

## NATIONAL HIGHWAY SYSTEM LENGTH - 2003 MILES BY MEASURED PAVEMENT ROUGHNESS - RURAL

TABLE HM-47  
SHEET 1 OF 4

OCTOBER 2004

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	-	258	259	47	31	10	-	-	-	605	-	426	1,244	310	40	7	2	-	-	2,029
Alaska	-	31	348	322	185	127	-	-	-	1,013	47	28	201	491	61	6	4	-	1	908
Arizona	-	744	217	15	5	-	-	-	-	981	10	522	344	153	45	32	7	-	-	1,103
Arkansas	5	139	209	40	16	19	18	14	7	462	12	15	483	688	338	131	62	40	18	1,775
California	-	312	390	271	186	92	57	16	33	1,357	3	228	1,408	823	602	378	141	55	12	3,647
Colorado	-	5	250	205	139	45	24	16	2	686	-	9	595	431	500	125	102	32	74	1,868
Connecticut	-	2	34	6	-	1	-	-	-	43	-	4	55	40	43	8	6	2	1	159
Delaware	-	-	-	-	-	-	-	-	-	-	-	5	105	75	20	3	2	2	1	213
Dist. of Columbia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Florida	-	785	162	-	3	-	-	-	-	950	-	784	838	160	18	16	-	-	-	1,816
Georgia	-	507	248	44	7	-	-	-	-	806	-	943	1,368	183	40	8	1	1	-	2,544
Hawaii	-	-	-	-	1	5	-	-	-	6	-	-	35	48	51	14	12	1	-	161
Idaho	-	44	325	119	32	4	2	-	-	526	-	85	876	400	205	77	5	2	7	1,657
Illinois	-	308	804	284	74	37	-	-	-	1,507	-	60	640	475	282	239	72	42	11	1,821
Indiana	-	149	542	114	33	15	-	-	-	853	1	241	590	266	112	78	31	9	1	1,328
Iowa	-	78	283	157	68	29	6	3	3	627	49	250	702	455	222	171	90	51	35	1,976
Kansas	-	31	533	89	35	1	1	-	-	690	11	420	1,674	425	70	10	6	3	1	2,609
Kentucky	1	299	127	57	63	5	-	-	-	551	-	386	998	252	82	16	-	1	-	1,735
Louisiana	54	53	167	116	109	76	22	8	7	558	34	47	376	243	175	143	88	75	21	1,168
Maine	-	83	173	46	10	1	-	-	-	313	-	67	395	165	63	40	22	14	20	786
Maryland	1	15	133	27	5	1	1	-	-	182	8	49	260	93	33	8	6	3	2	454
Massachusetts	-	38	6	28	2	16	-	-	-	90	-	-	19	51	45	26	14	1	9	165
Michigan	-	48	209	136	117	55	29	11	7	612	9	438	867	408	186	164	47	13	21	2,144
Minnesota	-	104	292	201	77	6	3	-	-	683	-	784	1,061	532	148	48	8	1	2	2,584
Mississippi	-	58	187	123	71	10	19	5	8	481	-	50	800	312	227	67	26	1	-	1,483
Missouri 3/	-	160	267	229	120	27	3	-	-	806	4	145	808	697	555	230	102	29	28	2,594
Montana	-	177	781	91	47	27	3	3	1	1,130	-	124	1,495	653	244	73	22	3	3	2,617
