



State of Rhode Island
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ADDENDUM #1

RFP #7652820

**TITLE: On-Call Consultant Services for Highway
Performance Monitoring System (HPMS)**

SUBMISSION DEADLINE:

Friday September 3, 2021 at 11:30 AM

Please see the attached.

Marisa DeFarno

Marisa DeFarno
Buyer II



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
RIDOT Addendum Notification

RFP# 7652820 – On-Call Consultant Services for Highway Performance Monitoring System (HPMS)

ADDENDUM #1
SUBMISSION DUE DATE: SEPTEMBER 3, 2021 at 11:30 am

Per issuance of **ADDENDUM # 7652820A1** the following additions are noted:

1. Compilation of the Questions/Answers submitted.
2. Highway Performance Monitoring System Report Cards 2017-2019

APPROVED:

Daniel T. DiBiasio

Daniel DiBiasio
Division of Planning & Infrastructure Development

8/26/2021

Date

Questions & Answers:

1. Given current health concerns and the fact that many businesses/employees are operating remotely or have limited access to office equipment, printers, etc., we respectfully ask that RIDOT consider accepting digital submittals and waive the requirement for hardcopy and/or physical media.

A: The Division of Purchases will not waive this requirement.

2. Given the current health concerns and the fact that staff are operating remotely, we respectfully ask that RIDOT allow the use of digital signatures on all forms and documents.

A: Digital signatures are acceptable

3. "The Consultant will be required to use existing and future technology and systems including but not limited to INRIX, VueWorks, dTIMS, MS2, ESRI Roads and Highways, and MIRE Data. The Consultant shall be responsible for costs associated with the purchase of software or license agreements required to perform the requested services." Can we assume that RIDOT will provide access to its existing licensed (purchased and in use) systems and software for work to be done by the consulting team?

A: RIDOT will be able to provide access to the system and or the data managed by the system.

4. Will the consultant team be granted remote connectivity rights to work on RIDOT data and systems as if they were sitting at RIDOT desks?

A: The consultant team will be provided with SSL accounts to access systems that are not available outside the RIDOT network.

5. Will RIDOT petition FHWA that the consultant be able to have their own UPACS access(es) to the Rhode Island submittal tab in UPACS HPMSv9 and v8 during each submittal season? If not at first, then perhaps eventually?

A: At this time the consultant should assume that they will not have direct access to the FHWA system. RIDOT will evaluate the feasibility of requesting access based on the project requirements as they evolve.

6. How many vendors does RIDOT intend to award? And how will the work be allocated among them?

A: RIDOT intends to make a single award for this solicitation.

7. Can you provide the Rhode Island HPMS Report Card for any most recent year? Or at least the cumulative scores on those cards?

A: Yes, included in the attachment are three years – 2017, 2018, 2019, with 2019 representing the most recent available report card.

8. From the listing of potential data items to address in Task 1, could you rank the 3 highest data items that you might initially request consultant assistance for?

A: Based on our current assessment, the top three data items are:

- Pavement condition data
- Traffic data
- Overall data quality

Priorities may shift with time as the project evolves.

9. To what extent has RIDOT moved to ArcGIS Pro? If not, is ArcGIS Desktop v10.x still used predominantly? If so, which “x” or “x.1” sub-release of ArcGIS 10.x does RIDOT have installed on most PCs.

A: RIDOT is predominately using ArcGIS Desktop 10.7.1, however we are beginning to train and migrate some functions to ArcGIS Pro.

10. Does RIDOT have a limit on ArcGIS Basic, Standard, or Advanced licenses such that the consultant is required to bring their own to the project?

A: RIDOT has a limited number of desktop licenses. We would require the consultant to use their own ArcGIS desktop licenses for this project.

11. Does the RIDOT HPMS submittal get assembled from a multi-editor enterprise GIS database with versioning? If so, what RDBMS is employed? Or does the HPMS data get edited in file geodatabases, personal geodatabases, or shapefiles?

A: RIDOT’s last submission was assembled using ArcGIS desktop using a file geodatabase and enterprise SQL server database. RIDOT is in the process of migrating to a multiuser Enterprise GIS database using the ESRI Roads and Highways Application for editing, The consultant may be called up to support this migration under Task #2 of the RFP.

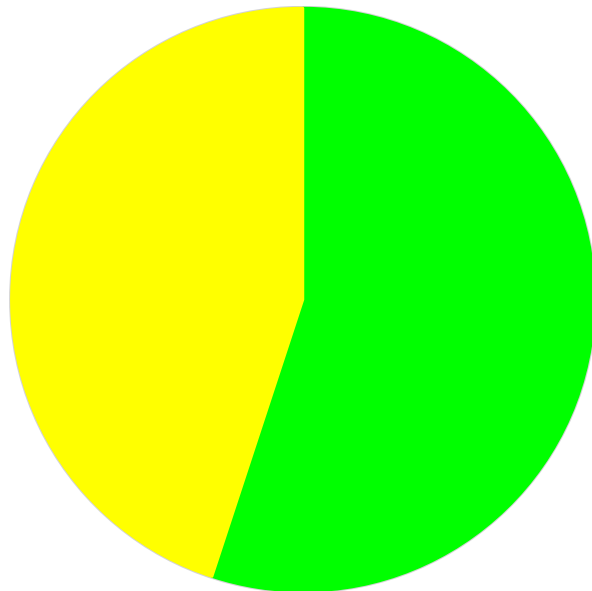
12. The Personnel Category options provided under the Cost Proposal has five apparent hierarchical Sr/HPMS/Data/Analyst classifications. Can RIDOT provide definitions to illustrate the distinctiveness of each classification? For example, how can the respondents know which row to apply to their Roads and Highways or GIS personnel or technical documentation writers?

A: RIDOT has created general staff categories following a typical allocation of staff resources based on personnel experience and allocated between the project manager, and senior and junior personnel. It is up to the consultant to allocate individual personnel to these categories as they see fit. Respondents may include supplemental information for these staff categories in their proposal if they wish to provide clarification on how they propose to assign work to these staff categories.

FULL EXTENT LANE MILES RATING (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

LANE MILES FULL EXTENT GOOD	200.004
LANE MILES FULL EXTENT FAIR	163.321
LANE MILES FULL EXTENT POOR	0.000
TOTAL	363.325
ESTIMATED TOTAL INTERSTATE LANE MILES MISSING OR INVALID DATA	0.528
% ESTIMATED TOTAL INTERSTATE LANE MILES MISSING OR INVALID DATA - LIMIT 5.0%	0.15 %
SAMPLE SIZE	72.03 %
% SURFACE TYPE BETWEEN 2 AND 10 RATED AS G-F-P	99.85 %



- LANE MILES FULL EXTENT GOOD (55.05%)
- LANE MILES FULL EXTENT FAIR (44.95%)
- LANE MILES FULL EXTENT POOR (0.00%)

THE HPMS PAVEMENT REPORT CARD'S PURPOSE IS TO PROVIDE FEEDBACK TO DIVISIONS AND STATES ON THEIR HPMS PAVEMENT SUBMITTAL DATA IN RESPONSE TO REQUIREMENTS OF 23 CFR 490. THE REPORT CARD IS FOR INFORMATION ONLY AND SHOULD NOT BE CONSIDERED THE OFFICIAL CALCULATION OF MEASURES OR MISSING OR INVALID DATA FOR A STATE.

BASED ON 23 CFR 490 THE REPORT CARD IS ANALYZING FULL EXTENT, NOT SAMPLE BASED, PAVEMENT DATA. STATES ARE ENCOURAGED TO SUBMIT FULL EXTENT DATA PRIOR TO ITS REQUIREMENT SO THEY CAN BETTER ASSESS THEIR DATA SUBMISSION.

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

DATA CHECK AND PAVEMENT DATA QUANTITY (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

DATA CHECK

FIPS CODE	44	STATE NAME	Rhode Island	STATE ABBREVIATION	RI
YEAR 2016 HM-41 INTERSTATE CENTERLINE MILES					70.009
SUBMITTED DATA INTERSTATE CENTERLINE MILES					70.009
DELTA					0.000
YEAR 2016 HM-43 INTERSTATE LANE MILES					378.464
SUBMITTED DATA INTERSTATE LANE MILES					378.154
DELTA					-0.310
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS A BRIDGE					363.853

DATA QUANTITY - PAVEMENT

TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING CRACKING PERCENT DATA FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.528
TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING FAULTING DATA FROM PCC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.528
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING RUTTING DATA FROM AC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.528
LANE MILES FULL EXTENT SURFACE TYPE IS NULL AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 1 UNSURFACED AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 11 OTHER AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS AC	363.853
LANE MILES FULL EXTENT SURFACE TYPE IS PCC	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS CRCP	0.000
TOTAL INTERSTATE LANE MILES WHERE THROUGH LANES IS CODED AS A 1,2, OR 3. ALTHOUGH THIS IS POSSIBLE AT INTERSTATE TERMINAL SECTION OR SOME INTERCHANGES THESE SECTIONS SHOULD BE VERIFIED.	0.000
TOTAL CENTERLINE MILES WHERE THROUGH_LANES IS MISSING - MARKED AS UNRESOLVED DATA	0.000

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - IRI (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA. IRI DATA IS REQUIRED TO BE COLLECTED AND REPORTED ANNUALLY ON THE INTERSTATE ALONG WITH THE DATE OF COLLECTION. IRI COLLECTION YEAR SHOULD EQUAL YEAR_RECORD	0.000
% INTERSTATE LANE MILES FULL EXTENT IRI COLLECTION YEAR DOES NOT EQUAL YEAR_RECORD. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.528
% INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.15 %
FULL EXTENT LANE MILES WITH MISSING OR INVALID IRI, FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	0.528
% FULL EXTENT LANE MILES MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES - SIP SP5	0.15 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI IS LESS THAN 30.0 INCHES/MILE. ALTHOUGH VALUES LESS THAN 30.0 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT IRI LESS THAN 30.0 INCHES PER MILE. AVERAGE VALUE IS 1.23%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI IS GREATER THAN 400.0 INCHES/MILE. ALTHOUGH VALUES GREATER THAN 400.0 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT IRI GREATER THAN 400.0 INCHES PER MILE. AVERAGE VALUE IS 0.0%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
LANE MILES FULL EXTENT GOOD BASED ON PSR WHERE IRI IS NULL	0.000
LANE MILES FULL EXTENT POOR BASED ON PSR WHERE IRI IS NULL	0.000

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - CRACKING PERCENT (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	100.776
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%. AVERAGE IS 55.46% WITH A SD OF 26.65%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 82.10%	27.70 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0.00% AND < 1.00%. THIS MAY BE AN INDICATION THAT A STATE MAY HAVE A PROBLEM CONVERTING DECIMAL TO PERCENTAGES. CRACKING PERCENT IS TO BE REPORTED WITH A PRECISION OF 1.00% OR LESS. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	41.750
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0.00% AND < 1.00%. AVERAGE IS 9.03% WITH A SD OF 15.67%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 24.70%	11.47 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FOR PAVEMENTS CODED AS HMA WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54.20%. CRACKING PERCENT FOR HMA IS LIMITED TO WHEELPATH AND THEREFORE SHOULD NOT EXCEED 54.20% FOR A 12-FOOT LANE WIDTH. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	0.000
% INTERSTATE LANE MILES FULL EXTENT FOR HMA PAVEMENTS WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54.20%. AVERAGE IS 0.16% WITH A SD OF 0.30%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100.00%. AVERAGE IS 0.18% WITH A SD OF 0.70%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.89%	0.00 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - FAULTING AND RUTTING (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00. AVERAGE IS 28.92% WITH A SD OF 33.54%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 84.30%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH. AVERAGE IS 0.20% WITH A SD OF 1.22%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00. AVERAGE IS 9.53% WITH A SD OF 20.33%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 29.85%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH. AVERAGE IS 0.04% WITH A SD OF 0.31%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE RUTTING IS REPORTED ON SURFACE TYPE = PCC OR CRCP	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE FAULTING IS REPORTED ON SURFACE TYPE = HMA OR CRCP	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

HPMS 8.0.1 PAVEMENT DATA QUALITY - BRIDGE AND SECTION LENGTH (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

BRIDGE LOCATION

PER MAP-21 BRIDGES ARE EXCLUDED FROM THE PERFORMANCE MEASURE CALCULATION. THE ABILITY TO ACCURATELY LOCATE BRIDGES IN HPMS IS VERY IMPORTANT IN THE CORRECT CALCULATION OF PAVEMENT CONDITION.

COUNT OF MAINLINE INTERSTATE BRIDGES OF DATA YEAR 2017 FROM NBI INVENTORY	98
TOTAL INTERSTATE LANE MILES OF BRIDGES OF DATA YEAR 2017 FROM NBI INVENTORY	17.446
TOTAL LANE MILES ON FULL EXTENT BASIS CODED AS A BRIDGE IN HPMS	14.301
PERCENT HPMS BRIDGE LANE MILES OF NBI BRIDGE LANE MILES. CUTOFF FOR VERIFICATION IS LESS THAN 90.00% OR GREATER THAN 100.00%.	81.97 %

SECTION LENGTH

DISTRESS DATA SHOULD BE REPORTED IN SECTIONS 0.1 MILE IN LENGTH OR SHORTER

TOTAL INTERSTATE LANE MILES WHERE SECTION LENGTH IS GREATER THAN 0.11 MILE (0.1 MILE NOMINAL) EXCLUDING BRIDGES - MARKED AS UNRESOLVED DATA	0.00
CUTOFF VALUE FOR VERIFICATION IS 0.00%	0.00 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

CRACKING PERCENT

The Cumulative and Frequency Distribution of Interstate Cracking Percent graph is based on full extent, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

FAULTING

The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

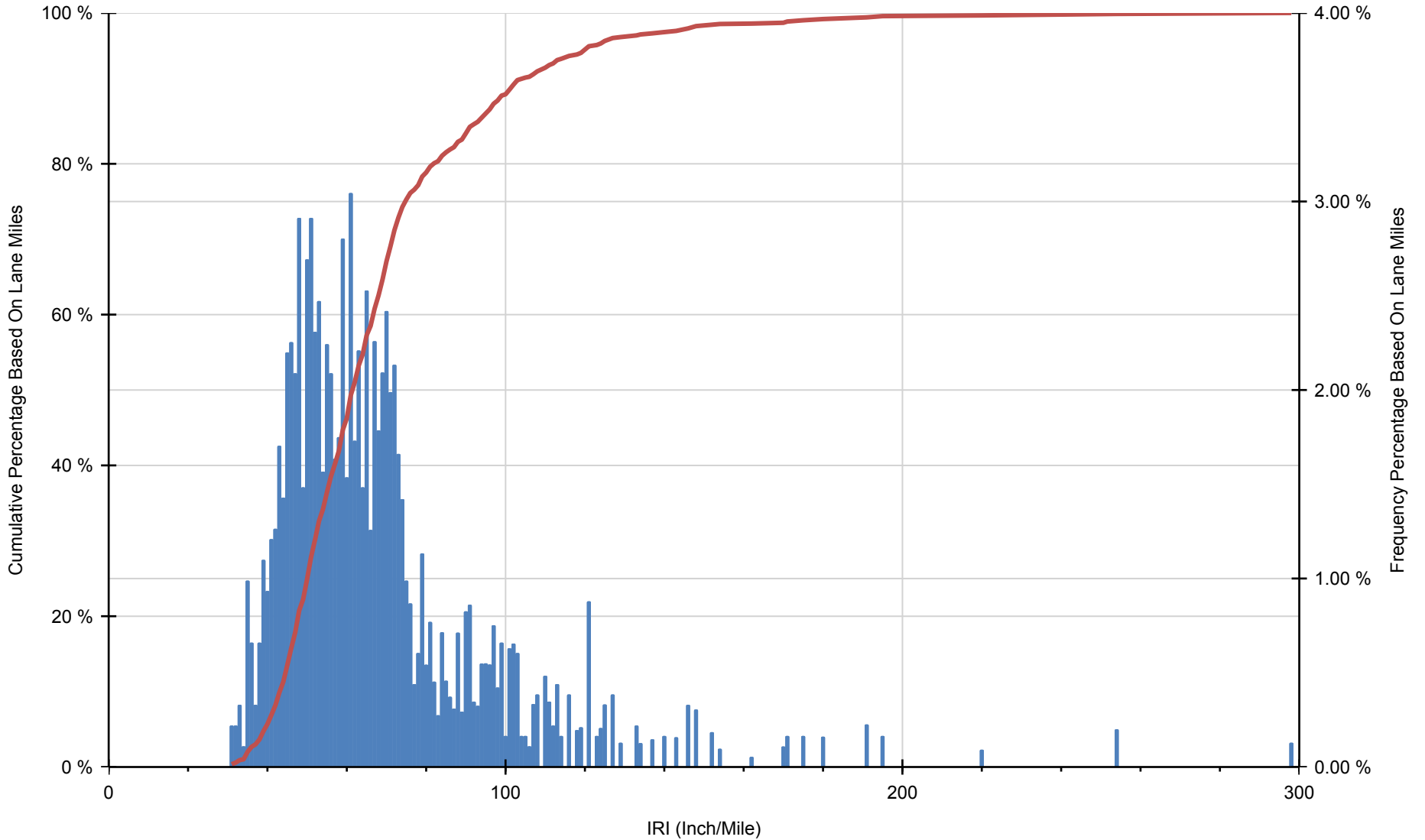
RUTTING

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI (INTERSTATE)

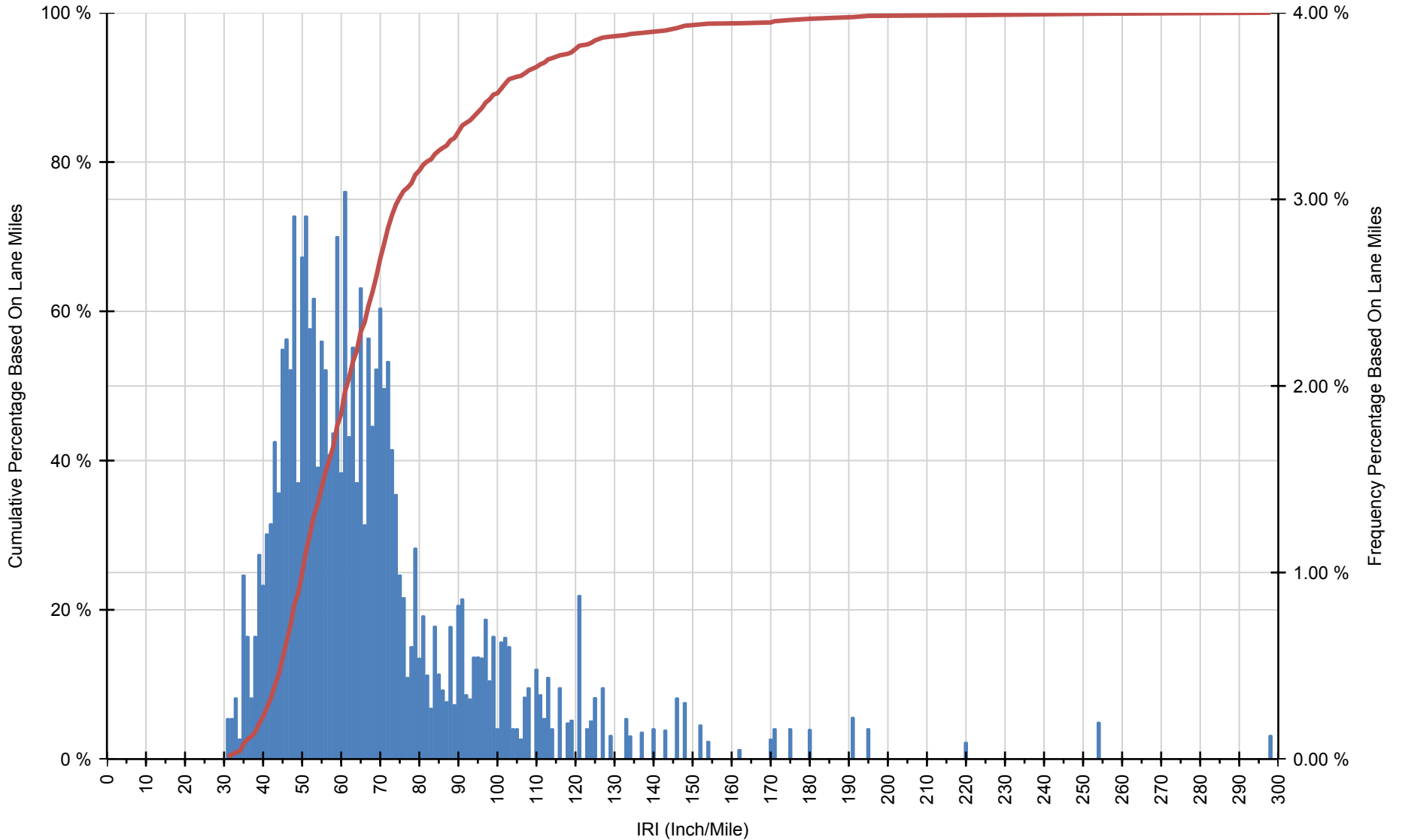
Stage: Review
Year: 2017
State: 44 - Rhode Island



(Frequency of Missing IRI = 0.145%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI - CLOSEUP 0 TO 400 (INTERSTATE)

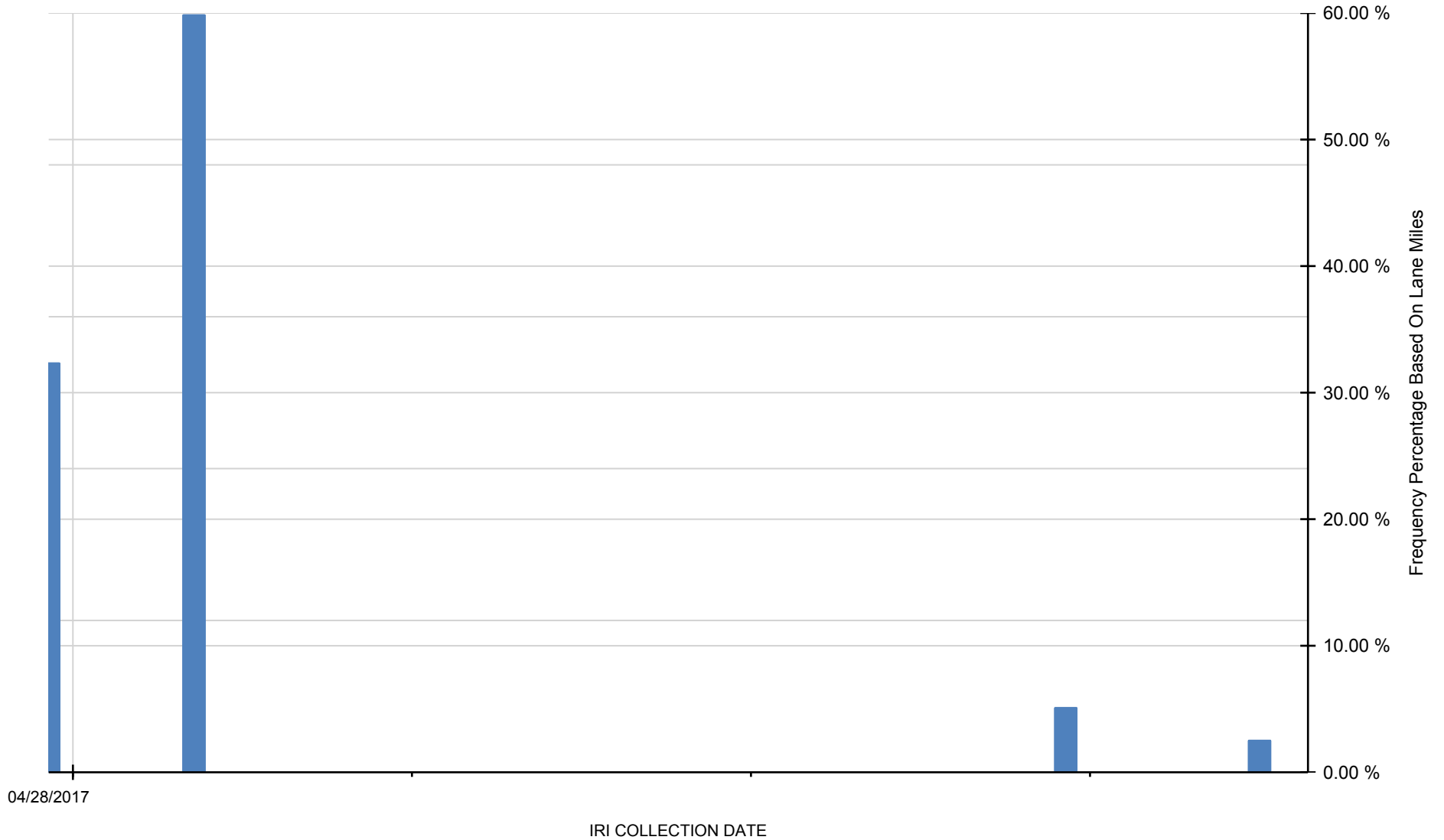
Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



(Frequency of Missing IRI = 0.145%, missing data is included in the cumulative distribution graph.)

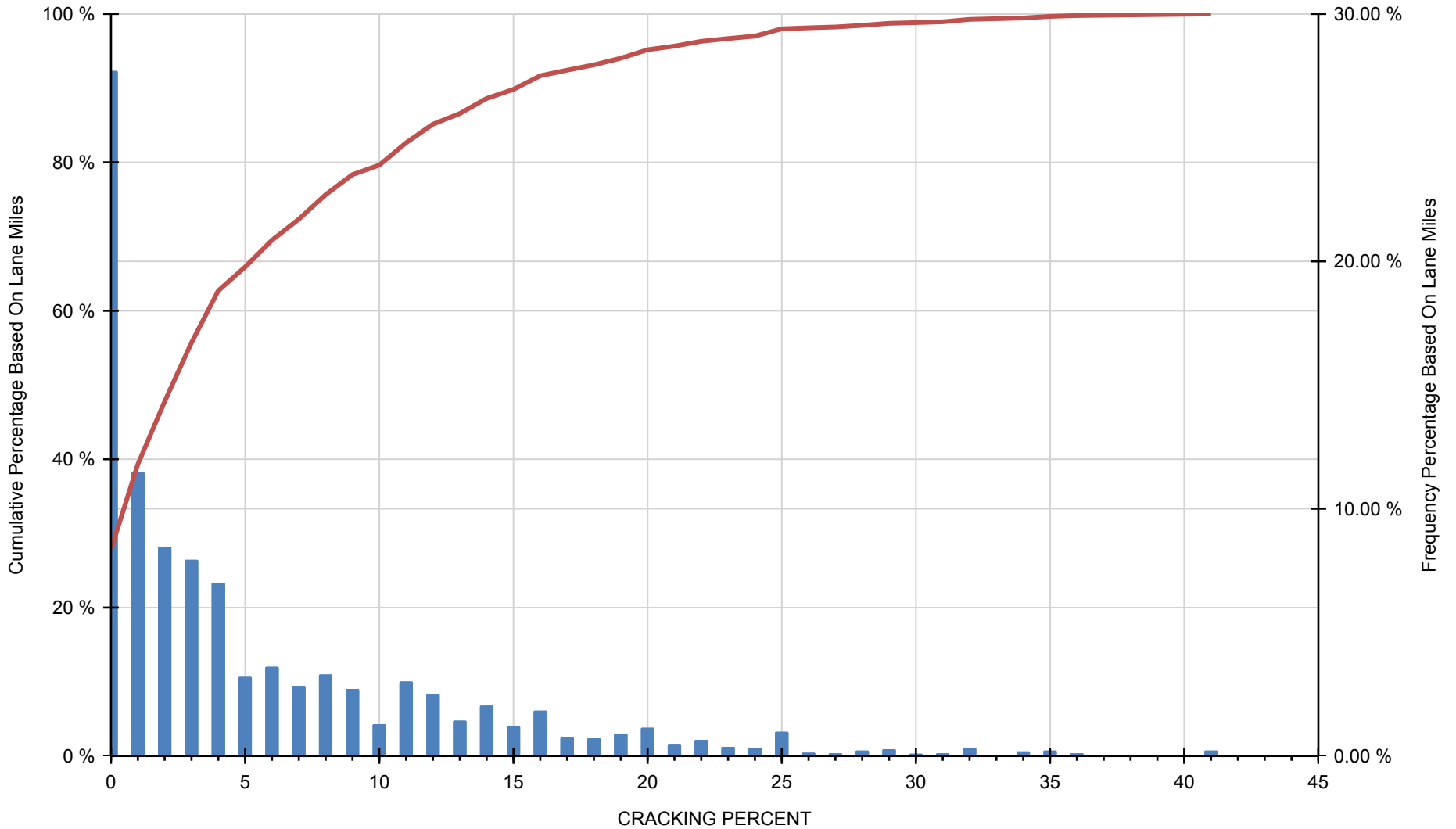
CUMULATIVE AND FREQUENCY DISTRIBUTION (INTERSTATE IRI COLLECTION DATES)

Stage: Review
Year: 2017
State: 44 - Rhode Island



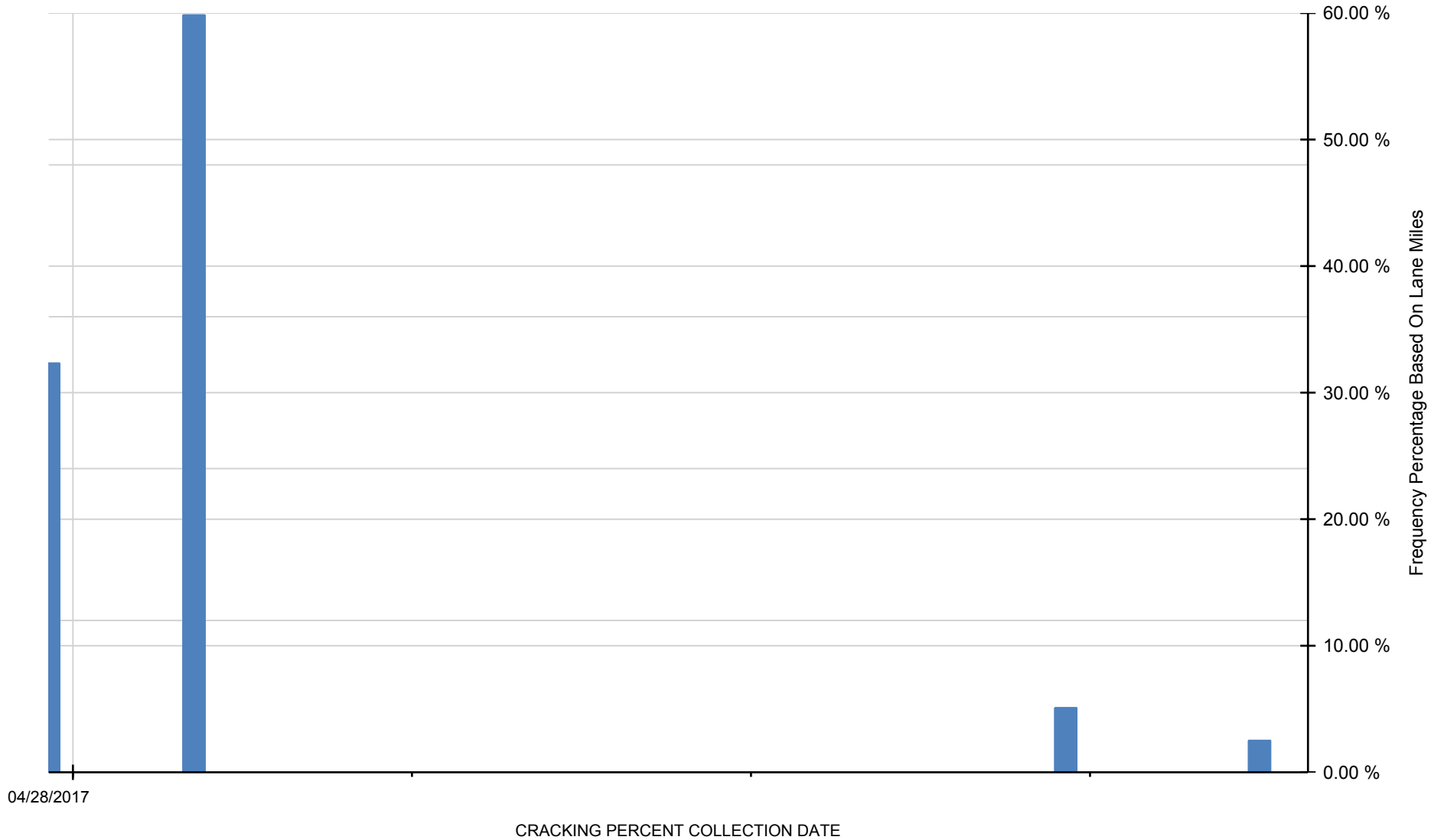
CUMULATIVE AND FREQUENCY DISTRIBUTION - CRACKING PERCENT (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



