

HPMS

Delaware
Annual Review
2011

Highway Performance Monitoring System



U.S. Department
of Transportation

**Federal Highway
Administration**

Delmar - Delaware Division

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I. Purpose and Background of the Review

The Highway Performance Monitoring System (HPMS) was developed in 1978 as a national highway database. It replaced numerous uncoordinated annual State data reports as well as biennial special studies conducted by each State. The HPMS provides data that reflects the extent, condition, performance, use, and operating characteristics of the Nation's highways. It includes limited data on all public roads and detailed data for a sample of the arterial and collector functional systems, and certain statewide summary information.

The HPMS form the basis of the analyses that support the biennial Condition and Performance Reports to Congress. These reports provide a comprehensive, factual background to support development and evaluation of the Administrative, program, and budget options. They provide the rationale for requested Federal-aid Highway Program funding levels, and are used for apportioning Federal-aid funds back to the State.

In addition, the HPMS data is used to assess highway system performance under Federal Highway Administration (FHWA) strategic planning process. Furthermore, the data is the source of a large portion of information included in FHWA's annual Statistics and other media publication.

For the past six years, the HPMS has undergone undergoing a Reassessment (known as *HPMS Reassessment 2010+*) to ensure it best meets the needs of its users and customers as we move forward. Some of the recommended changes include retaining 59 data items, deletion of 19 data items, and adding 23 new data items. The HPMS Field Manual was updated and the final version was released September 2010. The HPMS changes include, but are not limited to: addition of critical information on pavement conditions; extensive evaluation of safety data needs; new data model - use of Geographic Information System (GIS) which allows for geographic locating, analysis, comparison, and reporting of data; reporting motorcycle travel data; and collecting interchange and ramp data. Beginning in 2013, reporting of functional class changes will be mandatory.

The FHWA Division Office annually must provide the results of an annual review of the State's HPMS monitoring activities in a report to the FHWA's Office of Highway Policy Information (OHPI) by November 1; however, deadline was extended to December 15, 2011 due to the Reassessment. In addition, by June 1, the State must include a certification of public road mileage to FHWA; by June 15th of each year, the State must also report the HPMS data for the previous year to FHWA OHPI using the submittal software.

The requirements outlined in the HPMS Field Manual are authorized under 23 U.S.C. 315, which places the responsibility on the Secretary of Transportation for management decisions which affect transportation. In addition, 23 CFR 1.5 provides the FHWA with authority to request information deemed necessary to administer the Federal-aid highway program.

The FHWA DelMar-Delaware Division has employed a number of strategies and activities for coordinating with Delaware Department of Transportation (DelDOT) in the collection and reporting of quality data. Among these activities include: (1) annually ensuring DelDOT's timely submittal of quality HPMS data to the FHWA's Office of Highway Policy Information; (2) providing assistance to DelDOT in addressing any "high priority subject areas" that are identified by the FHWA's OHPI following review of the State's annual HPMS data; (3) conducting field inventory reviews of several key HPMS data items for a sampling of HPMS sample sections across the State; and (4) providing program and technical support to DelDOT.

The following report summarizes the FHWA DelMar-Delaware Division's annual stewardship activities related to HPMS which are consistent with the principles reflected in the FHWA's *HPMS Field Review Guidelines* (2011 version).

II. Scope of the Review

As mentioned earlier, the Division Office must annually document the results of its HPMS monitoring activities in a report to be submitted to the FHWA OHPI by November 1 - December 15, 2011 for this year.

Key components of these annual HPMS monitoring activities include: (1) ensuring the DelDOT's timely submittal of complete and accurate HPMS data; (2) conducting periodic process-oriented reviews of "high priority subject areas" (3) conducting field inventory reviews of a series of key HPMS data items for a sampling of HPMS sample sections across the State; and (4) conducting other associated annual required reviews (e.g., certifying public road mileages and verifying that the State's certified public road mileage data, highway vehicle miles of travel (VMT), and lane-miles data are valid and suitable for use in the apportionment of Federal-aid Highway Program funds).

The remainder of this report expounds on this year's status of the aforementioned activities.

