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23 USC 150: National goals and performance management measures Text contains those laws in effect on October 5, 2020
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§150. National goals and performance management measures

(a) Declaration of Policy.-Performance management will transform the Federal-aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decisionmaking through performance-based planning and programming.

(b) National Goals.-It is in the interest of the United States to focus the Federal-aid highway program on the following national goals:

(1) Safety.-To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

(2) Infrastructure condition.-To maintain the highway infrastructure asset system in a state of good repair.

(3) Congestion reduction.-To achieve a significant reduction in congestion on the National Highway System.

(4) System reliability.-To improve the efficiency of the surface transportation system.

(5) Freight movement and economic vitality.-To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

(6) Environmental sustainability.-To enhance the performance of the transportation system while protecting and enhancing the natural environment.

(7) 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.

(c) Establishment of Performance Measures.-

(1) In general.-Not later than 18 months after the date of enactment of the MAP–21, the Secretary, in consultation with State departments of transportation, metropolitan planning organizations, and other stakeholders, shall promulgate a rulemaking that establishes performance measures and standards.

(2) Administration.-In carrying out paragraph (1), the Secretary shall-

(A) provide States, metropolitan planning organizations, and other stakeholders not less than 90 days to comment on any regulation proposed by the Secretary under that paragraph;

(B) take into consideration any comments relating to a proposed regulation received during that comment period; and

(C) limit performance measures only to those described in this subsection.

(3) National highway performance program.-

(A) In general.-Subject to subparagraph (B), for the purpose of carrying out section 119, the Secretary shall establish-

(i) minimum standards for States to use in developing and operating bridge and pavement management systems;

(ii) measures for States to use to assess-
(I) the condition of pavements on the Interstate system;
(II) the condition of pavements on the National Highway System (excluding the Interstate);
(III) the condition of bridges on the National Highway System;
(IV) the performance of the Interstate System; and
(V) the performance of the National Highway System (excluding the Interstate System);

(iii) minimum levels for the condition of pavement on the Interstate System, only for the purposes of carrying out section 119(f)(1); and
(iv) the data elements that are necessary to collect and maintain standardized data to carry out a performance-based approach.

(B) Regions.-In establishing minimum condition levels under subparagraph (A)(iii), if the Secretary determines that various geographic regions of the United States experience disparate factors contributing to the condition of pavement on the Interstate System in those regions, the Secretary may establish different minimum levels for each region.

(4) Highway safety improvement program.-For the purpose of carrying out section 148, the Secretary shall establish measures for States to use to assess-
(A) serious injuries and fatalities per vehicle mile traveled; and
(B) the number of serious injuries and fatalities.

(5) Congestion mitigation and air quality program.-For the purpose of carrying out section 149, the Secretary shall establish measures for States to use to assess-
(A) traffic congestion; and
(B) on-road mobile source emissions.

(6) National freight movement.-The Secretary shall establish measures for States to use to assess freight movement on the Interstate System.

(d) Establishment of Performance Targets.-
(1) In general.-Not later than 1 year after the Secretary has promulgated the final rulemaking under subsection (c), each State shall set performance targets that reflect the measures identified in paragraphs (3), (4), (5), and (6) of subsection (c).
(2) Different approaches for urban and rural areas.-In the development and implementation of any performance target, a State may, as appropriate, provide for different performance targets for urbanized and rural areas.

(e) Reporting on Performance Targets.-Not later than 4 years after the date of enactment of the MAP–21 and biennially thereafter, a State shall submit to the Secretary a report that describes-
(1) the condition and performance of the National Highway System in the State;
(2) the effectiveness of the investment strategy document in the State asset management plan for the National Highway System;
(3) progress in achieving performance targets identified under subsection (d); and
(4) the ways in which the State is addressing congestion at freight bottlenecks, including those identified in the national freight strategic plan, within the State.

(Added Pub. L. 112–141, div. A, title I, §1203(a), July 6, 2012, 126 Stat. 524 , amended Pub. L. 114–94, div. A, title I, §1446(a)(4)–(6), (d)(2)(A), Dec. 4, 2015, 129 Stat. 1437 , 1438.)

EDITORIAL NOTES

REFERENCES IN TEXT

The date of enactment of the MAP–21, referred to in subsecs. (c)(1) and (e), is deemed to be Oct. 1, 2012, see section 3(a), (b) of Pub. L. 112–141, set out as Effective and Termination Dates of 2012 Amendment notes under section 101 of this title.

