw Whitson, Office of Infrastructure, (202) 366–8028, or Anne Christenson, Office of Chief Counsel, (202) 366–1356, Federal Highway Administration, 1200 New Jersey Avenue SE., Washington, DC 20590–0001. Office hours are from 8:00 a.m. to 4:30 p.m. e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: The FHWA has other rulemaking efforts underway to establish the measures required under 23 U.S.C. 150(c). The first performance measure NPRM covered the proposed performance management measures to carry out the Highway Safety Improvement Program (HSIP) and to assess serious injuries and fatalities per vehicle mile traveled (VMT), and the number of serious injuries and fatalities. That NPRM was published on March 11, 2014 (79 FR 13846). The third performance measure NPRM will focus on measures for the performance of the NHS, the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, and freight movement on the Interstate System. This last NPRM will also include a discussion that summarizes all three of the proposed rules to establish the measures required under 23 U.S.C. 150(c).

This current NPRM also proposes: The additional definitions that would be applicable to the proposed regulations; the process State DOTs and Metropolitan Planning Organizations (MPOs) would use to establish performance targets that reflect the measures proposed in this rulemaking; and the methodology State DOTs would use to assess compliance with the target achievement provision specified in MAP–21. The NPRM also proposes the process State DOTs would follow to report on progress toward the achievement of pavement and bridge condition-related performance targets. Finally, this NPRM proposes minimum levels for pavement and conditions on the Interstate System.

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I. Executive Summary

A. Purpose of the Regulatory Action

The MAP–21 (Pub. L. 112–141) transforms the Federal-aid highway

program by establishing new requirements for performance management to ensure the most efficient investment of Federal transportation funds. Performance management increases the accountability and transparency of the Federal-aid highway program and provides for a framework to support improved investment decision making through a focus on performance outcomes for key national transportation goals. As part of performance management, recipients of Federal-aid highway funds would make transportation investments to achieve performance targets that make progress towards national goals. The national performance goal for bridge and pavement condition is to maintain the condition of highway infrastructure assets in a state of good repair. The purpose of this rulemaking is to implement these MAP–21 performance management requirements.

Prior to MAP–21, there were no explicit requirements for State DOTs to demonstrate that their transportation program supported national performance outcomes. State DOTs were not required to measure condition, to establish targets, to assess progress towards targets, or to report on pavement and bridge condition in a nationally consistent manner that FHWA could use to assess the condition of the entire system. It was also difficult for FHWA to look at the effectiveness of the Federal-aid highway program as a means to address surface transportation performance at a national level.

This proposed rule is one of several rulemakings that DOT is or will be conducting to implement MAP–21's new performance management framework. The collective rulemakings would establish the regulations needed to more effectively evaluate and report on surface transportation performance across the country. This rulemaking proposes regulations that would: provide for greater consistency in the reporting of pavement and bridge conditions; require the establishment of targets that can be aggregated at the national level; require reporting in a consistent manner on progress achievement; and lastly require State DOTs to make significant progress. It would also require State DOTs to maintain their bridges and pavements at or above a minimum condition level. State DOTs would be expected to use the information and data generated as a result of the new regulations to better inform their transportation planning and programming decisionmaking. The new performance aspects of the Federal-aid program that would result from this rulemaking would provide FHWA the ability to better communicate a national performance story and to more reliably assess the impacts of Federal funding investments.

The FHWA is required to establish measures through a rulemaking to assess performance in 12 areas generalized as follows: (1) Serious injuries per VMT; (2) fatalities per VMT; (3) number of serious injuries; (4) number of fatalities; (5) pavement condition on the Interstate System; (6) pavement condition on the non-Interstate NHS; [1] (7) bridge condition on the NHS; (8) traffic congestion; (9) on-road mobile source emissions; (10) freight movement on the Interstate System; (11) performance of the Interstate System; and (12) performance of the non-Interstate NHS.[2] This rulemaking is the second of three NPRMs that together propose the establishment of performance measures for States DOTs and MPOs to use to carry out Federal-aid highway programs and to assess performance in each of these 12 areas. This rulemaking seeks to establish national measures for areas 5, 6, and 7, in the above list. Other rulemakings would establish national measures for the remaining areas in the above list. This NPRM proposes to establish performance measures to assess pavement and bridge conditions on the Interstate System and non-Interstate NHS for the purpose of carrying out the NHPP. The four proposed measures to assess pavement condition are: (1) Percentage of pavements on the Interstate System in Good condition; (2) Percentage of pavements on the Interstate System in Poor condition; (3) Percentage of pavements on the NHS (excluding the Interstate System) in Good condition; and (4) a Percentage of pavements on the NHS (excluding the Interstate System) in Poor condition. The two proposed performance measures for assessing bridge condition are: (1) Percentage of NHS Bridges Classified as in Good Condition; and (2) Percentage of NHS Bridges Classified as in Poor Condition.

This NPRM also proposes to establish the minimum level for pavement condition for the Interstate System as required by the statute. In addition, this NPRM proposes to establish the process for State DOTs and MPOs to use to establish and report targets and the process that FHWA will use to assess progress State DOTs have made in achieving targets.

[1] ''Non-Interstate NHS'' and ''NHS (excluding the Interstate)'' are used interchangeably throughout this NPRM and have the same meaning.

[2] These areas are listed within 23 U.S.C. 150(c), which requires the Secretary to establish measures to assess performance or condition.

B. Summary of the Major Provisions of the Regulatory Action in Question

The FHWA proposes the establishment of: Performance measures to be used by State DOTs to assess the condition of pavements and bridges and to carry out the NHPP; the process for State DOTs and MPOs to establish targets for each of the measures; the methodology to determine whether State DOTs have achieved their targets; the process for State DOTs to use to report on progress for targets; and the minimum levels for pavement conditions on the Interstate System for purposes of carrying out 23 U.S.C. 119(f)(1). The FHWA also proposes to incorporate the minimum level for condition of bridges on the NHS as required by 23 U.S.C. 119(f)(2).

This NPRM proposes to add to subpart A general information applicable to Part 490, to include requirements for target establishment, reporting on progress, and how determinations would be made on whether State DOTs have made significant progress toward NHPP targets. Subpart A also would include definitions and clarify terminology associated with target establishment, reporting, and making significant progress. Subparts C and D propose performance measures to assess pavement and bridge conditions. Section 490.105 proposes the process to be used by State DOTs and MPOs to establish targets for each of the four pavement and two bridge measures. The State DOTs would establish 2- and 4-year targets for a 4-year performance period for the condition of infrastructure assets. State DOTs would establish their first statewide targets 1 year after the effective date of this rule. The MPOs would establish targets by either supporting the State DOT's statewide target, or defining a target unique to the metropolitan area each time the State DOT establishes a target. The MPOs would be provided a 180-day period following the date at which the State DOT establishes a target to establish their pavement and bridge targets.

Section 490.107 proposes performance reporting for State DOTs and MPOs. The State DOT would submit their established targets in a baseline report at the beginning of the performance period and report progress at the midpoint and end of the performance period. State DOTs would be allowed to adjust their 4-year target at the midpoint of the performance period. The MPOs would not be required to provide separate reporting to FHWA; however, State DOTs and MPOs

would need to agree to a target establishment reporting process in the Metropolitan Planning Agreement, in accordance with 23 CFR part 450.

Section 490.109 proposes the method FHWA would use to determine if State DOTs have achieved or have made significant progress toward the achievement of their NHPP targets. Significant progress would be determined from an analysis of estimated performance/condition and measured performance/condition of each of the NHPP targets. If applicable, State DOTs would have the opportunity to discuss why targets were not achieved or significant progress was not made. If a State DOT fails to achieve significant progress for two consecutive biennial performance reporting periods (total of 4 years), then the State DOT is required to document in their next biennial performance report and encouraged to document sooner, the actions they will undertake to achieve their targets.

In subparts C and D, §§ 490.305 and 490.405 propose the pavement and bridge performance measures and program-specific definitions to ensure that the proposed performance measures are clear and consistent.

Sections 490.307 and 490.407 propose that State DOTs and MPOs use a total of six measures to assess the condition of pavements and bridges on the NHS. The proposed pavement measures would be applicable to both Interstate and non-Interstate NHS mainline roads and the proposed bridge measures would be applicable for all NHS bridges, including bridges on ramps that connect to NHS. Both the pavement and bridge measures would reflect the percentage of the system in good and poorp condition. The measure calculations would utilize data documented in the Highway Performance Monitoring System (HPMS) and in the National Bridge Inventory (NBI).

Section 490.315 proposes the minimum level for condition of pavements on the Interstate System as required by 23 U.S.C. 150(c)(3)(A)(iii).

Section 490.411 proposes to incorporate the minimum level for condition of bridges as required by 23 U.S.C 119(f)(2).

C. Costs and Benefits

The FHWA estimated the incremental costs associated with the new requirements proposed in this regulatory action that represent a change to current practices for State DOTs and MPOs.[3] The FHWA derived the costs of components by assessing the expected increase in level of effort from labor and additional capital needed to standardize and update State DOT data collection and reporting systems as well as the increase in level of effort from labor to establish and report targets. The FHWA sought opinions from pavement and bridge Subject Matter Experts (SME) to estimate impacts of the proposed rule. Cost estimates were developed based on assumptions informed by information received from SMEs.

To estimate costs, FHWA multiplied the level of effort, expressed in labor hours, with a corresponding loaded wage rate that varied by the type of laborer needed to perform the activity.[4] Where necessary, capital costs were included as well. Following this approach, the 10-year undiscounted incremental costs to comply with this rule are $196.4 million.

The FHWA expects that, upon implementation, the proposed rule would result in some significant benefits, although they are not easily quantifiable. Specifically, FHWA expects this proposed rule to result in improved pavement and bridge condition-related project, program, and policy choices. The proposed rule also would yield greater accountability for recipients of Federal funding because MAP–21-mandated reporting would increase visibility and transparency. In addition, the proposed rule would help focus the Federal-aid highway program on achieving balanced performance outcomes.

The FHWA could not directly quantify the expected benefits discussed above due to data limitations and the amorphous nature of the benefits from the proposed rule. Therefore, in order to evaluate the benefits, FHWA used a break-even analysis as the primary approach to quantify benefits. For both pavements and bridges, FHWA focused its break-even analysis on Vehicle Operating Costs (VOC) savings. The FHWA estimated the number of road miles of deficient pavement that would have to be improved (Table 8 in Section VI, Rulemaking Analysis and Notices) and the number of posted bridges that would have to be avoided (Table 9 in Section VI, Rulemaking Analysis and Notices) in order for the benefits of the rule to justify the costs. The results of the break-even analysis quantified the dollar value of the benefits that the proposed rule must generate to outweigh the threshold value, the estimated cost of the proposed rule, which is $196.4 million in undiscounted dollars. The FHWA believes that the proposed rule would surpass this threshold and, as a result, the benefits of the rule would outweigh the costs. The below table displays the Office of Management and Budget (OMB) A–4 Accounting Statement as a summary of the cost and benefits calculated for this rule.

OMB A–4—ACCOUNTING STATEMENT

Category	Estimates			Units			Source/citation
	Primary	Low	High	Year dollar	Discount rate (percent)	Period covered	
Benefits:							
Annualized Monetized ($ millions/year).	None	None	None	NA	7	NA	Not Quantified.
	None	None	None	NA	3	NA	
Annualized Quantified	None	None	None	NA	7	NA	Not Quantified.
	None	None	None	NA	3	NA	

[3] See Table 7 in Section VI, Rulemaking Analysis and Notices

[4] Bureau of Labor Statistics (BLS) Employee Cost Index, 2012

OMB A–4—ACCOUNTING STATEMENT—Continued

Category	Estimates			Units			Source/citation
	Primary	Low	High	Year dollar	Discount rate (percent)	Period covered	
Qualitative	With regard to the pavement condition measures, the rule is cost-beneficial if it results in the net improvement of approximately 435 miles of pavement (i.e., from Poor condition to Good) per year, or 4,350 miles over ten years, from its current base case projection. With regard to the bridge condition measures, 0.2 year-long bridge postings would need to be avoided per year, or 2 year-long bridge postings over ten years, in order for benefits to justify costs. Because of these low thresholds, FHWA determines that the proposed rule benefits outweigh the costs						Proposed Rule RIA.
Costs:							
Annualized Monetized ($/year).	$21,233,675			2012	7	10 Years	Proposed Rule RIA.
	$20,308,760			2012	3	10 Years.	
Annualized Quantified	None	None	None	2012	7	10 Years	Proposed Rule RIA.
	None	None	None	2012	3	10 Years	
Qualitative.							
Transfers	None.						
From/To	From:			To:.			
Effects:							
State, Local, and/or Tribal Government.	$21,162,705			2012	7	10 Years	Proposed Rule RIA.
	$20,241,409			2012	3	10 Years.	
Small Business	Not expected to have a significant impact on a substantial number of small entities.			NA	NA	NA	Proposed Rule RIA.

II. Table of Acronyms and Abbreviations

Acronym or abbreviation	Term
AASHTO	American Association of State Highway and Transportation Officials.
CFR	Code of Federal Regulations.
CMAQ	Congestion Mitigation and Air Quality Improvement Program.
CRCP	Continuously Reinforced Concrete Pavements.
DOT	U.S. Department of Transportation.
State DOT	State department of transportation.
E.O.	Executive Order.
FHWA	Federal Highway Administration.
FTA	Federal Transit Administration.
HPMS	Highway Performance Monitoring System.
HSIP	Highway Safety Improvement Program.
HSP	Highway Safety Plan.
IRI	International Roughness Index.
MAP–21	Moving Ahead for Progress in the 21st Century Act.
MPO	Metropolitan Planning Organization.
NARA	National Archives and Records Administration.
NBI	National Bridge Inventory.
NBIS	National Bridge Inspection Standards.
NHPP	National Highway Performance Program.
NCHRP	National Cooperative Highway Research Program.
NHS	National Highway System.
NPRM	Notice of Proposed Rulemaking.
OMB.	Office of Management and Budget.
PCCP or Jointed PCCP	Portland Cement Concrete Pavements.
PCI	Pavement Condition Index.
PRA	Paperwork Reduction Act.
PSR	Pavement Surface Rating.
RIA	Regulatory Impact Analysis.
RIN	Regulatory Identification Number.
RSL	Remaining Service Life.
Secretary	Secretary of the U.S. Department of Transportation.
SHSP	Strategic Highway Safety Plan.
TMA	Transportation Management Area.
U.S.C	United States Code.
VMT	Vehicle miles traveled.
VOCs	Vehicle Operating Costs.

III. Discussion of Stakeholder Engagement and Outreach

In developing the NPRMs required by 23 U.S.C. 150(c), including this NPRM, FHWA conducted outreach efforts to obtain technical information as well as information on operational and economic impacts from stakeholders and the public. The State DOTs, MPOs, transit agencies, and private/non-profit constituents across the country participated in the outreach efforts. A discussion of each contact or series of contacts influencing the agency's position may be found in the docket. A summary of the contacts are described below.

A. Consultation With State Departments of Transportation, Metropolitan Planning Organizations, and Other Stakeholders

In accordance with 23 U.S.C. 150(c)(1), DOT consulted regularly with affected stakeholders (State DOTs, MPOs, industry, advocacy organizations, etc.) to better understand the operational and economic impact of this proposed rule. In general, these consultations included:

- Conducting listening sessions and workshops to clarify stakeholder sentiment and capture diverse opinions on the interpretation of technical information of the potential economic and operational impacts of implementing 23 U.S.C. 150;
- Conducting listening sessions and workshops to better understand the state-of-the-practice on the economic and operational impacts of implementing various noteworthy practices, emerging technologies, and data reporting, collection, and analysis frameworks;
- Hosting webinars with targeted stakeholder audiences to ask for their viewpoints through a chat pod or conference call; and
- Attending meetings with non-DOT SMEs, including task forces, advocacy groups, private industry, non-DOT Federal employees, academia, etc., to discuss timelines, priorities, and the most effective methods for implementing 23 U.S.C. 150; and to discuss and collect information on the issues that need to be addressed or the questions that need to be answered in the NPRMs to facilitate efficient implementation.

B. Broader Public Consultation

It is DOT's policy to provide for and encourage public participation in the rulemaking process. In addition to the public participation that was coordinated in conjunction with the stakeholder consultation discussed above, DOT provided opportunities for broader public participation. The DOT invited the public to provide technical and economic information to improve the agency's understanding of a subject and the potential impacts of rulemaking. This was done by providing an email address (*performancemeasuresrulemaking@dot.gov*) feature on FHWA's MAP–21 Web site to allow the public to provide their comments and suggestions about the development of the performance measures and holding national online dialogues and listening sessions to ask the public to post their ideas on national performance measures, standards, and policies. The DOT also conducted educational outreach to inform the public about transportation-related performance measures and standards, and solicited comments on them.

In accordance with 23 U.S.C. 150(c)(2)(A), FHWA will ''provide States, metropolitan planning organizations, and other stakeholders not less than 90 days to comment on any regulation proposed by the Secretary . . .'' During the notice and comment period, FHWA will hold public meetings to explain the provisions contained in these NPRMs, including this NPRM. All such meetings will be open to the public. However, all comments regarding the NPRMs must be submitted in writing to the rulemaking docket.

C. Summary of Viewpoints Received

This section summarizes some of the common themes identified during the stakeholder outreach. These themes are organized by general concerns, pavement condition measure concerns, and bridge condition measure concerns. It is important to note that some of the stakeholder comments related to more than one topic. In that case, the comments were placed under whichever theme was most directly affected.

General concerns:

- Stakeholders questioned how FHWA would establish a methodology for determining significant progress toward achieving performance targets, and commented on the administrative burden on State DOTs and MPOs associated with target establishment and reporting.
- Stakeholders asked DOT to avoid creating a ''worst first'' approach to selecting priorities and requested that FHWA consider using Asset Management principles to consider financial imbalances including the concept that performance measures should not drive the selection of projects. Stakeholders would like performance management to drive a system-wide, risk-based project selection approach that looks at long-term outcomes.
- The stakeholders' key messages were simplicity, consistency, and flexibility.

Pavement Condition Measures

Stakeholders suggested various analytic and empirical methods for performance measurement. One of the suggestions was to consider the use of Remaining Service Life (RSL) as a pavement performance measure. Stakeholders expressed that an RSL based approach to performance management would help agencies determine the timing and level of rehabilitation activities. Currently, some States DOTs have pavement and bridge measures that relate to RSL. Other suggested approaches for pavement performance measures included the Roadway Pavement Health Index [5] and the Decay Ratio.[6]

Most stakeholders supported the use of International Roughness Index (IRI) as a pavement performance measure. Some added that it should not be the sole pavement performance measure and that there are some limitations to its ability to provide agencies sufficient information for making investment decisions. Those stakeholders that support its use pointed to the long history of IRI and its use in HPMS protocols.

Bridge Condition Measures

Stakeholders supported establishing bridge condition performance measures using the existing NBI data. However, stakeholders' opinions differed on the type of data to be used from the NBI and the processing of that data. For example, stakeholders were divided over the use of the ''Structurally Deficient'' classification. Some stakeholders also provided proprietary research information on advanced bridge condition assessment technologies and how these technologies may be used to reduce the number of structurally deficient bridges used today as a standard practice.

Some stakeholders commented that simply measuring the physical

[5] This propriety approach is intended to provide State DOTs the ability to relate tradeoffs between RSL, pavement management system data and life cycle costs in years and dollar metrics. This approach may not require changes to data collection or classification but would cost time and money to develop.

[6] The Decay Ratio is the ratio of deck area of bridges which have become newly deficient in the past year to the deck area of bridges which have been repaired/rehabilitated/replaced in the past year. More simply, Decay Ratio = (Deck Area Worse)/(Deck Area Improved).

condition of a bridge does not provide a complete picture of the infrastructure problems. In addition to the physical condition, stakeholders suggested that FHWA consider the cost of repair or replacement and the importance of the facility based upon how many vehicles it served. However, others felt that element-level bridge condition data, which provides granularity, is necessary to develop performance metrics that can help States make better informed decisions concerning their bridge preservation needs.

In addition, stakeholders conveyed other concerns regarding a proposed bridge condition measure. They believed FHWA should provide State DOTs and MPOs flexibility to move toward a national bridge performance measure based on element-level data in the near future and take into account other factors such as population changes. Stakeholders were also concerned that expansion of the NHS to include all principal arterial routes in a State may impact a State DOT's ability to meet the minimum level for condition of bridges. Some stakeholders suggested that the measure established for minimum standard of bridge condition be consistent with definition of ''state of good repair'' in the ''Bridge Preservation Guidance.'' [7]

IV. Rulemaking Authority and Background

The cornerstone of MAP–21's Federal-aid highway program transformation is the transition to a performance and outcome-based program. As part of this program, recipients of Federal-aid highway funds would invest resources in projects to achieve individual targets that collectively would make progress toward national goals.

The MAP–21 provisions that focus on the achievement of performance outcomes are contained in a number of sections of the law that are administered by different DOT agencies. Consequently, these provisions may require an implementation approach that includes a number of separate but related rulemakings, some from other modes within the DOT. This NPRM is focused on the implementation of some performance provisions related to the NHPP. The FHWA is also undertaking a rulemaking to implement new asset management requirements (RIN 2125–AF57) under the NHPP (23 U.S.C.119). Interested persons should refer to both rulemakings. Additional rulemakings are underway to implement other MAP–21 performance requirements. A summary of these rulemakings, as they relate to this proposed rule, is provided in this section, and additional information regarding related implementation actions is available on the FHWA Web site.[8]

Summary of Related Rulemakings

The DOT's proposal regarding MAP–21's performance requirements would be presented through several rulemakings, some of which were referenced in the above discussions. As a summary, these rulemaking actions are listed below and should be referenced for a complete picture of performance management implementation. The summary below describes the main provisions that DOT plans to propose for each rulemaking. The DOT will seek comment on each of these rulemakings.

1. First Federal-Aid Highway Performance Measures Rulemaking (RIN: 2125–AF49) [9]

a. Propose and define national measures for the HSIP
b. State and MPO target establishment requirements for Federal-aid highway program
c. Determination of significant progress toward the achievement of targets
d. Performance progress reporting requirements and timing
e. Discuss how FHWA intends to implement MAP–21 performance related provisions.

2. Second Federal-Aid Highway Performance Measures Rulemaking (This NPRM)

a. Propose and define national measures for the condition of NHS pavements and bridges
b. State and MPO target establishment requirements for the Federal-aid highway program
c. Determination of significant progress toward the achievement of targets for NHPP
d. Performance progress reporting requirements and timing
e. Minimum levels for the condition of pavement on the Interstate System

3. Third Federal-Aid Highway Performance Measures Rulemaking (RIN: 2125–AF54)

a. Propose and define national measures for the remaining areas under 23 U.S.C. 150(c) that require measures and are not discussed under the first and second measure rules, which includes the following: National Performance Measures for Performance of the Interstate System and non-Interstate National Highway System; CMAQ—Traffic Congestion; CMAQ—On-Road Mobile Source Emissions; and Freight Movement on the Interstate System
b. State and MPO target establishment requirements for the Federal-aid highway program
c. Performance progress reporting requirements and timing
d. Provide a summary of all three performance measure proposed rules

4. Update to the Metropolitan and Statewide Planning Regulations (RINs: 2125–AF52, 2132–AB10) [10]

a. Supporting national goals in the scope of the planning process
b. Coordination between States, MPOs, and public transportation providers in selecting FHWA and public transportation performance targets
c. Integration of elements in other performance-based plans into the metropolitan and statewide planning process
d. Discussion in Metropolitan and Statewide Transportation Improvement Programs documenting how the programs are designed to achieve targets
e. New performance reporting requirements in the Metropolitan transportation plan

5. Updates to the Highway Safety Improvement Program Regulations (2125–AF56) [11]

a. Integration of performance measures and targets into the HSIP
b. Strategic Highway Safety Plan (SHSP) updates
c. Establishment of Model Inventory of Roadway Element—Fundamental Data Elements
d. HSIP reporting requirements

6. Federal-Aid Highway Asset Management Plan Rule (2125–AF57)

a. Contents of asset management plan
b. Certification of process to develop plan
c. Transition period to develop plan
d. Minimum standards for pavement and bridge management systems

7. Transit State of Good Repair Rule (RIN: 2132–AB07) [12]

a. Define state of good repair and establish measures

[7] Bridge Preservation Guidance (FHWA 2011) *http://www.fhwa.dot.gov/bridge/preservation/guide/guide.pdf*

[8] *http://www.fhwa.dot.gov/map21/qandas/qapm.cfm*

[9] The NPRM was published on March 11, 2014 at 79 FR 13846.

[10] The NPRM was published on June 2, 2014 at 79 FR 31784.

[11] The NPRM was published on March 28, 2014 at 79 FR 17464.

[12] The FTA published their Advance Notice of Proposed Rulemaking (ANPRM) that incorporated

Continued

b. Transit asset management plan content and reporting requirements
c. Target establishment requirements for public transportation agencies and MPOs

8. Transit Safety Plan Rule (RIN: 2132–AB20) [13]

a. Define transit safety standards
b. Transit safety plan content and reporting requirements

9. Highway Safety Program Grants Rule (RIN: 2127–AL30, 2127–AL29) [14]

a. Highway safety plan contents, including establishment of performance measures, targets, and reporting requirements
b. Review and approval of highway safety plans

Organization of MAP–21 Performance-Related Provisions

The FHWA organized the many performance-related provisions within MAP–21 into six elements as defined below:

- National Goals—Goals or program purpose established in MAP–21 to focus the Federal-aid highway program on specific areas of performance.
- Measures—Establishment of measures by FHWA to assess performance and condition in order to carry out performance-based Federal-aid highway programs.
- Targets—Establishment of targets by recipients of Federal-aid highway funding for each of the measures to document expectations of future performance.
- Plans—Development of strategic and/or tactical plans by recipients of Federal funding to identify strategies and investments that will address performance needs.
- Reports—Development of reports by recipients of Federal funding that would document progress toward the achievement of targets, including the effectiveness of Federal-aid highway investments.
- Accountability—Requirements developed by FHWA for recipients of Federal funding to use to achieve or make significant progress toward achieving targets established for performance.

The following provides a summary of MAP–21 provisions, as they relate to the six elements listed above, including a reference to other related rulemakings that should be considered for a more comprehensive view of MAP–21 performance management implementation.

A. National Goals

The MAP–21 section 1203 establishes national goals to focus the Federal-aid highway program. The following national goals are codified at 23 U.S.C. 150(b):

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

These national goals would be largely supported through the Metropolitan and Statewide planning process, which is discussed under a separate rulemaking (2125–AF52) to update the Metropolitan and Statewide Planning Regulations at 23 CFR part 450.

B. Measures

The MAP–21 requires the establishment of performance measures, in consultation with State DOTs, MPOs, and other stakeholders, that would do the following:

- Carry out the NHPP and assess the condition of pavements on the Interstate System and the NHS (excluding the Interstate System), the condition of bridges on the NHS, and performance of the Interstate System and NHS (excluding the Interstate System);
- carry out the HSIP and assess serious injuries and fatalities per VMT and the number of serious injuries and fatalities;
- carry out the CMAQ Program and assess traffic congestion and on-road mobile source emissions; and
- assess freight movement on the Interstate System.

The MAP–21 also requires the Secretary to establish the data elements necessary to collect and maintain standardized data to carry out a performance-based approach.[15]

The FHWA would issue three NPRMs in sequence to propose the measures for the areas listed above. The first NPRM focused on the performance measures, for the purpose of carrying out the HSIP, to assess the number of serious injuries and fatalities and serious injuries and fatalities per VMT. This current NPRM focuses on the measures to assess the condition of pavements and bridges, and a third NPRM will be issued to propose the remaining areas under 23 U.S.C. 150(c) that require the establishment of measures. The FHWA anticipates issuing these three rulemakings in staggered sequence. The FHWA proposes to establish one common effective date for all three final rules for these performance measures, but we seek comment from the public on what would be an appropriate effective date. Additional information on the approach to establish performance measures for the Federal-aid highway program can be found on FHWA's Transportation Performance Management Web site.[16]

The MAP–21 also requires FHWA to establish minimum levels for the condition of pavements for the Interstate System necessary to carry out the NHPP, which is proposed in this rulemaking.[17] In addition, MAP–21 also requires FHWA to establish minimum standards for State DOTs to use in developing and operating bridge and pavement management systems, which FHWA would propose in a separate rulemaking to establish an Asset Management Plan (RIN 2125–AF57) for the NHS.[18]

Separate sections of MAP–21 require the establishment of additional measures to assess public transportation performance.[19] These measures, which would be used to monitor the state of good repair of transit facilities and to establish transit safety criteria, would be addressed in two separate rulemakings, led by FTA.

items 7 and 8, on October 3, 2013. This ANPRM may be found at: *http://www.gpo.gov/fdsys/pkg/FR-2013-10-03/pdf/2013-23921.pdf.*

[13] Ibid.

[14] The National Highway Traffic Safety Administration published their Interim Final Rule (IFR) on January 23, 2013. This IFR may be found at: *http://www.gpo.gov/fdsys/pkg/FR-2013-01-23/pdf/2013-00682.pdf.*

[15] 23 U.S.C. 150(c)(1).

[16] *http://www.fhwa.dot.gov/tpm/about/schedule.cfm.*

[17] 23 U.S.C. 150(c)(3)(A)(iii).

[18] 23 U.S.C. 150(c)(3)(A)(i).

[19] 49 U.S.C. 5326 and 49 U.S.C. 5329.

In regard to the Federal Lands Transportation Program, FHWA anticipates working with eligible Federal entities to establish performance measures.

C. Targets

The MAP–21 requires State DOTs to establish performance targets reflecting measures established for the Federal-aid highway program [20] and requires MPOs to establish performance targets for these measures where applicable.[21] The first NPRM proposed the process for State DOTs and MPOs to follow in the establishment of safety performance targets. This NPRM and the third Federal-aid highway measure NPRM discuss similar target establishment requirements for State DOTs and MPOs as they relate to the measures discussed in the respective proposed rules. Additionally, State DOTs and MPOs are required to coordinate when selecting targets for the areas specified under 23 U.S.C. 150(c) in order to ensure consistency in the establishment of targets, to the maximum extent practical.[22] A separate rulemaking to update the Metropolitan and Statewide Planning Regulations (RIN 2125–AF52) at 23 CFR part 450 discusses this coordination requirement.

Further, MAP–21 requires State Highway Safety Offices to establish targets for 10 core highway safety program measures in the HSP, which NHTSA has implemented through an Interim Final Rule,[23] and for recipients of public transportation Federal funding and MPOs to establish state of good repair and safety targets.[24] Discussions on these target establishment requirements are not included in this NPRM. Rather, DOT will discuss those target establishment requirements in the subsequent rulemakings to implement these respective provisions.

D. Plans

A number of provisions within MAP–21 require State DOTs and MPOs to develop plans that provide strategic direction for addressing performance needs. For the Federal-aid highway program these provisions require: State DOTs to develop a NHS Asset Management Plan; [25] State DOTs to update their SHSP; [26] MPOs serving a large TMA in areas of non-attainment or maintenance to develop a CMAQ Performance Plan; [27] MPOs to include a System Performance Report in the Metropolitan Transportation Plan; [28] and State DOTs and MPOs to include a discussion, to the maximum extent practical, in their Transportation Improvement Program as to how the program would achieve the performance targets they have established for the area.[29] In addition, State DOTs are encouraged to develop a State Freight Plan to document planned activities and investments with respect to freight.[30] This rulemaking does not discuss any requirements to develop or use plans. Rather, a discussion on the development and use of these plans would be included in the respective rulemakings to implement these provisions. More information on the required plans and the actions to implement the statutory provisions related to plans can be found on FHWA's MAP–21 Web site.[31]

E. Reports

The MAP–21 section 1203 requires State DOTs to submit biennial reports to FHWA on the condition and performance of the NHS, the effectiveness of the investment strategy documented in the State DOT's asset management plan for the NHS, progress in achieving targets, and ways in which the State DOT is addressing congestion at freight bottlenecks.[32] The FHWA proposed in the first NPRM that safety progress be reported by State DOTs through the HSIP annual report and not in the biennial report required under 23 U.S.C. 150(e). This NPRM, under subpart A, discusses the 23 U.S.C. 150(e) biennial reporting requirement. The 23 U.S.C. 150(e) biennial reporting requirement would apply to all of the non-safety measures for the Federal-aid highway program (*i.e.,* the measures proposed in this NPRM and in the third Performance Measures NPRM).

Additional progress reporting requirements are required under the CMAQ Program, Metropolitan transportation planning, elements of the Public Transportation Act of 2012, and the Motor Vehicle and Highway Safety Improvement Act of 2012. Detailed discussions on these reporting requirements are not included in this NPRM. Also, State DOTs should include a system performance report in their statewide transportation plan. These reporting provisions are discussed in separate rulemakings and guidance and are not discussed in this rulemaking.

F. Accountability

Two provisions within MAP–21, specifically 23 U.S.C. 119(e)(7) under the NHPP and 23 U.S.C. 148(i) under the HSIP, require the State DOT to undertake actions if significant progress is not made toward the achievement of State DOT targets established for these respective programs. For the NHPP, if a State DOT does not achieve or make significant progress toward the achievement of its NHS performance targets for two consecutive biennial reports, then the State DOT must document in its next report the actions it would take to achieve the targets.[33] The proposed implementation of this provision is covered in subpart A of this NPRM. For the HSIP, if a State DOT does not achieve or make significant progress toward the achievement of its HSIP safety targets, then the State DOT must dedicate a specified amount of obligation limitation to safety projects and prepare an annual implementation plan.[34] The first performance measures NPRM discussed this provision.

In addition, MAP–21 requires that each State DOT maintain a minimum condition level for Interstate System pavement and NHS bridge conditions. If a State DOT falls below either standard, then the State DOT must spend a specified portion of its funds for that purpose until the minimum standard is exceeded.[35] This NPRM discusses this provision.

The FHWA recognizes that there is a limit to the direct impact that State DOTs can have on performance outcomes within the State and that State DOTs need to consider this uncertainty in their establishment of targets. The FHWA encourages State DOTs to consult with relevant entities (*e.g.,* MPOs, local transportation agencies, Federal Land Management Agencies, tribal governments) as State DOTs establish targets, so they can better identify and consider factors outside of their direct control that could impact future condition/performance.

Further, MAP–21 includes special safety rules to require each State DOT to maintain or improve safety performance on high risk rural roads and for older drivers and pedestrians.[36] If the State

[20] 23 U.S.C. 150(d).

[21] 23 U.S.C. 134(h)(2)(B).

[22] 23 U.S.C. 134(h)(2), 23 U.S.C. 135(d)(2), 49 U.S.C. 5303(h)(2), and 49 U.S.C. 5304(d)(2).

[23] 23 U.S.C. 402(k); Uniform Procedures for State Highway Safety Grant Programs, Interim final rule, 78 FR 4986 (January 23, 2013) (to be codified at 23 CFR part 1200).

[24] 49 U.S.C. 5326(c) and 5329.

[25] 23 U.S.C. 119(e).

[26] 23 U.S.C. 148(d).

[27] 23 U.S.C. 149(l).

[28] 23 U.S.C. 134(i)(2)(C).

[29] 23 U.S.C. 134(j)(2)(D) and 23 U.S.C. 135(g)(4).

[30] MAP–21 Section 1118.

[31] *http://www.fhwa.dot.gov/map21/qandas/qapm.cfm.*

[32] 23 U.S.C. 150(e).

[33] 23 U.S.C. 119(e)(7).

[34] 23 U.S.C. 148(i).

[35] 23 U.S.C. 119(f).

[36] 23 U.S.C. 148(g).

DOT does not meet these special rules, which contain minimum performance standards, then it must dedicate a portion of HSIP funding (in the case of the high risk rural road special rule) or document in their SHSP actions they intend to take to improve performance (in the case of the older driver special rule). Guidance on how FHWA would administer these two special rules is provided on the FHWA MAP–21 Web site.

Implementation of MAP–21 Performance Requirements

The FHWA will implement the performance requirements within section 1203 of MAP–21 in a manner that results in a transformation of the Federal-aid highway program so that the program focuses on national goals, provides for a greater level of accountability and transparency, and provides a means for the most efficient investment of Federal transportation funds. The FHWA plans to implement these new requirements in a manner that will provide Federal-aid highway fund recipients the greatest opportunity to fully embrace a performance-based approach to transportation investment decisionmaking that does not hinder performance improvement. In this regard, FHWA carefully considered the following principles in the development of proposed regulations for national performance measures under 23 U.S.C. 150(c):

- Provide for a National Focus—focus the performance requirements on outcomes that can be reported at a national level.
- Minimize the Number of Measures—identify only the most necessary measures that would be required for target establishment and progress reporting. Limit the number of measures to one or no more than two per area specified under 23 U.S.C. 150(c).
- Ensure for Consistency—provide a sufficient level of consistency, nationally, in the establishment of measures, the process to establish targets and report expectations, and the approach to assess progress so that transportation performance can be presented in a credible manner at a national level.
- Phase in Requirements—allow for sufficient time to comply with new requirements and consider approaches to phase in new approaches to measuring, target establishment, and reporting performance.
- Increase Accountability and Transparency—consider an approach that would provide the public and decision makers a better understanding of Federal transportation investment returns and needs.
- Consider Risk—recognize that risks in the target establishment process are inherent and that many factors, outside the control of those that would be required to establish targets, can impact performance.
- Understand that Priorities Differ—recognize that targets need to be established across a wide range of performance areas and that performance trade-offs would need to be made to establish priorities, which would be influenced by local and regional needs.
- Recognize Fiscal Constraints—provide for an approach that encourages the optimal investment of Federal funds to maximize performance but recognize that, when operating with scarce resources, performance cannot always be improved.
- Provide for Flexibility—recognize that the MAP–21 requirements are the first steps that will transform the Federal-aid highway program to a performance-based program and that State DOTs, MPOs, and other stakeholders would be learning a great deal as implementation occurs.

The FHWA considered these principles in this NPRM and encourages comments on the extent to which this approach to performance measures, set forth in this NPRM, supports the principles discussed above.

Federal Technical Assistance

The FHWA is committed to providing stewardship to State DOTs and MPOs assisting them as they take steps to manage and improve the performance of the highway system. As a Federal agency, FHWA is in a unique position to utilize resources at a national level to capture and share strategies that can improve performance. The FHWA is prepared to dedicate resources at the national level to provide on-site assistance, technical tools and guidance to State DOTs and MPOs to assist them in making more effective investment decisions. It is FHWA's intent to be engaged at a local and national level to provide resources and assistance from the onset to identify opportunities to improve performance and to increase the chances for full State DOT and MPO compliance of new performance related regulations. The FHWA technical assistance will include activities such as conducting national research studies, developing analytical modeling tools, identifying and promoting best practices, preparing guidance materials, and developing data quality assurance tools. The FHWA encourages comments on how it can help maximize opportunities for successful implementation.

V. Performance Management Measure Analysis

In consultation with State DOTs, MPOs and other stakeholders, FHWA selected measures for this proposed rule considered to be the best alternatives to carry out the pavement and bridge condition related provisions of the NHPP and to use to assess pavement and bridge condition. The FHWA evaluated the selected measures, using a common methodology, to identify gaps that could impact successful implementation of proposed performance measures. This section discusses the basis for selecting the proposed performance measures and FHWA's identification of potential implementation gaps.

A. Selection of National Performance Management Measures for the NHPP: Pavement and Bridge

The FHWA considered views from the following sources when developing pavement and bridge measures to carry out the NHPP:

- Knowledge of technical experts within DOT on the current state of practice to monitor highway pavement and bridge condition;
- Information provided by external stakeholders received directly or captured as part of organized stakeholder listening sessions;
- Information provided by external stakeholders received indirectly through informal contact such as telephone calls, email or letters; and
- Measures that have been recommended and documented in nationally recognized reports such as the assessment of measurement readiness documented in the final report for NCHRP 20–24(37)G, ''Technical Guidance for Deploying National Level Performance Measurements.''