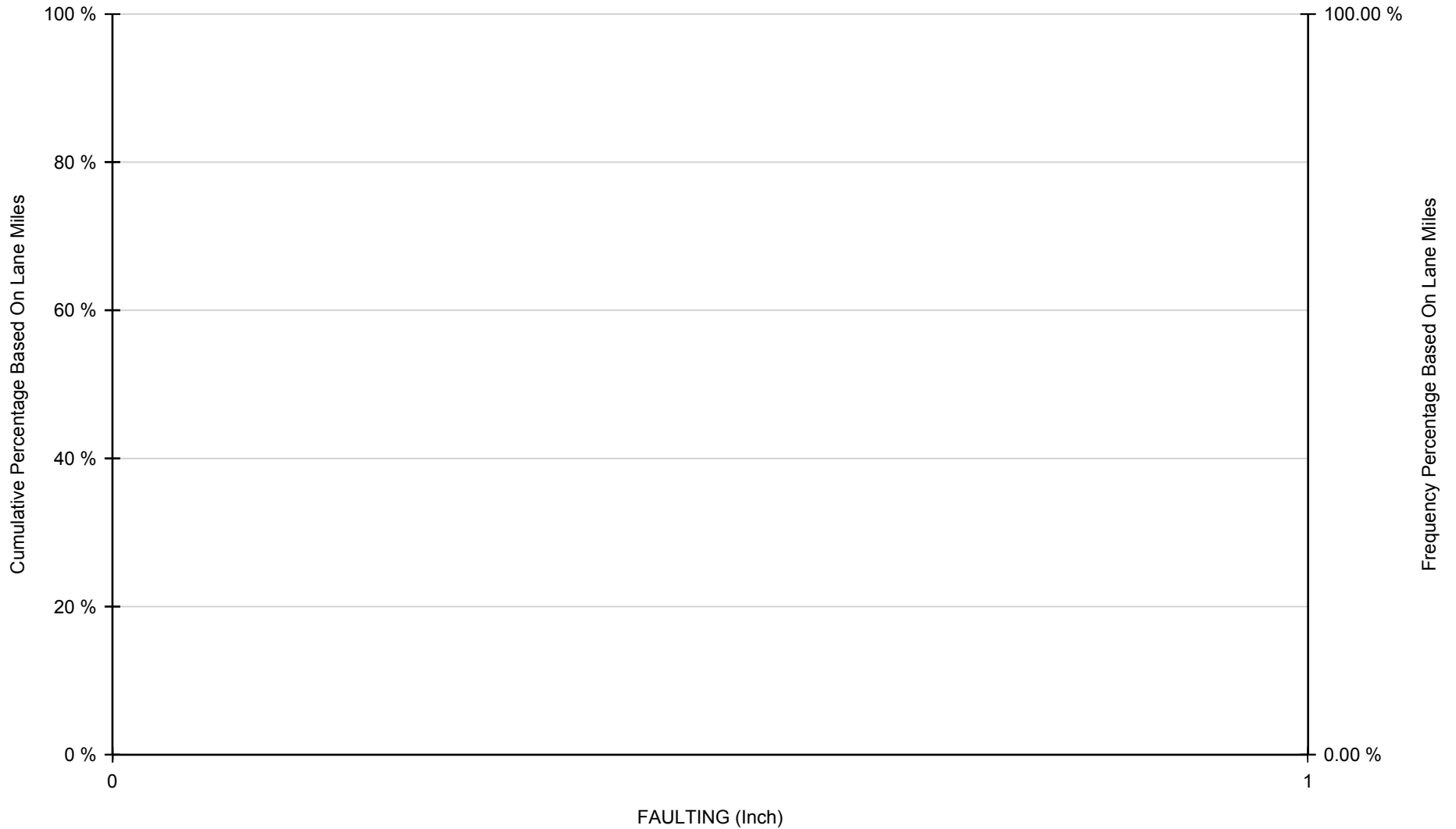
(Frequency of Missing CRACKING_PERCENT = 0.145%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION (INTERSTATE CRACKING PERCENT COLLECTION DATES)



CUMULATIVE AND FREQUENCY DISTRIBUTION - FAULTING (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

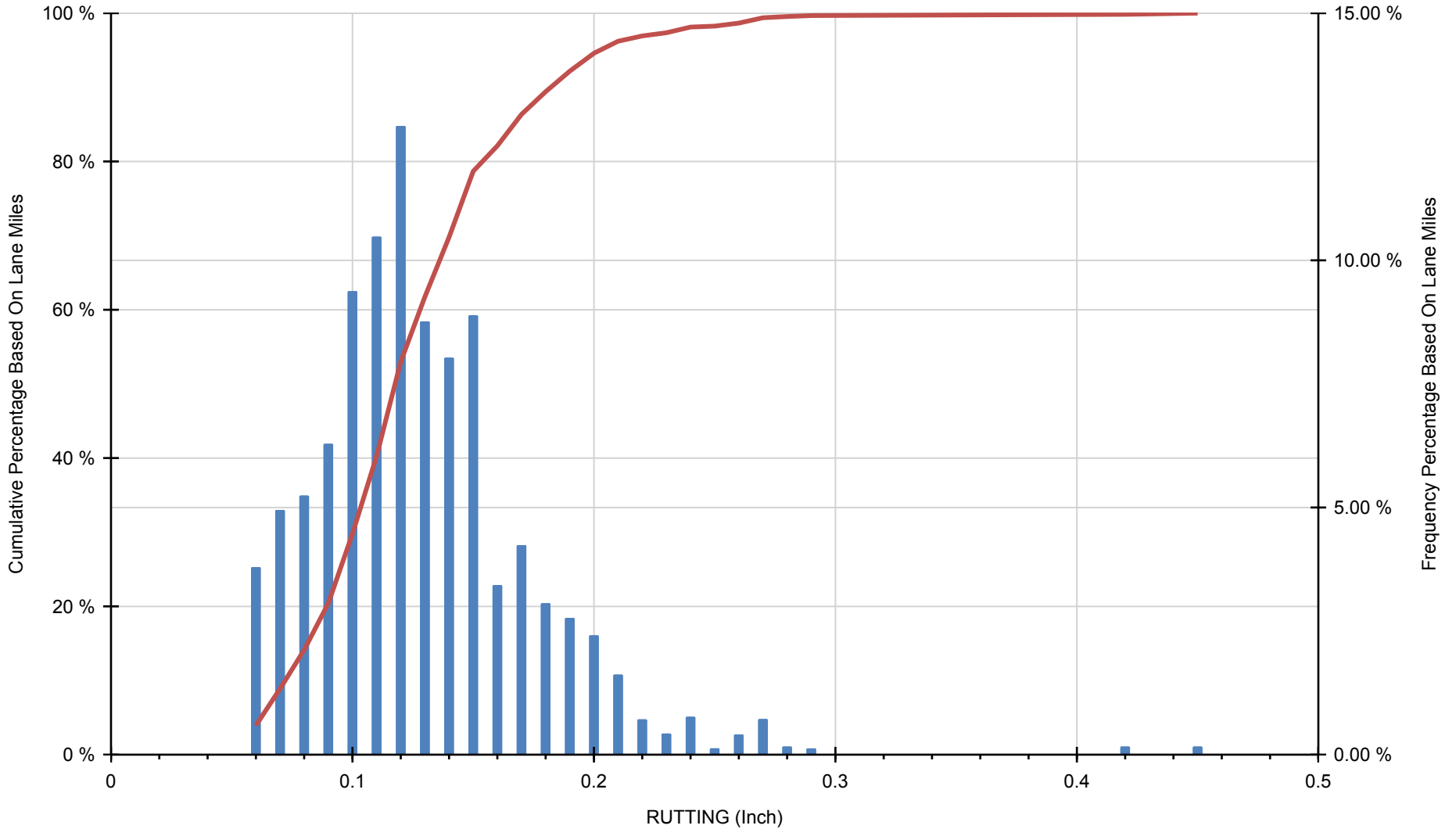


(Frequency of Missing FAULTING = 0.000%, missing data is included in the cumulative distribution graph.)

An error has occurred while processing Report 'PRCExpandedSampleLaneMilesRating':
Length cannot be less than zero.
Parameter name: length

CUMULATIVE AND FREQUENCY DISTRIBUTION - RUTTING (INTERSTATE)

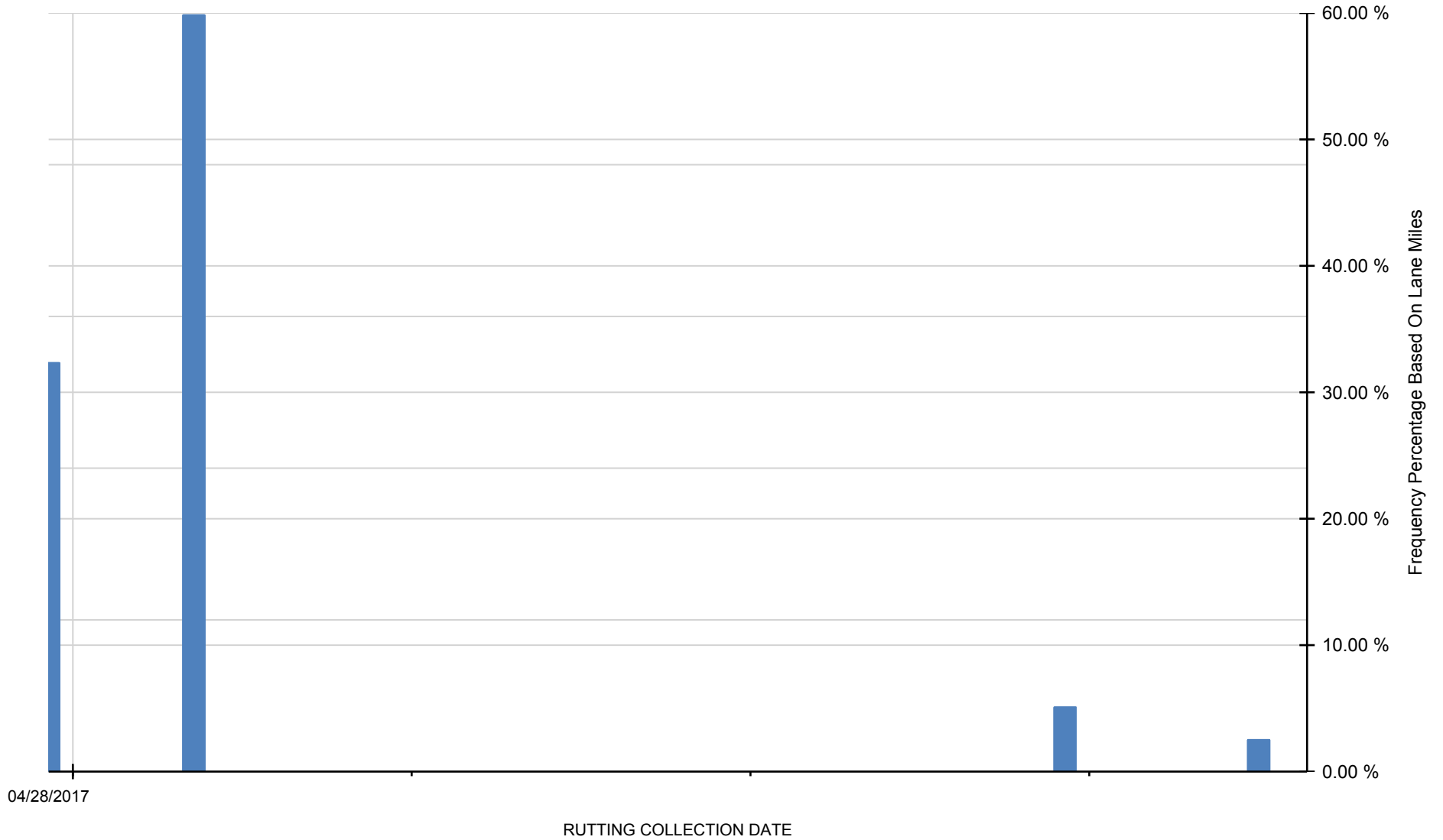
Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



(Frequency of Missing RUTTING = 0.145%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION (INTERSTATE RUTTING COLLECTION DATES)

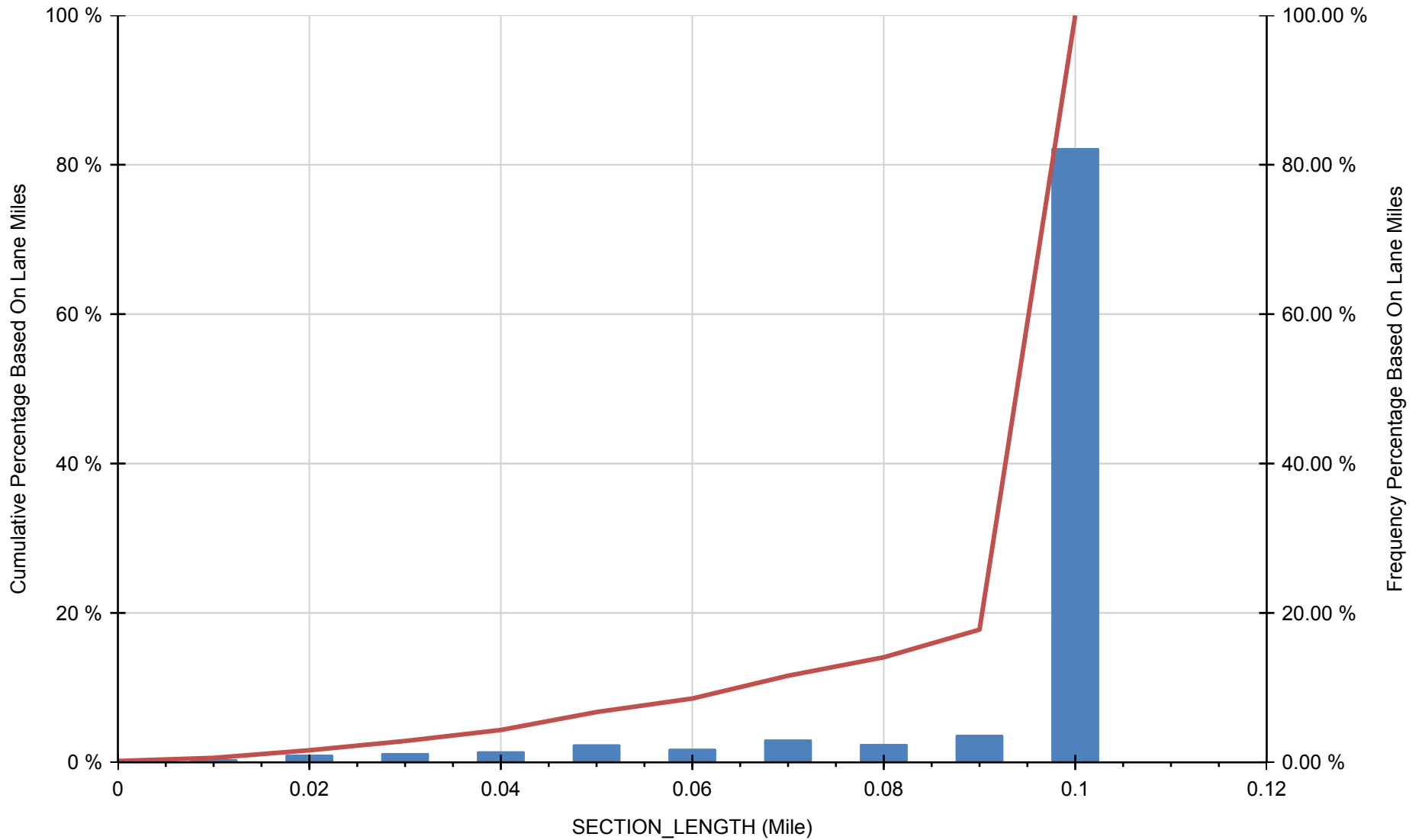
Stage: Review
Year: 2017
State: 44 - Rhode Island



23 CFR 490 REQUIRES THAT IRI DATA BE COLLECTED AND REPORTED IN SECTIONS NOMINALLY NO LONGER THAN 0.1 MILE WHILE ALLOWING FOR SHORTER SECTIONS AT BRIDGES AND TERMINAL SECTIONS. MAXIMUM SECTION LENGTH ALLOWED IS 0.11 MILE. THE REGULATION ALSO STATES THAT ALL FOUR METRICS SHOULD BE REPORTED IN 0.1 MILE SECTIONS THAT ARE SPATIALLY ALLIGNED. IF YOUR STATE REPORTS IN SECTIONS EXCEEDING THE MAXIMUM LENGTH YOU MAY WISH TO INVESTIGATE IF THIS IS DUE TO VENDOR PREFERENCE OR DYNAMIC SEGMENTATION TAKING PLACE DURING UPLOADING TO THEIR PAVEMENT MANAGEMENT SYSTEM OR HPMS. IF THE DATA DISTRIBUTION SHOWS A LARGE PERCENTAGE OF VERY SHORT SLIVERS (0.001 MILE) IT MAY INDICATE PROBLEMS WITH SPATIAL ALIGNMENT DURING DATA COLLECTION.

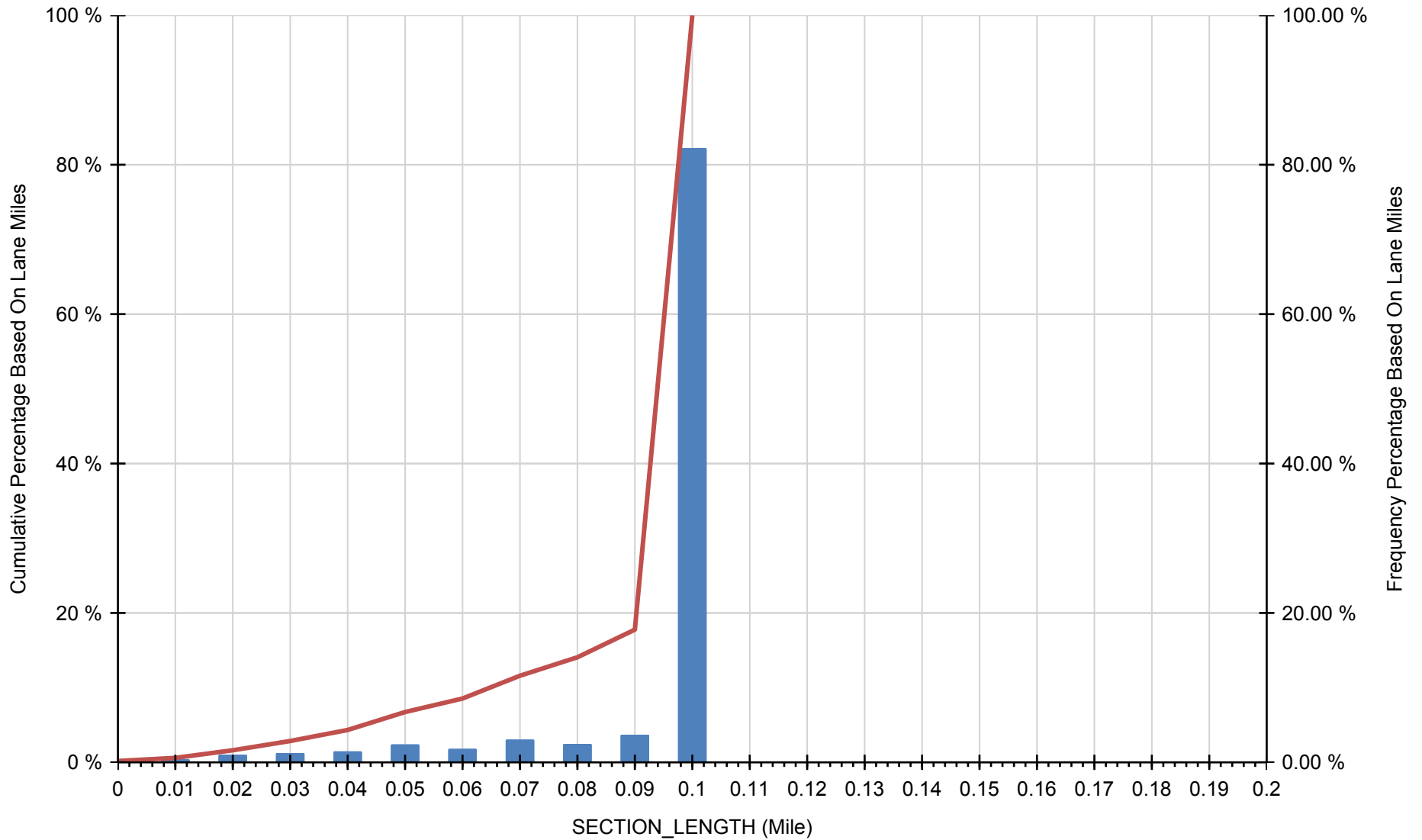
CUMULATIVE AND FREQUENCY DISTRIBUTION - SECTION LENGTHS (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



CUMULATIVE AND FREQUENCY DISTRIBUTION - SECTION LENGTHS - CLOSEUP 0.0 TO 0.2 MILE IN LENGTH (INTERSTATE)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



FULL EXTENT LANE MILES RATING (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

LANE MILES FULL EXTENT GOOD	247.332
LANE MILES FULL EXTENT FAIR	900.264
LANE MILES FULL EXTENT POOR	279.102
TOTAL	1,426.698
ESTIMATED TOTAL NON-INTERSTATE NHS LANE MILES MISSING OR INVALID DATA	15.134
% ESTIMATED TOTAL NON-INTERSTATE NHS LANE MILES MISSING OR INVALID DATA - LIMIT 5.0%	1.05 %
SAMPLE SIZE	41.87 %
% SURFACE TYPE BETWEEN 2 AND 10 RATED AS G-F-P	98.95 %



- LANE MILES FULL EXTENT GOOD (17.34%)
- LANE MILES FULL EXTENT FAIR (63.10%)
- LANE MILES FULL EXTENT POOR (19.56%)

THE HPMS PAVEMENT REPORT CARD'S PURPOSE IS TO PROVIDE FEEDBACK TO DIVISIONS AND STATES ON THEIR HPMS PAVEMENT SUBMITTAL DATA IN RESPONSE TO REQUIREMENTS OF 23 CFR 490. THE REPORT CARD IS FOR INFORMATION ONLY AND SHOULD NOT BE CONSIDERED THE OFFICIAL CALCULATION OF MEASURES OR MISSING OR INVALID DATA FOR A STATE.

BASED ON 23 CFR 490 THE REPORT CARD IS ANALYZING FULL EXTENT, NOT SAMPLE BASED, PAVEMENT DATA. STATES ARE ENCOURAGED TO SUBMIT FULL EXTENT DATA PRIOR TO ITS REQUIREMENT SO THEY CAN BETTER ASSESS THEIR DATA SUBMISSION.

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

DATA CHECK AND PAVEMENT DATA QUANTITY (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

DATA CHECK

FIPS CODE	44	STATE NAME	Rhode Island	STATE ABBREVIATION	RI
YEAR 2016 HM-41 NON-INTERSTATE NHS CENTERLINE MILES					531.852
SUBMITTED DATA NON-INTERSTATE NHS CENTERLINE MILES					531.755
DELTA					-0.097
YEAR 2016 HM-43 NON-INTERSTATE NHS LANE MILES					1,478.989
SUBMITTED DATA NON-INTERSTATE NHS LANE MILES					1,477.865
DELTA					-1.124
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS A BRIDGE					1,441.832

DATA QUANTITY - PAVEMENT

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING CRACKING PERCENT DATA FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	15.062
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING FAULTING DATA FROM PCC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	15.121
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	10.053
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING RUTTING DATA FROM AC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	15.062
LANE MILES FULL EXTENT SURFACE TYPE IS NULL AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 1 UNSURFACED AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 11 OTHER AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS AC	1,441.152
LANE MILES FULL EXTENT SURFACE TYPE IS PCC	0.680
LANE MILES FULL EXTENT SURFACE TYPE IS CRCP	0.000
TOTAL CENTERLINE MILES WHERE THROUGH_LANES IS MISSING - MARKED AS UNRESOLVED DATA	0.000

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - IRI (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA. IRI DATA IS REQUIRED TO BE COLLECTED AND REPORTED ANNUALLY ON THE NON-INTERSTATE NHS ALONG WITH THE DATE OF COLLECTION. IRI COLLECTION YEAR SHOULD EQUAL YEAR_RECORD OR YEAR_RECORD-1	10.053
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI YEAR DOES NOT EQUAL YEAR_RECORD NOR YEAR_RECORD-1. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.70 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS UNRESOLVED DATA	15.121
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	1.05 %
FULL EXTENT LANE MILES WITH MISSING OR INVALID IRI, FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	15.121
% FULL EXTENT LANE MILES MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES - SIP SP5	1.05 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI IS LESS THAN 30.0 INCHES/MILE. ALTHOUGH VALUES LESS THAN 30.0 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI LESS THAN 30.0 INCHES PER MILE. AVERAGE VALUE IS 0.33%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI IS GREATER THAN 400.0 INCHES/MILE. ALTHOUGH VALUES GREATER THAN 400.0 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	30.369
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI GREATER THAN 400.0 INCHES PER MILE. AVERAGE VALUE IS 0.21%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	2.11 %
LANE MILES FULL EXTENT GOOD BASED ON PSR WHERE IRI IS NULL	0.000
LANE MILES FULL EXTENT POOR BASED ON PSR WHERE IRI IS NULL	0.000

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - CRACKING PERCENT (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	281.613
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%. AVERAGE IS 37.22% WITH A SD OF 23.84%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 61.10%	19.53 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0.00% AND < 1.00%. THIS MAY BE AN INDICATION THAT A STATE MAY HAVE A PROBLEM CONVERTING DECIMAL TO PERCENTAGES. CRACKING PERCENT IS TO BE REPORTED WITH A PRECISION OF 1.00% OR LESS. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	105.222
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0.00% AND < 1.00%. AVERAGE IS 8.06% WITH A SD OF 10.93%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 18.99%	7.30 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FOR PAVEMENTS CODED AS HMA WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54.20%. CRACKING PERCENT FOR HMA IS LIMITED TO WHEELPATH AND THEREFORE SHOULD NOT EXCEED 54.20% FOR A 12-FOOT LANE WIDTH. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	10.208
% NON-INTERSTATE NHS LANE MILES FULL EXTENT FOR HMA PAVEMENTS WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54.20%. AVERAGE IS 0.71% WITH A SD OF 1.52%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.71 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100.00%. AVERAGE IS 0.11% WITH A SD OF 0.34%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.46%	0.00 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

PAVEMENT DATA QUALITY - FAULTING AND RUTTING (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00. AVERAGE IS 29.76% WITH A SD OF 30.32%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 79.80%	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH. AVERAGE IS 0.20% WITH A SD OF 1.28%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00. AVERAGE IS 5.12% WITH A SD OF 11.35%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 16.47%	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH. AVERAGE IS 0.01% WITH A SD OF 0.05%, CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE RUTTING IS REPORTED ON SURFACE TYPE = PCC OR CRCP	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FAULTING IS REPORTED ON SURFACE TYPE = HMA OR CRCP	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

HPMS 8.0.1 PAVEMENT DATA QUALITY - BRIDGE AND SECTION LENGTH (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

BRIDGE LOCATION

PER MAP-21 BRIDGES ARE EXCLUDED FROM THE PERFORMANCE MEASURE CALCULATION. THE ABILITY TO ACCURATELY LOCATE BRIDGES IN HPMS IS VERY IMPORTANT IN THE CORRECT CALCULATION OF PAVEMENT CONDITION.	
COUNT OF MAINLINE NON-INTERSTATE NHS BRIDGES OF DATA YEAR 2017 FROM NBI INVENTORY	208
TOTAL NON-INTERSTATE NHS LANE MILES OF BRIDGES OF DATA YEAR 2017 FROM NBI INVENTORY	38.572
TOTAL LANE MILES ON FULL EXTENT BASIS CODED AS A BRIDGE IN HPMS	36.033
PERCENT HPMS BRIDGE LANE MILES OF NBI BRIDGE LANE MILES. CUTOFF FOR VERIFICATION IS LESS THAN 90.00% OR GREATER THAN 100.00%.	93.42 %

SECTION LENGTH

DISTRESS DATA SHOULD BE REPORTED IN SECTIONS 0.1 MILE IN LENGTH OR SHORTER	
TOTAL NON-INTERSTATE NHS LANE MILES WHERE SECTION LENGTH IS GREATER THAN 0.11 MILE (0.1 MILE NOMINAL) EXCLUDING BRIDGES - MARKED AS UNRESOLVED DATA	7.32
CUTOFF VALUE FOR VERIFICATION IS 0.00%	0.51 %

ITEMS SHADED ORANGE ARE HPMS PAVEMENT PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED

IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

CRACKING PERCENT

The Cumulative and Frequency Distribution of Interstate Cracking Percent graph is based on full extent, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

FAULTING

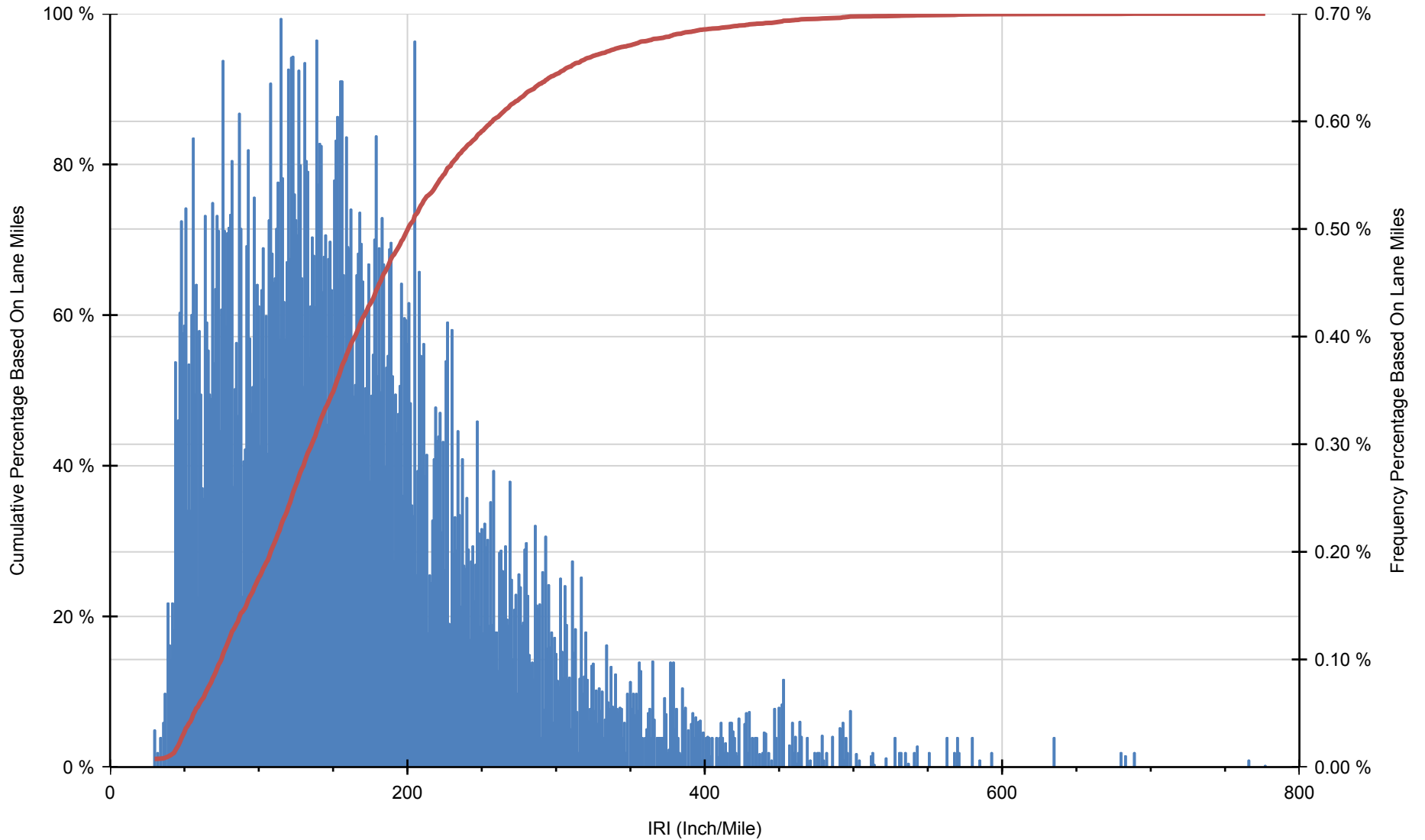
The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

RUTTING

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

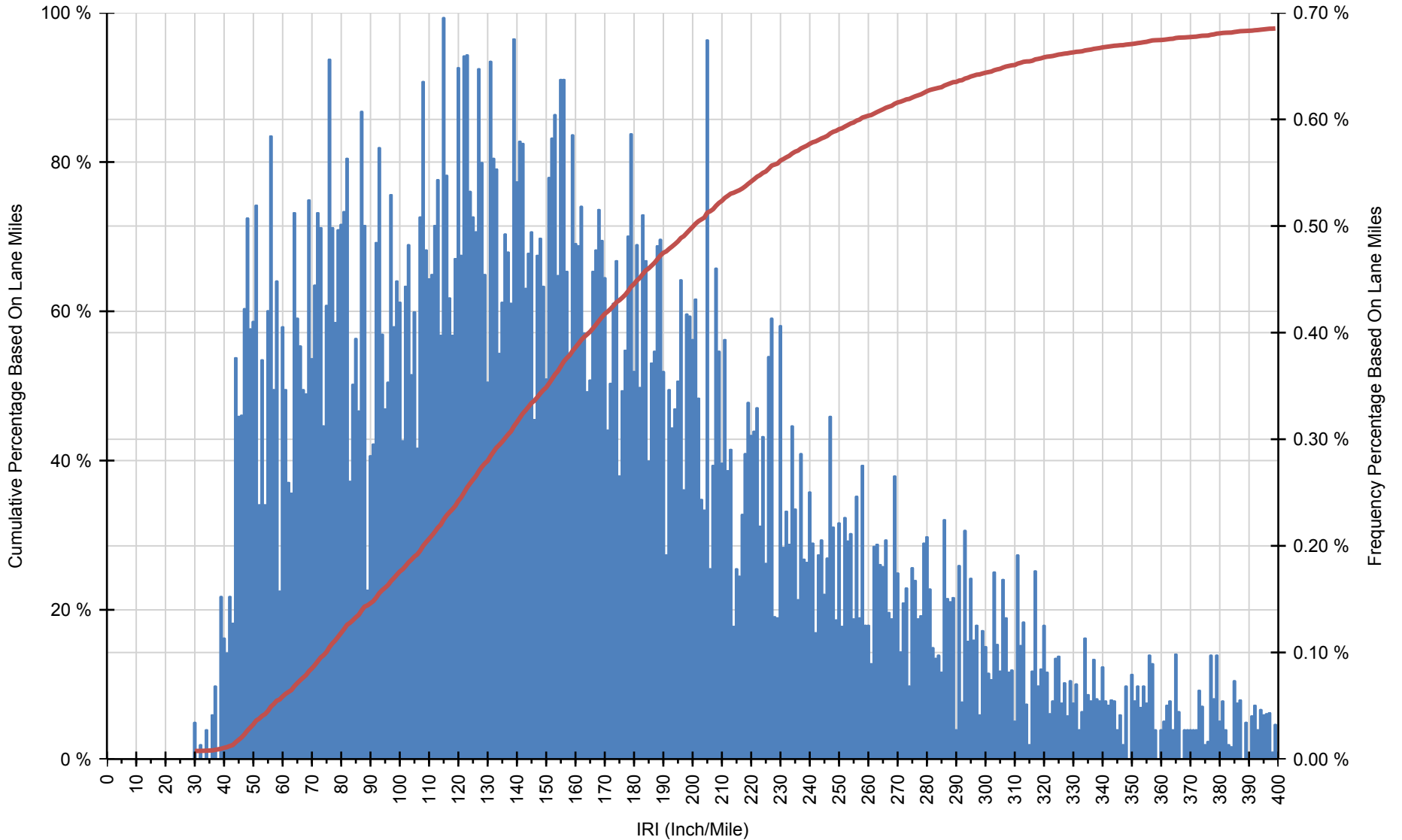
CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI (NON-INTERSTATE NHS)



(Frequency of Missing IRI = 1.049%, missing data is included in the cumulative distribution graph.)

