



Federal Lands Highway Road Inventory Program

Road Inventory and Condition Assessment

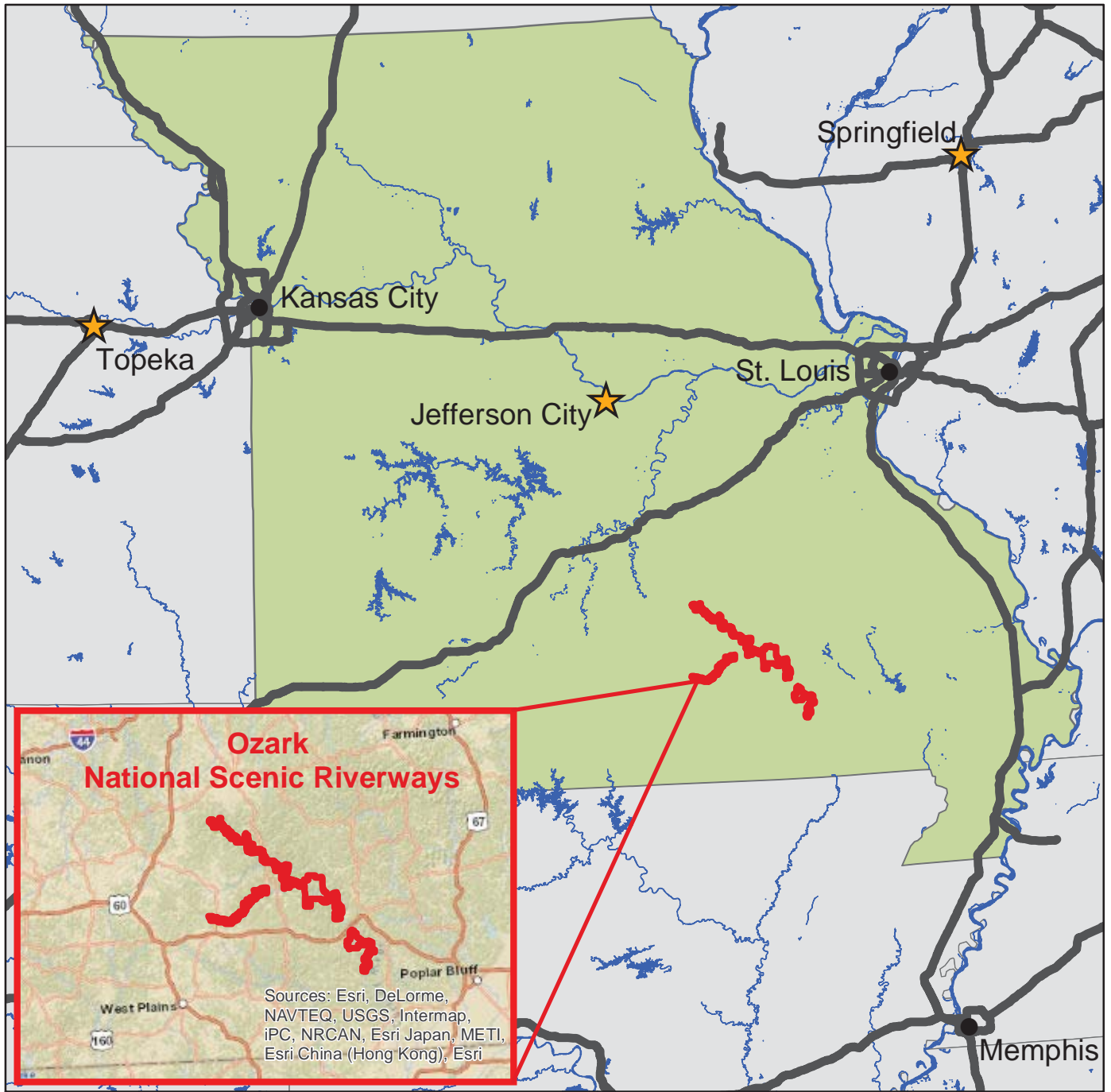


Ozark National Scenic Riverways OZAR

Cycle 5 Report

**Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 10/2012
Report Date: 06/2013**

Ozark National Scenic Riverways in Missouri





DCV = Data Collection Vehicle

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1. INTRODUCTION	1 - 1
2. PARK ROUTE INVENTORY Route IDs, Subcomponents & Changes Report (As Applicable)	2 - 1
3. PARK SUMMARY INFORMATION Paved Route Miles and Percentages by Functional Class and PCR DCV Road Condition Summary	3 - 1 3 - 3
4. PARK ROUTE LOCATION MAPS Route Location Key Map Route Location Area Map Route Condition Key Map – PCR Mile by Mile Route Condition Area Map – PCR Mile by Mile	4 - 1 4 - 2 4 - 9 4 - 10
5. PAVED ROUTE CONDITION RATING SHEETS CRS Pages	5 - 1
6. MANUALLY RATED PAVED ROUTE CONDITION RATING SHEETS MRR Pages	6 - 1
7. PARKING AREA CONDITION RATING SHEETS Paved Parking Area Pages	7 - 1
8. ROUTE MAINTENANCE FEATURES SUMMARIES DCV Route Maintenance Features Summary Structure List	8 - 1 8 - 2
9. ROUTE MAINTENANCE FEATURES ROAD LOGS Route Maintenance Features Road Logs	9 - 1
10. APPENDIX Explanation of Changes to the RIP Index Equations and Determination of PCR Explanation of the Excellent, Good, Fair and Poor Condition Descriptions Description of Rating System Surface Distresses Index Formulas Data Collection Vehicle Subsystems Geodatabase – Background and Metadata Glossary of Terms and Abbreviations	10 - 1 10 - 2 10 - 3 10 - 5 10 - 12 10 - 16 10 - 19 10 - 20

Section 1

Introduction



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

INTRODUCTION

The Federal Highway Administration, (FHWA), in the mid 1970s, was charged with the task of identifying surface condition deficiencies and corrective priorities on National Park Service (NPS) roads and parkways. Additionally, FHWA was tasked with establishing an integrated maintenance features inventory, locating features such as culverts, guardrails, and signs, among others, along NPS roads and parkways. As a result, in 1976 the NPS and FHWA entered into an MOA (Memorandum Of Agreement) which established the RIP (Road Inventory Program). This MOA was terminated and revised in 1980 to establish a new MOA aiming to update RIP data and develop a long-range program to improve and maintain NPS roads to designated condition standards and establish a maintenance management program.

The FHWA completed this initial phase of the RIP in the early 1980s. As a result of this effort, each NPS site included in the study received a RIP Report known as the “Brown Book” which included the information collected during this first RIP phase.

In the 1990s, the effort was again renewed to update and maintain the RIP data. By this time the computer age was upon us and a process was employed that relied heavily on electronic data collection and computer technology. A cyclical program was developed and the RIP completed two cycles of data collection from 1994 to 2001. Cycle 1, starting in 1994, was conducted in 44 “large parks” (parks containing 10 or more paved route miles). Cycle 2 began in 1997 and comprised 79 large parks and 5 small parks totaling 4,874 paved route miles. Each of these parks received a RIP Report known as the “Blue Book”. Cycle 3, from 2001 to 2004, was conducted in all parks, large and small, that contained any paved routes, including parking areas and, again, each park received a RIP Report and associated electronic files.

Cycle 4 was initiated in the spring of 2006 covering 86 large parks and several associated small parks consisting of 5,553 paved route miles and 6,232 paved parking areas. Data collection has been completed for Cycle 4 and all data has been delivered to the NPS.

In 2005, the FHWA began implementing the use of a Pavement Management System (PMS) to assist the NPS in prioritizing Pavement Maintenance and Rehabilitation activities. The PMS used by FHWA is the Highway Pavement Management Application (HPMA) and this software has the ability to store inventory and condition data from RIP and forecast future performance using prediction models. Outputs include performance and condition reports at the National, Regional, Park, or Route level. A regional prioritized list and optimization have been produced for most regions and the Federal Highway Deferred Maintenance is calculated via the HPMA.

In an effort to improve the accuracy of treatment recommendations and pavement condition descriptions, an extensive study was completed throughout 2010 that has resulted in changes to the RIP condition reporting method, specifically the distresses and indexes that comprise the Pavement Condition Rating (PCR). It was determined that a better representation of PCR could

be achieved by modifying the relative impact certain distresses would have on the overall rating. The changes that were implemented were endorsed by management at both the FHWA and NPS in October 2010. These changes will allow greater use of RIP and HPMA data for not simply condition data reporting, but also as a reliable tool for project identification and selection. Because of these changes, the PCR Condition ratings reported in Cycle 5 do not directly relate to the condition ratings reported in previous cycle RIP Reports. For more detailed information about the changes, see Section 3 and Section 10 in this RIP Report.

Cycle 5 has launched in the summer of 2010 and will again comprise all parks, large and small, that are served by paved roads and/or parking areas. For Cycle 5, the decision was made to collect condition data in large parks on Functional Class 1, 2, and 7 paved routes only, as well as any new routes that were previously not collected. In small parks, all paved routes and parking areas will be collected. As a result, this will include 81 large parks with 4,459 paved route miles and 231 small parks with 529 paved route miles and associated paved parking areas.

Since 1984, the Road Inventory Program has been funded through the Federal Lands Highway Park Roads and Parkways (PRP) Program. Currently, coordination of the RIP with FLH is under the NPS Washington Headquarters Park Facility Management Division. The FLH Washington office coordinates policy and prepares national reports and needs assessment studies for Congress.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) amended Title 23 U.S.C., and inserted Section 204(a)(6) requiring the FHWA and NPS, to develop by rule, a Pavement Management System (PMS) applied to park roads and parkways serving the National Park System.

FLH is responsible for the accuracy of all data presented in this report. Any questions or comments concerning the contents of this report should be directed to the national RIP Coordinator located in Sterling, Virginia.

Respectfully,

FHWA RIP Team

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Sterling, VA 20166
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Section 2

Park Route Inventory



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 1 of 23

Shading Color Key:

Red text denotes
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OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0010	5	78578		PEA VINE ROAD	FROM ROUTE 5014 (STATE HIGHWAY Z) ON RIGHT AND END OF ROUTE 5013 (STATE HIGHWAY 103) TO STATE HIGHWAY 103 (N FOREST SERVICE ROAD 3281)	LOWER CURRENT DISTRICT	3.22	0.00	3.22	1		AS	5
0011	5	78593		BIG SPRING CAMPGROUND ROAD	FROM ROUTE 0010 (PEA VINE ROAD) AT MP 0.92 TO BEGINNING OF ROUTE 0500F (BIG SPRING CAMPGROUND LOOP F (SITES 801-821))	LOWER CURRENT DISTRICT	0.83	0.00	0.83	2		AS	5
0101	NC	78966		GOOSENECK / HAWES CAMPGROUND LOOP ROAD	FROM ROUTE 0106 (GOOSENECK / HAWES CAMPGROUND ACCESS ROAD) TO GOOSENECK CAMPGROUND	LOWER CURRENT DISTRICT	0.00	0.45	0.45	3		GR	
0103	NC	78983		CEDAR SPRING PRIMITIVE CAMPGROUND ROAD	FROM CARTER COUNTY ROAD F-227 TO CEDAR SPRING PRIMITIVE AREA	LOWER CURRENT DISTRICT	0.00	0.26	0.26	4		GR	
0104	NC	78965		HICKORY LANDING ACCESS ROAD	FROM CARTER COUNT ROAD E-236 TO HICKORY LANDING	LOWER CURRENT DISTRICT	0.00	0.52	0.52	3		GR	
0106	NC	78939		GOOSENECK / HAWES CAMPGROUND ACCESS ROAD	FROM CARTER COUNTY ROAD C-246 TO ROUTE 0101 (GOOSENECK / HAWES CAMPGROUND LOOP ROAD)	LOWER CURRENT DISTRICT	0.00	0.61	0.61	3		GR	
0107	NC	78982		K.C. CLUBHOUSE ROAD	FROM CARTER COUNT ROAD ZZ-221 TO CLUBHOUSE PRIMITIVE AREA	LOWER CURRENT DISTRICT	0.00	0.87	0.87	4		GR	
0108	NC	78904		BROADFOOT TRACT ROAD	FROM SHANNON COUNTY ROAD 205 TO END OF LOOP	UPPER CURRENT DISTRICT	0.00	1.75	1.75	4		GR	
0109	NC	78877		DEE MURRAY CAMP ROAD	FROM DENT COUNTY ROAD 6510 TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.30	0.30	2		GR	
0111	4	78591		CHUBB HOLLOW ROAD	FROM ROUTE 5014 (STATE HIGHWAY Z) TO END OF LOOP	LOWER CURRENT DISTRICT	0.19	0.00	0.19	3		AS	5
0112	4	79063		BIG SPRING CABIN ROAD	FROM ROUTE 5013 (STATE HIGHWAY 103) TO ROUTE 5014 (STATE HIGHWAY Z)	LOWER CURRENT DISTRICT	0.71	0.00	0.71	3		AS	5
0114	4	78589		BIG SPRING PICNIC AREA LOOP ROAD	FROM ROUTE 0010 (PEA VINE ROAD) AT MP 0.40 TO ROUTE 0010 (PEA VINE ROAD) AT MP 0.66	LOWER CURRENT DISTRICT	0.39	0.00	0.39	3		AS	5
0115	4	78590		BIG SPRING BOAT LAUNCH ROAD	FROM ROUTE 0010 (PEA VINE ROAD) AT MP 0.63 TO BIG SPRING BOAT LAUNCH	LOWER CURRENT DISTRICT	0.21	0.00	0.21	3		AS	5
0116	4	78594		BIG SPRING GROUP CAMP ROAD	FROM ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP 0.27 TO END OF LOOP	LOWER CURRENT DISTRICT	0.19	0.00	0.19	3		AS	5

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Page 2 of 23

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Page 6 of 23

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Page 9 of 23

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					From	To								
0519	4	78909		PULLTITE FLOATER CAMP ROAD	FROM ROUTE 0148ZZ (PULLTITE CAMPGROUND ROADS)	TO ROUTE 0148ZZ (PULLTITE CAMPGROUND ROADS)	UPPER CURRENT DISTRICT	0.07	0.00	0.07	3		AS	2
0700	NC	78885		ROUND SPRING CLUSTER CAMPGROUND ROAD UNPAVED	FROM STATE HIGHWAY 19	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.24	0.24	2		GR	
0703	NC	78936		CHUBB HOLLOW ROAD UNPAVED	FROM ROUTE 0111 (CHUBB HOLLOW ROAD)	TO CHUBB HOLLOW SHELTER HOUSE	LOWER CURRENT DISTRICT	0.00	0.12	0.12	2		GR	
0704	NC	78941		RAMSEY FARM ROAD	FROM ROUTE 0131 (OLD STATE HIGHWAY 106 WEST ROAD)	TO RAMSEY BARN	JACKS FORK DISTRICT	0.00	2.10	2.10	3		GR	
0705	NC	78977		BEAL LANDING ROAD	FROM SHANNON COUNTY ROAD HH-555	TO BEAL LANDING	LOWER CURRENT DISTRICT	0.00	0.07	0.07	4		GR	
0707	NC	78989		POWDER MILL MAINTENANCE AREA ROAD	FROM RAMSEY FARM ROAD	TO POWDER MILL MAINTENANCE AREA	JACKS FORK DISTRICT	0.00	0.12	0.12	6		GR	
0708	NC	79008		BAPTIZING HOLE ROAD	FROM NPS 141	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.24	0.24	4		GR	
0713	NC	79023		BIG CREEK ROAD	FROM DENT COUNTY ROAD 651, OFF HIGHWAY 13	TO END AT CREEK	UPPER CURRENT DISTRICT	0.00	0.35	0.35	3		GR	
0714	NC	79030		OZRO RILEY ROAD	FROM STATE HIGHWAY K OFF AT MAILBOX 12895	TO DEAD END	UPPER CURRENT DISTRICT	0.00	1.06	1.06	3		GR	
0715	NC	79031		GOULD SMITH TRACT ROAD	FROM COUNTY ROAD 386 TO GOULD SMITH RIDGE ROAD	TO DEAD END	JACKS FORK DISTRICT	0.00	0.42	0.42	4		GR	
0716	NC	79032		CARTER RILEY / DOCK ROCK ROAD	FROM NORTH HOWELL HOLLOW ROAD, OFF 386 SHANNON COUNTY ROAD 385	TO DEAD END	UPPER CURRENT DISTRICT	0.00	1.37	1.37	4		GR	
0717	NC	79033		SOUTH LEWIS HOLLOW ROAD	FROM SHANNON COUNTY ROAD 359	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.62	0.62	4		GR	
0722	NC	79038		ARLEY LEWIS TRACT ROAD	FROM SHANNON COUNTY ROAD 250, OFF STATE HIGHWAY 19	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.93	0.93	3		GR	
0724	NC	79040		BLACKWELL TRACT ROAD	FROM STATE HIGHWAY K TO COUNTY ROAD B TO COUNTY ROAD 360 TO GOV ROAD 370	TO DEAD END	UPPER CURRENT DISTRICT	0.00	1.71	1.71	4		GR	