III. Status of the 2010 HPMS Data Submittal

For the 2011 submittal, DelDOT submitted the 2010 HPMS data package electronically to FHWA OHPI (hereinafter OHPI) on June 17, 2011, and they were in contact with OHPI on June 15 and updating them of their submittal progress. The Division Office received some initial feedback on the 2010 data from OHPI. OHPI stated that Delaware's submittal looks to be most complete compared to other states. DelDOT team should be commended considering the challenges they encountered during the HPMS 8.0 transition period. The commendations were shared with DelDOT HPMS staff in an August 2011 meeting. On Monday, December 5, OHPI hosted a conference call with DelDOT HPMS staff and the FHWA DelMar-Delaware Division as participants.

During the call, OHPI noted the following:

- Delaware's sample adequacy is in good shape.
- Validations are varied but include the overlap of curve and grade data that needs investigation on their end. Most common errors are future AADT and Year of Last Improvement. There were 46 section end point out of bounds errors.
 - Delaware responded by stating the following:
 - DelDOT does not have the equipment to determine curves and grades. They will discuss strategies to address this with the Division office.
 - In regards to the errors, the software available cannot point out the specific 46 sections. For future AADT, this is not an error but requires an explanation for HPMS samples where future AADT is more than 4 times current AADT. For year of last improvement, this data item is not reflected until after final inspection by the Pavement Management team. Sometimes there can be a delay between completion and final inspection.
- Another minor issue OHPI noted was that AADT section length is low (by a one mile or less) for functional systems 3-5.
 - DelDOT responded by stating that at the time of submission, the HPMS coordinator was unable to review and take remedial action. In the new system, they cannot create cross validation checks and an error check report.
- NHS length is essentially unchanged, but there are several lane lengths and travel changes in the functional systems.
 - DelDOT's responded by stating the shift from 2009 to 2010 is a result of more accurate data being reported.
- Travel on local roads is down by 9%.
 - DelDOT noted the high unemployment rate and increase in transit use as the contributing causes.
- VM-2 data check (*travel produced data from HPMS that lists the VMT by functional class*): OHPI noted it was okay to proceed; noted that rural major collector and urban local had changes over 10% of total VMT – check was acceptable.
 - DelDOT stated that 2010 information is updated by GIS platform. VMT changes are due to severe economic conditions.
- VM-4 data check (*the summary data from HPMS that lists the % of each vehicle type by functional class*): OHPI noted it was okay to proceed; noted significant changes in number of single unit vehicles (SU) yr/yr roadways. GIS data check – okay to proceed; all SU and combination unit vehicles (CU) AADT's are in percents versus using AADT's, samples don't appear to be randomly sampled, and minor issues with a few of the sample values. GIS layer for AADT is very detailed. [OHPI advises to not delete samples, especially before 2010 census boundaries are released.]
 - DelDOT responded by stating that DelDOT counts all HPMS samples in a 3-year cycles (or less). To meet the sample adequacy, HPMS software is used

for new samples with 0.50 miles or longer roadways. The new samples are updated from the data information in the Office of Planning. DeIDOT does not have a HPMS field crew; thus, the consultant provides truck related and other data in the next year.

- OHPI asked about the completeness of pavement data. Based on the DeIDOT's responses below, they suggested that cracking length could be done via a windshield survey. And they recommended collecting length data as it is part of pavement modeling and it feeds into the report that is sent to Congress. OHPI did not comment on not reporting Present Serviceability Rating (PSR) as they are more concerned with the International Roughness Index (IRI).
 - DeIDOT responded with the following information:
 - IRI & PSR - they will report IRI but not PSR;
 - Faulting – they will not report;
 - Rutting – they will report;
 - Cracking – they will report percent not length. Severity and extent of cracking is collected and it is converted to a general percentage for reporting.
 - DeIDOT informed FHWA that faulting and cracking length data items are not used for computing the distress. Because of budgetary constraint they could not include these two additional data items required by the HPMS into their current data collection contract.

IV. Field Inventory Review

The FHWA DelMar—Delaware Division's annual field review of HPMS sample section data took place on September 14, 2011. The FHWA Division Community Planner (Marc Dixon), DeIDOT HPMS Coordinator (Subhash Bhai) and two other members (Kevin Gustafson and Jason Vogl) from the Planning Division participated. Some of the objectives of this joint review process were to foster additional partnering between the State and FHWA, reduce duplicative FHWA and DeIDOT review efforts, and provide DeIDOT and FHWA staffs with a greater mutual understanding of each other's programs. The team reviewed 22 samples mainly located in Sussex County and a few were in Kent County. Table 1 provides more information about the samples.