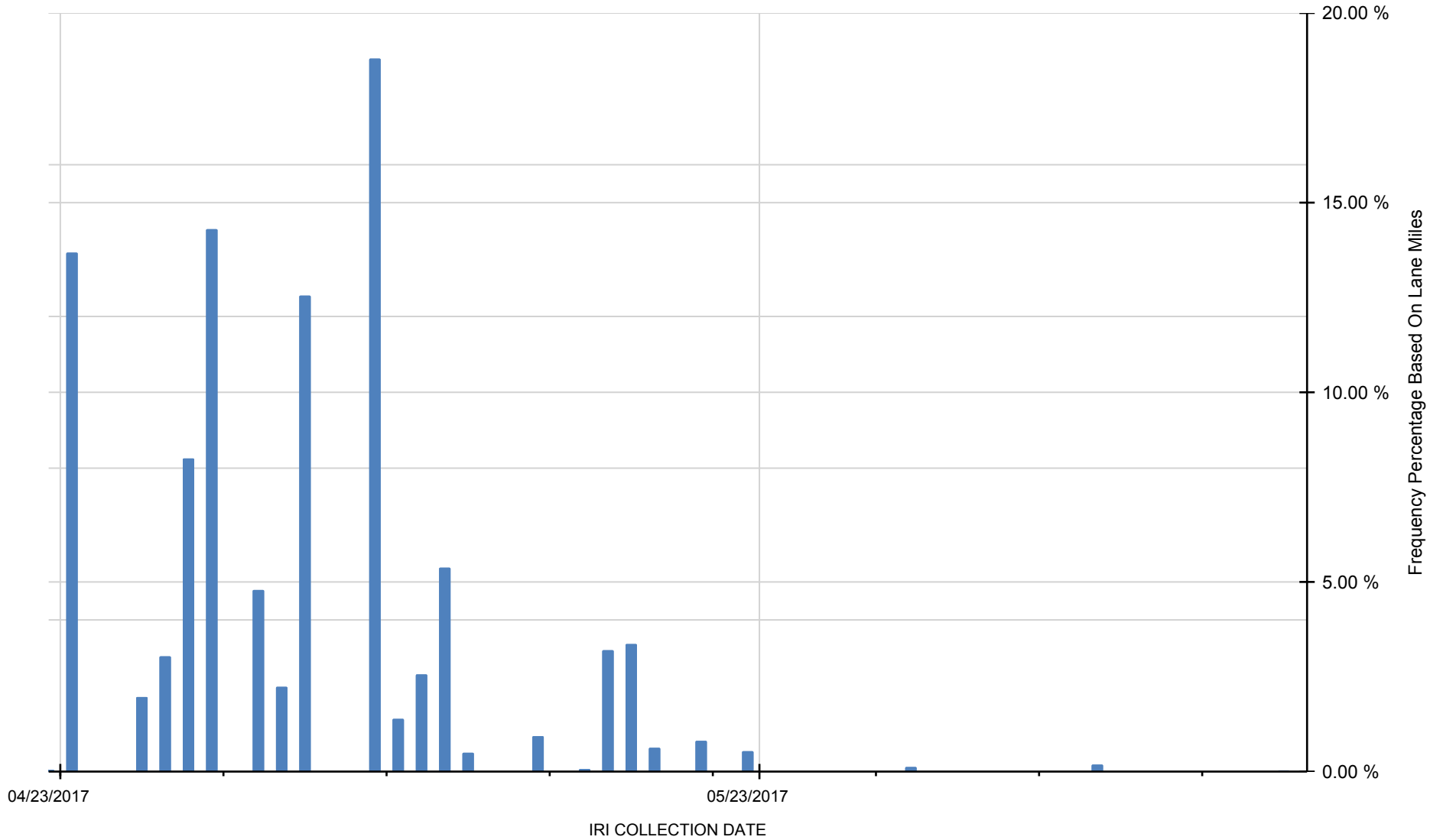
CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI - CLOSEUP 0 TO 400 (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



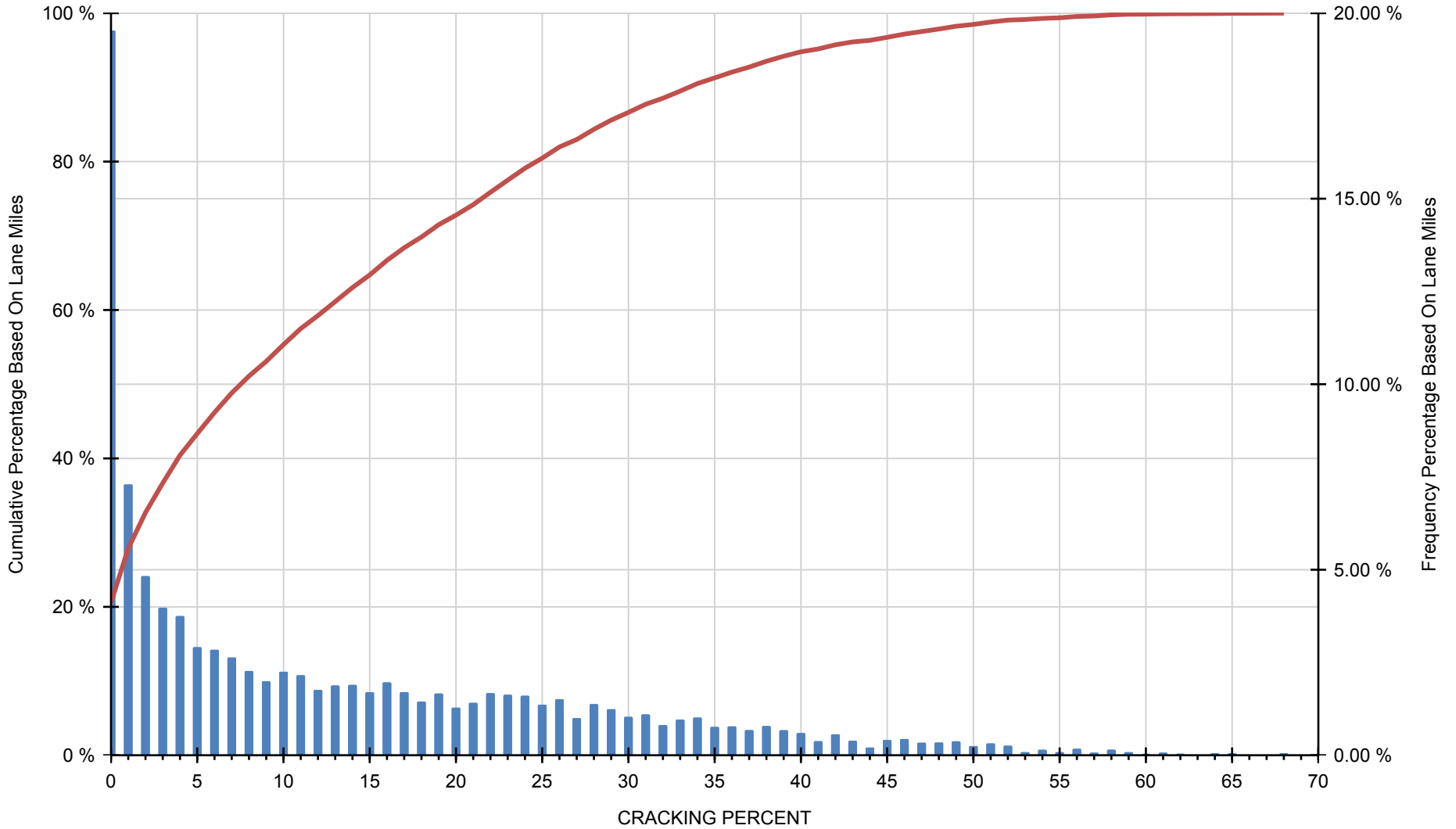
(Frequency of Missing IRI = 1.049%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION (NON-INTERSTATE NHS IRI COLLECTION DATES)



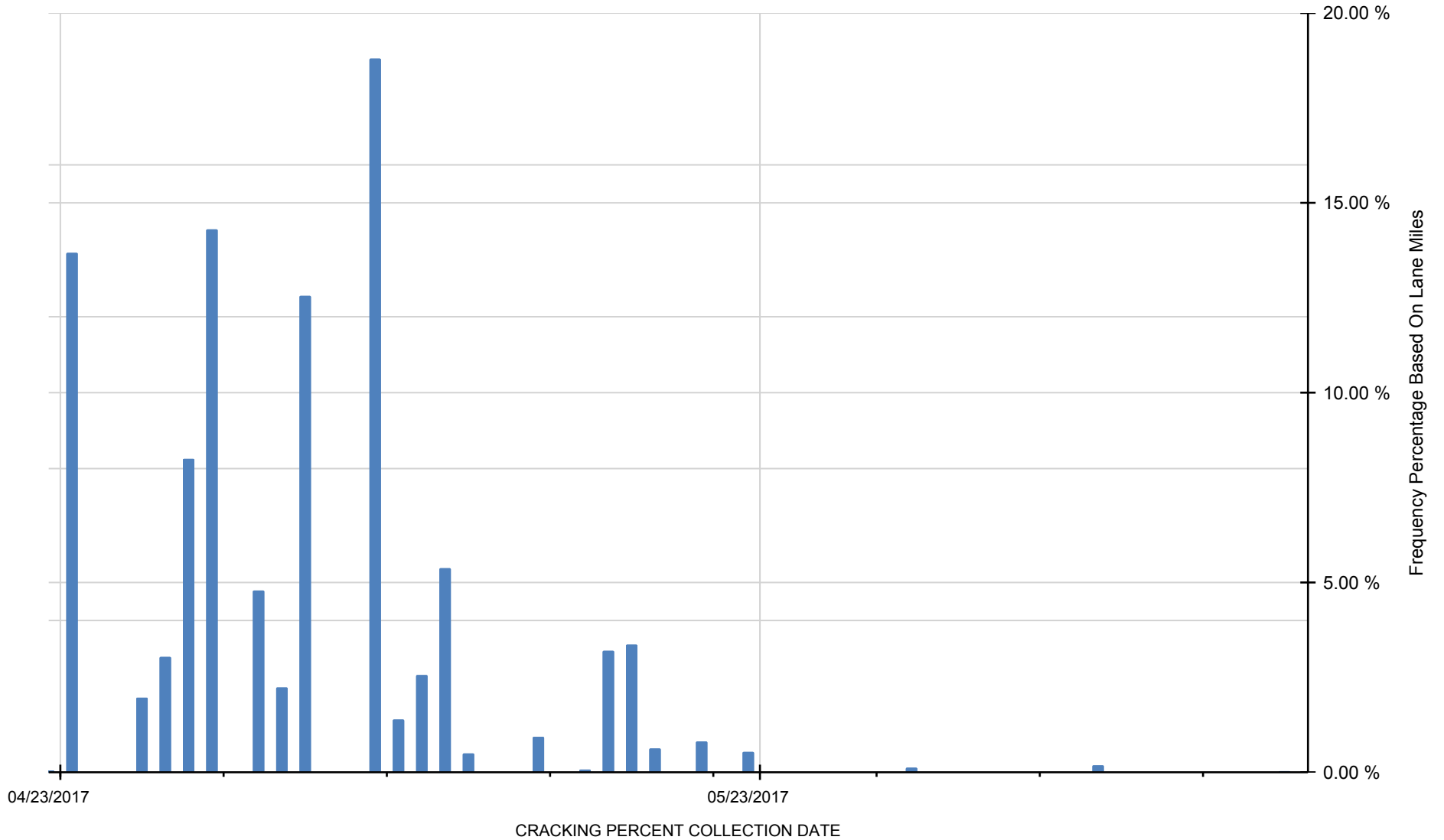
CUMULATIVE AND FREQUENCY DISTRIBUTION - CRACKING PERCENT (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



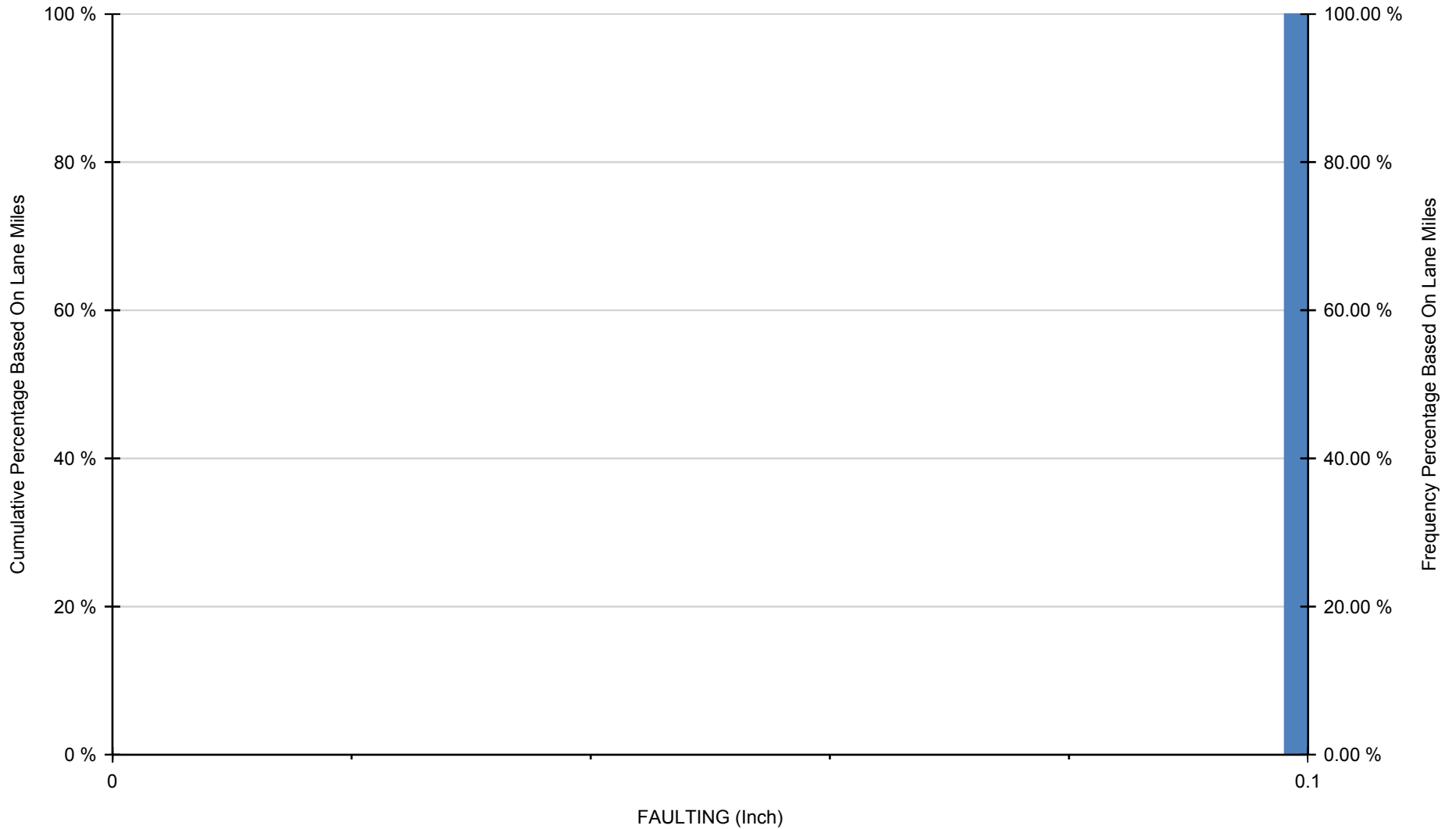
(Frequency of Missing CRACKING_PERCENT = 1.045%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION (NON-INTERSTATE NHS CRACKING PERCENT COLLECTION DATES)



CUMULATIVE AND FREQUENCY DISTRIBUTION - FAULTING (NON-INTERSTATE NHS)

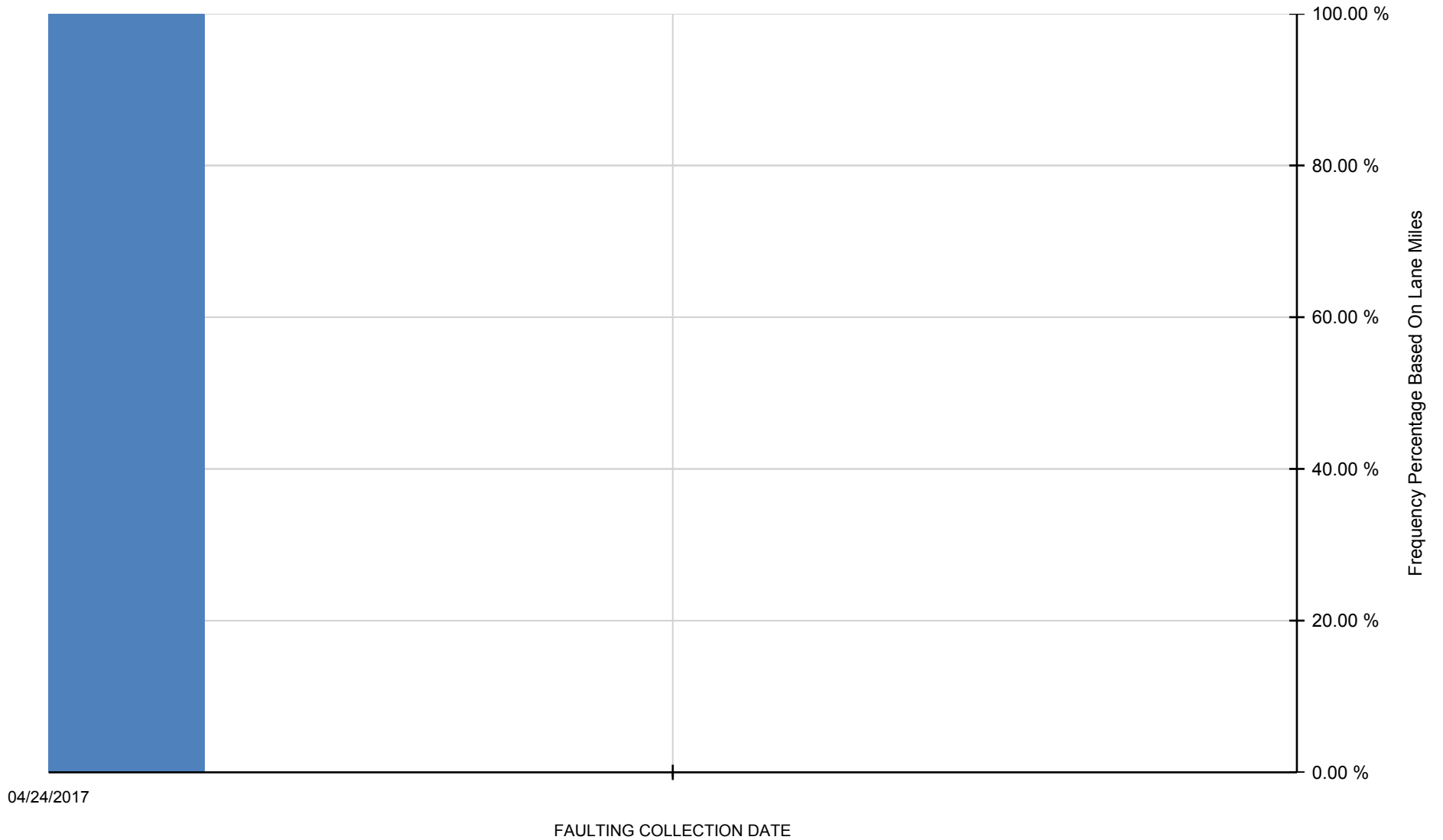
Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



(Frequency of Missing FAULTING = 0.000%, missing data is included in the cumulative distribution graph.)

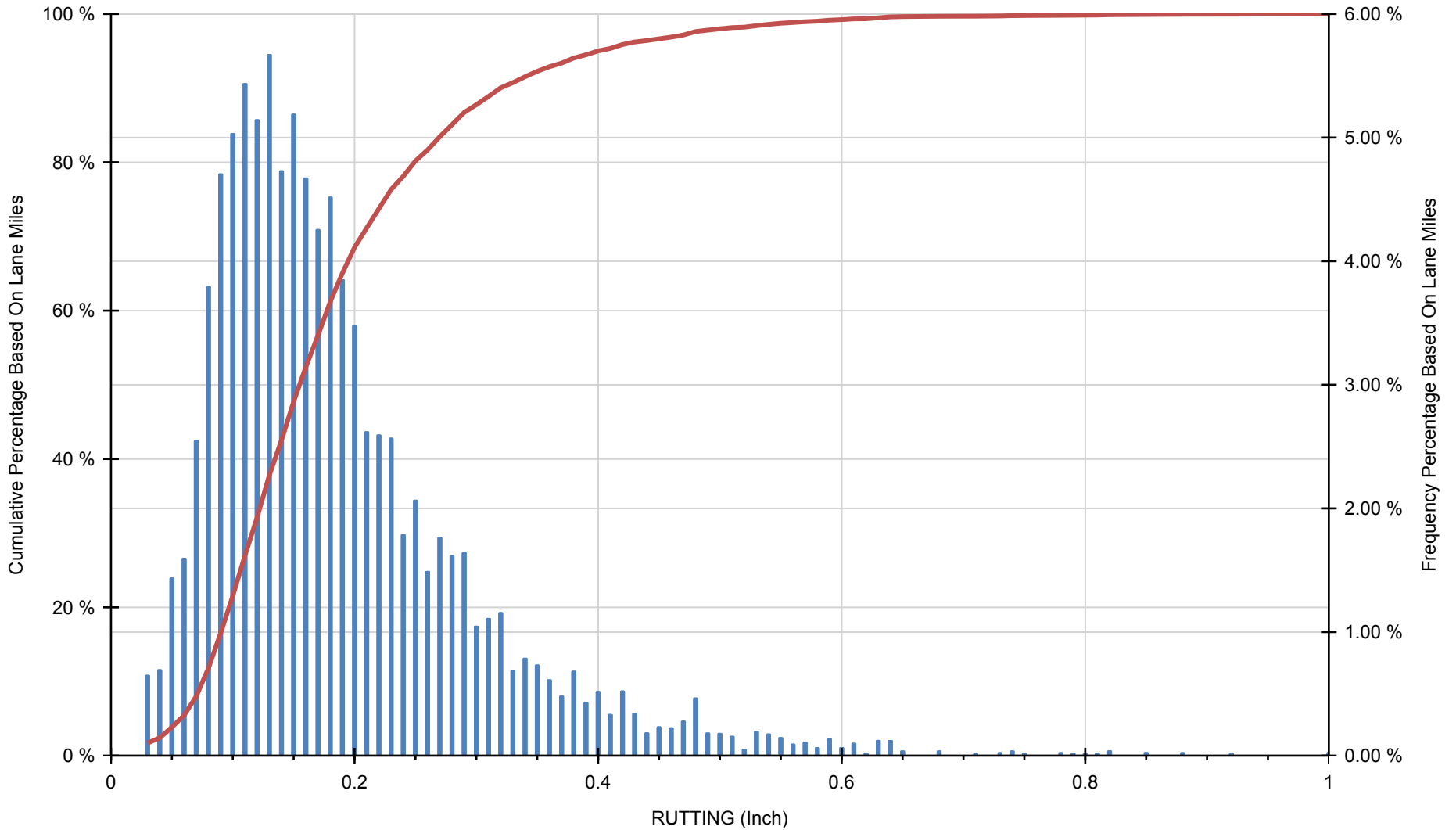
CUMULATIVE AND FREQUENCY DISTRIBUTION (NON-INTERSTATE NHS FAULTING COLLECTION DATES)

Stage: Review
Year: 2017
State: 44 - Rhode Island



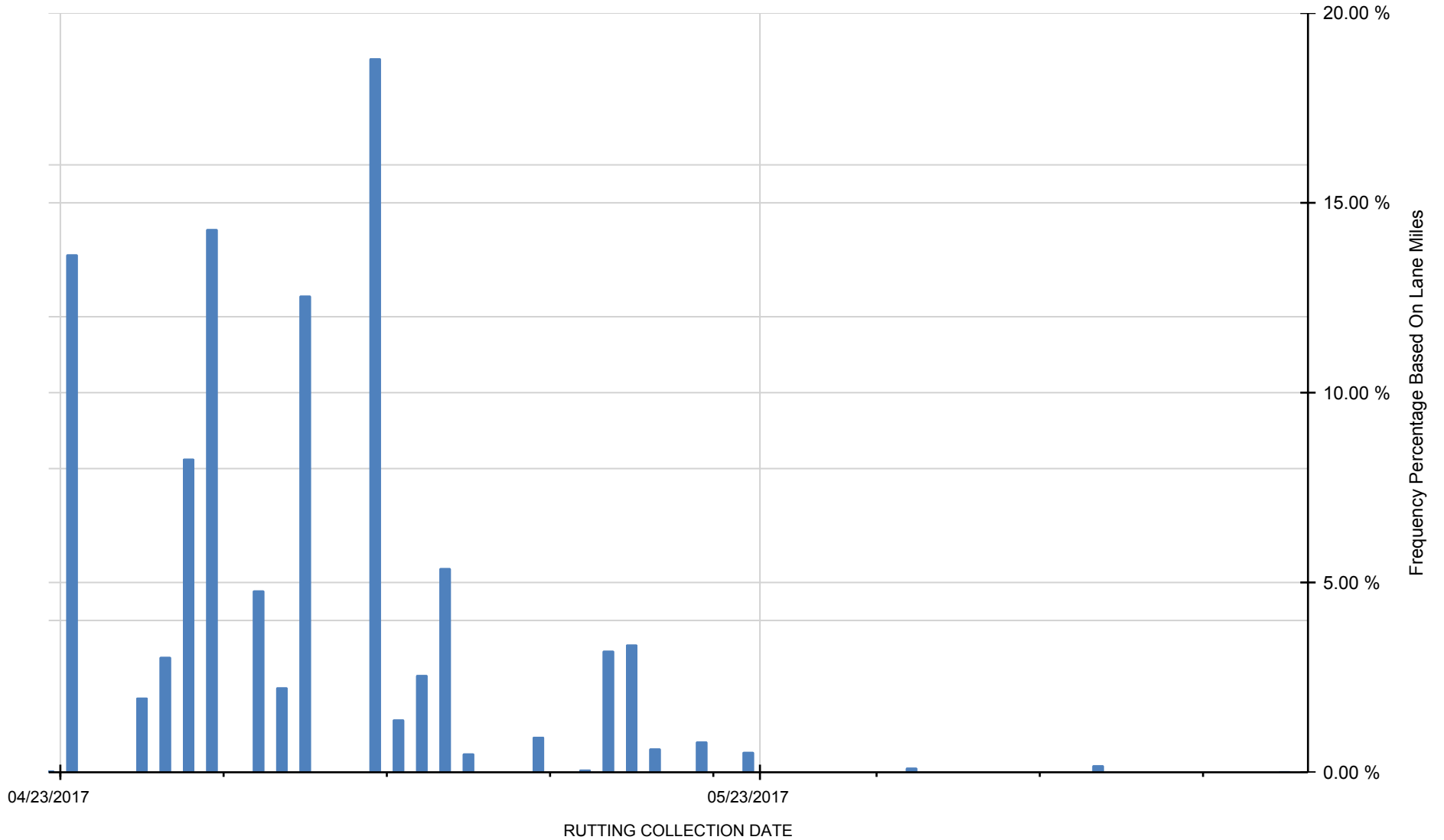
CUMULATIVE AND FREQUENCY DISTRIBUTION - RUTTING (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



(Frequency of Missing RUTTING = 1.045%, missing data is included in the cumulative distribution graph.)

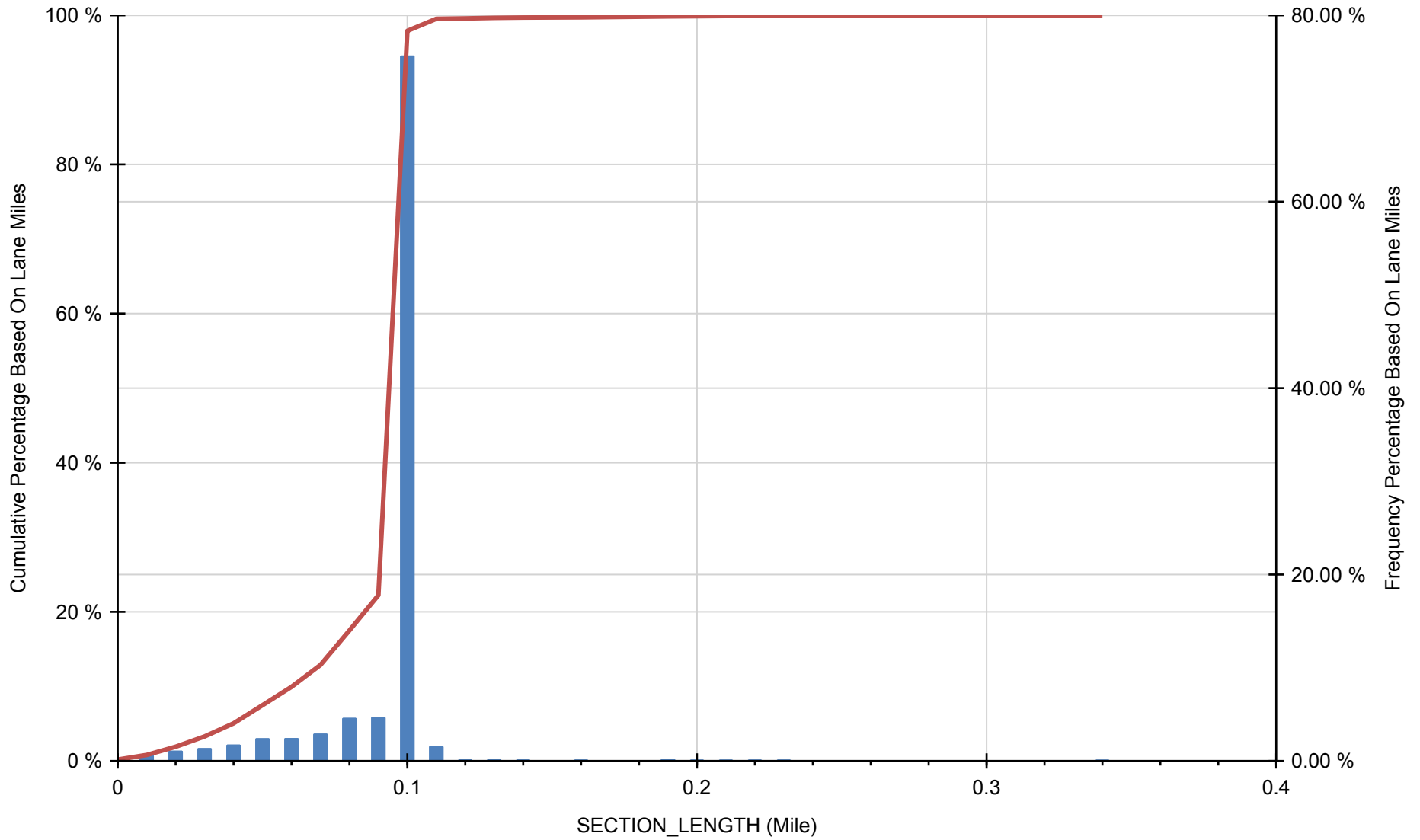
CUMULATIVE AND FREQUENCY DISTRIBUTION (NON-INTERSTATE NHS RUTTING COLLECTION DATES)



23 CFR 490 REQUIRES THAT IRI DATA BE COLLECTED AND REPORTED IN SECTIONS NOMINALLY NO LONGER THAN 0.1 MILE WHILE ALLOWING FOR SHORTER SECTIONS AT BRIDGES AND TERMINAL SECTIONS. MAXIMUM SECTION LENGTH ALLOWED IS 0.11 MILE. THE REGULATION ALSO STATES THAT ALL FOUR METRICS SHOULD BE REPORTED IN 0.1 MILE SECTIONS THAT ARE SPATIALLY ALLIGNED. IF YOUR STATE REPORTS IN SECTIONS EXCEEDING THE MAXIMUM LENGTH YOU MAY WISH TO INVESTIGATE IF THIS IS DUE TO VENDOR PREFERENCE OR DYNAMIC SEGMENTATION TAKING PLACE DURING UPLOADING TO THEIR PAVEMENT MANAGEMENT SYSTEM OR HPMS. IF THE DATA DISTRIBUTION SHOWS A LARGE PERCENTAGE OF VERY SHORT SLIVERS (0.001 MILE) IT MAY INDICATE PROBLEMS WITH SPATIAL ALIGNMENT DURING DATA COLLECTION.

