

## NATIONAL HIGHWAY SYSTEM LENGTH - 2016 MILES BY MEASURED PAVEMENT ROUGHNESS - RURAL

TABLE HM-47  
SHEET 1 OF 4

September 18, 2017

STATE	INTERNATIONAL ROUGHNESS INDEX (IRI) (1)																			
	INTERSTATE SYSTEM										OTHER									
	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	TOTAL REPORTED	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	TOTAL REPORTED
Alabama	8	383	124	27	18	7	3	1	1	563	6	958	765	137	57	29	14	9	9	1,978
Alaska	6	208	333	155	116	77	46	29	31	996	274	84	167	74	68	73	58	54	135	714
Arizona	1	506	264	81	35	16	6	3	4	916	35	401	455	164	81	39	16	9	8	1,173
Arkansas	0	146	181	57	25	14	7	4	5	439	3	116	727	452	276	171	95	58	64	1,959
California	3	437	392	155	92	49	24	13	21	1,183	80	813	1,507	548	281	153	77	48	71	3,497
Colorado	-	150	251	121	53	31	22	14	6	648	-	398	1,091	536	275	143	65	37	30	2,576
Connecticut	-	16	7	3	1	0	0	0	0	29	-	20	63	33	18	8	3	3	2	150
Delaware	-	-	-	-	-	-	-	-	-	-	0	40	85	18	5	2	1	0	0	152
District of Columbia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Florida	11	438	233	21	9	3	1	1	0	706	70	976	1,303	276	80	27	7	4	3	2,677
Georgia	17	234	194	51	20	11	4	3	2	518	246	756	1,465	403	157	57	24	9	15	2,886
Hawaii	-	-	-	-	-	-	-	-	-	-	-	0	18	15	15	6	5	5	5	80
Idaho	0	235	204	46	17	9	3	2	3	519	12	379	865	266	110	49	20	13	13	1,716
Illinois	-	691	468	71	10	1	-	2	-	1,243	-	341	1,076	447	236	140	47	14	5	2,306
Indiana	108	411	147	41	25	18	9	6	7	664	9	622	519	178	89	44	21	12	16	1,500
Iowa	28	246	218	66	35	10	4	2	4	584	129	818	1,016	554	360	223	121	92	97	3,281
Kansas	1	439	162	29	6	2	0	0	0	639	23	1,730	1,012	168	55	22	9	6	7	3,008
Kentucky	0	482	110	16	8	3	2	0	0	622	41	791	632	143	62	30	11	6	6	1,679
Louisiana	6	183	142	85	67	32	11	4	2	526	15	157	479	204	120	76	45	22	24	1,129
Maine	-	184	64	29	-	0	0	0	-	278	-	74	367	157	114	31	23	9	6	781
Maryland	-	64	63	8	4	1	1	1	0	142	0	185	132	29	13	9	4	3	3	377
Massachusetts	1	29	32	5	1	1	0	0	2	71	0	21	48	32	18	10	6	4	7	145
Michigan	6	223	219	59	31	18	6	3	2	561	12	1,061	944	243	109	57	26	11	20	2,472
Minnesota	29	200	252	57	27	13	7	3	2	560	136	1,218	1,071	485	273	153	72	43	38	3,353
Mississippi	-	338	128	33	24	15	7	5	5	554	-	472	732	268	157	90	46	25	24	1,812
Missouri	-	497	269	44	18	8	4	1	1	842	1	996	1,363	373	144	62	29	13	8	2,988