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					From	To								
0726	NC	79042		BOYDS CREEK SCHOOL HOUSE ROAD	FROM SHANNON COUNTY ROAD 325	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.25	0.25	3		GR	
0727	NC	79043		BRUSH CREEK ROAD	FROM SHANNON COUNTY ROAD 235C, OFF STATE HIGHWAY 19	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.96	0.96	4		GR	
0728	NC	79044		TWIN ROCKS ROAD	FROM ROUTE 0120 (JERKTAIL ROAD)	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.65	0.65	4		GR	
0729	NC	79045		J.R. BLAND ROAD	FROM SHANNON COUNTY ROAD NN-522	TO JR BLAND TRACT	LOWER CURRENT DISTRICT	0.00	5.06	5.06	4		GR	
0730	NC	79046		WEAVER FIELD ROAD	FROM SHANNON COUNTY ROAD NN-522	TO PARK BOUNDARY	LOWER CURRENT DISTRICT	0.00	0.94	0.94	4		GR	
0731	NC	79048		WARREN BLAND ROAD	FROM PARK BOUNDARY	TO WARREN BLAND TRACT	LOWER CURRENT DISTRICT	0.00	0.84	0.84	4		GR	
0732	NC	79049		BUTTIN ROCK ROAD	FROM SHANNON COUNTY ROAD 539	TO BUTTON ROCK SCHOOL	LOWER CURRENT DISTRICT	0.00	0.81	0.81	3		GR	
0733	NC	79050		ANT HOLE ROAD	FROM SHANNON COUNTY ROAD 539	TO ANT HOLE	LOWER CURRENT DISTRICT	0.00	0.25	0.25	3		GR	
0736	NC	79054		ROGERS CREEK ROAD	FROM STATE HIGHWAY M	TO BAILEY HOUSE SITE	LOWER CURRENT DISTRICT	0.00	0.15	0.15	4		GR	
0737	NC	79055		GRAVEL SPRING ROAD	FROM PARK BOUNDARY	TO END NEAR RIVER	LOWER CURRENT DISTRICT	0.00	0.88	0.88	4		GR	
0741	NC	79062		BIG SPRING MAINTENANCE ACCESS ROAD UNPAVED	FROM ROUTE 0112 (BIG SPRING CABIN ROAD)	TO PANTHER SPRING	LOWER CURRENT DISTRICT	0.00	0.11	0.11	3		GR	
0743	NC	79065		PANTHER SPRING ROAD	FROM CARTER COUNTY ROAD Z-217	TO PANTHER SPRING	LOWER CURRENT DISTRICT	0.00	0.50	0.50	4		GR	
0744	NC	79066		ROYAL HOLE ROAD	FROM STATE HIGHWAY 17 TO COUNTY ROAD 3710	TO DEAD END	JACKS FORK DISTRICT	0.00	1.06	1.06	4		GR	
0746	NC	79068		ALLEY SPRING RESIDENCE ROAD (PUMPHOUSE)	FROM STATE HIGHWAY 106 TO SHANNON COUNTY 423	TO DEAD END	JACKS FORK DISTRICT	0.00	0.13	0.13	3		GR	
0750	NC	79073		AKERS CAMPGROUND ROAD	FROM STATE HIGHWAY KK	TO DEAD END	UPPER CURRENT DISTRICT	0.00	0.05	0.05	3		GR	
0751	NC	79074		WIDE FORD PRIMITIVE AREA ROAD	FROM SHANNON COUNTY ROAD 325	TO DEAD END	JACKS FORK DISTRICT	0.00	0.37	0.37	4		GR	
0754	NC	79077		BAY CREEK CAMPGROUND ROAD	FROM SHANNON COUNTY ROAD 425	TO DEAD END	JACKS FORK DISTRICT	0.00	0.19	0.19	3		GR	
0755	NC	79079		DYER CEMETERY ROAD	FROM SHANNON COUNTY ROAD 425	TO DEAD END	JACKS FORK DISTRICT	0.00	0.35	0.35	3		GR	

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Page 11 of 23

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0906	4	78744		ALLEY SPRING PICNIC AREA RIVER PARKING	ADJACENT TO ROUTE 0161 (ALLEY SPRING PICNIC AREA ROAD) AT MP 0.04 ON LEFT	JACKS FORK DISTRICT	0.00	0.00	0.00		4,273	AS	6
0907	4	78745		ALLEY SPRING HOLLOW PARKING	ADJACENT TO ALLEY HOLLOW ROAD (SHANNON COUNTY)	JACKS FORK DISTRICT	0.00	0.00	0.00		2,264	AS	6
0910	4	78746		BIG SPRING LODGE ROAD PARKING	FROM ROUTE 5014 (STATE HIGHWAY Z) TO PARKING	LOWER CURRENT DISTRICT	0.00	0.00	0.00		31,504	AS	5
0911A	4	78747		PEA VINE ROAD PARKING A	ADJACENT TO ROUTE 0010 (PEA VINE ROAD) AT MP .77 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,502	AS	5
0911B	4	102105		PEA VINE ROAD PARKING B	ADJACENT TO ROUTE 0010 (PEA VINE ROAD) AT MP .55 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		2,055	AS	5
0911C	4	102106		PEA VINE ROAD PARKING C	ADJACENT TO ROUTE 0010 (PEA VINE ROAD) AT MP .34 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		988	AS	5
0912A	4	78748		BIG SPRING PICNIC AREA LOOP ROAD PARKING A	ADJACENT TO ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.28 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,300	AS	5
0912B	4	102107		BIG SPRING PICNIC AREA LOOP ROAD PARKING B	ADJACENT TO ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.23 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,485	AS	5
0912C	4	102108		BIG SPRING PICNIC AREA LOOP ROAD PARKING C	ADJACENT TO ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.14 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		4,303	AS	5
0912D	4	102109		BIG SPRING PICNIC AREA LOOP ROAD PARKING D	ADJACENT TO ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.10 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		5,079	AS	5
0912E	4	102110		BIG SPRING PICNIC AREA LOOP ROAD PARKING E	FROM ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.04 TO ROUTE 0114 (BIG SPRING PICNIC AREA LOOP ROAD) AT MP 0.08 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		20,942	AS	5
0913	4	78749		BIG SPRING BOAT LAUNCH RD PARKING	ADJACENT TO ROUTE 0115 (BIG SPRING BOAT LAUNCH ROAD)	LOWER CURRENT DISTRICT	0.00	0.00	0.00		14,791	AS	5

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 13 of 23

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OZAR

OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0914	4	78750		BIG SPRING SHOWERS PARKING	FROM ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP 0.41 TO PARKING	LOWER CURRENT DISTRICT	0.00	0.00	0.00		9,414	AS	5
0915	4	78751		BIG SPRING RV DUMP STATION	FROM ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP .27 TO ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP .32	LOWER CURRENT DISTRICT	0.00	0.00	0.00		8,021	AS	5
0916A	4	78752		BIG SPRING GROUP / WALK-IN CAMP PARKING A	ADJACENT TO ROUTE 0116 (BIG SPRING GROUP CAMP ROAD) AT MP 0.05 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		2,448	AS	5
0916B	4	102120		BIG SPRING GROUP / WALK-IN CAMP PARKING B	ADJACENT TO ROUTE 0116 (BIG SPRING GROUP CAMP ROAD) AT MP 0.06 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		2,139	AS	5
0916C	4	102121		BIG SPRING GROUP / WALK-IN CAMP PARKING C	ADJACENT TO ROUTE 0116 (BIG SPRING GROUP CAMP ROAD) AT MP 0.08 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,368	AS	5
0916D	4	102122		BIG SPRING GROUP / WALK-IN CAMP PARKING D	ADJACENT TO ROUTE 0116 (BIG SPRING GROUP CAMP ROAD) AT MP 0.12 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,967	AS	5
0916E	4	102123		BIG SPRING GROUP / WALK-IN CAMP PARKING E	ADJACENT TO ROUTE 0116 (BIG SPRING GROUP CAMP ROAD) AT MP 0.12 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		2,145	AS	5
0917A	4	78753		BIG SPRING CAMP LOOPS ROAD PARKING A	ADJACENT TO ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP 0.06 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		4,465	AS	5
0917B	4	102125		BIG SPRING CAMP LOOPS ROAD PARKING B	ADJACENT TO ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP 0.20 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		3,806	AS	5
0917C	4	102126		BIG SPRING CAMP LOOPS ROAD PARKING C	ADJACENT TO ROUTE 0011 (BIG SPRING CAMPGROUND ROAD) AT MP 0.24 ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		2,082	AS	5
0918	4	78754		BIG SPRING SEWAGE LAGOON PARKING	FROM ROUTE 0405 (BIG SPRING FIRE CACHE ROAD) ON LEFT TO PARKING	LOWER CURRENT DISTRICT	0.00	0.00	0.00		3,756	AS	5

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 14 of 23

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OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0930	4	78755		ROUND SPRING CAVE PARKING	FROM END OF ROUTE 0170 (ROUND SPRING CAVE ACCESS ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		27,136	AS	3
0931A	4	78756		ROUND SPRING PICNIC PARKING A	ADJACENT TO ROUTE 0171 (ROUND SPRING PICNIC ACCESS ROAD) AT MP 0.15 ON LEFT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		8,402	AS	3
0931B	4	102132		ROUND SPRING PICNIC PARKING B	ADJACENT TO ROUTE 0171 (ROUND SPRING PICNIC ACCESS ROAD) AT MP 0.20 ON RIGHT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		1,232	AS	3
0931C	4	102133		ROUND SPRING PICNIC PARKING C	ADJACENT TO ROUTE 0171 (ROUND SPRING PICNIC ACCESS ROAD) AT MP 0.22 ON RIGHT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		1,608	AS	3
0932A	4	78757		ROUND SPRING CAMPGROUND WALK-IN CAMPSITE PARKING	ADJACENT TO ROUTE 0169 (ROUND SPRING CAMPGROUND ROAD) AT MP 0.49 ON RIGHT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		2,157	AS	3
0932B	4	102134		ROUND SPRING CAMPGROUND RESTROOM PARKING	ADJACENT TO ROUTE 0169 (ROUND SPRING CAMPGROUND ROAD) AT MP 0.46 ON LEFT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		1,669	AS	3
0933	4	78758		ROUND SPRING UPPER RIVER ACCESS PARKING	FROM ROUTE 0173 (ROUND SPRING UPPER RIVER ACCESS ROAD) AT MP .06 TO ROUTE 0173 (ROUND SPRING UPPER RIVER ACCESS ROAD) AT MP .08	UPPER CURRENT DISTRICT	0.00	0.00	0.00		19,844	AS	3
0934	4	78760		ROUND SPRING GROUP CAMPSITE PARKING	FROM ROUTE 0173 (ROUND SPRING UPPER RIVER ACCESS ROAD) AT MP 0.02 ON RIGHT TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		15,767	AS	3
0935A	4	78761		ROUND SPRING RESIDENCE PARKING A	ADJACENT TO ROUTE 0170 (ROUND SPRING CAVE ACCESS ROAD) AT MP 0.15 ON LEFT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		484	AS	3
0935B	4	102135		ROUND SPRING RESIDENCE PARKING B	ADJACENT TO ROUTE 0422 (ROUND SPRING MAINTENANCE / RESIDENCE ACCESS ROAD) AT MP 0.02 ON RIGHT	UPPER CURRENT DISTRICT	0.00	0.00	0.00		684	AS	3

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

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Page 15 of 23

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OZAR

OZARK NATIONAL SCENIC RIVERWAYS

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Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

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Page 16 of 23

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OZARK NATIONAL SCENIC RIVERWAYS

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Cycle 5 NPS/RIP Route ID Report

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Page 17 of 23

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OZARK NATIONAL SCENIC RIVERWAYS

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Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 18 of 23

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OZAR

OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0954	NC	78777		JERKTAIL ROAD PARKING	FROM ROUTE 0120 (JERKTAIL ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		1,267	GR	
0955	4	78779		PULLTITE ROAD PARKING	FROM END OF ROUTE 0148ZZ (PULLTITE CAMPGROUND ROADS) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		8,325	AS	2
0956	4	78780		TWO RIVERS PARKING	FROM ROUTE 5007 (STATE HIGHWAY V) TO ROUTE 5007 (STATE HIGHWAY V)	JACKS FORK DISTRICT	0.00	0.00	0.00		41,235	AS	4
0957	NC	78781		BLUE SPRING ROAD PARKING	ADJACENT TO SHANNON COUNTY ROAD 106-535 ON LEFT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		1,267	GR	
0958	NC	78782		OLD STATE 106 EAST ROAD PARKING	FROM ROUTE 0958 (OLD STATE HIGHWAY 106 EAST ROAD) TO PARKING	JACKS FORK DISTRICT	0.00	0.00	0.00		1,900	GR	
0959	4	80583		CHUBB HOLLOW ROAD PARKING	ADJACENT TO ROUTE 0111 (CHUBB HOLLOW ROAD) ON RIGHT	LOWER CURRENT DISTRICT	0.00	0.00	0.00		819	AS	5
0960	NC	78785		TAN VAT ROAD PARKING	FROM ROUTE 0201 (TAN VAT ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		3,168	GR	
0961	NC	78787		CEDARGROVE BLUFF HOLE CAMP ROAD PARKING	FROM ROUTE 0154 (CEDARGROVE BLUFF HOLE CAMP ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		4,435	GR	
0962	NC	78789		CEDARGROVE CEMETERY ROAD PARKING	FROM ROUTE 0153 (CEDARGROVE CEMETERY ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		4,435	GR	
0963	NC	78791		AKERS CAMPGROUND ROAD PARKING	FROM ROUTE 0750 (AKERS CAMPGROUND ROAD) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		12,038	GR	
0964	NC	78792		ALLEY HOLLOW HANDICAP ROAD PARKING	FROM ROUTE 0231 (ALLEY SPRING HANDICAP ROAD) TO PARKING	JACKS FORK DISTRICT	0.00	0.00	0.00		1,901	GR	
0965	NC	78793		AKERS ROAD PARKING	FROM ROUTE 0150 (AKERS ROAD (UPPER ROAD TO RIVER)) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00		13,305	GR	
0966	NC	78803		POWDER MILL MAINTENANCE AREA ROAD PARKING	ADJACENT TO ROUTE 0707 (POWDER MILL MAINTENANCE AREA ROAD) ON LEFT	JACKS FORK DISTRICT	0.00	0.00	0.00			GR	
0967	NC	78796		POWDER MILL CAMPGROUND ROAD PARKING	ADJACENT TO ROUTE 0509 (POWDER MILL CAMPGROUND ROAD) ON LEFT	JACKS FORK DISTRICT	0.00	0.00	0.00		17,107	GR	

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 19 of 23

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OZAR

OZARK NATIONAL SCENIC RIVERWAYS

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Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 20 of 23

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OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0988	4	239972		POWDER MILL BOAT LANDING RESTROOM PARKING	ADJACENT TO ROUTE 0129 (OLD STATE HIGHWAY 106 EAST ROAD) AT MP 0.57 ON LEFT	JACKS FORK DISTRICT	0.00	0.00	0.00		1,447	AS	4
0989	4	239973		PULLTITE CAMPGROUND ROAD PARKING B	ADJACENT TO ROUTE 0148ZZ (PULLTITE CAMPGROUND ROADS)	UPPER CURRENT DISTRICT	0.00	0.00	0.00		1,871	AS	2
0990	4	239974		PULLTITE CAMPGROUND AMPHITHEATER PARKING	FROM ROUTE 0148ZZ TO PARKING (PULLTITE CAMPGROUND ROADS)	UPPER CURRENT DISTRICT	0.00	0.00	0.00		5,698	AS	2
0991	5	239969		ALLEY SPRING RESIDENCE PARKING	FROM ROUTE 0414 (ALLEY SPRING RESIDENCE ROAD) TO PARKING	JACKS FORK DISTRICT	0.00	0.00	0.00		3,477	AS	6
0992	5	239970		ALLEY SPRING BOAT LAUNCH PARKING B	ADJACENT TO ROUTE 0159 (ALLEY SPRING BOAT LAUNCH ROAD)	JACKS FORK DISTRICT	0.00	0.00	0.00		2,439	AS	6
0993	NC	239971		PULLTITE UPPER SHOWER HOUSE / CONTACT STATION PARKING	FROM ROUTE 0952 (PULLTITE CAMPGROUND ROAD PARKING) TO PARKING	UPPER CURRENT DISTRICT	0.00	0.00	0.00			GR	
0994	NC	79064		BIG SPRING CABIN ROAD PARKING	ADJACENT TO ROUTE 0112 (BIG SPRING CABIN ROAD) ON BOTH SIDES	LOWER CURRENT DISTRICT	0.00	0.00	0.00		25,978	GR	
0995	NC	228043		CHILTON CREEK BOAT LAUNCH / PARKING	FROM CARTER COUNTY ROAD 151 TO PARKING	LOWER CURRENT DISTRICT	0.00	0.00	0.00		17,195	GR	
5000	5			DENT COUNTY ROAD 653	FROM PARK BOUNDARY TO ROUTE 0940 (BAPTIST ACCESS PARKING)	UPPER CURRENT DISTRICT	0.96	0.00	0.96			AS	1
5001	5			STATE HIGHWAY ZZ	FROM PARK BOUNDARY TO END AT RIVER	UPPER CURRENT DISTRICT	0.52	0.00	0.52			AS	1
5002	5			STATE HIGHWAY B	FROM PARK BOUNDARY TO END AT CEDARGROVE	UPPER CURRENT DISTRICT	0.35	0.00	0.35			AS	1
5003	5			STATE HIGHWAY KK	FROM PARK BOUNDARY TO ROUTE 5004 (STATE HIGHWAY K)	UPPER CURRENT DISTRICT	0.71	0.00	0.71			AS	1
5004	5			STATE HIGHWAY K	FROM NORTH PARK BOUNDARY TO SOUTH PARK BOUNDARY	UPPER CURRENT DISTRICT	2.75	0.00	2.75			AS	1
5005	5			STATE HIGHWAY EE	FROM PARK BOUNDARY TO END AT ROUTE 0941B (PULLTITE PARKING B)	UPPER CURRENT DISTRICT	0.90	0.00	0.90			AS	2

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Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 21 of 23

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OZARK NATIONAL SCENIC RIVERWAYS

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					From	To								
5006	5			STATE HIGHWAY 19	FROM NORTH PARK BOUNDARY	TO SOUTH PARK BOUNDARY	UPPER CURRENT DISTRICT	3.78	0.00	3.78			AS	3
5007	5			STATE HIGHWAY V	FROM PARK BOUNDARY	TO END OF LOOP AT TWO RIVERS AREA	JACKS FORK DISTRICT	1.47	0.00	1.47			AS	4
5008	5			STATE HIGHWAY 106 (EAST)	FROM EAST PARK BOUNDARY (LOWER CURRENT)	TO WEST PARK BOUNDARY (LOWER CURRENT)	LOWER CURRENT DISTRICT	6.96	0.00	6.96			AS	4
5009	5			STATE HIGHWAY 106 (WEST)	FROM EAST PARK BOUNDARY (JACKS FORK)	TO WEST PARK BOUNDARY (JACKS FORK)	JACKS FORK DISTRICT	2.43	0.00	2.43			AS	6
5010	5			STATE HIGHWAY HH	FROM PARK BOUNDARY	TO END OF PAVEMENT NEAR LOGYARD	LOWER CURRENT DISTRICT	1.96	0.00	1.96			AS	4
5011	5			STATE HIGHWAY NN	FROM PARK BOUNDARY	TO END OF PAVEMENT NEAR ROBERTS FIELD	LOWER CURRENT DISTRICT	2.69	0.00	2.69			AS	4
5012	5			STATE HIGHWAY M	FROM PARK BOUNDARY	TO END OF PAVEMENT NEAR WAYMEYER	LOWER CURRENT DISTRICT	1.97	0.00	1.97			AS	4
5013	5			STATE HIGHWAY 103	FROM PARK BOUNDARY	TO BEGINNING OF ROUTE 0010 (PEA VINE ROAD) AND ROUTE 5014 (STATE HIGHWAY Z) ON RIGHT	LOWER CURRENT DISTRICT	0.62	0.00	0.62			AS	5
5014	5			STATE HIGHWAY Z	FROM INTERSECTION WITH ROUTES 0010 (PEA VINE ROAD) AND 5013 (STATE HIGHWAY 103)	TO END OF PAVEMENT NEAR BIG TREE	LOWER CURRENT DISTRICT	8.20	0.00	8.20			AS	5
5015	5			STATE HIGHWAY 17	FROM SOUTH PARK BOUNDARY	TO NORTH PARK BOUNDARY	JACKS FORK DISTRICT	1.24	0.00	1.24			AS	7

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 22 of 23

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CYCLE 5 COLLECTED SUMMARY TOTALS FOR OZARK NATIONAL SCENIC RIVERWAYS

CYCLE 5 COLLECTED ROUTE TOTALS

DCV Driven Route Miles	9.38
Manually Rated Route Miles	0.01
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	9.39
Manually Rated Routes (SQFT)	0.00

* CYCLE 5 COLLECTED PARKING AREA TOTALS

Paved Parking (SQFT)	5,916
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CYCLE 5 COLLECTED CONCESSION TOTALS

Concession Paved Route Miles	0.00
Concession Paved Parking Area SQFT	0
Concession Manually Rated Routes SQFT	0

CYCLE 5 COLLECTED WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	65
**Manually Rated Routes PCR	90
**Parking PCR	90
***Total Equivalent Lane Miles	16.59

TOTAL PARK SUMMARY FOR OZARK NATIONAL SCENIC RIVERWAYS

ROUTE TOTALS

TOTAL PAVED PARK ROUTE MILES	15.92
TOTAL PAVED PARKING (SQFT)	492,001

* - The Parking Area Totals SQFT value represents all parking areas collected in Cycle 5, both park and concessionaire.