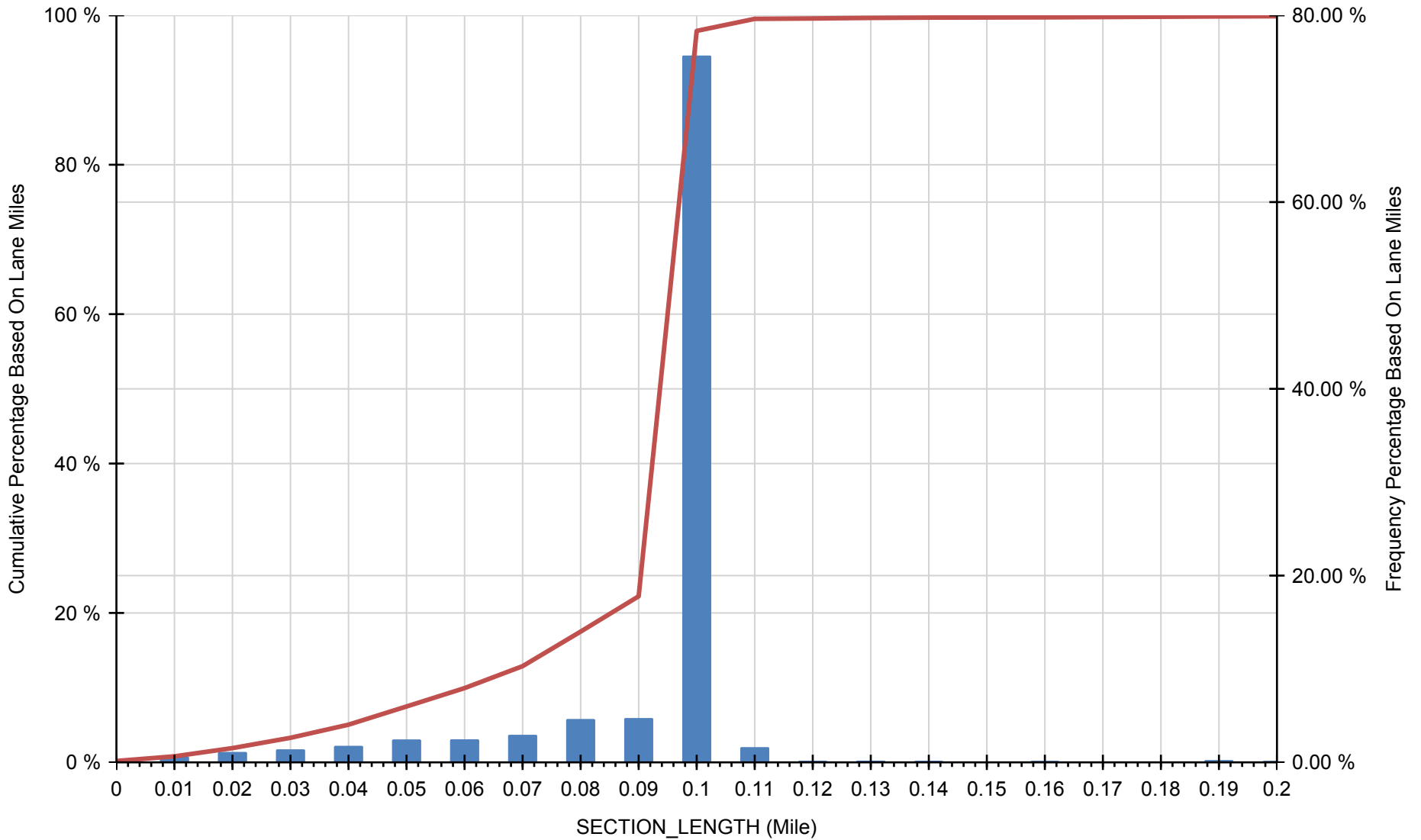
CUMULATIVE AND FREQUENCY DISTRIBUTION - SECTION LENGTHS (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018



CUMULATIVE AND FREQUENCY DISTRIBUTION - SECTION LENGTHS - CLOSEUP 0.0 TO 0.2 MILE IN LENGTH (NON-INTERSTATE NHS)

Stage: Review
Year: 2017
State: 44 - Rhode Island
Date: 06/22/2018

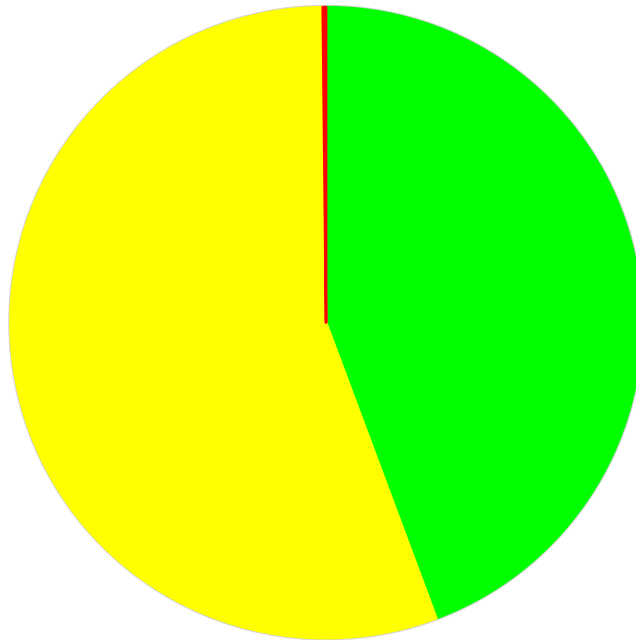


Year 2018

FULL EXTENT LANE MILES RATING (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

LANE MILES FULL EXTENT GOOD	160.122
LANE MILES FULL EXTENT FAIR	200.589
LANE MILES FULL EXTENT POOR	0.597
TOTAL LANE MILES GOOD, FAIR OR POOR	361.308
ESTIMATED TOTAL INTERSTATE LANE MILES MISSING OR INVALID DATA	2.400
TOTAL LANE MILES GOOD, FAIR, POOR, MISSING OR INVALID DATA	363.708
% ESTIMATED TOTAL INTERSTATE LANE MILES MISSING OR INVALID DATA - LIMIT 5%*	0.7 %



- LANE MILES FULL EXTENT GOOD (44.3%)
- LANE MILES FULL EXTENT FAIR (55.5%)
- LANE MILES FULL EXTENT POOR (0.2%)

THE HPMS PAVEMENT REPORT CARD'S PURPOSE IS TO PROVIDE FEEDBACK TO DIVISIONS AND STATES ON THEIR HPMS PAVEMENT SUBMITTAL DATA IN RESPONSE TO REQUIREMENTS OF 23 CFR 490. THE REPORT CARD IS FOR INFORMATION ONLY AND SHOULD NOT BE CONSIDERED THE OFFICIAL CALCULATION OF MEASURES FOR A STATE.

*STATES ARE LIMITED TO 5% MISSING, INVALID AND UNRESOLVED DATA. UNRESOLVED DATA IS FLAGGED IN THE FHWA REVIEW PROCESS. PERCENT M&I IS COMPUTED BY LANE-MILES OF M&I DIVIDED BY LANE-MILES OF GOOD, FAIR, POOR OR M&I MULTIPLIED BY 100.

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

DATA CHECK AND PAVEMENT DATA QUANTITY (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

DATA CHECK

FIPS CODE	44	STATE NAME	Rhode Island	STATE ABBR.	RI	PAVEMENT METRICS REPORTING METHOD	Inventory Direction (only)
YEAR 2017 HM-41 INTERSTATE MILES							70.009
SUBMITTED DATA INTERSTATE MILES							70.009
DIFFERENCE							0.000
YEAR 2017 HM-43 INTERSTATE LANE MILES							378.154
SUBMITTED DATA INTERSTATE LANE MILES							378.409
DIFFERENCE							0.255
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS A BRIDGE							363.708

DATA QUANTITY - PAVEMENT

TOTAL MILES WHERE THROUGH_LANES IS MISSING	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS NULL AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS MISSING DATA	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING CRACKING PERCENT DATA FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING FAULTING DATA FROM PCC PAVEMENTS (SURFACE_TYPE=3,4,9 OR 10) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE IS NULL OR NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	2.400
TOTAL INTERSTATE LANE MILES FULL EXTENT MISSING RUTTING DATA FROM AC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 1 UNSURFACED AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 11 OTHER AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND EXCLUDING SECTIONS CODED AS BRIDGES	363.708
LANE MILES FULL EXTENT SURFACE TYPE IS PCC (SURFACE_TYPE=3,4,9,10) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS CRCP (SURFACE_TYPE=5) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
TOTAL INTERSTATE LANE MILES WHERE THROUGH LANES IS CODED AS A 1,2, OR 3. ALTHOUGH THIS IS POSSIBLE AT INTERSTATE TERMINAL SECTION OR SOME INTERCHANGES THESE SECTIONS SHOULD BE VERIFIED.	0.000

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

PAVEMENT DATA QUALITY - IRI (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE IS NULL OR NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES. IRI DATA IS REQUIRED TO BE COLLECTED AND REPORTED ANNUALLY ON THE INTERSTATE ALONG WITH THE DATE OF COLLECTION. IRI COLLECTION YEAR SHOULD EQUAL YEAR_RECORD	2.400
% INTERSTATE LANE MILES FULL EXTENT IRI COLLECTION YEAR DOES NOT EQUAL YEAR_RECORD. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.66 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	0.00 %
FULL EXTENT LANE MILES WITH MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES	2.400
% FULL EXTENT LANE MILES MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES	0.66 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE IRI IS LESS THAN 30 INCHES/MILE. ALTHOUGH VALUES LESS THAN 30 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	1.600
% INTERSTATE LANE MILES FULL EXTENT IRI LESS THAN 30 INCHES PER MILE.	0.44 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE IRI IS GREATER THAN 400 INCHES/MILE. ALTHOUGH VALUES GREATER THAN 400 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT IRI GREATER THAN 400 INCHES PER MILE.	0.00 %
LANE MILES FULL EXTENT GOOD BASED ON PSR WHERE IRI IS NULL (SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES)	0.000
LANE MILES FULL EXTENT POOR BASED ON PSR WHERE IRI IS NULL (SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES)	0.000

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

PAVEMENT DATA QUALITY - CRACKING PERCENT (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL INTERSTATE LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED AS 0.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	92.376
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%.	25.40 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED > 0% AND < 1%. THIS MAY BE AN INDICATION THAT A STATE MAY HAVE A PROBLEM CONVERTING DECIMAL TO PERCENTAGES. CRACKING PERCENT IS TO BE REPORTED WITH A PRECISION OF 1% OR LESS. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0% AND < 1%.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FOR PAVEMENTS CODED AS HMA (SURFACE_TYPE = 2, 6, 7, OR 8) EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54%. CRACKING PERCENT FOR HMA IS LIMITED TO WHEELPATH AND THEREFORE SHOULD NOT EXCEED 54% FOR A 12-FOOT LANE WIDTH. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	0.000
% INTERSTATE LANE MILES FULL EXTENT FOR HMA PAVEMENTS WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54%.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED AS 100%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100%.	0.00 %

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

PAVEMENT DATA QUALITY - FAULTING AND RUTTING (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS JOINTED PCC (SURFACE_TYPE=3,4,9 OR 10) AND FAULTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS JOINTED PCC (SURFACE_TYPE=3,4,9 OR 10) AND FAULTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND RUTTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND RUTTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% INTERSTATE LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH.	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE RUTTING IS REPORTED ON SURFACE TYPE = PCC OR CRCP (SURFACE_TYPE=3,4,5,9 OR 10)	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %
TOTAL INTERSTATE LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE FAULTING IS REPORTED ON SURFACE TYPE = HMA OR CRCP (SURFACE_TYPE=2,5,6,7 OR 8)	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

HPMS 8.0.1 PAVEMENT DATA QUALITY - BRIDGE AND SECTION LENGTH (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

BRIDGE LOCATION

PER MAP-21 BRIDGES ARE EXCLUDED FROM THE PERFORMANCE MEASURE CALCULATION. THE ABILITY TO ACCURATELY LOCATE BRIDGES IN HPMS IS VERY IMPORTANT IN THE CORRECT CALCULATION OF PAVEMENT CONDITION.	
COUNT OF MAINLINE INTERSTATE BRIDGES OF DATA YEAR 2018 FROM NBI INVENTORY	98
TOTAL INTERSTATE LANE MILES OF BRIDGES OF DATA YEAR 2018 FROM NBI INVENTORY	17.404
TOTAL LANE MILES ON FULL EXTENT BASIS CODED AS A BRIDGE IN HPMS	14.701
PERCENT HPMS BRIDGE LANE MILES OF NBI BRIDGE LANE MILES.	84.47 %

SECTION LENGTH

DISTRESS DATA SHOULD BE REPORTED IN SECTIONS 0.1 MILE IN LENGTH OR SHORTER	
TOTAL INTERSTATE LANE MILES WHERE SECTION LENGTH IS GREATER THAN 0.11 MILE (0.1 MILE NOMINAL) EXCLUDING BRIDGES	0.00

SPATIAL COINCIDENCE

END POINTS OF FAULTING, RUTTING AND CRACKING PERCENT SHOULD BE ALIGNED WITH IRI	
TOTAL INTERSTATE LANE MILES WHERE SPATIAL COINCIDENCE IS VIOLATED EXCLUDING BRIDGES	0.00

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

CRACKING PERCENT

The Cumulative and Frequency Distribution of Interstate Cracking Percent graph is based on full extent, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

FAULTING

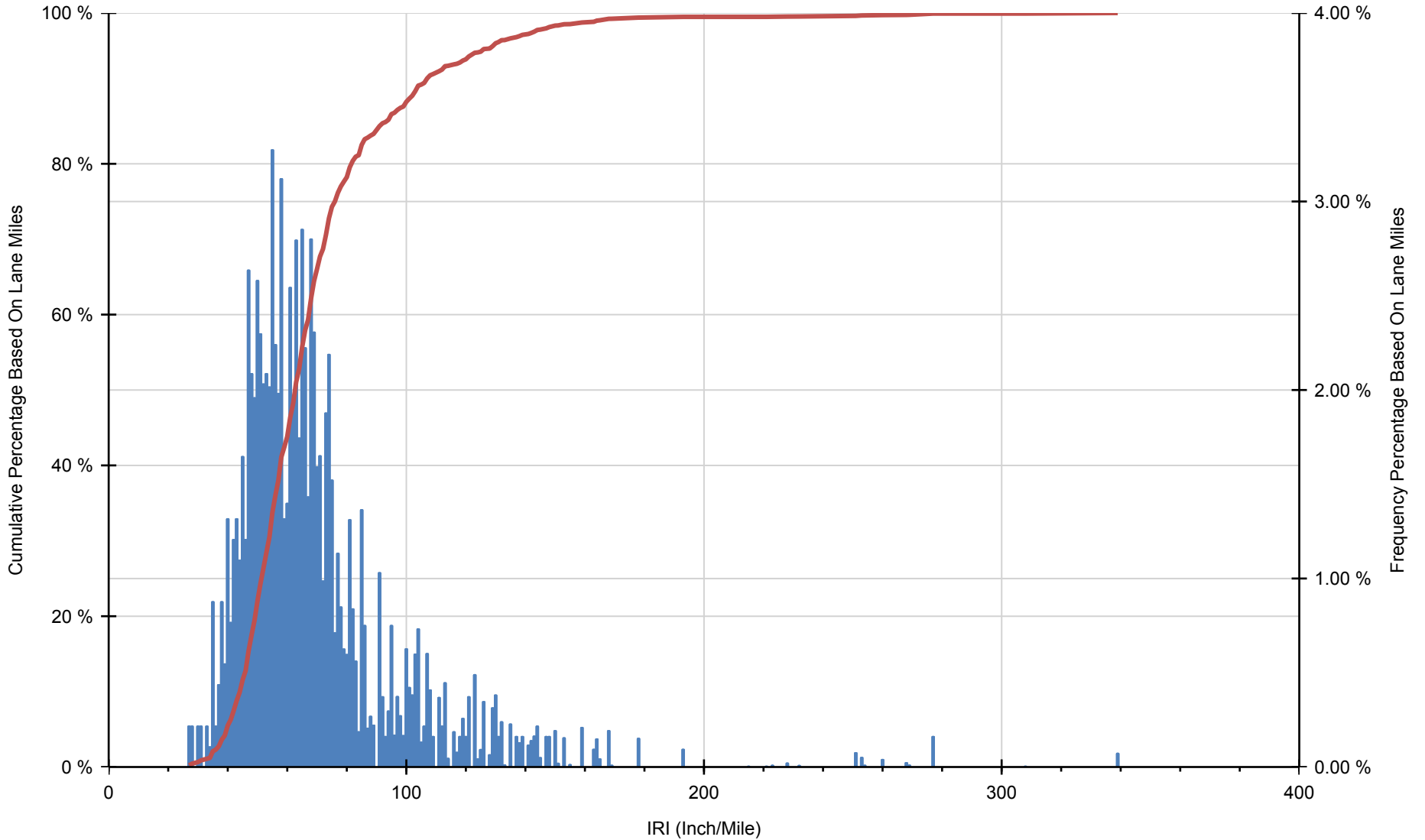
The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

RUTTING

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

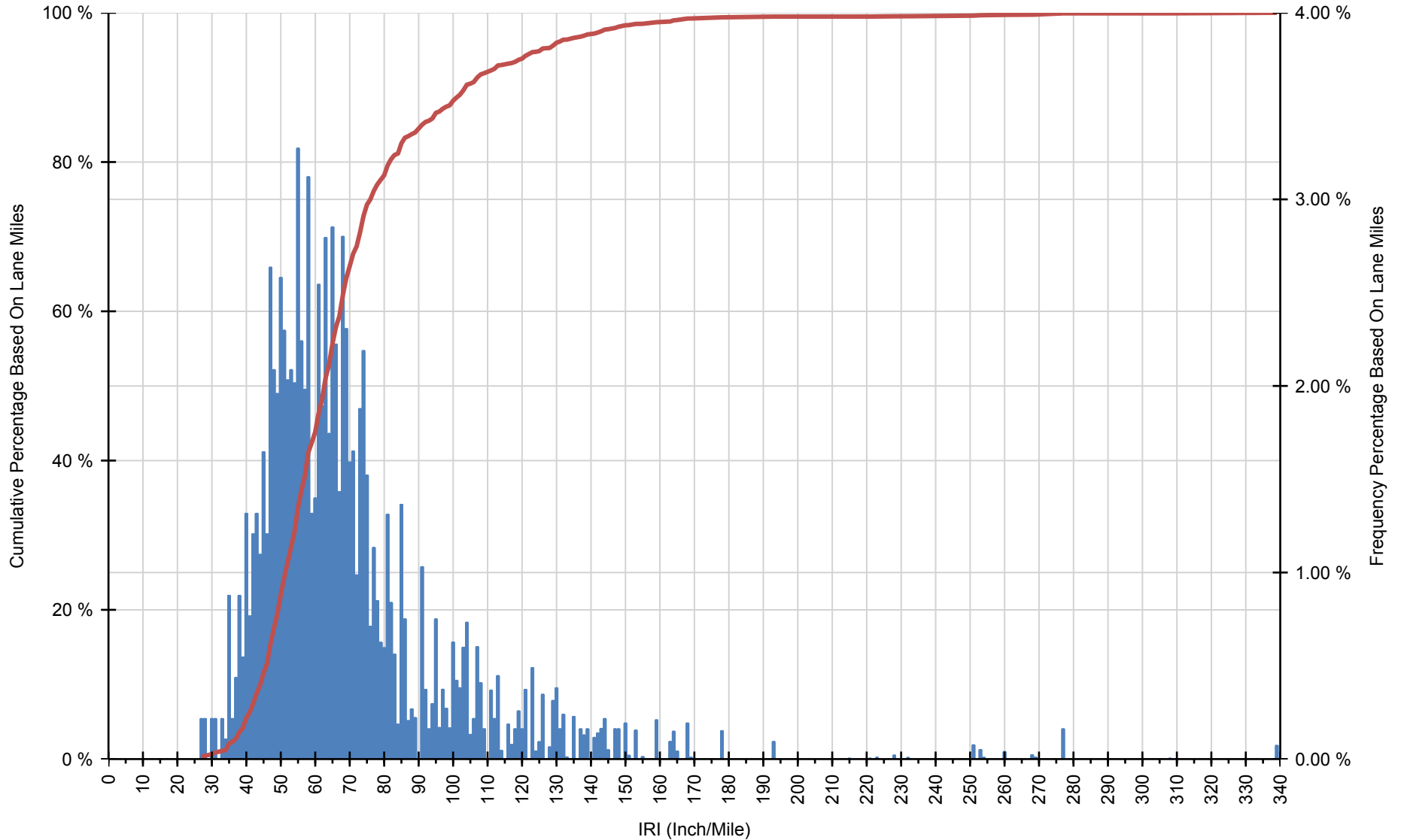
CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI (INTERSTATE)



(Frequency of Missing IRI = 0.000%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI - CLOSEUP 0 TO 400 (INTERSTATE)

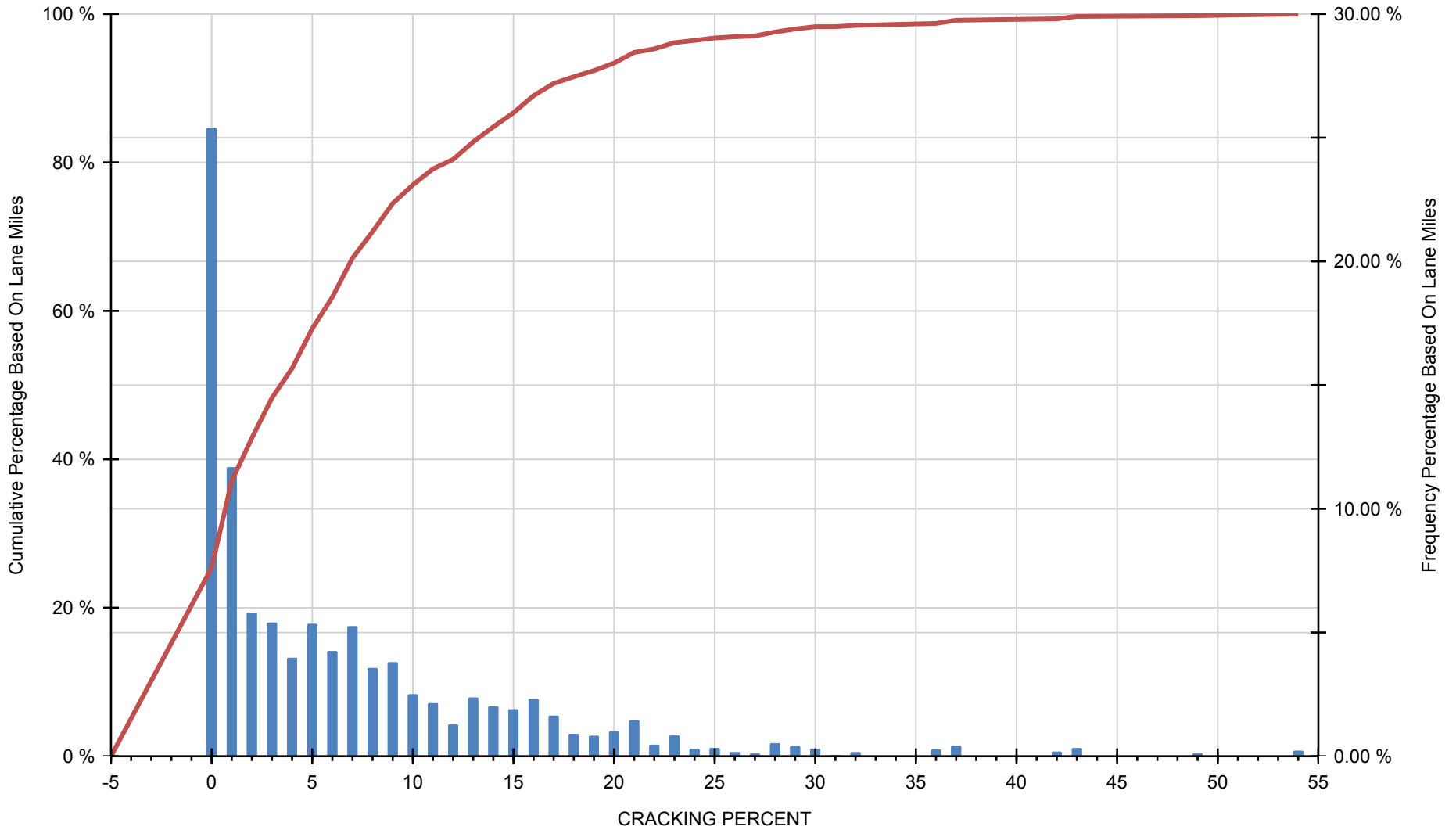
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing IRI = 0.000%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - CRACKING PERCENT (INTERSTATE)

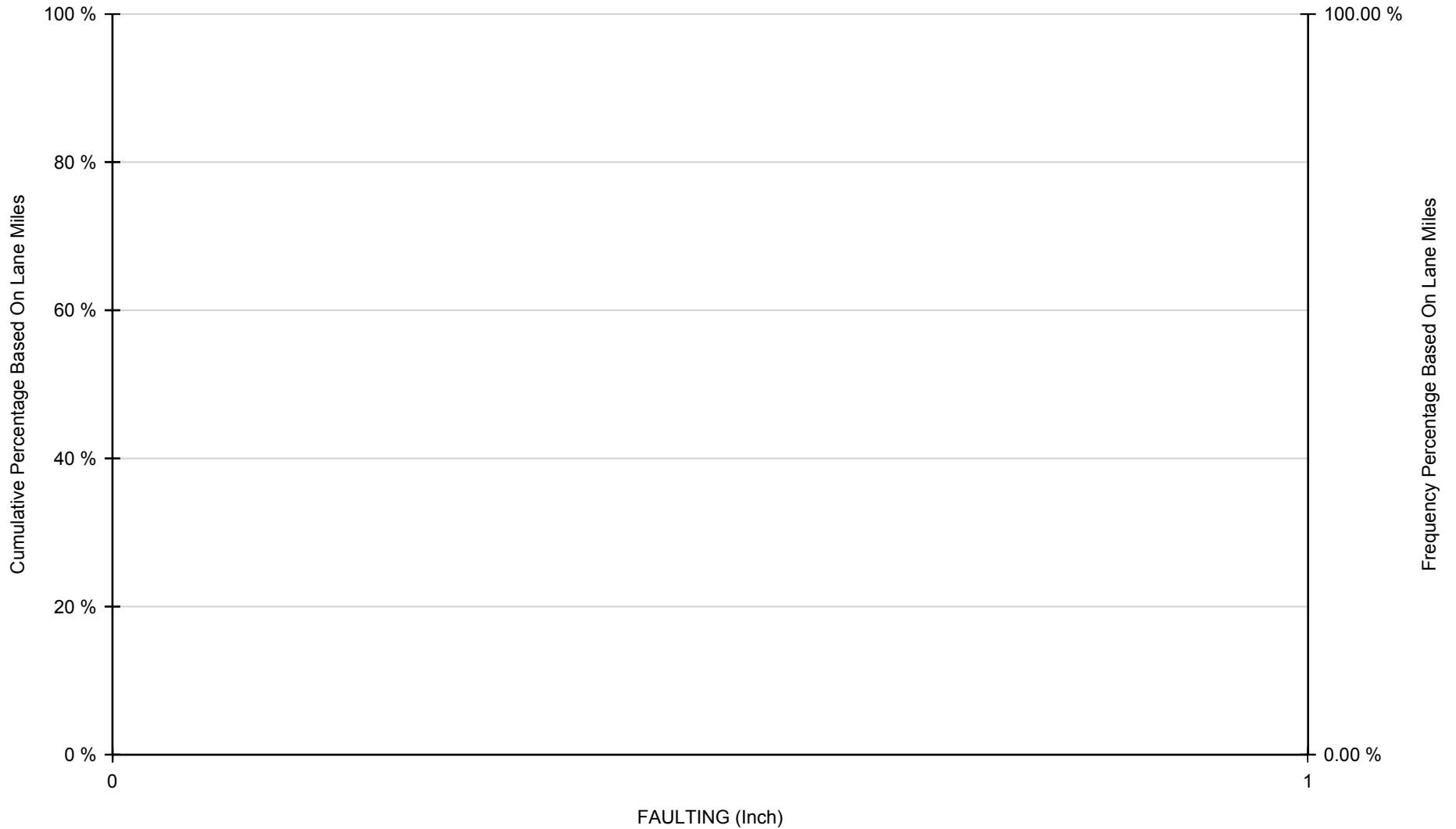
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing CRACKING_PERCENT = 0.000%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - FAULTING (INTERSTATE)

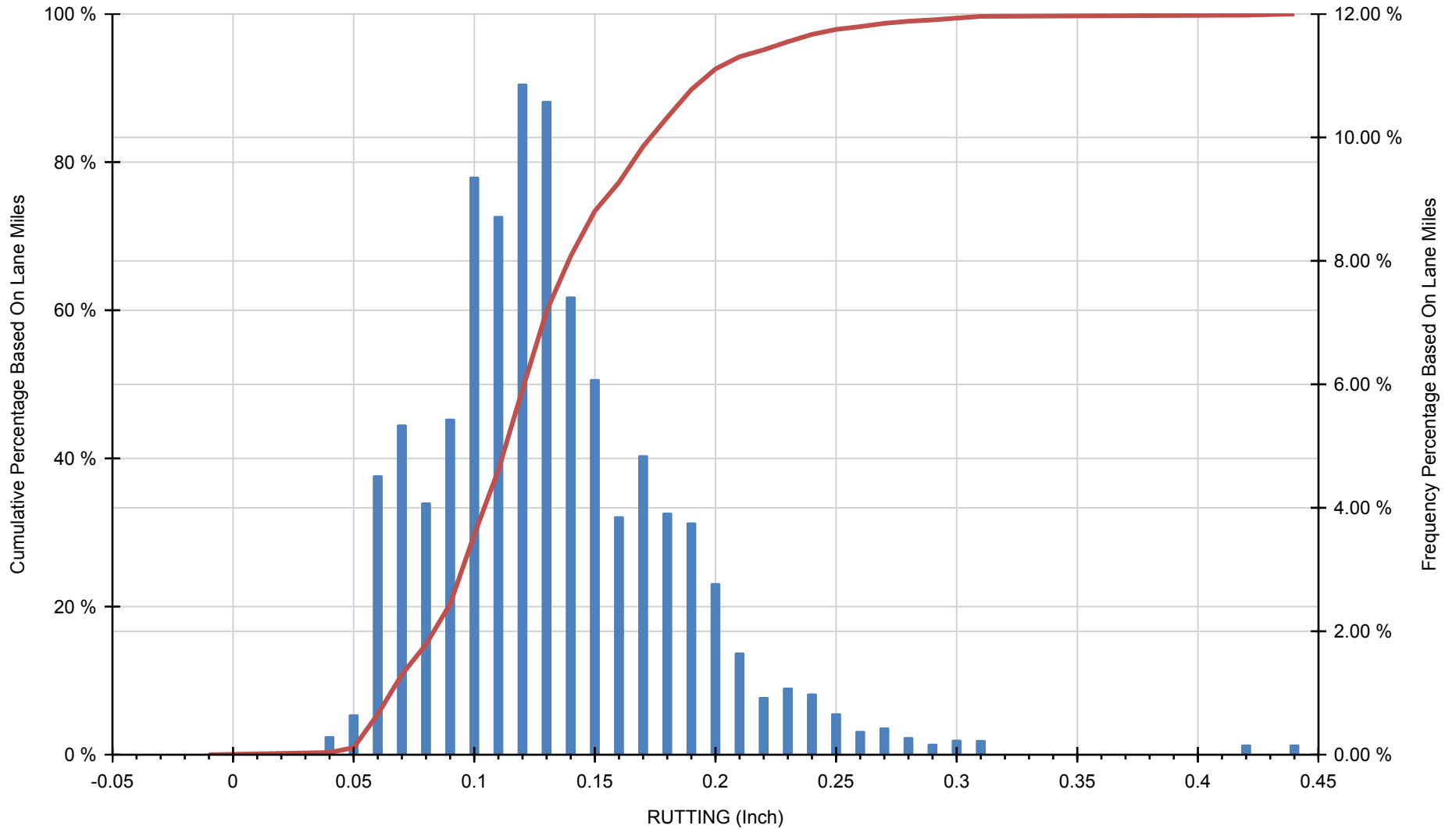
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing FAULTING = 0.000%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - RUTTING (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

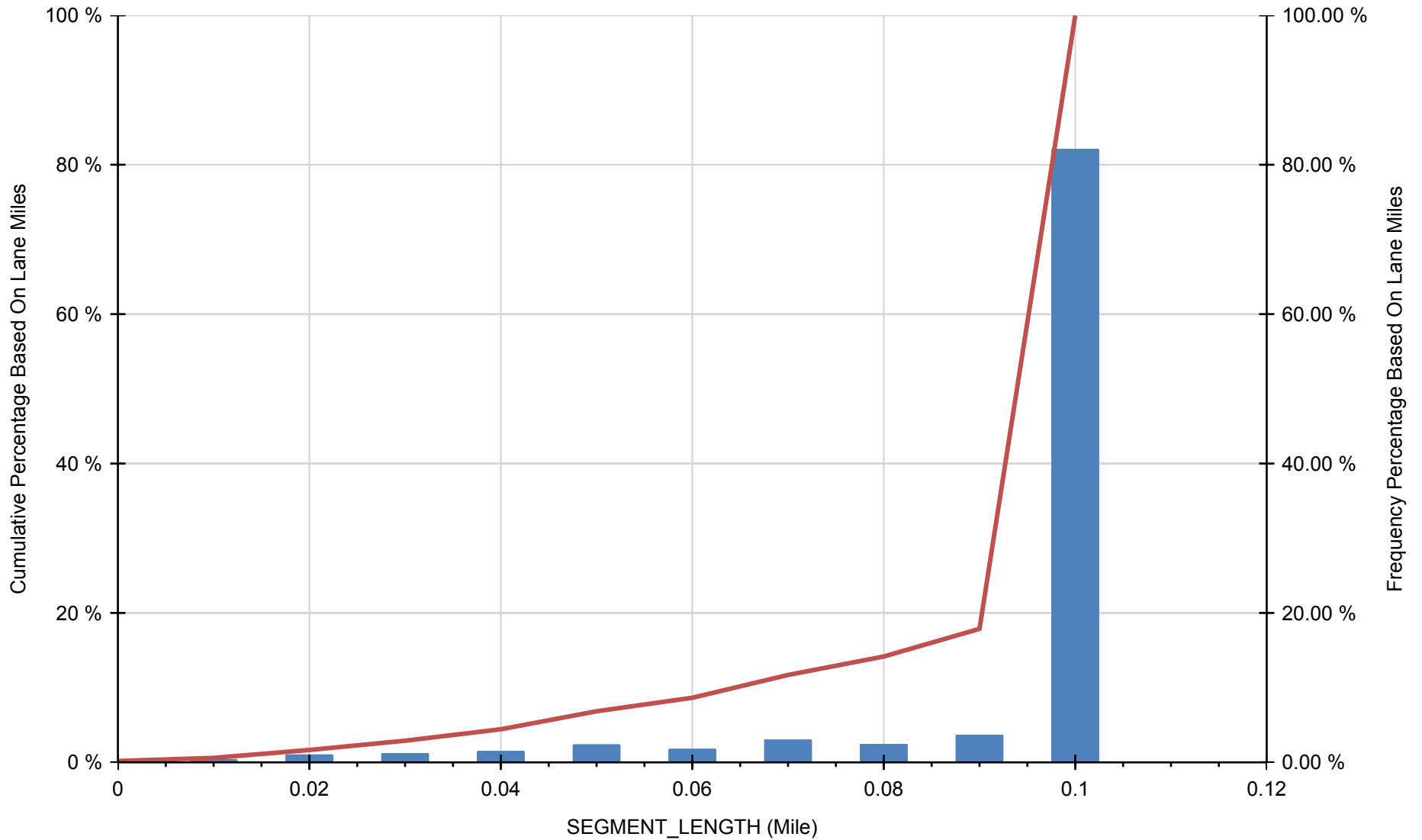


(Frequency of Missing RUTTING = 0.000%, missing data is included in the cumulative distribution graph.)