Montana	-	405	556	86	27	13	5	1	2	1,094	-	659	1,339	405	179	88	38	25	39	2,773
Nebraska	5	263	107	25	9	3	2	1	1	409	1,021	738	555	190	95	55	28	19	21	1,701
Nevada	-	398	29	7	5	6	2	1	0	448	4	927	475	65	18	9	11	11	18	1,534
New Hampshire	-	121	19	2	0	-	-	-	-	142	-	175	135	33	16	10	7	4	7	388
New Jersey	-	19	21	2	1	1	0	0	0	45	-	34	61	31	25	20	11	6	7	195
New Mexico	6	555	203	48	16	8	4	3	4	841	4	701	646	200	109	57	24	15	17	1,768
New York	17	268	338	92	40	21	11	7	9	786	188	285	1,041	372	190	106	52	31	29	2,105
North Carolina	14	300	169	34	19	9	3	1	1	537	64	513	1,039	328	145	62	29	13	20	2,149
North Dakota	-	282	188	30	8	1	1	0	0	510	1	1,301	1,064	318	150	54	23	14	19	2,943
Ohio	0	322	221	53	24	10	5	2	3	642	3	541	812	253	118	50	25	13	14	1,824
Oklahoma	7	283	242	57	25	17	7	5	3	640	37	369	954	389	208	124	67	37	47	2,195
Oregon	-	244	177	52	15	4	2	1	1	495	1	582	1,328	421	182	77	34	20	11	2,656
Pennsylvania	-	419	478	107	32	22	9	4	4	1,075	0	461	832	271	142	84	40	25	42	1,896
Rhode Island	-	15	2	0	0	0	-	-	-	18	-	7	14	16	19	18	11	9	13	108
South Carolina	-	202	236	57	30	13	5	2	1	546	-	139	638	349	209	120	58	37	41	1,591
South Dakota	21	205	284	50	18	7	3	2	0	570	230	320	1,112	627	294	156	71	42	38	2,660
Tennessee	-	529	73	16	10	4	1	1	0	634	16	765	663	163	74	47	16	9	13	1,749
Texas	-	911	776	190	71	32	11	5	4	2,001	14	2,178	3,146	1,267	584	264	94	48	37	7,617
Utah	1	388	239	41	10	4	1	1	0	683	9	187	746	403	258	147	67	34	27	1,869
Vermont	2	190	53	7	2	1	0	0	-	254	0	66	137	46	23	14	7	6	7	306
Virginia	0	235	278	53	21	7	2	0	1	598	28	234	890	334	147	58	24	10	6	1,702
Washington	-	182	133	47	29	14	11	7	8	429	0	324	925	367	149	68	40	23	30	1,927
West Virginia	12	128	138	21	10	5	2	1	1	306	6	104	447	216	117	59	29	18	23	1,013
Wisconsin	7	200	159	62	38	27	10	6	4	506	23	761	960	589	352	192	102	62	116	3,135
Wyoming	-	477	220	56	31	14	4	3	2	808	38	590	850	287	125	53	22	10	8	1,946
U.S. Total	314	14,283	9,796	2,458	1,134	579	270	150	148	28,819	2,782	26,386	38,705	14,142	7,101	3,706	1,778	1,052	1,268	94,139
Puerto Rico (3)	-	-	1	10	4	11	5	4	7	42	-	-	1	3	13	2	-	-	-	19
Grand Total	314	14,283	9,797	2,468	1,138	590	275	154	155	28,860	2,782	26,386	38,707	14,145	7,114	3,708	1,778	1,052	1,268	94,159