** - Parking and Manually Rated Routes are assigned the following PCR values based on their observed condition: Construction=-1, Excellent=97, Good=90, Fair=73, and Poor=45.

*** - Equivalent Lane Miles are calculated by route using the following equations : DCV and Manually Rated Lines Routes=(PAVE_WIDTHxPAVED_MI)/11 foot lane. Parking Areas=SQ_FEET/5280/11. Manually Rated Polygons=SQ_FEET/5280/11.

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 06/12/2013

(Numerical By Route #)

Page 23 of 23

Shading Color Key:

Red text denotes
approx. mileage

White = Paved Routes, DCV Driven

Grey = Paved Routes, DCV not Driven

Yellow = Unpaved Routes, DCV not Driven

Black = State, Local or Private non-NPS Routes

Blue = All Paved Parking Areas

 = Concession Route Flag ON

Green = All Unpaved Parking Areas

*Unpaved route data was obtained from NPS and was not inventoried by the Road Inventory Program (RIP).

** DCV - Data Collection Vehicle

*** Only Functional Class 1, 2, & 7 routes, and previously uncollected routes were collected in Cycle 5

General Park Road Functional Classification Table

- Class 1** Principal Park Road/Rural Parkway (Public Roads) Roads which constitute the main access route, circulatory tour, or thoroughfare for park visitors. Route Numbers 1 - 99. Note: Rural parkways (e.g. Natchez Trace) are numbered 1 - 9. State Routes Inventoried for Park. Route Numbers 5000-5999
- Class 2** Connector Park Road (Public Roads) - Roads which provide access within a park to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, etc. Route Numbers 100-199.
- Class 3** Special Purpose Park Road (Public Roads) - Roads which provide circulation within public areas, such as campgrounds, picnic areas, visitor center complexes, concessionaire facilities, etc. These roads generally serve low-speed traffic and are often designed for one-way circulation. Route Numbers 200-299.
- Class 4** Primitive Park Roads (Public Roads) - Roads which provide circulation through remote areas and/or access to primitive campgrounds and undeveloped areas. These roads frequently have no minimum design standards and their use may be limited to specially equipped vehicles. Route Numbers 200-299. Note: Functional Classes 3 and 4 have the same route numbers because, historically, they were numbered similarly.
- Class 5** Administrative Access Road (Administrative Roads) - All public roads intended for access to administrative developments or structures such as park offices, employee quarters, or utility areas. Route Numbers 400-499.
- Class 6** Restricted Road (Administrative Roads) - All roads normally closed to the public, including patrol roads, truck trails, and other similar roads. Route Numbers 400-499. Note: Functional Classes 5 and 6 have the same route numbers because historically they were numbered similarly and often there is little distinction between these routes. For example, because utility areas and employee housing are often closed to the public, this restriction would result in classification of FC 6 rather than FC 5.
- Class 7** Urban Parkway (Urban Parkways and City Streets) - These facilities serve high volumes of park and non-park related traffic and are restricted, limited-access facilities in an urban area. This category of roads primarily encompasses the major parkways which serve as gateways to our nation's capital. Other major park roads or portions thereof, however, may be included in this category. Route Numbers 1-9.
- Class 8** City Streets (Urban Parkways and City Streets) - City streets are usually extensions of the adjoining street system that are owned and maintained by the National Park Service. The construction and/or reconstruction should conform with accepted local engineering practice and local conditions. Route Numbers 600-699.

A park road system contains those roads within or giving access to a park or other unit of the NPS which are administered by the NPS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a park road is not based on traffic volumes or design speed, but on the intended use or function of that road or route.

The historic route numbering system also included a 300 number series for interpretive roads, and a 500 series for one-way roads. There are approximately 250 roads nationwide which are designated by the 300 and 500 series. The numbers for these roads will be maintained for reporting consistency. However, since these interpretive and one-way routes are not as clearly tied to a specific functional class, the 300 and 500 series will be discontinued for future use.

5000 route numbers are assigned to Non-NPS Routes that are State, County or City owned which border, traverse, or provide access to Park Facilities or Locations. 5000 Routes are driven for GPS and Video Log only.

Surface Type Abbreviations:

AS - Asphaltic Concrete Pavement

CO - Portland Cement Concrete Pavement

BR - Brick or Pavers Road Bed

CB - Cobble Stone Road Bed

GR - Gravel Road Bed

SA - Sand Road Bed

NV - Native or Dirt Material Road Bed

OT - Other Materials Road Bed

NPS/RIP Subcomponent Details for OZAR

Road Inventory Program 06/12/2013

(Numerical By Subcomponent #)

Page 1 of 1

Shading Color Key:

Red text denotes
approx. mileage

White = Paved Routes, DCV Driven

Yellow = Unpaved Routes, DCV not Driven

Blue = All Paved Parking Areas

Green = All Unpaved Parking Areas

Grey = Paved Routes, DCV not Driven

Black = State, Local or Private non-NPS Routes

■ = Concession Route Flag ON

*Unpaved route data was obtained from NPS and was not inventoried by the Road Inventory Program (RIP).

OZAR

OZARK NATIONAL SCENIC RIVERWAYS

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0148ZZ	78881	5	PULLTITE CAMPGROUND ROADS	FROM ROUTE 5005 (STATE HIGHWAY EE)	THROUGH CAMPGROUND		2	0.94	0.00	0.94	

OZAR-0148ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0148AZ	78881	5	PULLTITE CAMPGROUND ROAD A	FROM ROUTE 5005 (STATE HIGHWAY EE)	TO END OF LOOP		2	0.26	0.00	0.26	
0148BZ	78881	5	PULLTITE CAMPGROUND ROAD B	FROM ROUTE 0148AZ (PULLTITE CAMPGROUND ROAD A) AT MP 0.15	TO ROUTE 0955 (PULLTITE ROAD PARKING)		2	0.68	0.00	0.68	

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - OZAR

ROUTES ADDED FROM PREVIOUS INVENTORY:

Route #	Route Name	Reason for Addition	Comments
0233	ALLEY SPRING BLUFF HOLE ROAD	OTHER	ROUTE ADDED TO INVENTORY IN CYCLE 5.
0991	ALLEY SPRING RESIDENCE PARKING	RECENTLY CONSTRUCTED ROUTE	PAVED PARKING LOT ADDED TO INVENTORY IN CYCLE 5.
0992	ALLEY SPRING BOAT LAUNCH PARKING B	RECENTLY CONSTRUCTED ROUTE	PAVED PARKING LOT ADDED TO INVENTORY IN CYCLE 5.
5001	STATE HIGHWAY ZZ	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5002	STATE HIGHWAY B	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5003	STATE HIGHWAY KK	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5004	STATE HIGHWAY K	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5006	STATE HIGHWAY 19	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5008	STATE HIGHWAY 106 (EAST)	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5009	STATE HIGHWAY 106 (WEST)	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5010	STATE HIGHWAY HH	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - OZAR

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	Route Name	Reason for Addition	Comments
5011	STATE HIGHWAY NN	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5012	STATE HIGHWAY M	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5013	STATE HIGHWAY 103	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5014	STATE HIGHWAY Z	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
5015	STATE HIGHWAY 17	OTHER	NON-NPS ROUTE ADDED TO INVENTORY IN CYCLE 5.
ROUTES MODIFIED FROM PREVIOUS INVENTORY:			
Route #	Route Name	Type of Modification	Comments
0518A	ALLEY SPRING CAMPGROUND LOOP A	REALIGNED	CAMPGROUND ROAD WAS REALIGNED SINCE CYCLE 4.
0518B	ALLEY SPRING CAMPGROUND LOOP B	REALIGNED	CAMPGROUND ROAD WAS REALIGNED SINCE CYCLE 4.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - OZAR

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	Route Name	Type of Change	Comments
0011	BIG SPRING CAMPGROUND ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS AN ACCESS ROAD TO THE CAMPGROUND.
0148ZZ	PULLTITE CAMPGROUND ROADS	ROUTES COMBINED	CYCLE 4 ROUTES 0148A AND 0148B WERE COMBINED INTO ROUTE 0148ZZ THROUGH ALIGNMENT.
0156	ALLEY SPRING CAMPGROUND ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS THE ACCESS ROAD TO THE CAMPGROUND.
0159	ALLEY SPRING BOAT LAUNCH ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS THE PRIMARY ACCESS ROAD TO THE BOAT LAUNCH.
0169	ROUND SPRING CAMPGROUND ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS THE ACCESS ROAD TO THE CAMPGROUND.
0169A	ROUND SPRING CAMPGROUND CUT OFF ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS THE ACCESS ROAD TO THE CAMPGROUND.
0170	ROUND SPRING CAVE ACCESS ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS THE ACCESS ROAD TO THE CAVE.
0174	ROUND SPRING SEWAGE TREATMENT ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 5 TO 6 BECAUSE IT HAS RESTRICTED ACCESS.
0419	BIG SPRING WATER TANK ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 6 TO 5 BECAUSE PUBLIC ACCESS IS NOT RESTRICTED.
0422	ROUND SPRING MAINTENANCE / RESIDENCE ACCESS ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 6 TO 5 BECAUSE PUBLIC ACCESS IS NOT RESTRICTED.
0519	PULLTITE FLOATER CAMP ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 5 TO 3 BECAUSE IT IS A PUBLIC, CAMPGROUND ROAD.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - OZAR

OTHER CHANGES FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Change	Comments
0900	ALLEY SPRING SEWER TREATMENT PLANT PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "ALLEY SPRING RESIDENCE PARKING".
0935F	ROUND SPRING MAINTENANCE PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "ROUND SPRING RESIDENCE PARKING F".
0955	PULLTITE ROAD PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "PULLTITE CAMPGROUND ROAD PARKING A".
0971	PULLTITE LOWER SHOWER HOUSE PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "PULLTITE MAINTENANCE ROAD PARKING".
5000	DENT COUNTY ROAD 653	OTHER	CYCLE 4 ROUTE 0100 WAS CHANGED TO ROUTE 5000 BECAUSE IT IS A NON-NPS ROAD. IT WAS SHORTENED TO TERMINATE AT THE PARK BOUNDARY.
5005	STATE HIGHWAY EE	OTHER	THIS IS A COUNTY ROAD, NOT A PARK ROAD. ROUTE 0146 IS NOW PART OF ROUTE 5005 IN CYCLE 5. IT IS SHORTER IN CYCLE 5 BECAUSE THE COLLECTION LIMITS ARE THE PARK BOUNDARY.
5007	STATE HIGHWAY V	OTHER	THIS IS A COUNTY ROAD, NOT A PARK ROAD. ROUTE 0701 IS NOW PART OF ROUTE 5007 IN CYCLE 5. ADDITIONAL LENGTH ADDED IN CYCLE 5 SO THAT THE ROUTE TERMINATES AT THE PARK BOUNDARY.

ROUTES REMOVED FROM PREVIOUS INVENTORY:

Route #	Route Name	Reason for Removal	Comments
0162	ALLEY HOLLOW ROAD	OTHER	PAVED ROUTE (ALLEY HOLLOW ROAD) REMOVED THROUGH ALIGNMENT PRIOR TO CYCLE 5 BECAUSE IT IS NOT NPS OWNED.

Section 3

Park Summary Information



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

OZAR: PAVED ROUTE MILES AND PERCENTAGES BY FUNCTIONAL CLASS AND PCR

F.C.	Pavement Condition Rating (PCR)								TOTAL MILES
	Poor (0-60)		Fair (61-84)		Good (85-94)		Excellent (95-100)		
	MILES	%	MILES	%	MILES	%	MILES	%	
1	0.28	2.99%	2.62	27.93%	0.32	3.41%			3.22
2	3.08	32.84%	0.63	6.72%	1.66	17.70%	0.56	5.97%	5.93
3			0.06	0.64%	0.15	1.60%	0.02	0.21%	0.23
4									
5									
6									
7									
8									
Totals	3.36	35.82%	3.31	35.29%	2.13	22.71%	0.58	6.18%	9.38

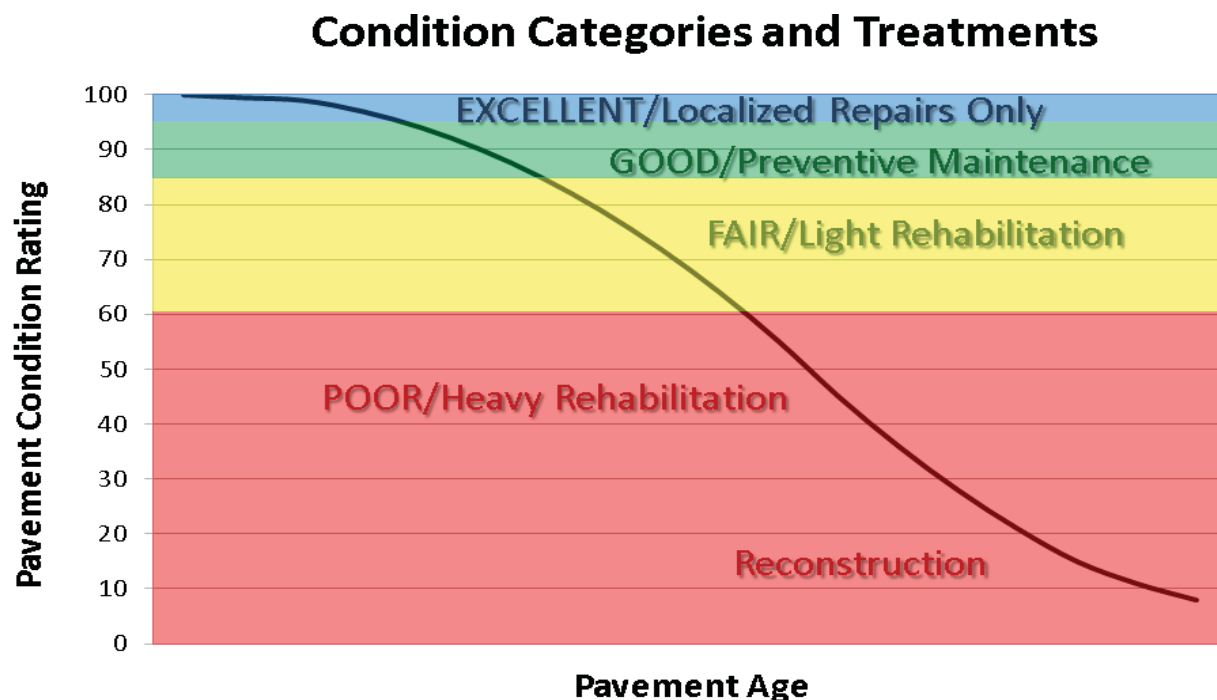
Note: The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class 1, 2, & 7 routes, and any new routes not previously collected by RIP, are collected in Large Parks.

Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

In addition to the RIP Index changes that have been implemented in Cycle 5, we will also aim to provide greater assistance in translating excellent/good/fair/poor categories into pavement needs categories. The PCR can be used to indicate the place in the Pavement Life Cycle and the types of treatments that should be considered now and into the future.

- Excellent/New: PCR of 95-100. Pavements in this range will require only spot repairs
- Good: PCR of 85-94. Pavements in this range will likely be candidates for Preventive Maintenance. Examples include Chip and Slurry Seals, Micro Surfacing and Thin Overlays.
- Fair: PCR of 61-84. Pavements in this range will likely be candidates of Light Rehabilitation (L3R). Examples include single-lift overlays up to 2.5 inches in total thickness, milling and overlays.
- Poor: PCR of 0-60. Pavements in this range will likely be candidates of Heavy Rehabilitation or Reconstruction (H3R or 4R). Examples include Pulverization, Multiple Lift Overlays, and Reconstruction.