Table 1. Samples Reviewing during 2011 Field Review

No.	Sample ID	Roadway ID	Road Name	Section Length	Functional System	County
1	582	9516	SR 1, Korean War Veterans Mem. Hwy	0.99	2	Kent
2	1	989	SR 9, Market Street	0.39	4	Sussex
3	563	973	SR 9, Lewes-Georgetown Hwy	0.83	3	Sussex
4	570	979	SR 58, Harbeson Road	1.48	5	Sussex
5	375	1168	SR 9, Kings Hwy	0.43	3	Sussex
6	201	983	SR 9, Theodore C. Freeman	0.39	3	Sussex
7	402	960	SR 9, Coastal Hwy	1.12	3	Sussex
8	408	960	SR 1, Coastal Hwy	3.27	3	Sussex
9	496	969	SR 16, Broadkill Rd	1.26	5	Sussex
10	478	477	SR 1, Bay Rd	1.46	2	Kent
11	596	9516	SR 1, Korean War Veterans Mem. Hwy	1	2	Kent
12	161	1060	SR 9, Dupont Blvd	2.38	3	Sussex
13	323	960	SR 1, Coastal Hwy	2.05	3	Sussex
14	250	1084	SR 30, Cedar Creek Rd	0.81	5	Sussex
15	164	1087	South Walnut St.	1.35	5	Sussex
16	24	996	SR 36, Lakeview Ave	0.14	4	Sussex
17	256	997	Seabury Ave	0.61	5	Sussex
18	168	996	SR 36, Lakeview Ave	0.35	4	Sussex
19	37	996	SR 36, Southeast Front St	0.25	4	Sussex
20	577	1059	Second St (Milford)	0.47	5	Sussex
21	2	996	SR 36, Southeast Front St	0.51	4	Sussex
22	211	996	SR 36, Cedar Beach Rd	0.39	4	Sussex

Table 2 shows the data items that were reviewed while in the field. Nineteen data items were reviewed.

Table 2. Field Review HPMS Data Items Verified

Item #	Data Item	Item #	Data Item
3	Facility Type	35	Median Type
5	Access Control	36	Median Width
7	Through Lanes	37	Shoulder Type
10	Peak Lanes	38	Right Shoulder Width
12	Left Turn Lane	39	Left Shoulder Width
13	Right Turn Lane	40	Peak Parking
14	Speed Limit	41	Widening Obstacles
31	Number of signals	42	Widening Potential
33	At-grade other ((# of intersections w/o signal controls or stop sign)	49	Surface Type
34	Lane Width		

The results show that DeIDOT continues to have a quality HPMS data program that consists of few errors. During the field review, an error was found with Item 35- Median Type. In

locations where median width was greater than zero (0), the sample data showed median type of 1, which indicates no median. After some investigating, the DeIDOT HPMS team discovered that this error was attributed to their RIMS database system update while trying to match the 2010 HPMS manual coding. DeIDOT HPMS team corrected the error through a manual update by using video log.

V. Review of “Highway Priority Subject Areas” – Pavement Data

The current *HPMS Field Review Guidelines* identifies six subject areas that are to be examined at least every three years cooperatively by the FHWA Division Offices and the State DOTs. These “high priority” data are: (1) traffic data submittal; (2) State Planning Research (SPR) Work Program ; (3) Quality Assurance; (4) Traffic Data; (5) Sample Adequacy; and (6) Pavement Data.

For this HPMS cycle, the FHWA Division chose to review the pavement data because there was no record of it being reviewed in the recent past. In addition, with the pavement reporting requirements, the FHWA Division and the DeIDOT HPMS Coordinator wanted to assess the pavement data collecting practices to address any concerns. Utilizing the *HPMS Field Review Guidelines*, staff from the FHWA DelMar-Delaware Division Office and the DeIDOT Planning Division and Pavement Section met on October 17, 2011 to go through pavement data questionnaire/guidelines.

Pavement Data Review Guidelines

Notes from Oct. 17, 2011 meeting.

Attendees: Jennifer Pinkerton, Pavement Management; Rhonda Lewis, Pavement Management; Sarah McDougall, Pavement Management; Kim Johnson, Pavement Management; Robin Davis, Pavement Management; Tyrone Crittenden, Planning; S. Bhai, Planning; and Marc Dixon; FHWA DelMar-Delaware.