Nebraska	-	192	123	54	23	31	6	-	-	429	-	515	832	380	224	167	62	35	33	2,248
Nevada	-	398	49	21	10	2	-	-	-	480	-	1,094	301	26	11	6	-	-	-	1,438
New Hampshire	-	41	113	8	5	4	1	1	1	184	-	58	221	98	55	20	9	8	5	474
New Jersey	-	1	27	14	13	5	3	2	-	65	8	3	74	110	38	18	5	-	2	250
New Mexico	-	519	311	26	11	-	-	-	-	867	-	896	537	179	65	32	1	1	5	1,716
New York	15	116	542	110	49	55	26	27	6	931	22	133	1,157	292	107	49	15	19	26	1,798
North Carolina	-	35	338	118	39	64	18	13	19	644	-	133	1,175	499	255	106	48	18	7	2,241
North Dakota	-	265	187	65	13	-	-	-	-	530	-	462	918	434	178	87	8	1	-	2,088
Ohio	-	478	191	41	12	1	-	-	-	723	-	450	825	215	64	15	12	2	3	1,586
Oklahoma	-	162	265	149	72	31	3	1	-	683	-	149	828	455	316	156	98	25	37	2,064
Oregon	-	29	223	284	35	10	1	-	-	582	16	54	859	945	583	155	32	15	11	2,654
Pennsylvania	1	234	531	223	73	26	9	5	4	1,105	1	151	801	480	277	132	55	24	7	1,927
Rhode Island	-	-	17	5	-	-	-	-	-	22	-	-	5	18	15	3	5	1	-	47
South Carolina	-	261	278	97	41	6	1	-	-	684	-	93	827	265	73	25	6	6	8	1,303
South Dakota	10	40	323	210	38	8	-	-	-	619	87	128	712	447	357	208	159	59	42	2,112
Tennessee	-	495	169	9	2	6	1	-	-	682	-	586	697	98	52	10	2	1	-	1,446
Texas	-	579	1,261	291	53	7	-	1	-	2,192	3	555	3,510	1,747	473	149	33	11	3	6,481
Utah	-	242	328	89	47	37	19	3	4	769	18	82	513	254	110	24	13	2	-	998
Vermont	-	107	134	26	10	2	-	-	-	279	-	23	128	57	44	30	13	11	12	318
Virginia	-	84	553	13	15	3	-	-	-	668	5	80	777	332	105	69	28	2	2	1,395
Washington	-	122	219	75	57	25	4	-	-	502	8	214	1,166	464	169	47	46	4	3	2,113
West Virginia	-	119	263	34	23	15	-	1	-	455	-	127	424	317	123	53	15	7	11	1,077
Wisconsin	-	117	196	136	44	12	11	-	-	516	-	637	1,020	461	248	111	45	12	11	2,545
Wyoming	-	287	435	50	31	22	2	-	-	827	-	923	887	115	9	16	5	-	-	1,955
U.S. Total	87	9,351	14,022	4,925	2,152	981	293	130	102	31,956	356	13,656	37,431	17,517	8,413	3,861	1,595	649	496	83,618
Puerto Rico	-	-	-	-	12	12	3	2	1	30	2	-	-	4	12	4	4	5	-	29
Grand Total	87	9,351	14,022	4,925	2,164	993	296	132	103	31,986	358	13,656	37,431	17,521	8,425	3,865	1,599	654	496	83,647