23 CFR 490 REQUIRES THAT IRI DATA BE COLLECTED AND REPORTED IN SECTIONS NOMINALLY NO LONGER THAN 0.1 MILE WHILE ALLOWING FOR SHORTER SECTIONS AT BRIDGES AND TERMINAL SECTIONS. MAXIMUM SECTION LENGTH ALLOWED IS 0.11 MILE. THE REGULATION ALSO STATES THAT ALL FOUR METRICS SHOULD BE REPORTED IN 0.1 MILE SECTIONS THAT ARE SPATIALLY ALLIGNED. IF YOUR STATE REPORTS IN SECTIONS EXCEEDING THE MAXIMUM LENGTH YOU MAY WISH TO INVESTIGATE IF THIS IS DUE TO VENDOR PREFERENCE OR DYNAMIC SEGMENTATION TAKING PLACE DURING UPLOADING TO THEIR PAVEMENT MANAGEMENT SYSTEM OR HPMS. IF THE DATA DISTRIBUTION SHOWS A LARGE PERCENTAGE OF VERY SHORT SLIVERS (0.001 MILE) IT MAY INDICATE PROBLEMS WITH SPATIAL ALIGNMENT DURING DATA COLLECTION.

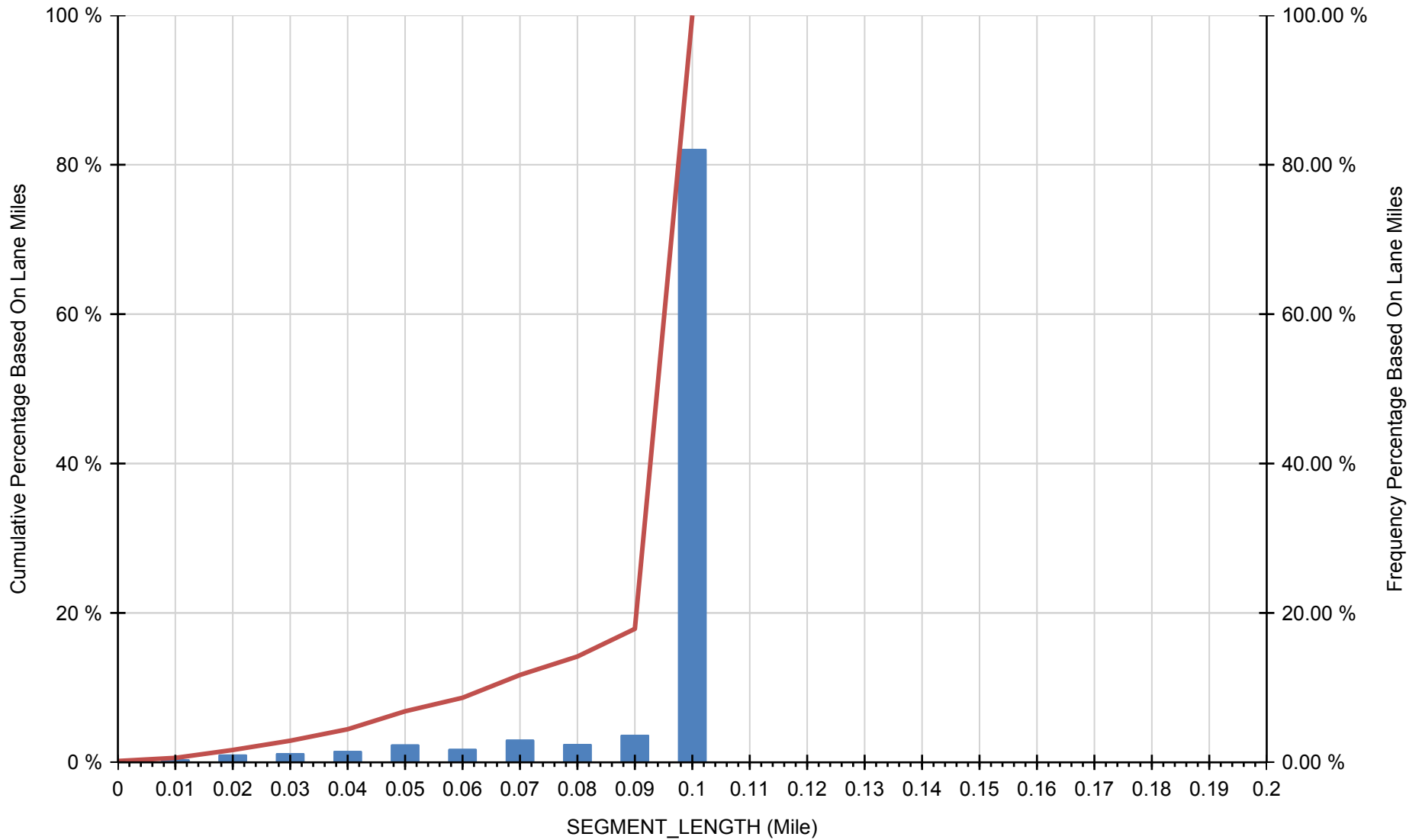
CUMULATIVE AND FREQUENCY DISTRIBUTION - SEGMENT LENGTHS (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



CUMULATIVE AND FREQUENCY DISTRIBUTION - SEGMENT LENGTHS - CLOSEUP 0.0 TO 0.2 MILE IN LENGTH (INTERSTATE)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



PM2 VALIDATION SUMMARIES INTERSTATE

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

Summary of Length and Spatial Coincidence Validation

Data Item	Section Length		Spatial Coincidence	
	Sections	Miles	Sections	Miles
IRI	0	0.00	N/A	N/A
PSR	0	0.00	N/A	N/A
Rutting	0	0.00	0	0.00
Faulting	0	0.00	0	0.00
Cracking_Percent	0	0.00	0	0.00

Lane Miles of Pavement Metrics Excluding Bridges by Collection Year

Year (Value Date)	IRI		Rutting		Faulting		Cracking Percent		PSR	
	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total
2017	2.40	0.66 %	2.40	0.66 %	0.00	0.00 %	2.40	0.66 %	0.00	0.00 %
2018	361.31	99.34 %	361.31	99.34 %	0.00	0.00 %	361.31	99.34 %	0.00	0.00 %
NULL	0.00	0.00 %	0.00	0.00 %	0.00	0.00 %	0.00	0.00 %	363.71	100.00 %
Total	363.71	100.00 %	363.71	100.00 %	0.00	0.00 %	363.71	100.00 %	363.71	100.00 %

Lane Miles of Pavement Metrics with Value Text Codes

Data Item	Text Codes				
	A (Construction)	B (Closure)	C (Disaster)	D (Deterioration)	E (New NHS Segment)
IRI	3.60	0.00	0.00	0.00	0.00
Cracking_Percent	3.60	0.00	0.00	0.00	0.00
Faulting	0.00	0.00	0.00	0.00	0.00
Rutting	3.60	0.00	0.00	0.00	0.00
Total	10.80	0.00	0.00	0.00	0.00

FULL EXTENT LANE MILES RATING (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

LANE MILES FULL EXTENT GOOD	246.762
LANE MILES FULL EXTENT FAIR	868.466
LANE MILES FULL EXTENT POOR	272.482
TOTAL LANE MILES GOOD, FAIR OR POOR	1,387.710
ESTIMATED TOTAL NON-INTERSTATE NHS LANE MILES MISSING OR INVALID DATA	52.428
TOTAL LANE MILES GOOD, FAIR, POOR, MISSING OR INVALID DATA	1,440.138
% ESTIMATED TOTAL NON-INTERSTATE NHS LANE MILES MISSING OR INVALID DATA - LIMIT 5%*	3.6 %



- LANE MILES FULL EXTENT GOOD (17.8%)
- LANE MILES FULL EXTENT FAIR (62.6%)
- LANE MILES FULL EXTENT POOR (19.6%)

THE HPMS PAVEMENT REPORT CARD'S PURPOSE IS TO PROVIDE FEEDBACK TO DIVISIONS AND STATES ON THEIR HPMS PAVEMENT SUBMITTAL DATA IN RESPONSE TO REQUIREMENTS OF 23 CFR 490. THE REPORT CARD IS FOR INFORMATION ONLY AND SHOULD NOT BE CONSIDERED THE OFFICIAL CALCULATION OF MEASURES FOR A STATE.

*STATES ARE LIMITED TO 5% MISSING, INVALID AND UNRESOLVED DATA. UNRESOLVED DATA IS FLAGGED IN THE FHWA REVIEW PROCESS. PERCENT M&I IS COMPUTED BY LANE-MILES OF M&I DIVIDED BY LANE-MILES OF GOOD, FAIR, POOR OR M&I MULTIPLIED BY 100.

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DATA CHECK AND PAVEMENT DATA QUANTITY (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

DATA CHECK

FIPS CODE	44	STATE NAME	Rhode Island	STATE ABBR.	RI	PAVEMENT METRICS REPORTING METHOD	Inventory Direction (only)
YEAR 2017 HM-41 NON-INTERSTATE NHS MILES							531.755
SUBMITTED DATA NON-INTERSTATE NHS MILES							531.912
DIFFERENCE							0.157
YEAR 2017 HM-43 NON-INTERSTATE NHS LANE MILES							1,477.865
SUBMITTED DATA NON-INTERSTATE NHS LANE MILES							1,477.240
DIFFERENCE							-0.625
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS A BRIDGE							1,440.138

DATA QUANTITY - PAVEMENT

TOTAL MILES WHERE THROUGH_LANES IS MISSING	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS NULL AND EXCLUDING SECTIONS CODED AS BRIDGES - MARKED AS MISSING DATA	0.000
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING CRACKING PERCENT DATA FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	47.884
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING FAULTING DATA FROM PCC PAVEMENTS (SURFACE_TYPE=3,4,9 OR 10) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	52.415
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE IS NULL OR NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	52.415
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT MISSING RUTTING DATA FROM AC PAVEMENTS AND EXCLUDING SECTIONS CODED AS BRIDGES	51.162
LANE MILES FULL EXTENT SURFACE TYPE = 1 UNSURFACED AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE = 11 OTHER AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND EXCLUDING SECTIONS CODED AS BRIDGES	1,440.138
LANE MILES FULL EXTENT SURFACE TYPE IS PCC (SURFACE_TYPE=3,4,9,10) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000
LANE MILES FULL EXTENT SURFACE TYPE IS CRCP (SURFACE_TYPE=5) AND EXCLUDING SECTIONS CODED AS BRIDGES	0.000

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PAVEMENT DATA QUALITY - IRI (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI COLLECTION DATE NOT VALID FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES. IRI DATA IS REQUIRED TO BE COLLECTED AND REPORTED ANNUALLY ON THE NON-INTERSTATE NHS ALONG WITH THE DATE OF COLLECTION. IRI COLLECTION YEAR SHOULD EQUAL YEAR_RECORD OR YEAR_RECORD-1	52.415
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI YEAR DOES NOT EQUAL YEAR_RECORD NOR YEAR_RECORD-1. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	3.64 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES	52.415
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE IRI DATA IS NULL OR ZERO. CUTOFF VALUE TO FLAG FOR VERIFICATION IS 0.00%	3.64 %
FULL EXTENT LANE MILES WITH MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES	52.415
% FULL EXTENT LANE MILES MISSING OR INVALID IRI EXCLUDING SECTIONS CODED AS BRIDGES	3.64 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE IRI IS LESS THAN 30 INCHES/MILE. ALTHOUGH VALUES LESS THAN 30 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	1.800
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI LESS THAN 30 INCHES PER MILE.	0.12 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE IRI IS GREATER THAN 400 INCHES/MILE. ALTHOUGH VALUES GREATER THAN 400 INCHES PER MILE ARE POSSIBLE THEY ARE NOT LIKELY AND SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED IRI CUMULATIVE DISTRIBUTION.	22.768
% NON-INTERSTATE NHS LANE MILES FULL EXTENT IRI GREATER THAN 400 INCHES PER MILE.	1.58 %
LANE MILES FULL EXTENT GOOD BASED ON PSR WHERE IRI IS NULL (SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES)	0.000
LANE MILES FULL EXTENT POOR BASED ON PSR WHERE IRI IS NULL (SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES)	0.000

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PAVEMENT DATA QUALITY - CRACKING PERCENT (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED AS 0.00%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	300.802
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 0.00%	20.89 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED > 0% AND < 1%. THIS MAY BE AN INDICATION THAT A STATE MAY HAVE A PROBLEM CONVERTING DECIMAL TO PERCENTAGES. CRACKING PERCENT IS TO BE REPORTED WITH A PRECISION OF 1% OR LESS. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED > 0% AND < 1%.	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FOR PAVEMENTS CODED AS HMA (SURFACE_TYPE = 2, 6, 7, OR 8) EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED GREATER THAN 54%. CRACKING PERCENT FOR HMA IS LIMITED TO WHEELPATH AND THEREFORE SHOULD NOT EXCEED 54% FOR A 12-FOOT LANE WIDTH. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED.	7.646
% NON-INTERSTATE NHS LANE MILES FULL EXTENT FOR HMA PAVEMENTS WHERE CRACKING PERCENT IS REPORTED GREATER	0.53 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT FROM SURFACE_TYPE BETWEEN 2 AND 10 AND EXCLUDING SECTIONS CODED AS BRIDGES WHERE CRACKING PERCENT IS REPORTED AS 100%. MULTIPLE STATES REPORTED VERY HIGH VALUES FOR THEIR PAVEMENTS AND THESE SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED CRACKING PERCENT CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE CRACKING PERCENT IS REPORTED AS 100%.	0.00 %

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PAVEMENT DATA QUALITY - FAULTING AND RUTTING (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS JOINTED PCC (SURFACE_TYPE=3,4,9 OR 10) AND FAULTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS EQUAL TO 0.00.	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS JOINTED PCC (SURFACE_TYPE=3,4,9 OR 10) AND FAULTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED FAULTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS JOINTED PCC AND FAULTING IS GREATER THAN 1.00 INCH.	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND RUTTING IS EQUAL TO 0.00. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.156
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS EQUAL TO 0.00.	0.01 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE SURFACE TYPE IS HMA (SURFACE_TYPE=2,6,7 OR 8) AND RUTTING IS GREATER THAN 1.00 INCH. MULTIPLE STATES REPORTED VERY HIGH VALUES AND THIS DATA SHOULD BE VERIFIED. YOU MAY WISH TO REFER TO THE ATTACHED RUTTING CUMULATIVE DISTRIBUTION.	0.000
% NON-INTERSTATE NHS LANE MILES FULL EXTENT WHERE SURFACE TYPE IS HMA AND RUTTING IS GREATER THAN 1.00 INCH.	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE RUTTING IS REPORTED ON SURFACE TYPE = PCC OR CRCP (SURFACE_TYPE=3,4,5,9 OR 10)	0.000
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.00 %
TOTAL NON-INTERSTATE NHS LANE MILES FULL EXTENT EXCLUDING SECTIONS CODED AS BRIDGES WHERE FAULTING IS REPORTED ON SURFACE TYPE = HMA OR CRCP (SURFACE_TYPE=2,5,6,7 OR 8)	0.680
MANY STATES REPORT ALL DISTRESSES REGARDLESS OF SURFACE TYPE. VALUES OTHER THAN 0% SHOULD BE VERIFIED AS THIS MAY BE AN ERROR OR THE RESULT OF DIFFERENT SOURCES OF REPORTING DATA	0.05 %

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

HPMS 8.0.1 PAVEMENT DATA QUALITY - BRIDGE AND SECTION LENGTH (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

BRIDGE LOCATION

PER MAP-21 BRIDGES ARE EXCLUDED FROM THE PERFORMANCE MEASURE CALCULATION. THE ABILITY TO ACCURATELY LOCATE BRIDGES IN HPMS IS VERY IMPORTANT IN THE CORRECT CALCULATION OF PAVEMENT CONDITION.

COUNT OF MAINLINE NON-INTERSTATE NHS BRIDGES OF DATA YEAR 2018 FROM NBI INVENTORY	209
TOTAL NON-INTERSTATE NHS LANE MILES OF BRIDGES OF DATA YEAR 2018 FROM NBI INVENTORY	38.649
TOTAL LANE MILES ON FULL EXTENT BASIS CODED AS A BRIDGE IN HPMS	37.102
PERCENT HPMS BRIDGE LANE MILES OF NBI BRIDGE LANE MILES.	96.00 %

SECTION LENGTH

DISTRESS DATA SHOULD BE REPORTED IN SECTIONS 0.1 MILE IN LENGTH OR SHORTER

TOTAL NON-INTERSTATE NHS LANE MILES WHERE SECTION LENGTH IS GREATER THAN 0.11 MILE (0.1 MILE NOMINAL) EXCLUDING BRIDGES	0.00
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SPATIAL COINCIDENCE

END POINTS OF FAULTING, RUTTING AND CRACKING PERCENT SHOULD BE ALIGNED WITH IRI

TOTAL NON-INTERSTATE NHS LANE MILES WHERE SPATIAL COINCIDENCE IS VIOLATED EXCLUDING BRIDGES	5.22
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ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

CRACKING PERCENT

The Cumulative and Frequency Distribution of Interstate Cracking Percent graph is based on full extent, bridges are excluded as are SURFACE_TYPE=NULL,1 OR 11.

FAULTING

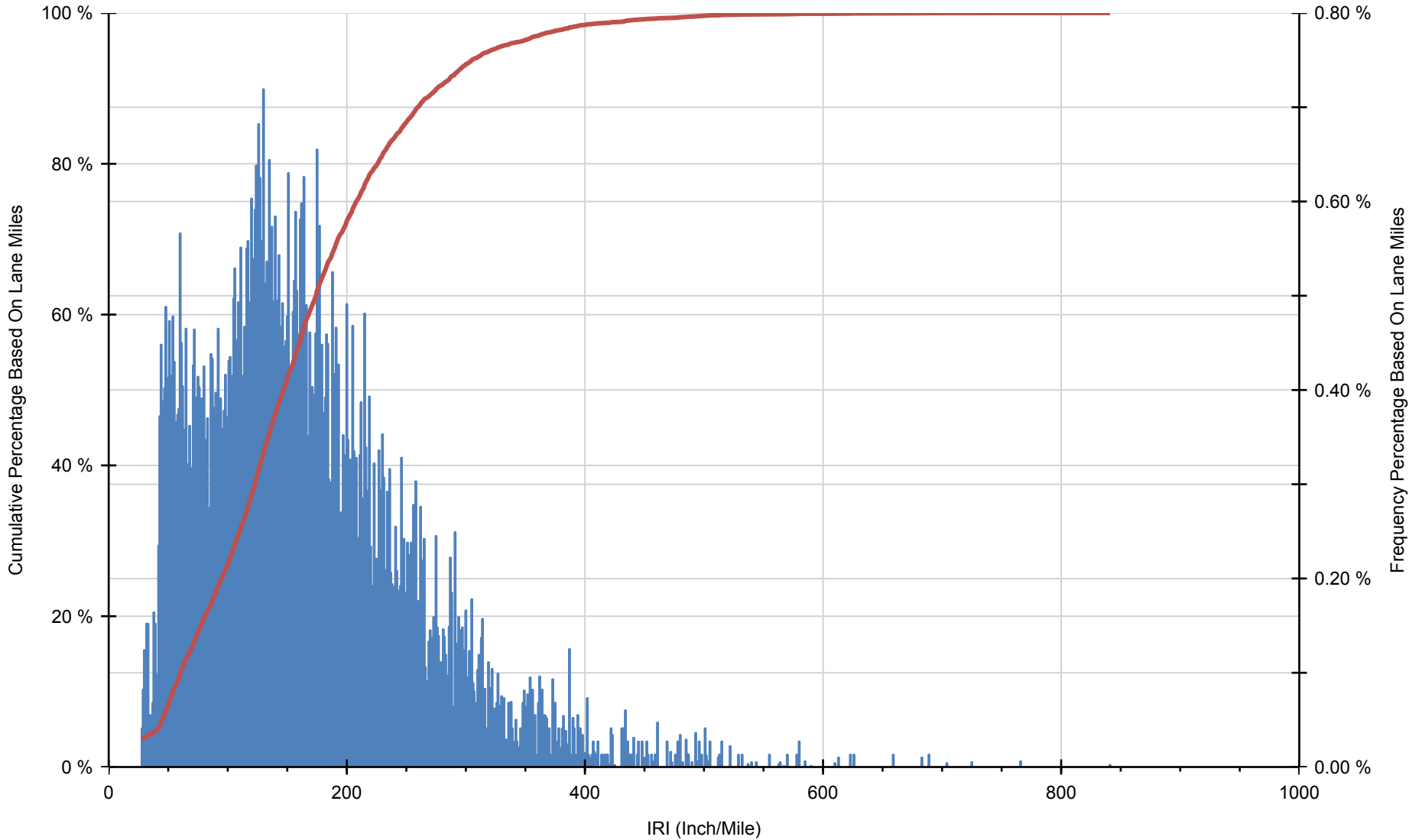
The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

RUTTING

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

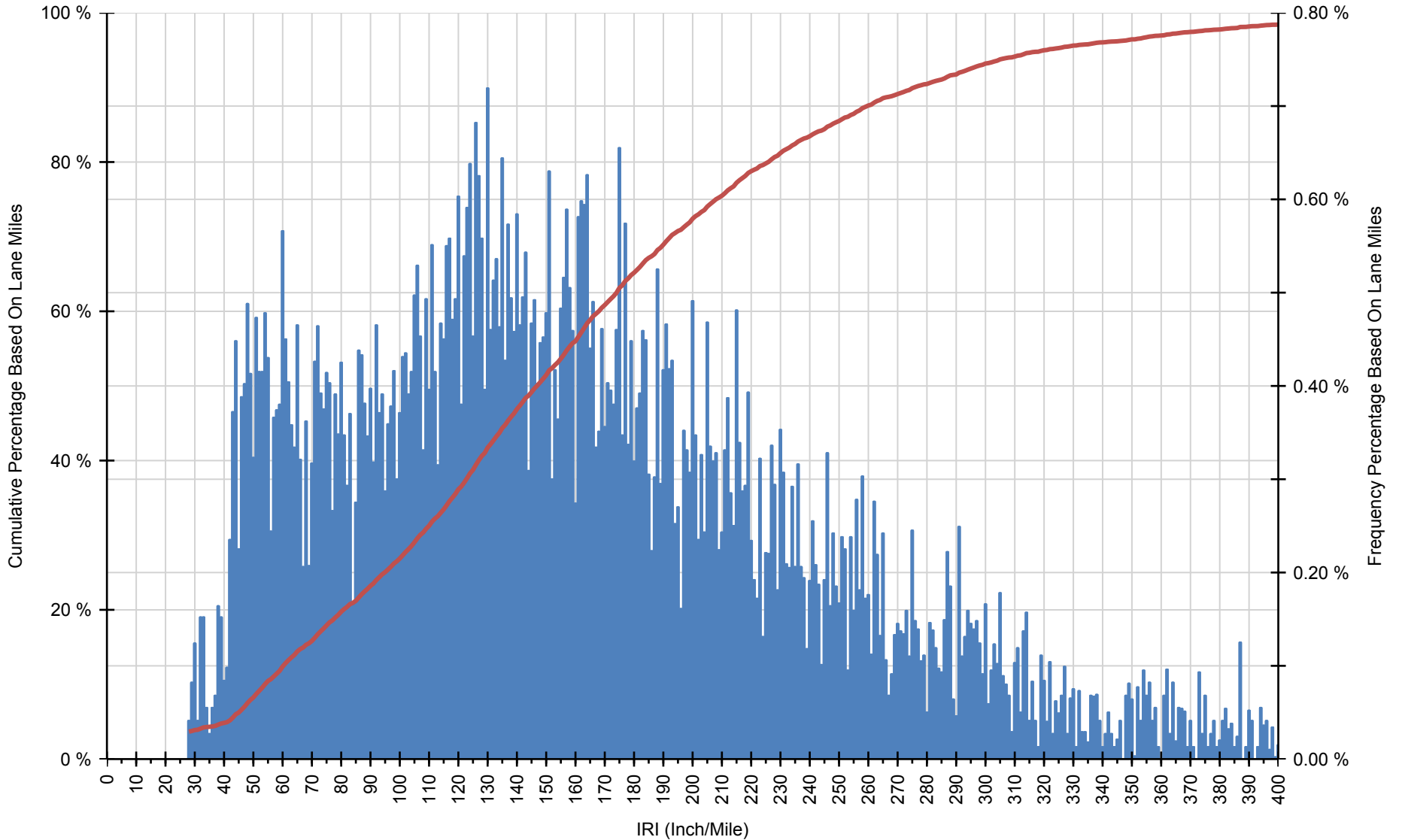
CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI (NON-INTERSTATE NHS)



(Frequency of Missing IRI = 3.640%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - IRI - CLOSEUP 0 TO 400 (NON-INTERSTATE NHS)

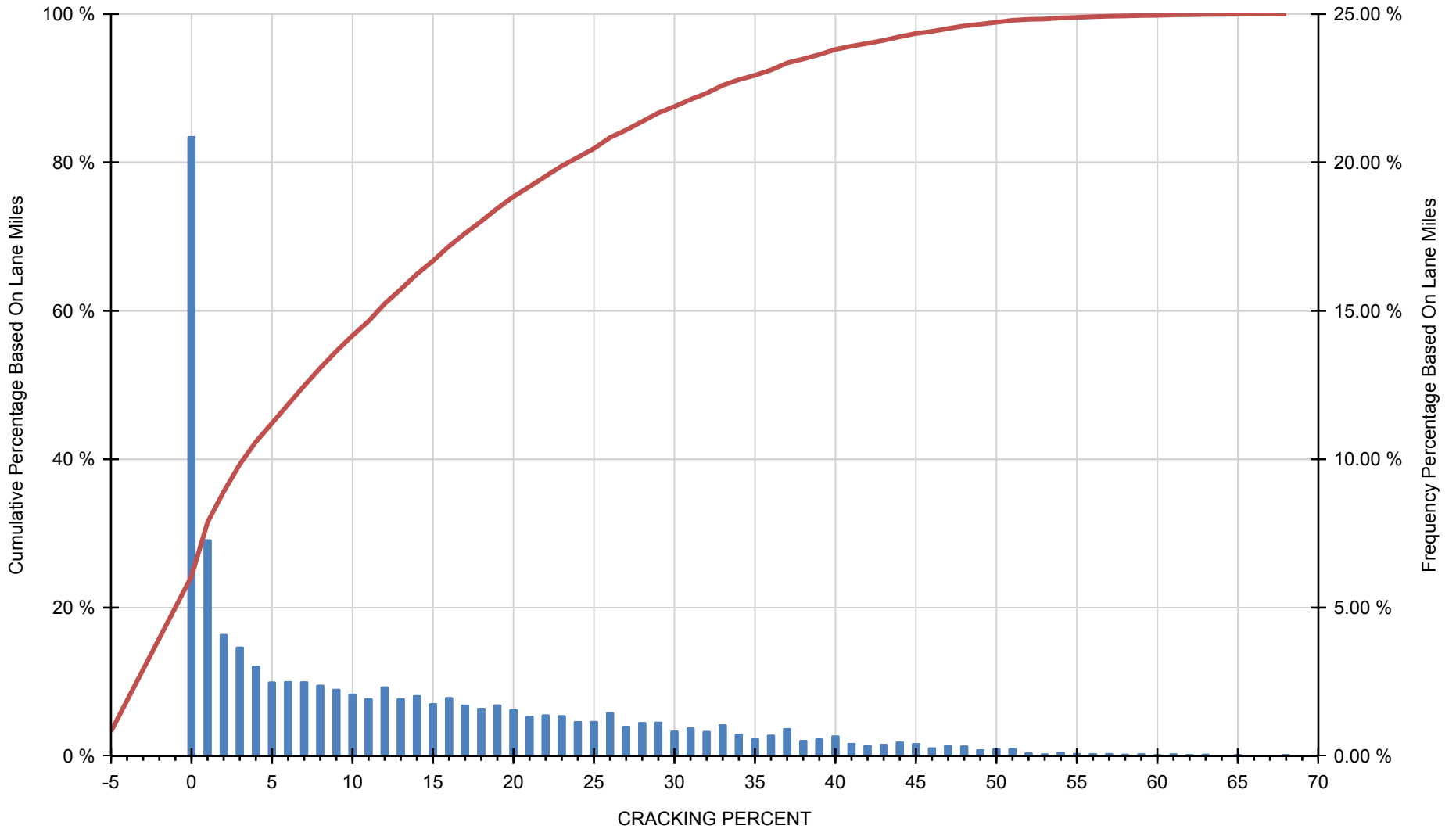
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing IRI = 3.640%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - CRACKING PERCENT (NON-INTERSTATE NHS)