CODIFICATION

Pub. L. 114–94, div. A, title I, §1446(d)(2)(A), Dec. 4, 2015, 129 Stat. 1438 , amended directory language of Pub. L. 112–141, div. A, title I, §1203(a), July 6, 2012, 126 Stat. 524 , which enacted this section.

PRIOR PROVISIONS

A prior section 150, added Pub. L. 93–87, title I, §157(a), Aug. 13, 1973, 87 Stat. 277 ; amended Pub. L. 97–424, title I, §124, Jan. 6, 1983, 96 Stat. 2113 , related to allocation of urban system funds, prior to repeal by Pub. L. 105–178, title I, §1103(l)(5), as added Pub. L. 105–206, title IX, §9002(c)(1), July 22, 1998, 112 Stat. 834 .

AMENDMENTS

2015-Subsec. (b)(5). Pub. L. 114–94, §1446(a)(4), substituted "National Highway Freight Network" for "national freight network".

Subsec. (c)(3)(B). Pub. L. 114–94, §1446(a)(5), substituted period for semicolon at end.

Subsec. (e)(4). Pub. L. 114–94, §1446(a)(6), substituted "national freight strategic plan" for "National Freight Strategic Plan".

STATUTORY NOTES AND RELATED SUBSIDIARIES

EFFECTIVE DATE OF 2015 AMENDMENT

Except as otherwise provided, amendment by Pub. L. 114–94 effective Oct. 1, 2015, see section 1003 of Pub. L. 114–94, set out as a note under section 5313 of Title 5, Government Organization and Employees.

Pub. L. 114–94, div. A, title I, §1446(d), Dec. 4, 2015, 129 Stat. 1438 , provided that the amendment made by section 1446(d)(2)(A) is effective as of July 6, 2012, and as if included in Pub. L. 112–141 as enacted.

EFFECTIVE DATE

Section effective Oct. 1, 2012, see section 3(a) of Pub. L. 112–141, set out as an Effective and Termination Dates of 2012 Amendment note under section 101 of this title.

PERFORMANCE MANAGEMENT DATA SUPPORT PROGRAM

Pub. L. 114–94, div. A, title VI, §6028, Dec. 4, 2015, 129 Stat. 1587 , provided that:

"(a) Performance Management Data Support.-The Administrator of the Federal Highway Administration shall develop, use, and maintain data sets and data analysis tools to assist metropolitan planning organizations, States, and the Federal Highway Administration in carrying out performance management analyses (including the performance management requirements under section 150 of title 23, United States Code).

"(b) Inclusions.-The data analysis activities authorized under subsection (a) may include-

"(1) collecting and distributing vehicle probe data describing traffic on Federal-aid highways;

"(2) collecting household travel behavior data to assess local and cross-jurisdictional travel, including to accommodate external and through travel;

"(3) enhancing existing data collection and analysis tools to accommodate performance measures, targets, and related data, so as to better understand trip origin and destination, trip time, and mode;

"(4) enhancing existing data analysis tools to improve performance predictions and travel models in reports described in section 150(e) of title 23, United States Code; and

"(5) developing tools-

"(A) to improve performance analysis; and

"(B) to evaluate the effects of project investments on performance.

"(c) Funding.-From amounts authorized to carry out the Highway Research and Development Program, the Administrator of the Federal Highway Administration may use up to $10,000,000 for each of fiscal years 2016 through 2020 to carry out this section."

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Title 23 → Chapter I → Subchapter E → Part 490 → Subpart C

Title 23: Highways
PART 490—NATIONAL PERFORMANCE MANAGEMENT MEASURES

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

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SOURCE: 82 FR 5962, Jan. 17, 2017, unless otherwise noted.

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§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 State DOTs and MPOs to assess the condition of pavements on the Interstate System;

(b) Establish measures for State DOTs 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.

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§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.

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§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 (includes whitetopping).
4	Jointed Reinforced Concrete Pavement (includes whitetopping).
9	Unbonded Jointed Concrete Overlay on PCC Pavement.
10	Bonded PCC Overlay on PCC Pavement.

Pavement means any hard surfaced travel lanes of any highway.

Pavement section means a nominally 0.1 mile-long reported segment that defines the limits of pavement condition metrics required by FHWA.