Pavement Condition Measure

Since 2010, through HPMS, State DOTs have submitted rutting, Cracking_Percent, International Roughness Index (IRI), and faulting data metrics.[37] The FHWA's ''Conditions and Performance Report'' and ''Highway Statistics Series'' have used pavement roughness, with the IRI as a metric, as the basis for its pavement conditions.

Based on FHWA's research, most State DOTs use a common group of pavement metrics (*e.g.,* pavement

[37] Cracking_Percent refers to the data metric in HPMS and is used as one of the metrics for determining the condition of pavements for the performance measure.

roughness, percentage of pavement that is rutted, percentage of pavement that is cracked, and the amount of misalignment between concrete pavement slabs), to report on and manage the condition of pavements in their State. There is not currently a nationally accepted method for assessing pavement condition using multiple pavement condition metrics (*e.g.,* IRI, rutting, Cracking_Percent, faulting) that most State DOTs use. A survey conducted as part of the 2009 National Cooperative Highway Research Program (NCHRP) Synthesis 401 study [38] revealed that 98 percent of State DOTs collect distress data (*e.g.,* faulting, cracking) and 95 percent collect roughness data to monitor network level pavement conditions. Similarly, an assessment of pavement management practices conducted by FHWA indicated that, for the NHS, all State DOTs monitor roughness and rutting, 94 percent monitor Cracking_Percent, 95 percent monitor faulting (with concrete surfaced pavements), and 31 percent monitor structural capacity.

The FHWA selected these metrics for calculation of the performance measures to assess pavement conditions in this rulemaking. In support of the selection of these metrics, FHWA evaluated their use in highway pavement investment decisions by State DOTs. The Texas Transportation Institute conducted a study, called the ''Pavement Score Synthesis.'' The synthesis study indicated that nearly all State DOTs use a combination of pavement condition attributes and a variety of methods and procedures to rate the condition of pavements. Most of these methods and procedures included some aspect of pavement roughness and at least one other pavement condition metric. A recently completed NCHRP project [39] included a detailed review of data collected and reported by State DOTs on pavement condition in their State pavement management system as compared to the data they report in the HPMS. This project included a national survey that was provided to all State DOTs and a detailed assessment using data collected and reported from eight State DOTs. The project's report indicated that assessments of pavement condition using State DOT methods of qualifying good, fair, and poor conditions were noticeably different from an approach based solely on IRI conditions as reported in the HPMS.

In developing its proposed measure, FHWA considered the use of existing methods such as the Pavement Condition Index (PCI) developed by the Army Corps of Engineers, the RSL concept using prediction models developed for the Mechanistic-Empirical Design Guide for New and Rehabilitated Pavement Structures, under NCHRP 1–37A [40], and State DOT-developed methods to calculate a pavement condition rating. The FHWA found that no single existing method was used predominantly enough to be considered as a national standard. In addition, existing methods, such as the PCI, were too challenging to implement nationally due to the burden and time associated with introducing pavement condition metrics that are not currently reported at a national level through a system like HPMS.

The FHWA has been working for the past several years in consultation with State DOTs to evaluate approaches that could more completely assess pavement condition at a national level. Based on these efforts, FHWA proposes to establish measures to assess pavement condition that meet the following criteria:

- Consider more than roughness.
- Utilize pavement condition attributes currently reported at a national level.
- Utilize pavement condition attributes where data collection and reporting standards exist today.
- Result in an assessment approach that is consistent with typical conceptual approaches used today by State DOTs to assess condition.
- Consider an approach that can be implemented so that State DOTs can establish targets within a 12-month time period after FHWA establishes the performance measures without introducing a considerable burden on State DOTs.

The FHWA proposes in this NPRM a measure for State DOTs to use to assess pavement condition that satisfies the criteria above and is based on data within the HPMS, including: IRI, rutting for asphalt surfaced pavements, faulting for jointed concrete surfaced pavements, and Cracking_Percent. The FHWA proposes pavement condition measures that would reflect the predominant condition represented by each of these HPMS data elements.

The four proposed measures to assess pavement condition are: (1) Percentage of pavements on the Interstate System in Good condition; (2) Percentage of pavements on the Interstate System in Poor condition; (3) Percentage of pavements on the NHS (excluding the Interstate System) in Good condition; and (4) a Percentage of pavements on the NHS (excluding the Interstate System) in Poor condition.

The FHWA is proposing measures to represent both the percentage of Good pavements and the percentage of Poor pavements that would support sound asset management practices. The FHWA intends to implement a condition measurement approach that will recognize the need to both preserve Good and Fair conditions and improve Poor conditions. The FHWA believes that a measurement approach that focused only on increasing Good conditions or only on reducing Poor conditions may result in practices that would not optimize the benefits of infrastructure investments. This same approach is proposed for the bridge condition measures as discussed in the next section.

Bridge Condition Measure

The FHWA, using data from the NBI, monitors bridge conditions in the United States. This database was established in 1972 and State DOTs have been required to submit annual reports to FHWA since 1978. The NBI is a highly consistent set of national data for evaluating the condition and performance of bridges. The National Bridge Inspection Standards (NBIS) in 23 CFR part 650 contribute to this consistency. The NBIS established the national standards for the proper and uniform inspection and evaluation of highway bridges. The NBIS include the specified methods by which inspections are to be carried out, qualifications for those charged with carrying out inspections, and certain bridge data that is to be collected and retained for collection by FHWA. For these reasons, FHWA considers the NBI and its data the definitive source for national bridge information and the most appropriate metric for bridge condition measures.

The ''Improving FHWA's Ability to Assess Highway Infrastructure Health Pilot Study Report'' [41] evaluated different methods to assign bridge condition using NBI data as a metric for defining a Good, Fair, or Poor classification. For this study, the NBI

[38] Flintsch G., McGhee K., NCHRP Synthesis 401, ''Quality Management of Pavement Condition Data Collection'', 2009.

[39] Zimmerman, K., Smadi, O. NCHRP 20–24(82), ''Increasing Consistency in HPMS Pavement Data,'' 2013.

[40] ''The Mechanistic-Empirical Design Guide for New and Rehabilitated Pavement Structures,'' NCHRP 1–37A, 2004, *http://onlinepubs.trb.org/onlinepubs/archive/mepdg/part_12_cover_ack_toc.pdf.*

[41] Guerre, et al., FHWA–HIF–12–049, ''Improving FHWA's Ability to Assess Highway Infrastructure Health Pilot Study Report,'' 2012 *http://www.fhwa.dot.gov/asset/pubs/hif12049/hif12049.pdf.*

database was selected as the logical data source because of the consistency of its representation of over 40 years of collected data, and its use by nearly every State DOT as the current basis for their bridge decisionmaking. The study discussed and evaluated four different weighted average methods and one minimum condition rating method. The four weighted average methods consisted of calculating a measure of structural adequacy based on a weighted average of deck, superstructure, and sub-structure condition ratings of a bridge. The minimum condition rating method calculated a measure of structural adequacy based on the lowest condition rating of deck, superstructure, and sub-structure of a bridge.

Findings of the study concluded that for the Interstate System:

- Percentages of bridges classified as Good, Fair, or Poor were consistent for the four different weighted average methods and the minimum condition rating method with little variation;
- the minimum condition rating method resulted in the highest percentage of bridges in Poor condition;
- percentages of bridges classified as Good, Fair, or Poor based on the four weighted average methods were not sensitive to the weights; and
- bridge deck conditions alone are typically not the driving factor in the Good, Fair, or Poor classifications.

The FHWA conducted an additional assessment of the different methods and observed that the magnitude in differences between condition ratings for individual NBI items was somewhat nullified when a final average or weighted average method was employed. The ''Improving FHWA's Ability to Assess Highway Infrastructure Health Pilot Study Report'' made a similar observation. This masking or obscuring of possible poor bridge conditions is a major concern with these methods. Although these methods could be further refined to possibly resolve this problem, the development, subjectivity, and complexity of such methods makes them less desirable than the simple minimum condition rating method, particularly when analyses indicate that a refined weighted method would result in the same general classification as the minimum condition rating method.

The FHWA proposes to establish two bridge performance measures using a classification system of Good, Fair, and Poor. These are based on an assessment of bridge condition data from the NBI. The measures would reflect the lowest component condition rating for the bridge.[42] The FHWA further proposes to weight this classification by the respective deck area of the bridge and express condition totals as a percentage of the total bridge deck area in a State.

The two proposed performance measures for assessing bridge condition are: (1) Percentage of NHS Bridges Classified as in Good Condition; and (2) Percentage of NHS Bridges Classified as in Poor Condition. These proposed performance measures are based on the assessment of condition ratings for the following NBI Items: 58—Deck, 59—Superstructure, 60—Substructure, and 62—Culverts.

B. Assessment of Selected National Performance Management Measures for the NHPP: Pavement and Bridge

The FHWA used a common methodology of 12 criteria to assess the appropriateness of the measure for national use and the readiness to implement the performance measure accurately and reliably. As a result of its assessment, FHWA assigned one of the following three ratings for each criterion.

- Green—Criterion is fully met for the candidate measure
- Yellow—Criterion is partially met for the candidate measure and work is underway to fully meet the criterion
- Red—Criterion is not fully met or no work is underway or planned that would allow the criterion to be met

The FHWA used the results of this assessment to identify gaps that FHWA could address through this rulemaking to improve the effectiveness of the measures for State DOTs and MPOs to use to assess pavement and bridge conditions. The rulemaking docket contains a description of the methodology used for this assessment.

Pavement Condition Performance Management Measures

The following four pavement performance measures for assessing condition proposed by FHWA are calculated from data from the HPMS: (1) Percentage of pavements on the Interstate System in Good condition; (2) Percentage of pavements on the Interstate System in Poor condition; (3) Percentage of pavements on the NHS (excluding the Interstate System) in Good condition; and (4) Percentage of pavements on the NHS (excluding the Interstate System) in Poor condition. The assessment process described earlier in this section evaluates these pavement performance measures for assessing conditions based on existing state-of-the-practice. Table 1 provides a summary of this assessment.

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[42] While FHWA proposes bridge condition measures that would reflect the lowest condition level represented by different bridge elements, the proposed pavement condition measures would reflect the predominant condition represented by certain HPMS data elements. The FHWA is proposing these differing approaches for pavement and bridges primarily due to the need to minimize safety risks associated with bridges. Additional information is provided in the Section-by-Section discussion to describe the differences in the methods to determine pavement and bridge conditions.

Table 1. NHPP Pavements Condition Measure Analysis

Assessment Factor/Criterion	*Percentage of Interstate System in Good Condition*	*Percentage of Interstate System in Poor Condition*	*Percentage of* non-*Interstate NHS in Good Condition*	*Percentage of* non-*Interstate NHS in Poor Condition*
A1) Is the measure focused on comprehensive performance outcomes?	G	G	G	G
A2) Has the measure been developed in partnership with key stakeholders?	G	G	G	G
A3) Is the measure maintainable to accommodate changes?	G	G	Y	Y
A4) Can the measure be used to support investment decisions, policy making and target establishment?	G	G	G	G
A5) Can the measures be used to analyze performance trends?	G	G	G	G
A6) Has the feasibility and practicality to collect, store, and report data in support of the measures been considered?	G	G	Y	Y
B1) Timeliness	Y	Y	Y	Y
B2) Consistency	R	R	R	R
B3) Completeness	Y	Y	R	R
B4) Accuracy	Y	Y	R	R
B5) Accessibility	G	G	G	G
B6) Data Integration	G	G	G	G

Legend: G=Green Y= Yellow R=Red A=Appropriateness B=Readiness

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The performance measures identified in this NPRM are considered to be ready for use when all of the criteria are rated Green. The remaining measures require additional analysis before they can be used on a regular basis for measuring the performance of the transportation system. The proposal outlined in this NPRM attempts to address some of the gaps that exist today for the yellow and red criteria so that, as a result of the implementation of these new requirements, the measures would result in an improved assessment rating and thereby better support national programs. The FHWA proposal addresses the gaps that exist today primarily through improvement of data collection techniques, requiring the use of established AASHTO Standards, establishing a standard method of calculation, and requiring data quality management programs in every State DOT. When establishing the proposed pavement condition measures, FHWA considered the following with respect to the criteria above:

- Criterion A3—consider data standards that allow for new data

collection methods as technologies improve. Consider an approach that allows for pavement metrics to change in the future as data standards are updated and improved.

- Criterion A4—recognize that the individual pavement metrics are not typically used to drive decisionmaking. Consider how the four metrics can be used collectively to develop a pavement measure that is more closely tied to decisionmaking.
- Criterion A6—consider changes to the current requirements to collect, store, and report data to the HPMS to support the proposed pavement condition measure.
- Criterion B1—recognize the time lag of data available in national data sources versus the availability of data in State-maintained sources in requirements associated with proposed pavement measures, target establishment, and evaluation of progress.
- Criteria B2 and B4—consider an approach that utilizes data collection standards and data reporting requirements that would improve consistency and accuracy in application across the country and recognize that these improvements can take time to implement. Recognize that State DOTs have been collecting and reporting pavement condition metrics for many years and that the standards, frequency, and formats have changed during this time.
- Criterion B3—consider an approach that improves the completeness of data coverage in the HPMS and recognize that State data submissions often have not represented the full extent of the NHS.
- Criterion B6—recognize the essential need for a national data source for pavement condition and that implementing minor adjustments to existing State DOT methodologies would facilitate the creation of such a national data source at a relatively low cost. Furthermore, many States already have technology, such as Geographic information Systems or Enterprise Resource Systems that can integrate data from various sources to support decisionmaking on a larger scale to aid with asset management and performance reporting programs.

Bridge Condition Performance Management Measures

The FHWA proposes two performance measures for assessing bridge condition: (1) Percentage of Deck Area of NHS Bridges Classified as in Good condition; and (2) Percentage of Deck Area of NHS Bridges Classified as in Poor condition. This data includes the following NBI items: 58—Deck, 59—Superstructure, 60—Substructure, and 62—Culverts. These bridge performance measures for assessing condition attributes were evaluated using the, existing state-of-the-practice, assessment process described in Section A.

All of the criteria, when applied to the proposed bridge performance measures, can be fully met largely because FHWA and stakeholders recognize that the NBI is, and has been for decades, the most consistent and comprehensive set of national data for evaluating the condition of bridges. Because the NBIS contains a consistent set of required standards for State DOTs to use for the proper inspection and evaluation of bridges for safety and serviceability, its use results in consistent and accurate data that goes into the NBI. Nearly every State DOT uses the NBI in some form as the basis for their current bridge decisionmaking. The calculation of the performance measures for assessing bridge condition provides flexibility to accommodate future changes such as the use of element level bridge data. In addition, the proposed measures are consistent with the feedback that FHWA has received from stakeholders. Therefore, FHWA considers the proposed bridge performance measures ready for use.

In this NPRM, FHWA is proposing the establishment of measures to assess pavement and bridge conditions. These measures would be used by State DOTs and MPOs to establish targets, develop plans, and report on progress. As discussed in the background of this proposal, FHWA is conducting a related rulemaking to establish requirements for the development of Asset Management Plans; this NPRM includes proposed minimum standards for State DOTs to use to develop and operate pavement and bridge management systems (RIN 2125–AF56). State DOTs use these systems to develop investment strategies for managing the conditions of their pavement and bridge networks. Further, FHWA has issued a proposed rule to update 23 CFR 450 to integrate performance in the scope of the metropolitan and statewide planning process (RIN 2125–AF52, 2132–AB10). Collectively, these three rulemakings discuss how the proposed measures would be used by State DOTs and MPOs to assess and manage pavement and bridge conditions.

Transportation decision makers consider a range of factors that ultimately influence project level investments decisions and typically reflect the transportation priorities for a local area or region. For example, a State DOT may, as a priority, focus their decisionmaking on investments that first address the sections of highways with higher traffic volumes or fatalities. With the exception of the minimum condition requirements for Interstate pavements and NHS bridges, FHWA is not proposing an implementation approach in this NPRM that would suggest how a State DOT or MPO would prioritize investment decisions. State DOTs and MPOs consider their priorities through the planning process.

The requirement of reporting and assessing targets would not necessarily dictate how a State DOT or MPO should prioritize their decision-making in establishing the targets required by 23 U.S.C. 150(d). A State DOT or MPO may consider a number of factors, such as funding availability and local transportation priorities, that could impact the targets they ultimately establish for pavement and bridge system conditions. For this reason, as stated in the discussion sections for §§ 490.105 and 490.109, the State DOT or MPO may elect to establish targets that represent a decline in pavement or bridge system conditions. Once established, the State DOT and MPO would use their targets to program investments by selecting sections of highway that would be treated to preserve or improve condition. The proposed regulation allows a State DOT or MPO to make decisions on the location of project investments. The FHWA encourages State DOTs and MPOs to select projects that will maximize the investment returns in improving system conditions.

The measures that are being proposed in this rulemaking are intended to summarize the condition based on the physical attributes of the pavement and bridge facility. Consequently, under this proposal a pavement or bridge would be rated in the same condition (Good, Fair, or Poor) regardless of the facility's location; functional class; level of use; environment; or impact the facility may have on other aspects of transportation performance, such as safety and traffic congestion. The FHWA is seeking comment from the public on whether the measures should reflect additional factors that could influence decision making, such as facility location, functional class, level of use, environment, or impact it may have on other aspects of transportation performance.

VI. Section-by-Section Discussion of the General Information and Proposed National Performance Management Measures for the NHPP: Pavement and Bridge

This Section-by-Section discusses how the proposed regulations address MAP–21's charge to establish national performance measures for State DOTs and MPOs to assess the condition of pavements and bridges to carry out the NHPP. The common aspects of the proposed rulemaking, related to reporting, significant progress determination, and target development, are discussed in subpart A: General Information. For the bridge and pavement performance measures, the proposed rule is separated by asset.[43] Subpart C addresses the Pavement performance measures and subpart D addresses the Bridge performance measures. Subparts C and D provide the requirements for the Pavement and Bridge performance measures, including methodologies for data collection, data requirements, a calculation process for evaluating condition, establishment or identification of minimal level of condition, and penalties for not maintaining condition. The Section-by-Section discussion also addresses procedural discrepancies in current data collection and reporting and attempts to update them utilizing the latest research and state-of-the-practice experience to provide consistent national performance measures.

A. Section-by-Section Discussion for the Subpart A: General Information, Target establishment, reporting, and NHPP Significant Progress Determination

Discussion of § 490.101 General Definitions

The FHWA proposes a section of general definitions. The first NPRM regarding the establishment of measures for carrying out the HSIP included several definitions (HPMS, measure, metric, non-urbanized area and target) that are repeated in this NPRM to provide clarity in the implementation of the proposed performance measures.

The FHWA proposes to define ''Full Extent'' to delineate data collection methods that utilize a sampling approach versus those that use a continuous form of data collection.

The FHWA proposes to include a definition for ''Highway Performance Monitoring System (HPMS)'' because it will be one of the data sources used in establishing a measure and establishing a target. The HPMS is an FHWA maintained, national level highway information system that includes State DOT-submitted data on the extent, condition, performance, use and operating characteristics of the Nation's highways. The HPMS database was jointly developed and implemented by FHWA and State DOTs beginning in 1974 and it is a continuous data collection system serving as the primary source of information for the Federal government about the Nation's highway system. Additionally, the data in the HPMS is used for the analysis of highway system condition, performance, and investment needs that make up the biennial Condition and Performance Reports to Congress. These Reports are used by the Congress in establishing both authorization and appropriation legislation, activities that ultimately determine the scope and size of the Federal-aid highway program, and determine the level of Federal highway taxation. Increasingly, State DOTs, as well as the MPOs, have utilized the HPMS as they have addressed a wide variety of concerns about their highway systems.[44] Numerous State DOTs and the MPOs use HPMS data and its analytical capabilities for supporting their condition/performance assessment, investment requirement analysis, strategic and state planning efforts, etc.

The FHWA proposes to define ''mainline highway'' to limit the extent of the highway system to be included in the scope of the proposed pavement performance measures. The proposed definition for mainline highway includes the primary traveled portion of the roadway and excludes ramps, climbing lanes, turn lanes, auxiliary lanes, shoulders, and non-normally traveled pavement surfaces.

The FHWA proposes to include a definition for ''measure'' because establishing measures is a critical element of an overall performance management approach and it is important to have a common definition that the FHWA can use throughout the Part. To have a consistent definition for ''measure,'' the FHWA proposes to make a distinction between ''measure'' and ''metric.'' Hence, the FHWA proposes to define ''metric'' as a quantifiable indicator of performance or condition and to define ''measure'' as an expression based on a metric that is used to establish targets and to assess progress toward achieving the established targets.

The FHWA proposes a definition for ''National Bridge Inventory (NBI)'' because it is the data system that would be used to establish the measure for assessing the condition of the bridges on the NHS and the targets for the measure, and the assessment of progress toward achieving the established targets. This definition is based on the description of an inventory as required by 23 U.S.C. 144(b)(1) and 23 U.S.C. 144(h)(2)(D).

The FHWA proposes to include a definition for ''non-urbanized areas'' to provide clarity in the implementation of the provision in 23 U.S.C. 150(d)(2) that allows the State DOTs the option of selecting different targets for ''urbanized and rural areas.'' As written, the statute is silent regarding the small urban areas that fall between ''rural'' and ''urbanized'' areas. Instead of only giving the State DOTs the option of establishing targets for ''rural'' and ''urbanized'' areas, FHWA proposes to define ''non-urbanized'' areas to include both ''rural'' areas and the small urban areas that are larger than ''rural'' areas but do not meet the criteria of an ''urbanized area.'' This would then allow State DOTs to establish different targets for urbanized and non-urbanized areas. For target-establishment purposes, the FHWA believes that these small urban areas are best treated with the ''rural'' areas, as non-urbanized areas, because both of these areas do not have the same complexities that come with having the population and density of urbanized areas and are generally more rural in characteristic. In addition, neither of these areas are treated as MPOs in the transportation planning process or given the authority under MAP–21 to establish their own targets.

The FHWA proposes to include a definition for ''Performance period'' to establish a definitive period of time during which condition/performance would be measured, evaluated, and reported. The frequency of measurement and target establishment for the measures proposed to implement 23 U.S.C. 150 is not directly or indirectly defined in statute. The FHWA proposes a consistent time period of 4 calendar years that would be used to assess non-safety condition/performance. This time period aligns with the timing of the biennial performance reporting requirements under 23 U.S.C. 150(e) and is consistent with a typical planning cycle for most State DOTs and MPOs (*e.g.,* State and MPO transportation improvement programs are required to cover a 4-year period; metropolitan plans are also required to be updated every 4 or 5 years). The

[43] Subpart B, addressing the HSIP-related performance management measures, was proposed in the first Federal-aid Highway Performance Management Measures NPRM.

[44] Highway Performance Monitoring System, FHWA Office of Policy Information. *http://www.fhwa.dot.gov/policyinformation/hpms/nahpms.cfm.*

proposed calendar year basis is consistent with data reporting requirements currently in place to report pavement and bridge conditions, which are also done on a calendar year basis.

The FHWA proposes a definition for ''Performance period'' that would cover a 4-year period beginning on January 1 of the calendar year in which targets are due to FHWA, as discussed in § 490.105. Within a performance period, condition/performance would be measured and evaluated to: (1) Assess condition/performance with respect to baseline condition/performance; and (2) track progress toward the achievement of the target that represents the intended condition/performance level at the midpoint and at the end of that time period. The term ''Performance period'' applies to all proposed measures in this Part, except the proposed measures for the HSIP provided for in § 490.209 where FHWA proposed a 1 calendar year period as the basis for measurement, target establishment and reporting.

The FHWA proposes to include a definition for ''target'' to indicate how measures will be used for target establishment by State DOTs and MPOs to assess performance or condition.

Discussion of § 490.103 Data Requirements

The FHWA is proposing in § 490.103 data requirements that apply to more than one subpart in part 490. Additional proposed data requirements that are unique to each subpart are included and discussed in their respective subpart.

In this section, FHWA is proposing that State DOTs would submit urbanized area boundaries in accordance with the HPMS Field Manual. The boundaries of urbanized areas would be as identified through the most recent U.S. Decennial Census unless FHWA approves adjustments to the urbanized area, as submitted by State DOTs and allowed for under 23 U.S.C. 101(a)(34). These boundaries are to be reported to HPMS in the year the Baseline Performance Report is due, and are applicable to the entire performance period, regardless of whether or not FHWA approved adjustments to the urbanized area boundary during the performance period. The FHWA proposes that the State DOT submitted boundary information would be the authoritative data source for the target scope for the additional targets for urbanized and non-urbanized areas (§ 490.105(e)(3)), progress reporting (§ 490.107(b)), and IRI rating (§ 490.313(b)(1)) for the measures identified in § 490.105(c)(1)–(3). As discussed in § 490.105(d)(3), any changes in urbanized area boundaries during a performance period would not be accounted for until the following performance period. The FHWA-approved urbanized area data available in HPMS on June 15th (HPMS due date) prior to the due date of the Baseline Performance Report is to be used for this purpose. For example, State DOTs shall submit their first Baseline Performance Period Report to FHWA by October 1, 2016. The FHWA approved urbanized area data available in HPMS on June 16, 2016 is to be used.

Section 490.103(c) is reserved.

In § 490.103(d), FHWA proposes that State DOTs would continue to submit NHS limit data in accordance with HPMS Field Manual. The FHWA proposed that the State DOT submitted NHS information would be the authoritative data source for determining measure applicability (§ 490.105(c)), target scope (§ 490.105(d)), progress reporting (§ 490.107(b)), and determining significant progress (§ 490.109(d)) for the measures identified in § 490.105(c)(1)–(3). As discussed in § 490.105(e)(3)(i), the NHS limits dataset referenced in the Baseline Performance Report are to be applied to the entire performance period, regardless of changes to the NHS approved and submitted to HPMS during the performance period.

Discussion of § 490.105 Establishment of Performance Targets

The declared policy under 23 U.S.C. 150(a) transforms the Federal-aid highway program and encourages the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing accountability and transparency in the Federal-aid highway program, and improving investment decisionmaking. To this end, FHWA encourages State DOTs and MPOs to establish targets that would support the national transportation goals while improving investment decision-making processes.

A number of considerations were raised during the performance management stakeholder outreach sessions regarding target establishment, such as: Providing flexibility for State DOTs and MPOs, coordinating through the planning process, allowing for appropriate time for target achievement, and allowing State DOTs and MPOs to incorporate risks. Using these considerations, FHWA created a set of principles to develop an approach to implement the target establishment requirements in MAP–21. These principles aimed to develop an approach that:

- Provides for a new focus for the Federal-aid program on the MAP–21 national goals under 23 U.S.C. 150(b);
- improves investment decisionmaking;
- considers the need for local performance trade-off decisionmaking;
- provides for flexibility in the establishment of targets;
- allows for an aggregated view of anticipated condition/performance; and
- considers budget constraints.

In § 490.105, FHWA proposes the minimum requirements that would be followed by State DOTs and MPOs in the establishment of targets for all measures identified in § 490.105(c), which include the proposed measures in both this performance management NPRM and the third performance management NPRM. These requirements are being proposed to implement the 23 U.S.C. 150(d) and 23 U.S.C. 134(h)(2) target establishment provisions in a manner that provides for the consistency necessary to evaluate and report progress at a State, MPO, and national level, while also providing a degree of flexibility for State DOTs and MPOs.

The FHWA proposes in § 490.105(a) for State DOTs and MPOs to establish quantifiable targets for each performance measure identified in § 490.105(c). In § 490.105(b), the performance targets for carrying out the HSIP would be established in accordance with § 490.209 of the first performance management NPRM.

In § 490.105(d), FHWA proposes that State DOTs establish statewide targets that represent performance outcomes of the transportation network within the respective State boundary, and that MPOs establish targets that represent performance outcomes of the transportation network within their respective metropolitan planning area. State DOTs and, if applicable, MPOs are encouraged to coordinate their target-establishment with neighboring states and MPOs to the extent practicable. The FHWA further proposes in § 490.105(d) that State DOTs and MPOs establish targets that represent performance outcomes of the entire transportation network required for proposed measures regardless of ownership, including NHS bridges that cross a State border.

The FHWA recognizes that there is a limit to the direct impact the State DOT and the MPO can have on the performance outcomes within the State and the metropolitan planning area, respectively, and recognizes that the State DOT and the MPO need to consider this uncertainty when

establishing targets. For example, some Federal and tribal lands contain roads and bridges on the NHS that State DOTs would need to consider (as appropriate) when establishing targets. The FHWA anticipates that State DOTs and MPOs would need to consult with relevant entities (*e.g.,* relevant MPOs, State DOTs, local transportation agencies, Federal Land Management Agencies, tribal governments) as they establish targets to better identify and consider factors outside of their direct control that could impact future condition/performance.

The FHWA also recognizes that the limits of the NHS could change between the time of target establishment and the time of progress evaluation and reporting for the targets for measures specified in sections § 490.105(c)(1) through (3). State DOTs may request modifications to the NHS, which could result in additions, deletions or relocations. In one instance with MAP–21, segments were added to the NHS. Such changes may alter the measures reported, which could then impact how an established target relates to actual measured performance. For example, if NHS limits are changed after a State DOT establishes the target, actual measured performance of the transportation network within the changed NHS limits would represent a different set of highways as compared to what was originally used to establish the target. This difference could impact a State DOT's ability to make significant progress toward achieving targets. Thus, for establishing targets for NHS, FHWA believes that it will be important for the State DOT to ensure that the data used to establish the targets is accessible, and the information about the data is properly documented. Consequently, FHWA proposes that State DOTs would need to describe the extent of the NHS used for target establishment. The FHWA also proposes that State DOTs declare and describe their urbanized area boundaries. This information would be included, along with reporting targets, in the Baseline Performance Period Report described in § 490.107(b)(1). These NHS limits and urbanized area boundaries are to be reported to HPMS in the year the Baseline Performance Report is due, and are applicable to the entire performance period, regardless of whether or not FHWA approved adjustments to the NHS limits during the performance period. In § 490.105(d)(3), FHWA proposes that any changes in NHS limits or urbanized area boundaries during a performance period would not be accounted for until the following performance period.

In § 490.105(e), FHWA proposes the State DOT requirements for the establishment of targets for all measures identified in paragraph 490.105(c), with applicable transportation network for those targets (target scope) defined in paragraph 490.105(d). Pursuant to 23 U.S.C. 150(d)(1) and 23 U.S.C. 150(e), FHWA proposes in § 490.105(e)(1) that State DOTs would establish targets within 1 year of the effective date of this rule, and for each performance period thereafter the State DOTs would establish and report the targets to FHWA by the due date provided in § 490.107(b)(1). The FHWA anticipates the final rule for this proposal to be effective no later than October 1, 2015. This would allow for at least a 1-year period for States to establish targets so that they can be reported in the first biennial performance report which would be due to FHWA by October 1, 2016. The FHWA recognizes that if the final rule is effective after October 1, 2015, the due date to report State DOT targets for the first performance period may need to be adjusted. If it becomes clear that the final rule won't be effective until after October 1, 2015, FHWA will consider adjusting the due date in the final rule or will issue implementation guidance that would provide State DOTs a 1-year period to establish and report targets.

The proposed schedule would require the establishment and reporting of targets at the beginning of each performance period or every 4 years. With the exception of the allowance proposed in § 490.105(e)(6), FHWA recommends that State DOTs would not have the ability to change targets reported for a performance period. Considering this proposed limitation, State DOTs would need to provide for sufficient time to fully evaluate their targets before they are due to be reported to FHWA.

Pursuant to 23 U.S.C. 135(d)(2)(B)(i)(II), FHWA proposes in § 490.105 (e)(2) that State DOTs shall coordinate with relevant MPOs to establish consistent targets, to the maximum extent practicable. The coordination would be accomplished in accordance with 23 CFR 450. The FHWA recognizes the need for State DOTs and MPOs to have a shared vision on expectations for future condition/performance in order for there to be a jointly owned target establishment process.

The FHWA proposes in § 490.105(e)(3) to allow State DOTs to establish additional targets for any of the proposed measures in Subparts C and D, beyond the required statewide target. The State DOT could establish additional targets for any number and combination of urbanized areas and could establish a target for the non-urbanized area for any or all of the proposed measures. This is intended to give the State flexibility when setting targets, and to aid the State in accounting for differences in urbanized and the non-urbanized area. For instance, a State DOT could choose to establish additional targets for a single urbanized area, a number of the urbanized areas, or all of the urbanized areas separately or collectively. For States that want to establish a non-urbanized target, it would be a single target that applies to the non-urbanized area statewide. If the State DOT elects to establish any additional targets, they need to be declared and described in the State Biennial Performance Report just after the start date of a performance period (*i.e.,* Baseline Performance Period Report). The FHWA intends to issue guidance regarding the voluntary establishment of additional performance targets for urbanized areas and the non-urbanized area.

If a State DOT chooses to establish additional performance targets, it would increase the number of performance targets that it reports. For example, at a minimum, State DOTs would be required to establish four statewide targets for the pavement condition measures, as specified in § 490.307. If a State DOT chooses to establish additional targets for all 4 pavement condition measures for the single largest urbanized area in its state, the State DOT would increase the total number of pavement condition targets to eight (4 required targets + 4 additional urbanized area targets = 8).

For each additional target established, State DOTs would evaluate whether they have made progress towards achieving each target and report on that progress in their biennial performance report in accordance with § 490.107(b)(2)(ii)(B) and (b)(3)(ii)(B).

Any additional targets the State DOT chooses to establish would not be subject to the significant progress assessment in § 490.109. Because these additional targets are optional and subcomponents of targets established under § 490.105(d), including them in the significant progress assessment proposed in § 490.109 could result in ''double counting'' during that assessment. The FHWA believes that excluding these additional targets from the significant progress assessment in § 490.109 provides an opportunity for some flexibility with respect to establishing the targets and may

encourage State DOTs to establish these additional targets.

Historically, the Census has defined urbanized areas every 10 years, and these boundaries can be adjusted (see 23 U.S.C. 101(a)(34)). The FHWA recognizes that the urbanized area boundaries and resulting non-urbanized area boundary have the potential to change on varying schedules. Changing a boundary during a performance period may lead to changes in the measures reported for the area, and could impact how an established target relates to actual measured performance. Thus, FHWA proposes that State DOTs would need to describe the urbanized area boundaries and the non-urbanized area boundary in place at the start of a performance period in the Baseline Performance Period Report, and use those same boundaries throughout a performance period. This will eliminate the potential for inconsistencies in the extent of the network used to establish targets and calculate measures in urbanized areas and the non-urbanized area, and provide consistency in reporting established targets for those areas.

The urbanized area boundaries are to be reported to HPMS in the year the Baseline Performance Report is due and are applicable to the entire performance period, regardless of whether or not FHWA approved adjustments to an area boundary during the performance period for other reasons. Any changes in urbanized area boundaries during a performance period would not be accounted for until the following performance period.

The FHWA is seeking comments on this approach for establishing optional additional targets for urbanized areas and the non-urbanized area. The FHWA would also like comments on any other flexibilities it could provide to or identify for State DOTs related to the voluntary establishment of additional targets. Some examples include:

- Providing options for establishing different additional targets throughout the State, particularly for the States' non-urbanized area; and
- Expanding the boundaries that can be used in establishing additional targets (*e.g.,* metropolitan planning area boundaries, city limit boundaries, etc.).

As described in § 490.105(f), an MPO would have the option to establish a quantifiable target for its metropolitan planning area. As described in 23 CFR 450.312, the boundaries of the metropolitan planning area include, at a minimum, the entire existing urbanized area (as defined by the Census Bureau) plus the contiguous area expected to become urbanized within a 20-year forecast period. The FHWA recognizes the challenges in coordinating targets between State DOTs and MPOs, especially in cases where metropolitan planning areas across multiple State boundaries. The FHWA intends for State DOTs and MPOs to collectively consider goals and issues when establishing both State DOT and MPO targets. For reporting purposes, FHWA expects MPOs to report progress to the relevant State DOT for the entire metropolitan planning area.

To illustrate the differences in boundaries and how they might be addressed for one of the pavement condition measures, the following example is provided regarding the target establishment boundary differences that could exist in the State of Maryland today.

- Urbanized Areas: Based on the 2010 Census, the State of Maryland contains part or all of 11 urbanized areas. Of these urbanized areas, 5 are shared with neighboring States.
- Metropolitan Planning Areas: Currently, the State contains part or all of six metropolitan planning areas. Of these areas, four metropolitan planning areas are shared with neighboring States. (A map of Metropolitan Planning Areas and Urbanized Areas of the State of Maryland is included in the docket.)
- Statewide Urbanized Area Target Extent: An optional State target for the Percentage of Interstate System lane-miles in Good condition within the State's urbanized areas would represent those portions of the 11 urbanized areas within the geographic boundary of the State of Maryland, in aggregate.
- Single Urbanized Area Target Extent: An optional urbanized area target for a single urbanized area would represent the anticipated Percentage of Interstate System lane-mileage in Good condition within the identified urbanized area, based on the corresponding boundary described Baseline Performance Period Report. In the case of the Hagerstown urbanized area, the target would be established for the portion of the urbanized area in the State of Maryland.
- MPO Target Extent: Each of the six MPOs would establish individual targets for representing the anticipated Percentage of Interstate System lane-mileage in Good condition within their entire metropolitan planning area, regardless of State boundary. In the case of the Hagerstown—Eastern Panhandle MPO in Maryland/West Virginia/Pennsylvania, the MPO would establish target for Interstate System lane-mileage in Good pavement condition within its metropolitan planning boundary that extends beyond Maryland State boundary and into Pennsylvania State boundary, while the Maryland DOT would establish its target for the area only within its State boundary.

The FHWA is seeking comment on alternative approaches that could be considered to effectively implement 23 U.S.C. 134(h)(2)(B)(i)(I) and 23 U.S.C. 150(d)(2) considering the need for coordination required under 23 U.S.C. 134(h)(2)(B)(i)(II) and 23 U.S.C. 135(d)(2)(B)(i)(II).

The FHWA proposes in § 490.105(e)(4) that State DOTs establish targets with a 2-year time horizon (*i.e.,* 2-year target) and a 4-year time horizon (*i.e.,* 4-year target) for each performance period. Each performance period, defined in § 490.101, would begin on the January 1 of the year in which the State DOT target is reported (*i.e.,* State DOT Baseline Performance Period Report required in § 490.107(b)(1)) to FHWA and would extend for a duration of 4 years. Additionally, the midpoint of a performance period would occur 2 calendar years after the beginning of a performance period. Thus, 2-year targets would be the anticipated or intended condition/performance level at the midpoint of each performance period, and 4-year targets would be the anticipated or intended condition/performance level at the end of each performance period. It is important to emphasize that established targets (2-year target and 4-year target) would need to be considered as interim conditions/performance levels that lead toward the accomplishment of longer-term performance expectations in the State DOT's long-range statewide transportation plan [45] and NHS asset management plans.[46] As defined in § 490.101, a target is a numeric value that represents a quantifiable level of condition/performance in an expression defined by a measure. The FHWA proposes that a target would be a single numeric value representing the intended or anticipated condition/performance level at a specific point in time. For example, the proposed measure, Percentage of pavements of the Interstate System in Good condition (in § 490.307(a)(1)), would be a percentage of lane-miles of the Interstate System in Good condition (§ 490.307(f)(2)) expressed in one tenth of a percent. Thus, FHWA proposes that a target for this measure would be a percentage of lane-miles of the Interstate System in Good condition expressed in one tenth of a percent. As a hypothetical example, a 2-year target and a 4-year target would be 39.5% and 38.5%, respectively for

[45] 23 U.S.C. 135(f).

[46] 23 U.S.C. 119(e).

the proposed measure Percentage of pavements of the Interstate System in Good condition.