For footnotes, see Footnotes Page.

**NATIONAL HIGHWAY SYSTEM LENGTH - 2016**  
**MILES BY MEASURED PAVEMENT ROUGHNESS - RURAL**

TABLE HM-47  
SHEET 2 OF 4

September 18, 2017

STATE	INTERNATIONAL ROUGHNESS INDEX (IRI) (1)									
	TOTAL RURAL NHS									
	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	TOTAL REPORTED
Alabama	14	1,341	888	164	74	36	17	9	10	2,540
Alaska	280	292	499	229	185	151	105	84	166	1,709
Arizona	36	907	719	245	115	55	23	12	12	2,088
Arkansas	3	262	908	509	302	185	101	62	69	2,397
California	83	1,250	1,899	703	373	202	101	62	91	4,679
Colorado	-	548	1,342	657	329	174	88	51	36	3,225
Connecticut	-	36	70	36	19	9	3	3	2	178
Delaware	0	40	85	18	5	2	1	0	0	152
District of Columbia	-	-	-	-	-	-	-	-	-	-
Florida	81	1,414	1,536	297	89	30	8	4	4	3,383
Georgia	264	990	1,659	453	177	68	28	11	17	3,404
Hawaii	-	0	18	15	15	15	6	5	5	80
Idaho	12	614	1,069	312	127	58	23	15	16	2,235
Illinois	-	1,031	1,544	519	247	141	47	16	5	3,550
Indiana	117	1,033	665	218	114	62	30	18	23	2,164
Iowa	157	1,064	1,234	620	395	232	125	95	101	3,866
Kansas	24	2,169	1,174	197	61	24	9	6	7	3,647
Kentucky	41	1,273	742	159	70	33	13	6	6	2,301
Louisiana	21	340	621	289	188	109	56	26	26	1,655
Maine	-	258	431	186	114	31	23	10	6	1,059
Maryland	0	249	195	37	17	10	5	4	3	519
Massachusetts	1	51	80	37	19	11	6	4	8	216
Michigan	17	1,284	1,163	302	141	75	32	15	22	3,033
Minnesota	165	1,417	1,323	542	300	165	79	47	39	3,912
Mississippi	-	809	860	301	180	105	53	29	29	2,367
Missouri	1	1,493	1,632	417	162	70	33	14	9	3,830
Montana	-	1,064	1,895	492	206	100	43	27	42	3,867
Nebraska	1,026	1,001	662	215	104	57	29	20	22	2,110
Nevada	4	1,325	503	72	23	15	13	12	18	1,982
New Hampshire	-	296	153	36	17	10	7	4	7	530
New Jersey	-	52	82	33	27	21	11	6	8	240
New Mexico	10	1,256	849	247	125	65	28	18	21	2,609
New York	205	553	1,378	464	230	128	63	38	38	2,891
North Carolina	78	813	1,208	362	164	71	32	14	21	2,685
North Dakota	1	1,583	1,252	348	158	55	24	14	19	3,453
Ohio	3	863	1,033	306	142	61	30	15	17	2,467
Oklahoma	44	653	1,196	446	233	141	74	42	51	2,835
Oregon	1	826	1,505	473	197	81	36	21	12	3,151
Pennsylvania	0	880	1,310	377	174	106	49	28	47	2,971
Rhode Island	-	22	16	17	20	18	11	9	13	126
South Carolina	-	340	874	406	239	133	64	39	42	2,137
South Dakota	251	525	1,397	677	312	163	74	44	38	3,231
Tennessee	16	1,295	735	179	84	51	17	10	13	2,383
Texas	14	3,089	3,922	1,457	655	295	105	53	42	9,618
Utah	10	575	985	444	268	150	68	35	28	2,553
Vermont	3	256	190	52	26	15	8	6	7	559
Virginia	29	469	1,168	387	168	65	26	10	6	2,300
Washington	0	507	1,057	414	178	82	50	30	38	2,356
West Virginia	17	232	585	238	127	65	31	19	23	1,319
Wisconsin	29	961	1,118	651	390	219	112	68	121	3,640
Wyoming	38	1,067	1,070	344	156	67	26	13	10	2,754
U.S. Total	3,096	40,669	48,502	16,601	8,236	4,285	2,048	1,202	1,417	122,958
Puerto Rico (3)	-	-	3	13	17	13	5	4	7	61
Grand Total	3,096	40,669	48,504	16,613	8,252	4,298	2,053	1,206	1,424	123,019

For footnotes, see Footnotes Page.