Present Serviceability Rating (PSR) means an observation based system used to rate pavements.

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 NHS pavement conditions.

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§490.307 National performance management measures for assessing pavement condition.

(a) To carry out the NHPP, the performance measures for State DOTs 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.

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§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). State DOTs shall report four condition metrics for each pavement section: IRI, rutting, faulting, and Cracking_Percent. State DOTs shall also report three inventory data elements as directed in the HPMS Field Manual: Through Lanes, Surface Type, and Structure Type. All pavement data collected after January 1, 2018 for Interstate highways and January 1, 2020 for non-Interstate National Highway System routes shall meet the requirements of this section.

(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. State DOTs will be permitted to report present serviceability rating (PSR) for specific locations in accordance with the HPMS requirements as an alternative where posted speed limits are less than 40 miles per hour.

(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 carries traffic that is not representative of the remainder of the lanes or is not readily accessible due to closure, excessive congestion, or other events impacting access;

(C) Continuously collected in a manner that will allow for reporting in nominally uniform pavement section lengths of 0.10 mile (528 feet); shorter pavement sections are permitted only at the beginning of a route, end of a route, at bridges, at locations where surface type changes or other locations where a pavement section length of 0.10 mile is not achievable; the maximum length of pavement sections shall not exceed 0.11 mile (580.8 feet);

(D) In at least one direction 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) State DOTs may collect and report pavement condition data separately for each direction of divided highways on the Interstate System. Averaging across directions is not permitted. When pavement condition data is collected in one direction only, the measured conditions shall apply to all lanes in both directions for that pavement section for purposes of this part.

(iv) For the portions of the Interstate mainline highway pavements where posted speed limits are less than 40 MPH (e.g., border crossings, toll plazas), State DOTs may collect and report the Present Serviceability Rating (PSR) as an alternative to the IRI, Cracking_Percent, rutting, and faulting in this pavement section and shall follow the following requirements:

(A) The PSR shall be determined as a value from 0 to 5 per the procedures prescribed in the HPMS Field Manual;

(B) Alternative pavement condition methods may be allowed to estimate a PSR with prior approval from FHWA of the method of correlation between their condition determination and PSR as required in the HPMS Field Manual;

(C) The PSR data shall be continuously collected in a manner that will allow for reporting in uniform pavement section lengths of 0.10 mile (528 feet); shorter

pavement sections are permitted only at the beginning of a route, end of a route, at bridges, at locations where surface type changes or other locations where a pavement section length of 0.10 mile is not achievable; the maximum length of pavement sections shall not exceed 0.11 mile (580.8 feet);

(D) The PSR data shall be collected in at least one direction of travel; and

(E) The PSR data shall be collected on an annual frequency.

(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 pavement section lengths of 0.10 mile (528 feet); shorter pavement sections are permitted only at the beginning of a route, end of a route, at bridges, at locations where surface type changes or other locations where a pavement section length of 0.10 mile is not achievable; the maximum length of pavement sections shall not exceed 0.11 mile (580.8 feet)

(D) In one direction of travel; and

(E) On a biennial frequency.

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

(ii) For the Cracking percent, rutting and faulting metrics, State DOTs shall collect data—

(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 pavement section lengths of 0.10 mile (528 feet); shorter pavement sections are permitted only at the beginning of a route, end of a route, at bridges, at locations where surface type changes or other locations where a pavement section length of 0.10 mile is not achievable; the maximum length of pavement sections shall not exceed 0.11 mile (580.8 feet)

(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.

(iii) For the portions of mainline highways where posted speed limits of less than 40 MPH, State DOTs may collect the Present Serviceability Rating (PSR) as an alternative to the IRI, Cracking_Percent, rutting, and faulting pavement condition metrics, in paragraphs (b)(2)(i) and (ii) of this section, and shall follow the following requirements:

(A) The PSR shall be determined as a 0 to 5 value per the procedures prescribed in the HPMS Field Manual;

(B) Alternative pavement condition methods may be allowed to estimate a PSR with prior approval from FHWA of the method of correlation between their condition determination and PSR as required in the HPMS Field Manual;

(C) The PSR data shall be continuously collected in a manner that will allow for reporting in uniform pavement section lengths of 0.10 mile (528 feet); shorter pavement sections are permitted only at the beginning of a route, end of a route, at bridges, at locations where surface type changes or other locations where a pavement section length of 0.10 mile is not achievable; the maximum length of pavement sections shall not exceed 0.11 mile (580.8 feet);

(D) The PSR data shall be collected in one direction of travel; and

(E) The PSR data shall be collected on at least a biennial frequency.