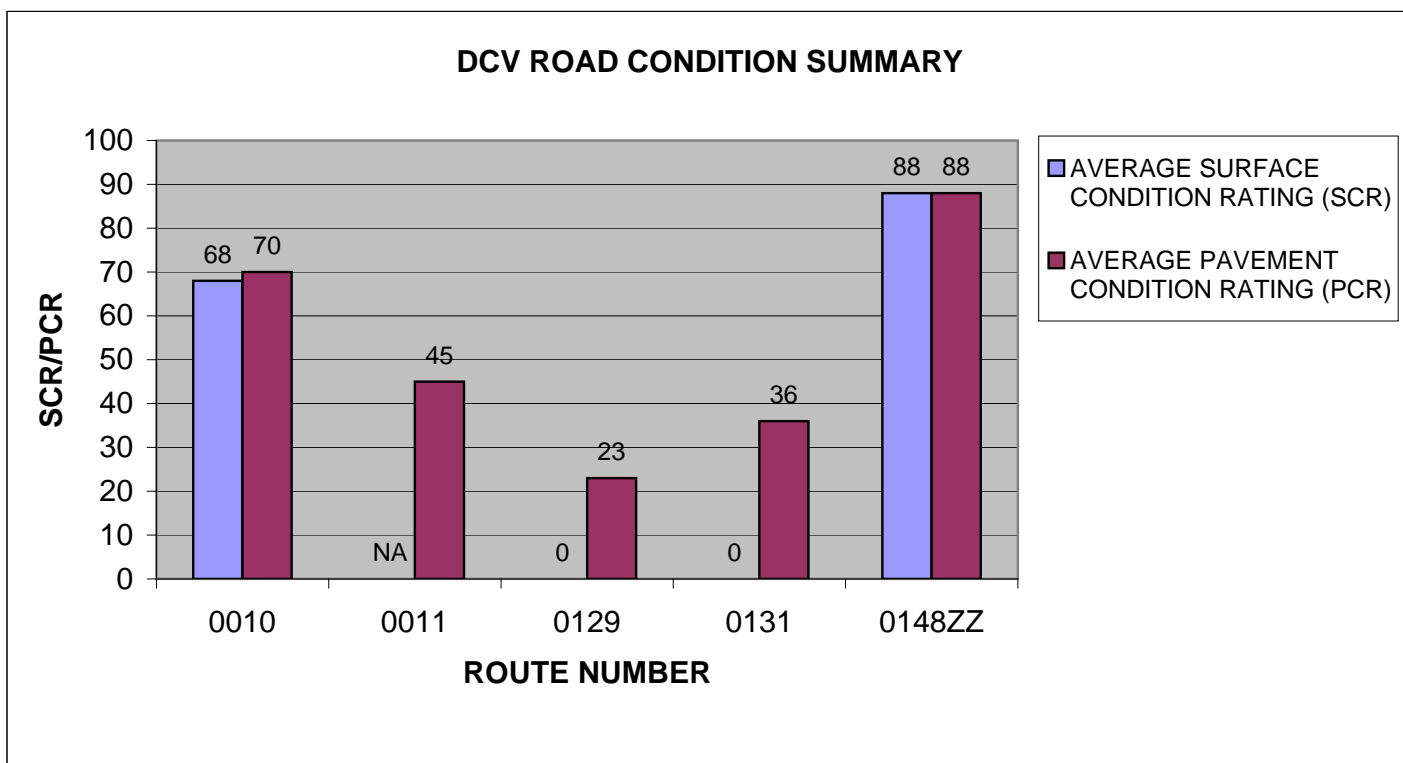
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely on RIP data. Additionally, RIP produces a snapshot of conditions the year in which the data was collected. For further information or to obtain additional Pavement Management System's data from our Highway Pavement Management Application (HPMA) please contact the Eastern Federal Lands pavement team.



OZAR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

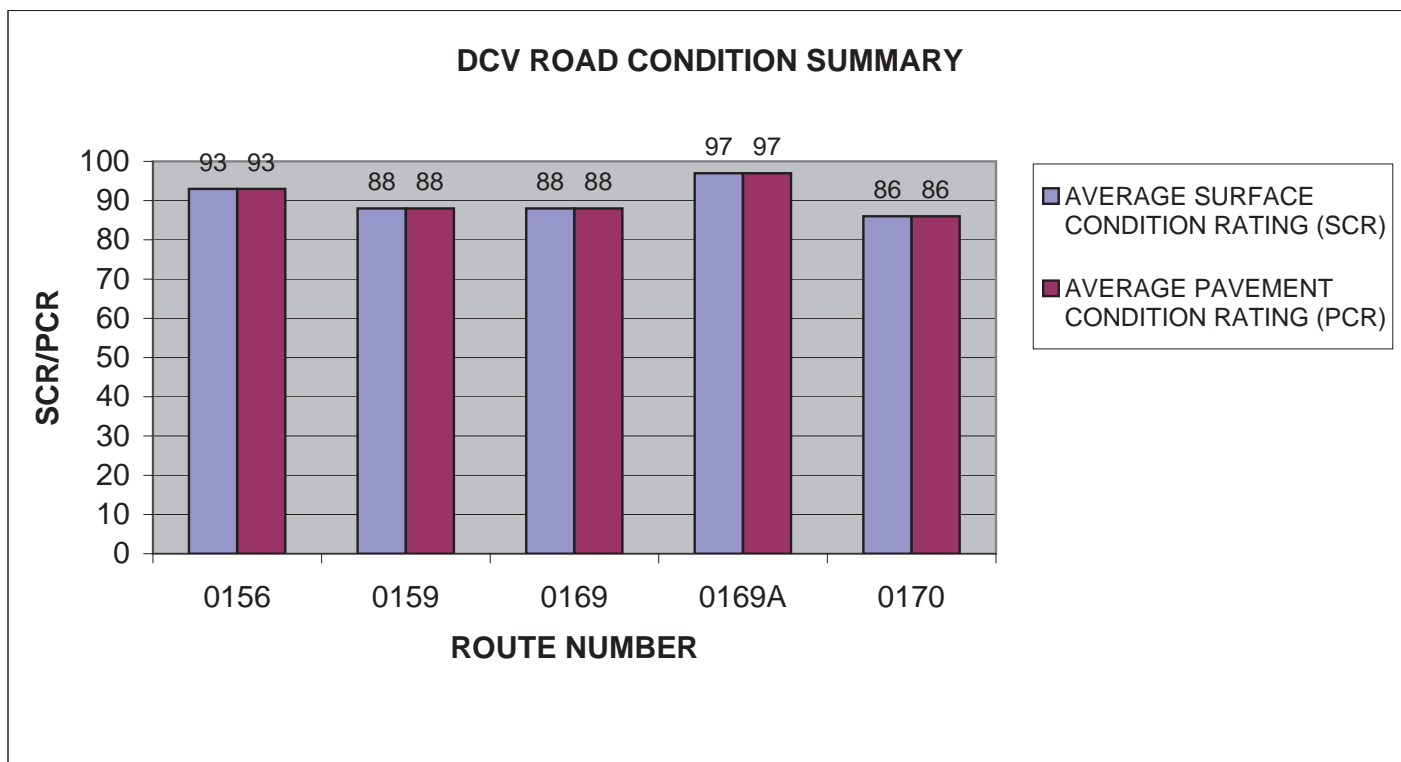
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	PEA VINE ROAD	1	3.22	ASPHALT	68	70
0011	BIG SPRING CAMPGROUND ROAD	2	0.83	ASPHALT	NA	45
0129	OLD STATE HIGHWAY 106 EAST ROAD	2	0.64	ASPHALT	0	23
0131	OLD STATE HIGHWAY 106 WEST ROAD	2	1.66	ASPHALT	0	36
0148ZZ	PULLTITE CAMPGROUND ROADS	2	0.94	ASPHALT	88	88



OZAR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

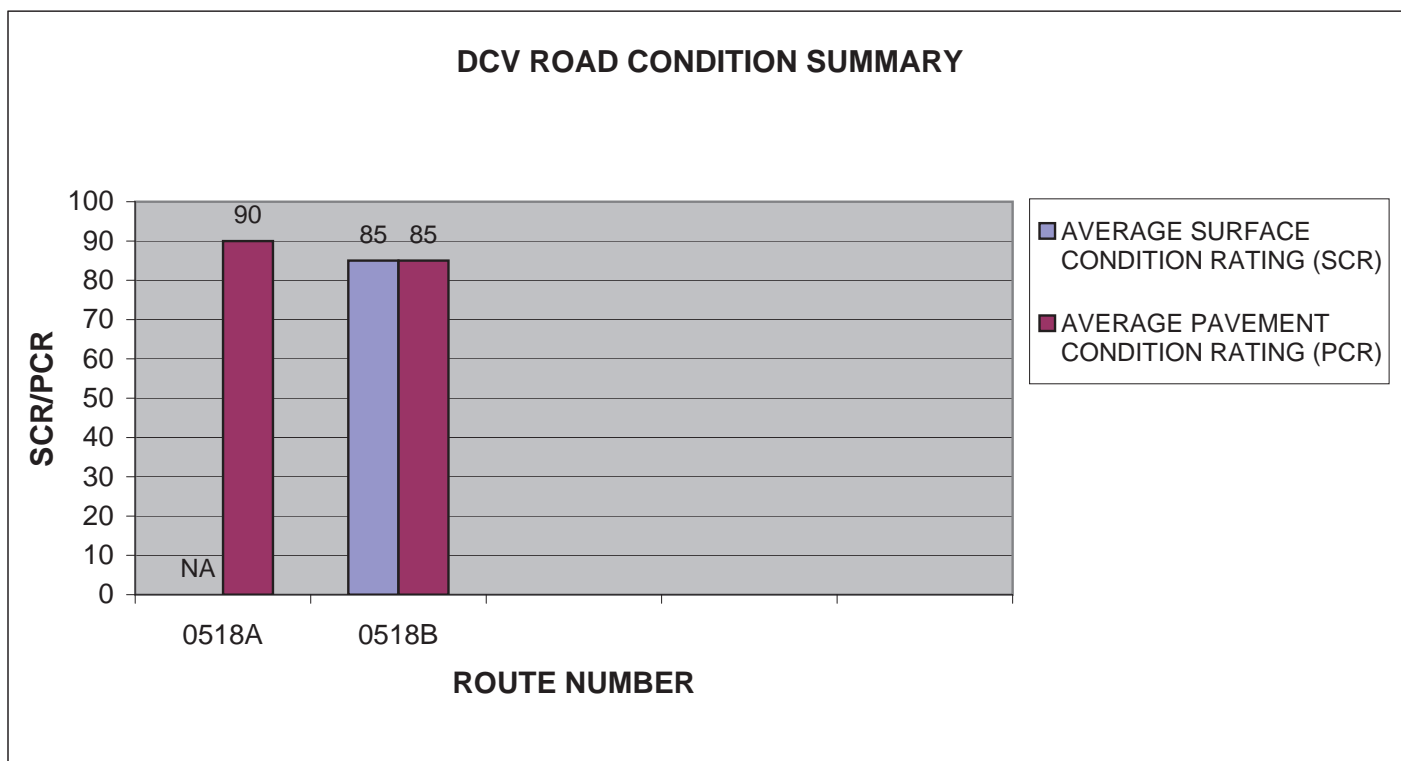
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0156	ALLEY SPRING CAMPGROUND ROAD	2	0.79	ASPHALT	93	93
0159	ALLEY SPRING BOAT LAUNCH ROAD	2	0.14	ASPHALT	88	88
0169	ROUND SPRING CAMPGROUND ROAD	2	0.63	ASPHALT	88	88
0169A	ROUND SPRING CAMPGROUND CUT OFF ROAD	2	0.07	ASPHALT	97	97
0170	ROUND SPRING CAVE ACCESS ROAD	2	0.23	ASPHALT	86	86



OZAR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0518A	ALLEY SPRING CAMPGROUND LOOP A	3	0.08	ASPHALT	NA	90
0518B	ALLEY SPRING CAMPGROUND LOOP B	3	0.15	ASPHALT	85	85



Section 4

Park Route Location Maps

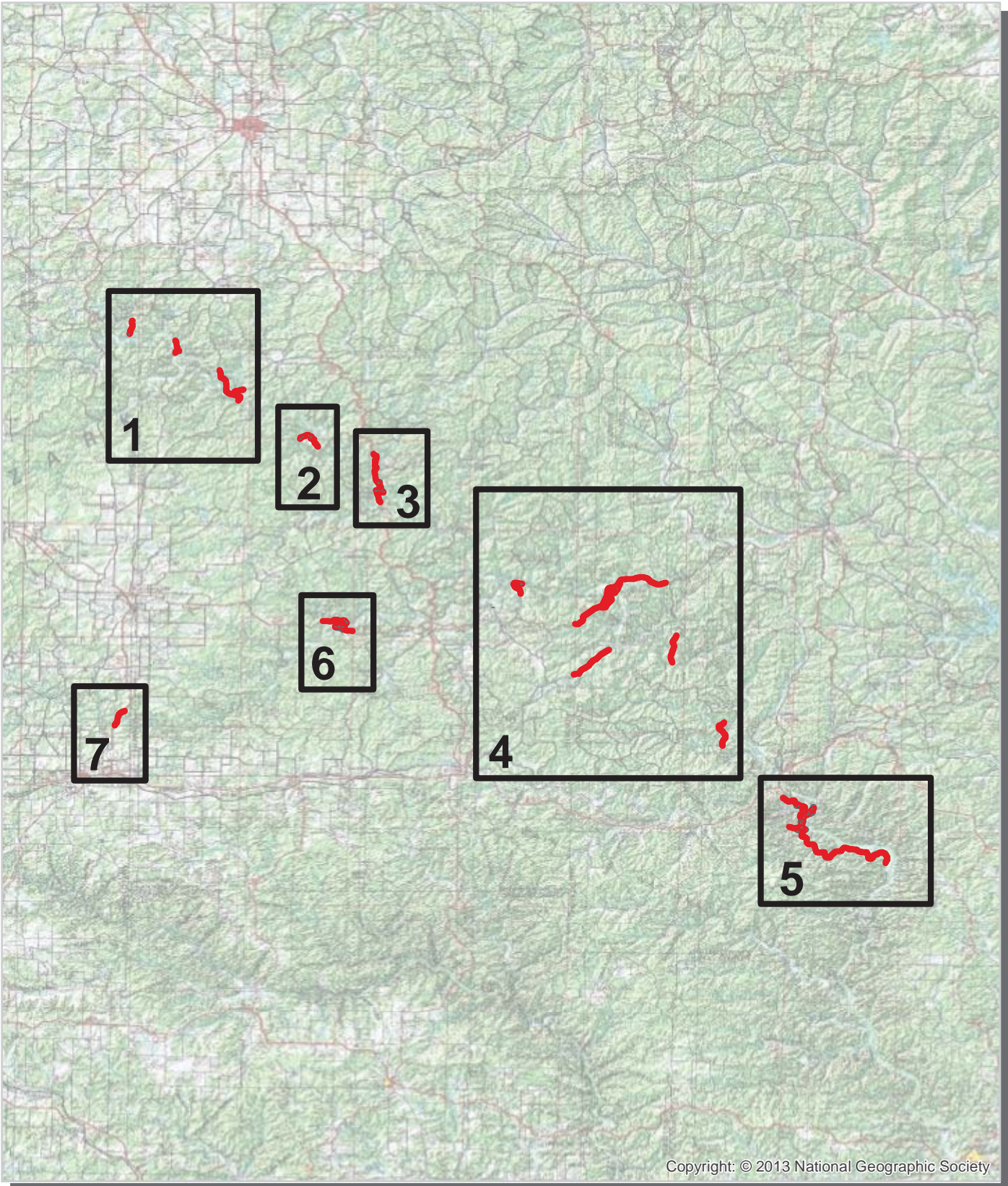


Ozark National Scenic Riverways

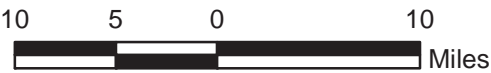


Federal Lands Highway
Road Inventory Program

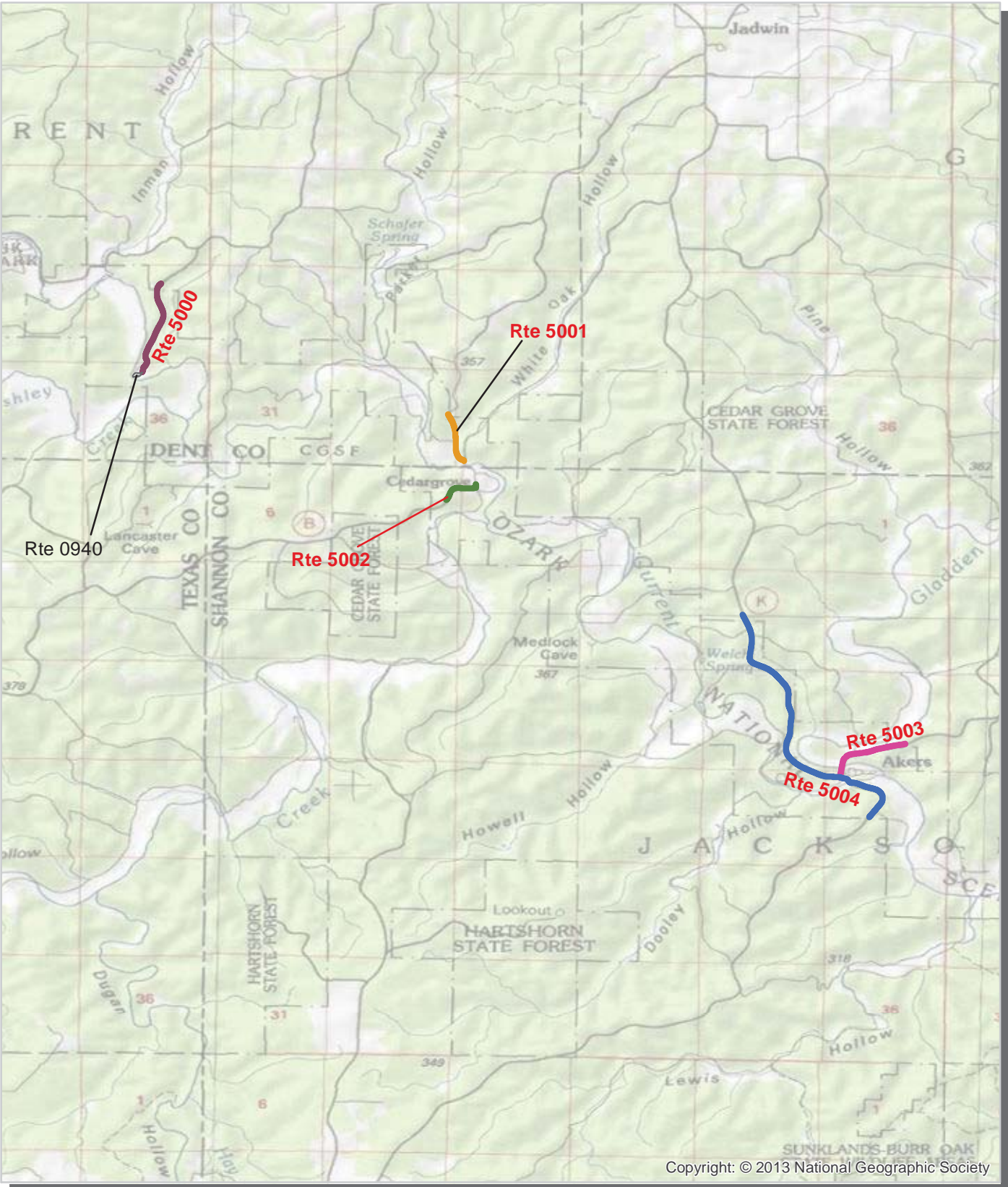
Ozark National Scenic Riverways
Route Location Map
Key Map