**NATIONAL HIGHWAY SYSTEM LENGTH - 2016**  
**MILES BY MEASURED PAVEMENT ROUGHNESS - URBAN**

TABLE HM-47  
SHEET 3 OF 4

September 18, 2017

STATE	INTERNATIONAL ROUGHNESS INDEX (IRI) (1)																			
	INTERSTATE SYSTEM										OTHER									
	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	TOTAL REPORTED	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	TOTAL REPORTED
Alabama	9	248	84	33	25	15	10	6	3	424	11	449	475	144	80	52	32	23	37	1,293
Alaska	1	20	37	12	4	3	1	1	1	78	2	15	49	29	21	14	10	7	14	159
Arizona	0	149	67	23	8	3	2	0	0	252	180	150	196	97	70	45	27	18	36	638
Arkansas	0	71	110	54	28	17	11	10	10	310	6	22	146	130	101	79	54	42	103	676
California	2	243	411	212	145	98	58	43	52	1,262	128	374	1,047	992	1,042	993	805	707	2,058	8,019
Colorado	-	62	123	55	38	13	6	4	3	304	1	74	341	250	212	162	106	81	155	1,380
Connecticut	-	151	103	32	16	8	4	2	2	317	0	112	249	172	137	100	62	43	71	946
Delaware	-	3	20	9	3	2	2	1	1	41	1	29	102	39	20	14	8	6	13	231
District of Columbia	1	-	0	1	2	2	1	1	4	11	2	-	2	3	6	8	9	13	79	120
Florida	14	355	305	56	28	13	5	2	1	764	109	1,057	1,934	669	335	194	93	58	91	4,432
Georgia	29	331	224	60	29	19	9	5	5	682	696	481	933	305	158	95	48	34	58	2,113
Hawaii	-	0	13	10	11	8	6	3	3	55	0	20	52	47	49	43	31	20	53	315
Idaho	-	33	38	12	5	3	1	0	0	92	15	53	109	59	38	28	20	13	33	354
Illinois	-	237	486	121	50	40	4	1	2	942	-	164	769	720	563	371	256	195	322	3,361
Indiana	96	138	111	59	35	22	12	9	10	397	122	276	407	198	139	101	67	49	91	1,328
Iowa	10	54	67	20	11	7	4	3	3	169	91	71	168	157	124	92	57	53	112	834
Kansas	9	108	67	26	14	7	2	1	1	226	20	163	164	59	38	27	16	11	18	495
Kentucky	0	135	54	15	8	4	3	1	1	220	66	189	215	94	62	44	23	17	29	673
Louisiana	2	103	96	52	50	50	26	15	11	403	77	88	235	164	144	123	94	75	148	1,072
Maine	-	37	37	8	1	2	3	0	-	88	-	5	44	45	20	22	10	16	19	181
Maryland	0	140	116	26	19	14	8	7	8	338	7	247	388	161	116	101	66	55	157	1,292
Massachusetts	8	307	128	19	13	10	6	5	12	501	62	148	305	297	286	280	213	176	474	2,179
Michigan	5	179	263	90	56	40	23	17	12	680	35	218	605	445	355	289	210	176	404	2,702
Minnesota	235	28	38	8	6	4	3	1	3	90	398	129	156	63	38	27	14	8	16	450
Mississippi	-	130	57	25	14	12	6	4	5	253	-	139	291	159	111	88	58	42	127	1,014