(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) For highways with a posted speed limit less than 40 miles per hour, an alternate method for estimation of IRI is permitted as described in §490.309(b)(1)(iv)

or §490.309(b)(2)(iii) may be used in lieu of measuring IRI, cracking, rutting and faulting.

(iv) The method to collect data needed to determine the Cracking_Percent metric for all pavement types except CRCP shall be manual, semi-automated, or fully automated in accordance with the HPMS Field Manual (incorporated by reference, see 490.111).

(v) 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.

(vi) 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 the HPMS Field Manual (incorporated by reference, see §490.111).

(vii) 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 at least one direction of travel for the Interstate System and in one direction of travel for the non-Interstate NHS; and

(iii) On an annual frequency on the Interstate routes and on at least a biennial frequency on non-Interstate NHS routes.

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

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§490.311 Calculation of pavement metrics.

(a) The condition metrics and inventory 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 except where permitted in §490.309(b)(3)(iii).

(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 0.01 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 0.01 inch, of faulting between pavement slabs for the section.

(5) For the mainline highways on the non-Interstate NHS with posted speed limits of less than 40 MPH—

(i) The present serviceability rating (PSR) may be used as an alternative to the IRI, Cracking_Percent, rutting, and faulting pavement condition metrics.

(ii) The PSR shall be determined as a 0 to 5 value per the procedures prescribed in the HPMS Field Manual.

(iii) Alternative pavement condition methods may be allowed to estimate a PSR with prior approval from FHWA of the method of correlation between their condition determination and PSR as required in the HPMS Field Manual.

(c) State DOTs shall report the four pavement metrics 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) Pavement condition metrics 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, the end of a route, at bridges, or other locations where a section length of 0.1 mile is not achievable; and the maximum length of sections shall not exceed 0.11 mile (580.8 feet)

(2) Each measured section shall have a single value for each of the relevant condition metrics. Sections where condition is estimated from PSR will have one value for the overall condition.

(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.

(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

(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 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 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(s).

(d) The three inventory data elements, Through_Lanes, Surface_Type, and Structure Type shall be reported to the HPMS as directed in Chapter 4 of the HPMS Field Manual for the entire extent of the NHS.

(1) Section Lengths for the three inventory data items are not required to meet the 0.1 mile nominal length but may be any logical length as defined in the HPMS Field Manual.

(2) The three inventory data elements shall be reported to the HPMS for the Interstate System by April 15 of each year.

(3) The three inventory data elements shall be reported to the HPMS for the non-Interstate NHS by June 15 of the each year that data reporting is required.

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§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. If an IRI value of a pavement section is:—

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

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

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

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

(i) For asphalt 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 20 percent the cracking rating for the pavement section is Fair; and

(C) If the Cracking_Percent value of a section is greater than 20 percent the cracking rating for the pavement section is Poor.

(ii) For 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 15 percent the cracking rating for the pavement section is Fair; and

(C) If the Cracking_Percent value of a section is greater than 15 percent the cracking rating for the pavement section is Poor.

(iii) 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 0.10 inches, the faulting rating for the pavement section is Good;

(B) If the faulting value of a section is equal to or greater than 0.10 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) The FHWA will determine that a reported section in HPMS has a missing, invalid or unresolved data on the dates specified in §490.317(b) for Interstate System and §490.109(d)(2) and (d)(4) for non-Interstate NHS, if a reported section does not meet any one of the data requirements specified in §§490.309 and 490.311(c) or that reported section does not provide sufficient data to determine its Overall Condition specified in paragraphs (c) through (f) of this section:

(i) Total mainline lane-miles of missing, invalid, or unresolved sections for Interstate System and non-Interstate NHS shall be limited to no more than 5 percent of the total lane miles less the sections excluded in §490.313(f)(1). For each pavement section without collected its condition metrics and inventory data, State DOTs shall note in the HPMS submittal with a specific code identified in the HPMS Field Manual (incorporated by reference, see §490.111) noting the reason it was not collected.