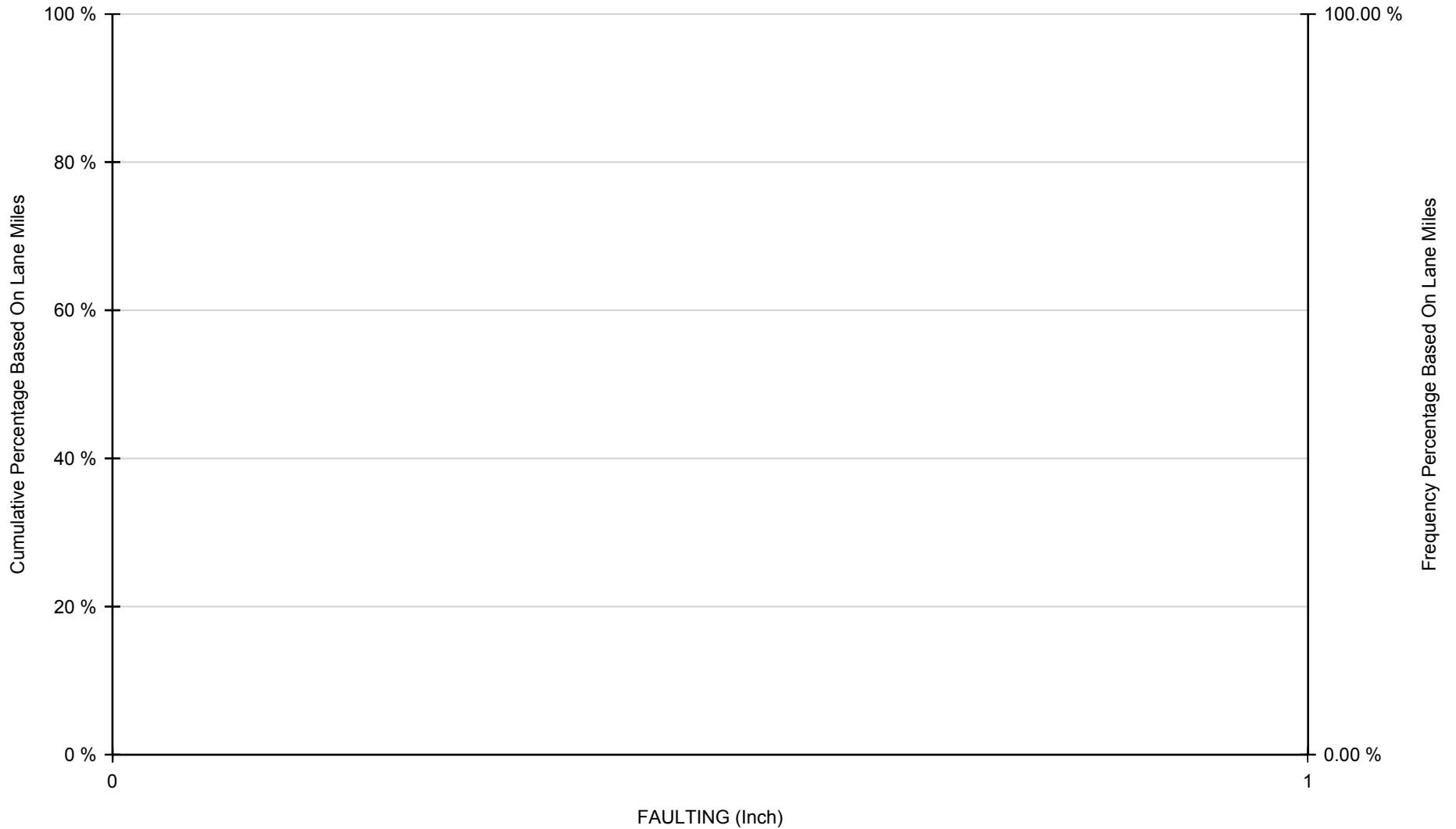
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing CRACKING_PERCENT = 3.325%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - FAULTING (NON-INTERSTATE NHS)

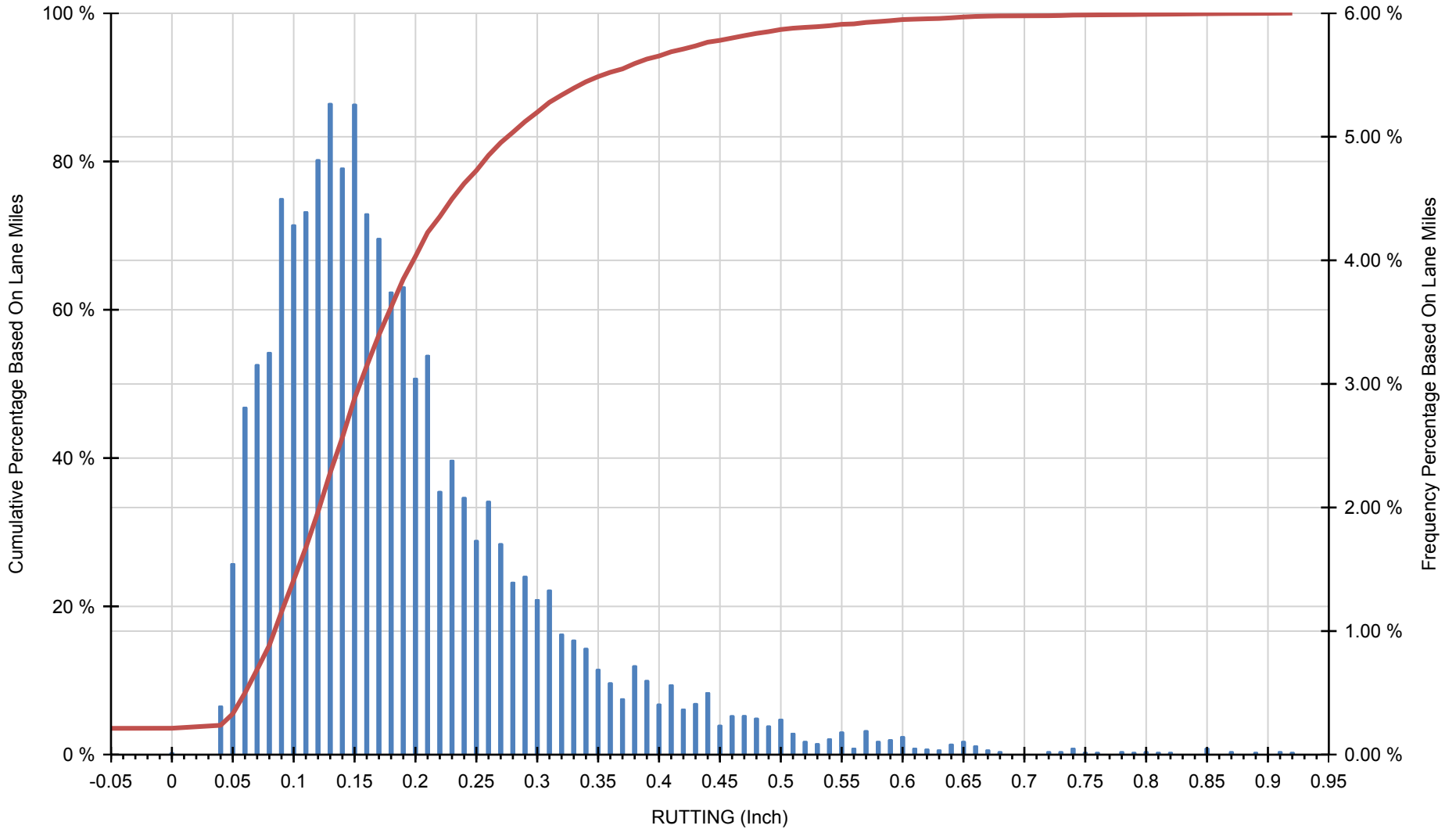
Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing FAULTING = 0.000%, missing data is included in the cumulative distribution graph.)

CUMULATIVE AND FREQUENCY DISTRIBUTION - RUTTING (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



(Frequency of Missing RUTTING = 3.553%, missing data is included in the cumulative distribution graph.)

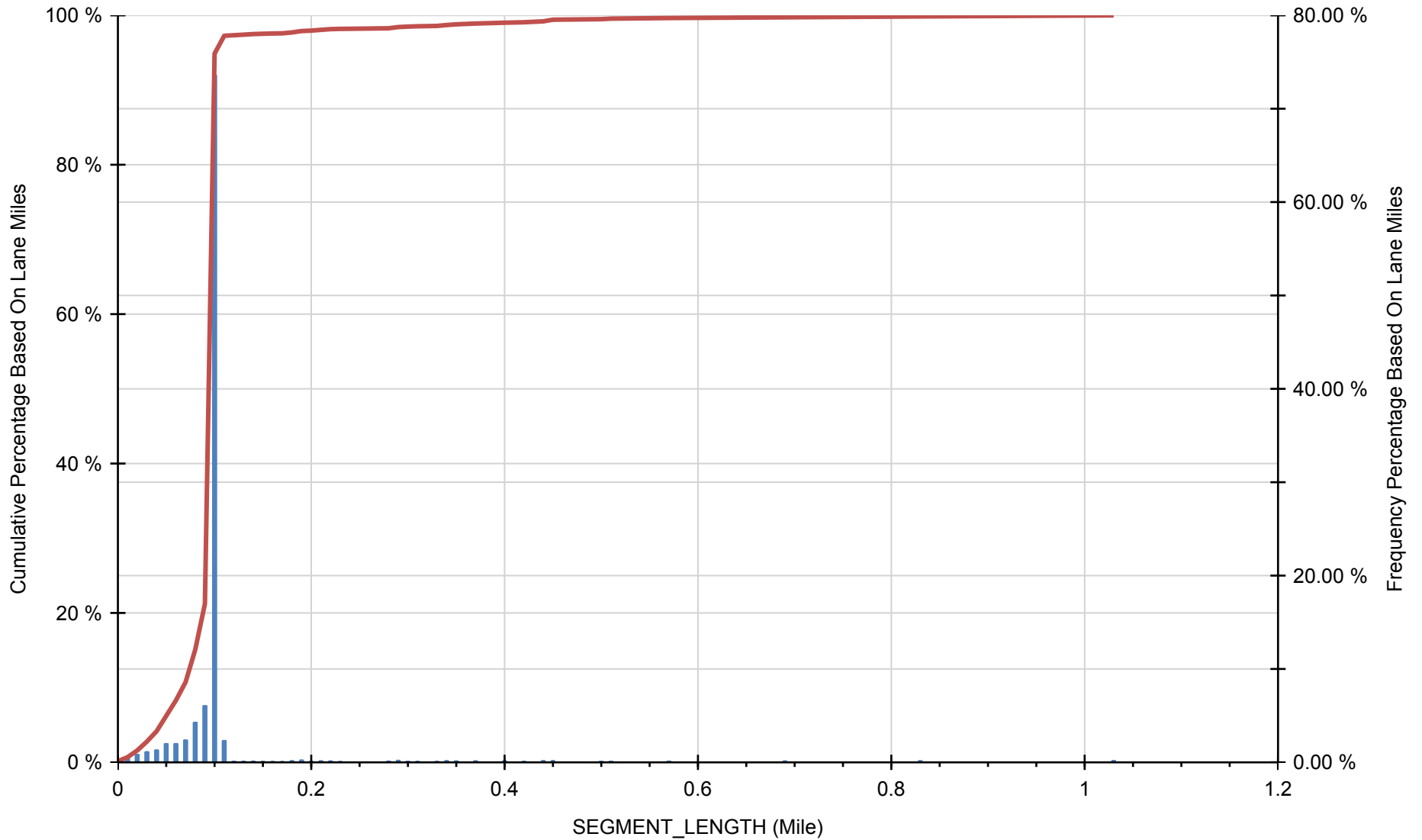
SEGMENT LENGTHS

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

23 CFR 490 REQUIRES THAT IRI DATA BE COLLECTED AND REPORTED IN SECTIONS NOMINALLY NO LONGER THAN 0.1 MILE WHILE ALLOWING FOR SHORTER SECTIONS AT BRIDGES AND TERMINAL SECTIONS. MAXIMUM SECTION LENGTH ALLOWED IS 0.11 MILE. THE REGULATION ALSO STATES THAT ALL FOUR METRICS SHOULD BE REPORTED IN 0.1 MILE SECTIONS THAT ARE SPATIALLY ALLIGNED. IF YOUR STATE REPORTS IN SECTIONS EXCEEDING THE MAXIMUM LENGTH YOU MAY WISH TO INVESTIGATE IF THIS IS DUE TO VENDOR PREFERENCE OR DYNAMIC SEGMENTATION TAKING PLACE DURING UPLOADING TO THEIR PAVEMENT MANAGEMENT SYSTEM OR HPMS. IF THE DATA DISTRIBUTION SHOWS A LARGE PERCENTAGE OF VERY SHORT SLIVERS (0.001 MILE) IT MAY INDICATE PROBLEMS WITH SPATIAL ALIGNMENT DURING DATA COLLECTION.

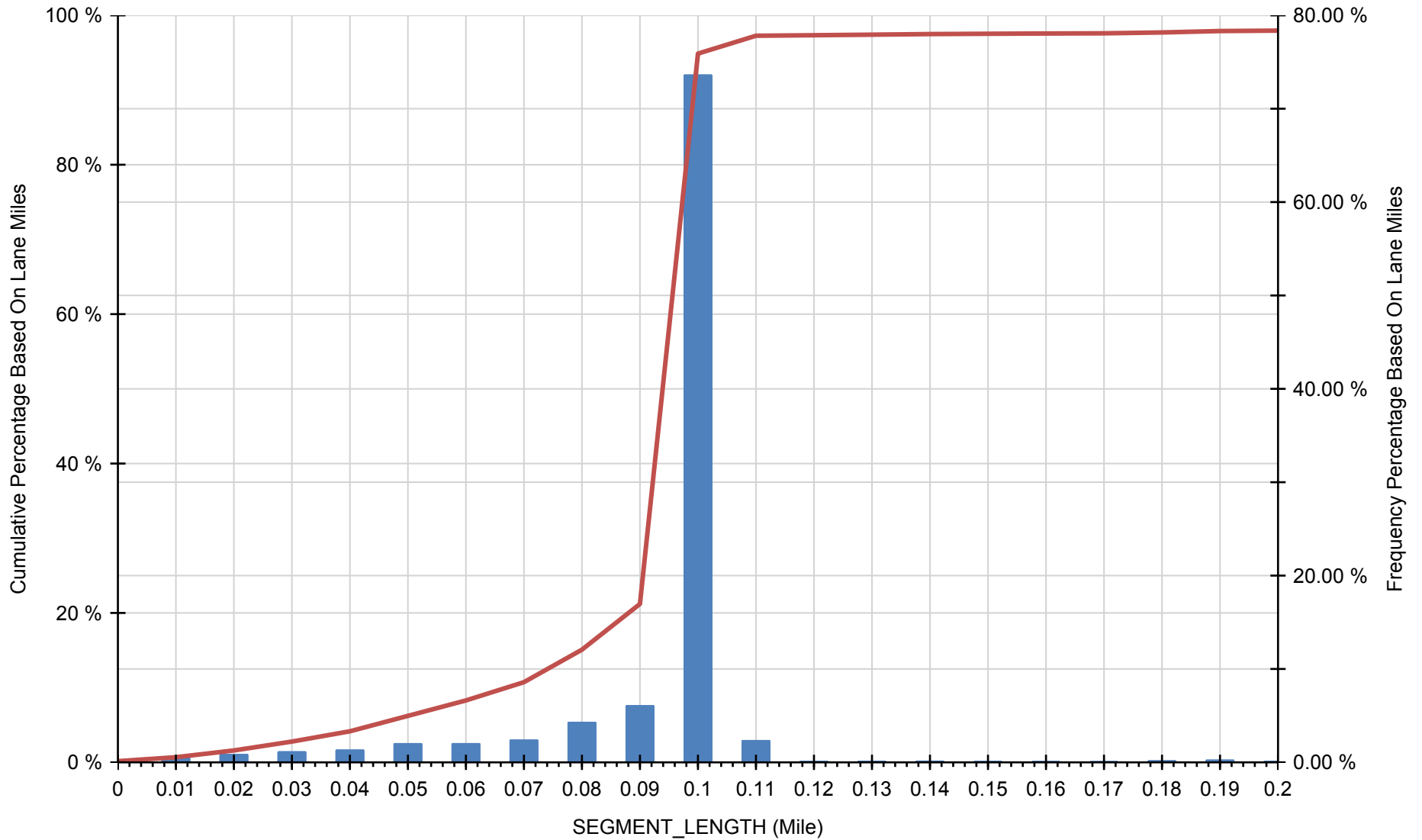
CUMULATIVE AND FREQUENCY DISTRIBUTION - SEGMENT LENGTHS (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



CUMULATIVE AND FREQUENCY DISTRIBUTION - SEGMENT LENGTHS - CLOSEUP 0.0 TO 0.2 MILE IN LENGTH (NON-INTERSTATE NHS)

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019



PM2 VALIDATION SUMMARIES NON-INTERSTATE NHS

Stage: Review
Year: 2018
State: 44 - Rhode Island
Date: 06/10/2019

Summary of Length and Spatial Coincidence Validation

Data Item	Section Length		Spatial Coincidence	
	Sections	Miles	Sections	Miles
IRI	0	0.00	N/A	N/A
PSR	0	0.00	N/A	N/A
Rutting	0	0.00	16	1.34
Faulting	0	0.00	2	0.17
Cracking_Percent	0	0.00	21	1.84

Lane Miles of Pavement Metrics Excluding Bridges by Collection Year

Year (Value Date)	IRI		Rutting		Faulting		Cracking Percent		PSR	
	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total
2017	59.57	4.14 %	59.56	4.14 %	0.00	0.00 %	59.56	4.14 %	0.00	0.00 %
2018	1,328.15	92.22 %	1,330.69	92.40 %	0.00	0.00 %	1,332.69	92.54 %	0.00	0.00 %
NULL	52.42	3.64 %	49.88	3.46 %	0.00	0.00 %	47.88	3.32 %	1,440.14	100.00 %
Total	1,440.14	100.00 %	1,440.14	100.00 %	0.00	0.00 %	1,440.14	100.00 %	1,440.14	100.00 %

Lane Miles of Pavement Metrics with Value Text Codes

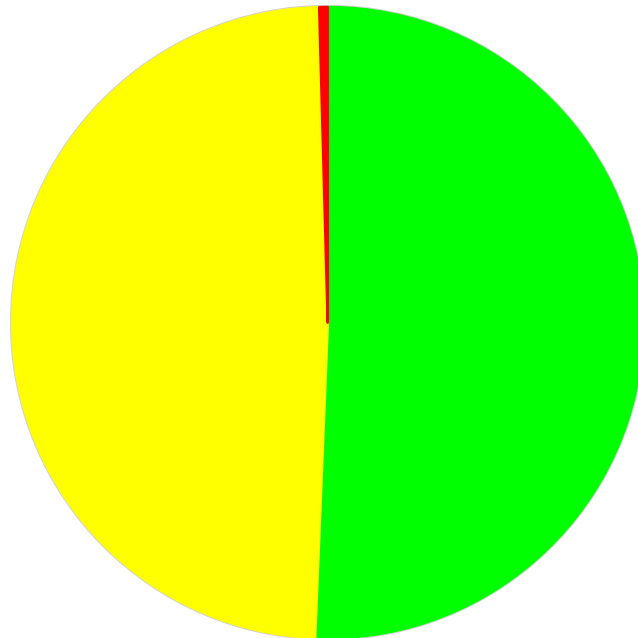
Data Item	Text Codes				
	A (Construction)	B (Closure)	C (Disaster)	D (Deterioration)	E (New NHS Segment)
IRI	3.29	0.00	0.00	0.00	0.00
Cracking_Percent	7.27	0.00	0.00	0.00	0.00
Faulting	0.00	0.00	0.00	0.00	0.00
Rutting	5.27	0.00	0.00	0.00	0.00
Total	15.83	0.00	0.00	0.00	0.00

Year 2019

Full Extent Lane Miles Rating (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Lane miles full extent Good	177.460
No.2	Lane miles full extent Fair	171.470
No.3	Lane miles full extent Poor	1.500
No.4	Total lane miles Good, Fair or Poor	350.430
No.5	Estimated total Interstate lane miles Missing, Invalid or Unresolved data	13.136
No.6	Total lane miles Good, Fair, Poor, Missing, Invalid or Unresolved data	363.566
No.7	% Estimated total Interstate lane miles Missing, Invalid or Unresolved data - limit 5%*	3.6 %



- Lane miles full extent Good (50.6%)
- Lane miles full extent Fair (48.9%)
- Lane miles full extent Poor (0.4%)

The HPMS pavement report card's purpose is to provide feedback to divisions and states on their HPMS pavement submittal data in response to requirements of 23 CFR 490. the report card is for information only and should not be considered the official calculation of measures for a state.

*States are limited to 5% Missing, Invalid or Unresolved data. Unresolved data is flagged in the FHWA review process. Percent Missing, Invalid or Unresolved(MIU) is computed by lane-miles of MIU divided by lane-miles of Good, Fair, Poor or MIU multiplied by 100.

Items shaded in orange are HPMS performance data improvement zones where data should be verified or corrected.
Items shaded in red may contribute to missing or invalid totals.

Data Check and Pavement Data Quantity (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Data Check

FIPS Code	44	State Name	Rhode Island	State Abbr.	RI	Pavement Metrics Reporting Method	Inventory Direction (only)
No.1	Year 2018 HM-41 Interstate miles						70.009
No.2	Submitted data Interstate miles						70.079
No.3	Difference						0.070
No.4	Year 2018 HM-43 Interstate lane miles						378.409
No.5	Submitted data Interstate lane miles						378.269
No.6	Difference						-0.140
No.7	Submitted data Interstate lane miles (Previous Year)						378.409
No.8	Total Interstate lane miles full extent excluding sections coded as a bridge						363.566

Data Quantity - Pavement

No.9	Total miles where Through_Lanes is missing						0.000
No.10	Lane miles full extent surface type is null and excluding sections coded as bridges - marked as missing data						0.000
No.11	Total Interstate lane miles full extent missing Cracking_Percent data from Surface_Type between 2 and 10 and excluding sections coded as bridges						0.030
No.12	Total Interstate lane miles full extent missing Faulting data from PCC pavements (Surface_Type=3,4,9 or 10) and excluding sections coded as bridges						0.000
No.13	Total Interstate lane miles full extent where IRI data is null or zero from Surface_Type between 2 and 10 and excluding sections coded as bridges						0.030
No.14	Total Interstate lane miles full extent where IRI collection date is null or not valid from Surface_type between 2 and 10 and excluding sections coded as bridges						13.136
No.15	Total Interstate lane miles full extent missing Rutting data from AC pavements and excluding sections coded as bridges						0.030
No.16	Lane miles full extent Surface_Type = 1 unsurfaced and excluding sections coded as bridges						0.000
No.17	Lane miles full extent Surface_Type = 11 other and excluding sections coded as bridges						0.000
No.18	Lane miles full extent Surface_Type is HMS (Surface_Type=2,6,7 or 8) and excluding sections coded as bridges						363.566
No.19	Lane miles full extent Surface_Type is PCC (Surface_Type=3,4,9,10) and excluding sections coded as bridges						0.000
No.20	Lane miles full extent Surface_Type is CRCP (Surface_Type=5) and excluding sections coded as bridges						0.000
No.21	Total Interstate lane miles where Through_Lanes is coded as a 1,2, or 3. Although this is possible at interstate terminal section or some interchanges these sections should be verified.						0.058

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Pavement Data Quality - IRI (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Interstate lane miles full extent where IRI collection date is null or not valid from Surface_Type between 2 and 10 and excluding sections coded as bridges. IRI data is required to be collected and reported annually on the Interstate along with the date of collection. IRI collection year should equal Year_Record	13.136
No.2	% Interstate lane miles full extent IRI collection year does not equal Year_Record. Cutoff value to flag for verification is 0.00%	3.61 %
No.3	Total Interstate lane miles full extent where IRI data is null or zero from Surface_Type between 2 and 10 and excluding sections coded as bridges	0.030
No.4	% Interstate lane miles full extent where IRI data is null or zero. Cutoff value to flag for verification is 0.00%	0.01 %
No.5	Full extent lane miles with Missing or Invalid IRI excluding sections coded as bridges	13.136
No.6	% Full extent lane miles Missing or Invalid IRI excluding sections coded as bridges	3.61 %
No.7	Total Interstate lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where IRI is less than 30 inches/mile. Although values less than 30 inches per mile are possible they are not likely and should be verified. you may wish to refer to the attached IRI cumulative distribution.	3.200
No.8	% Interstate lane miles full extent IRI less than 30 inches per mile.	0.88 %
No.9	Total Interstate lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where IRI is greater than 400 inches/mile. Although values greater than 400 inches per mile are possible they are not likely and should be verified. You may wish to refer to the attached IRI cumulative distribution.	0.000
No.10	% Interstate lane miles full extent IRI greater than 400 inches per mile.	0.00 %
No.11	Lane miles full extent Good based on PSR where IRI is null (Surface_Type between 2 and 10 and excluding sections coded as bridges)	0.000
No.12	Lane miles full extent Poor based on PSR where IRI is null (Surface_Type between 2 and 10 and excluding sections coded as bridges)	0.000

Items shaded in orange are HPMS performance data improvement zones where data should be verified or corrected.

Items shaded in red may contribute to missing or invalid totals.

Pavement Data Quality - Cracking Percent (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Interstate lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported as 0.00%. Multiple states reported very high values for their pavements and these should be verified. You may wish to refer to the attached Cracking_Percent cumulative distribution.	124.904
No.2	% Interstate lane miles full extent where cracking percent is reported as 0.00%.	34.36 %
No.3	Total Interstate lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported > 0% AND < 1%. This may be an indication that a state may have a problem converting decimal to percentages. Cracking_Percent is to be reported with a precision of 1% or less. Multiple states reported very high values for their pavements and these should be verified.	0.000
No.4	% Interstate lane miles full extent where cracking percent is reported > 0% AND < 1%.	0.00 %
No.5	Total Interstate lane miles full extent for pavements coded as HMA (Surface_Type = 2, 6, 7, or 8) excluding sections coded as bridges where Cracking_Percent is reported greater than 54%. Cracking_Percent for HMA is limited to wheelpath and therefore should not exceed 54% for a 12-foot lane width. Multiple states reported very high values for their pavements and these should be verified.	0.000
No.6	% Interstate lane miles full extent for HMA pavements where Cracking_Percent is reported greater than 54%.	0.00 %
No.7	Total Interstate lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported as 100%. Multiple states reported very high values for their pavements and these should be verified. You may wish to refer to the attached Cracking_Percent cumulative distribution.	0.000
No.8	% Interstate lane miles full extent where Cracking_Percent is reported as 100%.	0.00 %

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

Pavement Data Quality - Faulting and Rutting (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Interstate lane miles full extent excluding sections coded as bridges where Surface_Type is jointed PCC (Surface_Type=3,4,9 or 10) and Faulting is equal to 0.00. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Faulting cumulative distribution.	0.000
No.2	% Interstate lane miles full extent where Surface_Type is jointed PCC and Faulting is equal to 0.00.	0.00 %
No.3	Total Interstate lane miles full extent excluding sections coded as bridges where Surface_Type is jointed PCC (Surface_Type=3,4,9 or 10) and Faulting is greater than 1.00 inch. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Faulting cumulative distribution.	0.000
No.4	% Interstate lane miles full extent where Surface_Type is jointed PCC and Faulting is greater than 1.00 inch.	0.00 %
No.5	Total Interstate lane miles full extent excluding sections coded as bridges where Surface_Type is HMA (Surface_Type=2,6,7 or 8) and Rutting is equal to 0.00. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Rutting cumulative distribution.	0.000
No.6	% Interstate lane miles full extent where Surface_Type is HMA and Rutting is equal to 0.00.	0.00 %
No.7	Total Interstate lane miles full extent excluding sections coded as bridges where Surface_Type is HMA (Surface_Type=2,6,7 or 8) and Rutting is greater than 1.00 inch. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Rutting cumulative distribution.	0.000
No.8	% Interstate lane miles full extent where Surface_Type is HMA and Rutting is greater than 1.00 inch.	0.00 %
No.9	Total Interstate lane miles full extent excluding sections coded as bridges where Rutting is reported on Surface_Type = PCC or CRCP (Surface_Type=3,4,5,9 or 10)	0.000
No.10	Many states report all distresses regardless of surface type. Values other than 0% should be verified as this may be an error or the result of different sources of reporting data	0.00 %
No.11	Total Interstate lane miles full extent excluding sections coded as bridges where Faulting is reported on Surface_Type = HMA or CRCP (Surface_Type=2,5,6,7 or 8)	0.000
No.12	Many states report all distresses regardless of surface type. Values other than 0% should be verified as this may be an error or the result of different sources of reporting data	0.00 %

Items shaded in orange are HPMS performance data improvement zones where data should be verified or corrected.

Items shaded in red may contribute to missing or invalid totals.

Pavement Data Quality - Bridge and Section Length (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Bridge Location

Per MAP-21 bridges are excluded from the performance measure calculation. The ability to accurately locate bridges in HPMS is very important in the correct calculation of pavement condition.		
No.1	Count of mainline Interstate bridges of data year 2019 from NBI inventory	98
No.2	Total Interstate lane miles of bridges of data year 2019 from NBI inventory	17.425
No.3	Total lane miles on full extent basis coded as a bridge in HPMS	14.703
No.4	Percent HPMS bridge lane miles of NBI bridge lane miles.	84.38 %

Section Length

Distress data should be reported in sections 0.1 mile in length or shorter		
No.5	Total Interstate lane miles where section length is greater than 0.11 mile (0.1 mile nominal) excluding bridges	0.00

Spatial Coincidence

End points of Faulting, Rutting and Cracking_Percent should be aligned with IRI		
No.6	Total Interstate lane miles where spatial coincidence is violated excluding bridges	0.00

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are Surface_Type=NULL,1 OR 11.

Cracking_Percent

The Cumulative and Frequency Distribution of Interstate Cracking_Percent graph is based on full extent, bridges are excluded as are Surface_Type=NULL,1 OR 11.