Data Reporting

1. Is pavement roughness data being collected on an annual cycle for the NHS/PAS and on the 2-year maximum cycle for all other required sections? If not, what update cycle is used and what are the State's plans for meeting the 1 or 2-year HPMS cycle requirement? When was the last time pavement roughness was collected?

Response: Data for the entire network was last collected in 2009. The pilot for the current contract (scope includes only the HPMS segments) is getting ready to start; work will begin in late October 2011 and will wrap-up in early 2012.

2. Is old (outside of guidelines) pavement roughness data retained and reported until it is replaced by new data (it should be)?
Response: Yes
 Is "0" reported for sections where data are not available and for unpaved sections (no sections should be reported with a "0" or null value)?
Response: No, "0" values are never reported. If new data is not available, old data is used
3. Do all standard sample sections have either an IRI or PSR reported? (Required)
Response: Yes, IRI is reported.
4. Is IRI reported on all NHS routes and principal arterials (i.e. NHS and FC =1, 2 or 3)? (Required) *Response: Yes*
5. Does the State report measured IRI only or is IRI converted from other data such as PSR? *Response: IRI only – data is not converted.*
 - a. How do you distinguish IRI from PSR on the report?
Response: There are two (2) different fields, but you don't have to report PSR if you have IRI.
 - b. Are default or model conversion values used? (Not acceptable)
Response: No.
6. Is the IRI data reported in HPMS consistent with roughness data in the State's pavement management system? *Response: Yes*
 How do you know this? *Response: Working knowledge. There might be a slight difference as it might average differently due to different lengths between DelDOT's rating segments and HPMS sample segments.*

Equipment

1. What kind of data collection equipment is being used to measure roughness?
Response: High- speed inertial profiler
 - a. Direct Profilers (Preferred)
 - i. Direct Profile Measuring Equipment
 1. How many does the State possess?
Response: DelDOT owns a light-weight profiler that they use on private jobs. But, for HPMS, a consultant is hired and the consultant uses their own profiler(s).
 2. Does it contain a computer with sensors?
Response: Yes for a, b & c.
 - a. Two sensors separated approximately 63 to 71 inches
 - b. Longitudinal profile points used for calculating IRI have maximum longitudinal spacing of 5.9 inches
 - c. Contains long wavelength filters used to remove wavelengths exceeding 197 feet

3. What type of sensors does it have? *Response: Yes for a, b & c.*
 - a. Height sensor - Measures up and down movement of the van
 - b. Acceleration sensor - Detects changes in the speed of the van's up and down movement
 - c. Speed/Distance device - Measures how fast the van is traveling and how far it has traveled. Connected to a profiler's speedometer or to a wheel?
 - ii. Non-contact Devices
 - Does it utilize laser, infrared, or ultrasound sensors?
Response: Laser
 - b. Manual Profilers (Discouraged from Use) *Response: DeIDOT does not use.*
 - i. Manual techniques
 - ii. Rod and level or dipstick
 - iii. Used for calibration
 - c. Mechanical Roughness Meters (Allowed, but profilers more accurate)
Response: DeIDOT does not use.
 - d. Response Type Road Roughness Meters (Should not be used for HPMS)
Measure average rectified slope and converts into IRS Units.
Response: DeIDOT does not use.
 - e. Estimation (Should not be used for HPMS)
Response: DeIDOT does not use.
Subjective estimations by observer using road description or ride sensitivities
3. What vehicle response variables does the State observe? *Response: None.*
 - a. Road Meter Response - For historical continuity, highly correlated to IRI
 - b. Vertical Passenger Acceleration - For ride quality, highly correlated to IRI
 - c. Tire Load - For vehicle controllability and safety, highly correlated to IRI
 - d. Vertical Passenger Position - Poor correlation with IRI
 - e. Axle Acceleration - Poor correlation with IRI
 4. Is the equipment either Class 1 or Class 2? *Response: Class 1.*
Class 3 or Class 4 equipment should not be used.

5. What are the State's pavement roughness equipment needs?
Response: To handle all data collection needs in-house, DeIDOT would need approx. \$2 million to buy a van (high speed) plus staff. Due to the high costs, they have decided to use a consultant.