The FHWA is proposing this definitive performance period while recognizing that planning cycles and time-horizons for long-term performance expectations differ among State DOTs. The FHWA felt that although differences exist, it was necessary to utilize a 4-year performance period considering the following implementation expectations:

- Provide for a link between the interim, short-term targets (*i.e.,* 2-year and 4-year time horizons) to individual State DOT's long-term performance expectations as part of performance-based planning and programming process;
- Ensure the time horizon is long enough to allow for condition/performance change to occur through the delivery of programmed projects;
- Align the schedule of reporting on targets and the evaluation of progress toward achieving the targets with the biennial performance reporting requirements under 23 U.S.C. 150(e); and
- Report targets using a consistent performance period as part of the evaluation of the State DOTs' effectiveness of performance-based planning process to the Congress by October 1, 2017, as required by 23 U.S.C. 135(h).

The FHWA anticipates that the State DOTs would establish targets for the measures listed in § 490.105(c) and report the established targets to FHWA by the statutory deadline for the first biennial report of October 1, 2016.[47] The FHWA considered a number of alternatives for a consistent time horizon (*i.e.,* performance period) across the State DOTs to ensure consistent reporting of targets and assessment of progress toward achieving those targets for carrying out the requirements in the statutory provisions.[48]

In addition, FHWA considered the data collection cycles associated with other proposed measures. The FHWA also assessed the inherent time lag between data collection and target establishment due to necessary data processing, data quality management, data analysis, and other required business processes necessary for target establishment. The FHWA intends to minimize the time lag between the end of a performance period and the time of subsequent biennial performance reporting under 23 U.S.C. 150(e) to ensure a timely assessment of progress toward achieving the targets. Thus, FHWA proposes that the first 4-year performance period start on January 1, 2016, and end on December 31, 2019, and subsequent performance periods would follow thereafter, for the measures listed in § 490.105(c). A diagram for proposed performance periods for target establishment, condition/performance measure data collection and assessment, and biennial performance reporting is exhibited in Figure 1.

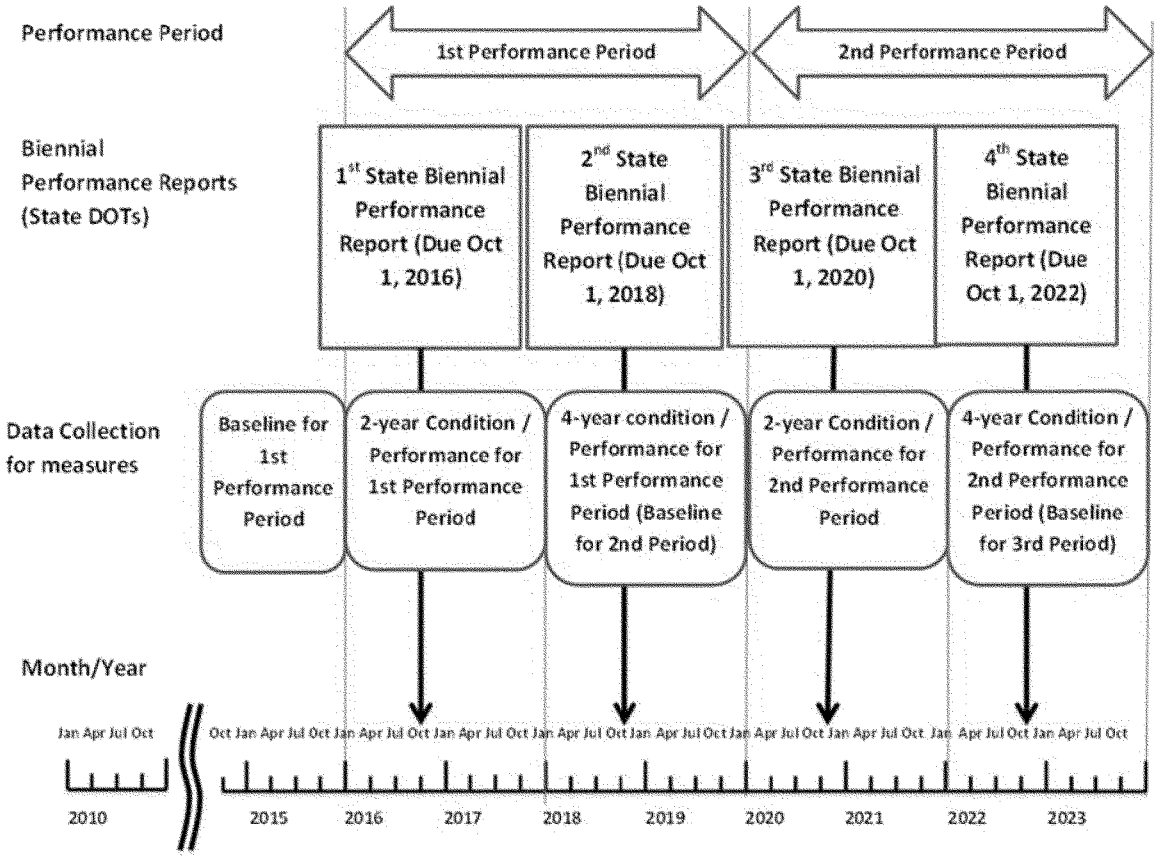

Figure 1 – Timeline of Performance Periods

[47] 23 U.S.C. 150(e).

[48] 23 U.S.C. 150(e), 23 U.S.C. 135(h), and 23 U.S.C. 119(e)(7).

As shown in Figure 1, for the first performance period, the latest measured condition/performance data through December 31, 2015, is the baseline condition/performance. The State DOTs would establish 2-year targets as the condition/performance anticipated at a midpoint, which would be indicated by the latest measured condition/performance data through the midpoint of the performance period (December 31, 2017, for the first performance period). Similarly, the State DOTs would establish 4-year targets as the condition/performance anticipated at the end of a performance period that would be indicated by the latest measured condition/performance data through the end of the performance period (December 31, 2019, for the first performance period). It is important to note that the frequency of data collection cycle depends on the individual measure. For example, the Interstate System pavement condition measures provided in § 490.307(a)(1) and (2) would require a data collection frequency of 1 year as specified in § 490.309(b)(1). Conversely, non-Interstate NHS condition measures, provided in § 490.307(a)(3) and (4), respectively, would require a data collection frequency of 2 years as specified in § 490.309(b)(2).

Data collection frequency requirements are defined in the Data Requirement sections for each measure in the relevant subparts. This proposed timeline is intended to: (1) Satisfy the first State DOT biennial performance report due on October 1, 2016, as described in the discussion on § 490.107; (2) accommodate data collection cycles; and (3) minimize the time lag between the end/midpoint of a performance period and the following biennial performance reporting date, as described in the discussion sections in §§ 490.107 and 490.109. Baseline condition and target establishment for subsequent performance periods would follow a similar timeline as the first performance period. The proposed 2-year and 4-year targets are timed so that the targets are on the same cycle as the biennial report under 23 U.S.C. 150(e), and are also necessary for FHWA to determine the significant progress for NHPP measures as required under 23 U.S.C. 119(e)(7). The FHWA must make this determination every 2 years, after a State DOT submits each biennial report.

The FHWA proposes in § 490.105(e)(5) that State DOTs report their established targets (2-year and 4-year) and progress toward achieving their targets in the biennial performance report required per 23 U.S.C. 150(e) as specified in § 490.107. As discussed in § 490.105(e)(2), State DOT coordination with relevant MPOs would be required for selection of targets. Thus, FHWA proposes that the State DOTs would be able to provide relevant MPOs' targets to FHWA, upon request, each time the relevant MPOs establish or adjust MPO targets, described in § 490.105(f).

The FHWA recognizes that State DOTs would need to consider many factors in establishing targets that could impact progress such as uncertainties in funding, changing priorities, and external factors (see § 490.109(e)(4)) outside the control of the State DOTs. Thus, FHWA proposes in § 490.105(e)(6) that State DOTs may adjust their established 4-year targets when they submit their State Biennial Performance Report just after the midpoint of the performance period (*i.e.,* Mid Performance Period Progress Report, described in § 490.107(b)(2)). This target adjustment allowance would be limited to this specific report and not allowed at any other time during the performance period. The FHWA feels that this frequency of adjustment allows a State DOT to address changes they could not have foreseen in the initial establishment of 4-year targets while still maintaining a sufficient level of control in the administrative procedure necessary to carry out these program requirements in an equitable manner. For example, the 4-year target established in 2016 (the 1st State Biennial Performance Report illustrated in Figure 1) may be adjusted in 2018 (2nd State Biennial Performance Report illustrated in Figure 1). The State DOT would report and justify this adjusted target in the second State Biennial Performance Report due on October 2018 (*i.e.,* Mid Performance Period Progress Report). The details of reporting requirements for adjusting a target are discussed in § 490.107(b)(2).

In § 490.105(e)(7), FHWA proposes that State DOTs are not required to establish their 2-year targets in the beginning of the first performance period (*i.e.,* the 1st State Biennial Performance Report illustrated in Figure 1) for the Interstate System pavement condition measures, provided in § 490.307(a)(1) and (2). As proposed in the § 490.105(e)(4) discussion, the first performance period baseline condition/performance data would need to be collected prior to the start of the performance period for establishing targets. However, FHWA recognizes that some State DOTs may not be able to meet all data requirements in § 490.309(b)(1) prior to the start of the first proposed performance period for the Interstate System pavement condition measure. Thus, FHWA proposes that for the first performance period, State DOTs would only be required to establish their 4-year targets in the beginning of the first performance period (*i.e.,* the 1st State Biennial Performance Report in 2016 illustrated in Figure 1) for the Interstate System pavement condition measures. If necessary, the State DOTs would adjust their established 4-year targets at the midpoint of the first performance period (*i.e.,* the 2nd State Biennial Performance Report in 2018 illustrated in Figure 1) as described in § 490.105(e)(6).

Similar considerations should be made regarding baseline conditions/performance. For those State DOTs who may not be able to collect data required in § 490.309(b)(1) prior to the start of the first proposed performance period, FHWA proposes that such State DOTs would not be required to establish baseline condition/performance in the 1st State Biennial Performance Report in 2016, but would update baseline condition/performance with the 2-year condition/performance at the midpoint (2nd State Biennial Performance Report illustrated in Figure 1) in 2018. Also, at the midpoint of the first performance period, FHWA would determine the State DOT's 2-year targets for the Interstate System pavement condition measures as ''progress not determined'' for the 2-year significant progress determination as discussed in § 490.109(e)(3).

In § 490.105(f) FHWA proposes MPO requirements for the establishment of targets for all measures identified in § 490.105(c). These requirements are being proposed to implement the 23 U.S.C. 134(h)(2)(B) target establishment provisions in a manner that provides for a level of consistency necessary to evaluate and report progress at an MPO and the national level while providing for a degree of flexibility to support metropolitan planning needs. The FHWA also attempted to develop these target establishment requirements so that they could be met by all MPOs, recognizing that MPOs currently vary in capability, resource availability, and ability to establish performance targets.

Pursuant to 23 U.S.C. 134(h)(2)(C), FHWA proposes in § 490.105(f)(1) that each MPO would establish 4-year targets no later than 180 days after the relevant State DOT establishes its targets, described in the discussion of § 490.105(e)(1). The FHWA recognizes the burden on MPOs, regardless of size, to establish targets. In addition, MPOs are not directly subject to the requirement to evaluate the progress toward achieving NHPP targets. As a result, FHWA proposes in this section that MPOs would not be required to

establish 2-year targets, which are required of State DOTs under § 409.105(d)(4). Thus, in case of the first performance period, FHWA anticipates that the State DOTs would establish targets for the measures listed in § 490.105(c) prior to the first State DOT biennial performance report, and the MPOs would establish targets no later than 180 days thereafter. The timeline for target establishment for State DOTs is illustrated in Figure 1 in the discussion of § 490.105(e)(4). If the rule is effective on or after September 30, 2015, MPOs may not have the opportunity to establish their own targets in time for States to consider those MPO targets when submitting the 1st Baseline Performance Period Report. The MPOs would be required to establish targets for all applicable measures.

Similar to the requirement for State DOTs, pursuant to 23 U.S.C. 134(h)(2)(B)(i)(II), FHWA proposes in § 490.105(f)(2) that MPOs coordinate with relevant State DOT(s) to establish consistent targets, to the maximum extent practicable. This would be done in accordance with 23 CFR part 450.

As part of the MPO-State DOT coordination in establishing State DOT and MPO targets described in the discussion of § 490.105(e)(2) and (f)(2), FHWA proposes in § 490.105(f)(3) that the MPOs establish targets with a 4-year performance period identical to the State DOT's performance periods discussed in the Section-by-Section for §§ 490.101 and 490.105(e)(4). It is important to emphasize that established MPO targets (4-year target) must be considered as interim conditions/performance levels that lead toward the accomplishment of longer-term performance expectations in the longer-term performance expectations in the MPO's Metropolitan Transportation Plan [49] and relevant State DOT NHS asset management plans.[50]

The FHWA recognizes the burden on the MPOs to establish their own performance targets. Consequently, as proposed, the MPOs would have the flexibility to establish their targets using one of two options. The FHWA proposes in § 490.105(f)(4) that MPOs would establish targets, specific to the metropolitan planning area, by either: (1) Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT targets, or (2) committing to quantifiable targets for their metropolitan planning area. This proposal would give MPOs two options to establish targets. The MPOs could establish their own quantifiable targets. Alternatively, recognizing that the resource level and capability of some MPOs to reliably predict performance outcomes varies across the country, FHWA is proposing an approach that would allow MPOs that did not want to establish their own quantifiable target to establish targets by supporting the State DOT targets for performance. The MPOs would do this through their investment decisionmaking process. Regardless of which option MPOs use to establish targets, FHWA recognizes that the MPOs may need to work with relevant State DOTs to coordinate, plan, and program projects for their planning area.

As stated in the § 490.105(e)(6) discussion, State DOTs may adjust their established 4-year targets when they submit their State Biennial Performance Report just after the midpoint of the performance period (*i.e.,* Mid Performance Period Progress Report, described in § 490.107(b)(2)). The MPOs are required to establish targets 180 days after the date on which the relevant State DOT(s) establishes their targets, per the MPO target establishment requirements specified in 23 U.S.C. 134(h)(2)(C). If a State DOT adjusts a target, as allowed under the proposed §§ 490.105(e)(6) and 490.107(b)(2), any relevant MPOs would be required to also re-establish targets for the same measures within 180 days. However, FHWA is proposing that the MPO only be required to re-establish the target if the MPO had originally elected to establish a target supporting the State DOT target for that measure. In that case the adjusted State target could directly impact an MPO's investment decisionmaking. Specifically, FHWA proposes in § 490.105(f)(7) that if a State DOT adjusts their 4-year target in the State DOT's Mid Performance Period Progress Report and the MPO established the relevant target by supporting the State DOT target as allowed under § 490.105(f)(4), then the MPO would be required, within 180 days, to report to the State DOT if they either: (1) Agree to plan and program projects so that they contribute toward the accomplishment of State DOT adjusted target, or (2) commit to a new quantifiable 4-year target.

As with State DOTs, FHWA recognizes that MPOs would need to consider many factors in establishing targets, such as uncertainties in funding, changing priorities, and external factors outside the control of the MPO. Thus, FHWA proposes in § 490.105(f)(8) that MPOs may adjust their established 4-year target in a manner that is consistent with agreed upon terms documented in the relevant Metropolitan Planning Agreement. The FHWA recognizes that for many MPOs the establishment of targets, especially for the first performance period, would be new and challenging and that there may be a need to revisit targets during the 4-year performance period. The FHWA requires State DOTs and MPOs to coordinate with each other throughout the performance period with respect to any target adjustments so their targets are consistent to the maximum extent practicable.

In § 490.105(f)(9), FHWA proposes that the method by which MPOs would report their established baseline condition/performance, targets, and progress toward achieving targets would be as specified in § 490.107(c). The FHWA further proposes in 490.105(f)(9) that the State would be able to provide MPO targets to FHWA on request after targets are established or adjusted by MPOs within the State. The FHWA believes that, through the coordination between a State DOT and relevant MPOs, the reporting on MPO progress can be shared between these two entities. However, FHWA expects to be able to request from a State DOT the MPO targets and reports on progress, as needed, to better understand performance expectations and outcomes in urbanized areas across the country. The State DOT and MPO would document the target establishment reporting process in the Metropolitan Planning Agreement, in accordance with 23 CFR 450. The FHWA encourages State DOTs to work with multiple MPOs to agree on a process for reporting that would provide a sufficient level of consistency to understand performance in urbanized areas collectively across the State.

Discussion of § 490.107 Reporting on Performance Targets

Pursuant to 23 U.S.C. 150(e), State DOTs are required to submit reports on performance targets and progress in achieving established targets to FHWA not later than October 1, 2016, and every 2 years thereafter. The FHWA evaluated whether there were any existing reports that could be used to meet these 23 U.S.C. 150(e) reporting requirements. For the non-HSIP related measures, FHWA determined that none of the existing reporting requirements met the statutorily required timing. In addition, none of the existing reports currently provide the consistency needed to implement performance management nationally. For these reasons, FHWA proposes a new biennial report to meet the statutory requirements.

[49] 23 U.S.C. 134(i).

[50] 23 U.S.C. 119(e).

The FHWA proposes in § 490.107 for State DOT performance reporting to be used—

- In the determination of significant progress toward achieving NHPP targets;
- to provide some of the information needed for FHWA to report to Congress on the performance-based planning process evaluation of each State DOT as required by 23 U.S.C. 135(h);
- to understand performance needs, expectations, and progress at a State, regional, and national level; and
- to provide for transparency by communicating the content of the report to the public on an externally facing Web site in a downloadable format.

In § 490.107(a), FHWA proposes that all performance targets described in § 490.105 would be subject to biennial performance reporting in this section. However, reporting on performance targets for carrying out the HSIP would be in accordance with § 490.213. In the National Performance Measures; HSIP NPRM, FHWA proposed a 1 calendar year period as the basis for measurement, target establishment, and reporting. As discussed in § 490.101 of that NPRM, a 1-year period was proposed to align the safety measures with the requirements for the common measures reported as a requirement of 23 U.S.C. 402. The FHWA also proposes that State DOTs use an electronic template to deliver the report proposed in this section. The FHWA intends to provide additional guidance regarding the template which will include fields to capture all of the information that would be required to be reported under this rulemaking.

For consistent State DOT and FHWA reporting, FHWA proposed a 4-year performance period in § 490.105(e)(4). The FHWA recognizes the need for uniform data collection timing in order to ensure consistency in reporting and repeatable target establishment and progress evaluation processes. Thus, in subsequent sections, FHWA proposes the timing of data collection based on the specified performance periods, described in § 490.105(e)(4). The FHWA proposes that data collection requirements for the established measures support the reporting requirements in this section and be in accordance with the respective Data Requirements section (*e.g.,* § 490.309) for each measure. To ensure consistency in reporting, FHWA proposes that the reported baseline condition/performance be derived from the latest data collected through the begin date of a performance period, the reported actual 2-year condition/performance would be derived from the latest data collected through the midpoint of a performance period, and the reported actual 4-year condition/performance would be derived from the latest data collected through the end date of a performance period. This is illustrated in Figure 1 in the discussion for § 490.105(e)(4).

The FHWA proposes in § 490.107(b) that State DOTs submit to FHWA three types of Biennial Performance Reports: Baseline Performance Period Report, Mid Performance Period Progress Report and Full Performance Period Progress Report. The FHWA proposes to make a distinction between the three reports to emphasize the differences in content while aligning the reporting process to the proposed target establishment, progress evaluation, and other performance reporting requirements. Figure 2 is a timeline of the proposed reporting timeline for the Biennial Performance Reports. The proposed requirements identify three distinct biennial reports (baseline, mid and full) and State DOTs will be expected to provide information for at least one of these reports every 2 years. Because these reports would be required for consecutive 4-year performance periods, the information provided in the Full Performance Period Report would be provided at the same time and may include some of the same information as the Baseline Performance Period Report for the next performance period. As discussed previously, FHWA is proposing to provide for an electronic template that State DOTs would use to capture the information required in each of the three reports discussed in § 490.107(b). It is envisioned that this electronic template would provide the State DOT all of the relevant fields for the information that would be due at the corresponding 2-year point. This approach would allow State DOTs to provide all of the required baseline and progress reporting information at one time. The proposed regulations identify three distinct reports to clarify the purpose and timing of information that would be required to be reported every 2 years.

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Discussion of Baseline Performance Period Reports

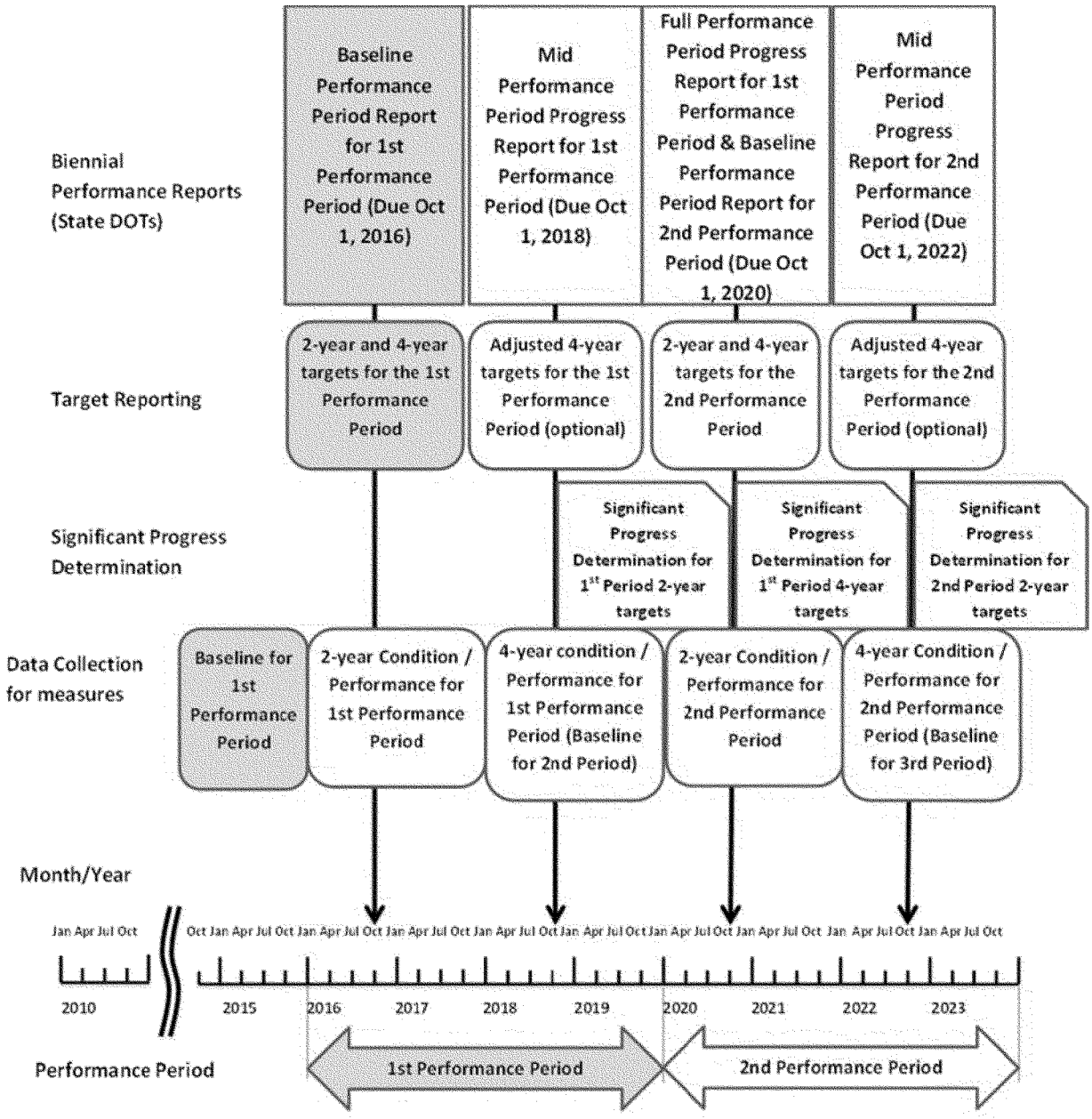

Figure 2 – Alternating Biennial Performance Reports – The Baseline Performance Period Report

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The FHWA proposes the requirement for the Baseline Performance Period Report in § 490.107(b)(1), where the State DOTs would be required to submit a Baseline Performance Period Report no later than October 1 of the first year of a performance period. The FHWA is proposing that the first performance period would begin on January 1, 2016, which would require State DOTs to submit their first Baseline Performance Period Report no later than October 1, 2016. Subsequent Baseline Performance Period Reports would be due no later than October 1 every 4 years thereafter.

The required contents for the Baseline Performance Period Report are discussed in § 490.107(b)(1)(ii). The FHWA is proposing that the Baseline Performance Period Report would be the official source of the non-safety targets established by the State DOT. To document the established targets, FHWA proposes in § 490.107(b)(1)(ii)(A) that State DOTs would report both their established 2-year and 4-year targets for each measure listed in 490.105(c) for the current performance period. Considering the proposed phase-in of new requirements for Interstate System pavement condition measures discussed in § 490.105(e)(7), State DOTs would not be required to report 2-year targets for Interstate System pavement measures in the Baseline Performance Period Report

for the first performance period. If a State DOT elects to establish additional targets for urbanized and non-urbanized areas, as described in § 490.105(e)(3), the State DOT would be required to include these targets (both 2-year target and 4-year target) in the report.

Although FHWA would not approve the State DOT submitted targets, a discussion of the basis for each established target would be included in the Baseline Performance Period Report. The FHWA believes that this discussion is needed to explain the State DOT's basis for the selection of a target. The FHWA intends to publish the State DOT established targets on a publicly available Web site with the target basis discussion. It is important to note that, although other MAP–21 required plans and reports may discuss and use targets, FHWA is proposing that only the targets reported in the Baseline Performance Period Report and the HSIP report would be viewed by FHWA as those that are established by the State DOT to meet the requirements of 23 U.S.C. 150(d).

The FHWA proposes in § 490.107(b)(1)(ii)(B) that the State DOTs report baseline condition/performance associated with each target reported to represent the latest condition/performance data collected through the begin date of a performance period. Considering the first performance period is proposed to begin on January 1, 2016, the baseline condition/performance for this performance period would be the most recent condition/performance that represents actual condition/performance through December 31, 2015. Considering the proposed phase-in of new requirements for Interstate System pavement condition measures discussed in § 490.105(e)(7), State DOTs would not be required to report baseline conditions for Interstate System pavement measures in the Baseline Performance Period Report for the first performance period. If a State DOT elects to establish additional targets for urbanized and non-urbanized areas as described in § 490.105(e)(3), the State DOT would report baseline condition/performance that represent these areas in addition to the statewide baseline condition/performance. As an example, for the Percentage of pavements of the Interstate System in Good condition measure (in § 490.307(a)(1)), would be a percentage of lane-miles of the Interstate System in Good condition (§ 490.307(f)(2)) expressed in one tenth of a percent. Thus, FHWA proposes that a baseline condition/performance for this measure would be a percentage of lane-miles of the Interstate System in Good condition expressed in one tenth of a percent. As a hypothetical example, baseline condition/performance would be 37.7% for the proposed measure Percentage of pavements of the Interstate System in Good condition.

The FHWA proposes in § 490.107(b)(1)(ii)(C) that State DOTs would be required to also include a discussion in the Baseline Performance Period Report, to the maximum extent practical, of how the established 2-year and 4-year targets support longer term performance expectations in other performance-related plans, such as the State asset management plan and the long-range statewide transportation plan.

The FHWA proposes in § 490.107(b)(1)(ii)(D) that State DOTs would be required to report the geographic boundaries and Decennial Census population data used to determine target scope, IRI rating and establish any additional targets for urbanized and non-urbanized areas. Similarly, in § 490.107(b)(1)(ii)(E), FHWA proposes that State DOTs would be required to report the NHS network limits used for target establishment. The State DOT would report both the urbanized area boundaries and NHS limits used for target establishment by identifying the corresponding data inventory year of the HPMS that includes this information. Using HPMS data items for the data year identified by the State, FHWA would be able to extract pavement and bridge condition data for the appropriate NHS and/or urbanized area the State DOT used to establish targets. The FHWA would use this information in making its progress determinations in future years. It is the State's responsibility to ensure that the data entered into HPMS reflects the information that is used for target establishment.

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Discussion of Mid Performance Period Report

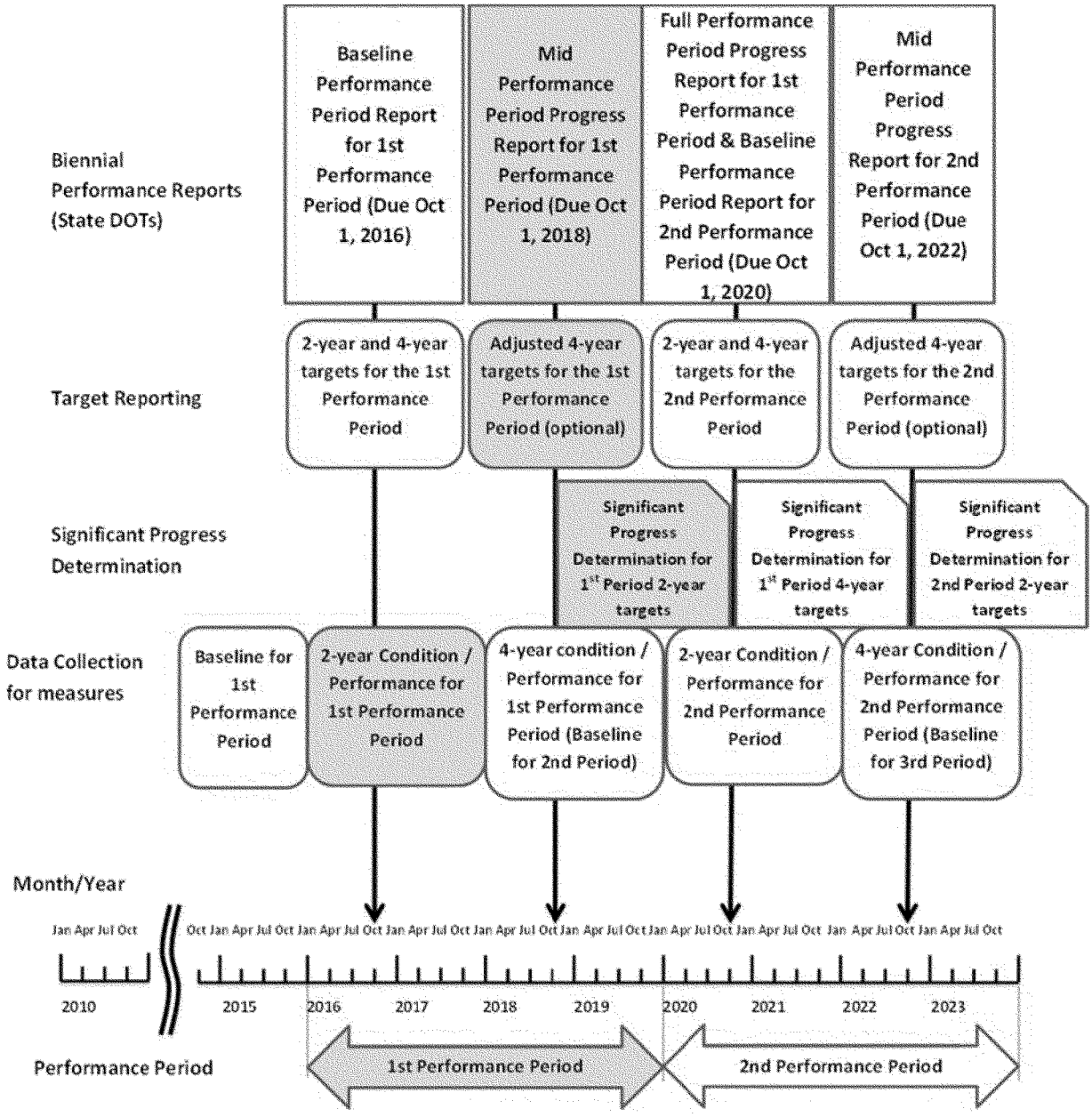

Figure 3 – Alternating Biennial Performance Reports – The Mid Performance Period Report

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The FHWA proposes the requirement for the Mid Performance Period Progress Report in § 490.107(b)(2). In § 490.107(b)(2)(i), FHWA proposes that State DOTs would be required to submit a Mid Performance Period Progress Report no later than October 1 of the third year of a performance period. The FHWA is proposing that the first performance period would begin on January 1, 2016, which would require State DOTs to submit their first Mid Performance Period Progress Report no later than October 1, 2018, and subsequent Mid Performance Period Progress Reports would be due no later than October 1 every 4 years thereafter.

In § 490.107(b)(2)(ii), FHWA proposes the required contents for the Mid Performance Period Progress Report. In § 490.107(b)(2)(ii)(A), FHWA proposes that State DOTs would be required to report 2-year condition/performance in each Mid Performance Period Progress Report. As exhibited in Figure 3, FHWA proposes that the 2-year condition/performance would be reported to represent the actual condition/performance derived from the latest measured condition/performance through the midpoint of a performance period. Considering the first performance period is proposed to begin

on January 1, 2016, 2-year condition/performance for this performance period would be the most recent conditions/performance that represents actual conditions/performance through December 31, 2017 (illustrated in Figure 3).

Considering the proposed phase-in of new requirements for Interstate System pavement condition measures discussed in § 490.105(e)(7), State DOTs would be required to report the 2-year actual Interstate System pavement conditions as the baseline condition by updating their Baseline Performance Period Report for the first performance period.

The FHWA proposes in § 490.107(b)(2)(ii)(B) that State DOTs would also include a discussion of progress made toward the achievement of 2-year targets established for the current performance period. In this discussion, State DOTs would present a comparison of 2-year condition/performance with the 2-year targets that were established for the performance period. For example, in the first Mid Performance Period Progress Report in 2018, a State would compare the actual condition/performance through 2017 with the 2-year targets established for the first performance period and discuss why targets were or were not achieved. This discussion could describe accomplishments achieved, planned activities, circumstances that led to actual conditions/performance, or any other information that State DOT feel would adequately explain progress. Although this explanation would not be used in the determination of significant progress, as described in § 490.109, this information would be made available to the public to provide an opportunity for the State DOT to discuss actual outcomes achieved. As an example, the Percentage of pavements of the Interstate System in Good condition measure (in § 490.307(a)(1)), would be a percentage of lane-miles of the Interstate System in Good condition (§ 490.307(f)(2)) expressed in one tenth of a percent. Thus, FHWA proposes that a 2-year condition/performance for this measure would be a percentage of lane-miles of the Interstate System in Good condition expressed in one tenth of a percent. As a hypothetical example, 2-year condition/performance would be 39.2% for the proposed measure Percentage of pavements of the Interstate System in Good condition.

The FHWA proposes in § 490.107(b)(2)(ii)(C) that, in each Mid Performance Period Progress Report, State DOTs would include discussion on the effectiveness of the investment strategy documented in the State asset management plan for the NHS. The FHWA is reserving § 490.107(b)(2)(ii)(D). The statutory requirement for State DOTs to include a discussion on ways in which State DOTs are addressing congestion at freight bottlenecks, including those identified in the National Freight Strategic Plan, will be addressed in the third Performance Measure NPRM. This content is required as part of the report under 23 U.S.C. 150(e)(2) and (4). The FHWA recognizes that the Mid Performance Period Progress Report for the first performance period may be impacted by the timing of the implementation of the new NHS asset management plan requirement. The FHWA intends to issue further guidance if the timing of this plan would impact a State DOT's ability to comply with the requirements proposed in § 490.107(b)(2)(ii)(C).

As discussed in § 490.105(e)(6), FHWA recognizes the challenges that State DOTs may face in target establishment and, as a result, proposes to allow State DOTs to adjust their 4-year targets. The FHWA is proposing in § 490.107(b)(2)(ii)(E) that State DOTs would report any adjustments to their 4-year targets in the Mid Performance Period Progress Report. The FHWA proposes that this target adjustment allowance would be limited to this specific report and not allowed prior to, or following, the submittal of the Mid Performance Period Progress Report. For example, if a State DOT elects to adjust a 4-year target established in its first Baseline Performance Period Report in 2016, the State DOT would only be able to adjust the 4-year target in its Mid Performance Period Progress Report in 2018. In addition to reporting the adjusted 4-year target, the State DOT would be required to include a discussion on the basis for the adjusted 4-year target(s) for the performance period and a discussion on how the adjusted targets support expectations documented in longer range plans, such as the State asset management plan and the long-range statewide transportation plan.

In § 490.107(b)(2)(ii)(F), FHWA proposes that the State DOTs would discuss the progress they have made toward the achievement of the 2-year targets reported in the current Baseline Performance Period Report that would had been established for the NHPP measures specified in § 490.105(c)(1) through (3).[51] Additionally, State DOTs would provide information to discuss how the actual 2-year condition/performance levels compare with the NHPP targets. Although this discussion would not be used in the determination of significant progress for the NHPP, this information would be made available to the public to provide an opportunity for the State DOT to discuss actual outcomes related to the NHPP. For example, the State DOT may use this discussion to explain how they effectively and efficiently delivered a program designed to achieve 2-year targets, how this may have resulted in actual condition/performance improvements for the NHPP, and how the State DOT would deliver a program to make significant progress toward achieving 4-year targets for the NHPP.

In § 490.107(b)(2)(ii)(G), FHWA is proposing that State DOTs would report any factors that it could not have foreseen and were outside of their control that impacted its ability to make significant progress for the NHPP 2-year targets. This discussion would be used by FHWA to consider the application of the proposed consideration of extenuating circumstances discussed in § 490.109(e)(4).

In § 490.107(b)(2)(ii)(H), FHWA proposes that if FHWA determines that a State DOT has not made significant progress toward the achievement of NHPP targets, in two consecutive biennial FHWA determinations, then the State DOT would include a description of the actions they will undertake to better achieve NHPP targets as required under 23 U.S.C. 119(e)(7). For example, if either of the Interstate pavement condition targets did not make significant progress in previous two determinations (determinations at midpoint and the end of previous performance period), then the State DOT would include in the current Mid Performance Period Report a description of the actions the State DOT will undertake to improve conditions with respect to both Interstate pavement condition measure. If FHWA determines that the State DOT has achieved significant progress, then the State DOT does not need to include such description in the Mid Performance Period Progress Report.

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[51] The performance measures for performance of the Interstate System and performance of the non-Interstate NHS will be proposed in the third performance measures NPRM.