— Cycle 5 Collected Routes
— Routes Collected in Previous Cycle



Ozark National Scenic Riverways
Route Location Map
Area 1

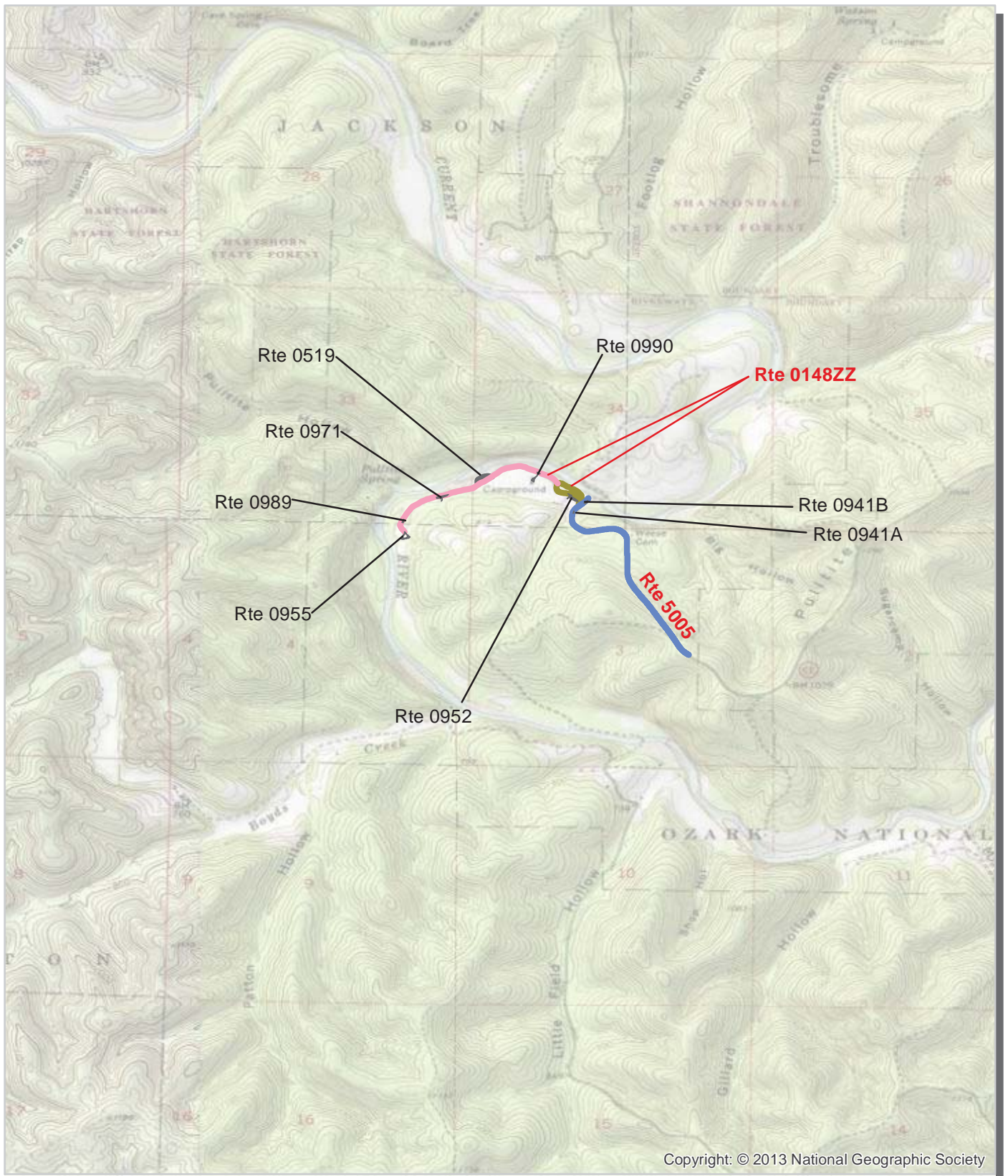


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

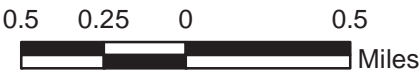


Ozark National Scenic Riverways Route Location Map Area 2

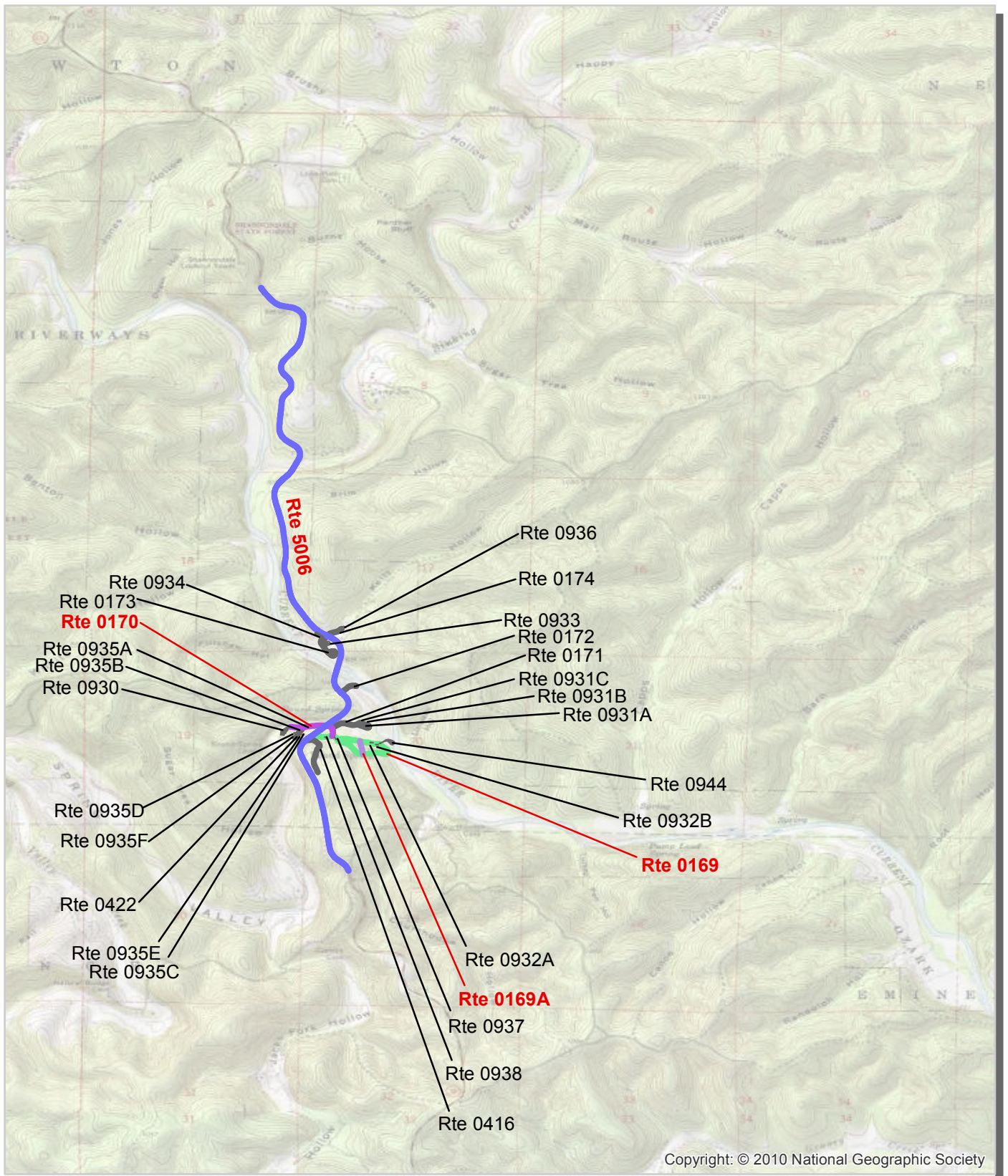


Unique colors used to differentiate routes

Routes Collected in Previous Cycle

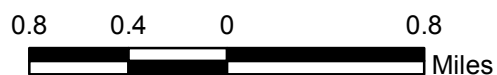


Ozark National Scenic Riverways Route Location Map Area 3

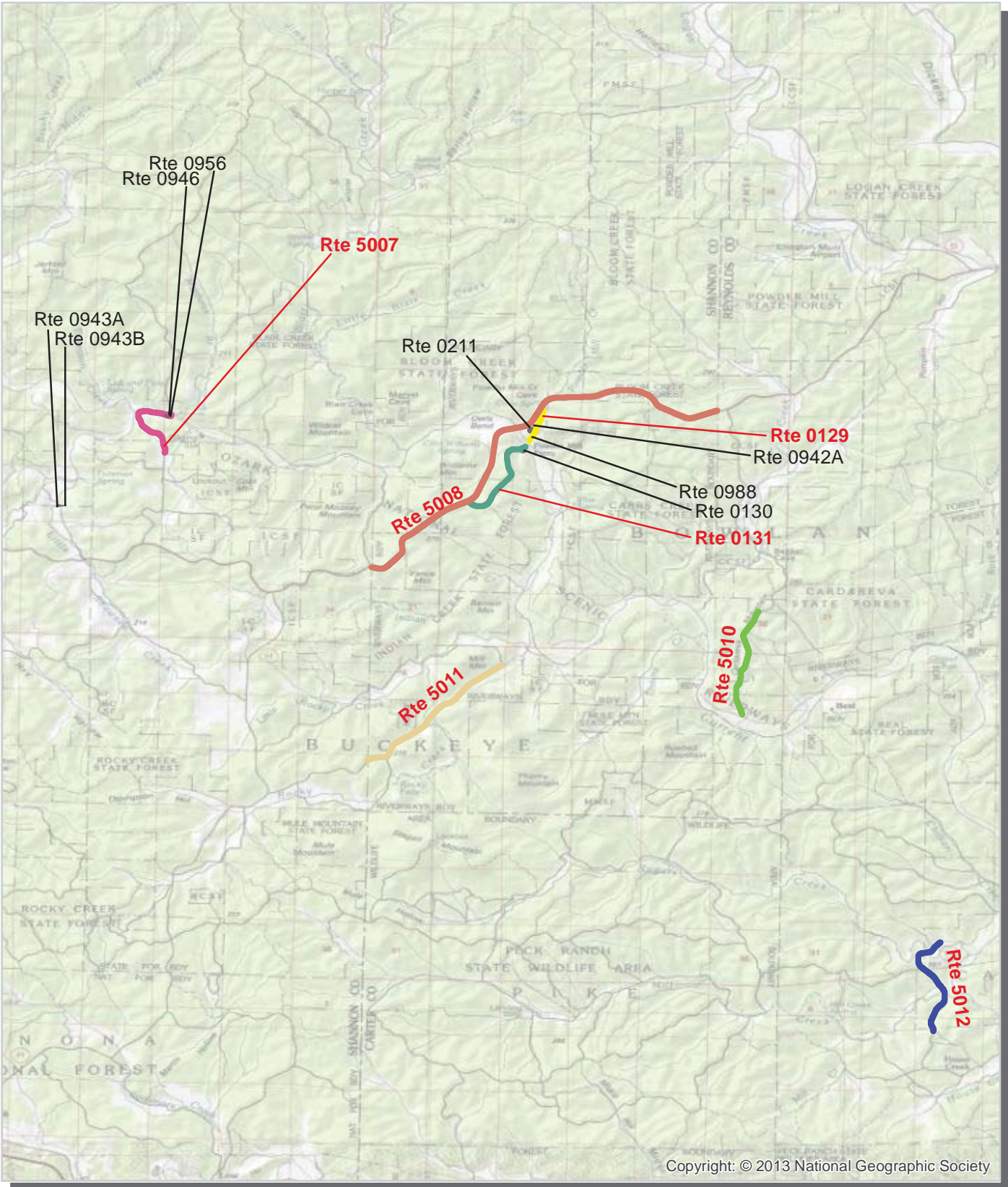


Unique colors used to differentiate routes

Routes Collected in Previous Cycle



Ozark National Scenic Riverways
Route Location Map
Area 4

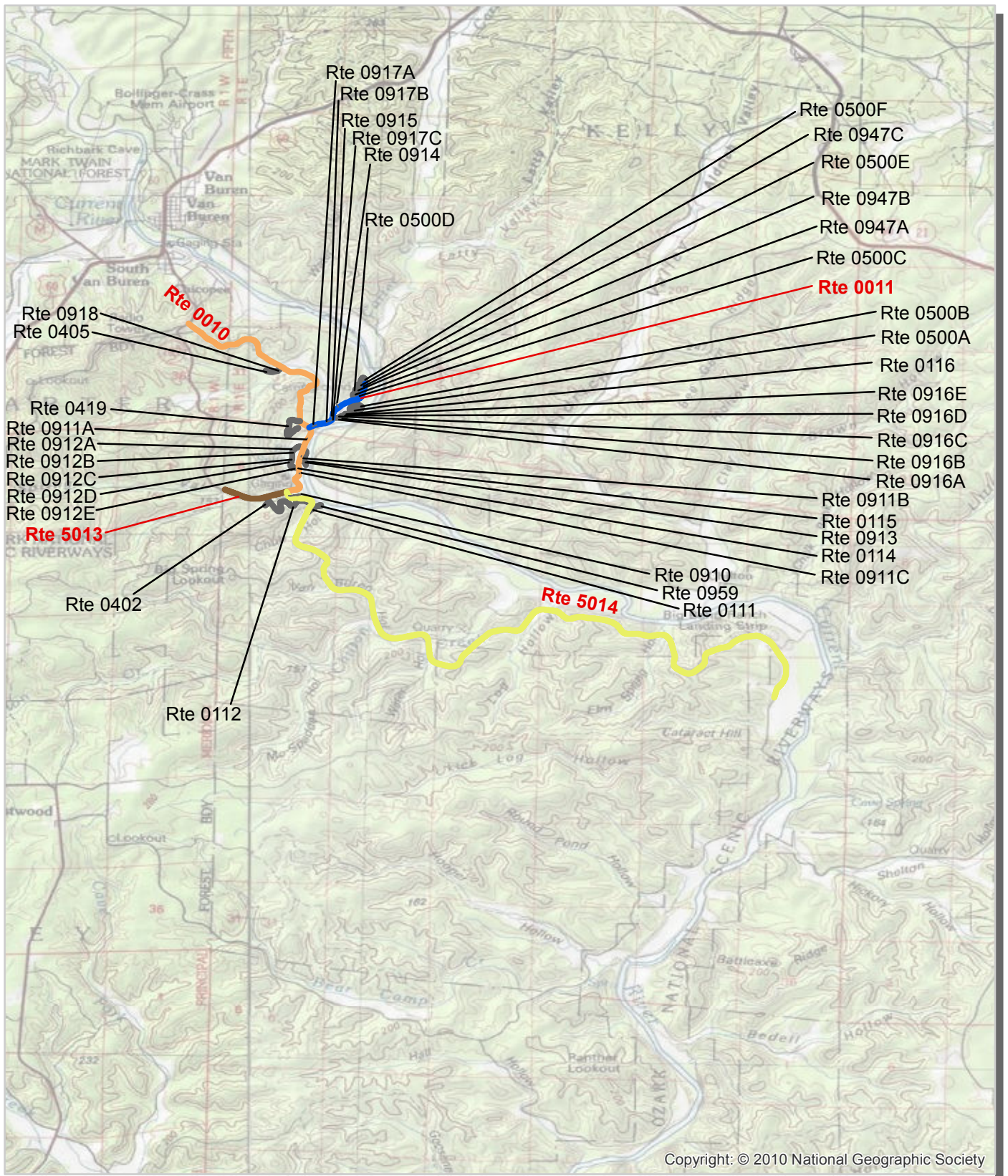


Unique colors used to differentiate routes

Routes Collected in Previous Cycle



Ozark National Scenic Riverways Route Location Map Area 5



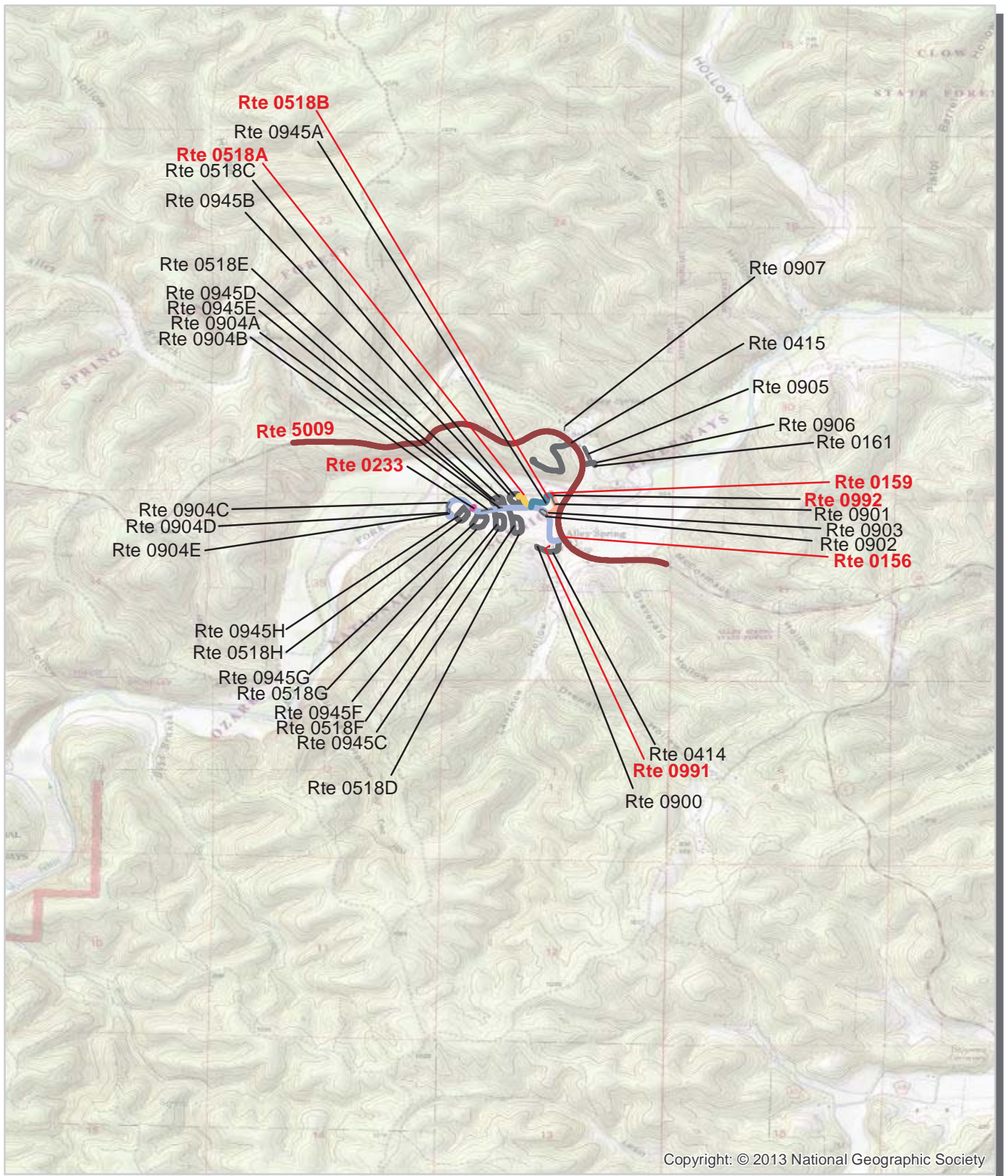
Unique colors used to differentiate routes