It is not practical to collect data every year due to cost of collecting condition data. But, if federal report requirements are annual, they would have increased costs just for IRI reporting.

Collection

1. Does the State use one or two technicians to measure roughness?
(2 is a good safety factor)
Response: This is left up to the consultant; typically they use two.
 - a. One to drive - Focus on van's lane position, speed, safety
 - b. One to take readings - Finds landmarks, triggers the system, conducts quality control steps during measurements
2. Is roughness data filtered? *Response: Yes.*
3. Is a quarter car or half simulation used? *Response: Quarter car.*
4. Is the average of two wheel paths data reported? (Inside/outside) *Response: Yes.*
5. Does the State use one direction for reporting pavement roughness for HPMS?
(Example: east to west or south to north) *Response: Yes.*
 1. Does the State use the same direction each time pavement roughness data are collected? *Response: Yes.*
 2. Roughness should not be measured on both directions of roadway for HPMS. If both directions are collected, how are they used for HPMS reporting? *Response: N/A – one direction is reported.*
6. On multi-lane facilities, which lane(s) does the State use to collect roughness data? *Response: Right outermost lane.*
For HPMS, it is recommended that the outside right lane be used and the same lane should be used each time pavement roughness data is collected.
7. Are bridges and railroad crossings excluded from pavement roughness data reported in HPMS? *Response: No.*

8. Are these conditions followed when measuring pavement roughness?
 - a. Pavement in stable condition *Response: Yes.*
 - b. Good weather conditions *Response: Yes.*
 - i. Wind conditions do not affect equipment stability
 - ii. Not during wet conditions
 - iii. Not during winter conditions - frost/freeze or freeze/thaw
 - c. Speed conditions specified by manufacturer, constant speeds within specified ranges *Response: Yes.*
 - d. Minimum run-in length required prior to measurement, if not possible, is consistent. *Response: Yes.*

Program

1. Does the State collect roughness data for off-state system roadways? *Response: No.*
 - a. How is this data collected?
 - b. If collected by a contractor or other non-State agency, how does the State confirm the accuracy of data?
2. Are there State or local pavement management systems? Describe. *Response: Yes and some cities have their own. DelDOT uses Agile Asset's pavement management software. It allows for semi-automation with the use of video log.*
3. Does the State make IRI comparisons on asphalt vs. Portland cement concrete? *Response: No.*
How does the State distinguish between the two pavement types?
Response: IRI is not used in conditions survey, but there is a field in the database that shows pavement type.
4. How is roughness viewed? *Response: N/A.*
 - a. Deviations in Elevation (Displacement Inputs)
 - b. Slope (Velocity Inputs)
 - c. Change of Slope (Acceleration Inputs)
5. What percent of NHS VMT in the State has an IRI below 95 and below 170 inches per mile? *Response: Per August 2011 IRI map from Tom Roff (FHWA OHPI), 68.5% and 95.2%, respectively.*
 - a. Good (IRI<95) (national goal is 57% >= good for 2009) Acceptable (IRI 95 to170) Unacceptable(IRI>170)
 - b. What additional efforts or program changes are being made to meet this goal? *Response: Goal has been met.*

6. Do pavement roughness reports list all available information necessary to locate the section using agency's current referencing system? *Response: The info is kept within DelDOT but not reported as part of HPMS. All data types except pavement surface temperature are kept.*
 - a. Date of data collection (month/day/year)?
 - b. Length of section for which data is collected?
 - c. Profile sampling interval?
 - d. Long wavelength filter setting?
 - e. Pavement surface temperature (optional)?

Quality Assurance

1. Is pavement roughness data verified in the field, especially where improvements are made? *Response: Not specifically for HPMS. But, through DelDOT's field review process and HPMS field reviews*
 - a. Are temporary values used on pavement improvement sites until measured? (Acceptable) How are they designated on reports? *Response: Old data is used until it is replaced with new data.*
 - b. How do you know where and when highway improvements are made? There is a history database in the pavement data system. *Response: Also, the pavement management group is aware of the improvements since they are part of the approval process.*
2. Does the State adhere to AASHTO Provisional Standard PP37-99? *Response: Yes.* If not, what are their plans for doing so?
3. Is there a quality assurance plan in place? *Response: Yes, the consultants are required to provide quality assurance as part of the contract.* The plan should include daily quality control equipment procedures (accelerometers & non-contact sensors), a schedule for accuracy checks of roughness equipment, pavement roughness survey personnel training records, and a schedule for the regular calibration of roughness equipment.
 - a. Are there verification sections? *Response: Yes.*
 - b. Are there quality checks? *Response: Yes.*