Missouri	-	290	154	43	22	16	7	4	3	538	11	268	496	201	139	100	58	40	67	1,369
Montana	-	36	48	7	3	2	1	1	0	98	-	23	66	39	26	19	11	9	22	217
Nebraska	4	20	26	9	5	2	1	1	0	64	157	27	75	43	39	41	30	28	73	356
Nevada	-	70	43	17	10	5	2	1	1	150	0	146	111	61	39	26	14	8	15	420
New Hampshire	-	63	15	3	1	1	0	0	0	83	0	98	88	39	25	18	12	11	28	319
New Jersey	1	118	147	44	25	14	11	10	18	386	2	238	512	291	258	235	180	159	469	2,342
New Mexico	2	104	32	8	4	2	1	0	0	152	6	88	153	92	80	60	40	29	57	599
New York	28	170	392	135	69	45	31	23	43	908	326	125	853	607	479	384	292	250	716	3,704
North Carolina	38	271	252	86	40	19	6	5	4	683	103	252	750	418	250	141	79	48	141	2,079
North Dakota	-	23	29	6	2	1	0	0	0	61	2	27	54	31	28	19	11	8	24	202
Ohio	0	356	344	94	56	41	18	11	11	931	130	391	878	465	372	272	177	145	376	3,076
Oklahoma	1	78	116	38	19	14	8	6	7	285	33	89	227	150	118	103	80	70	116	953
Oregon	-	75	107	25	12	8	4	2	1	234	2	109	283	165	119	83	57	37	68	921
Pennsylvania	7	215	335	99	61	31	16	11	10	779	6	262	852	598	480	373	245	190	393	3,393
Rhode Island	-	19	22	5	2	2	1	0	0	52	11	15	47	45	54	44	42	112	413	
South Carolina	-	92	110	41	29	20	6	3	4	304	-	62	327	270	198	139	72	37	56	1,161
South Dakota	13	11	43	11	6	3	1	1	-	75	11	7	36	21	16	13	9	5	7	116
Tennessee	0	370	105	34	17	11	5	2	4	548	62	564	661	252	167	120	61	60	119	2,006
Texas	1	371	485	244	158	97	44	20	14	1,434	181	677	1,803	1,161	878	687	438	327	812	6,782
Utah	0	89	96	37	16	10	4	1	0	253	18	110	293	150	86	50	26	16	19	750
Vermont	2	33	22	4	2	1	0	0	0	63	5	11	33	16	11	8	5	4	9	97
Virginia	14	141	231	74	31	17	7	4	3	508	23	107	542	339	257	188	119	84	93	1,729
Washington	-	116	119	42	23	14	7	7	7	335	0	161	428	298	222	176	118	111	353	1,867
West Virginia	6	101	84	19	12	8	3	1	2	230	8	24	163	77	50	31	22	16	22	406
Wisconsin	7	107	102	63	40	24	13	6	3	357	40	108	313	320	294	236	154	118	341	1,885
Wyoming	-	36	35	17	8	4	3	1	2	106	6	30	70	34	24	15	11	8	22	214
U.S. Total	544	6,637	6,547	2,240	1,293	830	415	263	289	18,515	3,173	8,693	19,494	11,684	8,979	6,982	4,749	3,803	9,248	73,632
Puerto Rico (3)	2	-	30	74	47	44	28	8	6	238	2	-	2	7	11	33	21	11	25	109
Grand Total	546	6,637	6,577	2,315	1,341	874	444	271	295	18,753	3,175	8,693	19,496	11,692	8,989	7,015	4,770	3,815	9,273	73,741