(ii) Calculation of overall pavement conditions in any State meeting the requirements of §490.309(b) shall be based only on sections containing data reported in the HPMS Submittal as of the submission dates required in §490.311(c)(4) and (5). State DOTs not meeting the requirements of §490.309(b) will be considered as not in compliance with §420.105(b) requiring State DOTs to submit data to the HPMS and not in compliance with §490.107 requiring reporting on performance targets. Failure to report data meeting the requirements of §490.309(b) by the submission dates for the Interstate System will be considered as not meeting the minimum requirements for pavement conditions on the Interstate System and that State DOT is subject to the penalties in §490.315.

(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), (b)(2), (b)(3) and (b)(4) 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 paragraphs (c)(1) or (c)(2) of this section.

(4) For sections on roadways where the posted speed limit is less than 40 MPH and where the State DOT has reported PSR in lieu of the IRI, Cracking_Percent, rutting, and faulting metrics the PSR condition level shall be determined using the following criteria:

(i) If the PSR of a section is equal to or greater than 4.0 the PSR rating for the pavement section is Good;

(ii) If the PSR of a section is less than 4.0 and greater than 2.0 the PSR rating for the pavement section is Fair; and

(iii) If the PSR of a section is less than or equal to 2.0 the PSR rating for the pavement section is Poor.

(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 (b)(2) of this section or based on PSR where appropriate as described in paragraph (c)(4) 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 paragraphs (d)(1) or (d)(2) of this section.

(4) For pavement sections that are on roadways with a posted speed limit of less than 40 MPH where the State DOT reported the PSR metric in lieu of the IRI, Cracking_Percent, faulting, and rutting metrics the pavement section shall be rated an overall condition equal to the PSR condition rating as described in section (c)(4) above

(e) State DOTs shall not be subject to paragraphs (c) and (d) of this section for Pavements on the until after the data collection cycle ending December 31, 2018, for Interstate highways and December 31, 2021, for the non-Interstate NHS. During this transition period, the Overall condition for all pavement types will be based on IRI rating, as described in paragraph (b)(1) of this section, or on PSR as described in paragraphs (c)(4) or (d)(4) of this section.

(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 data item in the HPMS is coded as 1. Sections that have an unpaved surface or an "other" surface type (such as cobblestone, planks, brick) shall be excluded prior to computing all pavement condition measures by removing the sections where the Surface Type data item in the HPMS is coded as 1 or as 11.

(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:

$$100 \times \frac{\sum_{g=1}^{Good}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ g}}{\sum_{t=1}^{Total}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ t}}$$

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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 excluding bridges, unpaved surface and "other" surface types, and missing data sections, described in paragraph (f)(1) and (b)(4)(i) of this section.

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:

$$100 \times \frac{\sum_{p=1}^{Poor}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ p}}{\sum_{t=1}^{Total}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ t}}$$

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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 excluding bridges, unpaved surface and "other" surface types, and missing data sections, described in paragraph (f)(1) and (b)(4)(i) of this section;

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 in §490.307(a)(3) shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{g=1}^{Good}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ g}}{\sum_{t=1}^{Total}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ t}}$$

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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 excluding bridges, unpaved surface and "other" surface types, and missing data sections, described in paragraph (f)(1) and (b)(4)(i) of this section;

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 in §490.307(a)(4) shall be computed to the one tenth of a percent as follows:

$$100 \times \frac{\sum_{p=1}^{Poor}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ p}}{\sum_{t=1}^{Total}\{(End\_Point - Begin\_Point) \times Through\_lanes\}_{section\ t}}$$

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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 excluding bridges, unpaved surface and “other” surface types, and missing data sections, described in paragraph (f)(1) and (b)(4)(i) of this section;

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.*

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§490.315 Establishment of minimum level for condition of pavements.

(a) 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(e)(3), shall not exceed 5.0 percent except as noted in paragraph (b) of this section.

(b) 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 within the State of Alaska, as computed per §490.313(e)(3), shall not exceed 10.0 percent.

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§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(e)(3), for each State annually.

(b) Each year, 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, beginning with data collected during the 2018 calendar year.

(c) The FHWA shall determine if a State DOT is in compliance with §490.315(a) or §490.315(b) and 23 U.S.C. 119(f)(1) after the first full year of data collection for the Interstate System and each year thereafter.

(d) 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.

(e) 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).

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§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 (a)(2) and;

(2) The data elements specified in §490.309(c) 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 (a)(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(c).

(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.

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