For footnotes, see Footnotes Page.

**NATIONAL HIGHWAY SYSTEM LENGTH - 2003**  
**MILES BY MEASURED PAVEMENT ROUGHNESS - RURAL**

TABLE HM-47  
SHEET 2 OF 4

OCTOBER 2004

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	-	683	1,503	356	71	17	2	-	-	2,632
Alaska	47	59	549	813	301	187	6	4	1	1,920
Arizona	10	1,266	561	167	50	32	7	-	-	2,083
Arkansas	17	154	693	729	354	149	80	54	25	2,238
California	3	540	1,799	1,093	788	470	199	71	45	5,005
Colorado	-	14	845	636	639	170	125	49	76	2,554
Connecticut	-	6	89	46	43	9	6	2	1	202
Delaware	-	5	105	75	20	3	2	2	1	213
Dist. of Columbia	-	-	-	-	-	-	-	-	-	-
Florida	-	1,569	1,000	160	21	16	-	-	-	2,766
Georgia	1	1,450	1,616	226	47	8	1	1	-	3,349
Hawaii	-	-	35	48	52	19	12	1	-	167
Idaho	-	130	1,201	519	237	82	7	2	7	2,185
Illinois	-	369	1,445	759	356	276	72	42	11	3,330
Indiana	1	390	1,132	379	145	93	31	9	1	2,180
Iowa	49	327	985	612	290	200	96	55	38	2,603
Kansas	11	451	2,207	515	105	11	7	4	1	3,301
Kentucky	1	686	1,125	309	145	21	-	1	-	2,287
Louisiana	88	100	544	359	285	218	109	83	28	1,726
Maine	-	150	568	211	73	40	22	14	20	1,098
Maryland	10	64	393	120	38	8	7	3	2	635
Massachusetts	-	38	25	79	47	42	14	1	9	255
Michigan	9	486	1,076	544	302	219	76	24	28	2,755
Minnesota	-	888	1,353	733	226	54	10	1	2	3,267
Mississippi	-	108	986	435	298	78	44	6	8	1,963
Missouri 3/	4	305	1,076	926	675	257	105	29	28	3,401
Montana	-	301	2,276	744	291	99	25	6	3	3,745
Nebraska	-	707	955	434	248	198	68	35	33	2,678
Nevada	-	1,491	350	47	22	8	-	-	-	1,918
New Hampshire	-	99	334	116	60	25	10	10	6	660
New Jersey	8	4	101	124	51	23	8	2	2	315
New Mexico	-	1,415	848	205	76	32	1	1	5	2,583
New York	37	249	1,699	403	157	104	41	46	32	2,731
North Carolina	-	167	1,513	618	294	170	67	31	26	2,886
North Dakota	-	728	1,105	499	191	87	8	1	-	2,619
Ohio	-	928	1,015	256	76	17	12	2	3	2,309
Oklahoma	-	311	1,093	604	388	187	101	25	37	2,746
Oregon	16	83	1,081	1,229	618	165	32	15	11	3,234
Pennsylvania	2	385	1,331	703	350	159	64	29	11	3,032
Rhode Island	-	-	21	23	15	3	5	1	-	68
South Carolina	-	355	1,105	361	114	31	7	6	8	1,987
South Dakota	97	168	1,035	657	395	216	159	59	42	2,731
Tennessee	-	1,081	866	107	54	16	3	1	-	2,128
Texas	3	1,134	4,771	2,039	526	156	33	12	3	8,674
Utah	18	324	842	344	157	60	32	5	4	1,768
Vermont	-	130	262	84	54	33	13	11	12	599
Virginia	5	164	1,330	346	120	72	28	2	2	2,064
Washington	8	336	1,384	539	225	72	49	4	3	2,612
West Virginia	-	246	687	351	146	68	16	8	11	1,533
Wisconsin	-	754	1,217	597	292	123	56	12	11	3,062
Wyoming	-	1,210	1,323	165	40	39	7	-	-	2,784
U.S. Total	445	23,008	51,455	22,444	10,568	4,842	1,885	782	597	115,581
Puerto Rico	2	-	-	4	24	16	7	7	1	59
Grand Total	447	23,008	51,455	22,448	10,592	4,858	1,892	789	598	115,640

For footnotes, see Footnotes Page.