Discussion of Full Performance Period Reports

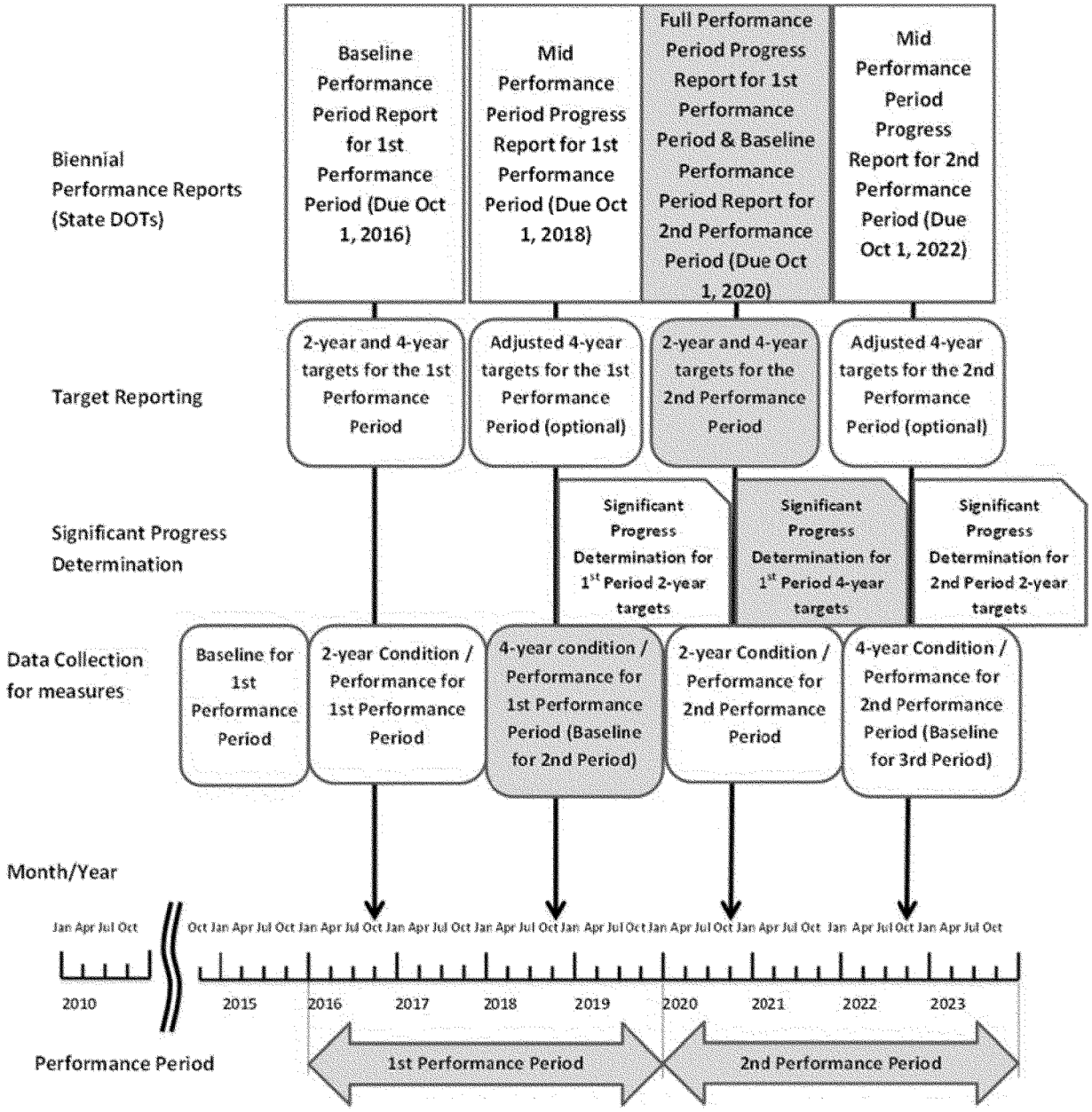

Figure 4 – Alternating Biennial Performance Reports – The Full Performance Period Report

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The FHWA proposes the requirement for the Full Performance Period Progress Report in § 490.107(b)(3). In § 490.107 (b)(3)(i), FHWA proposes that State DOTs be required to submit a Full Performance Period Progress Report no later than October 1 of the first year following the completion of a performance period. The FHWA is proposing that the first performance period would begin on January 1, 2016, which would require State DOTs to submit their first Full Performance Period Progress Report no later than October 1, 2020, and subsequent Full Performance Period Progress Reports would be due no later than October 1 every 4 years thereafter.

In § 490.107(b)(3)(ii), FHWA proposes the required contents for Full Performance Period Progress Report.

In § 490.107(b)(3)(ii)(A), FHWA proposes that State DOTs would be required to report 4-year condition/ performance in each Full Performance Period Progress Report. As exhibited in Figure 4, FHWA proposes that the 4-year condition/performance be reported

to represent the actual condition/performance derived from the latest measured condition/performance through the end of a performance period. Considering the first performance period is proposed to begin on January 1, 2016, the 4-year condition/performance for this performance period would be the most recent conditions/performance that represents actual conditions/performance through December 31, 2019 (illustrated in Figure 4). As an example, the Percentage of pavements of the Interstate System in Good condition measure (in § 490.307(a)(1)), would be a percentage of lane-miles of the Interstate System in Good condition (§ 490.307(f)(2)) expressed in one tenth of a percent. Thus, FHWA proposes that a 4-year condition/performance for this measure would be a percentage of lane-miles of the Interstate System in Good condition expressed in one tenth of a percent. As a hypothetical example, 4-year condition/performance would be 37.7% for the proposed measure Percentage of pavements of the Interstate System in Good condition.

The FHWA proposes in § 490.107(b)(3)(ii)(B), that the State DOTs would also include a discussion of progress made toward the achievement of 4-year targets established for the relevant performance period. In this discussion, State DOTs would present a comparison of 4-year condition/performance with the 4-year targets that were established for the performance period. For example, in the first Full Performance Period Progress Report in 2020, a State would compare the actual condition/performance through 2019 with the 4-year targets established for the first performance period and discuss why targets were or were not achieved. This discussion could describe accomplishments achieved, planned activities, circumstances that led to actual conditions/performance or any other information that State DOT would feel would adequately explain progress. Although this explanation would not be used in the determination of significant progress, this information would be made available to the public to provide an opportunity for the State DOT to discuss actual outcomes achieved.

The FHWA proposes in § 490.107(b)(3)(ii)(C) that, in each Full Performance Period Progress Report, State DOTs would include discussion on the effectiveness of the investment strategy documented in the State asset management plan for the NHS. The FHWA is reserving § 490.107(b)(3)(ii)(D). The statutory requirement for State DOTs to include a discussion on ways in which State DOTs are addressing congestion at freight bottlenecks, including those identified in the National Freight Strategic Plan, will be addressed in the third Performance Measure NPRM. This content is required as part of the report under 23 U.S.C. 150(e)(2) and (4).

In § 490.107(b)(3)(ii)(E), FHWA proposes that the State DOTs would discuss the progress they have made toward the achievement of the 4-year targets reported in the current Baseline Performance Period Report, or adjusted in the current Mid Performance Period Progress Report, that would had been established for the NHPP measures specified in § 490.105(c)(1) through (3).[52] Additionally, State DOTs would provide information to discuss how the actual 4-year condition/performance levels compare with the NHPP targets. Although this discussion would not be used in the determination of significant progress for the NHPP, this information would be made available to the public to provide an opportunity for the State DOT to discuss actual outcomes related to the NHPP. For example, the State DOT may use this discussion to explain how they effectively and efficiently delivered a program designed to achieve targets and how this may have resulted in actual condition/performance improvements for the NHPP.

In § 490.107(b)(3)(ii)(F), FHWA is proposing that State DOTs would report any factors that it could not have foreseen and were outside of their control that impacted its ability to make significant progress for the NHPP 4-year targets. This discussion would be used by FHWA to consider the application of the proposed consideration of extenuating circumstances discussed in § 490.109(e)(5).

In § 490.107(b)(3)(ii)(G), FHWA proposes that if FHWA determines that a State DOT has not made significant progress toward the achievement NHPP targets, in two consecutive biennial FHWA determinations, then the State DOT would include a description of the actions they would undertake to better achieve NHPP targets as required under 23 U.S.C. 119(e)(7). For example, if either of the NHS bridge condition targets did not make significant progress in previous two determinations (determination at the end of previous performance period and determination at the midpoint of current performance period), then the State DOT would include in the current Full Performance Period Report) a description of the actions the State DOT will undertake to improve conditions with respect to both Interstate pavement condition measures. If FHWA determines that the State DOT has achieved significant progress, then the State DOT does not need to include such description in the Full Performance Period Progress Report.

The FHWA proposes, in § 490.107(c), that MPOs document the manner in which they report their established targets within the Metropolitan Planning Agreement required by 23 CFR 450. The MPOs would report their established targets to the relevant State DOTs in a manner that is agreed upon by both parties and documented in the Metropolitan Planning Agreement. The FHWA proposes in § 490.105(e)(5), that MPOs would report targets to the State DOT in a manner that would allow the State DOT to provide FHWA, upon request, all of the targets established by relevant MPOs. The FHWA also proposes that MPOs would report baseline condition/performance, and progress toward the achievement of their targets, in the system performance report in the metropolitan transportation plan, in accordance with 23 CFR 450.

Discussion of § 490.109 Assessing Significant Progress Towards Achieving the Performance Targets for the NHPP

In § 490.109, FHWA proposes the method by which FHWA would determine if a State DOT has achieved or is making significant progress toward the achievement of their NHPP performance targets as required by 23 U.S.C. 119(e)(7). Although this determination could directly impact State DOTs, MPOs could also be indirectly impacted as a result of the link between metropolitan and statewide planning and programming decisionmaking. This rulemaking discusses the approach that would be taken by FHWA to assess State DOT performance progress, but does not include a discussion on the method that may be used by FHWA to assess the performance progress of MPOs. Interested persons should refer to the updates to the Statewide and Metropolitan Planning regulations for any discussions on the review of MPO performance progress. (RIN 2125–AF52).[53]

The FHWA recognizes the risks associated with target establishment and that there may be factors outside of a State DOT's control that could impact its ability to achieve a target. A number

[52] The performance measures for performance of the Interstate System and performance of the non-Interstate NHS will be proposed in the third performance measures NPRM.

[53] The NPRM was published on June 2, 2014 at 79 FR 31784.

of factors were raised as part of the performance management stakeholder outreach sessions regarding target establishment and progress assessment, including: the impact of funding availability on performance outcomes, the reliability of the current state-of-practice to predict outcomes resulting from investments at a system level, the impact of uncertain events or events outside the control of a State DOT on performance outcomes, the need to consider multiple performance priorities in making investment trade-off decisions, and the challenges with balancing local and national objectives. The FHWA considered these risks and factors in its evaluation of different approaches to implement this provision.

The FHWA recognizes that the State DOTs and MPOs have to consider multiple performance priorities in making investment trade-off decisions and that there are challenges with balancing local and national objectives. During outreach, stakeholders raised a number of concerns regarding progress assessment, including: [54]

- The desire to foster balanced and sound decisions rather than focusing on achieving one target at the expense of another;
- the desire to assess progress using quantitative and qualitative input; and
- the desire to avoid unachievable targets.

Thus, FHWA plans to implement an approach that balances the uncertainty facing State DOTs in predicting future performance with the need to provide for a fair and consistent process to determine compliance. The approach being proposed by FHWA is based on the following principles:

- Focus the Federal-aid highway program on the MAP–21 national goals in 23 U.S.C. 150(b); and
- recognize that State DOTs need to consider fiscal constraints in their target establishment.

Because targets would be established for an entire system, FHWA acknowledges that State DOTs may make small incremental changes within that system that would not necessarily appear in a quantitative assessment. In some instances, even a modest increase in improvement when evaluating on a system-wide basis, would constitute significant progress. Accordingly, FHWA proposes that for each NHPP target, progress toward the achievement of the target would be considered ''significant'' when either of the following occur: The actual condition/performance level is equal to or better than the State DOT established target; or actual condition/performance is better than the State DOT identified baseline condition/performance. The FHWA believes that any improvement over the baseline, which represents a 0.1% improvement over 4 years, should be viewed as significant progress considering the fiscal short falls and financial uncertainties many State DOTs are faced with today. Although a change of 0.1% may appear insignificant, this degree of improvement to a pavement or bridge system is difficult to achieve. In many States this level of change would require improvements to hundreds, if not thousands, of miles of pavements and/or bridges. The FHWA reviewed the extent to which State DOTs have been able to actually change system conditions of their pavements and bridges in recent years to validate this view of significant progress. This review supported FHWA's belief that any improvement should be considered significant as many State DOTs have seen minimal or no improvements in the condition of their pavement and bridge networks in recent years. This is the case even with the influx of funding State DOTs were able to utilize through the American Recovery and Reinvestment Act of 2009. For these reasons, FHWA believes that any improvement over the baseline should be viewed as significant progress.

The FHWA believes that State DOTs would, through a transparent and public process, want to establish or adjust targets that strive to improve the overall performance of the Interstate and National Highway systems. For this reason, FHWA did not want to consider an approach to determine significant progress that would be difficult to meet as it could discourage the establishment of ''reach'' targets due to the perceived unmanageable risks that would need to be assumed by State DOTs. The FHWA feels that the progress assessment approach proposed in this NPRM, which considers improvement from baseline conditions to be significant, would not discourage State DOTs from establishing targets to improve the overall conditions of the Interstate System and non-Interstate NHS.

The FHWA therefore proposes a three-step process to determine if a State DOT has made significant progress toward the achievement of their NHPP targets. This proposed process would be completed by FHWA each time the State DOT submits their Mid Performance Period Progress Report and their Full Performance Period Progress Report. The FHWA proposes that the significant progress determination process for two consecutive reporting periods would be done on an ongoing basis and would not restart at the beginning of each performance period. [55]

- Step 1: The State DOT would evaluate and report the progress they have made toward the achievement of each target. [56] This evaluation would be documented in the discussion of the progress achieved since the most recent report. The State DOT would document in their Biennial Performance Reports any extenuating circumstances outside their control they may have impacted their ability to achieve progress.
- Step 2: The FHWA would review the completeness of the content provided in their Biennial Performance Reports and would determine if any documented extenuating circumstances would be considered. State DOTs would provide any additional information to FHWA, upon request, if the report is incomplete.
- Step 3: The FHWA would determine if the State DOT has made significant progress for each target using the following sources:
  - Data contained within the HPMS for targets established for pavement condition measures, as specified in § 490.105(c)(1) and (2);
  - Data contained in the NBI for targets established for bridge condition measures, as specified in § 490.105(c)(3); and

In § 490.109(a), FHWA proposes that it would determine whether the State DOT has achieved or has made significant progress toward achieving each of the State DOT targets for the NHPP measures separately.

The FHWA proposes in § 490.109(b) that FHWA would determine whether a State DOT has or has not made significant progress toward the achievement of NHPP targets at the midpoint and the end of each performance period.

In § 490.109(c), FHWA proposes that FHWA would determine significant progress toward the achievement of a State DOT's NHPP targets after the State

[54] AASHTO (2013), *SCOPM Task Force Findings on MAP–21 Performance Measure Target-Setting. http://scopm.transportation.org/Documents/SCOPM%20Task%20Force%20Findings%20on%20Performance%20Measure%20Target-Setting%20FINAL%20v2%20(3-25-2013).pdf.*

[55] For example, assuming a determination would be made in 2021, that period-end determination for 1st performance period would be based on information submitted in the 2016 Mid Performance Period Report and the 2020 Full Performance Period Report. The next determination made in 2023 would be based on information submitted in the 2020 Baseline Performance Period Report/2022 Mid Performance Period Progress Report Performance Period Report and the 2020 Full Performance Period Report.

[56] The performance measures for performance of the Interstate System and performance of the non-Interstate NHS will be proposed in the third performance measures NPRM.

DOT submittal of the Mid Performance Period Progress Report and after the State DOT submittal of the Full Performance Period Progress Report. This process, which is described in the discussion of § 490.107(b), would follow the proposed schedule illustrated in Figures 3 and 4. The FHWA would make a significant progress determination for the NHPP every 2 years. The FHWA would notify all State DOTs of the outcome of the determination within a reasonable time and would advise any State DOTs that would need to add additional information to their next biennial report (see 450.109(f)). The FHWA intends to post State DOT targets, actual condition, and progress reports on an externally facing Web site. This information would provide for greater transparency and allow the public access to the progress State DOTs have made in achieving their targets. The FHWA does not intend to post the significant progress determinations on the Web site but will make this information available in an electronic format on request.

The FHWA also expects that during a performance period, State DOTs would routinely monitor leading indicators, such as program delivery status, to assess if they are on track to make significant progress toward achievement of a State DOT's NHPP targets. If a State DOT anticipates it may not make significant progress, it is encouraged to work with FHWA and seek technical assistance during the performance period to identify the actions that can be taken to improve progress toward making significant progress. The FHWA also seeks comment on whether it should require State DOTs to more frequently (*e.g.,* annually) evaluate and report the progress they have made.

The FHWA desires to use national datasets in a consistent manner as a basis for its determination of a State DOT's significant progress toward the achievement of NHPP targets. The FHWA is proposing to determine actual pavement and bridge conditions from the HPMS and NBI, respectively, in a manner that could be replicated by State DOTs and others that may have interest in assessing actual pavement and bridge conditions. Thus, in § 490.109(d), FHWA proposes to use: The HPMS as the data source to determine actual pavement conditions; the NBI as the data source to determine actual bridge condition measures; and NHS limits and urbanized area boundaries identified in the Baseline Performance Period Report. The data source for performance of the Interstate System and the non-Interstate NHS measures will be proposed in the third Federal-aid Highway Performance Measures NPRM.

The FHWA is proposing a period of approximately 60 days for Interstate pavements and bridges and 90 days for non-Interstate NHS pavements and bridges after the State DOT submits data to the HPMS and NBI for the State DOT to update the data to address missing or incorrect data. Considering this time allowance, FHWA is proposing that specific dates be established to extract data from the HPMS and NBI. The FHWA would use this data to determine significant progress toward the achievement of NHPP targets and assess the pavement and bridge minimum condition. These dates are necessary in order to make significant progress determinations in a timely manner and to determine compliance with the minimum condition requirements in sufficient time to apply any resulting obligation, transfer, or set-aside requirements by the next fiscal year. The FHWA is proposing the following dates to extract data from the HPMS and the NBI to determine actual conditions:

- June 15—The FHWA is proposing to extract data from the HPMS and the NBI on this date to determine the actual Interstate System pavement conditions and NHS bridge conditions. This date is needed to provide for sufficient time to carry out any penalties resulting from non-compliance with the minimum condition requirements in 23 U.S.C. 119(f);
- August 15—The FHWA is proposing to extract data from the HPMS on this date to determine the actual non-Interstate NHS pavement conditions. This date is needed to provide for sufficient time to make a determination of significant progress for the achievement of NHPP targets.

In § 490.109(e), FHWA proposes a process for significant progress determination for each established NHPP target. In paragraph (e)(1), FHWA proposes that FHWA would assess how the target established by State DOT compares to the actual condition/performance using the data/information sources described in § 490.109(d). In paragraph (e)(2), FHWA proposes that FHWA would determine that a State DOT has made significant progress for each 2-year or 4-year NHPP target if either: (i) The actual condition/performance level is better than the baseline condition/performance reported in the State DOT Baseline Performance Period Report; or (ii) the actual condition/performance level is equal to or better than the established target. For illustrative purposes, 2-year and 4-year evaluations where improving targets were established for the first performance period are shown in Figure 5.

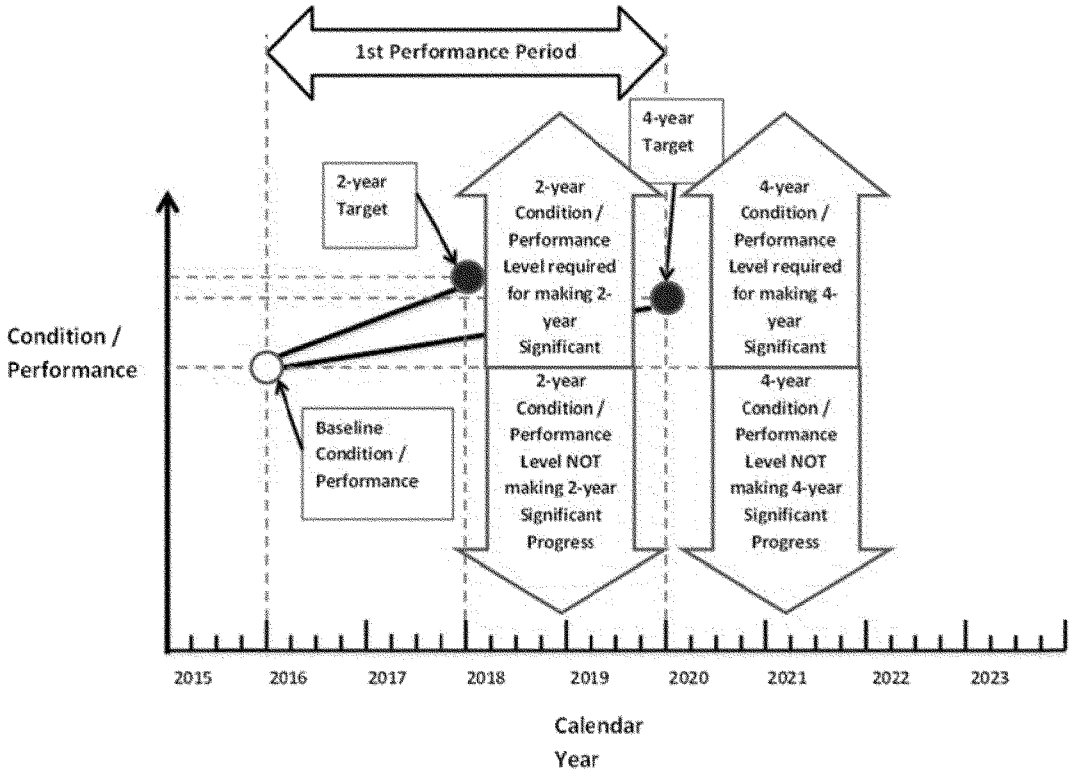

Figure 5 – First Performance Period: 2- and 4-year Significant Progress Determination for a 2-and 4-year target (anticipated improving scenario)

The FHWA recognizes that State DOTs have to consider their fiscal constraints in target establishment and acknowledges that, in some cases, anticipated condition/performance could be projected to decline from (or sustain) the baseline condition/performance due to lack of funding, changing priorities, etc. In these cases State DOTs should document why they project a decline in condition in their Biennial Performance Reports as discussed in paragraph § 490.107(b)(1)(ii)(A). The FHWA proposes that significant progress could still be made in cases where the established target indicates a decline from (or sustain) the baseline condition/performance. For the decline/sustain condition/performance scenario, FHWA proposes that significant progress is made for a target when actual condition/performance level is equal to or exceeds the target. For illustrative purposes, 2-year and 4-year evaluations where declining targets were established for the first performance period are shown in Figure 6.

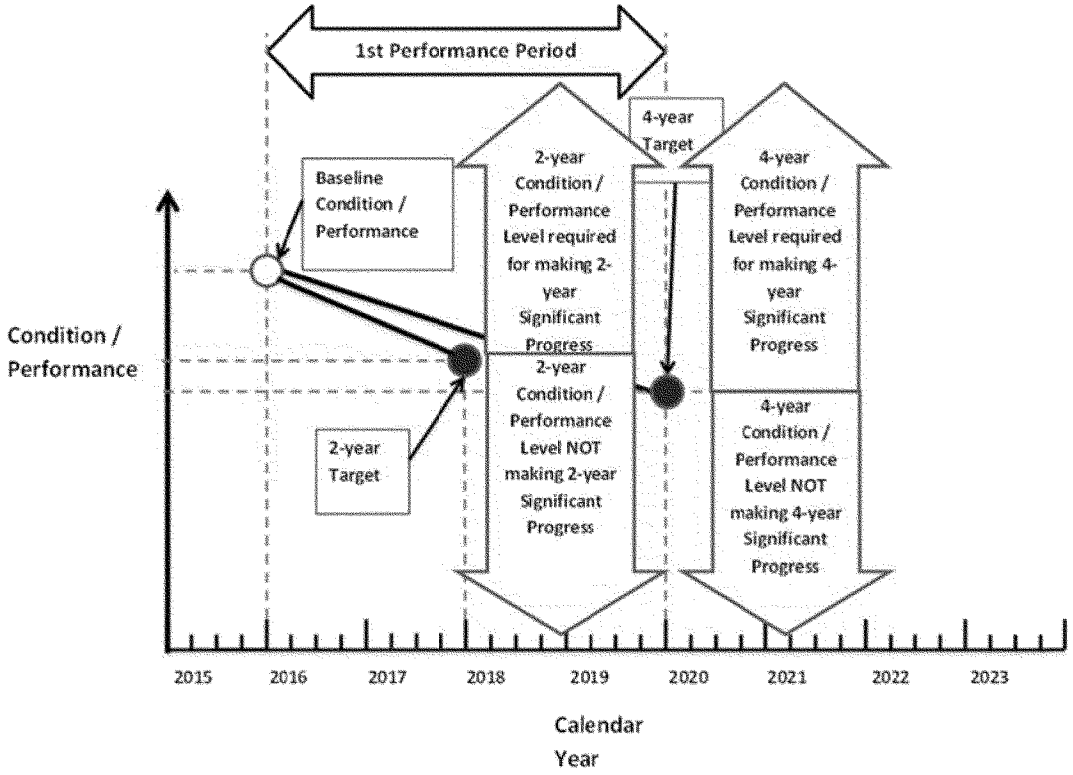

Figure 6 - First Performance Period: 2-and 4-year Significant Progress Determination for a 2-and 4-year target (anticipated decline/sustain scenario)

As discussed in § 490.105(e)(7), FHWA recognizes that some State DOTs may not be able to collect the data required in § 490.309(b)(1) for the Interstate System pavement condition prior to the start of the first performance period. Considering this limitation, FHWA proposed in § 490.109(e)(3) that for the first performance period, the State DOTs would not be required to report their 2-year targets and their baseline condition for the Interstate System pavement condition measures at the beginning of the first performance period. Consequently, FHWA proposes in § 490.109(e)(3) that progress towards the achievement of 2-year targets for the Interstate System pavement condition measures would not be subject to the FHWA determination under § 490.109(e)(2), even if they elect to collect the data needed to calculate the Interstate System pavement measures in the first 2 years of the first performance period.

The FHWA proposes to accomplish this by categorizing the 2-year targets for the Interstate System pavement condition measures as ''progress not determined,'' which would exclude these targets from the FHWA determination under § 490.109(e)(2). The FHWA expects that some State DOTs would adjust their established 4-year targets at the midpoint of the first performance period because they may have had limited baseline data available to them when they first established the target. For the first performance period, FHWA would determine significant progress toward the achievement of a State DOT's Interstate System pavement condition targets based on HPMS data extracted on June 15 of the year in which the Full Performance Period Progress Report is due. The FHWA recognizes that some State DOTs would be able to establish and report baseline condition and 2-year targets for the proposed Interstate System pavement condition measures in their first Baseline Performance Period Report. However, FHWA proposes that the process established in this section applies to all State DOTs in order to ensure uniformity in the progress determination process.

In § 490.109(e)(4), FHWA proposes that if a State DOT does not provide sufficient data and/or information for FHWA to make a significant progress determination for NHPP target(s), then that State DOT would be deemed to not have made significant progress made for those individual NHPP target(s).

If a State DOT encounters extenuating circumstances beyond its control, the State DOT would document the explanation of the extenuating circumstances in the biennial performance report. This explanation would address factors that the State DOT could not have foreseen and were outside of their control when they established targets at the beginning of the performance period. If the explanation is accepted by FHWA, then the associated NHPP target(s) would be excluded from FHWA determination under § 490.109(e)(2). If the explanation is not accepted by FHWA, then the State DOT would be deemed to not have made significant progress for the target. Extenuating circumstances would include:

- Natural or man-made disasters causing delay in NHPP project delivery, extenuating delay in data collection, and/or damage/loss of data system;
- sudden discontinuation of Federal Government furnished data due to natural and man-made disasters or lack of funding; and/or
- new law or regulation directing State DOTs to change metric and/or measure calculation.

Pursuant to 23 U.S.C. 119(e)(7), in § 490.109(f), FHWA proposes that if FHWA determines that a State DOT has not made significant progress for an NHPP targets in two consecutive FHWA determinations, then the State DOT

would include in its next Biennial Performance Report a description of the actions the State DOT will undertake to achieve all targets in same measure group. The FHWA proposed the measure groups as follow:

- Interstate System pavement condition—both proposed measures Percentage of pavements of the Interstate System in Good condition in § 490.307(a)(1) and Percentage of pavements of the Interstate System in Poor condition in § 490.307(a)(2);
- Non-Interstate NHS pavement condition—both proposed measures Percentage of pavements of the non-Interstate NHS in Good condition in § 490.307(a)(3) and Percentage of pavements of the non-Interstate NHS in Good condition in § 490.307(a)(4);
- NHS bridge condition—both measures Percentage of NHS bridges in Good condition in § 490.407(c)(1) and Percentage of NHS bridges in Poor condition in § 490.407(c)(2);

As a general example of this proposed approach, when a State DOT has not made significant progress for any one of the targets for Interstate System pavement condition measures, then that State DOT would include in its next Biennial Performance Report a description of the actions the State DOT will undertake to achieve targets for all Interstate System pavement condition measures.

Tables 2 and 3 illustrate this proposed determination method. Table 2 includes the significant progress determination results in 2019 for the midpoint 1st performance period and the significant progress determination in 2021 for the end of the 1st performance period. Table 3 includes the significant progress determination results in 2021 for the end of the 1st performance period (repeat from Table 2) and the significant progress determination in 2023 for the midpoint 2nd performance period. In this example, a State DOT has established statewide targets, as required, for 2 measures: Percentage of pavements in Good Condition on the Interstate System and Percentage of pavements in Poor Condition on the Interstate System.

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Table 2 – Example of Significant Progress Determinations in 2019 and 2021

Measure	Baseline Condition / Performance for the 1st Performance Period	Significant Progress Determination for the midpoint 1st Performance Period in 2019			Significant Progress Determination for the end of the 1st Performance Period in 2021			Measure Group
		2-year target	Actual 2-year Condition / Performance	Significant progress made at the midpoint?	4-year target	Actual 4-year Condition / Performance	Period-end Significant progress made at the end of period?	
The Percentage of pavements in Good Condition on Interstate System – **statewide**	**40.0%**	*39.5%*	39.2%	**No**	*38.5%*	37.7%	**No**	Interstate System pavement condition
The Percentage of pavements in Poor Condition on Interstate System– **statewide**	**7.0%**	*5.9%*	6.2%	**Yes** by actual better than the baseline	*5.2%*	6.0%	**Yes** by actual better than the baseline	
Percentage of pavements in Good Condition on non-Interstate NHS – **statewide**	**35.0%**	*34.4%*	34.4%	**Yes** by achieving the 2-year target	*33.3%*	33.4%	**Yes** by achieving the 4-year target	Non-Interstate NHS pavement condition
Percentage of pavements in Poor Condition on non-Interstate NHS – **statewide**	**3.8%**	*2.9%*	2.9%	**Yes** by achieving the 2-year target	*2.3%*	2.2%	**Yes** by achieving the 4-year target	
Percentage of NHS bridges in Good Condition – **statewide**	**35.0%**	*34.5%*	34.9%	**Yes** by achieving the 2-year target	*34.0%*	33.4%	**No**	NHS Bridge condition

Measure	Baseline Condition / Performance for the 1st Performance Period	Significant Progress Determination for the midpoint 1st Performance Period in 2019			Significant Progress Determination for the end of the 1st Performance Period in 2021			Measure Group
		2-year target	Actual 2-year Condition / Performance	Significant progress made at the midpoint?	4-year target	Actual 4-year Condition / Performance	Period-end Significant progress made at the end of period?	
Percentage of NHS bridges in Poor Condition – **statewide**	**10.0%**	*9.3%*	8.9%	**Yes** by achieving the 2-year target	*7.5%*	8.5%	**Yes** by actual better than the baseline	
The performance of Interstate System measure (TBD[57])								
The performance of non-Interstate NHS measure (TBD[58])								

[57] To be included in the 3rd Performance Measure NPRM
[58] To be included in the 3rd Performance Measure NPRM

In Table 2 above, the State DOT has not made significant progress towards the target for the Percentage of pavements in Good Condition on the Interstate System measure in two consecutive FHWA determinations. So the State DOT would include in its next Biennial Performance Report (*i.e.* Mid Performance Period Progress Report in 2022) a description of the actions the State DOT will undertake to achieve for both measures—the Percentage of pavements in Good Condition on Interstate System and the Percentage of pavements in Poor Condition on Interstate System measures.

The FHWA believes that any one of the targets could impact other targets in the same measure group and FHWA also believes that the State DOT's descriptions of the actions for all targets in a same measure group would be more logical and sensible in managing performance of relevant network (*e.g.* the entire Interstate System) rather than isolated description on a subset of network (*e.g.* pavements in Good Condition on Interstate System). So, FHWA proposes that a State DOT would provide a description of the actions the State DOT will undertake to achieve all targets in the same measure group.

As indicated in the previous discussion in § 490.109, FHWA would make the significant progress determination each time the State DOT submits its State DOT Mid Performance Period Progress Report and its State DOT Full Performance Period Progress Report. The FHWA proposes that the significant progress determination would be done on an ongoing/rolling basis and would not restart at the beginning of each performance period. So in this example, 2 consecutive reporting would also be the significant progress determination results in 2021 for the end of the 1st performance period (repeat from Table 2) and the significant progress determination in 2023 for the midpoint 2nd performance period. Note 4-year condition/ performance of the 1st performance period is the baseline condition/ performance of the 2nd performance period.

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Table 3 – Example of Significant Progress Determinations in 2021 and 2023

Measure	Baseline Condition / Performance for the 1st Performance Period	Significant Progress Determination for the end of the 1st Performance Period in 2021[59]			Baseline Condition / Performance for the 2nd Performance Period	Significant Progress Determination for the midpoint 2nd Performance Period in 2023			Measure Group
		4-year target	Actual 4-year Condition / Performance	Significant progress made at the end of period?		2-year target	Actual 2-year Condition / Performance	Significant progress made at the midpoint?	
The Percentage of pavements in Good Condition on Interstate System – **statewide**	**40.0%**	*38.5%*	37.7%	**No**	**37.7%**	*39.5%*	39.9%	**Yes** by achieving the 2-year target	Interstate System pavement condition
The Percentage of pavements in Poor Condition on Interstate System– **statewide**	**7.0%**	*5.2%*	6.0%	**Yes** by actual better than the baseline	**6.0%**	*5.6%*	5.6%	**Yes** by achieving the 2-year target	
Percentage of pavements in Good Condition on non-Interstate NHS – **statewide**	**35.0%**	*33.3%*	33.4%	**Yes** by achieving the 4-year target	**33.4%**	*32.4%*	32.5%	**Yes** by actual better than the baseline	Non-Interstate NHS pavement condition
Percentage of pavements in Poor Condition on non-Interstate NHS – **statewide**	**3.8%**	*2.3%*	2.2%	**Yes** by achieving the 4-year target	**2.2%**	*2.1%*	2.0%	**Yes** by achieving the 2-year target	
Percentage of NHS bridges in Good Condition – **statewide**	**35.0%**	*34.0%*	33.4%	**No**	**33.4%**	*33.0%*	32.7%	**No**	NHS Bridge condition

[59] Repeat from Table 2

Measure	Baseline Condition / Performance for the 1st Performance Period	Significant Progress Determination for the end of the 1st Performance Period in 2021[59]			Baseline Condition / Performance for the 2nd Performance Period	Significant Progress Determination for the midpoint 2nd Performance Period in 2023			Measure Group
		4-year target	Actual 4-year Condition / Performance	Significant progress made at the end of period?		2-year target	Actual 2-year Condition / Performance	Significant progress made at the midpoint?	
Percentage of NHS bridges in Poor Condition – **statewide**	**10.0%**	*7.5%*	8.5%	**Yes** by actual better than the baseline	**8.5%**	*7.3%*	7.5%	**Yes** by actual better than the baseline	
The performance of Interstate System measure (TBD[60])									
The performance of non-Interstate NHS measure (TBD[61])									

[60] To be included in the 3rd Performance Measure NPRM
[61] To be included in the 3rd Performance Measure NPRM

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In Table 3, the State DOT has not made significant progress towards the Percentage of NHS bridges in Good Condition measure in two consecutive FHWA determinations. So the State DOT would include in its next Biennial Performance Report (*i.e.* Full Performance Period Progress Report in 2024) a description of the actions the State DOT will undertake to achieve statewide targets for both measures Percentage of NHS bridges in Good Condition and Percentage of NHS bridges in Poor Condition.

Although State DOTs are required to include a description of the actions the State DOT will undertake to achieve targets in its next Biennial Performance Report to meet the requirement in 23 U.S.C. 119(e)(7) and paragraph (f) of this section, State DOTs should not wait until next Biennial Performance Report in taking necessary actions. As discussed in § 490.107(b)(2)(ii)(F) and (b)(3)(ii)(E), all State DOTs are required to discuss the progress they have made toward the achievement of targets established for the NHPP measures in each of their Biennial Performance Report. Thus, FHWA expects State DOTs would routinely monitor leading indicators, such as program delivery status and measured data, to assess if they are on track to make significant progress for a State DOT's NHPP targets and expects State DOTs to be aware of their progress prior to the time of each Biennial Performance Report. As discussed in § 490.109(c), if a State DOT anticipates it may not make significant progress, they are encouraged to work with FHWA and seek technical assistance during the performance period to identify the actions that can be taken in a timely manner to improve progress toward making significant progress for the targets reported in subsequent Biennial Performance Reports. Thus, in § 490.109(f)(6), FHWA proposes that the State DOT should, within 6 months of the significant progress determination and in a format that can be made available to FHWA, document the information specified in this section to ensure actions are being taken to improve progress.

Discussion of § 490.111 Incorporation by Reference

In § 490.111, FHWA proposes to incorporate by reference a number of items. First, FHWA proposes to incorporate the proposed HPMS Field Manual to codify the data requirements for measures, as discussed throughout Part 490, and to be consistent with HPMS reporting requirements. The proposed HPMS Field Manual includes detailed information on technical procedures to be used as reference by those collecting and reporting data for the proposed measures. The proposed HPMS Field Manual is included in the docket.

The FHWA also proposes to incorporate by reference 10 AASHTO standards to codify the method and/or the device used to collect data for the metrics (*i.e.,* IRI, Cracking_Percent, rutting, and faulting). These AASHTO Standards were developed and adopted

by the AASHTO member States as appropriate national standard practices for collecting and reporting pavement and other condition data. The incorporated standards are included in the ''Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 34th Edition and AASHTO Provisional Standards, 2014 Edition,'' which is available for purchase at: *https://bookstore.transportation.org/item_details.aspx?ID=2223*. The FHWA believes that the entities most affected by this proposed regulation, namely State DOTs and MPOs, already own a copy of the incorporated AASHTO standards.

Lastly, FHWA proposes to incorporate by reference the ''Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges,'' which contains all of the NBI Items listed in subpart D. This guide is intended for use by States, Federal agencies, Tribal governments and other bridge owners in recording and coding the data items that comprise the NBI. The Guide is available at no charge on the FHWA Web site at: *http://www.fhwa.dot.gov/bridge/nbi.cfm,* and is also included in the docket.

A copy of all of the incorporated documents outlined above will be on file and available for inspection at the National Archives and Records Administration. These documents will also be available for viewing at the Department of Transportation Library.

B. Section-by-Section Discussion for Subpart C: NHPP Measures for Assessing Pavement Condition

Discussion of § 490.301 Purpose

This section describes the general purpose of the proposed subpart: To implement certain portions of 23 U.S.C. 150(c) that require FHWA to establish performance measures to assess the condition of pavement on the Interstate System, performance measures to assess the condition of pavement on the non-Interstate NHS, minimum levels for the condition of pavement on the Interstate System, pavement data elements that are necessary to collect and maintain standardized data to carry out a performance-based approach, and consider regional differences in establishing the minimum levels for pavement condition.

Discussion of § 490.303 Applicability

The FHWA proposes to specify pavement condition performance measures that would be applicable to all mainline Interstate System and non-Interstate NHS pavements covered under 23 U.S.C. 119 regardless of ownership or maintenance responsibility. Specifically excluded are 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.

Discussion of § 490.305 Definitions

The FHWA proposes a set of definitions that are specific only to this subpart. The FHWA proposes to include definitions for three types of pavements: ''asphalt pavements,'' ''Continuously Reinforced Concrete Pavement (CRCP),'' and ''Jointed Concrete Pavements,'' because data requirements and metrics for the proposed measure are dependent on surface type of pavement. The FHWA recognizes some pavements are composite pavements that consist of multiple pavement types, such as an asphalt pavement overlay over an older jointed concrete pavement. The FHWA believes it is sufficient for the purpose of this rulemaking and for improved consistency to consider the pavement type of any composite pavement as the pavement type that exists in the surface of the structure (or the top-most layer).

The need for consistent definitions was reinforced by a national study on pavement roughness [62] and a regional study on highway infrastructure health.[63] These studies found that both measured roughness and distress data are not consistently collected and reported by State DOTs across the country. The FHWA is addressing this need by proposing definitions for cracking, faulting, IRI, punchout, and rutting.[64]

The FHWA proposes to define ''Cracking'' as a metric that would be used for determining pavement condition and a definition for ''Cracking Percent'' that would be used to express the percentage of cracking exhibiting in a pavement surface. The FHWA proposes to define ''Cracking Percent'' separately for each type of pavement.