Faulting

The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

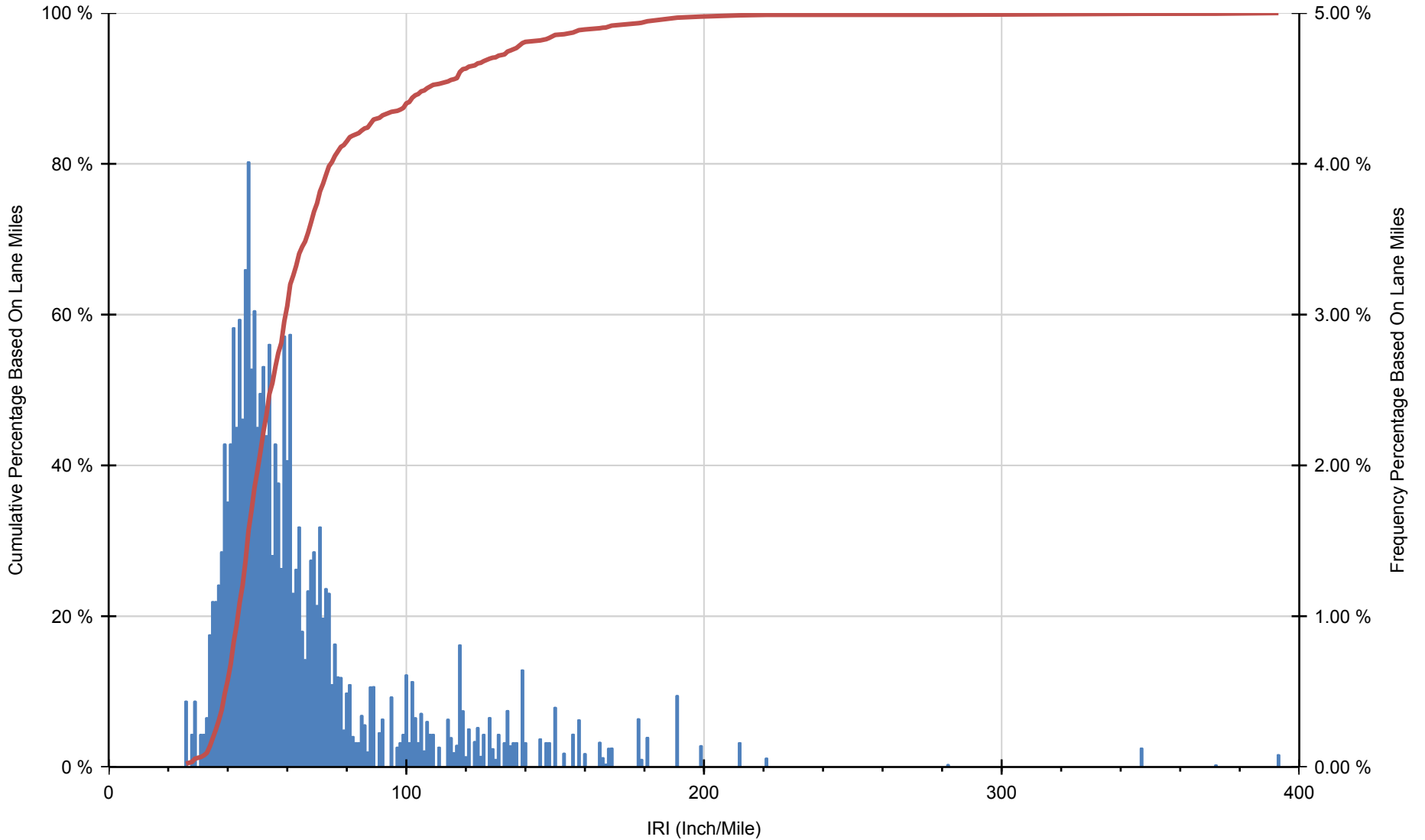
Rutting

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

Cumulative and Frequency Distribution - IRI (Interstate)

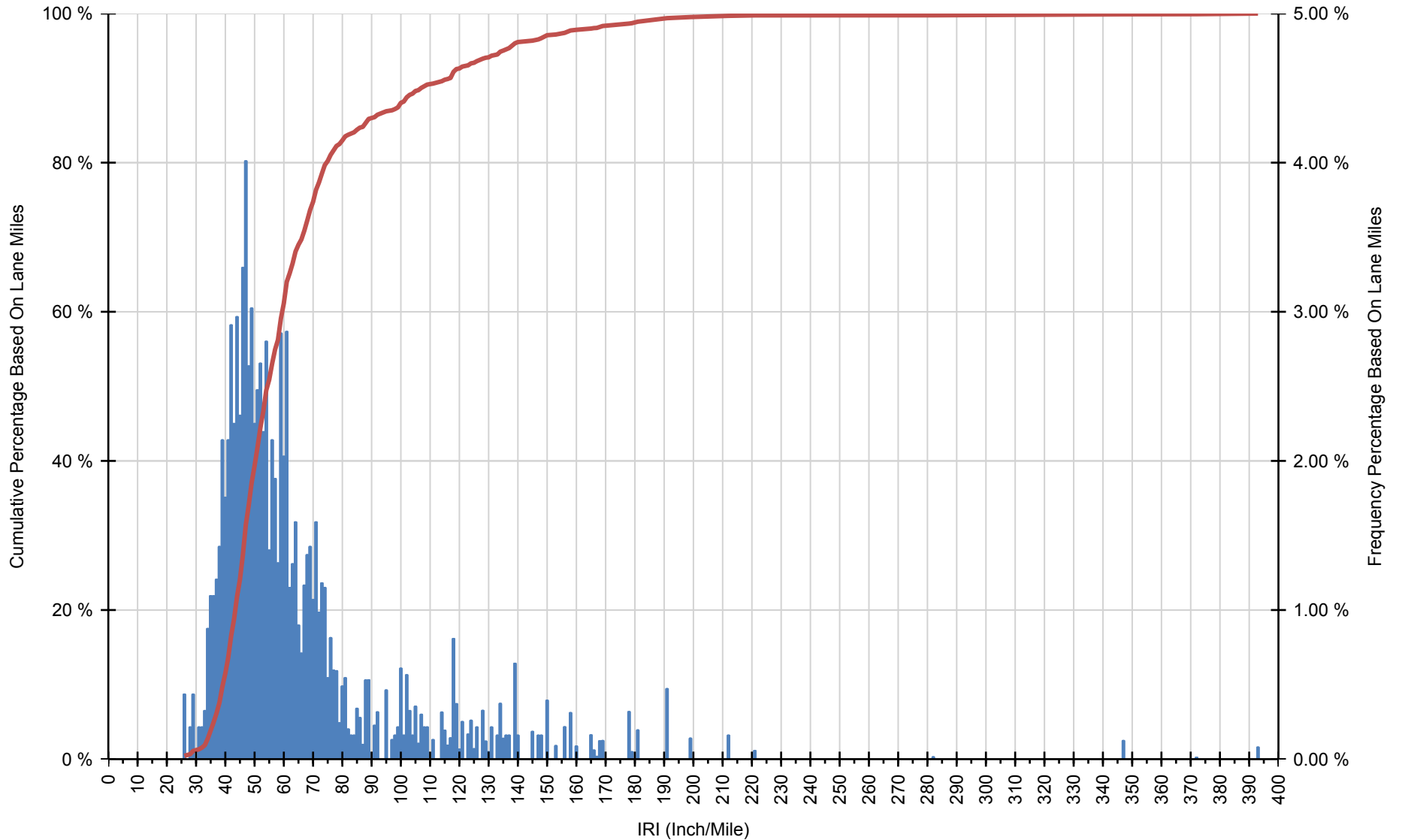
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing IRI = 0.008%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - IRI - Closeup 0 TO 400 (Interstate)

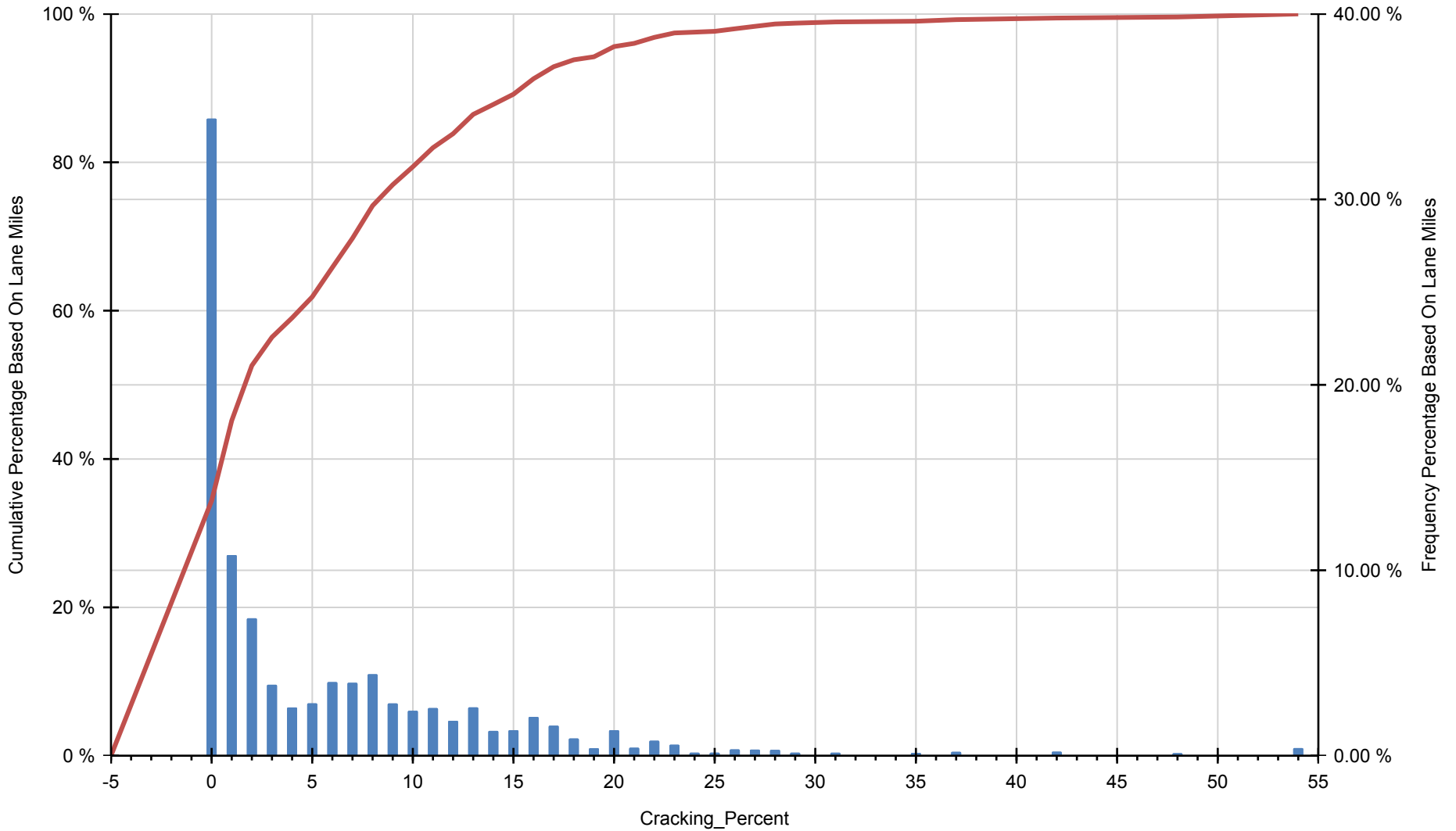
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing IRI = 0.008%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Cracking_Percent (Interstate)

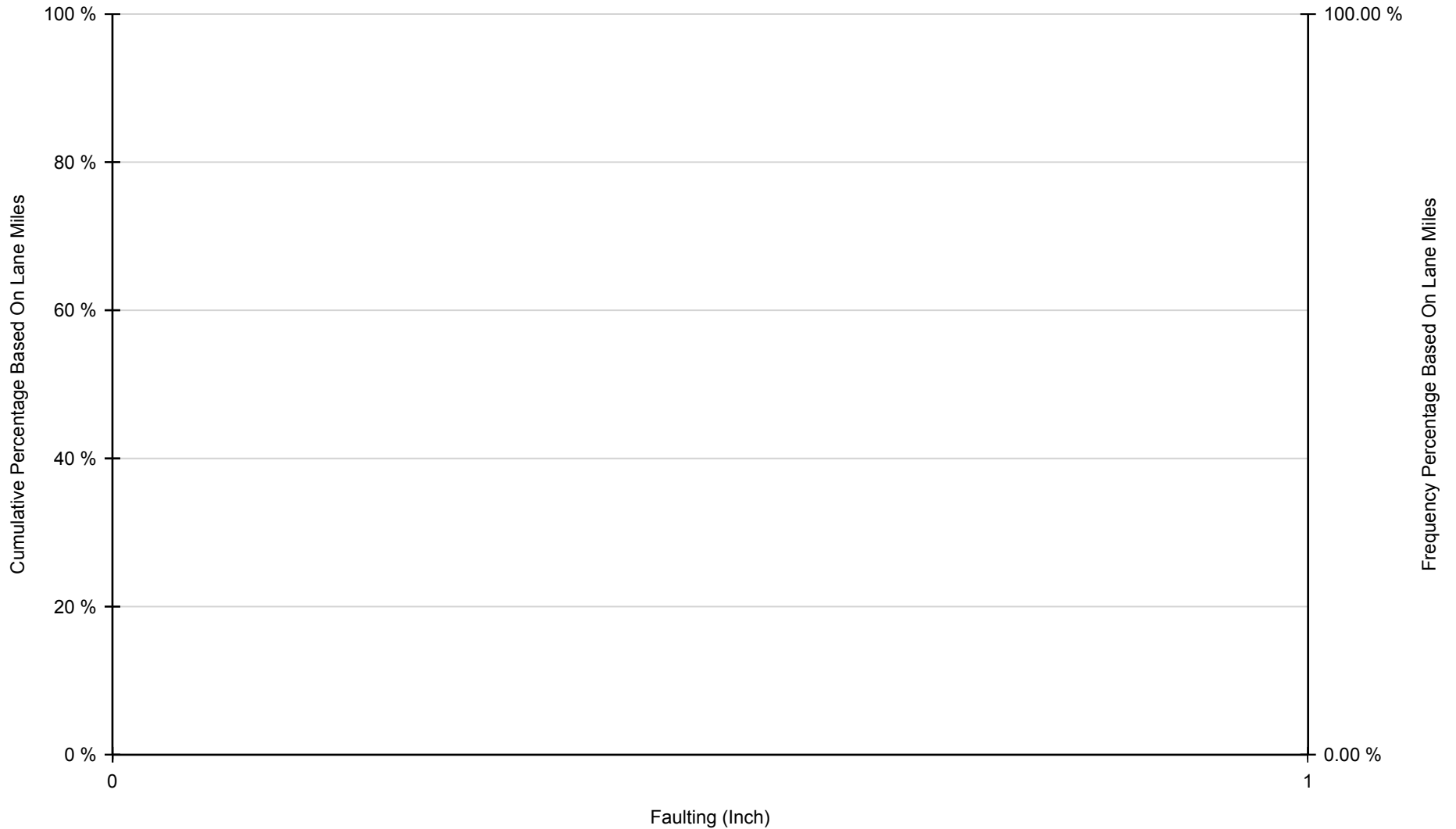
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing Cracking_Percent = 0.008%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Faulting (Interstate)

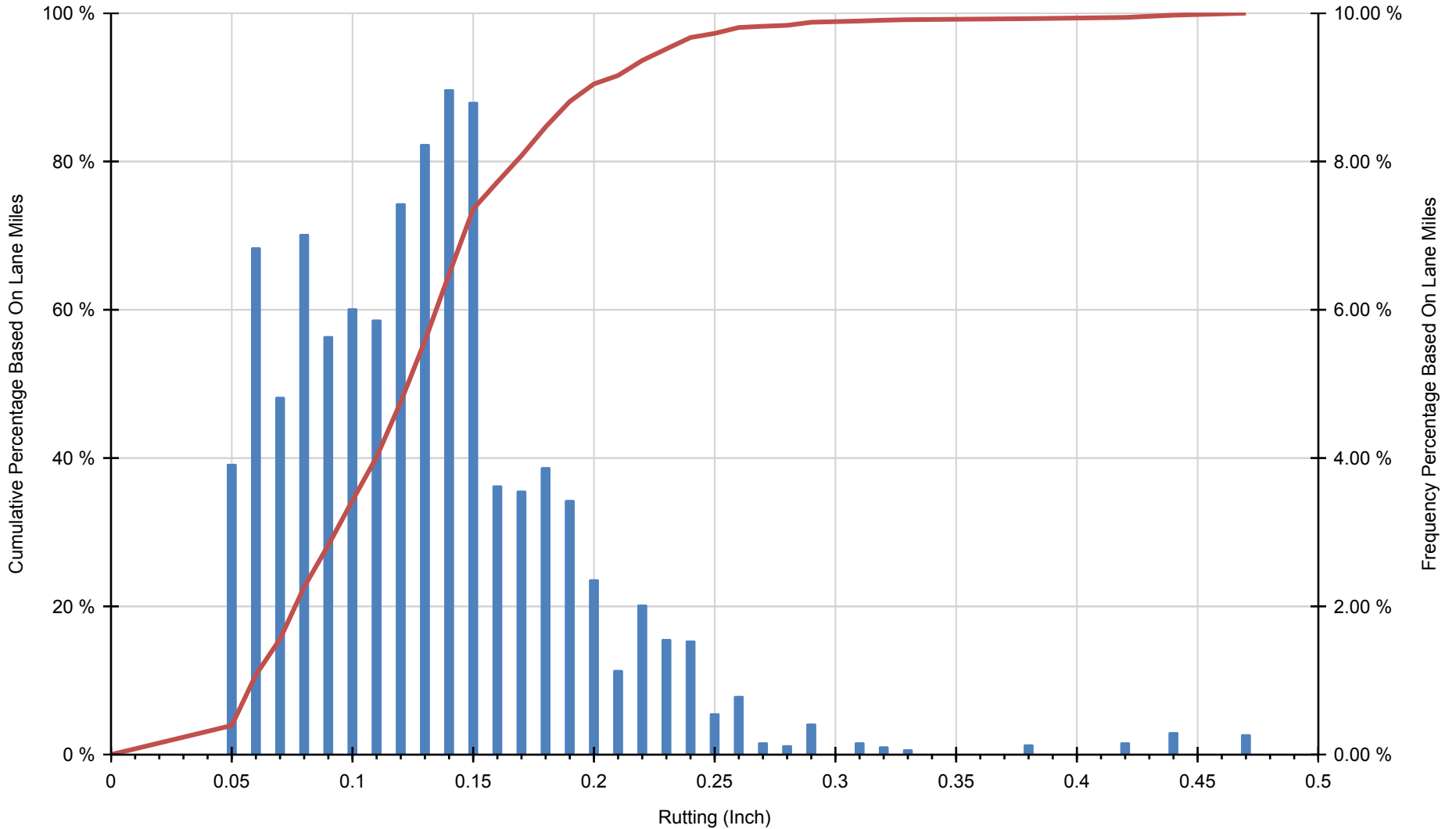
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing Faulting = 0.000%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Rutting (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing Rutting = 0.008%, missing data is included in the cumulative distribution graph.)

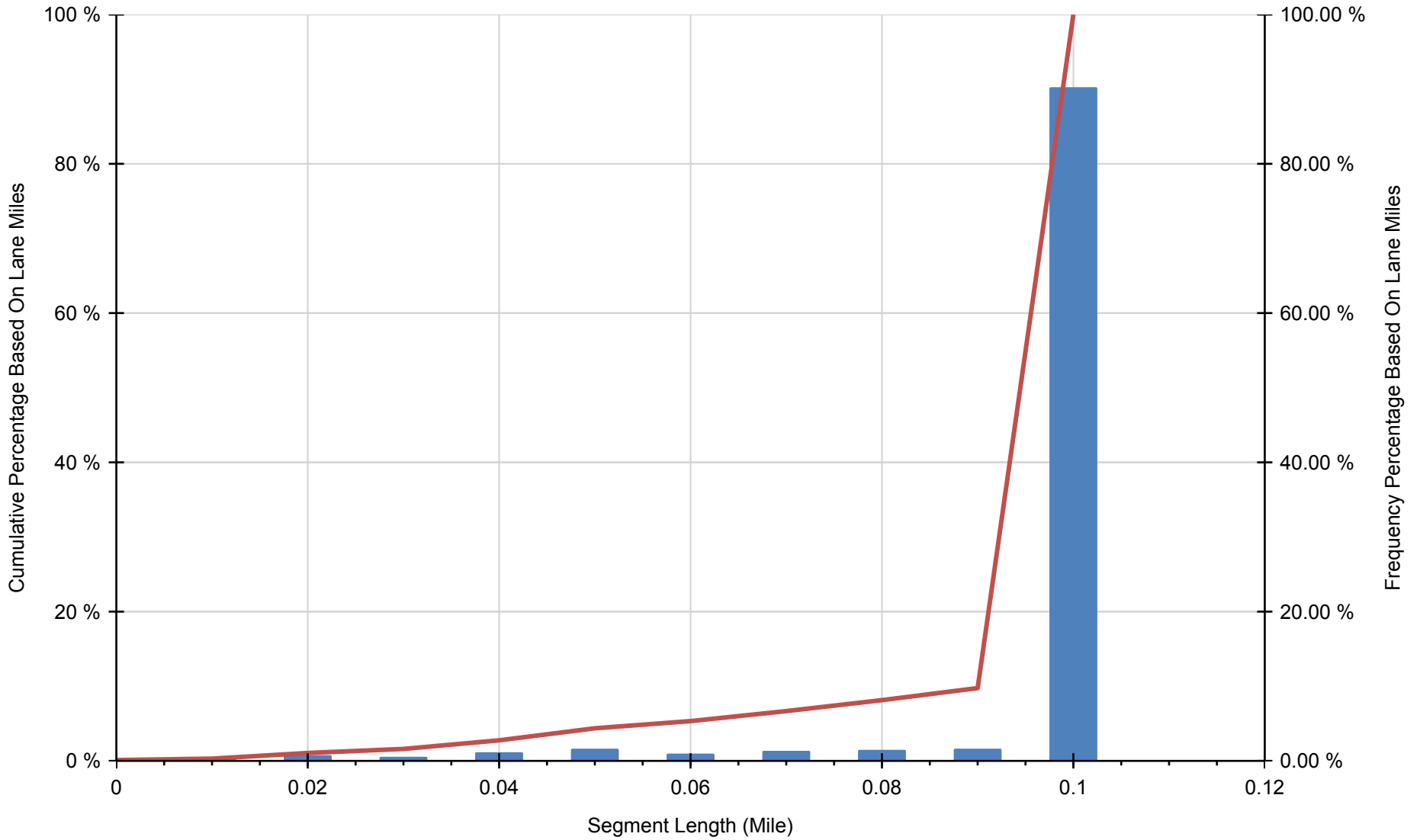
Segment Lengths

Stage: Submit**Year:** 2019**State:** 44 - Rhode Island**Date:** 06/15/2020

23 CFR 490 requires that IRI data be collected and reported in sections nominally no longer than 0.1 mile while allowing for shorter sections at bridges and terminal sections. Maximum section length allowed is 0.11 mile. the regulation also states that all four metrics should be reported in 0.1 mile sections that are spatially aligned. If your state reports in sections exceeding the maximum length you may wish to investigate if this is due to vendor preference or dynamic segmentation taking place during uploading to their pavement management system or HPMS. If the data distribution shows a large percentage of very short slivers (0.001 mile) it may indicate problems with spatial alignment during data collection.

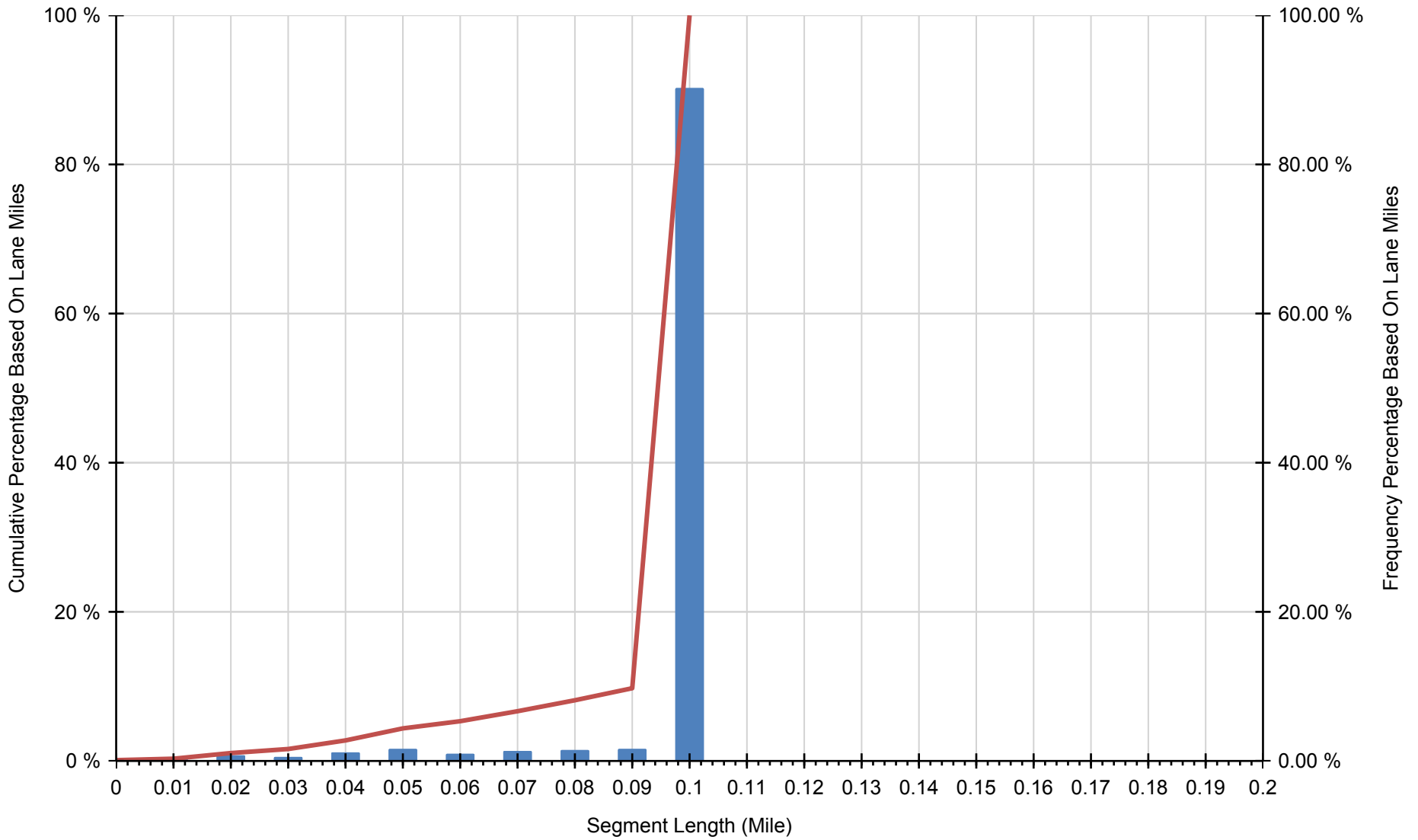
Cumulative and Frequency Distribution - Segment Lengths (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



Cumulative and Frequency Distribution - Segment Lengths - Closeup 0.0 TO 0.2 Mile in Length (Interstate)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



PM2 Validation Summaries Interstate

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Summary of Length and Spatial Coincidence Validation

Data Item	Section Length		Spatial Coincidence	
	Sections	Miles	Sections	Miles
Cracking_Percent	0	0.000	0	0.000
Faulting	0	0.000	0	0.000
IRI	0	0.000	N/A	N/A
PSR	0	0.000	N/A	N/A
Rutting	0	0.000	0	0.000

Lane Miles of Pavement Metrics Excluding Bridges by Collection Year

Year (Value Date)	IRI		Rutting (HMA)		Faulting (PCC)		Cracking Percent		PSR	
	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total
2018	13.106	3.60 %	12.522	3.44 %	0.000	0.00 %	13.106	3.60 %	0.000	0.00 %
2019	350.430	96.39 %	351.014	96.55 %	0.000	0.00 %	350.430	96.39 %	0.000	0.00 %
NULL	0.030	0.01 %	0.030	0.01 %	0.000	0.00 %	0.030	0.01 %	0.000	0.00 %
Total	363.566	100.00 %	363.566	100.00 %	0.000	0.00 %	363.566	100.00 %	0.00	0.00 %

Lane miles of Missing or Invalid Pavement Segments with Valid Value Text Codes

Text Codes				
A (Construction)	B (Closure)	C (Disaster)	D (Deterioration)	E (New NHS Segment)
13.106	0.000	0.000	0.000	0.000

Full Extent Lane Miles Rating (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Lane miles full extent Good	250.002
No.2	Lane miles full extent Fair	888.446
No.3	Lane miles full extent Poor	256.510
No.4	Total lane miles Good, Fair or Poor	1,394.958
No.5	Estimated total Non-interstate NHS lane miles Missing, Invalid or Unresolved data	45.796
No.6	Total lane miles Good, Fair, Poor, Missing, Invalid or Unresolved data	1,440.754
No.7	% Estimated total Non-interstate NHS lane miles Missing, Invalid or Unresolved data - limit 5%*	3.2 %



- Lane miles full extent Good (17.9%)
- Lane miles full extent Fair (63.7%)
- Lane miles full extent Poor (18.4%)

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*States are limited to 5% Missing, Invalid or Unresolved data. Unresolved data is flagged in the FHWA review process. Percent Missing, Invalid or Unresolved(MIU) is computed by lane-miles of MIU divided by lane-miles of Good, Fair, Poor or MIU multiplied by 100.

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Items shaded in red may contribute to missing or invalid totals.

Data Check and Pavement Data Quantity (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Data Check

FIPS Code	44	State Name	Rhode Island	State Abbr.	RI	Pavement Metrics Reporting Method	Inventory Direction (only)
No.1	Year 2018 HM-41 Non-interstate NHS miles						531.912
No.2	Submitted data Non-interstate NHS miles						532.449
No.3	Difference						0.537
No.4	Year 2018 HM-43 Non-interstate NHS lane miles						1,477.240
No.5	Submitted data Non-interstate NHS lane miles						1,477.963
No.6	Difference						0.723
No.7	Submitted data Non-interstate NHS lane miles (Previous Year)						1,477.240
No.8	Total Non-interstate NHS lane miles full extent excluding sections coded as a bridge						1,440.754

Data Quantity - Pavement

No.9	Total miles where Through_Lanes is missing						0.000
No.10	Lane miles full extent surface type is null and excluding sections coded as bridges - marked as missing data						0.000
No.11	Total Non-interstate NHS lane miles full extent missing Cracking_Percent data from Surface_Type between 2 and 10 and excluding sections coded as bridges						44.996
No.12	Total Non-interstate NHS lane miles full extent missing Faulting data from PCC pavements (Surface_Type=3,4,9 or 10) and excluding sections coded as bridges						0.000
No.13	Total Non-interstate NHS lane miles full extent where IRI data is null or zero from Surface_Type between 2 and 10 and excluding sections coded as						44.996
No.14	Total Non-Interstate NHS lane miles full extent where IRI collection date is null or not valid from Surface_type between 2 and 10 and excluding sections coded as bridges						44.996
No.15	Total Non-interstate NHS lane miles full extent missing Rutting data from AC pavements and excluding sections coded as bridges						44.996
No.16	Lane miles full extent Surface_Type = 1 unsurfaced and excluding sections coded as bridges						0.000
No.17	Lane miles full extent Surface_Type = 11 other and excluding sections coded as bridges						0.000
No.18	Lane miles full extent Surface_Type is HMS (Surface_Type=2,6,7 or 8) and excluding sections coded as bridges						1,440.070
No.19	Lane miles full extent Surface_Type is PCC (Surface_Type=3,4,9,10) and excluding sections coded as bridges						0.684
No.20	Lane miles full extent Surface_Type is CRCP (Surface_Type=5) and excluding sections coded as bridges						0.000

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Pavement Data Quality - IRI (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Non-interstate NHS lane miles full extent where IRI collection date not valid from Surface_Type between 2 and 10 and excluding sections coded as bridges. IRI data is required to be collected and reported annually on the Non-interstate NHS along with the date of collection. IRI collection year should equal Year_Record or Year_Record-1	44.996
No.2	% Non-interstate NHS lane miles full extent IRI year does not equal Year_Record nor Year_Record-1. Cutoff value to flag for verification is 0.00%	3.12 %
No.3	Total Non-interstate NHS lane miles full extent where IRI data is null or zero from Surface_Type between 2 and 10 and excluding sections coded as bridges	44.996
No.4	% Non-interstate NHS lane miles full extent where IRI data is null or zero. Cutoff value to flag for verification is 0.00%	3.12 %
No.5	Full extent lane miles with Missing or Invalid IRI excluding sections coded as bridges	44.996
No.6	% Full extent lane miles Missing or Invalid IRI excluding sections coded as bridges	3.12 %
No.7	Total Non-interstate NHS lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where IRI is less than 30 inches/mile. Although values less than 30 inches per mile are possible they are not likely and should be verified. you may wish to refer to the attached IRI cumulative distribution.	5.800
No.8	% Non-interstate NHS lane miles full extent IRI less than 30 inches per mile.	0.40 %
No.9	Total Non-interstate NHS lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where IRI is greater than 400 inches/mile. Although values greater than 400 inches per mile are possible they are not likely and should be verified. You may wish to refer to the attached IRI cumulative distribution.	26.453
No.10	% Non-interstate NHS lane miles full extent IRI greater than 400 inches per mile.	1.84 %
No.11	Lane miles full extent Good based on PSR where IRI is null (Surface_Type between 2 and 10 and excluding sections coded as bridges)	0.000
No.12	Lane miles full extent Poor based on PSR where IRI is null (Surface_Type between 2 and 10 and excluding sections coded as bridges)	0.000

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Pavement Data Quality - Cracking Percent (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Non-interstate NHS lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported as 0.00%. Multiple states reported very high values for their pavements and these should be verified. You may wish to refer to the attached Cracking_Percent cumulative distribution.	318.318
No.2	% Non-interstate NHS lane miles full extent where cracking percent is reported as 0.00%	22.09 %
No.3	Total Non-interstate NHS lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported > 0% AND < 1%. This may be an indication that a state may have a problem converting decimal to percentages. Cracking_Percent is to be reported with a precision of 1% or less. Multiple states reported very high values for their pavements and these should be verified.	0.000
No.4	% Non-interstate NHS lane miles full extent where cracking percent is reported > 0% AND < 1%.	0.00 %
No.5	Total Non-interstate NHS lane miles full extent for pavements coded as HMA (Surface_Type = 2, 6, 7, or 8) excluding sections coded as bridges where Cracking_Percent is reported greater than 54%. Cracking_Percent for HMA is limited to wheelpath and therefore should not exceed 54% for a 12-foot lane width. Multiple states reported very high values for their pavements and these should be verified.	15.800
No.6	% Non-interstate NHS lane miles full extent for HMA pavements where Cracking_Percent is reported greater than 54%.	1.10 %
No.7	Total Non-interstate NHS lane miles full extent from Surface_Type between 2 and 10 and excluding sections coded as bridges where Cracking_Percent is reported as 100%. Multiple states reported very high values for their pavements and these should be verified. You may wish to refer to the attached Cracking_Percent cumulative distribution.	0.000
No.8	% Non-interstate NHS lane miles full extent where Cracking_Percent is reported as 100%.	0.00 %

ITEMS SHADED ORANGE ARE HPMS PERFORMANCE DATA IMPROVEMENT ZONES WHERE DATA SHOULD BE VERIFIED OR CORRECTED.

ITEMS SHADED IN RED MAY CONTRIBUTE TO MISSING OR INVALID TOTALS.