Based on the responses from DelDOT, their pavement data program is currently above satisfactory in the areas of data reporting, equipment, collection, program, and quality assurance. However, in the near future there is an imminent issue in regards to data reporting, equipment needs, and its relation to FHWA HPMS reporting requirements for IRI. As stated in the HPMS Field Manual (September 2010 edition), IRI should be measured on an annual cycle for the NHS and on the 2-year maximum cycle for all other required sections. Although they are in the process of collecting IRI data, it is unclear if they will be able to meet the annual requirement on a continual basis due to budget constraints. The DelMar-Delaware Division will regularly follow-up with DelDOT and encourage them to use SPR funds if necessary.

VI. Conclusions and Follow-up

The FHWA Division office will continue to work and coordinate with DeIDOT's HPMS Team in developing and providing quality HPMS data. Also, the Division office will continue to monitor DeIDOT's plans for collecting IRI and other pavement data, and imminent funding and succession planning challenges with the HPMS program. We recommend that DeIDOT create standard operating procedures for the HPMS Coordinator position before the incumbent leaves.

For their 2010 submittal, DeIDOT is to be commended for the quality and timely submittal of data to headquarters for review and comments.

VII. Acknowledgments

The FHWA Division Office acknowledges and appreciates the cooperation and involvement of the staffs from the DeIDOT Planning, Traffic Data Section, and Pavement Section throughout the various elements of this year's HPMS annual review.

VIII. DELAWARE FHWA Division Office HPMS Review - Status Report & Certification

(Annually by November 1, complete and sign this form, the risk assessment, and attach additional information as necessary.)

STATUS REPORT – Answers (Y/N) to these questions should be reflected in rating each activity on the HPMS Program Activity Risk Assessment form.

Geographical Information System (GIS)/Linear Referencing System (LRS) Adequacy

- Y State maintains an accurate up to date, as driven GIS/LRS
- Y The LRS/GIS represents and correlates with the State’s Enterprise Management Systems
- Y Federally-Aided Routes are included
- All Public Roads are included (optional)

Data Submittal

- Yes, no deficiencies; No, for date submitted; they submitted June 17 State completed their data submittal by June 15 with no major deficiencies
- Y State’s submittal letter adequately explains recurring conditions, edits, changes, and improvements being made in data collection procedures and processing data?

Highway Policy Information (OHPI) memo to Division Office concerning current year HPMS submittal

- N/A – conference call on Dec. 5, 2011; memo will be sent in Jan./Feb. 2012 The memo has been fully discussed and understood by both the Division and State?
Date response forwarded to OHPI including discussion of implementation No memo received from OHPI yet
Resolution of other comments in correspondence and discussions No major comments from OHPI, but comments were addressed with some resolution during the conference call.

SPR Work Program

- Y Current levels of SPR funding are adequate.
- Y State has requested additional resources for data collection, system improvement or staffing
- N Process improvements identified, reflected in an action plan, and fully supported in SPR or State work programs

Quality Assurance

- Y The State has a quality assurance program concerning all data provided for HPMS
- Y The data reported in HPMS directly reflect current enterprise information systems
- Y A Field Inventory Review has been conducted within the past year to verify data is coded properly and reflects current conditions and all problems/issues have been rectified.

Traffic Data

- Y Have all the necessary counts taken place on the Federal-Aid System to accurately represent traffic volume for the data year, per the TMG? Do traffic volume trends reasonably reflect ATR data
- Y Do the trends in VMT by functional class appear reasonable compared to adjoining functional class groups and prior year’s data?
When was the last time your office did a process review of the State’s traffic monitoring program to assure that procedures are adequate and are being applied to all HPMS data? (This is more than just the TMS/H review; it should follow the guidelines in Attachments F and G.) Summer/Fall 2010

Pavement Data

- Y IRI data been provided and updated within the last 1 or 2 years as required
- When was the last time your office did a process review of the State’s pavement data program to assure that procedures are adequate and are being applied to all HPMS data? October 2011

Sample Adequacy

Y The State conducted a sample adequacy review this year; explaining results and changes in number of samples or when last review was conducted.