**NATIONAL HIGHWAY SYSTEM LENGTH - 2003  
MILES BY MEASURED PAVEMENT ROUGHNESS - URBAN**

TABLE HM-47  
SHEET 3 OF 4

OCTOBER 2004

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	-	69	113	53	29	29	8	-	-	301	-	215	344	75	42	10	1	-	1	688
Alaska	-	14	25	12	10	8	1	-	-	70	-	8	15	26	17	4	4	1	1	76
Arizona	-	87	64	27	8	1	-	-	-	187	24	77	135	91	66	37	11	9	4	430
Arkansas	3	13	74	27	22	22	10	11	6	185	24	3	42	41	47	39	28	12	18	230
California	2	57	179	151	151	221	158	120	63	1,100	2	37	261	327	228	239	202	124	97	1,515
Colorado	-	1	109	60	55	21	21	2	-	269	1	3	199	201	121	71	45	75	40	755
Connecticut	-	26	128	97	28	12	5	3	3	302	-	14	109	127	72	49	30	31	28	460
Delaware	1	5	16	13	2	2	1	1	-	40	-	1	31	21	7	3	1	1	2	67
Dist. of Columbia	-	-	-	2	3	1	1	1	1	13	-	-	-	-	3	6	3	3	55	70
Florida	9	262	210	20	10	8	1	-	-	511	7	304	585	101	39	20	11	7	8	1,075
Georgia	2	260	139	34	4	-	-	-	-	437	-	286	372	113	48	11	8	2	-	840
Hawaii	-	-	7	6	10	16	5	2	3	49	-	1	32	30	39	16	6	3	2	129
Idaho	-	3	54	10	10	-	2	5	2	86	-	3	34	21	15	12	6	4	6	101
Illinois	-	56	207	174	125	46	45	7	1	661	-	19	175	404	320	236	161	126	247	1,688
Indiana	-	15	153	70	42	30	5	1	-	316	6	18	93	95	53	56	35	12	15	377
Iowa	2	5	52	31	24	16	10	7	7	152	25	15	101	74	55	39	28	26	46	384
Kansas	2	6	68	59	43	5	-	-	-	181	49	30	89	36	16	19	4	4	6	204
Kentucky	-	49	101	27	29	3	-	2	-	211	-	38	165	106	36	23	15	2	9	394
Louisiana	55	19	45	49	48	46	20	5	4	236	31	11	104	68	47	52	51	51	84	468
Maine	-	4	36	11	2	1	-	-	-	54	-	1	33	22	23	13	7	8	28	135
Maryland	9	18	151	58	24	12	10	5	9	287	11	50	179	102	55	41	24	19	33	503
Massachusetts	-	340	23	61	13	35	4	1	1	478	16	-	111	175	192	215	195	150	176	1,214
Michigan	1	43	217	127	94	70	35	19	26	631	-	35	259	217	230	176	135	88	211	1,351
Minnesota	-	9	120	52	28	16	3	1	-	229	-	57	160	116	71	47	8	11	6	476
Mississippi	-	9	49	53	51	33	7	3	-	205	-	18	156	100	62	33	8	13	9	399
Missouri 3/	-	20	166	76	50	36	15	6	4	373	24	7	61	75	109	85	72	67	116	592
Montana	-	5	28	11	7	5	6	1	-	63	1	1	14	11	6	14	6	6	6	64
Nebraska	-	11	17	6	6	9	3	2	-	54	7	5	17	21	29	40	35	35	58	240
Nevada	-	30	15	7	11	15	2	1	-	81	-	60	45	15	9	2	1	1	2	135
New Hampshire	-	13	34	1	-	1	-	-	1	50	-	17	59	14	12	6	3	2	1	111
New Jersey	7	1	90	123	43	38	34	14	17	360	35	2	296	366	293	152	78	46	118	1,351
New Mexico	-	36	60	21	5	9	1	-	-	132	-	35	88	42	19	13	9	4	10	220
New York	19	50	317	118	63	51	30	32	48	709	77	34	369	271	224	182	113	86	298	1,577
North Carolina	-	18	164	79	41	31	9	10	22	374	-	3	188	148	77	41	23	11	13	504
North Dakota	-	19	15	6	1	-	-	-	-	41	-	2	21	16	12	9	7	1	-	68
Ohio	-	386	365	65	27	3	2	2	-	850	-	242	444	230	132	76	43	22	37	1,226
Oklahoma	-	15	94	28	32	28	19	18	15	249	4	25	126	60	61	36	28	16	12	364
Oregon	1	5	31	58	40	8	4	-	-	146	7	2	62	87	85	48	26	17	25	352
Pennsylvania	13	63	293	176	62	22	13	6	3	638	-	68	394	410	339	249	141	105	84	1,790
Rhode Island	-	-	28	15	5	-	1	-	-	49	-	-	31	52	32	19	10	2	5	151
South Carolina	-	47	72	25	11	4	-	-	-	159	-	13	164	118	68	48	23	13	28	475
South Dakota	-	-	17	20	8	3	2	-	-	50	17	-	3	10	7	9	5	3	5	42
Tennessee	-	174	156	30	19	7	4	1	1	392	-	193	296	95	65	31	17	8	19	724
Texas	-	73	425	257	195	71	16	3	2	1,042	110	109	891	863	659	460	218	130	232	3,562
Utah	-	40	44	50	26	9	1	-	-	170	32	34	88	48	19	14	1	2	1	207
Vermont	-	6	20	3	5	7	-	-	-	41	-	-	13	6	14	7	5	2	8	55
Virginia	1	21	185	120	73	33	10	4	3	449	29	4	238	278	160	101	71	37	45	934
Washington	-	73	97	33	22	16	15	4	3	263	112	42	191	82	41	27	15	9	14	421
West Virginia	-	24	45	11	8	4	1	1	-	94	-	7	42	25	15	12	6	3	7	117
Wisconsin	-	37	93	58	18	14	5	-	-	225	3	42	175	160	140	122	79	69	67	854
Wyoming	4	25	29	12	12	5	2	1	-	86	-	39	25	10	3	2	1	-	-	81
U.S. Total	131	2,562	5,240	2,693	1,655	1,083	547	302	249	14,331	663	2,230	8,125	6,202	4,534	3,272	2,063	1,480	2,343	30,249
Puerto Rico	1	-	16	69	74	32	26	5	10	232	5	-	2	17	12	36	19	5	10	101
Grand Total	132	2,562	5,256	2,762	1,729	1,115	573	307	259	14,563	668	2,230	8,127	6,219	4,546	3,308	2,082	1,485	2,353	30,350

For footnotes, see Footnotes Page.