The FHWA proposes to define ''Faulting'' and ''International Roughness Index'' to avoid confusion with any other uses of these terms as these pavement conditions are broadly defined. The FHWA believes that these proposed definitions would provide greater consistency for characterizing pavement condition for the proposed measure.

For purposes of this subpart, the FHWA proposes to define ''pavement'' as any hard surfaced travel lanes of any highway. While there are many definitions currently in practice, FHWA selected this proposed definition because it focuses on the surface of the pavement, which is what would actually be measured and evaluated to assess pavement condition. The FHWA proposes to include the definition of ''Pavement Surface Rating (PSR)'' because PSR values were previously permitted to be submitted in the HPMS in lieu of IRI, if IRI values were not available or obtainable. Under this proposal, PSR could not be used in lieu of IRI to measure or rate NHS pavement condition.

The FHWA proposes to include the definition of ''punchout'' as a pavement failure specific to CRCP condition that needs to be evaluated for the performance measures.

The FHWA proposes to define ''rutting'' because it is another pavement failure condition that needs to be evaluated for the performance measures.

The FHWA proposes to include the definition of ''sampling'' because it is an approach to data collection that is referenced in this NPRM. The sampling of some pavement condition data that is currently permitted on non-Interstate NHS routes would be discussed in this subpart.

Discussion of § 490.307 National Performance Management Measures for Assessing Pavement Condition

The next several sections discuss the measures that are proposed to assess pavement condition. This first section introduces the proposed measures and the following sections discuss the metrics, data requirements, and processes for calculating the measures. Once the measures have been established by FHWA, they would be used by States and MPOs for the establishment of targets and in the determination of progress toward the achievement of targets for pavement condition. In addition, FHWA would use these measures to assess compliance with the minimum condition of Interstate System pavements as required in 23 U.S.C. 150(c)(3)(A)(iii).

[62] AASHTO (2008). Comparative Performance Measurement: Pavement Smoothness, NCHRP 20–24(37B). *http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/20-24(37)B_FR.pdf.*

[63] FHWA (2012). Improving FHWA's Ability to Assess Highway Infrastructure Health Pilot Study Report, FHWA–HIF–12–049. *http://www.fhwa.dot.gov/asset/pubs/hif12049/hif12049.pdf.*

[64] More information about the defined terms associated with pavement ''cracking,'' ''faulting,'' ''punchouts,'' ''rutting,'' etc., can be found in the ''Distress Identification Manual'' published by FHWA. See FHWA 2003, Publication No. FHWA–RD–03–031 ''Distress Identification Manual for the *Long-Term Pavement Performance Program.''* *http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltpp/reports/03031/03031.pdf.*

The establishment of a measure for pavement condition poses challenges because current State DOT measure definitions and data collection approaches vary across State DOTs and local agencies and there is limited availability of consistent data at a national level. A summary of the challenges associated with developing national measures as documented in national studies [65] [66] is provided below:

- Data items collected varies across agencies.—The data items the State DOTs collect and the frequency with which they are collected, although similar, vary across the agencies. For example, Colorado DOT collects cracking, rutting and IRI, but Florida DOT collects surface distress, faulting, rutting, and IRI.
- Data collection protocols vary across agencies.—While FHWA, AASHTO, and the American Society for Testing and Materials have all issued standards for the terminology, definitions, and data collection techniques, a recent national study indicated that there is still variation in defining types of pavement failures and collection methods used by highway and local transportation agencies. In addition, while fully automated and semi-automated technologies have gained wide acceptance in pavement condition data collection, some State DOTs still use manual surveys (including walking and windshield surveys).
- Data collection coverage varies across State DOTs and local agencies.—The extent of the pavement system that is monitored for condition assessment differs across State DOTs and local agencies where there is no consistency in the number of directions, the number of lanes, and the percentage of system length that are collected. Methods for determining the number and locations of samples vary among different State DOTs and the statistical significance of these sampling techniques is largely unknown.
- Reporting intervals vary across State DOTs.—Pavement condition data is typically aggregated in pavement sections for reporting. The section lengths of pavement condition vary from 0.01 to 1 mile or more depending on State DOT.
- Pavement condition metrics and measures vary across State DOTs.—The State DOTs evaluate the condition and anticipated performance of pavements differently. Not all State DOTs classify pavements as Good, Fair or Poor. The State DOTs that do classify pavements as Good, Fair, or Poor, each have unique definitions for these terms.
- Data Quality Management practices vary among State DOTs from highly elaborate systems to none at all.

Considering these challenges, FHWA proposes to establish the following as part of this rulemaking: (1) State DOTs and MPOs use a set of national measures that are based on broadly accepted metrics to assess pavement conditions; and (2) data elements and consistent data collection and management practices for pavement condition assessment that allow State DOTs and MPOs to continue with most of their current pavement management practices.

In § 490.307, FHWA proposes performance measures to assess the pavement condition of the Interstate System and non-Interstate NHS. 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. The State DOTs and FHWA would classify each section of pavement as Good, Fair, or Poor, based on measurements of IRI, percentage of cracking, and either percentage of rutting or faulting in each pavement section. Pavement sections would be uniform in size, except as provided in § 490.311(c)(1), and would be defined using inventory data items that establish the location, number of lanes, surface type, and whether a bridge exists in the section. These measurements would be rated for severity and combined into an overall rating for each section of pavement. The State DOTs would use overall ratings for sections contained in the appropriate highway system to establish targets and report progress toward the achievement of those targets.

The FHWA believes that the inclusion of IRI in the measure is essential to capture the extent that pavement conditions are affecting the operation of the highway. Thus, if IRI is excessive, traffic would operate at slower speeds to avoid damage to vehicles, maintain safety, cause less discomfort to passengers, and avoid damage to cargo. Inclusion of Cracking_Percent, rutting and faulting in the measures captures the extent of pavement structural deterioration and liability for future maintenance and reconstruction. The State DOTs currently use similar measurements and data items in their Pavement Management Systems, but typically use different standards for data collection and different methods for guiding pavement decisions. The FHWA recognizes the importance of standardization of data collection and data management practices and identifies critical data collection practices and methods in § 490.309.

Relationship between § 490.309 (Data Requirements), 490.311 (Calculation of Pavement Metrics), and 490.313 (Calculation of Pavement Management Measures)

The proposed approach to determining pavement measures includes data requirements, methods to determine pavement, and methods to calculate pavement condition. This proposed approach is presented in the next three sections as follows:

- Data Requirements—§ 490.309 outlines the data necessary to determine a set of metrics that would be reported to the HPMS and then used to calculate pavement measures. The type of data to be collected, the methods of data collection, and the extent and frequency of collection are all proposed in this section.
- Pavement Metrics—§ 490.311 describes a set of metrics that would be calculated from the data collected. The proposed pavement metrics would be calculated for sections of highway pavement and reported by the State DOT to the HPMS.
- Pavement Measures—§ 490.313 provides the method to calculate measures using the metrics reported in the HPMS. The State DOTs would use the measures to report the condition of Interstate System and non-Interstate NHS pavements and establish targets and report on progress.

Discussion of § 490.309 Data Requirements

Even before the passage of MAP–21, FHWA and stakeholders recognized the need for standardized data collection. The pavement community (*i.e.,* FHWA, States, local agencies, private industry and academia) is continuing to conduct research to refine and standardize data collection, reporting and production. The following are provided as example of efforts that are underway, or have recently been completed, that support the national pavement performance measure:

- Evaluate differences in State DOTs data sources and the HPMS data sources and provide recommended actions to improve any consistency issues.[67]
- Build on existing work to document the current approaches used by State

[65] NCHRP (2009) Quality Management of Pavement Condition Data Collection, NCHRP Synthesis 401. *http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_401.pdf.*

[66] FHWA (2013) Practical Guide for Quality Management of Pavement Condition Data Collection. *http://www.fhwa.dot.gov/pavement/management/qm/data_qm_guide.pdf.*

[67] AASHTO led NCHRP project, NCHRP 20–24(82) ''Improving Consistency in HPMS Pavement Data.''

DOTs to rate overall pavement condition and to drive pavement investment decisionmaking.[68] The outcome of this report would recommend approaches that State DOTs can use to develop a national pavement performance measure that has the least impact on current practices to rate condition.

The FHWA is proposing in § 490.309 the data requirements needed to calculate the proposed pavement performance measures, including the incorporation by reference of the FHWA HPMS Field Manual [69] (''HPMS Field Manual'') by reference. These requirements are necessary in order to calculate the pavement conditions measures discussed in § 490.313. The existing HPMS was selected as the reporting mechanism for this proposed subpart because State DOTs are familiar with this data source and its content. In addition, the current HPMS reporting frequency closely aligns with this proposal. The following section discusses the relevant requirements of the Field Manual. Note that definitions and language from the HPMS Field Manual have been used in the subpart to avoid confusion.

In § 490.309(a), FHWA proposes that State DOTs and other local agencies collect data in accordance with the HPMS Field Manual to report four condition metrics: IRI, rutting, faulting, and Cracking_Percent. Nearly all State DOTs [70] currently collect these metrics using similar data collection processes that are based on existing AASHTO Standards and required for HPMS submittals. In addition to the four condition metrics, FHWA proposes that State DOTs provide three HPMS inventory data elements that define the pavement sections used to calculate the proposed pavement condition. These three inventory data elements include: Through Lanes, Surface Type, and Structure Type. The data elements identified in this proposed subpart are considered necessary to collect and maintain standardized data to carry out a performance-based approach as required by 23 U.S.C. 150(c)(3)(A)(iv).

In § 490.309(b), FHWA proposes data requirements that are necessary to calculate the four proposed metrics for pavements on the Interstate System and on the non-Interstate NHS. The proposed requirements in this section define what data would be required to be collected, how extensive the data collection would be, and how often the data would need to be collected. To ensure data consistency between the data collection cycles, FHWA proposes that data would be collected in the rightmost lane of travel, or in one consistent lane if the rightmost lane is not accessible. Additional data collection requirements specified in this section would be more stringent than current HPMS requirements in the following areas:

1. State DOTs would be required to collect data on the full extent of Interstate System to calculate the four metrics and on the full extent of the NHS to identify the three data elements.

2. Beginning in 2018, State DOTs would be required to collect data on the full extent of non-Interstate NHS to calculate the 4 metrics.

3. States DOTs would be required to collect data in both directions of travel of the Interstate System to calculate the four metrics and identify three data elements.

4. States DOTs would be required to collect data on the full Interstate System annually and calculate the four metrics.

5. States DOTs would be required to collect data on the non-Interstate NHS biennially after the transition period ending December 31, 2017.

The FHWA proposes the specific data collection requirements for Interstate System pavements in § 490.309(b)(1) and for non-Interstate NHS pavements in § 490.309(b)(2). The FHWA recognizes that although these proposed data collection requirements would be similar to current HPMS data collection practices, they would, in some aspects, increase the burden on State DOTs to assess pavement condition for national reporting. The FHWA feels that this increased level of effort is necessary to improve consistency and to ensure more accurate and timely reporting of national pavement conditions. Currently, State DOTs typically manage and maintain each direction of the Interstate System as separate roadways and only report in one direction. The FHWA feels that reporting the measurement in both directions is essential to this process.[71]

As part of HPMS submittal, State DOTs have been required to collect and report IRI data on the full length of the NHS annually. In addition, as of 2010, State DOTs have been required to collect and report rutting, Cracking_ Percent, and faulting conditions using a sampling approach for all Federal-aid eligible roadway pavements. Since 2010, FHWA's review of HPMS data submittals has exposed many inconsistencies in State DOT submittals. For the Interstate System several State DOTs have not submitted any Cracking_ Percent, faulting or rutting data; others have submitted data only for a limited portion of the roadway network; and many anomalies have been found in the data that have raised questions regarding the accuracy of the data. Inconsistencies in State DOT submittals are not unexpected. While sampling can be a valid process for handling large quantities of data, it is only representative of actual pavement conditions when it follows a known distribution, such as a normal distribution and the data is collected randomly. Neither of these conditions exist for pavements on the NHS. Collecting data on a truly random basis is not practical or desirable for States to use for managing pavement programs. Furthermore, the States are adopting automated devices for data collection for reasons of objectivity and safety for personnel. Although these devices are not a perfect replacement for manual surveys, they are rapidly developing and are making the need for sampling pavement data obsolete. For these reasons, FHWA is proposing to prohibit the practice of expanding samples to populate the HPMS with data for the full extent of the system. The FHWA wants data collected for the full extent of both the Interstate System and the NHS.

The FHWA recognizes the increased burden imposed on State DOTs for full extent data collection for mainline highways on the non-Interstate NHS. In consideration of this fact, FHWA is proposing in § 490.309(b)(2)(i)(E) to reduce the current frequency of reporting for IRI on the non-Interstate NHS from annual reports to biennial reporting. In addition, FHWA proposes in § 490.309(b)(2)(ii) and (iii) a phased-in approach to comply with data collection requirements of the non-Interstate NHS. This approach allows State DOTs to phase in these new data collection requirement while continuing their existing HPMS reporting practices through the data collection cycle ending on December 31, 2017 (the 2nd Data Collection Cycle in Figure 7 below). By December 31, 2019, all State DOTs would have a completed data collection cycle (the 3rd Data Collection Cycle in Figure 7 below) conforming to the new

[68] AASHTO led NCHRP project, NCHRP 20–24(37J) ''Comparative Study on Pavement Structural Adequacy.''

[69] FHWA (2013) HPMS Field Manual. *http://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/.*

[70] FHWA (2013) Practical Guide for Quality Management of Pavement Condition Data Collection. *http://www.fhwa.dot.gov/pavement/management/qm/data_qm_guide.pdf.*

[71] FHWA (2012).Improving FHWA's Ability to Assess Highway Infrastructure Health Pilot Study Report, FHWA–HIF–12–049. *http://www.fhwa.dot.gov/asset/pubs/hif12049/hif12049.pdf.*

requirements. In addition to reducing the immediate burden to State DOTs, FHWA proposes this transition period so that it will align with the State DOT biennial performance reporting requirements under 23 U.S.C. 150(e). As proposed in §§ 490.105 and 490.107 on State DOT target establishment and reporting requirements, State DOTs are required to establish targets in Calendar Year 2016 for a performance period ending in December 31, 2019. Thus, the data collected during the data collection cycle ending on December 31, 2019 (the 3rd Data Collection Cycle in Figure 7 below), would be used to: (1) Assess target achievement for the targets established in 2016; and (2) establish a baseline for new targets in 2020 for the performance period ending on December 31, 2023.

In the case of the non-Interstate NHS, a State DOT has a biennial data collection cycle. In the first two data cycles, a State DOT would collect data for the full extent of the system to allow for reporting of the IRI metric for the non-Interstate NHS. However, data collected to support the faulting, rutting, and Cracking_Percent would be required only in sample panels of the system to meet HPMS reporting requirements and would not be required to calculate the pavement condition measure proposed in this rulemaking. Beginning with the third data collection cycle (the latest data collection cycle that ends on December 31, 2019; see Figure 7), and continuing with subsequent cycles, State DOTs would be required to collect data for the full extent of the system to report the IRI, faulting, rutting and Cracking_Percent metrics.

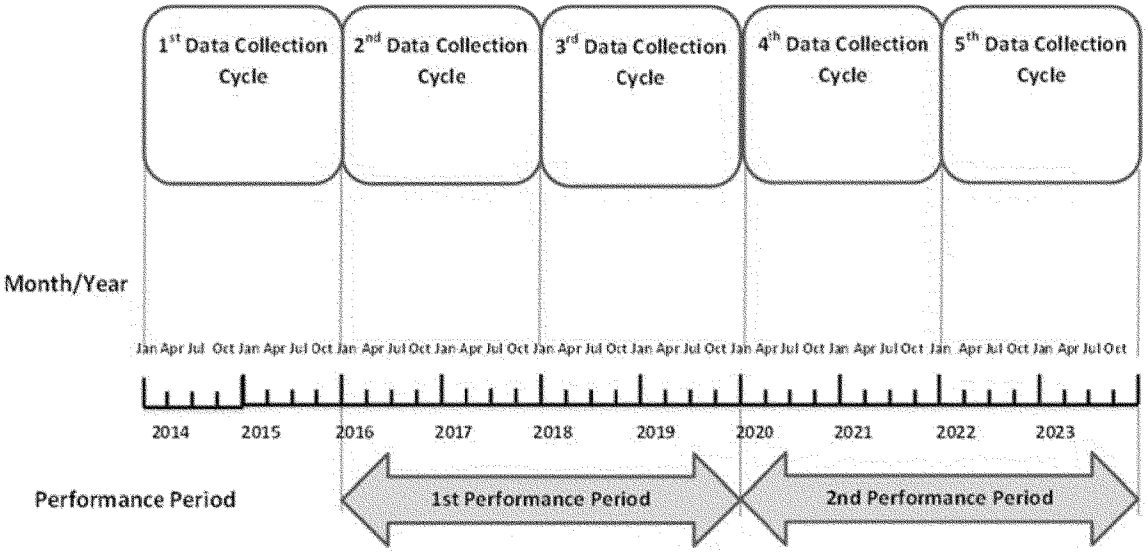


Figure 7 - Biennial Data Collection Cycle Illustration for the non-Interstate NHS

To ensure the collection of data in a consistent manner to provide for credible national performance/condition reporting, FHWA proposes in § 490.309(b)(3) the use of the AASHTO data collection standards for supporting the proposed measure. The section provides specific data collection standards, where appropriate, and incorporates the AASHTO standards by reference. The AASHTO standards are proposed because they are considered as best practices, specifically by State DOTs, and are recognized worldwide. A summary of proposed data collection standards is presented in Table 4.

TABLE 4—A SUMMARY OF PROPOSED DATA COLLECTION STANDARDS

Data metric	Proposed protocol
IRI for all Pavement Types ..	• IRI collection device in accordance with AASHTO Standard M328–14. • Collection of IRI data in accordance with AASHTO Standard R57–14.
Cracking_Percent for all Pavement Types (Except CRCP).	• Either manual cracking data collection and analysis in accordance with AASHTO Standard R55–10 (2013) or Automated Cracking Data Collection and Analysis in accordance with AASHTO Standard PP67–14 and AASHTO Standard PP68–14.
Cracking_Percent for CRCP	• Percentage of pavement surface with longitudinal cracking and/or punchouts, spalling or other visible defects (as described in the HPMS field manual). • Transverse cracking in CRCP is not included in the cracking computation.
Rutting for Asphalt Pavements.	• Either the 5-Point Collection of Rutting Data method in accordance with AASHTO Standard R48–10 (2003) or the Automated Transverse Profile Data method in accordance with AASHTO Standard PP69–14 and AASHTO Standard PP70–14.
Faulting for Jointed PCCP ...	• Measured pavement profiles using AASHTO Standard R36–13.

In § 490.309(c), FHWA proposes the data collection requirements to identify the three data elements that State DOTs would be required to use to calculate the performance measures. These are essentially highway inventory items that are already reported by State DOTs to the HPMS. These data elements define the type of pavement, and whether or not there is a bridge at that location. Consistent with all of the pavement conditions and measures on the NHS, FHWA proposes that these elements be measured and not estimated from samples. This proposed approach would help achieve standardized data collection at a national level.

Discussion of § 490.311 Calculation of Pavement Metrics

In § 490.311, FHWA proposes the method to calculate and report the four pavement metrics and three inventory data elements discussed in § 490.309(a) from the data collected. The FHWA is proposing specific methodologies for calculating the metric, where appropriate, and incorporates the HPMS Field Manual by reference for any areas not specifically covered. The metric and inventory data element reporting requirements specified in this section would be more stringent than current HPMS requirements in the following areas:

1. The States DOTs would be required to report the four metrics and three inventory data elements in segments of 0.1 mile.

2. The States DOTs would be required to report the four metrics and three inventory data elements biennially for the non-Interstate NHS after the transition period ending December 31, 2019.

3. The State DOTs would be required to report the four metrics and three inventory data elements to the HPMS by April 15 each year for Interstate System pavements.

The FHWA is proposing in § 490.311(b) that State DOTs calculate the IRI metric from profile data in accordance with AASHTO Standard R43–13. The metric would be reported for all pavements as the average value in inches per mile, rounded to the nearest whole number, for each section. This method has been widely adopted by State DOTs for determining the IRI metric.[72] In addition, FHWA would not permit IRI to be estimated from a PSR or other observation-based methods.

Because of differences in the engineering properties, the Cracking_Percent, rutting, and faulting metrics are calculated differently for each type of pavement. The FHWA proposes in § 490.311(b)(2) that for asphalt sections, the Cracking_Percent metric would be computed as the percentage of the total area, to the nearest whole percent, that are exhibiting cracking, and the rutting metric would be computed as the average depth of rutting, to the nearest 0.05 inch, for the section. The FHWA proposes in § 490.311(b)(3) that for CRCP, the Cracking_Percent metric would be computed as the percentage of the area, to the nearest whole percent, of the full section exhibiting longitudinal cracking, punchouts, spalling, or other visible defects. In addition, FHWA proposes in § 490.311(b)(3) that transverse cracking not be considered in the computation for the Cracking_Percent metrics for CRCP because transverse cracking is not considered a pavement failure indicator for CRCP. The FHWA proposes in § 490.311(b)(4) that for jointed concrete pavement, the Cracking_Percent metric would be computed as the percentage of slabs, to the nearest whole percent, within the section that exhibit cracking. The FHWA proposes that partial slabs should contribute to the section that contains the majority of the slab length. In addition, FHWA proposes that the faulting metric would be computed as the average height, to the nearest 0.05 inch, of faulting between pavement slabs for the section.

The type and extent of cracking used for the Cracking_Percent metric varies by pavement type. For asphalt pavement the Cracking_Percent metric considers all cracking present in the section area, for jointed concrete pavements the Cracking_Percent metric considers any crack present in a slab within the section, and for CRCP the Cracking_Percent metric considers only longitudinal cracking in the section area (plus the additional non-cracking related items discussed in § 490.311(b)(3)). The metric calculations of Cracking_Percent for different pavements are proposed to align with existing HPMS practices and avoid the need for major changes in measurement and calculation practices by State DOTs.

In § 490.311(c)(1), FHWA proposes all pavement metrics and data inventory elements be reported in uniform 0.1-mile sections. Shorter sections may be used at the beginning of a route, end of a route, or at locations where a section length of 0.1 mile is not achievable. The FHWA feels that a consistent reporting interval reduces discrepancies in calculating the percentages of system sections classified in Good, Fair, or Poor Condition that are associated with varied section lengths. In Figure 8, a ½-mile road measured at both the 0.1-mile interval and at 0.5-mile section shows the following hypothetical results.

[72] FHWA 2013, Practical Guide for Quality Management of Pavement Condition Data Collection. *http://www.fhwa.dot.gov/pavement/management/qm/data_qm_guide.pdf.*

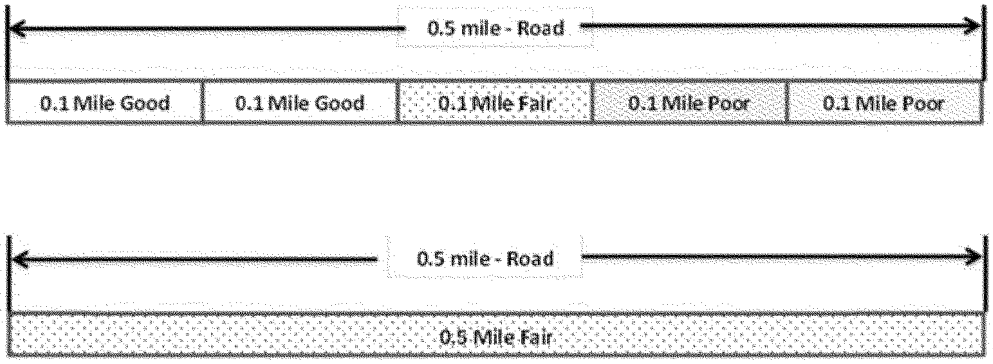


Figure 8 - A ½-mile road is measured at (a) 0.1-mile section and (b) the same road is measured at 0.5-mile section

For the 0.1-mile sections shown in Figure 8(a), 40 percent of the road is classified Good, 20 percent of the road is classified Fair, and 40 percent of the road is classified Poor when pavement conditions are measured. However, when the same road pavement conditions are measured at a 0.5-mile interval as shown in Figure 8(b), the entire roadway (100 percent) may be summarized (*i.e.,* averaged) to be Fair, which presents a very different account of pavement condition for this length of roadway as compared to an approach that uses a shorter section length to report condition. This 0.1 mile uniform section length, which is proposed to be used for the Interstate System and non-Interstate NHS, is supported by a recommendation provided by stakeholders.[73] The FHWA requests comments on whether a 0.1 mile uniform section length is appropriate for both the Interstate System and non-Interstate NHS.

The FHWA proposes in § 490.311(c)(2) that State DOTs provide a single value for each of the four metrics and three data elements for each ⅒ mile segment reported to the HPMS per year. The FHWA feels that using uniform section lengths to report to the HPMS will improve consistency. Considering this, FHWA proposes that State DOTs would not be allowed to break a ⅒ mile section into multiple shorter sections unless the ⅒ section is truncated at the termini of a roadway. A State DOT would also not be allowed to submit multiple entries for the four metrics and three data elements for the same ⅒ mile section length. This redundant reporting would be considered invalid data and would be subject to the requirement specified in § 490.313.

Section 490.311(c)(3) proposes that State DOTs would report for each section containing any of the four metrics or three inventory data elements a time and location reference. The HPMS includes a standard location referencing framework that would be required under this proposal, which includes the State_Code, Route_ID, Begin_Point, and End_Point. The date for which the data represents for each section would be reported as year in the HPMS Year_Record field for each of sections containing any of the four metrics or three inventory data elements. In addition, the Value_Date field would be reported as the month and year of data collection for each of the sections containing any of the four metrics. This data information is needed to associate the reported condition metric to the performance year.

Section 490.311(c)(4) provides that State DOTs report the four metrics and three inventory data elements for the Interstate System to the HPMS no later than April 15 of each calendar year. The information reported to the HPMS would be calculated from data collected from roadway sections in the prior calendar year. For example, the data collected from January 1, 2016, through December 31, 2016, would be used to calculate the four metrics and three inventory data elements that would be reported to the HPMS no later than April 15, 2017. Additionally, FHWA is proposing in § 490.311(c)(5) that State DOTs report the four metrics and three inventory data elements for the non-Interstate NHS to the HPMS no later than June 15 of each calendar year, the current due date to report to the HPMS.

Discussion of § 490.313 Calculation of Performance Management Measures

In § 490.313, FHWA proposes the method for calculating the pavement measures using the pavement metrics and data elements. In § 490.313(a), FHWA proposes how the pavement measures would be used by FHWA, State DOTs, and MPOs.

In § 490.313(b), FHWA proposes the method to calculate condition ratings that would use a Good, Fair, and Poor rating approach for each of the four pavement metrics discussed in § 490.311. This approach would use thresholds that would be applied to each of the four pavement metrics to determine the condition rating of Good, Fair, or Poor. The proposed thresholds are based on documented research. As an example, the proposed pavement rutting thresholds have been correlated to threshold levels that minimize the risk of vehicle hydroplaning.[74]

The FHWA proposes in § 490.313(b), the criteria to determine Good, Fair and Poor pavement condition ratings using each metric. These proposed criteria are based on the levels used by FHWA to report ride quality conditions for the IRI metric and the default design criteria thresholds established for the Mechanistic Empirical Pavement Design Guide.[75] The proposed criteria to

[73] AASHTO (2013). SCOPM Task Force Findings on MAP–21 Performance Measure Target-Setting. AASHTO Standing Committee on Performance Management. *http://scopm.transportation.org/Documents/SCOPM%20Task%20Force%20Findings%20on%20Performance%20Measure%20Target-Setting%20FINAL%20v2%20(3-25-2013).pdf.*

[74] ''Potential Safety Cost-Effectiveness of Treating Rutted Pavements'' by Start, M R,Kim, J,Berg, W D; Transportation Research Record, Issue Number: 1629, Publisher: Transportation Research Board,ISSN: 0361–1981.

[75] *The Mechanistic-Empirical Design Guide for New and Rehabilitated Pavement Structures'',* NCHRP 1–37A, 2004, *http://onlinepubs.trb.org/*

Continued

determine Good, Fair, and Poor ratings are summarized in Table 5. The FHWA encourages comments on the appropriateness of these proposed criteria and any alternative levels that would be appropriate for network level condition assessment.

TABLE 5—PROPOSED PAVEMENT CONDITION RATING THRESHOLDS

Surface type	Metric	Metric range	Rating
All pavements	IRI	<95	Good.
		95–170: Areas with a population less than 1,000,000.	Fair.
		95–220: Urbanized areas with a population of at least 1,000,000.	
		>170: Areas with a population less than 1,000,000.	Poor.
		>220: Urbanized areas with a population of at least 1,000,000.	
Asphalt Pavement and Jointed Concrete Pavement.	Cracking_Percent	<5%	Good.
		5–10%	Fair.
		>10%	Poor.
Asphalt Pavement	Rutting	<0.20	Good.
		0.20–0.40	Fair.
		>0.40	Poor.
Jointed Concrete Pavement	Faulting	<0.05	Good.
		0.05–0.15	Fair.
		>0.15	Poor.
CRCP	Cracking_Percent	<5%	Good.
		5–10%	Fair.
		>10%	Poor.

Overall pavement condition is derived from the policies that State DOTs use for initiating construction activities for maintenance and/or safety repairs. State DOTs advise that IRI conditions are more difficult to preserve in urbanized areas than in non-urbanized areas. In consideration of this and because speeds are typically slower in urbanized areas, FHWA is proposing different thresholds for Fair and Poor IRI for large urbanized areas. In particular, FHWA proposes that the criteria to classify Poor condition be increased to an IRI of 220 in urbanized areas with a population over 1 million. The proposed IRI threshold of 170 is commonly used by State DOTs in non-urbanized areas. The proposed IRI threshold of 220 for urbanized areas with a population over 1 million is based on the upper end of IRI value distributions derived from the data submitted by State DOTs.[76]

Traffic levels were not included in the computation of pavement conditions except as implied by location as either urbanized or non-urbanized areas. Although traffic is an important consideration for the design of pavements, it is not considered a measure of the existing pavement condition. For this reason, the proposed rating system described in paragraphs (b) through (e) was designed without weightings or other prioritization related to anything other than the physical characteristics of the pavement structure. The FHWA is seeking stakeholders' comment on the IRI threshold values. Because of safety and pavement structural implications, Cracking_Percent, rutting, and faulting are the same for all population areas.

The FHWA proposes that condition ratings would be determined for each section of mainline highway.

The FHWA proposes in § 490.313(b)(4) how missing or invalid data would be addressed. The FHWA would determine, on the dates specified in 490.109(d)(1) and 490.109(d)(2), for the Interstate System and non-Interstate NHS, respectively, any mainline mileage that is incomplete due to any of the following scenarios:

- Sections are missing, resulting in gaps in the mileage to be reported; or
- sections are reported that do not contain all the data required in § 490.311(c) or contain invalid data.

The FHWA is proposing to address incomplete mainline mileage by:

- Rating the mainline mileage as being in Poor condition for the corresponding metric where the mileage is considered incomplete due to missing or invalid sections for any of the four metrics; or
- rating the mainline mileage as being in overall Poor condition where the mileage is considered incomplete due to missing or invalid sections for any of the three inventory data elements.

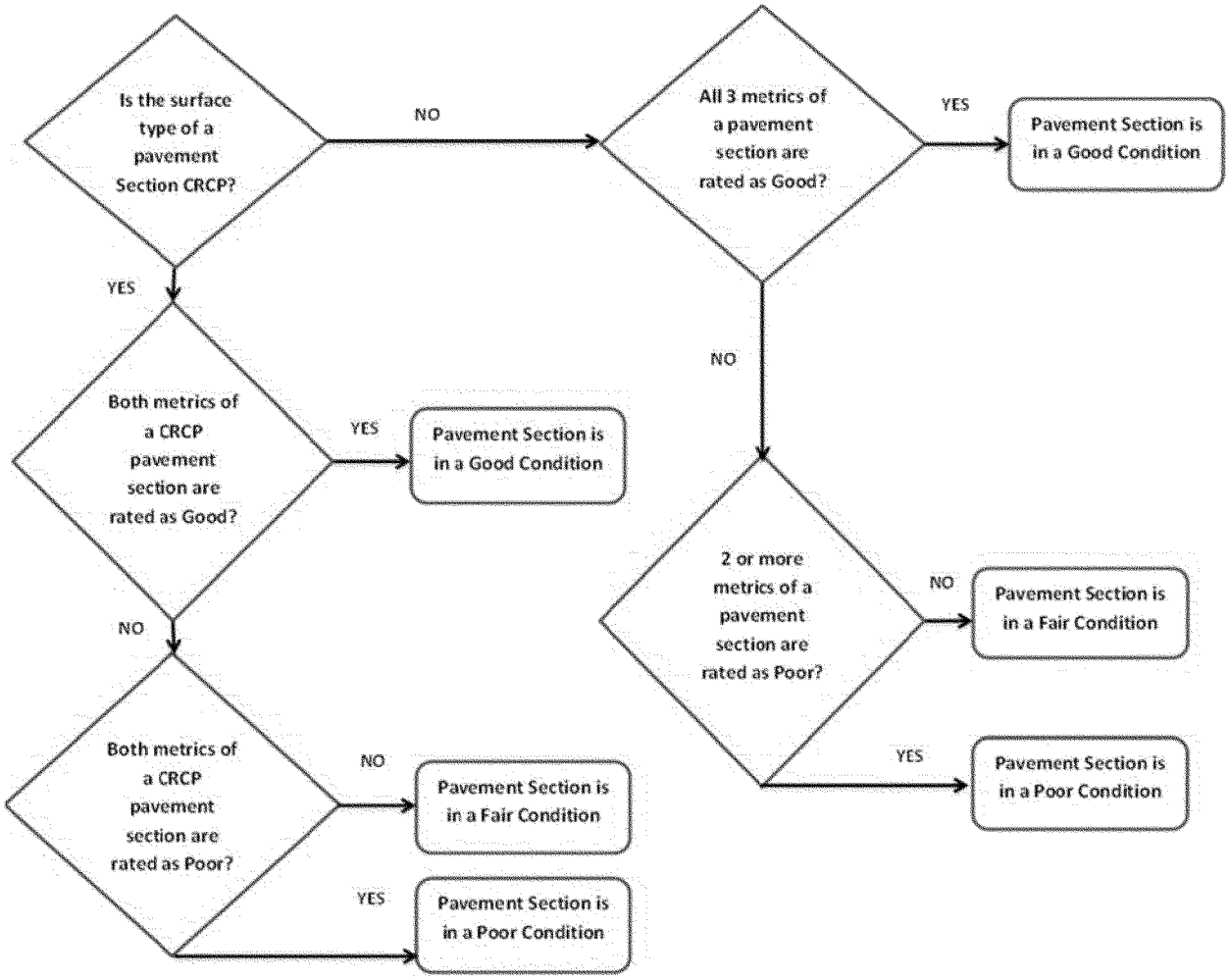
The FHWA believes that completeness of data is essential to reliable and defensible reporting of pavement condition. The HPMS data needed to calculate the proposed pavement condition measure is, in some cases, incomplete. In 2012, 12 State DOTs were missing data from samples that represented at least 50 percent of their Interstate System and 3 State DOTs were not able to provide any samples with complete data for their portion of the Interstate System. In aggregate, 27 percent of the full Interstate System lane mileage was represented by samples with missing HPMS data in 2012. Approximately 11 percent of the Interstate System would be rated in Poor condition if the proposed approach to addressing missing data was applied to the 2012 HPMS data. In contrast, only approximately 2 percent of the Interstate System would be rated in Poor condition if the missing 27 percent of data were excluded from the estimated calculation. This does not account for invalid data. The FHWA believes that it is critically important to use the entire network system (Interstate System and non-Interstate NHS) when assessing pavement conditions. The FHWA encourages comments on alternative methods for addressing missing or invalid data that would provide for an

onlinepubs/archive/mepdg/part_12_cover_ack_toc.pdf.

[76] FHWA, Table HM–47 in 2011 Highway Statistic. *http://www.fhwa.dot.gov/policyinformation/statistics/2011/hm47.cfm.*

accurate assessment of network level conditions.

The FHWA proposes in § 490.313(c) and (d) that an Overall Condition Rating be determined based on the individual condition ratings for the metrics as illustrated in Figure 9.



Legend: CRCP=Continuously Reinforced Concrete Pavement

Figure 9 -Flow Chart of Proposed Overall Pavement Condition Measure for Each Section

For an asphalt or jointed concrete pavement section to be classified in overall Good condition, all three criteria would have to be met. If a pavement section has two or more Poor criteria, it would be classified as Poor. For example, a section exceeding the criteria for IRI but not meeting the criteria for Cracking_Percent and the criteria for rutting would be classified in overall Poor condition because the rutting is a safety hazard and the cracking indicates that the section is structurally failing. Because of the distinct engineering properties of CRCP, there are only two criteria for determining the overall pavement condition, IRI and Cracking_Percent. For a CRCP section, both the IRI and Cracking_Percent criteria would need to be rated Good in order for a section to be classified in overall Good condition. Conversely, for a CRCP section, a condition rating of Poor means that both the IRI and Cracking_Percent criteria are rated as Poor.

As outlined above, the FHWA is proposing an approach to determining pavement condition that requires at least 2 metrics to be exhibiting a Poor level of condition in order for the overall condition of a pavement section to be considered Poor. This approach recognizes the predominant condition represented by the metrics as the driver of the overall pavement condition. An alternative approach could consider the lowest rated metric as the indicator driving the overall condition of the pavement section, essentially only requiring 1 metric to be in Poor condition in order for the pavement section to be rated Poor overall. The FHWA elected to use a predominant approach as this concept is typical of the approach used by many State DOTs today to evaluate pavement condition. In addition, FHWA wanted to propose a condition assessment method that minimizes the potential for any single metric, such as ride quality, to dominate the condition. Further, FHWA believes that a predominant approach more accurately recognizes that pavement

condition is impacted by multiple failure criteria. For example, a pavement that is exhibiting both Poor cracking and Poor rutting is more indicative of a structural problem as compared to a pavement that is only exhibiting Poor cracking.

In § 490.313(e), FHWA proposes that the Overall condition for all pavement types on the non-Interstate NHS be solely based on IRI, until the collection cycle ending December 31, 2019.