Routes Collected in Previous Cycle

1 0.5 0 1
Miles



Ozark National Scenic Riverways Route Location Map Area 6



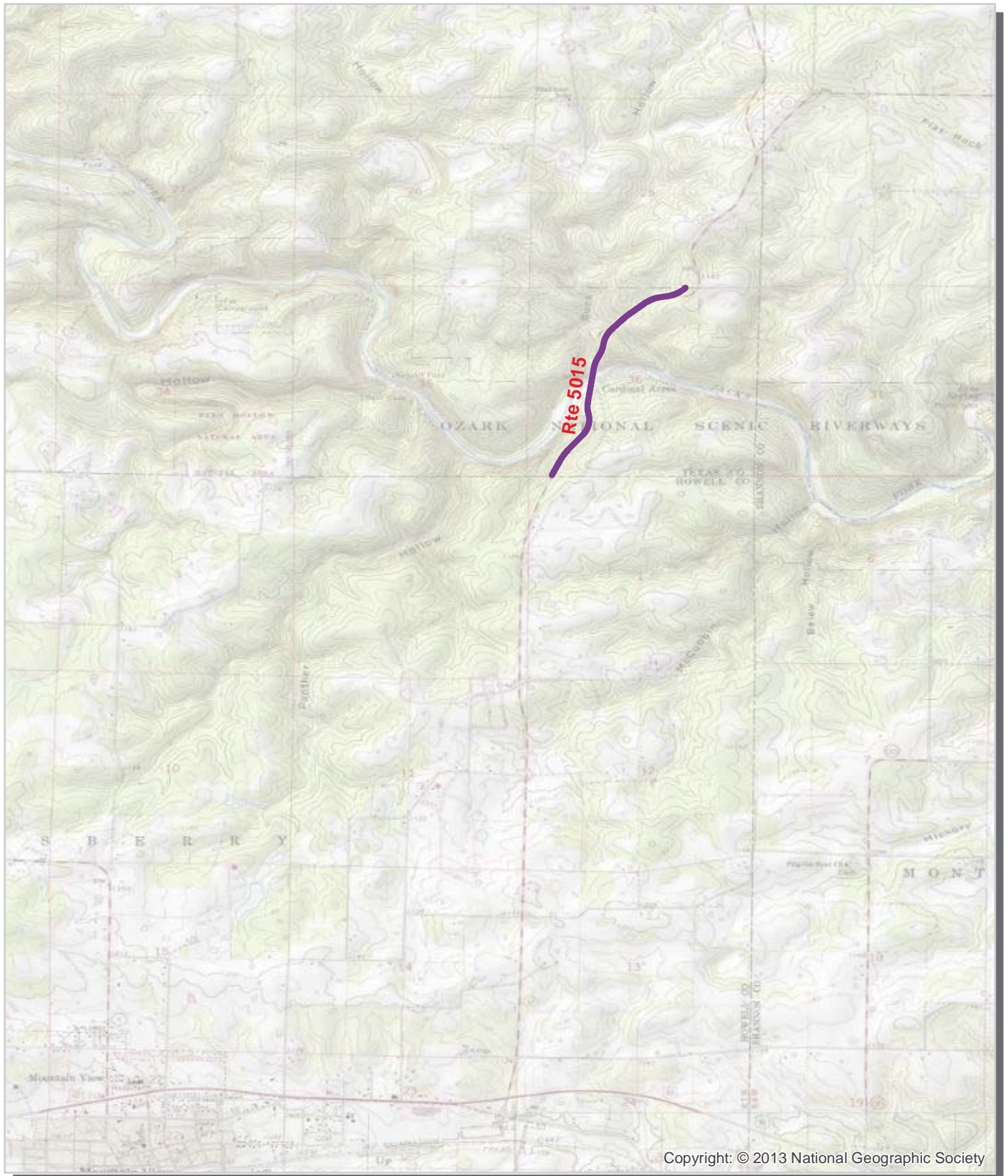
Unique colors used to differentiate routes

Routes Collected in Previous Cycle

0.8 0.4 0 0.8
Miles



Ozark National Scenic Riverways Route Location Map Area 7



Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

0.8 0.4 0 0.8
Miles

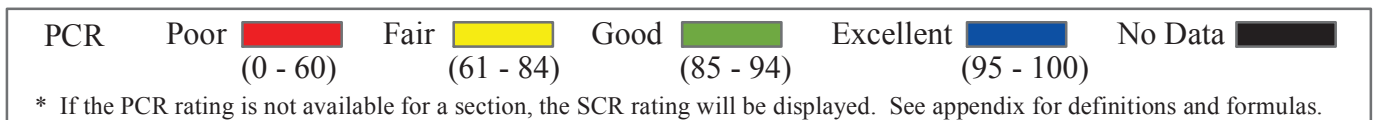
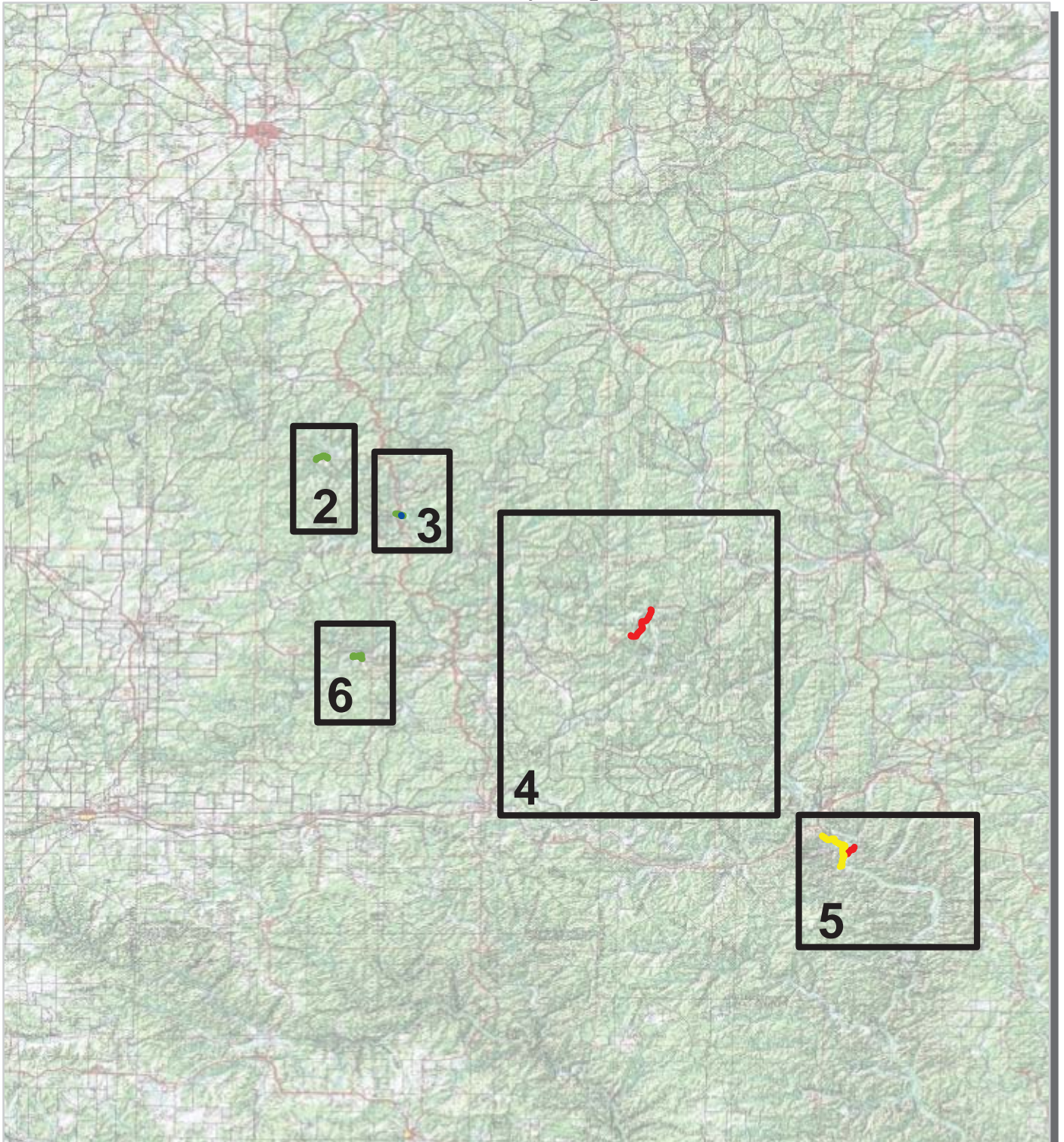


Ozark National Scenic Riverways

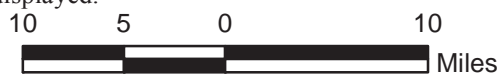
Route Condition Map

PCR - Mile by Mile

Key Map



Note: Only routes collected by the DCV in Cycle-5 are displayed.