Pavement Data Quality - Faulting and Rutting (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Surface_Type is jointed PCC (Surface_Type=3,4,9 or 10) and Faulting is equal to 0.00. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Faulting cumulative distribution.	0.000
No.2	% Non-interstate NHS lane miles full extent where Surface_Type is jointed PCC and Faulting is equal to 0.00.	0.00 %
No.3	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Surface_Type is jointed PCC (Surface_Type=3,4,9 or 10) and Faulting is greater than 1.00 inch. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Faulting cumulative distribution.	0.000
No.4	% Non-interstate NHS lane miles full extent where Surface_Type is jointed PCC and Faulting is greater than 1.00 inch.	0.00 %
No.5	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Surface_Type is HMA (Surface_Type=2,6,7 or 8) and Rutting is equal to 0.00. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Rutting cumulative distribution.	0.000
No.6	% Non-interstate NHS lane miles full extent where Surface_Type is HMA and Rutting is equal to 0.00.	0.00 %
No.7	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Surface_Type is HMA (Surface_Type=2,6,7 or 8) and Rutting is greater than 1.00 inch. Multiple states reported very high values and this data should be verified. You may wish to refer to the attached Rutting cumulative distribution.	0.000
No.8	% Non-interstate NHS lane miles full extent where Surface_Type is HMA and Rutting is greater than 1.00 inch.	0.00 %
No.9	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Rutting is reported on Surface_Type = PCC or CRCP (Surface_Type=3,4,5,9 or 10)	0.000
No.10	Many states report all distresses regardless of surface type. Values other than 0% should be verified as this may be an error or the result of different sources of reporting data	0.00 %
No.11	Total Non-interstate NHS lane miles full extent excluding sections coded as bridges where Faulting is reported on Surface_Type = HMA or CRCP (Surface_Type=2,5,6,7 or 8)	0.000
No.12	Many states report all distresses regardless of surface type. Values other than 0% should be verified as this may be an error or the result of different sources of reporting data	0.00 %

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Pavement Data Quality - Bridge and Section Length (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Bridge Location

Per MAP-21 bridges are excluded from the performance measure calculation. The ability to accurately locate bridges in HPMS is very important in the correct calculation of pavement condition.

No.1	Count of mainline Non-interstate NHS bridges of data year 2019 from NBI inventory	210
No.2	Total Non-interstate NHS lane miles of bridges of data year 2019 from NBI inventory	38.606
No.3	Total lane miles on full extent basis coded as a bridge in HPMS	37.209
No.4	Percent HPMS bridge lane miles of NBI bridge lane miles.	96.38 %

Section Length

Distress data should be reported in sections 0.1 mile in length or shorter

No.5	Total Non-interstate NHS lane miles where section length is greater than 0.11 mile (0.1 mile nominal) excluding bridges	0.80
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Spatial Coincidence

End points of Faulting, Rutting and Cracking_Percent should be aligned with IRI

No.6	Total Non-interstate NHS lane miles where spatial coincidence is violated excluding bridges	5.76
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IRI

The Cumulative and Frequency Distribution of Interstate IRI graph is based on full extent of Interstate IRI data, bridges are excluded as are Surface_Type=NULL,1 OR 11.

Cracking_Percent

The Cumulative and Frequency Distribution of Interstate Cracking_Percent graph is based on full extent, bridges are excluded as are Surface_Type=NULL,1 OR 11.

Faulting

The Cumulative and Frequency Distribution of Interstate Faulting graph is based on full extent data for PCC jointed surface types, bridges are excluded.

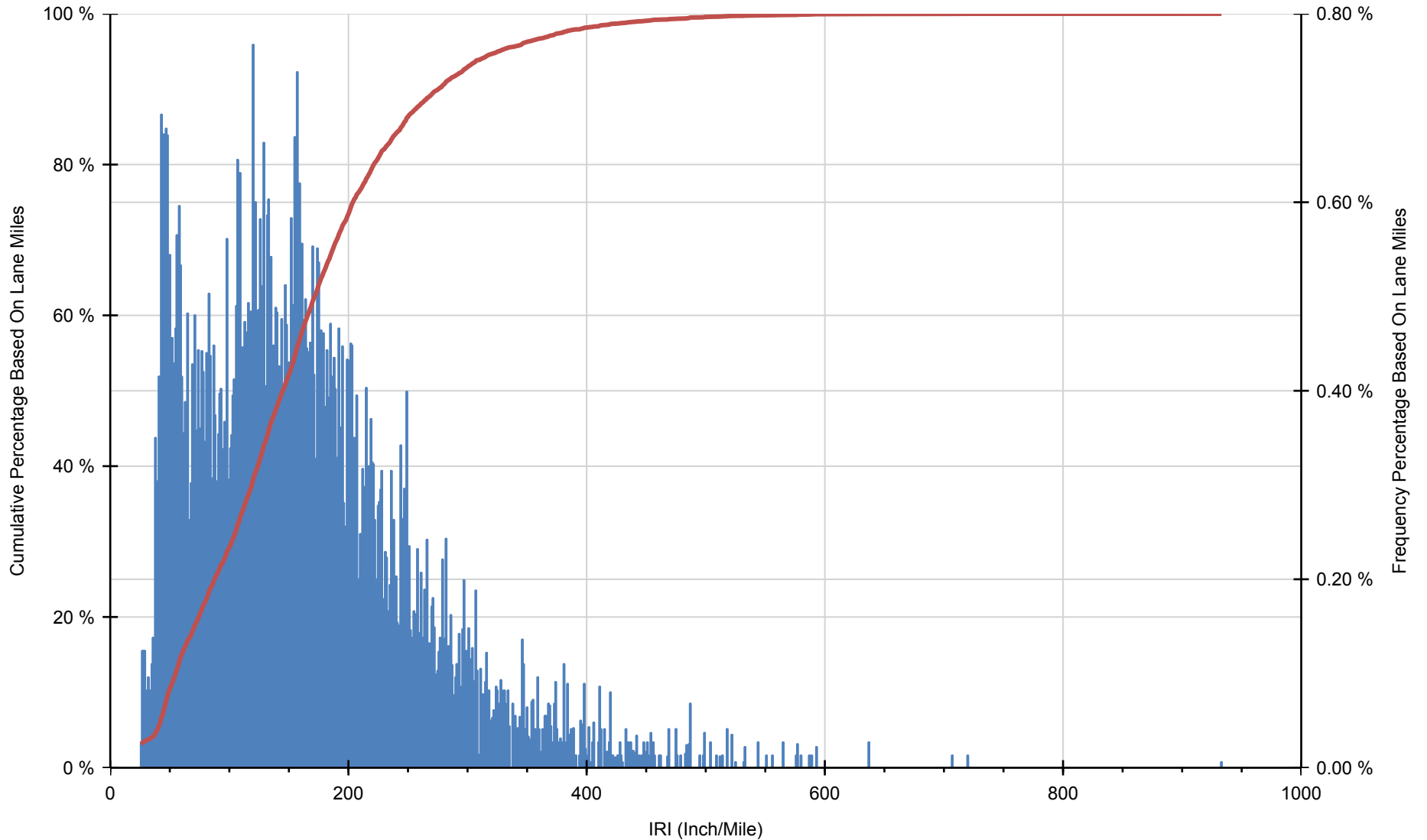
Rutting

The Cumulative and Frequency Distribution of Interstate Rutting graph is based on full extent data for AC surface types, bridges are excluded.

When evaluating the distribution in regard to the quality of the data, consider the shape of the distribution rather than whether your distribution is better or worse than average. When evaluating the distribution consider especially the tails, 0-10% and 90-100%.

Cumulative and Frequency Distribution - IRI (Non-interstate NHS)

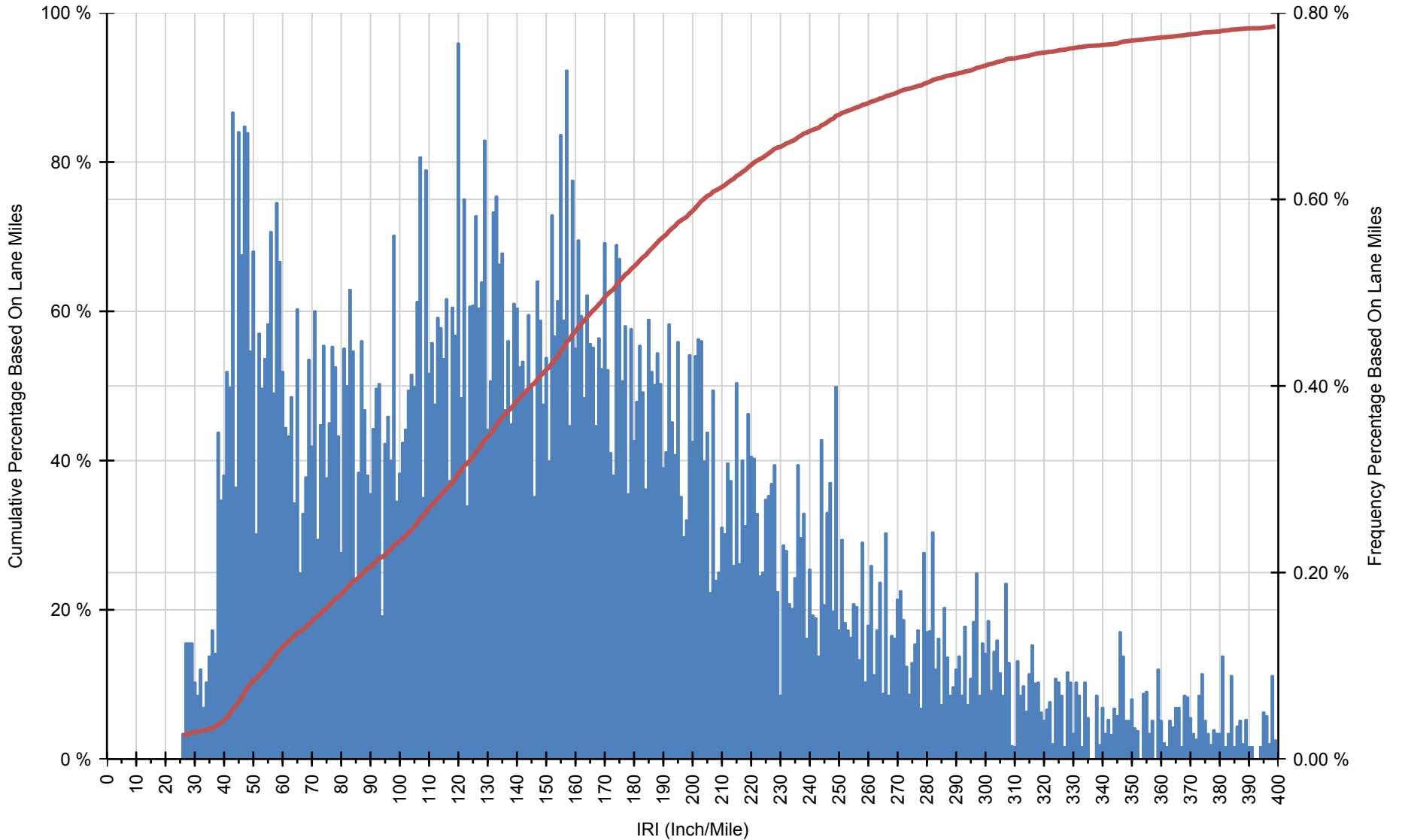
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing IRI = 3.123%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - IRI - Closeup 0 TO 400 (Non-interstate NHS)

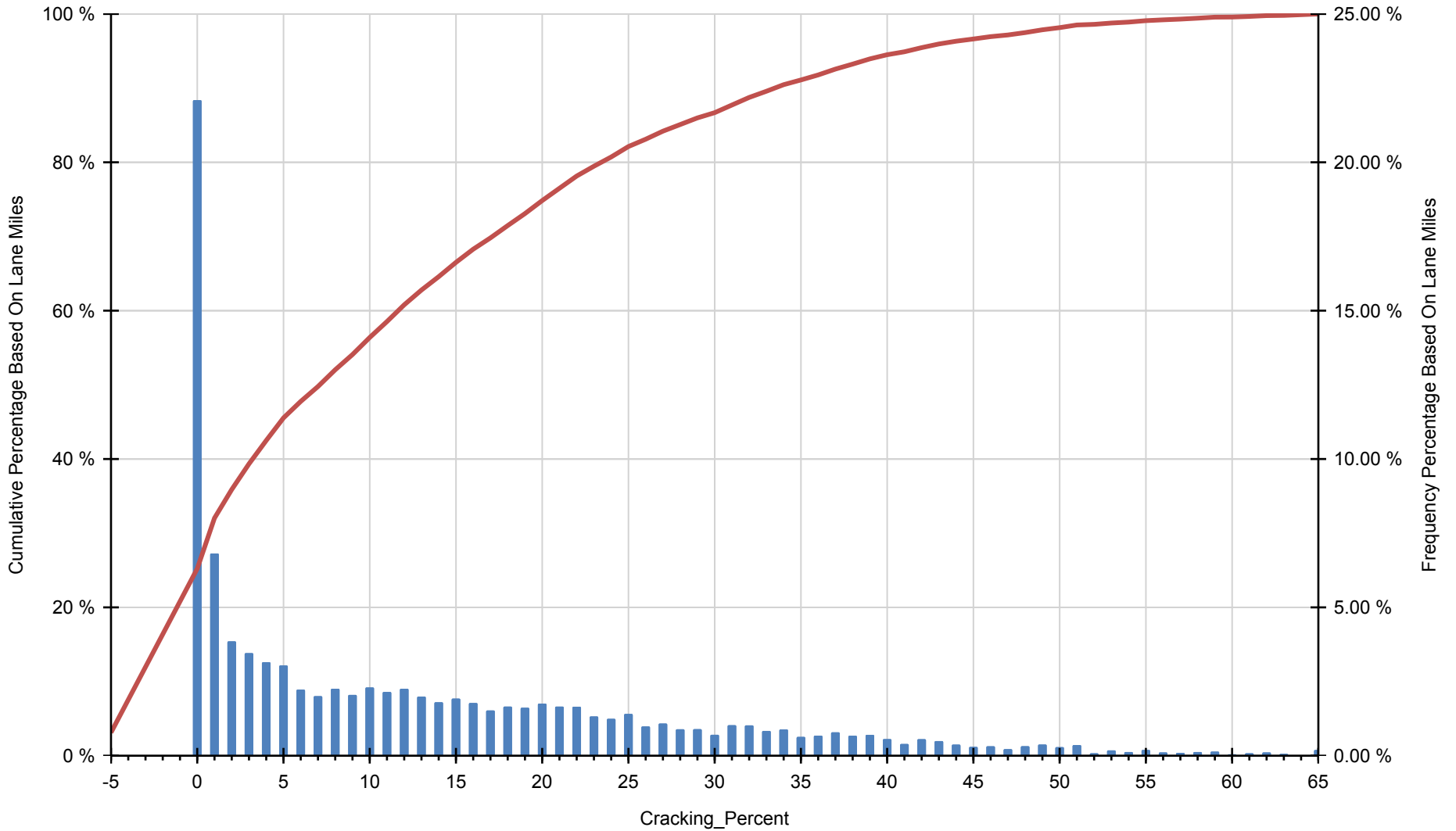
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing IRI = 3.123%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Cracking_Percent (Non-interstate NHS)

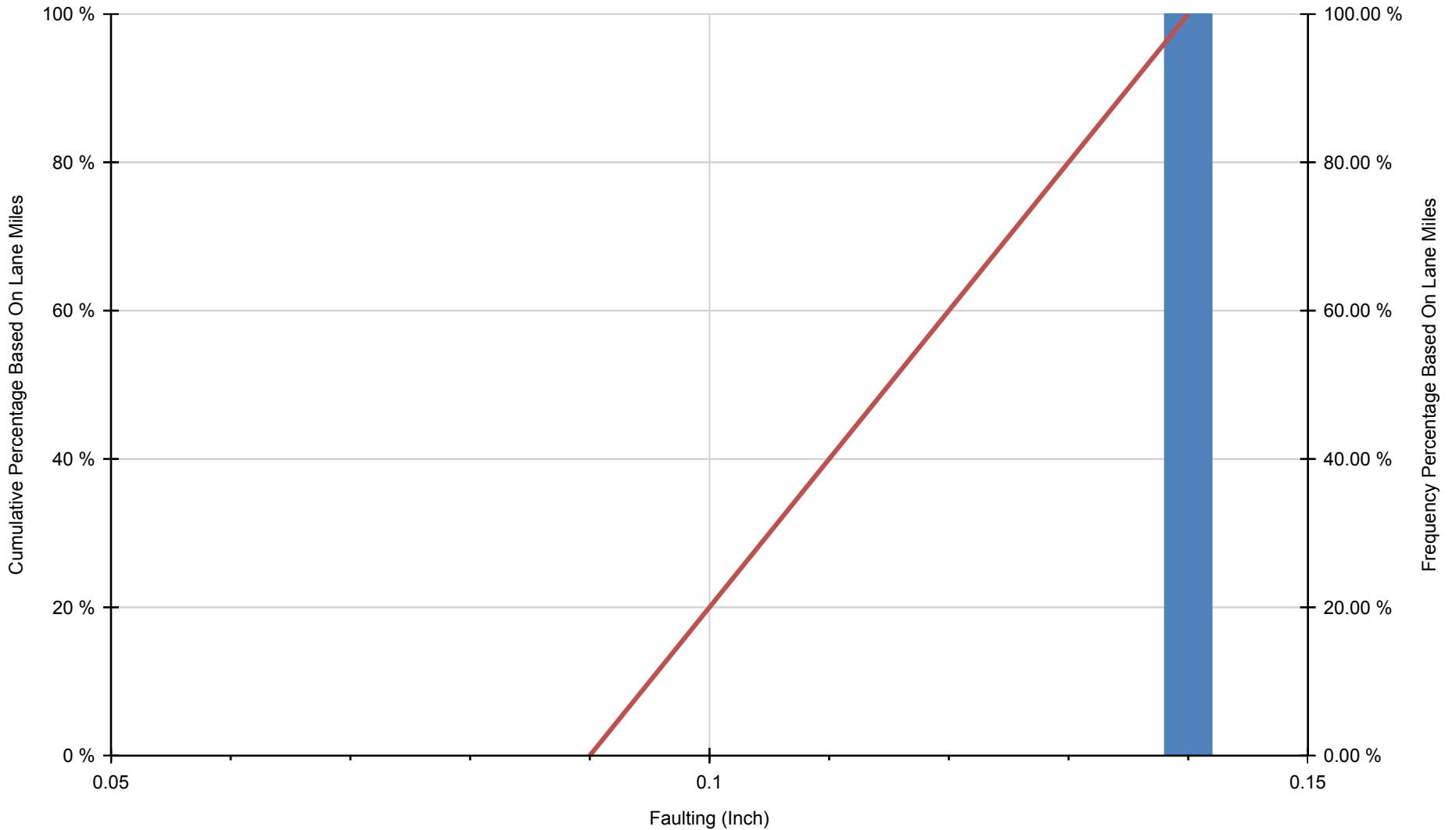
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing Cracking_Percent = 3.123%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Faulting (Non-interstate NHS)

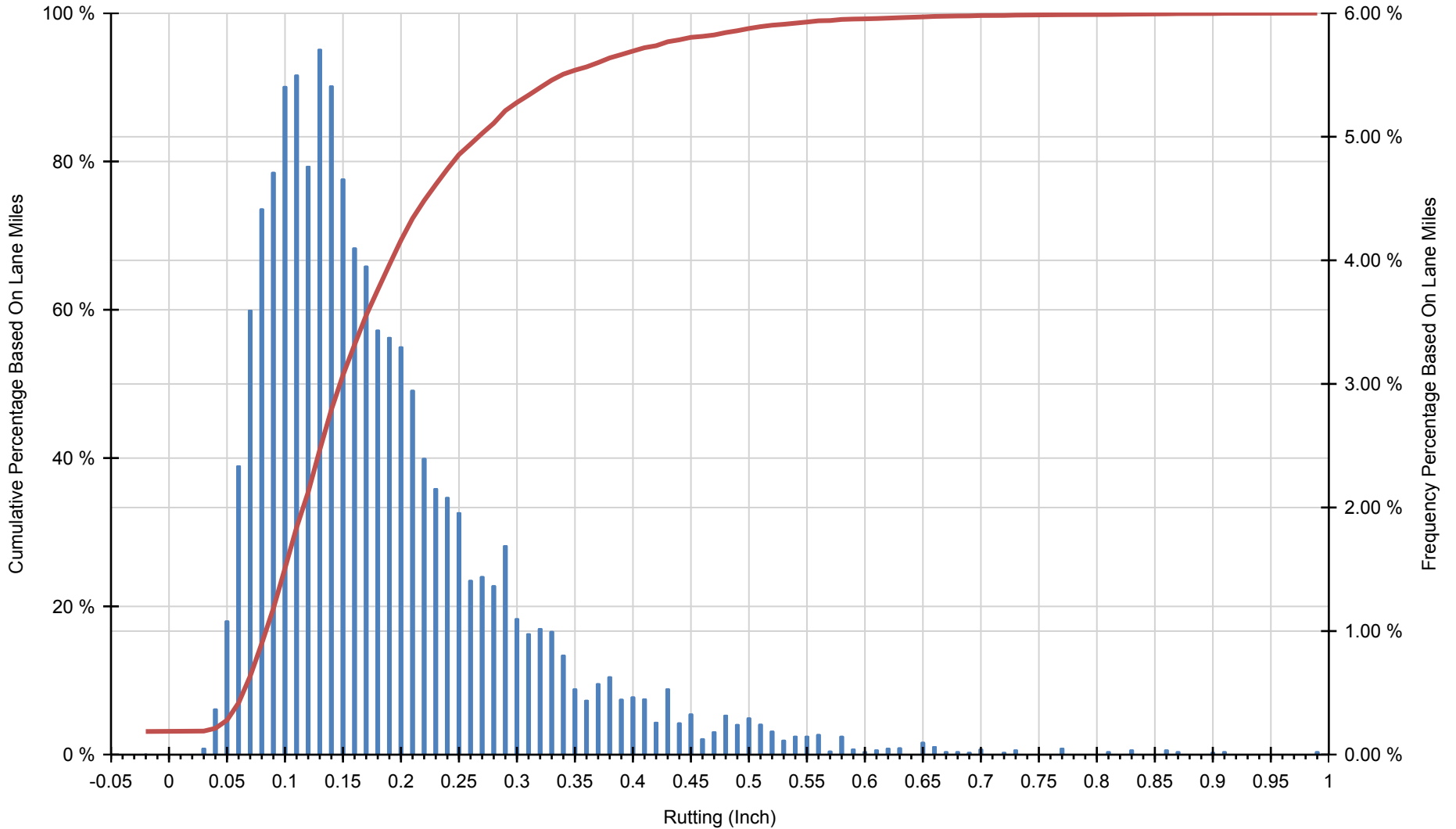
Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



(Frequency of Missing Faulting = 0.000%, missing data is included in the cumulative distribution graph.)

Cumulative and Frequency Distribution - Rutting (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



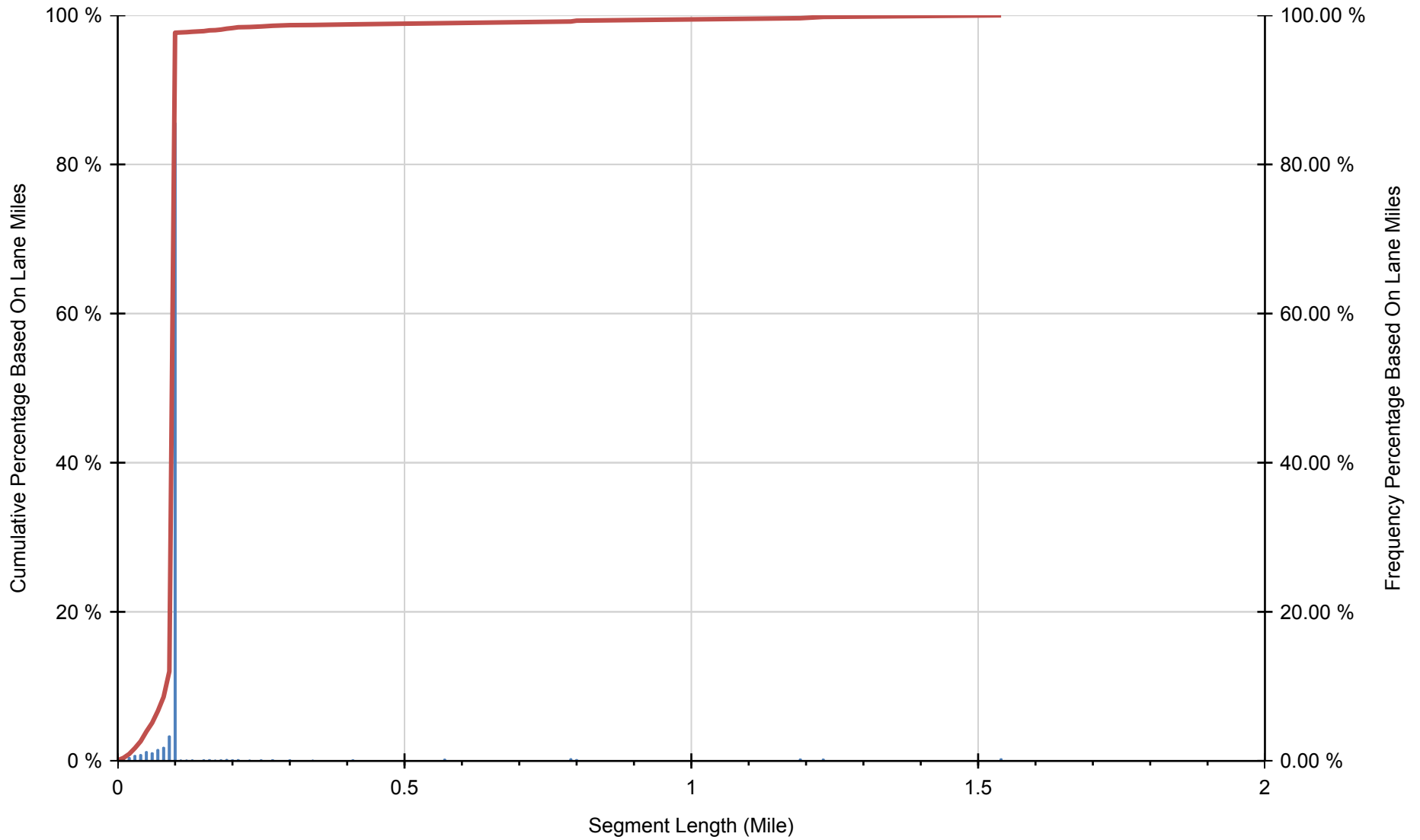
(Frequency of Missing Rutting = 3.125%, missing data is included in the cumulative distribution graph.)

Segment Lengths**Stage:** Submit**Year:** 2019**State:** 44 - Rhode Island**Date:** 06/15/2020

23 CFR 490 requires that IRI data be collected and reported in sections nominally no longer than 0.1 mile while allowing for shorter sections at bridges and terminal sections. Maximum section length allowed is 0.11 mile. the regulation also states that all four metrics should be reported in 0.1 mile sections that are spatially aligned. If your state reports in sections exceeding the maximum length you may wish to investigate if this is due to vendor preference or dynamic segmentation taking place during uploading to their pavement management system or HPMS. If the data distribution shows a large percentage of very short slivers (0.001 mile) it may indicate problems with spatial alignment during data collection.

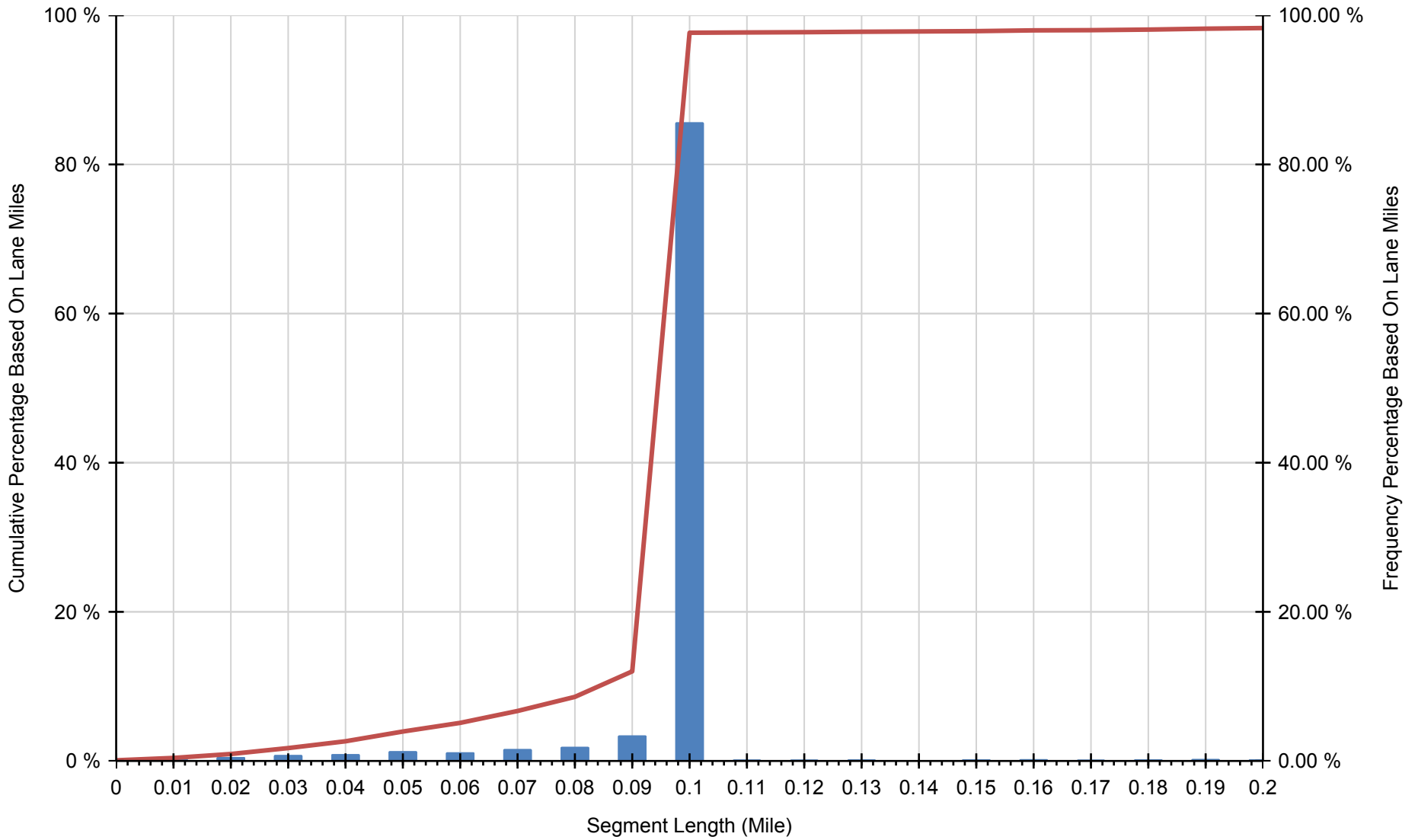
Cumulative and Frequency Distribution - Segment Lengths (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



Cumulative and Frequency Distribution - Segment Lengths - Closeup 0.0 TO 0.2 Mile in Length (Non-interstate NHS)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020



PM2 Validation Summaries Non-interstate NHS

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

Summary of Length and Spatial Coincidence Validation

Data Item	Section Length		Spatial Coincidence	
	Sections	Miles	Sections	Miles
IRI	1	0.200	N/A	N/A
PSR	0	0.000	N/A	N/A
Rutting	1	0.200	12	1.200
Faulting	0	0.000	0	0.000
Cracking Percent	1	0.200	12	1.200

Lane Miles of Pavement Metrics Excluding Bridges by Collection Year

Year (Value Date)	IRI		Rutting (HMA)		Faulting (PCC)		Cracking Percent		PSR	
	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total	Lane Miles	% of Total
2018	46.766	3.25 %	46.766	3.25 %	0.000	0.00 %	46.766	3.25 %	0.000	0.00 %
2019	1,348.992	93.63 %	1,354.071	94.03 %	0.684	100.00 %	1,354.755	94.03 %	0.000	0.00 %
NULL	44.996	3.12 %	39.233	2.72 %	0.000	0.00 %	39.233	2.72 %	0.000	0.00 %
Total	1,440.754	100.00 %	1,440.070	100.00 %	0.684	100.00 %	1,440.754	100.00 %	0.00	0.00 %

Lane miles of Missing or Invalid Pavement Segments with Valid Value Text Codes

Text Codes				
A (Construction)	B (Closure)	C (Disaster)	D (Deterioration)	E (New NHS Segment)
5.763	0.000	0.000	0.000	0.000

Full Extent Lane Miles Rating (IRI Only) (Non-Interstate NHS Transition)

Stage: Submit
Year: 2019
State: 44 - Rhode Island
Date: 06/15/2020

No.1	Lane miles full extent Good	345.028
No.2	Lane miles full extent Fair	501.821
No.3	Lane miles full extent Poor	548.909
No.4	Total lane miles Good, Fair or Poor	1,395.758
No.5	Estimated total Non-interstate NHS lane miles Missing, Invalid or Unresolved data	44.996
No.6	Total lane miles Good, Fair, Poor, Missing or Invalid data	1,440.754
No.7	% Estimated total Non-interstate NHS lane miles Missing, Invalid or Unresolved data - limit 5%*	3.1 %



- Lane miles full extent Good (24.7%)
- Lane miles full extent Fair (36.0%)
- Lane miles full extent Poor (39.3%)

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