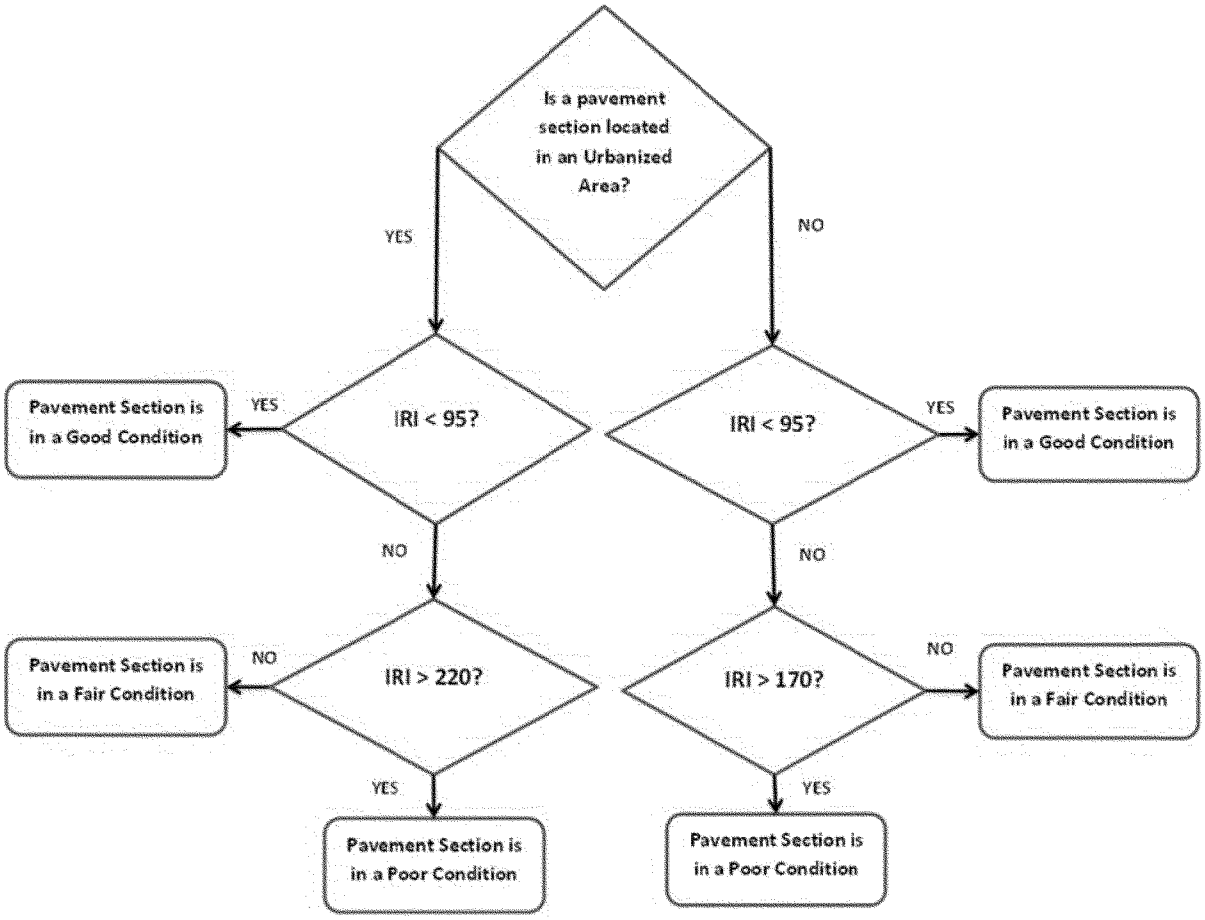


Figure 10 –Flow Chart of Proposed Overall Pavement Condition Measure for Each Section for non-Interstate NHS for Data Collection Cycle Ending December 31, 2019

For the purpose of establishing targets and reporting of condition, FHWA proposes in § 490.313(f) that State DOTs and MPOs report system-level condition measure computed to the one tenth of a percent as Good and Poor percentages of lane-miles of Interstate System and non-Interstate NHS. The Percentages of lane-miles in Good (or Poor) condition is calculated from the total of the lengths of the sections in Good (or Poor) condition, the number of mainline lanes in each section, and the total length of all sections. Bridges would be excluded by excluding any samples that have a Structure Type of 1 prior to computing all pavement condition measures. State DOTs and MPOs would do separate calculations for the Interstate System and non-Interstate NHS measures. These measures would be used for establishing targets and reporting the condition of pavements in the biennial performance report.

Discussion of § 490.315 Establishment of Minimum Level for Condition of Pavements on the Interstate System

Selection of Minimum Condition Levels for the Interstate System

The FHWA is required to establish minimum levels for the condition of pavement on the Interstate System for carrying out 23 U.S.C. 119(f)(1). (23 U.S.C. 150(c)(3)(A)(iii)) The Interstate System, which includes approximately 48,000 miles of access-controlled highways, is considered one of the most important infrastructure assets in the world.[77] The FHWA proposes a minimum condition level that would minimize impacts to this System: State DOTs maintain no more than 5.0 percent of their pavements on the Interstate System in Poor condition.[78] In selecting this level, the FHWA evaluated the costs and impacts to State DOTs and highway users as well as the estimated ability for State DOTs to comply.

Poor, as defined in this proposal, represents a level of condition that

[77] FHWA Highway Statistics 2011, Table VM–1, *http://www.fhwa.dot.gov/policyinformation/statistics/2011/vm1.cfm*

[78] The FHWA did consider the establishment of different minimum condition thresholds for different geographic regions and felt that separate thresholds for these areas were not necessary.

would adversely impact system performance and the ability to effectively manage network level conditions to meet user needs. There are several costs and other impacts associated with the existence of Poor condition pavements, including increased repair costs, increased VOCs, costs associated with work zones, and impacts to the environment, local communities and businesses. Considering these impacts, FHWA would like to minimize the existence of Poor condition pavements on the Interstate System but also allow States flexibility to manage their pavements system-wide. The FHWA believes that it is impractical to set an expectation to remove all Poor condition pavements from the Interstate System as it could result in ineffective pavement management practices by forcing State DOTs to chase small percentages of Poor pavements at the risk of ignoring efforts to preserve pavements in Good and Fair conditions. Understanding this challenge, FHWA believes that a minimum condition level of 5.0 percent (approximately 2,400 miles nationally) would minimize the costs impacts associated with Poor condition pavements on the Interstate System, and would allow State DOTs to effectively manage the overall performance of the pavement network through the delivery of a mix of treatments to address all pavement condition levels. This would optimize investment returns.

The FHWA also considered current target establishment practices used by State DOTs and actual pavement conditions existing on the Interstate System. The FHWA reviewed a sample of pavement condition target values in use by a number of State DOTs [79] in their planning processes and targets documented in recent research studies.[80] The FHWA found only a limited number of cases where a State DOT has established a target specifically addressing pavements on its portion of the Interstate System at Poor condition levels. In the majority of these cases the target was established at or below 5.0 percent. The FHWA's proposal is consistent with policies set by State DOTs that have established targets associated with the level of Poor pavements on the Interstate System.

The FHWA also evaluated pavement conditions State DOTs submitted to the HPMS for the Interstate System in 2012. Although the HPMS data submitted in 2012 was not complete and was not reported following the same data collection and process standards included in this proposal, FHWA believes that it provides a general understanding of the extent to which the proposed threshold could be met when implemented. Based on the 2012 submitted data, FHWA estimates that approximately 1.7 percent of the Interstate System was in Poor condition and that approximately 87 percent of State DOTs would meet a 5.0 percent threshold on allowable Poor pavements.[81] It is difficult to accurately assess the impacts of the proposed 5.0 percent minimum condition level on State DOT investment programming for Interstate System pavements because the full baseline of conditions using the proposed pavement measures does not exist today for every State. The estimates discussed above were based on a sample of the full data from States that had provided a full baseline condition data. For this reason, FHWA is committed to reassessing the minimum Interstate System pavement condition level in the future after a sufficient level of data is reported to establish a baseline and trends of pavement conditions on the entire Interstate System. The FHWA expects to reassess the minimum Interstate pavement condition level after the completion of the first full performance period to determine if additional system improvements can be achieved through adjustments to the required minimum condition level. The FHWA will conduct a rulemaking with an opportunity for public comment if it is determined through the assessment that the minimum level should be adjusted.

The FHWA further evaluated the 2012 HPMS data to examine the possibility of geographical differences in percent lane-miles of the Interstate System in Poor pavement condition as described in 23 U.S.C. 150(c)(3)(B). The FHWA evaluated lane-mile distribution of the Interstate System pavement conditions among different traffic volumes, climatic conditions, and terrain types. Consequently, the data suggested that there is 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. However, FHWA seeks comments on the need to establish different thresholds for geographic regions.

A white paper included in the docket includes additional information on FHWA's rationale for the proposed minimum condition threshold. Recognizing the limitations associated with an analytical approach to developing the threshold, FHWA is seeking comment on:

- The proposed minimum level, including suggestions for alternative approaches to implementing the minimum condition requirements of 23 U.S.C. 119(f)(1);
- potential impacts resulting from the existence of Poor condition Interstate System pavements;
- the appropriate threshold level to establish a minimum condition for the Interstate pavement system nationally and within each State;
- the need to establish different thresholds for different geographic regions;
- the need to reassess and potentially adjust, through rulemaking, the minimum condition threshold after the completion of the first full performance period;
- whether FHWA should, in the final rule, establish a minimum condition threshold that would become more stringent over time, to replace in the future the proposed initial 5 percent 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.

Discussion of § 490.317 Penalties for Not Maintaining Condition

Pursuant to 23 U.S.C. 119(f), § 490.317 describes the method FHWA will use to assess if a State DOT has maintained the minimum condition level for pavements on the Interstate System. The FHWA is proposing to make this determination after the first full year of data collection and each year thereafter. Considering that this rule is scheduled to be effective in 2015, the first determination would be made in 2017 (after a full year of data collection in 2016) and then annually thereafter. The FHWA intends to make this determination in a manner that can be replicated by State DOTs and others interested in assessing State DOT compliance with § 490.315(a) by

[79] Washington State DOT Gray Notebook *http://www.wsdot.wa.gov/Accountability/GrayNotebook/SI_pavement.htm* Kansas DOT. KDOT Long Range Transportation Plan, Section 2.2 *http://www.ksdot.org/Assets/wwwksdotorg/LRTP2008/pdf/KS_LRTPFinal.Chapter_2.pdf* Texas DOT. TxDOT Statewide Long Range Transportation Plan—2035 Final Report, Section 2.6 *http://ftp.dot.state.tx.us/pub/txdot-info/tpp/rural_2035/report/slrtp_final_ch2.pdf*

[80] Pavement Score Synthesis, TXDOT Study, January, 2009, NCHRP Report 522, and NCHRP Report 551

[81] Estimate based on HPMS data provided by 31 State DOTs and excludes Interstate System mileage within these States that is represented by samples with missing data. These State DOTs were able to submit complete data (needed to calculate the proposed pavement condition measure) for samples that represented at least 80 percent of their Interstate System lane-miles.

extracting the data needed from the HPMS to make the determination on a specific date each year. The FHWA is proposing to extract data from the HPMS on June 15th of each year to provide sufficient time for State DOTs to report pavement conditions for the prior year to the HPMS. This timetable would also enable any requirements to obligate or transfer funds to be in place by the next fiscal year.

If FHWA determines that the condition of the Interstate System meets the requirement specified in § 490.317(d), then no further action is required by the State DOT for the next fiscal year. If FHWA determines that a State DOT is out of compliance with 23 U.S.C. 119(f)(1), then the State DOT would be subject to the requirements specified in 23 U.S.C. 119(f)(1)(A)(i) and (ii).

The FHWA proposes in § 490.317(e) to notify all State DOTs annually of their compliance status with the minimum condition requirements prior to October 1 of the year the determination would be made.

Section 490.317(f) outlines the actions that would occur if FHWA determines that a State DOT is out of compliance with 23 U.S.C. 119(f)(1). This proposed section incorporates the requirements found in 23 U.S.C. 119(f). Under this proposal, States determined to be out of compliance would be required to: (1) Obligate certain NHPP funds for the purposes described in 23 U.S.C. 119 (as in effect on the day before enactment of MAP–21) and increased by an amount each year after Fiscal Year (FY) 2013, and (2) transfer certain apportioned Surface Transportation Program for the purposes described in 23 U.S.C. 119 (as in effect on the day before enactment of MAP–21). The day before enactment of MAP–21, 23 U.S.C. 119 contained the requirements for the Interstate Maintenance Program. Pursuant to 23 U.S.C. 119(f)(1)(B), the requirement specified in 23 U.S.C. 119(f)(1)(A) remains in effect until the Interstate System pavement condition exceeds the minimum condition level established by this NPRM. The FHWA is proposing to implement this restoration requirement by making annual determinations of compliance. The FHWA is proposing in § 490.317(d) that it would make the determination based on the data submitted to the HPMS each year by assessing compliance with § 490.315(a) for the most recent 2 years. A proposed application of this NHPP minimum condition penalty is provided in the docket.

The following example (illustrated in Table 6) indicates how this provision would be carried out. Assuming that this rule is effective in 2015, a State DOT submits data collected on the Interstate System in calendar year 2016 to the HPMS by April 15, 2017, and data collected on the Interstate System in calendar year 2017 to the HPMS by April 15, 2018. The FHWA would review the submitted data for completeness and would work with the State DOT to address any missing data. The FHWA would extract data from the HPMS on June 15, 2017, to determine State DOT compliance with § 490.315(a) in 2016 and would notify the State DOT before October 1 of the determination. Similarly in 2018, FHWA would extract data from the HPMS, check compliance with the minimum level for condition of pavements, and notify the State DOT following the same schedule as described for 2017. If FHWA determined in both 2017 and 2018 that the State DOT did not comply with § 490.315(a), then beginning October 1, 2018, the State DOT would need to: (1) Obligate, from the amount apportioned to the State for the NHPP, an amount that is not less than the Interstate Maintenance apportionment for the FY 2009, plus 2 percent per year compounded annually (for the 5 additional FYs after 2013); and (2) transfer certain apportioned Surface Transportation Program funds equal to 10 percent of Interstate Maintenance apportionment for the FY 2009. These funds would need to be used to improve Interstate pavement conditions (as provided under the pre-MAP–21 Interstate Maintenance Program). In 2019 and each year thereafter, FHWA would assess the State DOT's compliance with § 490.315(a). The State DOT would be subject to the obligation requirements specified in 23 U.S.C. 119(f)(1)(A)(i) and (ii) if in any year it is determined that the State DOT was out of compliance with § 490.315(a) for the most recent 2 years.

TABLE 6—DETERMINATION OF COMPLIANCE BASED ON HPMS REPORTING

Data collection year	HPMS reporting date	Data to be used for compliance determination	Date of determination and notification	Obligation requirement effective date (if not meeting minimum level requirement)	Obligation requirement
CY 2016	April 15, 2017	Data extracted from HPMS on June 15, 2017, for calendar year 2015 and 2016 Interstate System pavement conditions.	Prior to October 1, 2017.		
CY 2017	April 15, 2018	Data extracted from HPMS on June 15, 2018, for calendar year 2017 and data that was extracted on June 15, 2017, for calendar year 2016.	Prior to October 1, 2018.	October 1, 2018	At least $[(FY09IM^{*}) \times (1.02)^{2019-2013}]^{**} + [0.10 \times (FY09IM^{*})]^{***}$
CY 2018 and each year thereafter noted as "CY 20##" the columns to the right.	April 15, 20XX+1	Data extracted from HPMS on June 15, 20XX+1 for calendar year 20XX, and data that was extracted on June 15, 20XX for calendar year 20XX–1.	Prior to October 1, 20XX+1.	October 1, 20XX+1.	At least $[(FY09IM^{*}) \times (1.02)^{(20XX+1)-2013}]^{**} + [0.10 \times (FY09IM^{*})]^{***}$

* FY 09IM denotes the amount of funds apportioned to a State for FY 2009 under the Interstate Maintenance program.

** Amount of NHPP to be obligated to addressing Interstate System pavement conditions.

*** Amount of STP to be transferred to the NHPP to address Interstate System pavement conditions.

Discussion of § 490.319 Other Requirements

To implement the Interstate System pavement minimum condition level requirement and the issuance of any penalties, required under 23 U.S.C. 119(f)(1), FHWA proposes in § 490.319(a) that each State DOT reports the required pavement condition metrics and data elements outlined in §§ 490.311 and 490.309(b)(4), respectively, to the HPMS no later than April 15 of each year. The FHWA recognizes that State DOTs need sufficient time after data collection to process data, conduct data quality management activities, analyze data, and carry out other required business processes that are necessary to prepare data for upload into HPMS. Based on previous data management experience, FHWA anticipates that additional time would be needed after the State DOT reports to the HPMS to conduct checks to assure data quality and completeness. Additionally, sufficient time is needed for FHWA's compliance determination for minimum condition level, for State DOT notification, and for FHWA to issue any resulting penalties so that they are effective by the beginning of the next fiscal year as required under 23 U.S.C. 119(f)(1).

Thus, FHWA proposes that the State DOTs report to the HPMS the proposed Interstate System pavement condition metrics and data elements no later than April 15 of each year. This would allow for sufficient time to carry out the necessary steps to make a timely and accurate minimum condition determination. The FHWA recognizes that the proposed schedule to report Interstate System data would accelerate the time needed to report to the HPMS, which may impact a State DOT's ability to effectively process data and ensure data quality. Understanding this potential impact, FHWA is seeking comment from State DOTs on the proposed schedule to implement the 23 U.S.C. 119(f)(1) minimum condition requirements.

Provided that this proposed rule becomes effective in 2015, the determination of compliance with the minimum condition requirements specified in 23 U.S.C. 119(f)(1) would be carried out by FHWA for the first time in 2018, based on information in the previous 2 years. The 2017 assessment will review 2016 minimum condition compliance and the 2018 assessment will review 2017 minimum condition compliance. Following this implementation schedule, any transfer and obligation requirements under 23 U.S.C. 119(f)(1) resulting from the minimum condition compliance determination would not be in effect until FY 2019, or by October 1, 2018. Thus, the proposed requirement to submit Interstate System data by April 15 would not be in effect until 2017. This would allow time for State DOTs to prepare for this proposed accelerated data reporting requirement.

In § 490.319(b), FHWA proposes to retain the requirement currently in the HPMS Field Manual that data for the non-Interstate NHS pavement condition be reported to HPMS not later than June 15 of each year.

In § 490.319(c), FHWA proposes Data Quality Management program requirements to implement 23 U.S.C. 150(c)(3)(A)(iv) for pavement condition data. Data quality management programs are a standard practice in both private industry and the public sector wherever large quantities of materials, products, or data are exchanged. For purposes of assessing pavement conditions, there are considerable data requirements and significant consequences attached to the outcomes of the analyses. The FHWA proposes that each State DOT must have a data quality management program for the data required to assess pavement conditions. This proposal would require State DOTs to submit their Data Quality Management Programs to FHWA for approval. Once approved, State DOTs would use that program to collect and report data. State DOTs would also be required to have FHWA approve significant changes prior to implementation. A significant change would occur when a State DOT changes fundamental processes, procedures, or acceptance criteria. Examples of significant change include moving from in-house data collection to contract collection, changing from manual to automated data collection, contracting with an independent assurance firm, and similar actions. The design of the data quality management program is left to discretion of State DOTs, as long as it includes the following items:

- Data Collection equipment, calibration, and certification;
- Certification process for persons performing manual data collection, if used;
- Data quality control measures conducted both before data collection begins and periodically during the data collection program;
- Data sampling, review, and checking processes; and
- Error resolution procedures and data acceptance criteria.

C. Section-by-Section Discussion for Subpart D: National Performance Management Measures for Assessing Bridge Condition

Discussion of § 490.401 Purpose

In § 490.401, FHWA proposes to specify that bridge condition performance measures are applicable to all NHS bridges covered under the NHPP. In addition, this section emphasizes that the data used for the performance measures would need to include all bridges on the NHS in the State regardless of ownership, maintenance responsibility, or functional classification.

Discussion of § 490.403 Applicability

In § 490.403, FHWA proposes to specify that the bridge performance measures are applicable to all NHS bridges including bridges on ramps connecting to the NHS as defined by 23 U.S.C. 103 and NHS bridges that cross a State border regardless of ownership or maintenance responsibility. The FHWA also proposes that State DOTs coordinate with all relevant bridge owners, such as Federal agencies that own NHS bridges and other State DOTs that share NHS bridges that cross State borders, in order to meet the proposed requirements of subpart A. The FHWA recognizes that this differs from certain established requirements of the NBIS, such as the NBI data submittal process under which States are not responsible for Federal- or tribal-owned bridges. Similar to the proposed requirement in subpart A that requires coordination between State DOTs and MPOs, it is appropriate that State DOTs coordinate with all relevant NHS bridge owners for the proposed bridge condition performance measures and targets in order to ensure consistency.

Discussion of § 490.405 Definitions

In § 490.405, FHWA proposes to use the definition of ''bridge'' found in the NBIS (23 CFR 650.305) for this subpart. The FHWA recognizes that States may have differing definitions for ''bridge.'' These discrepancies would cause problems in analyzing collected bridge data at the national level, and measuring progress toward the national goal of ''maintaining the highway infrastructure asset system in a state of good repair.'' The use of an established definition would continue to provide FHWA consistent and standardized data to be analyzed for the evaluation of State and national progress in achieving a state of good repair.

The FHWA also proposes to include a definition for ''Structurally Deficient'' to identify the population of NHS bridges for determining a State's percentage of deck area of bridges classified as ''Structurally Deficient'' and implement the penalty for any State DOT that does not maintain the minimum condition level established by 23 U.S.C. 119(f)(2). ''Structurally Deficient'' is a programmatic term that was used to administer the Highway Bridge Program. This Program was known as the Highway Bridge Replacement and Rehabilitation Program and was eliminated by MAP–21. It was one of three statuses assigned to a highway bridge based on an evaluation of NBI data for the purposes of determining Highway Bridge Program eligibility. The proposed definition would be the same programmatic definition of ''Structurally Deficient'' that was used under the Highway Bridge Program. It would provide a continued focus of improving a specific population of bridges through the penalty and minimum condition level provisions established by 23 U.S.C. 119(f)(2).

Discussion of § 490.407 National Performance Management Measures for Assessing Bridge Condition

In § 490.407, FHWA proposes the two performance measures to carry out the NHPP for State DOTs to use to assess bridge condition on the NHS. The proposed measures are: (1) Percentage of NHS bridges classified as in Good condition; and (2) Percentage NHS bridges classified as in Poor condition. These performance measures would be used to demonstrate how investments of Federal-aid funds are utilized toward achieving performance targets for all NHS bridges, including bridges on ramps connecting to the NHS. The NHS is defined in 23 U.S.C. 103.

Discussion of § 490.409 Calculation of National Performance Management Measures for Assessing Bridge Condition

In § 490.409(a), FHWA proposes the method that would be used to calculate the bridge measures proposed in § 490.407 and outlines how FHWA, State DOTs, and MPOs would use the bridge measures.

In § 490.409(b), FHWA proposes the source of data and the method to be used in assigning classification for the condition of bridges on the NHS, including bridges on ramps connecting to the NHS. The Good, Fair, and Poor classification of bridges on the NHS utilizes data elements from the NBI database. State DOTs measure and classify a number of standard features for bridges in their jurisdiction and then report them to FHWA on an annual basis. Based on their NBI data, State DOTs would be required to classify all bridges within a State into one of the three classifications: Good, Fair, or Poor. These classifications and their development are consistent with the conclusions and recommendations of a 2011 FHWA study on the use of performance management approaches titled, ''Improving FHWA's Ability to Assess Highway Infrastructure Health.'' [82] As noted in this study, there are two basic methods FHWA could use as a basis for developing a measure to assess bridge condition. The first is a weighted average method that consists of calculating a measure of structural adequacy based on a weighted average of the deck, superstructure, and sub-structure condition ratings of a bridge. The second is the minimum condition rating method which calculates a measure of structural adequacy based on the lowest condition rating of deck, superstructure, and sub-structure of a bridge.

This section also proposes that the condition classification of Good, Fair, or Poor, be based on a bridge's condition ratings for the following NBI Items: 58—Deck, 59—Superstructure, 60—Substructure, and 62—Culverts. Various methods for determining the bridge condition based on these NBI items have been studied by FHWA as well as suggested by States, including: Each item contributing equally to a final average; some items contributing more than others to achieve a weighted average; and the minimum rated item controlling (minimum condition rating method). In the case of culverts, there is only one item (Item 62—Culvert) to rate, since culverts do not have NBI Items 58, 59, and 60.

The data within FHWA's NBI database, which includes bridge condition and geometric information, is utilized to determine overall bridge condition. Data in the NBI database is provided to FHWA by State DOTs and Federal agencies as required by 23 CFR 650.315. State DOTs are required to submit NBI data annually in accordance with 23 U.S.C. 144(d)(1) and 23 U.S.C. 144(h)(2)(D)(ii).

Phases of the previously identified 2011 FHWA study, ''Improving FHWA's Ability to Assess Highway Infrastructure Health,'' evaluated five different methods (four different weighted average methods and one minimum condition rating method) to assign bridge condition based on Good, Fair, or Poor ratings. For this study, the NBI database was selected as the logical data source because of the consistency of its representation of over 40 years of collected data, and because it is used by nearly every State DOT as the current basis for their bridge decisionmaking. The study discussed and evaluated five different methods (four different weighted average methods and one minimum condition rating method). The study concluded that for the Interstate System—

- Percentages of bridges classified as Good, Fair, or Poor were consistent for all methods with little variation;
- minimum condition rating method resulted in the highest percentage of bridges in Poor condition;
- percentages of bridges classified as Good, Fair, or Poor based on the four weighted average methods are not sensitive to the weights; and
- bridge deck conditions alone are not typically the driving factor in the Good, Fair, or Poor calculations.

The FHWA further assessed the different methods and observed that the magnitude in differences between condition ratings for individual NBI items was somewhat nullified when a final average or weighted average method was employed. This observation was also noted in the 2011 study. The masking or obscuring of possible poor bridge conditions is a major concern with the final average or weighted average methods. Although these methods could be further refined, the development, subjectivity, and complexity of such methods makes them less desirable than the simple minimum condition rating method, especially since analyses indicate that a refined weighted method would result in the same general classification as the minimum condition rating method. Therefore, FHWA proposes that for each applicable bridge, the performance measures for determining condition be based on the minimum value for the following NBI Items: 58—Deck, 59—Superstructure, 60—Substructure, and 62—Culverts. The FHWA further proposes to weight this condition by the respective deck area of each bridge and express condition totals as a percentage of the total deck area of bridges in a State. The FHWA recognizes that this proposed approach to determining bridge condition is different from the approach to determining pavement condition, which is based on a cumulative assessment.

[82] ''Improving FHWA's Ability to Assess Highway Infrastructure Health,'' (*http://ntl.bts.gov/lib/46000/46100/46182/Improving_FHWA_s_ability_to_assess_highway_infrastructure_health_Pilot_Study_Rpt.pdf*

The following flow diagram, Figure 11, provides in visual format the classification ratings identified in § 490.409(b)(1) through (3). They are as follows: § 490.409(b)(1) assigns a Good classification when all of the NBI items are rated as 7 or above; § 490.409(a)(2) identifies Fair classification when any of the NBI items are rated as 5 or 6; and § 490.409(a)(3) assigns a Poor classification when any of the NBI items are 4 or less. These classification ratings are then used to determine the performance measures identified in § 490.407.

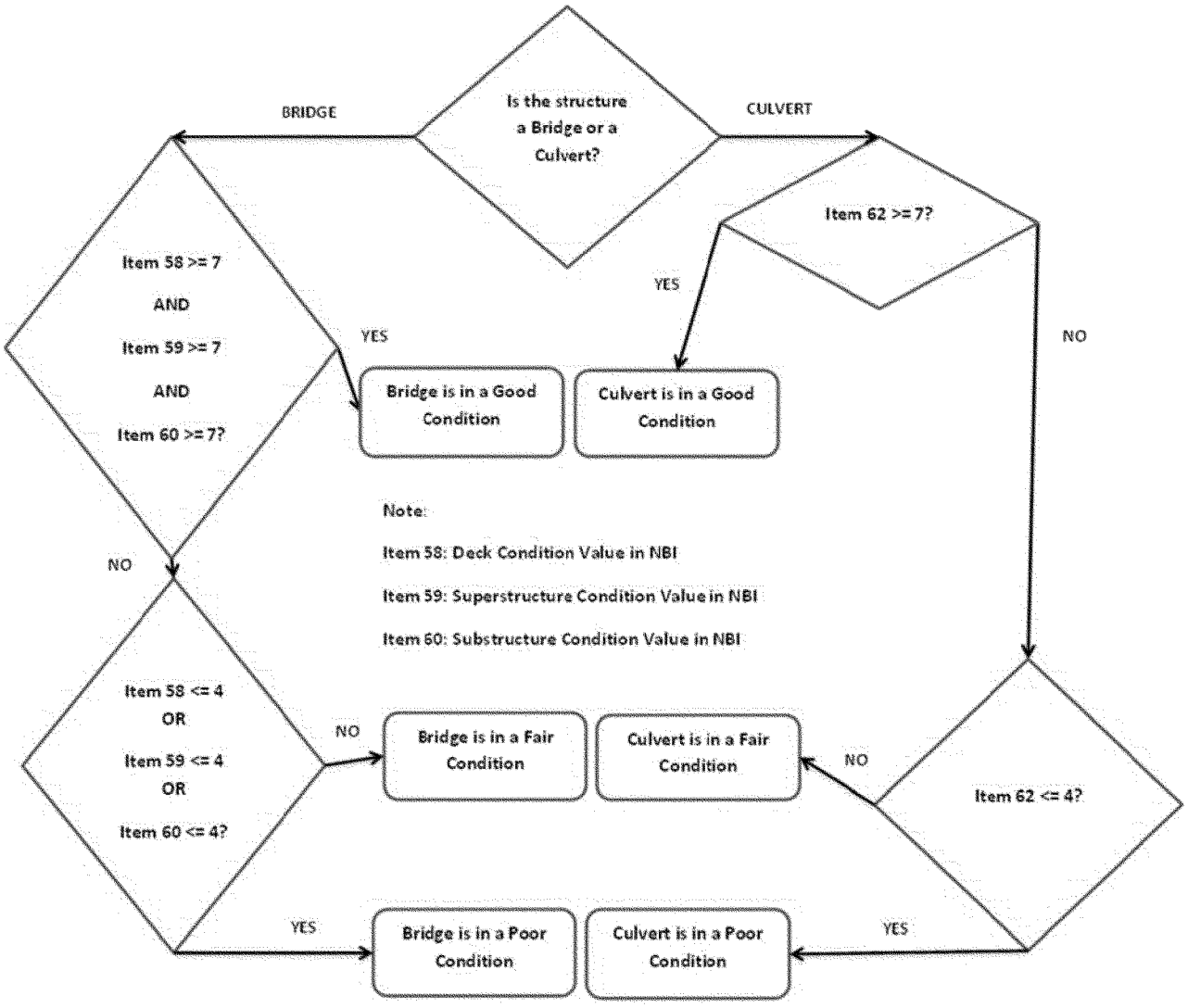


Figure 11– Flow Chart of NBI Classification Process

In § 490.409(c), FHWA proposes how to calculate the performance measures for assessing bridge condition identified in § 490.407. Using NBI data, the ratio of the total deck area of bridges in a condition classification to the total deck area of applicable bridges is calculated. The deck area of a bridge is proposed to be the product of NBI Items 49—Structure Length, and 52—Deck Width. In the case of a roadway on fill carried across a pipe(s) or culvert in which headwalls do not affect the flow of traffic, NBI Item 32—Approach Roadway Width is utilized instead of Item 52—Deck Width, to calculate the deck area. The FHWA proposes that this ratio would be calculated by first summing the total deck area for each of the three classification conditions (Good, Fair, and Poor) for all applicable bridges. Next, the total deck area for all of the applicable bridges is calculated. Finally, the ratio is determined by dividing the total deck area of bridges for a classification condition by the total deck area for the applicable bridges. The result would be multiplied by 100 to get the final percentages for the performance measures (the percent of bridges in a particular classification). The equation is as follows:

$$Percentage\ (X.X\%)\ of\ NHS\ Bridges\ in\ a\ Classification = 100.0 * \frac{Total\ Deck\ Area\ of\ NHS\ Bridges\ in\ a\ Classification}{Total\ Deck\ Area\ of\ NHS\ Bridges\ in\ a\ State}$$

In § 490.409(d), FHWA proposes that these measures be used to establish targets and report targets and condition.

In § 490.409(e), FHWA notes that all of the NBI Items (*e.g.,* NBI Item 49—Structure Length, NBI Item 52—Deck Width) listed in this section are included in the ''Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges,'' which is incorporated by reference in § 490.111.

Discussion of § 490.411 Establishment of Minimum Level for Condition for Bridges

In § 490.411(a) through (c), FHWA incorporates the minimum condition level for bridges on the NHS established by 23 U.S.C. 119(f)(2). The minimum condition level is for State DOTs to maintain bridges so that the percentage of the deck area of bridges on the NHS classified as Structurally Deficient does not exceed 10 percent. This minimum is applicable to bridges on the NHS, to bridges on ramps connecting to the NHS within a State, and to bridges on the NHS that cross a State border.

The FHWA also proposes the source of data and the method to be used in assigning a classification of Structurally Deficient to a bridge. The NBI is the definitive source for national bridge information and has been used for many years to classify bridges as Structurally Deficient, determine eligibility for the Highway Bridge Program, and apportion Federal-aid funds. It is for these reasons the NBI is proposed to be the source of data for classifying a bridge as Structurally Deficient.

This section also proposes that the classification of Structurally Deficient be based on a bridge's condition ratings for the following NBI Items: 58—Deck, 59—Superstructure, 60—Substructure, 62—Culverts, and a bridge's appraisal ratings for NBI Items 67—Structural Evaluation, and 71—Waterway Adequacy. The proposed method for classification would be the same method used under the Highway Bridge Program. This classification methodology is found in the former Federal-aid Policy Guide Non-Regulatory Supplement, NS 23 CFR, Part 650 D, dated September 30, 1992, Transmittal 5, paragraph 9.a. (*http://www.fhwa.dot.gov/bridge/0650dsup.cfm*). This method would provide a continued focus of improving a specific population of bridges through the minimum condition level provisions established by 23 U.S.C. 119(f)(2).

In order to effectively implement FHWA's determination of State DOT minimum condition level and assessment of penalty in a timely manner, FHWA proposes in § 490.411(d) to make minimum condition level determinations for NHS bridges on an annual basis. These determinations would be based on data cleared in the NBI as of June 15 of each year. Under the NBIS, State DOTs are allowed up to 90 days after the date of inspection to enter Structure Inventory and Appraisal data into their inventory for State DOT bridges. For all other bridges, they are allowed up to 180 days. This time is needed for data processing, data quality management, data analysis, and other required business processes necessary to report quality data. Based on previous experiences with data management, FHWA anticipates State DOTs will need 90 days after submitting their inventory to the NBI to conduct checks to ensure data quality and completeness. Additionally, sufficient time is needed for FHWA's minimum condition level determination, for State DOT notification, and for FHWA to issue any resulting penalties so that they are effective by the beginning of the next fiscal year. After FHWA makes its compliance determination, it would notify all State DOTs of its determination prior to October 1 of the year in which the determination was made.

Thus, FHWA proposes in § 490.411(e) that the State DOTs submit their most current NBI data on highway bridges to FHWA no later than March 15 of each year. The FHWA recognizes that this is change from the practice of submitting NBI data every April 1; however, this change would allow for sufficient time to make a timely and accurate minimum condition determination.

The FHWA estimates that less than 1 percent of all bridges on the NHS are on Federal or tribal lands. The FHWA encourages State DOTs to consult and coordinate with all relevant entities (*e.g.,* Federal Land Management Agencies, tribal governments) so that NBI data for NHS bridges on Federal or tribal lands within a State's boundaries can be provided and considered when FHWA determines whether a State DOT has complied with the minimum condition requirements. Understanding this potential impact, FHWA is seeking comment from State DOTs on the proposal to implement the 23 U.S.C. 119(f)(2) minimum condition requirements.

The determination of compliance with the minimum condition requirements specified in 23 U.S.C. 119(f)(2) would be carried out by FHWA for fiscal year 2017 and annually thereafter. This timing is based on an assessment of minimum condition compliance NBI data submitted in 2014, 2015, and 2016. Following this implementation schedule, any penalties resulting from the minimum condition compliance determination would not be in effect until FY 2017 or by October 1, 2016.

In § 490.411(f), FHWA notes that all of the NBI Items (*e.g.,* NBI Item 49—Structure Length, NBI Item 52—Deck Width) listed in this section are included in the ''Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges'', which is incorporated by reference in 490.111.

Discussion of § 490.413 Penalties for Not Maintaining Bridge Condition

In § 490.413, FHWA incorporates into the proposed regulation the penalty for any State DOT that does not maintain the minimum condition level established by 23 U.S.C. 119(f)(2). The proposed section generally describes the minimum condition requirement and the consequences when a State fails to comply with those requirements.

In order to assess State DOT compliance with the minimum condition, for the 3-year period preceding the date of the determination, FHWA would evaluate annually whether more than 10.0 percent of the total deck area of NHS bridges in the State have been classified as structurally deficient. If more than 10 percent of the total deck area of NHS bridges in the State are classified as structurally deficient for the 3-year period preceding the date of determination, then the State would need to comply with the proposed 490.413, which incorporates the requirements found in 23 U.S.C. 119(f)(2).

Under this proposal, States that do not meet the minimum condition requirements would be required to obligate a set aside amount equal to 50 percent of the funds apportioned to the State for fiscal year 2009 to carry out the Highway Bridge Program, 23 U.S.C. 144, (as in effect on the day before enactment of MAP–21) from the amounts apportioned to a State for a fiscal year under section 104(b)(1) (the NHPP) only for eligible NHS bridge projects. The day before enactment of MAP–21, 23 U.S.C. 144 contained the requirements for the Highway Bridge Program.

The FHWA is proposing to require an obligation of a set-aside of certain NHPP funds during the fiscal year following the determination. While 23 U.S.C. 119(f)(2) only references set-aside, FHWA is proposing that set aside funds be obligated in order to implement the set aside requirement consistent with congressional treatment to address

Interstate Pavement Condition, which requires, in part, an obligation of certain NHPP funds if the State does not meet the minimum pavement condition requirements. The FHWA also proposes that the bridge minimum condition penalty would take effect during the fiscal year following the FHWA's determination.

A set aside is derived from a funding category and results in a portion of that funding being segregated and dedicated for a specific purpose (the set aside implementing this provision would be segregated from NHPP funds and dedicated to addressing NHS bridge conditions). Dedication to address bridge condition requires timely obligation. An obligation is considered a contractual commitment, which evidences the commitment of funds for the specific purpose. Pursuant to authority under 23 U.S.C. 315 and after taking into account the heading of 23 U.S.C. 119(f)(2)(A) indicating that this provision is a ''penalty,'' FHWA believes it would be appropriate to require both a set aside and obligation of NHPP funds. Implementation of the requirement in this manner would cause the States not to lose funds but, States would be required to timely obligate the set aside funds to address NHS bridge condition. Thus the States subject to this requirement would lose some flexibility with NHPP funds when the funds are obligated to address the bridge deficiencies. A requirement to obligate, in addition to set aside, NHPP funds would result in funding dedicated to improving NHS bridges. In addition, FHWA believes it is appropriate to specify the timing as to when the provision would take effect; otherwise the provision would have little meaning.

Both of these requirements would be consistent with the minimum Interstate pavement condition penalty in 23 U.S.C. 119(f)(1)(A), which requires an obligation of certain funds within a specific time period. To require different outcomes with respect to funding for pavement minimum condition and bridge minimum condition, when the purpose of both provisions is essentially the same (to require funding to be directed to improve condition), would seem to place a priority on pavement condition over bridge condition with no rationale to support the disparate treatment. This consistency in application of the penalty provisions is also important as pavement and bridge condition are both part of the NHPP program. The FHWA does not believe that prioritizing pavement condition over bridge condition is consistent with the national goal in 23 U.S.C. 150(b)(2) of maintaining all infrastructure assets in a state of good repair.

Pursuant to 23 U.S.C. 119(f)(2)(B), the requirement specified in 23 U.S.C. 119(f)(2)(A) remains in effect until less than 10.0 percent of the total deck area of the States' NHS bridges is located on bridges that have been classified as structurally deficient. The FHWA is proposing to implement this restoration requirement by making annual determinations of compliance.

As proposed in § 490.413(b), the determination of compliance with the minimum condition requirements specified in 23 U.S.C. 119(f)(2) would be carried out by FHWA in 2016 and annually thereafter. This timing is based on an assessment of minimum condition compliance with NBI data submitted in 2014, 2015, and 2016. Following this implementation schedule, any penalties resulting from the minimum condition compliance determination would not be in effect until FY 2017, or after October 1, 2016. State DOTs have been and currently are submitting the necessary NBI data to FHWA. As such, FHWA will have the data to make an annual determination of compliance beginning in 2016.[83] A proposed application of this NHPP minimum condition penalty is provided in the docket along with an example of its application.

VII. Rulemaking Analyses and Notices

All comments received before the close of business on the comment closing date indicated above will be considered and will be available for examination in the docket at the address noted in the above **ADDRESSES** section. Comments received after the comment closing date will be filed in the docket and will be considered to the extent practicable. A final rule may be published at any time after close of the comment period.