# NATIONAL HIGHWAY SYSTEM LENGTH - 2003

## MILES BY MEASURED PAVEMENT ROUGHNESS - URBAN

TABLE HM-47  
SHEET 4 OF 4

OCTOBER 2004

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	-	284	457	128	71	39	10	-	1	990
Alaska	-	23	40	37	26	12	5	1	1	145
Arizona	24	164	198	118	73	38	11	9	4	615
Arkansas	28	16	116	68	68	61	37	23	24	413
California	4	94	440	478	379	459	359	244	160	2,613
Colorado	1	4	309	260	176	92	66	77	41	1,025
Connecticut	-	40	237	224	100	62	35	34	31	763
Delaware	1	6	47	34	9	5	2	2	3	108
Dist. of Columbia	-	-	-	2	6	7	4	4	60	83
Florida	16	565	795	122	49	28	12	7	8	1,586
Georgia	2	547	511	147	52	11	8	2	-	1,278
Hawaii	-	1	39	35	48	32	11	5	5	176
Idaho	-	6	88	31	25	12	8	9	8	187
Illinois	-	75	382	578	445	283	206	133	249	2,351
Indiana	6	33	246	165	95	86	40	14	15	694
Iowa	26	20	153	105	79	55	38	34	53	537
Kansas	52	35	157	94	58	24	5	4	6	383
Kentucky	-	87	266	133	66	26	15	3	9	605
Louisiana	85	30	148	118	96	98	71	56	88	705
Maine	-	5	69	33	25	14	7	8	28	189
Maryland	21	68	330	159	79	53	35	24	43	791
Massachusetts	16	341	133	236	205	250	199	151	177	1,692
Michigan	1	77	475	344	324	246	170	108	237	1,981
Minnesota	-	66	280	168	99	63	12	12	6	706
Mississippi	-	27	205	152	113	65	15	16	9	602
Missouri 3/	24	26	228	151	160	121	88	73	121	968
Montana	1	6	42	22	13	19	12	7	6	127
Nebraska	7	16	34	26	34	49	38	37	58	292
Nevada	-	90	60	22	20	16	2	2	2	214
New Hampshire	-	30	94	15	12	7	3	2	3	166
New Jersey	41	3	386	489	336	190	111	60	135	1,710
New Mexico	-	71	148	63	24	22	10	4	10	352
New York	95	84	686	389	287	234	144	118	346	2,288
North Carolina	-	21	352	227	119	71	31	20	35	876
North Dakota	-	21	36	22	13	9	7	1	-	109
Ohio	-	628	809	295	159	79	45	24	37	2,076
Oklahoma	4	40	219	87	93	64	47	34	27	611
Oregon	8	7	92	145	124	56	29	17	25	495
Pennsylvania	22	132	687	586	400	271	155	111	87	2,429
Rhode Island	-	-	59	68	37	19	10	2	6	201
South Carolina	-	60	236	143	80	53	23	14	28	637
South Dakota	17	-	20	31	15	12	8	3	5	94
Tennessee	-	367	452	125	84	38	21	9	20	1,116
Texas	111	182	1,316	1,120	853	530	233	133	234	4,601
Utah	32	74	133	98	45	23	2	2	1	378
Vermont	-	6	34	9	18	14	5	2	8	96
Virginia	30	25	424	398	233	134	80	41	48	1,383
Washington	112	115	288	115	64	42	30	13	17	684
West Virginia	-	31	87	36	23	16	7	4	7	211
Wisconsin	7	78	268	218	158	136	84	69	67	1,078
Wyoming	-	64	54	22	16	7	3	3	-	169
U.S. Total	794	4,791	13,365	8,891	6,186	4,353	2,609	1,785	2,599	44,579
Puerto Rico	6	-	18	86	86	68	45	10	20	333
Grand Total	800	4,791	13,383	8,977	6,272	4,421	2,654	1,795	2,619	44,912

For footnotes, see Footnotes Page.

# **NATIONAL HIGHWAY SYSTEM LENGTH - 2003**

## **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/ 2002 data used.