When was the last time your office did a process review of sample adequacy to assure that procedures are adequate and are being applied to all HPMS data? September 2007

ANNUAL CERTIFICATION

I certify that the State's HPMS data submittal and the information in this review are true and correct to the best of my knowledge and belief and there is no evidence of submission of false data, which would be in violation of U.S.C., Title 18, Section 1020. Furthermore, I certify that this HPMS data is valid and suitable for use in the apportionment of Federal-aid highway funds, performance measurement, and condition and performance reporting to Congress.

[Handwritten signature]

FHWA Division Administrator 12/14/11 Date

IX. HPMS Program Activity Assessment

State: **Delaware** * Date Year (Attach to your Status Report & Certification): **2011**

Date of Assessment: **August 29, 2011**

Activity	Poor 0 point	Fair 5 points	Good 10 points	Outstanding 20 points	Score (points)
GIS/LRS Adequacy	GIS/LRS is not maintained and/or does not reflect the entire Federal Aid System	GIS/LRS is maintained and does reflect the entire Federal Aid System. May not be integrated with the DOT Enterprise or completely up to date	GIS/LRS is maintained and does reflect the entire Federal Aid System. It is integrated with the DOT enterprise but may not be completely up to date.	GIS/LRS is maintained and does reflect the entire Federal Aid System. It is integrated with the DOT enterprise and is completely up to date.	15
Data Submittal	Late with complete mileage and VMT data, other major data issues not explained	By June 15 th , complete mileage & VMT data, major issues explained or data resubmittal	By June 15 th , complete data and minor comments	By June 15 th , no comments	12
	Submittal letter brief and general comments	Submittal letter explains only recurring comments	Submittal letter explains recurring comments and edits	Submittal letter explains recurring comments, edits, and changes in procedures and processes	15
SPR Work Program or State Planning Work Program	Decrease or inadequate funding or no priorities for data collection including staff, training or equipment	Adequate funding, some recognition of needs and new activities, but still no changes in staff, training, or equipment	Adequate or increased funding, more staff and training for selected activities	Adequate or increased funding for process review (or action plan) recommendations included in work program	4*
Quality Assurance	Minimal quality assurance, off-state system issues, many coding error messages	Basic quality assurance program for short term solutions including off-state system issues, some coding error messages explained in submittal letter	Quality assurance program implemented and coordinated with all data providers, minor isolated problems,	Quality assurance program documented, funded, and no major data coding problems found	14
Traffic Data	Current year data provided with non statistical or non verifiable explanation for anomalies and unusual trends for F.C. or H.V. locations, Primary OHPI comments.	Current year data provided for all PAS, acceptable statistical justification for anomalies and unusual trends for F.C. or H.V. locations, Primary OHPI comments.	Current year data provided for all F.C., acceptable statistical justification for anomalies and unusual trends for F.C. or H.V. locations, Secondary OHPI comments.	Current year data provided for all F.C., no unusual trends by F.C. or H.V. locations, no OHPI comments.	12
Pavement Data	Complete data provided on-state system updated on an infrequent cycle, off-state system data incomplete, Primary OHPI comments	Complete data provided on-state system updated on a 2 year cycle, plan developed for complete off-state system data, Primary OHPI comments	Complete data provided and collected with supporting explanations that differ from Field Manual, all current 2-3 year data, Secondary OHPI comments	Complete data provided and collected in accordance with Field Manual, all current 2-3 year data, no OHPI comments	10
Sample Adequacy	Sample revisions needed, identified, but not made. Primary OHPI comments	Some sample revisions were made, sample adequacy assessed. Primary OHPI comments	Most sample revisions were made, sample adequacy assessed. Secondary OHPI comments	Sample revisions not needed or were made addressing all deficiencies and OHPI comments	18

(*)= DeIDOT HPMS staff is facing imminent challenges. Program manager has asked for additional funds but has been met with resistance. In addition, with the increase in HPMS requirements (ramps, IRI, etc.) there is a need for additional resources. Lastly, the current HPMS coordinator is very close to retirement and there is no succession plan in place.

Total Score (140 max)	100
Activity(s) Identified for Review: (Less than 10, more than one activity should be considered)	