Please note that the proposed regulatory text that is presented below builds on, but is separate from, the regulatory text proposed in the FHWA's first Performance Measure NPRM published in the **Federal Register**. The regulatory text proposed in that first NPRM is included in the docket. Comments on that NPRM should be submitted in accordance with the instructions contained in that NPRM (docket number USDOT–2013–0020). When the three Performance Management rulemakings are completed, the combined regulatory text from each of the three rules will represent the entirety of 23 CFR part 490.

Executive Order 12866 (Regulatory Planning and Review), Executive Order 13563 (Improving Regulation and Regulatory Review), and DOT Regulatory Policies and Procedures

The FHWA has determined that this proposed rule constitutes an economically significant regulatory action within the meaning of Executive Order (E.O.) 12866 and within the meaning of the DOT regulatory policies and procedures. This action complies with E.O.s 12866 and 13563. This action is considered ''economically significant'' because this rulemaking will result in the transformation of the Federal-aid highway program so that the program focuses on national goals, provides for a greater level of accountability and transparency, and provides a means for the most efficient investment of Federal transportation funds. The FHWA has filed into the docket a Regulatory Impact Analysis (regulatory analysis or RIA) in support of the NPRM on National Performance Measures for Assessing Pavement and Bridge Conditions. The regulatory analysis estimates the economic impact, in terms of costs and benefits, on Federal, State, and local governments, as well as private entities regulated under this action, as required by E.O. 12866 and E.O. 13563, but does not currently attempt to directly quantify the changes from the improved decisionmaking. The economic impacts are measured on an incremental basis, relative to current pavement and bridge condition reporting practices.

This section of the NPRM identifies the estimated costs and benefits resulting from the proposed rule in order to inform policy makers and the public of the relative value of the current proposal. The complete RIA may be accessed from the rulemaking's docket (docket number FHWA–2013–0053).

The cornerstone of MAP–21's transformation of the highway program is the transition to a performance-based program. In accordance with the law, State DOTs would invest resources in projects to achieve performance targets that make progress toward national goals areas. The national performance goal area established for infrastructure condition is to maintain the highway infrastructure asset system in a state of good repair. In order to carry out this mandate, MAP–21 requires FHWA to promulgate a rule to establish pavement and bridge condition performance measures and standards. As required by

[83] Questions and Answer 2 on FHWA's MAP–21 Web site (*http://www.fhwa.dot.gov/map21/qandas/qabridges.cfm*), posted on 9/25/2012, provides information on the 3-year period that will be used for the first determination of compliance.

MAP–21, this NPRM identifies the following pavement and bridge performance measures for which State DOTs and MPOs must collect and report data, establish targets for performance, and make progress toward achievement of targets:

1. Percentage of lane-miles of the Interstate System in Good condition;

2. Percentage of lane-miles of the Interstate System in Poor condition;

3. Percentage of lane-miles of the non-Interstate NHS in Good condition;

4. Percentage of lane-miles of the non-Interstate NHS in Poor condition;

5. Percentage of NHS bridges classified as in Good condition; and

6. Percentage of NHS bridges classified as in Poor condition.

Estimated Cost of the Proposed Rule

To estimate costs for the proposed rule, FHWA assessed the level of effort, expressed in labor hours and the labor categories, and capital needed to comply with each component of the proposed rule. Level of effort by labor category is monetized with loaded wage rates to estimate total costs.

Table 7 displays the total cost of the proposed rule for the 10-year study period (2015–2024). Total costs are estimated to be $196.4 million undiscounted, $149.1 million discounted at 7 percent, and $173.2 million discounted at 3 percent. The costs in the table assume a portion of MPOs, approximately half of the estimated 420 MPOs, would establish their own targets and a portion would adopt State DOT targets. It is assumed that State DOTs and MPOs serving TMAs [84] would use staff to establish performance targets and MPOs not serving a TMA would agree to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT targets and would therefore not incur any incremental costs. There are currently an estimated 210 MPOs serving TMAs. The FHWA made this assumption because larger MPOs may have more resources available to develop performance targets. The FHWA believes that this is a conservative estimate as larger MPOs may elect not to establish their own targets for any variety of reasons, including resource availability.

TABLE 7—TOTAL COST OF THE PROPOSED RULE

Cost components	10-yr Total cost		
	Undiscounted	7%	3%
Section 490.105–109—General Information, Target Establishment, Reporting on Progress, and Making Significant Progress	$93,283,261	$64,861,869	$79,297,035
Establish and Update Performance Targets	39,198,632	28,462,495	33,931,374
Assess Significant Progress Toward Achieving Performance Targets	1,122,098	703,058	913,432
Reporting on Performance Targets Progress	52,962,531	35,696,316	44,452,229
Section 490.309—Data Requirements—Interstate IRI, Rutting, and Faulting	30,712,622	23,081,249	26,984,444
Data Collection: IRI measurement in both directions	24,283,997	18,249,988	21,336,184
Tracking costs: establish measurement for rutting	489,800	368,096	430,344
Tracking costs: establish measurement for faulting	979,600	736,192	860,687
Data processing costs: Additional IRI data	1,653,075	1,242,324	1,452,410
Data processing costs: Additional rutting data	1,836,750	1,380,360	1,613,789
Data processing costs: Additional faulting data	1,469,400	1,104,288	1,291,031
Section 490.309—Data Requirements—Interstate Cracking	15,225,866	11,872,243	13,587,510
Fully Automated State DOTs: Additional Data Quality Control Costs	1,224,500	920,240	1,075,859
Semi-Automated State DOTs: Additional Data Processing & Quality Control Costs	4,006,853	3,011,243	3,520,464
Manual & State DOTs not currently collecting: Training costs to adopt automated methods	1,729,138	1,729,138	1,729,138
Manual & State DOTs not currently collecting: Data quality control costs	8,265,375	6,211,622	7,262,049
Section 490.309—Data Requirements—Non-Interstate NHS IRI, Rutting, and Faulting	5,616,835	4,050,700	4,855,720
Data Collection costs: Increase IRI Measurement to Cover 100 percent of non-interstate NHS miles	395,566	285,271	341,965
Data processing costs: Additional rutting and faulting data collected	636,740	459,199	550,458
Tracking costs: establish measurement for rutting	2,546,960	1,836,795	2,201,832
Tracking costs: establish measurement for faulting	2,037,568	1,469,436	1,761,466
Section 490.309—Data Requirements—Non-Interstate NHS Cracking	4,040,850	2,914,145	3,493,291
Additional data quality control costs for new data collection	4,040,850	2,914,145	3,493,291
Section 490.309—Data Requirements—Capital Costs	16,600,000	15,891,841	16,254,041
Profiler	9,100,000	8,391,841	8,754,041
Faulting Software	1,000,000	1,000,000	1,000,000
Cracking Video Equipment and Software Purchase	6,500,000	6,500,000	6,500,000
Section 490.313—Calculation of performance management measures	8,242,259	7,785,869	8,019,297
Reprogramming of software to allow Performance Calculations	6,405,509	6,405,509	6,405,509
FHWA's Management of Data Submissions	244,900	184,048	215,172
Filtering out Bridge Pavement from Pavement Data	1,591,850	1,196,312	1,398,617
Section 490.319—Other Requirements	15,962,695	12,007,317	14,030,362
Develop a Quality Management Program	44,194	44,194	44,194
Run New Quality Management Program	3,061,250	2,300,601	2,689,648
Improve Quality Management Program	12,857,251	9,662,522	11,296,520
Section 490.407—Calculation of bridge performance measures	6,759,061	6,671,211	6,716,144
Update Software to generate good/fair/poor condition	6,405,509	6,405,509	6,405,509
FHWA's Management of Data Submissions	353,552	265,703	310,635

[84] A TMA is an urbanized area having a population of over 200,000 or otherwise requested by the Governor and the MPO and officially designated by FHWA or FTA. 23 U.S.C. 134(k).

TABLE 7—TOTAL COST OF THE PROPOSED RULE—Continued

Cost components	10-yr Total cost		
	Undiscounted	7%	3%
Total Cost of Proposed Rule	196,443,449	149,136,445	173,237,846

* Totals may not sum due to rounding.

Break-Even Analysis

Currently, State DOTs differ from State to State in the way they measure the condition of their pavement. We do not believe their current methods are inadequate, but the methods are inconsistent and these differences hinder accurate analysis of infrastructure conditions at the national level. The proposed rulemaking would establish uniform condition measures for the purpose of carrying out the NHPP to assess condition of pavements on the NHS (excluding the Interstate System), condition of pavements on the Interstate System, and condition of bridges on the NHS. In addition, the rule would establish processes that: (1) State DOTs and MPOs use to report measures and establish performance targets, and (2) FHWA uses to assess progress that State DOTs have made toward achieving targets.

Upon implementation, FHWA expects that the proposed rule would result in certain benefits. Specifically, the proposed rule would allow for more informed decisionmaking on bridge and pavement condition-related project, program, and policy choices. The proposed rule also would yield greater accountability because the MAP–21-mandated reporting would increase visibility and transparency. In addition, the proposed rule would help focus the Federal-aid highway program on achieving balanced performance outcomes.

These benefits resulting from the proposed rule (*i.e.,* more informed decisionmaking, greater accountability, and greater focus on making progress toward the national goal for infrastructure condition) would lead to improved pavement and bridge conditions. The benefits resulting from performance measurement, while real and substantial, are difficult to monetize. For this proposed rule, FHWA quantified these benefits of the proposed rule by performing break-even analyses as described in Office of Management and Budget Circular A–4. A break-even analysis calculates the threshold a specific variable must achieve in order for benefits to equal costs, holding every other variable in the analysis constant. For both pavements and bridges, FHWA focused its break-even analyses on VOCs savings because users typically garner the greatest concentration of benefits from transportation projects. The DOT estimated the number of road miles of deficient pavement that would have to be improved and the number of posted bridges that would have to be avoided in order for the benefits of the rule to justify the costs.

Table 8 presents the results from the pavement break-even analysis. The results represent the savings in VOC to automobile and truck drivers from pavement conditions that are improved from Poor to Good. The analysis shows that the proposed rule would need to result in the net improvement of approximately 435 miles of pavement (*i.e.,* to Good condition) per year, or 4,350 miles over 10 years, that would otherwise not have been improved without the proposed rule. The annual break-even point represents approximately 1.9 percent of the NHS miles currently estimated to be in poor condition. Based on recent trends in improving road condition, FHWA believes improving 435 miles of pavement per year or 4,350 miles over 10 years as a result of this rule is achievable. Using a related benchmark as a point of reference, between 2000 and 2010, the percentage of VMT on NHS pavements with ''Good'' ride quality increased from 48 percent to 60 percent. On average, this is equivalent to a 1.2 percent increase in improved VMT per year.[85]

TABLE 8—BREAK-EVEN IMPROVEMENT OF PAVEMENT CONDITIONS (IMPROVED FROM POOR)

	Annual improved from poor VMT needed	Annual poor VMT (total VMT * 4.9%)	Percent of poor VMT needing improvement	Current NHS miles estimated to be in poor condition	Approximate number of poor NHS miles needing improvement from poor
	a	b	c = a ÷ b	d	e = c * d
Maintenance	7,398,564,204	79,778,275,896	9.24%	22,827	2,109
Fuel	1,946,081,966	79,778,275,896	2.43%	22,827	555
Tires	175,596,118,543	79,778,275,896	219.25%	22,827	50,049
Total	1,527,395,633	79,778,275,896	1.91%	22,827	435

* Please refer to the Summary Report for details on the methodology used in the analysis.

Table 9 presents the results from the bridge break-even analysis which calculates the number of year-long bridge postings that would need to be reduced as a result of the proposed rule in order for the benefits of the bridge condition requirements to justify the costs. The FHWA estimated the average cost per year of a bridge posting (column E in Table 9). With the undiscounted cost of the bridge requirements and this average cost of a bridge posting, the analysis estimates the number of year-long bridge postings that need to be avoided in order to make

[85] U.S. Department of Transportation, Federal Highway Administration. 2013 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance Report to Congress. *http://www.fhwa.dot.gov/policy/2013cpr/pdfs/littlebook.pdf.*

the benefits of the proposed rule justify the cost. The break-even analysis estimates that 2 year-long bridge postings need to be avoided over 10 years in order for benefits to justify costs. As a basis for comparison, NBI data indicate that currently there are approximately 85 NHS bridges posted for trucks. Over the 10 year period of 2003–2012 the number of NHS bridges posted for truck declined from 145 to 85. Trends in the United States demonstrated by bridge owners provide evidence that posted bridges receive priority consideration in work schedules. With the increased performance requirements of this rule, it is reasonable to assume that at a minimum, a reduction in the posted load limit of one bridge annually nationwide would be achieved to provide the needed benefit to justify the costs of complying with this rule.

TABLE 9—BREAK-EVEN BRIDGE DETOURS

Undiscounted 10 year cost of proposed bridge rule	Average truck user cost per VMT	Average distance per detour (miles)	Average cost of detour per trucks	Average cost per year of each bridge posting	Equivalent number of year-long posts that need to be avoided	Annual number of year-long posts that need to be avoided
a	b	c	d = b × c	e = d * 1,940 ADT * 365.25	f = a ÷ e	g = f ÷ 10 years
$53,400,692	$1.69	20	$33.82	$23,964,028	2	0.2

* Please refer to the Summary Report for details on the methodology used in the analysis.

Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act (Pub. L. 96–354, 5 U.S.C. 601–612), FHWA has evaluated the effects of this action on small entities and has determined that the action would not have a significant economic impact on a substantial number of small entities. The proposed rule affects State governments and MPOs. State DOTs are not included in the definition of small entity set forth in 5 U.S.C. 601. The MPOs are considered governmental jurisdictions, so the small entity standard for these entities is whether the affected MPOs serve less than 50,000 people. As discussed in the RIA, the proposed rule is expected to impose costs on MPOs that serve TMAs, which generally have populations exceeding 200,000. Further, MPOs serve urbanized areas with populations of more than 50,000. Therefore, the MPOs that incur economic impacts under this proposed rule do not meet the definition of a small entity.

Therefore, the Regulatory Flexibility Act does not apply, and I hereby certify that the proposed action would not have a significant economic impact on a substantial number of small entities.

Unfunded Mandates Reform Act of 1995

The FHWA has determined that this NPRM would not impose unfunded mandates as defined by the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, March 22, 1995, 109 Stat. 48). This rule does not contain a Federal mandate that may result in expenditures of $143.1 million or more in any one year (when adjusted for inflation) in 2012 dollars for either State, local, and tribal governments in the aggregate, or by the private sector. The FHWA will publish a final analysis, including its response to public comments, when it publishes a final rule. Additionally, the definition of ''Federal mandate'' in the Unfunded Mandates Reform Act excludes financial assistance of the type in which State, local, or tribal governments have authority to adjust their participation in the program in accordance with changes made in the program by the Federal Government. The Federal-aid highway program permits this type of flexibility.

Executive Order 13132 (Federalism Assessment)

The FHWA has analyzed this NPRM in accordance with the principles and criteria contained in E.O. 13132. The FHWA has determined that this action would not have sufficient federalism implications to warrant the preparation of a federalism assessment. The FHWA has also determined that this action would not preempt any State law or State regulation or affect the States' ability to discharge traditional State governmental functions.

Executive Order 12372 (Intergovernmental Review)

Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing E.O. 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.

Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501, *et seq.*), Federal agencies must obtain approval from OMB for each collection of information they conduct, sponsor, or require through regulations. The FHWA has analyzed this proposed rule under the PRA and has determined that this proposal contains collection of information requirements for the purposes of the PRA.

This proposed rule provides definitions and outlines processes for bridge and pavement performance measures and reporting. Some burdens in this proposed rule would be realized in other reporting areas as described below. The PRA activities that are already covered by existing OMB Clearances have reference numbers for those clearances as follows: HPMS information collection, OMB No. 2125–0028 with an expiration of June 30, 2015; and National Bridge Inventory, OMB No. 2125–0501 with an expiration date of December 31, 2014. Any increase in PRA burdens caused by MAP–21 in these areas will be addressed in PRA approval requests associated with those collections.

This rulemaking requires the submittal of biennial performance reports. The FHWA has analyzed this proposed rule under the PRA and has determined the following:

Respondents: Approximately 262 applicants consisting of States and MPOs.

Frequency: Biennially.

Estimated Average Burden per Response: Approximately 416 hours to complete and submit the report.

Estimated Total Annual Burden Hours: Approximately 54,496 hours annually.

The FHWA invites interested persons to submit comments on any aspect of the information collection. Comments submitted on the information collection proposed in this NPRM will be summarized or included, or both, in the request for OMB approval of this information collection.

National Environmental Policy Act

The FHWA has analyzed this action for the purpose of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*), and has determined that this action would not have any effect on the quality of the environment and meets the criteria for the categorical exclusion at 23 CFR 771.117(c)(20), which covers the promulgation of regulations.

Executive Order 12630 (Taking of Private Property)

The FHWA has analyzed this proposed rule under E.O. 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights. The FHWA does not anticipate that this proposed action would affect a taking of private property or otherwise have taking implications under E.O. 12630.

Executive Order 12988 (Civil Justice Reform)

This action meets applicable standards in sections 3(a) and 3(b)(2) of E.O. 12988, Civil Justice Reform, to minimize litigation, eliminates ambiguity, and reduce burden.

Executive Order 13045 (Protection of Children)

We have analyzed this proposed rule under E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks. The FHWA certifies that this action would not cause an environmental risk to health or safety that might disproportionately affect children.

Executive Order 13175 (Tribal Consultation)

The FHWA has analyzed this action under E.O.13175, dated November 6, 2000, and believes that the proposed action would not have substantial direct effects on one or more Indian tribes; would not impose substantial direct compliance costs on Indian tribal governments; and would not preempt tribal laws. The proposed rulemaking addresses obligations of Federal funds to States for Federal-aid highway projects and would not impose any direct compliance requirements on Indian tribal governments. Therefore, a tribal summary impact statement is not required.

Executive Order 12898 (Environmental Justice)

The E.O. 12898 requires that each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations. The FHWA has determined that this proposed rule does not raise any environmental justice issues.

Executive Order 13211 (Energy Effects)

The FHWA has analyzed this action under E.O. 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. The FHWA has determined that this is not a significant energy action under E.O. 13211 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Therefore, a Statement of Energy Effects is not required.

Regulation Identification Number

A regulation identification number is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The regulation identification number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

List of Subjects in 23 CFR Part 490

Bridges, Highway safety, Highways and roads, Reporting and recordkeeping requirements.

Issued in Washington, DC, on December 18, 2014, under authority delegated in 49 CFR 1.85.

Gregory G. Nadeau,

Acting Administrator, FHWA Administration.

In consideration of the foregoing, FHWA proposes to amend 23 CFR part 490, as proposed to be added at 79 FR 13846, March 11, 2014, as follows:

PART 490—NATIONAL PERFORMANCE MANAGEMENT MEASURES

■ 1. The authority citation for part 490 continues to read as follows:

Authority: 23 U.S.C. 134, 135, 148(i), and 150; 49 CFR 1.85.

■ 2. Revise subpart A to read as follows:

Subpart A—General Information

Sec.

490.101 Definitions
490.103 Data Requirements
490.105 Establishment of Performance Targets
490.107 Reporting on Performance Targets
490.109 Assessing Significant Progress toward Achieving the Performance Targets for the National Highway Performance Program
490.111 Incorporation by reference

§ 490.101 Definitions.

Unless otherwise specified, the following definitions apply to the entire part 490:

Full Extent means continuous collection and evaluation of pavement condition data over the entire length of the roadway.

Highway Performance Monitoring System (HPMS) is a national level highway information system that includes data on the extent, condition, performance, use, and operating characteristics of the Nation's highways.

Mainline highways means the through travel lanes of any highway. Mainline highways specifically exclude ramps, shoulders, turn lanes, crossovers, rest areas, and other pavement surfaces that are not part of the roadway normally travelled by through traffic.

Measure means an expression based on a metric that is used to establish targets and to assess progress toward achieving the established targets (*e.g.,* a measure for flight on-time performance is percent of flights that arrive on time, and a corresponding metric is an arithmetic difference between scheduled and actual arrival time for each flight).

Metric means a quantifiable indicator of performance or condition.

National Bridge Inventory (NBI) is an FHWA database containing bridge information and inspection data for all highway bridges on public roads, on and off Federal-aid highways, including tribally owned and federally owned bridges, that are subject to the National Bridge Inspection Standards (NBIS).

Non-Urbanized Area means any geographic area that is not an ''urbanized area'' under either 23 U.S.C. 101(a)(34).

Performance period means a determined time period during which condition/performance is measured and evaluated to: (1) Assess condition/performance with respect to baseline condition/performance; and (2) track progress toward the achievement of the targets that represent the intended condition/performance level at the midpoint and at the end of that time period. The term ''performance period'' applies to all proposed measures in this Part, except the measures proposed for the Highway Safety Improvement Program (HSIP) in Subpart B. Each performance period covers a 4-year duration beginning on a specified date (provided in § 490.105).

Target means a quantifiable level of performance or condition, expressed as a value for the measure, to be achieved within a time period required by FHWA.

§ 490.103 Data requirements.

(a) *In general.* Unless otherwise noted below, the data requirements in this section applies to the measures identified in Subparts B–C. Additional data requirements for specific performance management measures are identified in 23 CFRs—

(1) 490.309 for the condition of pavements on the Interstate System;

(2) 490.309 for the condition of pavements on the non-Interstate NHS;

(3) 490.409 for the condition of bridges on the NHS;

(4) [Reserved].

(b) *Urbanized area data.* The State DOTs shall submit urbanized area data, including boundaries of urbanized areas, in accordance with the HPMS Field Manual for the purpose of the additional targets for urbanized and non-urbanized areas in § 490.105(e) and IRI rating determination in § 490.313(b)(1). The boundaries of urbanized areas shall be identified based on the most recent U.S. Decennial Census, unless FHWA approves adjustments to the urbanized area as provided by 23 U.S.C. 101(a)(34), and these adjustments are submitted to HPMS, available at the time when the State DOT Baseline Performance Period Report is due to FHWA.

(c) [Reserved].

(d) *National Highway System data.* The State DOTs shall document and submit the extent of the NHS in accordance with the HPMS Field Manual.

§ 490.105 Establishment of performance targets.

(a) *In general.* State Departments of Transportation (State DOTs) shall establish performance targets for all measures specified in paragraph (c) of this section for respective target scope identified in paragraph (d) with the requirements specified in paragraph (e) of this section, and the Metropolitan Planning Organizations (MPOs) shall establish performance targets for all measures specified in paragraph (c) for respective target scope identified in paragraph (d) of this section with the requirements specified in paragraph (f) of this section.

(b) *Highway Safety Improvement Program measures.* State DOTs and MPOs shall establish performance targets for the Highway Safety Improvement Program (HSIP) measures in accordance with § 490.209.

(c) *Applicable measures.* State DOTs and MPOs that include, within their respective geographic boundaries, any portion of the applicable transportation network shall establish performance targets for the performance measures identified in 23 CFRs—

(1) 490.307(a)(1) and (2) for the condition of pavements on the Interstate System;

(2) 490.307(a)(3) and (4) for the condition of pavements on the National Highway System (NHS) (excluding the Interstate); and

(3) 490.407(c)(1) and (2) for the condition of bridges on the NHS.

(d) *Target scope.* Targets established by the State DOT and MPO shall, regardless of ownership, represent the transportation network, including bridges that cross State borders, that are applicable to the measures as specified in paragraphs (d)(1) and (2).

(1) State DOTs and MPOs shall establish Statewide and metropolitan planning areawide targets, respectively, that represent the condition/performance of the transportation network that is applicable to the measure, as specified in 23 CFR—

(i) 490.303 for the condition of pavements on the Interstate System;

(ii) 490.303 for the condition of pavements on the non-Interstate NHS; and

(iii) 490.403 for the condition of bridges on the NHS.

(2) [Reserved].

(3) For the purpose of target establishment in this section, reporting targets and progress evaluation in § 490.107 and significant progress determination in § 490.109, State DOTs shall declare and describe the NHS limits and urbanized area boundaries within the State boundary in the Baseline Performance Period Report required by § 490.107(b)(1). Any changes in NHS limits or urbanized area boundaries during a performance period would not be accounted for until the following performance period.

(e) *State DOT target setting.* State DOTs shall establish targets for each of the performance measures identified in paragraph (c) of this section for respective target scope identified in paragraph (d) of this section as follows:

(1) *Schedule.* State DOTs shall establish targets not later than 1 year of the effective date of this rule and for each performance period thereafter, in a manner that allows for the time needed to meet the requirements specified in this section and so that the final targets are submitted to FHWA by the due date provided in § 490.107(b).

(2) *Coordination.* State DOTs shall coordinate with relevant MPOs on the selection of targets in accordance with 23 U.S.C. 135(d)(2)(B)(i)(II) to ensure consistency, to the maximum extent practicable.

(3) *Additional targets for urbanized and non-urbanized areas.* In addition to statewide targets, described in paragraph (d)(1) of this section, State DOTs may, as appropriate, for each statewide target establish additional targets for portions of the State.

(i) A State DOT shall declare and describe in the Baseline Performance Period Report required by § 490.107(b)(1) the boundaries used to establish each additional target. Any changes in boundaries during a performance period would not be accounted for until the following performance period.

(ii) State DOTs may select any number and combination of urbanized area boundaries and may also select a non-urbanized area boundary for the establishment of additional targets.

(iii) The boundaries used by the State DOT for additional targets shall be contained within the geographic boundary of the State and available to the FHWA.

(iv) State DOTs shall evaluate separately the progress of each additional target and report that progress as required under § 490.107(b)(2)(ii)(B) and (b)(3)(ii)(B).

(4) *Time horizon for targets.* State DOTs shall establish targets for a performance period as follows:

(i) The performance period will begin on:

(A) January 1 of the year in which the Baseline Performance Period Report is due to FHWA and will extend for a duration of 4 years for the measures in paragraphs (c)(1) through (3) of this section; and

(B) [Reserved].

(ii) The midpoint of a performance period will occur 2 years after the beginning of a performance period described in paragraph (e)(4)(i) of this section.

(iii) State DOTs shall establish 2-year targets that reflect the anticipated condition/performance level at the midpoint of each performance period.

(iv) State DOTs shall establish 4-year targets that reflect the anticipated condition/performance level at the end of each performance period.

(5) *Reporting.* State DOTs shall report 2-year targets, 4-year targets, the basis for each established target, progress made toward the achievement of targets, and other requirements to FHWA in accordance with § 490.107, and the State DOTs shall provide relevant MPO(s) targets to FHWA, upon request, each time the relevant MPOs establish or adjust MPO targets, as described in paragraph (f) of this section.

(6) *Target adjustment.* State DOTs may adjust an established 4-year target

in the Mid Performance Period Progress Report, as described in § 490.107(b)(2).

(7) *Phase-in of new requirements for Interstate System pavement condition measures.* The following requirements apply only to the first performance period and the measures in § 490.307(a)(1) and (2):

(i) State DOTs shall establish their 4-year targets, required under paragraph (e)(4)(iv) of this section, and report these targets in their Baseline Performance Period Report, required under § 490.107(b)(1);

(ii) State DOTs shall not report 2-year targets, described in paragraph (e)(4)(iii) of this section, and baseline condition/performance in their Baseline Performance Period Report; and

(iii) State DOTs shall update the baseline condition/performance in their Baseline Performance Period Report, with the 2-year condition/performance in their Mid Performance Period Progress Report, described in § 490.107(b)(2)(ii)(A). State DOTs may also adjust their 4-year targets, as appropriate.

(f) *MPO target setting.* The MPOs shall establish targets for each of the performance measures identified in paragraph (c) of this section for respective target scope identified in paragraph (d) of this section as follows:

(1) *Schedule.* The MPOs shall establish targets no later than 180 days after the respective State DOT(s) establishes their targets, described in paragraph (e)(1) of this section.

(i) The MPOs shall establish 4-year targets, described in paragraph (e)(4)(iv) of this section, for all applicable measures, described in paragraphs (c)–(d) of this section.

(ii) Reserved.

(2) *Coordination.* The MPOs shall coordinate with relevant State DOT(s) on the selection of targets in accordance with 23 U.S.C. 134(h)(2)(B)(i)(II) to ensure consistency, to the maximum extent practicable.

(3) *Time horizon for targets.* The MPOs shall establish 4-year targets that reflect the anticipated condition/performance level at the end of each performance period, described in paragraph (e)(4) of this section. The MPOs are not required to establish 2-year targets.

(4) *Target establishment options.* The MPOs shall establish targets by either:

(i) Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT targets; or

(ii) Committing to quantifiable targets for their metropolitan planning area.

(5) [Reserved].

(6) [Reserved].

(7) *MPO response to State DOT target adjustment.* If the State DOT adjusts a 4-year target in the State DOT's Mid Performance Period Progress Report and if, for this respective target, the MPO established a target by supporting the State DOT target as allowed under paragraph (f)(4)(i) of this section, then the MPO shall, within 180 days, report to the State DOT whether they will either:

(i) Agree to plan a program of projects so that they contribute to the adjusted State DOT target; or

(ii) Commit to a new quantifiable target for its metropolitan planning area.

(8) *Target adjustment.*— If the MPO establishes its target by committing to a quantifiable target, described in paragraph (f)(4)(ii) of this section, then the MPOs may adjust its target(s) in a manner that is agreed upon and documented in the metropolitan planning agreement in accordance with part 450 of this chapter.

(9) *Reporting.*—The MPOs shall report targets and progress toward the achievement of their targets as specified in § 490.107(c). After the MPOs establish or adjust their targets, the relevant State DOT(s) must be able to provide these targets to FHWA, upon request.

§ 490.107 Reporting on performance targets.

(a) *In general.* All State DOTs and MPOs shall report the information specified in this section for the targets required in § 490.105.

(1) All State DOTs and MPOs shall report in accordance with the schedule and content requirements under paragraphs (b) and (c) of this section, respectively.

(2) For the measures identified in § 490.207(a), all State DOTs and MPO shall report on performance in accordance with § 490.213.

(3) State DOTs shall report using an electronic template provided by FHWA.

(b) *State Biennial Performance Report.* State DOTs shall report to FHWA baseline condition/performance at the beginning of a performance period and progress achievement at both the midpoint and end of a performance period. State DOTs shall report at an ongoing 2-year frequency as specified in paragraphs (b)(1), (2), and (3) of this section.

(1) *Baseline Performance Period Report*— (i) *Schedule.* State DOTs shall submit a Baseline Performance Period Report to FHWA by October 1 of the first year in a performance period. State DOTs shall submit their first Baseline Performance Period Report to FHWA by October 1, 2016, and subsequent Baseline Performance Period Reports to FHWA by October 1 every 4 years thereafter.

(ii) *Content.* The State DOT shall report the following information in each Baseline Performance Period Report:

(A) *Targets.* Two-year and 4-year targets for the performance period, as required in § 490.105(e), and a discussion, to the maximum extent practicable, of the basis for each established target;

(B) *Baseline condition/performance,* Baseline condition/performance derived from the latest data collected through the begin date of the performance period specified in § 490.105(e)(4) for each target, required under paragraph (b)(1)(ii)(A) of this section;

(C) *Relationship with other performance expectations.* A discussion, to the maximum extent practicable, on how the established targets in paragraph (b)(1)(ii)(A) of this section support expectations documented in longer range plans, such as the State asset management plan required by 23 U.S.C. 119(e) and the long-range statewide transportation plan provided in part 450 of this chapter;

(D) *Urbanized area boundaries and population data for targets.* For the purpose of determining target scope in § 490.105(d), determining IRI rating in § 490.313(b)(1), and establishing additional targets for urbanized and non-urbanized areas in § 490.105(e)(3), State DOTs shall document the boundary extent for all applicable urbanized areas and the latest Decennial Census population data, based on information in HPMS;

(E) *NHS limits for targets.* For the purpose of determining target scope in § 490.105(d), State DOTs shall document the extent of the NHS, based on information in the HPMS.

(2) *Mid Performance Period Progress Report*—(i) *Schedule.*—State DOTs shall submit a Mid Performance Period Progress Report to FHWA by October 1 of the third year in a performance period. State DOTs shall submit their first Mid Performance Period Progress Report to FHWA by October 1, 2018, and subsequent Mid Performance Period Progress Reports to FHWA by October 1 every 4 years thereafter.

(ii) *Content.* The State DOT shall report the following information in each Mid Performance Period Progress Report:

(A) *Two-year condition/performance.* The actual condition/performance derived from the latest data collected through the midpoint of the performance period, specified in § 490.105(e)(4), for each State DOT

reported target required in paragraph (b)(1)(ii)(A) of this section;

(B) *Two-year progress in achieving performance targets.* A discussion of the State DOT's progress toward achieving each established 2-year target in paragraph (b)(1)(ii)(A) of this section. The State DOT shall compare the actual 2-year condition/performance in paragraph (b)(2)(ii)(A) of this section, within the boundaries and limits documented in paragraphs (b)(1)(ii)(D) and (E) of this section, with the respective 2-year target and document in the discussion any reasons for differences in the actual and target values;

(C) *Investment strategy discussion.* A discussion on the effectiveness of the investment strategies developed and documented in the State asset management plan for the NHS required under 23 U.S.C. 119(e);

(D) [Reserved];

(E) *Target adjustment discussion.* When applicable, a State DOT may submit an adjusted 4-year target to replace an established 4-year target in paragraph (b)(1)(ii)(A) of this section. If the State DOT adjusts its target, it shall include a discussion on the basis for the adjustment and how the adjusted target supports expectations documented in longer range plans, such as the State asset management plan and the long-range statewide transportation plan. The State DOT may only adjust a 4-year target at the midpoint and by reporting the change in the Mid Performance Period Progress Report.

(F) *Two-year significant progress discussion for the National Highway Performance Program (NHPP) targets.* State DOTs shall discuss the progress they have made toward the achievement of all 2-year targets established for the NHPP measures in § 490.105(c)(1) through (3). This discussion should document a summary of prior accomplishments and planned activities that will be conducted during the remainder of the Performance Period to make significant progress toward that achievement of 4-year targets for NHPP measures;

(G) *Extenuating Circumstances discussion on NHPP 2-year targets.* When applicable, a State DOT may include a discussion on the extenuating circumstance(s), described in § 490.109(e)(5), beyond the State DOT's control that prevented the State DOT from making 2-year significant progress toward achieving NHPP target(s) in paragraph (b)(2)(ii)(F) of this section; and

(H) *NHPP Target Achievement Discussion.* If FHWA determines that a State DOT has not made significant progress toward the achievement of NHPP targets in two consecutive biennial FHWA determinations, then the State DOT shall include a description of the actions they will undertake to better achieve NHPP targets as required under § 490.109(f). If FHWA determines under § 490.109(e) that the State DOT has achieved significant progress, then the State DOT does not need to include this description.

(3) *Full Performance Period Progress Report*—(i) *Schedule.*—State DOTs shall submit a progress report on the full performance period to FHWA by October 1 of the first year following the reference performance period. State DOTs shall submit their first Full Performance Period Progress Report to FHWA by October 1, 2020, and subsequent Full Performance Period Progress Reports to FHWA by October 1 every 4 years thereafter.

(ii) *Content.* The State DOT shall report the following information for each Full Performance Period Progress Report:

(A) *Four-year condition/performance.* The actual condition/performance derived from the latest data collected through the end of the Performance Period, specified in § 490.105(e)(4), for each State DOT reported target required in paragraph (b)(1)(ii)(A) of this section;

(B) *Four-year progress in achieving performance targets.* A discussion of State DOT's progress made toward achieving each established 4-year target in paragraph (b)(1)(ii)(A) or (E) of this section, when applicable. The State DOT shall compare the actual 4-year condition/performance in paragraph (b)(3)(ii)(A) of this section, within the boundaries and limits documented in paragraph (b)(1)(ii)(D) and (E) of this section, with the respective 4-year target and document in the discussion any reasons for differences in the actual and target values;

(C) *Investment strategy discussion.* A discussion on the effectiveness of the investment strategies developed and documented in the State asset management plan for the NHS required under 23 U.S.C. 119(e);

(D) [Reserved];

(E) *Four-year significant progress evaluation for NHPP targets.*—State DOTs shall discuss the progress they have made toward the achievement of all 4-year targets established for the NHPP measures in § 490.105(c)(1) through (3). This discussion shall include a summary of accomplishments achieved during the Performance Period to demonstrate whether the State DOT has made significant progress toward achievement of 4-year targets for NHPP measures.

(F) *Extenuating circumstances discussion on NHPP targets.* When applicable, a State DOT may include discussion on the extenuating circumstance(s), described in § 490.109(e)(5), beyond the State DOT's control that prevented the State DOT from making a 4-year significant progress toward achieving NHPP targets, described in paragraph (b)(3)(ii)(E) of this section; and

(G) *NHPP target achievement discussion.* If FHWA determines that a State DOT has not made significant progress toward the achievement of NHPP targets in two consecutive biennial FHWA determinations, then the State DOT shall include a description of the actions they will undertake to better achieve NHPP targets as required under § 490.109(f). If FHWA determines in § 490.109(e) that the State DOT has achieved significant progress, then the State DOT does not need to include this description.

(c) *MPO report.* MPOs shall establish targets in accordance with § 490.105 and report targets and progress toward the achievement of their targets in a manner that is consistent with the following:

(1) The MPOs shall report their established targets to their respective State DOT in a manner that is agreed upon by both parties and documented in the Metropolitan Planning Agreement in accordance with part 450 of this chapter.

(2) The MPOs shall report baseline condition/performance and progress toward the achievement of their targets in the system performance report in the metropolitan transportation plan in accordance with part 450 of this chapter.

§ 490.109 Assessing significant progress toward achieving the performance targets for the National Highway Performance Program.

(a) *In general.* The FHWA will assess each of the State DOT targets separately for the NHPP measures specified in § 490.105(c)(1) through (3) to determine the significant progress made toward the achievement of those targets.

(b) *Frequency.* The FHWA will determine whether a State DOT has or has not made significant progress toward the achievement of NHPP targets as described in paragraph (e) of this section at the midpoint and the end of each performance period.

(c) *Schedule.* The FHWA will determine significant progress toward the achievement of a State DOT's NHPP targets after the State DOT submits the Mid Performance Period Progress Report

for progress toward the achievement of 2-year targets, and again after the State DOT submits the Full Performance Period Progress Report for progress toward the achievement of 4-year targets. The FHWA will notify State DOTs of the outcome of the determination of the State DOT's ability to make significant progress toward the achievement of its NHPP targets.

(d) *Source of data/information.* The FHWA will use the following sources of information to assess NHPP condition and performance progress:

(1) Data contained within the HPMS on June 15 of the year in which the significant progress determination is made that represents conditions from the prior year for targets established for Interstate System pavement condition measures, as specified in § 490.105(c)(1);

(2) Data contained within the HPMS on August 15 of the year in which the significant progress determination is made that represents conditions from the prior year for targets established for non-Interstate NHS pavement condition measures, as specified in § 490.105(c)(2);

(3) The most recently available data contained within the NBI as of June 15 of the year in which the significant progress determination is made for targets established for NHS bridge condition measures, as specified in § 490.105(c)(3); and

(4) The urbanized area boundary and NHS limit data in the HPMS as documented in the Baseline Period Performance Report specified in § 490.107(b)(1)(ii)(D) and (E).

(e) *Significant progress determination for individual NHPP targets*—(1) *In general.* The FHWA will biennially assess whether the State DOT has achieved or made significant progress towards each target established by the State DOT for the NHPP measures described in § 490.105(c)(1) and (3). The FHWA will assess the significant progress of each statewide target separately using the condition/performance data/information sources described in paragraph (d) of this section. The FHWA will not assess the progress achieved for any additional targets a State DOT may establish under § 490.105(e)(3).