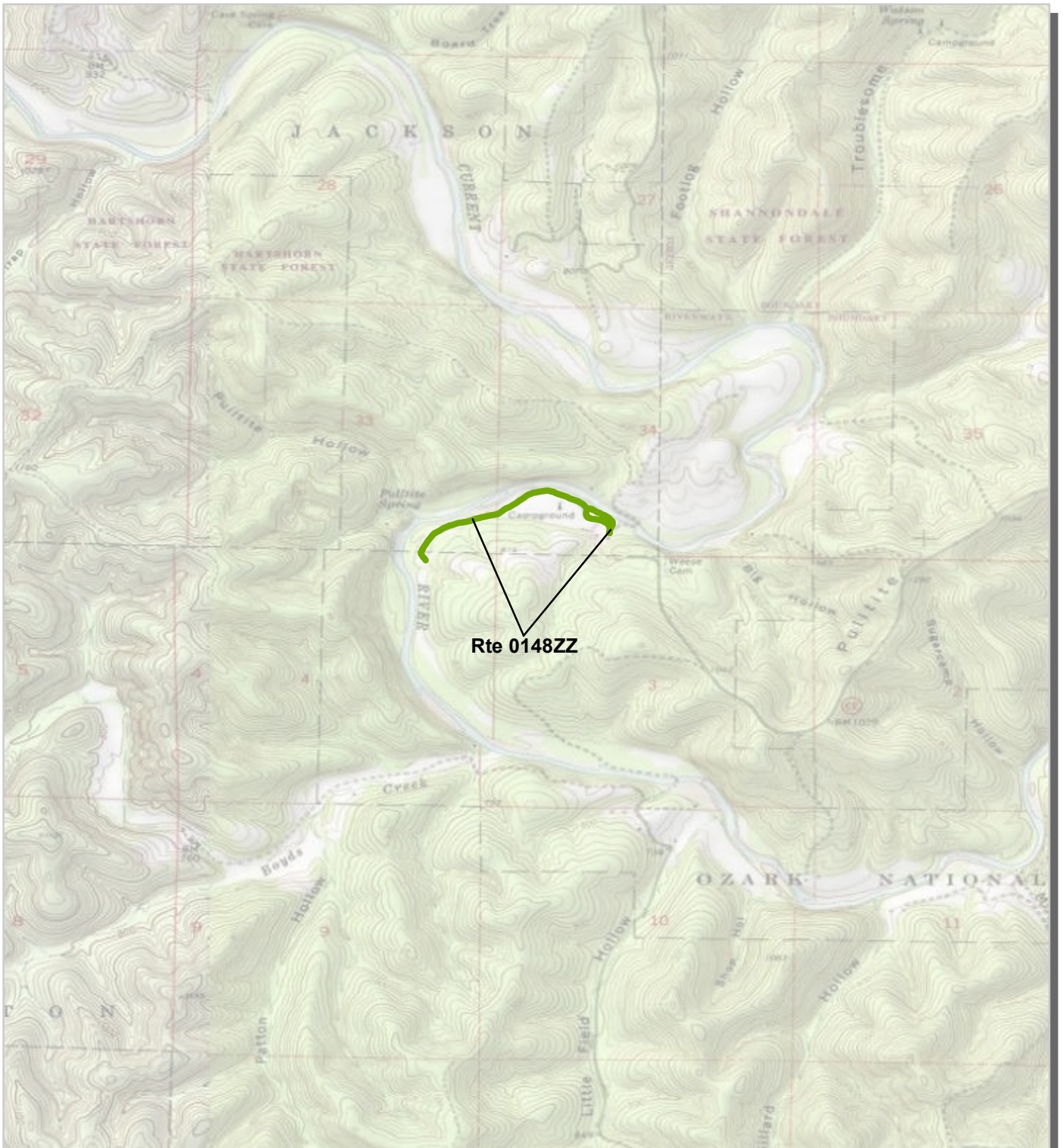


Ozark National Scenic Riverways

Route Condition Map

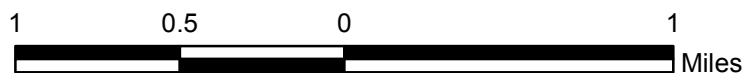
PCR - Mile by Mile

Area 2



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

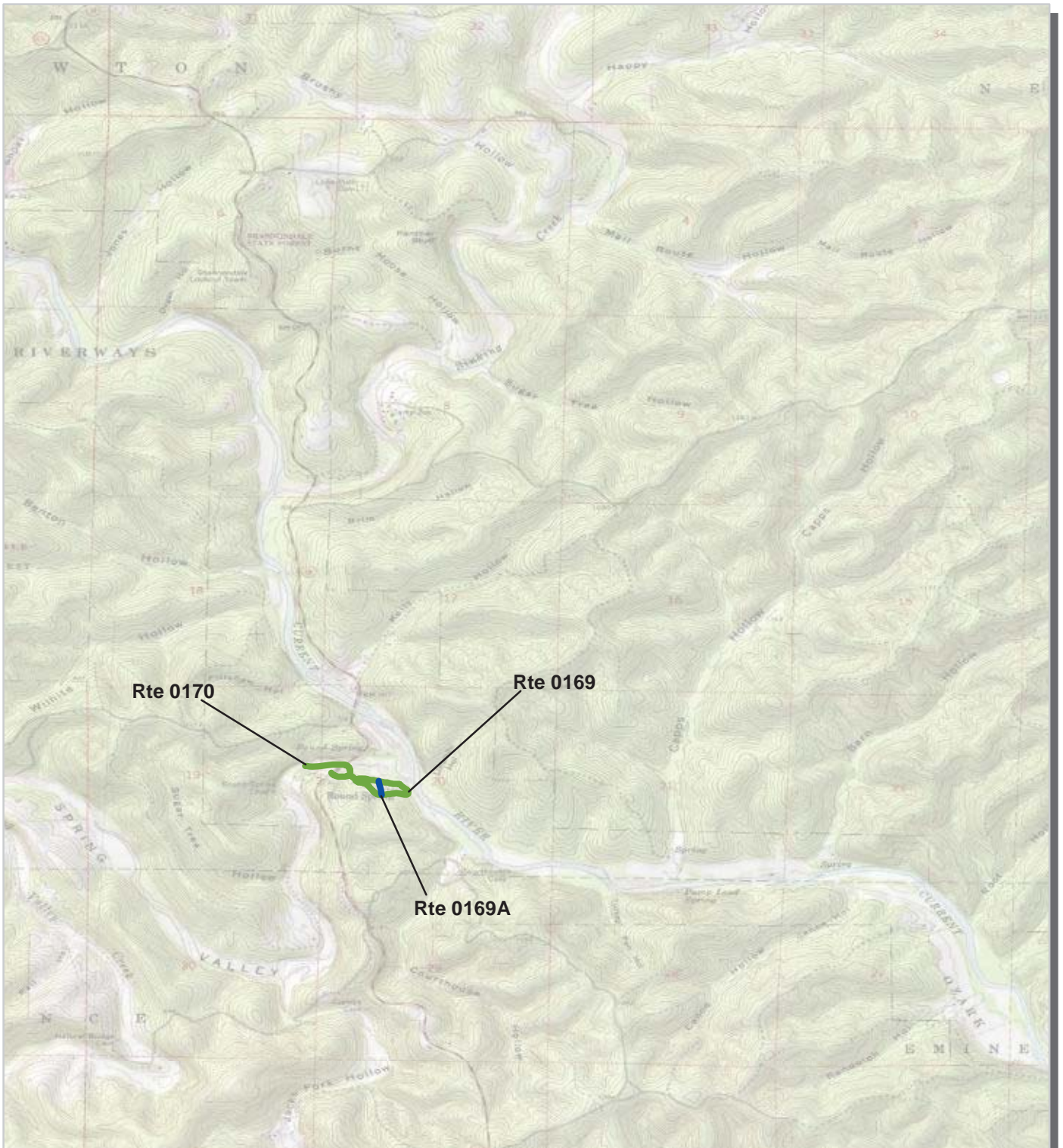


Ozark National Scenic Riverways

Route Condition Map

PCR - Mile by Mile

Area 3



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

1 0.5 0 1 Miles

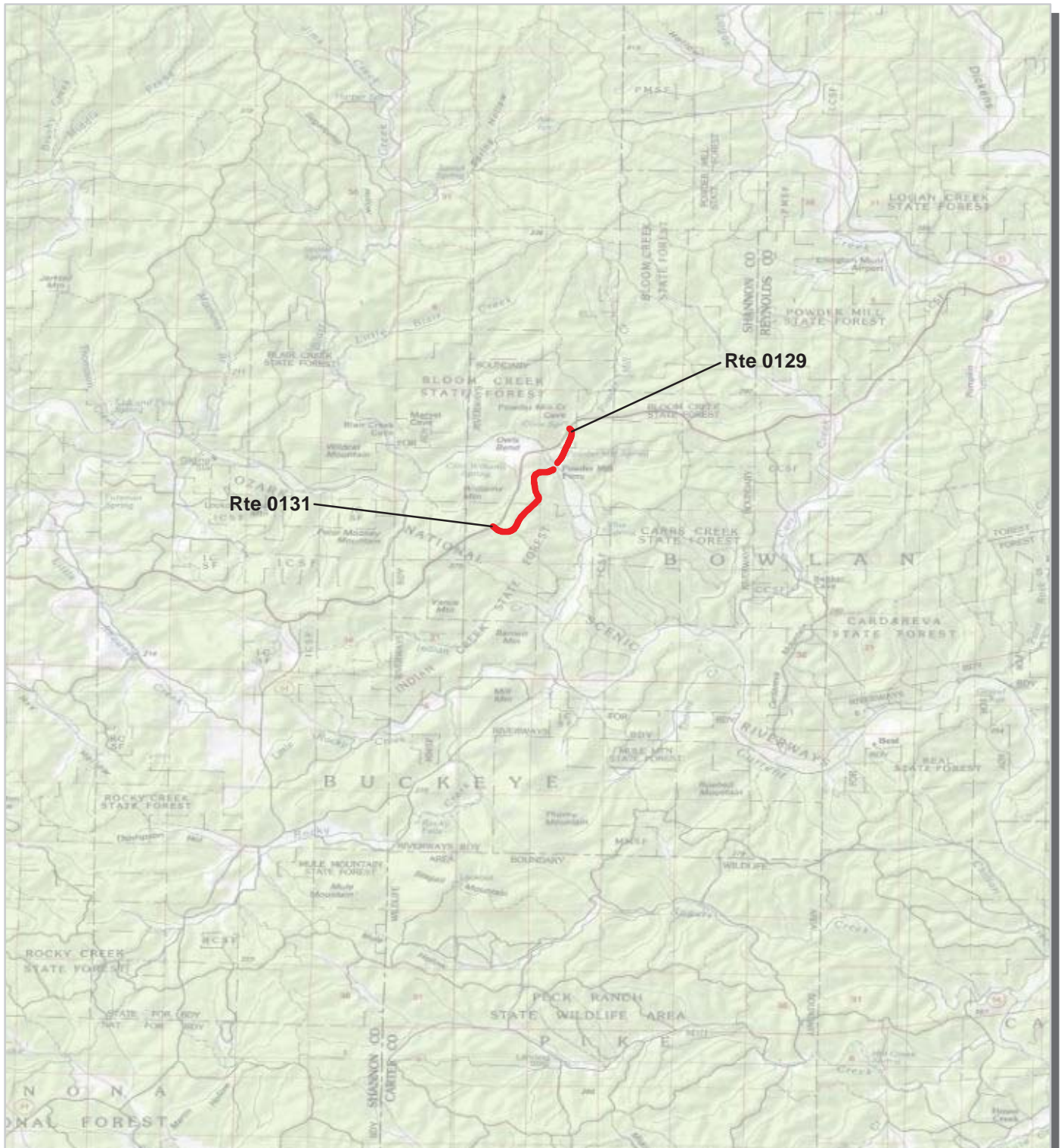


Ozark National Scenic Riverways

Route Condition Map

PCR - Mile by Mile

Area 4



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

3 1.5 0 3
Miles

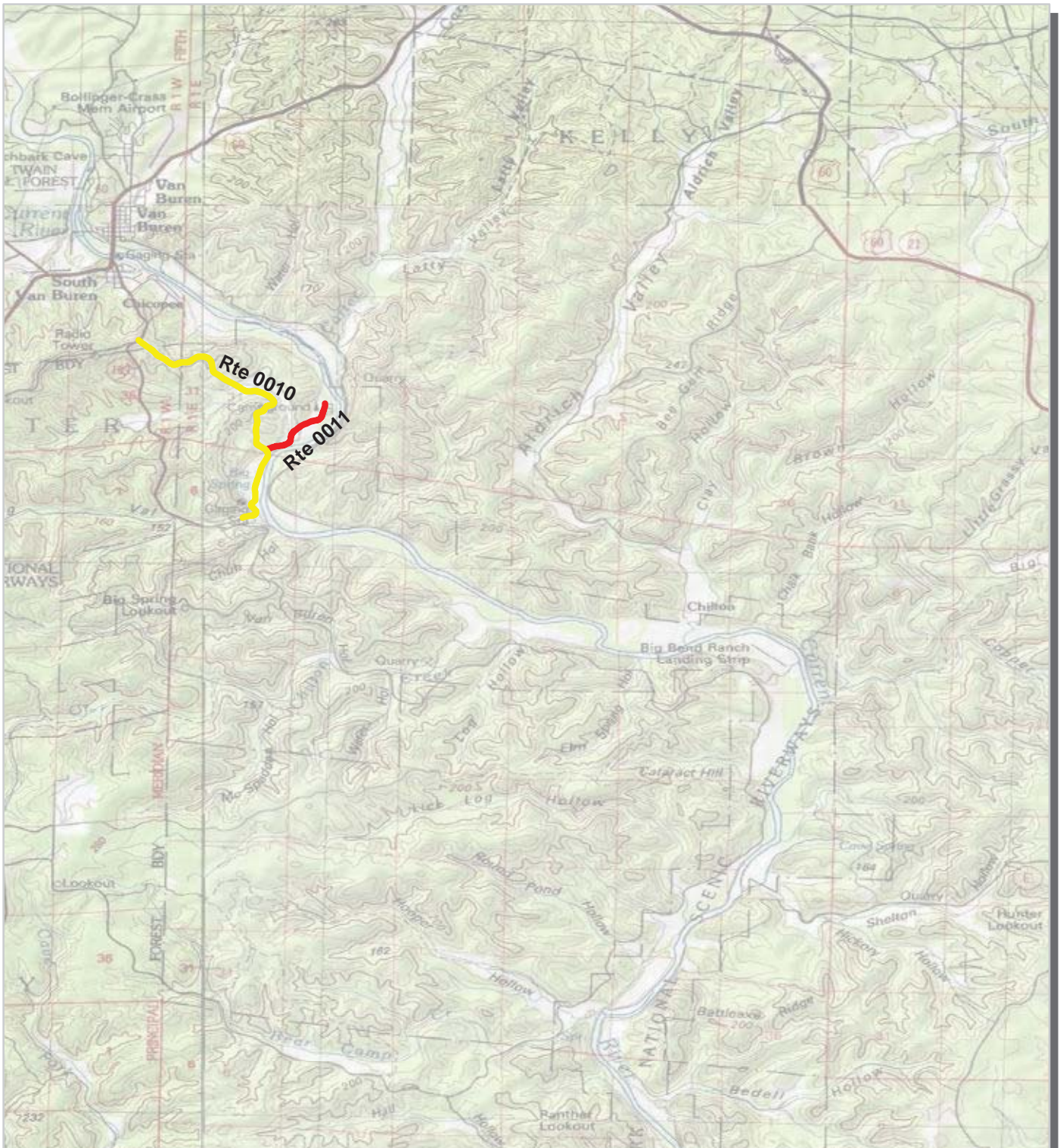


Ozark National Scenic Riverways

Route Condition Map

PCR - Mile by Mile

Area 5



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

2 1 0 2
Miles

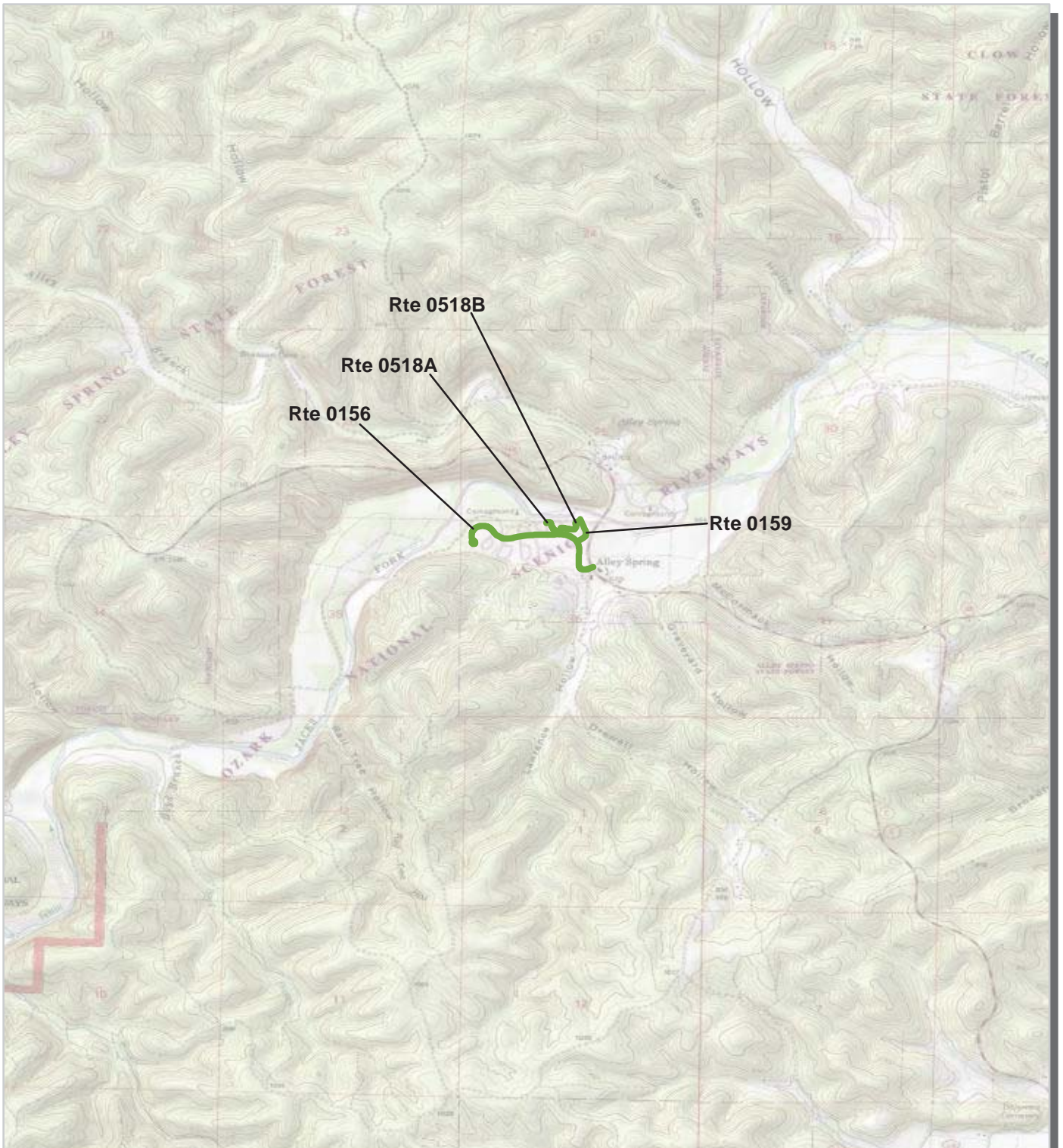


Ozark National Scenic Riverways

Route Condition Map

PCR - Mile by Mile

Area 6



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.



Section 5

Paved Route

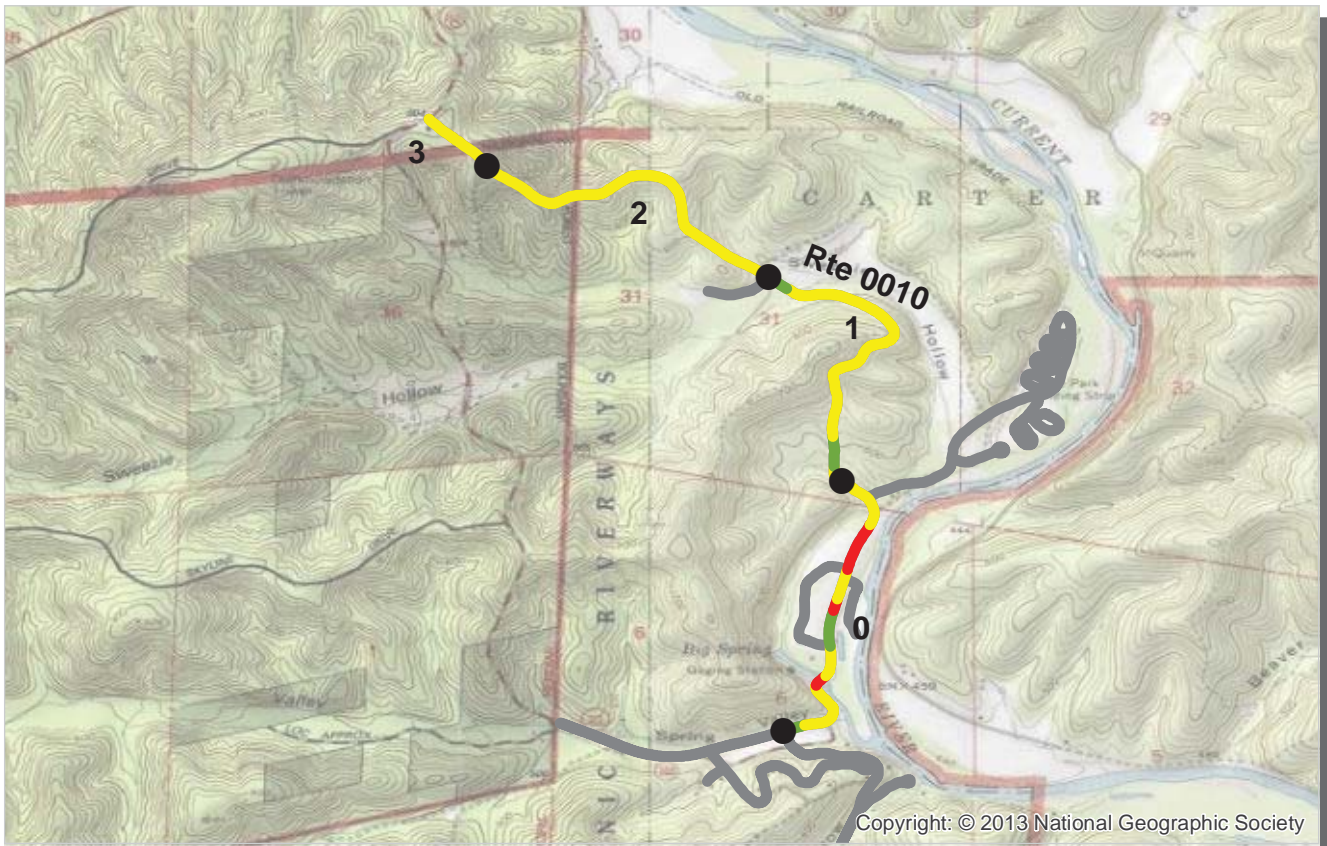
Condition Rating Sheets



Ozark National Scenic Riverways



**Federal Lands Highway
Road Inventory Program**



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0010 PEA VINE ROAD

OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/25/2012
TOTAL LENGTH: 3.22 Miles

MIDWEST REGION

Section Number	0	1	2	3	
Section Length (mi)	1.00	1.00	1.00	0.22	
Cross Section Information					
Number of Lanes	2	2	2	2	
Paved Width (ft)	22	20	19	19	
Lane Width (ft)	9	9	9	9	
Roadway Condition Information					
SCR (Surface Condition Rating)	63	NC	NC	88	
PCR (Pavement Condition Rating)	64	73	73	75	
Distress Index Values					
Structural Crack Index	63	NC	NC	98	
Transverse Cracking Index	90	NC	NC	100	
Patching Index	100	NC	NC	100	
Rutting Index	92	NC	NC	88	
Roughness Condition Index (RCI)	66	NC	NC	56	

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0010 PEA VINE ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0011 BIG SPRING CAMPGROUND ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/25/2012
TOTAL LENGTH: 0.83 Miles

MIDWEST REGION

Section Number	0				
Section Length (mi)	0.83				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	45				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0011 BIG SPRING CAMPGROUND ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0129 OLD STATE HIGHWAY 106 EAST ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