For footnotes, see Footnotes Page.

# NATIONAL HIGHWAY SYSTEM LENGTH - 2016

## MILES BY MEASURED PAVEMENT ROUGHNESS - URBAN

TABLE HM-47  
SHEET 4 OF 4

September 18, 2017

STATE	INTERNATIONAL ROUGHNESS INDEX (IRI) (1)									
	TOTAL URBAN NHS									TOTAL REPORTED
	NOT REPORTED (2)	< 60	60-94	95-119	120-144	145-170	171-194	195-220	> 220	
Alabama	20	698	559	178	105	67	42	29	40	1,717
Alaska	3	34	85	41	26	17	11	7	15	237
Arizona	180	298	262	120	79	48	29	19	36	890
Arkansas	6	93	255	183	128	96	65	52	113	986
California	131	618	1,458	1,204	1,187	1,092	863	750	2,110	9,281
Colorado	1	135	464	305	250	174	112	85	158	1,684
Connecticut	0	263	352	204	153	107	65	45	73	1,264
Delaware	1	32	122	48	23	16	10	7	15	272
District of Columbia	3	-	2	4	7	11	9	14	83	131
Florida	123	1,412	2,239	725	363	207	99	60	92	5,196
Georgia	726	812	1,156	366	188	115	56	39	63	2,795
Hawaii	0	20	65	57	60	51	37	23	56	369
Idaho	15	86	147	71	43	31	22	14	33	447
Illinois	-	401	1,255	842	613	411	260	196	324	4,302
Indiana	217	413	518	257	174	124	79	59	101	1,725
Iowa	101	124	235	177	136	99	61	56	115	1,002
Kansas	29	271	230	85	52	34	18	11	19	720
Kentucky	66	324	269	109	70	48	26	19	30	893
Louisiana	79	191	331	216	194	174	120	90	159	1,476
Maine	-	42	81	53	21	24	13	16	19	269
Maryland	7	388	504	187	135	115	74	62	165	1,630
Massachusetts	69	456	433	316	299	290	219	181	485	2,680
Michigan	40	397	868	534	411	329	233	193	417	3,381
Minnesota	633	156	194	71	43	31	17	9	19	541
Mississippi	-	268	348	184	126	100	64	46	132	1,267
Missouri	11	558	649	244	161	115	65	44	70	1,907
Montana	-	59	114	46	30	22	12	10	22	315
Nebraska	161	47	100	52	44	43	31	29	73	420
Nevada	0	216	154	78	49	31	16	10	16	570
New Hampshire	0	161	103	42	26	19	12	11	28	402
New Jersey	2	356	659	334	283	249	191	169	487	2,728
New Mexico	8	192	185	100	84	62	40	29	57	751
New York	354	295	1,245	742	548	429	323	273	758	4,613
North Carolina	142	522	1,001	504	290	160	86	53	144	2,762
North Dakota	2	50	83	37	31	19	11	8	24	264
Ohio	130	748	1,221	560	429	312	195	156	386	4,007
Oklahoma	34	167	343	187	138	117	88	76	123	1,238
Oregon	2	184	390	191	131	91	60	39	69	1,155
Pennsylvania	13	477	1,187	697	542	404	262	202	404	4,172
Rhode Island	11	35	69	50	57	55	45	43	113	465
South Carolina	-	154	437	311	227	159	78	40	59	1,465
South Dakota	24	18	80	32	22	16	10	6	7	190
Tennessee	62	934	766	286	184	131	66	63	123	2,553
Texas	182	1,048	2,288	1,404	1,036	784	482	347	826	8,216
Utah	18	199	390	186	102	60	30	17	20	1,003
Vermont	7	44	55	20	13	9	5	4	9	159
Virginia	36	248	773	413	288	205	125	88	95	2,237
Washington	0	277	547	340	245	190	124	118	360	2,202
West Virginia	14	126	247	96	63	39	25	17	23	636
Wisconsin	47	215	415	383	334	260	167	124	344	2,242
Wyoming	6	66	105	51	32	19	14	10	23	319
U.S. Total	3,716	15,329	26,041	13,925	10,272	7,812	5,164	4,067	9,537	92,146
Puerto Rico (3)	4	-	32	82	58	77	49	19	31	347
Grand Total	3,720	15,329	26,073	14,006	10,330	7,888	5,213	4,086	9,567	92,493

For footnotes, see Footnotes Page.

# **NATIONAL HIGHWAY SYSTEM LENGTH - 2016**

## **MILES BY MEASURED PAVEMENT ROUGHNESS**

HM-47 Footnotes Page:

- (1) Data are reported as the International Roughness Index (IRI) in inches per mile. Reference: World Bank Technical Paper Number 46, 1986. Lower IRI represents smoother riding roadways. To obtain a comprehensive assessment of pavement condition, additional measures of pavement distress are needed.
- (2) May include sections entirely on structures and unpaved miles.
- (3) 2009 data.