(2) *Significant Progress toward individual NHPP Targets.* The FHWA will determine that a State DOT has made significant progress toward the achievement of each 2-year or 4-year NHPP target if either:

(i) The actual condition/performance level is better than the baseline condition/performance reported in the State DOT Baseline Performance Period Report; or

(ii) The actual condition/performance level is equal to or better than the established target.

(3) *Phase-in of new requirements for Interstate System pavement condition measures.* The following requirements shall only apply to the first performance period and the Interstate System pavement condition targets, described in § 490.105(e)(7):

(i) At the midpoint of the first performance period, FHWA will not make a determination of significant progress toward the achievement of 2-year targets for Interstate System pavement condition measures.

(ii) The FHWA will classify the assessment of progress toward the achievement of targets in paragraph (e)(3)(i) of this section as ''progress not determined'' so that they will be excluded from the requirement under paragraph (e)(2) of this section.

(4) *Insufficient data and/or information.* If a State DOT does not provide sufficient data and/or information, required under paragraph (d) of this section and § 490.107, necessary for FHWA to make significant progress determination for each NHPP target, FHWA will determine that the State DOT has not made significant progress toward the achievement of the applicable NHPP target(s).

(5) *Extenuating circumstances.* The FHWA will consider extenuating circumstances documented by the State DOT in the assessment of progress toward the achievement of NHPP targets in the relevant State Biennial Performance Report, provided in § 490.107.

(i) The FHWA will classify the assessment of progress toward the achievement of an individual 2-year or 4-year target as ''progress not determined'' if the State DOT has provided an explanation of the extenuating circumstances beyond the control of the State DOT that prevented it from making significant progress toward the achievement of a 2-year or 4-year target and the State DOT has quantified the impacts on the condition/performance that resulted from the circumstances, which include:

(A) Natural or man-made disasters that caused delay in NHPP project delivery, extenuating delay in data collection, and/or damage/loss of data system;

(B) Sudden discontinuation of Federal Government furnished data due to natural and man-made disasters or lack of funding; and/or

(C) New law and/or regulation directing State DOTs to change metric and/or measure calculation.

(ii) If the State DOT's explanation, described in paragraph (e)(5)(i) of this section, is accepted by FHWA, FHWA will classify the progress towards achieving the relevant NHPP target(s) as ''progress not determined,'' and those targets will be excluded from the requirement in paragraph (e)(2) of this section.

(f) *Performance achievement.* If FHWA determines that a State DOT has not made significant progress towards the achievement of NHPP targets in two consecutive FHWA determinations, then the State DOT shall include in its next Biennial Performance Report a description of the actions the State DOT will undertake to achieve the targets related to the measure in which significant progress was not achieved as follows:

(1) If significant progress is not made for either target established for the Interstate System pavement condition measures, § 490.307(a)(1) and (2), then the State DOT shall document the actions they will take to improve Interstate Pavement conditions;

(2) If significant progress is not made for either target established for the Non-Interstate System pavement condition measures, § 490.307(a)(3) and (4), then the State DOT shall document the actions they will take to improve Non-Interstate Pavement conditions.

(3) If significant progress is not made for either target established for the NHS bridge condition measures, § 490.407(c)(1) and (2), then the State DOT shall document the actions they will take to improve NHS bridge conditions.

(4) [Reserved].

(5) [Reserved].

(6) The State DOT should, within 6 months of the significant progress determination and in a format that can be made available to FHWA, document the information specified in this paragraph to ensure actions are being taken to improve progress.

(7) [Reserved].

§ 490.111 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, FHWA must publish a notice of change in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Federal Highway Administration, Office of Highway

Policy Information (202–366–4631) and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*.

(b) The Federal Highway Administration, 1200 New Jersey Avenue SE., Washington, DC 20590, *www.fhwa.dot.gov*.

(1) Highway Performance Monitoring System (HPMS) Field Manual, IBR approved for subpart A though C.

(2) Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, Report No. FHWA–PD–96–001, December 1995 and errata, IBR approved for subpart D.

(c) The American Association of State Highway Transportation Officials, 444 North Capitol Street NW., Suite 249, Washington, DC 20001, (202) 624–5800, *www.transportation.org*.

(1) AASHTO Standard M328–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Equipment Specification for Inertial Profiler, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(2) AASHTO Standard R57–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Operating Inertial Profiling Systems, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(3) AASHTO Standard R55–10 (2013), Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Cracks in Asphalt Pavement Surface, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(4) AASHTO Standard PP67–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Cracks in Asphalt Pavement Surfaces from Collected Images Utilizing Automated Methods, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(5) AASHTO Standard PP68–14, Standard Specification for Collecting Images of Pavement Surfaces for Distress Detection, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(6) AASHTO Standard R48–10 (2003), Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Determining Rut Depth in Pavements, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(7) AASHTO Standard PP69–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles, 2013, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(8) AASHTO Standard PP70–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Collection the Transverse Pavement Profile, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(9) AASHTO Standard R36–13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Evaluating Faulting of Concrete Pavements, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

(10) AASHTO Standard R43–13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Roughness of Pavement, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4, IBR approved for subpart C.

■ 4. Add subpart C to read as follows:

Subpart C—National Performance Management Measures for the Assessing Pavement Condition

Sec.

490.301 Purpose.
490.303 Applicability.
490.305 Definitions.
490.307 National Performance Management Measures for Assessing Pavement Condition.
490.309 Data requirements.
490.311 Calculation of Pavement Metrics.
490.313 Calculation of Performance Management Measures.
490.315 Establishment of minimum level for condition of Pavements.
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490.319 Other requirements.

Subpart C—National Performance Management Measures for the Assessing Pavement Condition

§ 490.301 Purpose.

The purpose of this subpart is to implement the following statutory requirements of 23 U.S.C. 150(c)(3) to:

(a) Establish measures for States and MPOs to assess the condition of pavements on the Interstate System;

(b) Establish measures for States and MPOs to assess the condition of pavements on the NHS (excluding the Interstate);

(c) Establish minimum levels for pavement condition on the Interstate System, only for purposes of carrying out 23 U.S.C. 119(f)(1);

(d) Establish data elements that are necessary to collect and maintain standardized data to carry out a performance-based approach; and

(e) Consider regional differences in establishing the minimum levels for pavement conditions on the Interstate System.

§ 490.303 Applicability.

The performance measures in this subpart are applicable to the mainline highways on the Interstate System and on the non-Interstate NHS.

§ 490.305 Definitions.

The following definitions are only applicable to this subpart, unless otherwise provided:

Asphalt pavements means pavements where the top-most surface is constructed with asphalt materials. These pavements are coded in the HPMS as having any one of the following Surface Types:

Code	Surface_type
2	Bituminous.
6	Asphalt-Concrete (AC) Overlay over Existing AC Pavement.
7	AC Overlay over Existing Jointed Concrete Pavement.
8	AC (Bituminous Overlay over Existing CRCP).

Continuously Reinforced Concrete Pavements (CRCP) means pavements where the top-most surface is constructed of reinforced Portland cement concrete with no joints. These pavements are coded in the HPMS as having the following Surface Type:

Code	Surface_type
5	CRCP—Continuously Reinforced Concrete Pavement.

Cracking means an unintentional break in the continuous surface of a pavement. *Cracking percent* means the percentage of pavement surface exhibiting cracking as follows:

(1) For Asphalt pavements, Cracking_Percent is the percentage of the area of the pavement section, exhibiting visible cracking.

(2) For Jointed Concrete Pavements, Cracking_Percent is the percentage of concrete slabs exhibiting cracking;

(3) For CRCP, the Cracking Percent is the percentage of pavement surface with longitudinal cracking and/or punchouts, spalling or other visible defects.

Faulting means a vertical misalignment of pavement joints in Portland Cement Concrete Pavements.

International Roughness Index (IRI) means a statistic used to estimate the amount of roughness in a measured longitudinal profile. The IRI is computed from a single longitudinal profile using a quarter-car simulation, as described in the report: ''On the Calculation of IRI from Longitudinal Road Profile'' (Sayers, M.W., Transportation Research Board 1501, Transportation Research Board, Washington, DC 1995).

Jointed concrete pavements means pavements where the top-most surface is constructed of Portland cement concrete with joints. It may be constructed of either reinforced or unreinforced (plain) concrete. It is coded in the HPMS as having any one of the following Surface Types:

Code	Surface_type
3	Jointed Plain Concrete Pavement.
4	Jointed Reinforced Concrete Pavement.
9	Unbonded Jointed Concrete Overlay on PCC Pavement.
10	Bonded PCC Overlay on PCC Pavement.
11	Other (includes ''whitetopping'').

Pavement means any hard surfaced travel lanes of any highway.

Pavement Surface Rating (PSR) means an observation based system formerly used to rate pavements. It is not to be used to measure or rate NHS pavement conditions.

Punchout means a distress specific to CRCP described as the area between two closely spaced transverse cracks and between a short longitudinal crack and the edge of the pavement (or a longitudinal joint) that is breaking up, spalling, or faulting.

Rutting means longitudinal surface depressions in the pavement derived from measurements of a profile transverse to the path of travel on a highway lane. It may have associated transverse displacement.

Sampling as applied to pavements, means measuring pavement conditions on a short section of pavement as a statistical representation for the entire section. Sampling is not to be used to measure or rate non-Interstate NHS pavement conditions after January 1, 2018. Sampling is not permitted on the Interstate System.

§ 490.307 National performance management measures for assessing pavement condition.

(a) To carry out the NHPP, the performance measures for States to assess pavement condition are:

(1) Percentage of pavements of the Interstate System in Good condition;

(2) Percentage of pavements of the Interstate System in Poor condition;

(3) Percentage of pavements of the non-Interstate NHS in Good condition; and

(4) Percentage of pavements of the non-Interstate NHS in Poor condition.

(b) State DOTs will collect data using the methods described in § 490.309 and will process this data to calculate individual pavement metrics for each section of pavement that will be reported to FHWA as described in § 490.311. State DOTs and FHWA will use the reported pavement metrics to compute an overall performance of Good, Fair, or Poor, for each section of pavement as described in § 490.313.

§ 490.309 Data requirements.

(a) The performance measures identified in § 490.307 are to be computed using methods in § 490.313 from the four condition metrics and three inventory data elements contained within the HPMS that shall be collected and reported following the HPMS Field Manual, which is incorporated by reference into this subpart (see § 490.111). The four condition metrics include: IRI, rutting, faulting, and Cracking_Percent. The three data elements include: Through Lanes, Surface Type, and Structure Type.

(b) State DOTs shall collect data in accordance with the following relevant HPMS requirements to report IRI, rutting (asphalt pavements), faulting (jointed concrete pavements), and Cracking Percent.

(1) For the Interstate System the following shall apply for all the pavement condition metrics:

(i) State DOTs shall collect data—

(A) From the full extent of the mainline highway;

(B) In the rightmost travel lane or one consistent lane for all data if the rightmost travel lane is not accessible;

(C) Continuously collected in a manner that will allow for reporting in uniform section lengths of 0.1 mile (528 feet); shorter sections are permitted only at the beginning of a route, end of a route, or other locations where a section length of 0.1 mile is not achievable; sections shall not exceed 0.1 mile in length;

(D) In both directions of travel; and

(E) On an annual frequency.

(ii) Estimating conditions from data samples of the full extent of the mainline highway is not permitted.

(iii) Pavement condition data shall be collected separately for each direction of the Interstate System. Averaging across directions is not permitted.

(2) For the non-Interstate NHS the following shall apply:

(i) For the IRI metric, State DOTs shall collect and report data:

(A) From the full extent of the mainline highway;

(B) In the rightmost travel lane or one consistent lane for all data if the rightmost travel lane is not accessible;

(C) Continuously collected in a manner that will allow for reporting in uniform section lengths of 0.1 mile (528 feet); shorter sections are permitted only at the beginning of a route, end of a route, or other locations where a section length of 0.1 mile is not achievable; sections shall not exceed 0.1 mile in length;

(D) In one direction of travel; and

(E) On a biennial frequency.

(F) Estimating conditions from data samples of the full extent of the mainline will not be permitted.

(ii) For the Cracking Percent, rutting and faulting metrics, data collected prior to the data collection cycle ending December 31, 2019, shall be collected:

(A) Using sampling methods outlined in the HPMS Field Manual (incorporated by reference, see § 490.111); and

(B) On at least a biennial frequency.

(iii) For the Cracking Percent, rutting and faulting metrics, data collected beginning with the data collection cycle ending December 31, 2019, shall be in accordance with the following:

(A) On the full extent (no sampling) of the mainline highway;

(B) In the rightmost travel lane or one consistent lane for all data if the rightmost travel lane is not accessible;

(C) Continuously collected in a manner that will allow for reporting in uniform section lengths of 0.1 mile (528 feet); shorter sections are permitted only at the beginning of a route, end of a route, or other locations where a section length of 0.1 mile is not achievable; sections shall not exceed 0.1 mile in length;

(D) In one direction of travel; and

(E) On at least a biennial frequency.

(F) Estimating conditions from data samples of the full extent of the mainline highway will not be permitted.

(3) Data collection methods for each of the condition metrics shall conform to the following:

(i) The device to collect data needed to calculate the IRI metric shall be in

accordance with American Association of State Highway Transportation Officials (AASHTO) Standard M328–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Equipment Specification for Inertial Profiler (incorporated by reference, see § 490.111).

(ii) The method to collect data needed to calculate the IRI metric shall be in accordance with AASHTO Standard R57–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Operating Inertial Profiling Systems (incorporated by reference, see § 490.111).

(iii) The method to collect data needed to determine the Cracking_Percent metric for all pavement types except CRCP shall be either:

(A) Manual, in accordance with AASHTO Standard R55–10 (2013), Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Cracks in Asphalt Pavement Surface (incorporated by reference, see § 490.111); or

(B) Automated, in accordance with AASHTO Standards PP67–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Cracks in Asphalt Pavement Surfaces from Collected Images Utilizing Automated Methods (incorporated by reference, see § 490.111), and PP68–14, Standard Specification for Collecting Images of Pavement Surfaces for Distress Detection (incorporated by reference, see § 490.111).

(iv) For CRCP the method to collect the data needed to determine the Cracking_Percent metric is described in the HPMS Field Manual (incorporated by reference, see § 490.111) and includes longitudinal cracking and/or punchouts, spalling, or other visible defects.

(v) For Asphalt Pavements, the method to collect data needed to determine the rutting metric shall either be:

(A) A 5-Point Collection of Rutting Data method in accordance with AASHTO Standard R48–10, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Determining Rut Depth in Pavements (incorporated by reference, see § 490.111); or

(B) An Automated Transverse Profile Data method in accordance with AASHTO Standards PP69–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles (incorporated by reference, see § 490.111), and PP70–14, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Collection the Transverse Pavement Profile (incorporated by reference, see § 490.111).

(vi) For Jointed Concrete Pavements, the method to collect data needed to determine the faulting metric shall be in accordance with AASHTO Standard R36–13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Evaluating Faulting of Concrete Pavements (incorporated by reference, see § 490.111).

(c) State DOTs shall collect data in accordance with the following relevant HPMS requirements to report Through Lanes, Surface Type, and Structure Type.

(1) State DOTs shall collect data:

(i) For the full extent of the mainline highway of the NHS;

(ii) In both directions of travel for the Interstate System and in one direction of travel for the non-Interstate NHS; and

(iii) On at least a biennial frequency.

(2) Estimating data elements from samples of the full extent of the mainline highway is not permitted, except as provided in paragraph (b)(2)(ii)(A) of this section.

§ 490.311 Calculation of pavement metrics.

(a) The condition metrics and data elements needed to calculate the pavement performance measures shall be calculated in accordance with the HPMS Field Manual (incorporated by reference, see § 490.111), except as noted below.

(b) State DOTs shall calculate metrics in accordance with the following relevant HPMS requirements.

(1) For all pavements, the IRI metric:

(i) Shall be computed from pavement profile data in accordance with AASHTO Standard R43–13, Standard Specification for Transportation Materials and Methods of Sampling and Testing, Standard Practice for Quantifying Roughness of Pavement, 2014, 34th/2014 Edition, AASHTO, 1–56051–606–4 (incorporated by reference, see § 490.111);

(ii) Shall be reported for all pavements as the average value in inches per mile for each section; and

(iii) Shall not be estimated from a PSR or other observation-based method.

(2) For asphalt pavements—

(i) The Cracking Percent metric shall be computed as the percentage of the total area containing visible cracks to the nearest whole percent in each section; and

(ii) The rutting metric shall be computed as the average depth of rutting, in inches to the nearest 0.05 inches, for the section.

(3) For CRCP, the Cracking Percent metric shall be computed as the percentage of the area of the section to the nearest whole percent exhibiting longitudinal cracking, punchouts, spalling or other visible defects. Transverse cracking shall not be considered in the Cracking_Percent metric.

(4) For jointed concrete pavements—

(i) The Cracking Percent metric shall be computed as the percentage of slabs to the nearest whole percent within the section that exhibit cracking;

(ii) Partial slabs shall contribute to the section that contains the majority of the slab length; and

(iii) The faulting metric shall be computed as the average height, in inches to the nearest 0.05 inch, of faulting between pavement slabs for the section.

(c) State DOTs shall report the four pavement metrics and three inventory data elements listed in § 490.309(a) as calculated following the requirements in paragraphs (a) and (b) of this section in accordance with the following relevant HPMS requirements:

(1) Metrics and inventory data elements shall be reported to the HPMS in uniform section lengths of 0.1 mile (528 feet); shorter sections are permitted only at the beginning of a route, end of a route, or other locations where a section length of 0.1 mile is not achievable; and sections shall not exceed 0.1 mile in length;

(2) Each section shall have a single value for each of the relevant condition metrics and a single value for each of the inventory data elements.

(3) The time and location reference shall be reported for each section as follows:

(i) The State Code, Route ID, Begin Point, and End Point shall be reported as specified in the HPMS field manual (incorporated by reference, see § 490.111) for each of the four condition metrics and three inventory data elements;

(ii) The Year Record shall be reported as the four digit year for which the data represents for each of the four condition metrics and three inventory data elements; and

(iii) The Value Date shall be reported as the month and year of data collection for each of the four condition metrics.

(4) Sections for the four condition metrics and three inventory data elements shall be reported to the HPMS for the Interstate System by April 15 of each year for the data collected during the previous calendar year.

(5) Sections for the four condition metrics and three inventory data elements shall be reported to the HPMS for the non-Interstate NHS by June 15 of each year for the data collected during the previous calendar year.

§ 490.313 Calculation of performance management measures.

(a) The pavement measures in § 490.307 shall be calculated in accordance with this section and used by State DOTs and MPOs to carry out the pavement condition related requirements of this part, and by FHWA to make the significant progress and minimum condition determinations specified in §§ 490.109 and 490.317, respectively.

(b) The performance measure for pavements shall be calculated based on the data collected in § 490.309 and pavement condition metrics computed in § 490.311. The performance measure for pavements shall be based on three condition ratings of Good, Fair, and Poor calculated for each pavement section. The ratings are determined as follows.

(1) IRI rating shall be determined for all pavement types using the following criteria:

(i) If an IRI value of a pavement section in a non-urbanized area or urbanized area with a population less than 1 million is—

(A) Less than 95, the IRI rating for the pavement section is Good;

(B) Between 95 and 170, the IRI rating for the pavement section is Fair; and

(C) Greater than 170, the IRI rating for the pavement section is Poor.

(ii) If an IRI value of a pavement section in an urbanized area with a population of at least 1 million is—

(A) Less than 95, the IRI rating for the pavement section is Good;

(B) Between 95 and 220, the IRI rating for the pavement section is Fair; and

(C) Greater than 220, the IRI rating for the pavement section is Poor.

(2) Cracking condition shall be determined using the following criteria:

(i) For asphalt and jointed concrete pavement sections—

(A) If the Cracking Percent value of a section is less than 5 percent, the cracking rating for the pavement section is Good;

(B) If the Cracking Percent value of a section is equal to or greater than 5 percent and less than or equal to 10 percent the cracking rating for the pavement section is Fair; and

(C) If the Cracking Percent value of a section is greater than 10 percent the cracking rating for the pavement section is Poor.

(ii) For CRCP sections:

(A) If the Cracking Percent value of a section is less than 5 percent, the cracking rating for the pavement section is Good;

(B) If the Cracking Percent value of a section is equal to or greater than 5 percent and less than or equal to 10 percent, the cracking rating for the pavement section is Fair; and

(C) If the Cracking Percent value of a section is greater than 10 percent, the cracking rating for the pavement section is Poor.

(3) Rutting or faulting rating shall be determined using the following criteria.

(i) For asphalt pavement:

(A) If the rutting value of a section is less than 0.20 inches, the rutting rating for the pavement section is Good;

(B) If the rutting value of a section is equal to or greater than 0.20 inches and less than or equal to 0.40 inches, the rutting rating for the pavement section is Fair; and

(C) If the rutting value of a section in is greater than 0.40 inches, the rutting rating for the pavement section is Poor.

(ii) For jointed concrete pavement:

(A) If the faulting value of a section is less than 0.05 inches, the faulting rating for the pavement section is Good;

(B) If the faulting value of a section is equal to or greater than 0.05 inches and less than or equal to 0.15 inches, the faulting rating for the pavement section is Fair; and

(C) If the faulting value of a section is greater than 0.15 inches, the faulting rating for the pavement section is Poor.

(4) Missing sections or sections reported to the HPMS with unresolved, missing, or invalid data as determined on the dates specified in § 490.109(d)(1) and (2), shall be addressed as follows:

(i) Mainline lane-miles that are missing sections or represented with sections that are missing data or contain invalid data as specified in § 490.311(c) for any of the four condition metrics will be rated as Poor for each respective condition metric; and

(ii) Mainline lane-miles that are missing sections or represented with sections that are missing data or contain invalid data as specified in § 490.311(c) for any of the three inventory data elements will be rated in overall Poor condition.

(c) The overall condition for asphalt and jointed concrete pavement sections shall be determined based on the ratings for IRI, Cracking Percent, rutting and faulting, as described in paragraphs (b)(1) through (3) of this section, respectively, for each section as follows:

(1) A pavement section shall be rated an overall condition of Good only if the section is exhibiting Good ratings for all three conditions (IRI, Cracking_Percent, and rutting or faulting);

(2) A pavement section shall be rated an overall condition of Poor if two or more of the three conditions are exhibiting Poor ratings (at least two ratings of Poor for IRI, Cracking Percent, and rutting or faulting).

(3) A pavement section shall be rated an overall condition of Fair if it does not meet the criteria in paragraph (c)(1) or (2) of this section.

(d) The Overall Condition for CRCP sections shall be determined based on two ratings of IRI and Cracking_Percent, as described in paragraphs (b)(1) and (2) of this section, respectively, for each section as follows:

(1) A pavement section shall be rated an overall condition of Good only if the section is exhibiting Good ratings for both conditions (IRI and Cracking Percent);

(2) A pavement section shall be rated an overall condition of Poor if it exhibits Poor ratings for both conditions (IRI and Cracking Percent);

(3) A pavement section shall be rated an overall condition of Fair if it does not meet the criteria in paragraph (d)(1) or (2) of this section.

(e) State DOTs shall not be subject to paragraphs (c) and (d) of this section for Pavements on the non-Interstate NHS until after the data collection cycle ending December 31, 2019. During this transition period, the Overall condition for all pavement types on the non-Interstate NHS will be based on IRI rating, as described in paragraph (b)(1) of this section, until the Cracking Percent, rutting, and faulting data collection requirements are in effect, as described in § 490.309(b)(2)(iii).

(f) The pavement condition measures in § 490.307 shall be computed as described below. The measures shall be used for establishing targets in accordance with § 490.105 and reporting the conditions of the pavements in the biennial performance reporting required in § 490.107 as follows:

(1) Bridges shall be excluded prior to computing all pavement condition measures by removing the sections where the Structure Type is coded as 1.

(2) For § 490.307(a)(1) the measure for Percentage of lane-miles of the Interstate System in Good condition shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{g=1}^{Good}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ g}}{\sum_{t=1}^{Total}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ t}}$$

where:

Good = total number of mainline highway Interstate System sections where the overall condition is Good;

g = a section's overall condition is determined Good per paragraphs (b) or (c) of this section;

t = an Interstate System section;

Total = total number of mainline highway Interstate System sections;

Begin_Point = Begin Milepost of each section *g* or *t*;

End Point = End Milepost of each section *g* or *t*; and

Through_lanes = the number of lanes designated for through-traffic represented by a section *g* or *t*.

(3) For § 490.307(a)(2) the measure for Percentage of lane-miles of the Interstate System in Poor condition shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{p=1}^{Poor}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ p}}{\sum_{t=1}^{Total}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ t}}$$

where:

Poor = total number of mainline highway Interstate System sections where the overall condition is Poor;

p = a section's overall condition is determined Poor per paragraphs (b) or (c) of this section;

t = an Interstate System section;

Total = total number of mainline highway Interstate System sections;

Begin_Point = Begin Milepost of each section *p* or *t*;

End Point = End Milepost of each section *p* or *t*; and

Through_lanes = the number of lanes designated for through-traffic represented by a section *p* or *t*.

(4) For § 490.307(a)(3) the measure for Percentage of lane-miles of the non-Interstate NHS in Good condition shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{g=1}^{Good}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ g}}{\sum_{t=1}^{Total}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ t}}$$

where:

Good = total number of mainline highway non-Interstate NHS sections where the overall condition is Good;

g = a section's overall condition is determined Good per paragraphs (b), (c), or (d) of this section;

t = a non-Interstate NHS section;

Total = total number of mainline highway non-Interstate NHS sections;

Begin_Point = Begin Milepost of each section *g* or *t*;

End Point = End Milepost of each section *g* or *t*; and

Through_lanes = the number of lanes designated for through-traffic represented by a section *g* or *t*.

(5) For § 490.307(a)(4) the measure for Percentage of lane-miles of the non-Interstate NHS in Poor condition shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{p=1}^{Poor}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ p}}{\sum_{t=1}^{Total}\{\langle End\_Point - Begin\_Point\rangle \times Through\_lanes\}_{section\ t}}$$

where:

Poor = total number of mainline highway non-Interstate NHS sections where the overall condition is Poor;

p = a section's overall condition is determined Poor per paragraphs (b), (c), or (d) of this section;

t = a non-Interstate NHS section;

Total = total number of mainline highway non-Interstate NHS sections;

Begin_Point = Begin Milepost of each section *p* or *t*;

End Point = End Milepost of each section *p* or *t*; and

Through_lanes = the number of lanes designated for through-traffic represented by a section *p* or *t*.

§ 490.315 Establishment of minimum level for condition of pavements.

For the purposes of carrying out the requirements of 23 U.S.C. 119(f)(1), the Percentage of lane-miles of Interstate System in Poor condition, as computed per § 490.313(f)(3), shall not exceed 5.0 percent.

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

(a) The FHWA shall compute the percentage of lane-miles of the Interstate System, excluding sections on bridges, in Poor Condition, in accordance with § 490.313(f)(3), for each State annually.

(b) The FHWA shall extract data contained within the HPMS on June 15 that represents conditions from the prior calendar year for Interstate System pavement conditions to carry out paragraph (a) of this section.

(c) The FHWA shall determine State DOT compliance with § 490.315(a) after the first full year of data collection for the Interstate System following the effective date of this rule and each year thereafter.

(d) The FHWA shall determine if a State DOT is in compliance with 23 U.S.C. 119(f)(1) after the second full year of data collection for the Interstate

System following the effective date of this rule and each year thereafter based on the determination made in paragraph (c) of this section for the most recent 2 years. The FHWA will determine a State DOT to be in compliance with 23 U.S.C. 119(f)(1) if the State DOT is determined to be in compliance with § 490.315(a) in either of the most recent 2 years.

(e) The FHWA will notify State DOTs of their compliance with 23 U.S.C. 119(f)(1) prior to October 1 of the year in which the determination was made.

(f) If FHWA determines through conduct of paragraph (d) of this section a State DOT to be out of compliance with 23 U.S.C. 119(f)(1) then the State DOT shall, during the following fiscal year:

(1) Obligate, from the amounts apportioned to the State DOT under 23 U.S.C. 104(b)(1) (for the NHPP), an amount that is not less than the amount of funds apportioned to the State for Federal fiscal year 2009 under the Interstate Maintenance program for the purposes described in 23 U.S.C. 119 (as in effect on the day before the date of enactment of the MAP–21), except that for each year after Federal fiscal year 2013, the amount required to be obligated under this clause shall be increased by 2 percent over the amount required to be obligated in the previous fiscal year; and

(2) Transfer, from the amounts apportioned to the State DOT under 23 U.S.C. 104(b)(2) (for the Surface Transportation Program) (other than amounts sub-allocated to metropolitan areas and other areas of the State under 23 U.S.C. 133(d)) to the apportionment of the State under 23 U.S.C. 104(b)(1), an amount equal to 10 percent of the amount of funds apportioned to the State for fiscal year 2009 under the Interstate Maintenance program for the purposes described in 23 U.S.C. 119 (as in effect on the day before the date of enactment of the MAP–21).

§ 490.319 Other requirements.

(a) In accordance with the HPMS Field Manual (incorporated by reference, see § 490.111), each State DOT shall report the following to the HPMS no later than April 15 each year:

(1) The pavement condition metrics specified in § 490.311 that are necessary to calculate the Interstate System condition measures identified in §§ 490.307(a)(1) and (2) and;

(2) the data elements specified in § 490.309(b)(4) for the Interstate System

(b) In accordance with the HPMS Field Manual (incorporated by reference, see § 490.111), each State DOT shall report to the HPMS no later than June 15 each year the pavement condition metrics specified in § 490.311 that are necessary to calculate the non-Interstate NHS condition measures in §§ 490.307(a)(3) and (4).

(c) Each State DOT shall develop and utilize a Data Quality Management Program, approved by FHWA that addresses the quality of all data collected, regardless of the method of acquisition, to report the pavement condition metrics, discussed in § 490.311, and data elements discussed in § 490.309(b)(4).

(1) In a Data Quality Management Programs, State DOTs shall include, at a minimum, methods and processes for:

(i) Data collection equipment calibration and certification;

(ii) Certification process for persons performing manual data collection;

(iii) Data quality control measures to be conducted before data collection begins and periodically during the data collection program;

(iv) Data sampling, review and checking processes; and

(v) Error resolution procedures and data acceptance criteria.

(2) Not later than 1 year after the effective date of this regulation, State DOTs shall submit their Data Quality Management Program to FHWA for approval. Once FHWA approves a State DOT's Data Quality Management Program, the State DOT shall use that Program to collect and report data required by §§ 490.309 to 490.311. State DOTs also shall submit any proposed significant change to the Data Quality Management Program to FHWA for approval prior to implementing the change.

■ 5. Add subpart D to read as follows:

Subpart D—National Performance Management Measures for Assessing Bridge Condition

Sec.

490.401 Purpose.
490.403 Applicability.
490.405 Definitions.
490.407 National performance management measures for assessing bridge condition.
490.409 Calculation of National performance management measures for assessing bridge condition.
490.411 Establishment of minimum level for condition for bridges.
490.413 Penalties for not maintaining bridge condition.

Subpart D—National Performance Management Measures for Assessing Bridge Condition

§ 490.401 Purpose.

The purpose of this subpart is to implement the requirements of 23 U.S.C. 150(c)(3)(A)(ii)(III), which requires the Secretary of Transportation to establish performance measures for the purpose of carrying out the NHPP and for State DOTs and MPOs to use in assessing the condition of bridges on the NHS.

§ 490.403 Applicability.

The section is only applicable to NHS bridges including bridges on ramps connecting to the NHS as defined by 23 U.S.C. 103.

§ 490.405 Definitions.

The following definitions are only applicable to this subpart, unless otherwise provided:

Bridge as used in this section, is defined in 23 CFR 650.305, the National Bridge Inspection Standards.

Structurally deficient as used in §§ 490.411 and 490.413 is a classification given to a bridge which has significant load carrying elements in poor or worse condition or the adequacy of the waterway opening provided by the bridge is determined to be insufficient to the point of causing overtopping with intolerable traffic interruptions.

§ 490.407 National performance management measures for assessing bridge condition.

(a) There are three classifications for the purpose of assessing bridge condition. They are:

(1) Percentage of NHS bridges classified as in Good condition;

(2) Percentage of NHS bridges classified as in Fair condition; and

(3) Percentage of NHS bridges classified as in Poor condition.

(b) [Reserved].

(c) To carry out the NHPP, two of the three classifications are performance measures for State DOTs to use to assess bridge condition on the NHS. They are:

(1) Percentage of NHS bridges classified as in Good condition; and

(2) Percentage of NHS bridges classified as in Poor condition.

(d) Determination of Good and Poor conditions are described in § 490.409.

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

(a) The bridge measures in § 490.407 shall be calculated in accordance with this section and used by State DOTs and MPOs to carry out the bridge condition related requirements of this part and by FHWA to make the significant progress determination specified in § 490.109.

(b) The condition of bridges on the NHS, including bridges on ramps connecting to the NHS, shall be classified as Good, Fair, or Poor following the criteria specified in this paragraph. The assignment of a classification of Good, Fair, or Poor

shall be based on the bridge's condition ratings for NBI Items 58—Deck, 59—Superstructure, 60—Substructure, and 62—Culverts. For the purposes of national performance measures under the NHPP, the method of assessment to determine the classification of a bridge will be the minimum of condition rating method, *i.e.,* the condition ratings for lowest rating of a bridge's 3 NBI Items, 58—Deck, 59—Superstructure, and 60—Substructure, and will determine the classification of a bridge. For culverts, the rating of its NBI Item, 62—Culverts, will determine its classification. The NHS bridges will be classified as Good, Fair, or Poor based on the following criteria:

(1) Good: When the lowest rating of any of the 3 NBI items for a bridge (Items 58—Deck, 59—Superstructure, 60—Substructure) is 7, 8 or 9, the bridge will be classified as Good. When the rating of NBI item for a culvert (Item 62—Culverts) is 7, 8, or 9, the culvert will be classified as Good.

(2) Fair: When the lowest rating of any of the 3 NBI items for a bridge is 5 or 6, the bridge will be classified as Fair. When the rating of NBI item for a culvert is 5 or 6, the culvert will be classified as Fair.

(3) Poor: When the lowest rating of any of the 3 NBI items for a bridge is 4, 3, 2, 1, or 0, the bridge will be classified as Poor. When the rating of NBI item for a culvert is 4, 3, 2, 1, or 0, the culvert will be classified as Poor.

(c) The bridge measures specified in § 490.407(c) shall be calculated for the applicable bridges per paragraph (a) of this section that pertain to each target established by the State DOT or MPO in § 490.105(e) and (f), respectively, as follows:

(1) For § 490.407(c)(1), the measure for the Percentage of bridges classified as in Good condition shall be computed and reported to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{g=1}^{GOOD} [Length \times Width]_{Bridge\ g}}{\sum_{s=1}^{TOTAL} [Length \times Width]_{Bridge\ s}}$$

Where:

GOOD = total number of the applicable bridges, where their condition is Good per paragraph (b)(1) of this section;

g = a bridge determined to be in Good condition per paragraph (b)(1) of this section;

Length = corresponding value of NBI Item 49—Structure Length for every applicable bridge;

Width = corresponding value of NBI Item 52—Deck Width or value of Item 32 Approach Roadway Width for culverts where the roadway is on a fill [*i.e.,* traffic does not directly run on the top slab (or wearing surface) of the culvert] and the headwalls do not affect the flow of traffic for every applicable bridge.

s = an applicable bridge per paragraph (b) of this section; and

TOTAL = total number of the applicable bridges specified in paragraph (b) of this section.

(2) For § 490.407(c)(2), the measure for the Percentage of bridges classified as in Poor condition shall be computed and reported to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{p=1}^{POOR} [Length \times Width]_{Bridge\ p}}{\sum_{s=1}^{TOTAL} [Length \times Width]_{Bridge\ s}}$$

Where:

POOR = total number of the applicable bridges, where their condition is Poor per paragraph (b)(3) of this section;

p = a bridge determined to be in Poor condition per paragraph (b)(3) of this section;

Length = corresponding value of NBI Item 49—Structure Length for every applicable bridge;

Width = corresponding value of NBI Item 52—Deck Width or value of Item 32 Approach Roadway Width for culverts where the roadway is on a fill [*i.e.,* traffic does not directly run on the top slab (or wearing surface) of the culvert] and the headwalls do not affect the flow of traffic for every applicable bridge.

s = an applicable bridge per paragraph (b) of this section; and

TOTAL = total number of the applicable bridges specified in paragraph (b) of this section.

(d) The measures identified in § 490.407(c) shall be used to establish targets in accordance with § 490.105 and report targets and conditions described in § 490.107.

(e) The NBI Items included in this section are found in the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, which is incorporated by reference (see § 490.111).

§ 490.411 Establishment of minimum level for condition for bridges.

(a) State DOTs will maintain bridges so that the percentage of the deck area of bridges classified as Structurally Deficient does not exceed 10.0 percent. This minimum condition level is applicable to bridges on the NHS and bridges on ramps connecting to the NHS within a State and bridges on the NHS that cross a State border.

(b) For the purposes of carrying out this section and § 490.413, a bridge will be classified as Structurally Deficient when one of its NBI Items, 58—Deck, 59—Superstructure, 60—Substructure, or 62—Culverts, is 4 or less, or when one of its NBI Items, 67—Structural Evaluation or 71—Waterway Adequacy, is 2 or less.

(c) For all NHS bridges including ramps connecting to the NHS and NHS bridges that cross a State border, FHWA shall calculate a ratio of the total deck area of all bridges classified as Structurally Deficient to the total deck area of all applicable bridges for each State. The percentage of deck area of bridges classified as Structurally Deficient shall be computed by FHWA to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{SD=1}^{Structurally\ Deficient} [Length \times Width]_{Bridge\ SD}}{\sum_{s=1}^{TOTAL} [Length \times Width]_{Bridge\ s}}$$

Where:

Structurally Deficient = total number of the applicable bridges, where their classification is Structurally Deficient per this section and § 490.413;

SD = a bridge classified as Structurally Deficient per this section and § 490.413;

Length = corresponding value of NBI Item 49—Structure Length for every applicable bridge;

Width = corresponding value of NBI Item 52—Deck Width or value of Item 32 Approach Roadway Width for culverts where the roadway is on a fill [*i.e.,* traffic does not directly run on the top slab (or wearing surface) of the culvert] and the headwalls do not affect the flow of traffic for every applicable bridge.

s = an applicable bridge per this section and § 490.413; and

TOTAL = total number of the applicable bridges specified in this section and § 490.413.

(d) The FHWA will annually determine the percentage of the deck area of NHS bridges classified as Structurally Deficient for each State DOT and identify State DOTs that do not meet the minimum level of condition for NHS bridges based on data cleared in the NBI as of June 15 of each year. The FHWA will notify State DOTs of their compliance with 23 U.S.C. 119(f)(2) prior to October 1 of the year in which the determination was made.

(e) For the purposes of carrying out this section, State DOTs will annually submit their most current NBI data on highway bridges to FHWA no later than March 15 of each year.

(f) The NBI Items included in this section are found in the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, which is incorporated by reference (see § 490.111).

§ 490.413 Penalties for not maintaining bridge condition.

(a) If FHWA determines for the 3-year period preceding the date of the determination, that more than 10.0 percent of the total deck area of bridges in the State on the NHS is located on bridges that have been classified as Structurally Deficient, the following requirements will apply.

(1) During the fiscal year following the determination, the State DOT shall obligate and set aside in an amount equal to 50 percent of funds apportioned to such State for fiscal year 2009 to carry out 23 U.S.C. 144 (as in effect the day before enactment of MAP–21) from amounts apportioned to a State for a fiscal year under 23 U.S.C. 104(b)(1) only for eligible projects on bridges on the NHS.

(2) The set-aside and obligation requirement for bridges on the NHS in a State in this paragraph (a) for a fiscal year shall remain in effect for each subsequent fiscal year until such time as less than 10 percent of the total deck area of bridges in the State on the NHS is located on bridges that have been classified as Structurally Deficient as determined by FHWA.

(b) The FHWA will make the first determination by October 1, 2016, and each fiscal year thereafter.

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