MIDWEST REGION **COLLECTED: 10/24/2012**
TOTAL LENGTH: 0.64 Miles

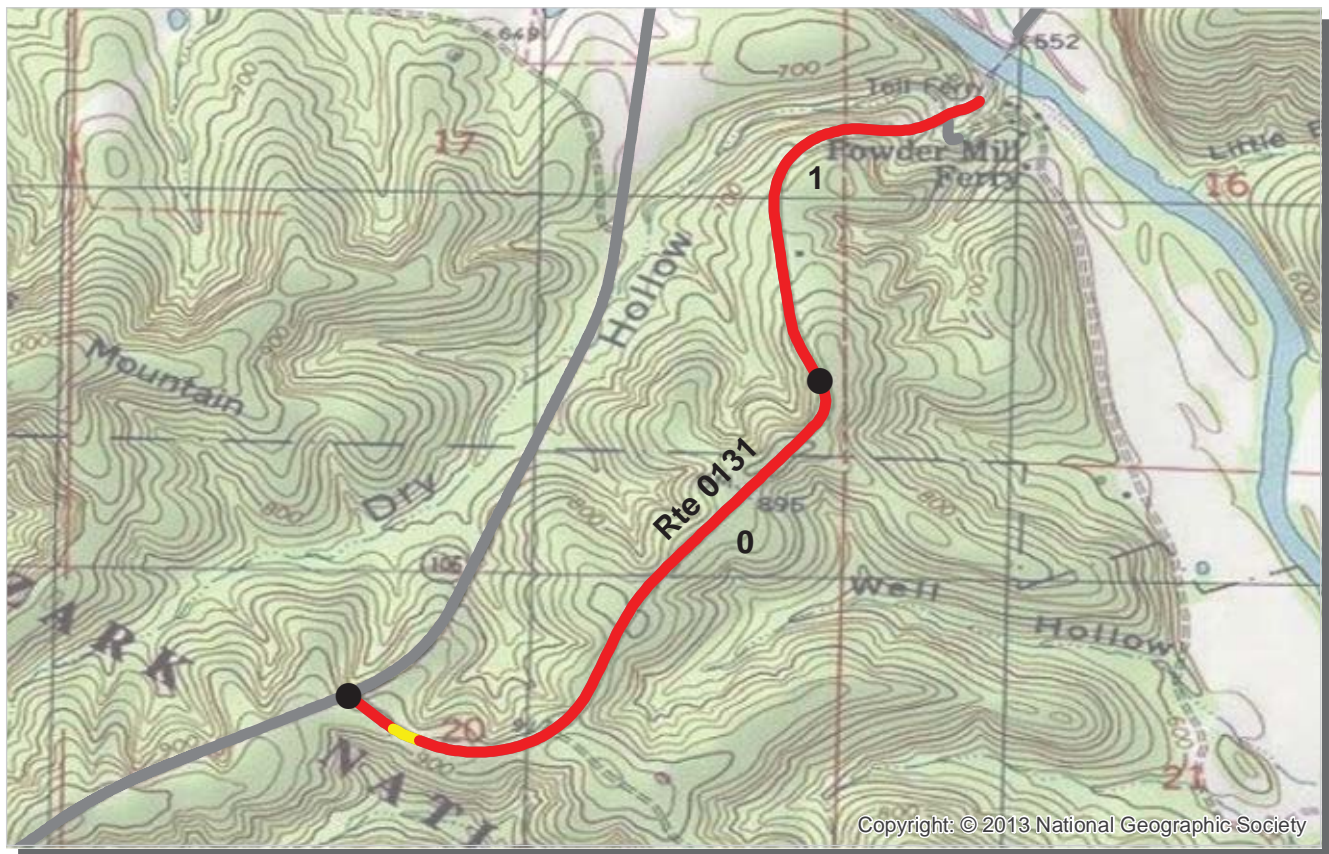
Section Number	0				
Section Length (mi)	0.64				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	19				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	23				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	96				
Patching Index	100				
Rutting Index	94				
Roughness Condition Index (RCI)	58				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0129 OLD STATE HIGHWAY 106 EAST ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0131 OLD STATE HIGHWAY 106 WEST ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/24/2012
TOTAL LENGTH: 1.66 Miles

MIDWEST REGION

Section Number	0	1			
Section Length (mi)	1.00	0.66			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	21	20			
Lane Width (ft)	9	9			
Roadway Condition Information					
SCR (Surface Condition Rating)	NC	0			
PCR (Pavement Condition Rating)	45	23			
Distress Index Values					
Structural Crack Index	NC	0			
Transverse Cracking Index	NC	100			
Patching Index	NC	100			
Rutting Index	NC	88			
Roughness Condition Index (RCI)	NC	57			

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0131 OLD STATE HIGHWAY 106 WEST ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0148ZZ PULLTITE CAMPGROUND ROADS
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

Summary Record **COLLECTED: 10/24/2012**
MIDWEST REGION **TOTAL LENGTH: 0.94 Miles**

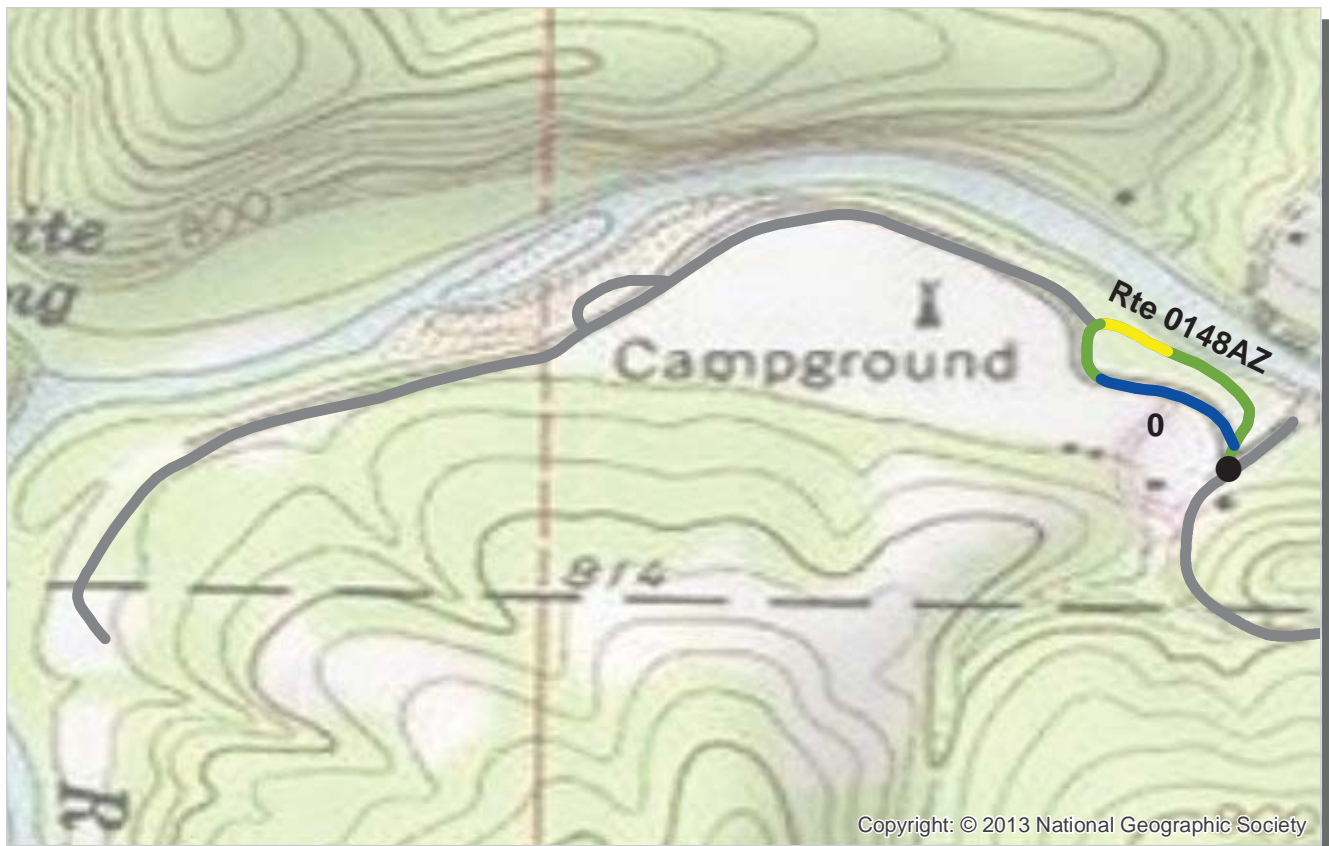
Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	88				
PCR (Pavement Condition Rating)	88				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0148ZZ PULLTITE CAMPGROUND ROADS



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0148AZ PULLTITE CAMPGROUND ROAD A
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

Subcomponent Record
MIDWEST REGION

COLLECTED: 10/24/2012
TOTAL LENGTH: 0.26 Miles

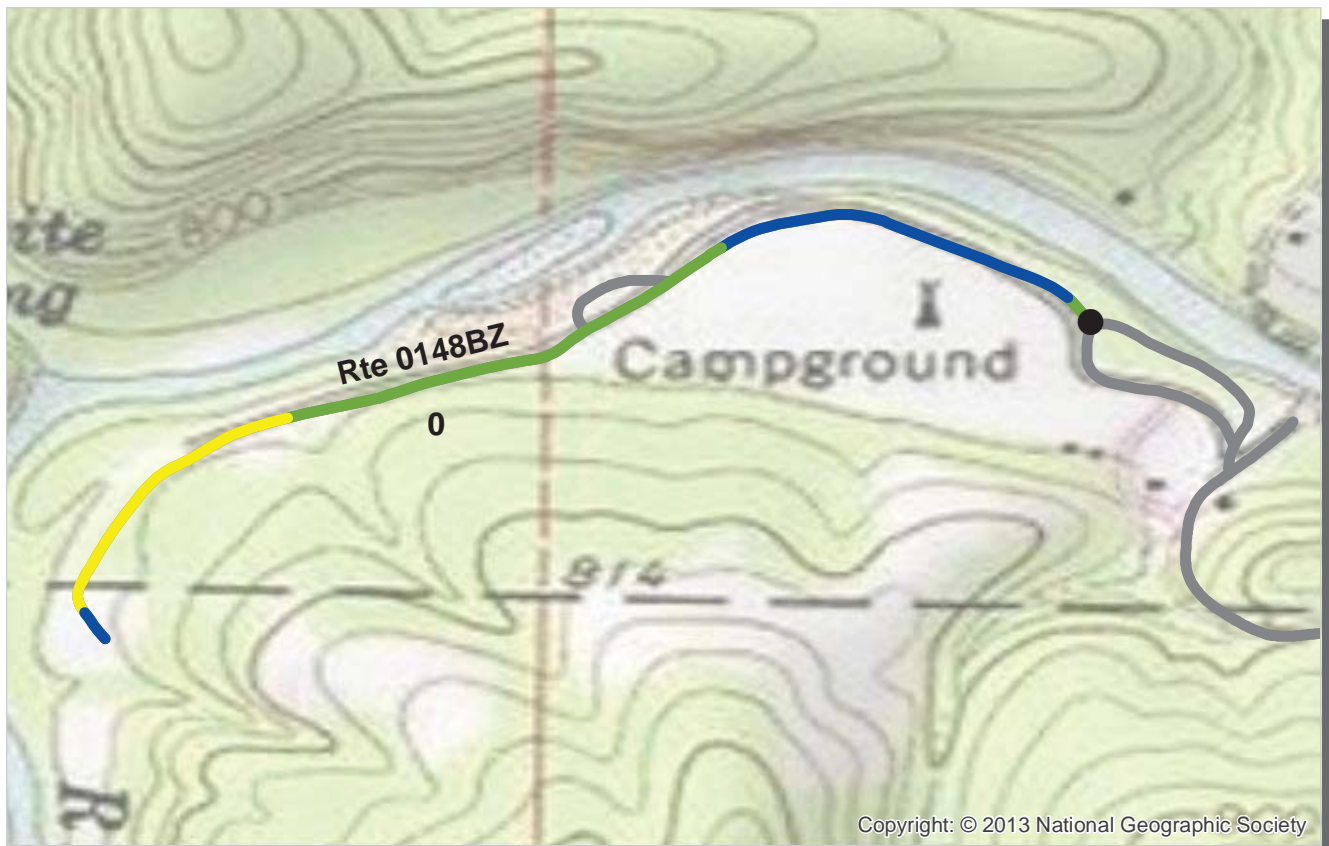
Section Number	0				
Section Length (mi)	0.26				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	92				
PCR (Pavement Condition Rating)	92				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	92				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0148AZ PULLTITE CAMPGROUND ROAD A



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0148BZ PULLTITE CAMPGROUND ROAD B
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

Subcomponent Record

MIDWEST REGION

COLLECTED: 10/24/2012
TOTAL LENGTH: 0.68 Miles

Section Number	0				
Section Length (mi)	0.68				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	87				
PCR (Pavement Condition Rating)	87				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	87				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0148BZ PULLTITE CAMPGROUND ROAD B



PCR Poor (0 - 60) Fair (61 - 84) Good (85 - 94) Excellent (95 - 100) No Data

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0156 ALLEY SPRING CAMPGROUND ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/25/2012
TOTAL LENGTH: 0.79 Miles

MIDWEST REGION

Section Number	0				
Section Length (mi)	0.79				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	93				
PCR (Pavement Condition Rating)	93				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	93				
Patching Index	100				
Rutting Index	95				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0156 ALLEY SPRING CAMPGROUND ROAD



PCR Poor (0 - 60) Fair (61 - 84) Good (85 - 94) Excellent (95 - 100) No Data

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0159 ALLEY SPRING BOAT LAUNCH ROAD

OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/25/2012

MIDWEST REGION

TOTAL LENGTH: 0.14 Miles

Section Number	0				
Section Length (mi)	0.14				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	88				
PCR (Pavement Condition Rating)	88				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	88				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0159 ALLEY SPRING BOAT LAUNCH ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0169 ROUND SPRING CAMPGROUND ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/24/2012
TOTAL LENGTH: 0.63 Miles

MIDWEST REGION

Section Number	0				
Section Length (mi)	0.63				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	17				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	88				
PCR (Pavement Condition Rating)	88				
Distress Index Values					
Structural Crack Index	96				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	88				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0169 ROUND SPRING CAMPGROUND ROAD



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PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0169A ROUND SPRING CAMPGROUND CUT OFF ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

MIDWEST REGION **COLLECTED: 10/24/2012**
TOTAL LENGTH: 0.07 Miles

Section Number	0				
Section Length (mi)	0.07				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	97				
PCR (Pavement Condition Rating)	97				
Distress Index Values					
Structural Crack Index	97				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	97				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0169A ROUND SPRING CAMPGROUND CUT OFF ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0170 ROUND SPRING CAVE ACCESS ROAD
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

COLLECTED: 10/24/2012
TOTAL LENGTH: 0.23 Miles

MIDWEST REGION

Section Number	0				
Section Length (mi)	0.23				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	86				
PCR (Pavement Condition Rating)	86				
Distress Index Values					
Structural Crack Index	86				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	87				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0170 ROUND SPRING CAVE ACCESS ROAD



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0518A ALLEY SPRING CAMPGROUND LOOP A
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

MIDWEST REGION **COLLECTED: 10/25/2012**
TOTAL LENGTH: 0.08 Miles

Section Number	0				
Section Length (mi)	0.08				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0518A ALLEY SPRING CAMPGROUND LOOP A



PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0518B ALLEY SPRING CAMPGROUND LOOP B
OZAR : OZARK NATIONAL SCENIC RIVERWAYS

MIDWEST REGION **COLLECTED: 10/25/2012**
TOTAL LENGTH: 0.15 Miles

Section Number	0				
Section Length (mi)	0.15				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	85				
PCR (Pavement Condition Rating)	85				
Distress Index Values					
Structural Crack Index	98				
Transverse Cracking Index	98				
Patching Index	100				
Rutting Index	85				
Roughness Condition Index (RCI)	NC				

NOTES:

Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

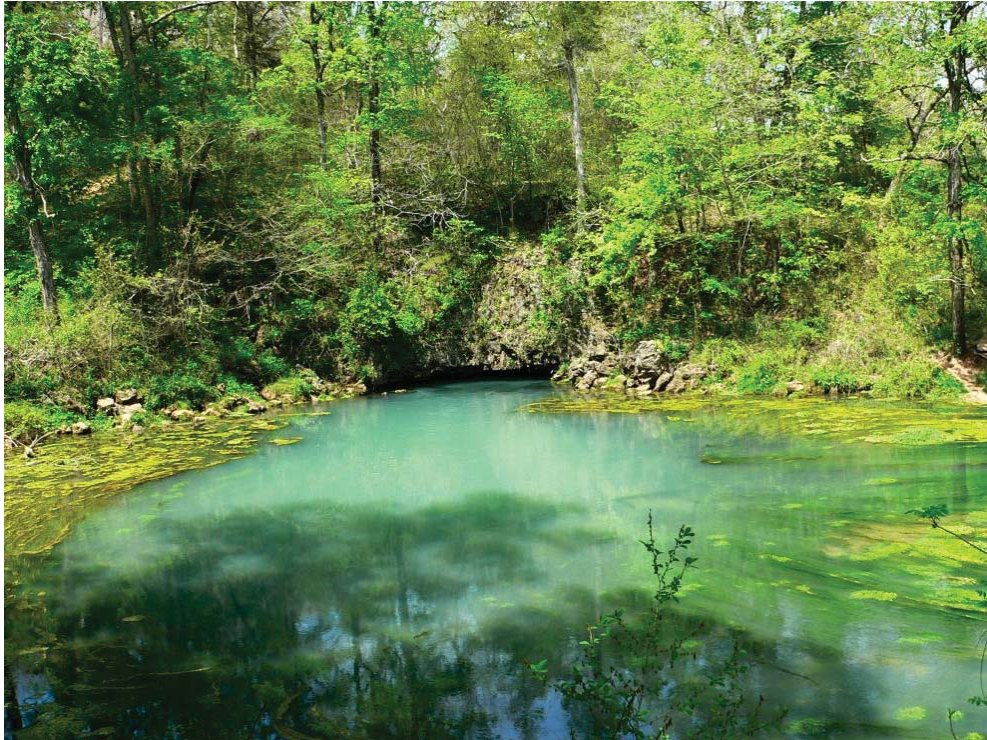
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable

ROUTE: 0518B ALLEY SPRING CAMPGROUND LOOP B

Section 6

Manually Rated Paved Route Condition Rating Sheets



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

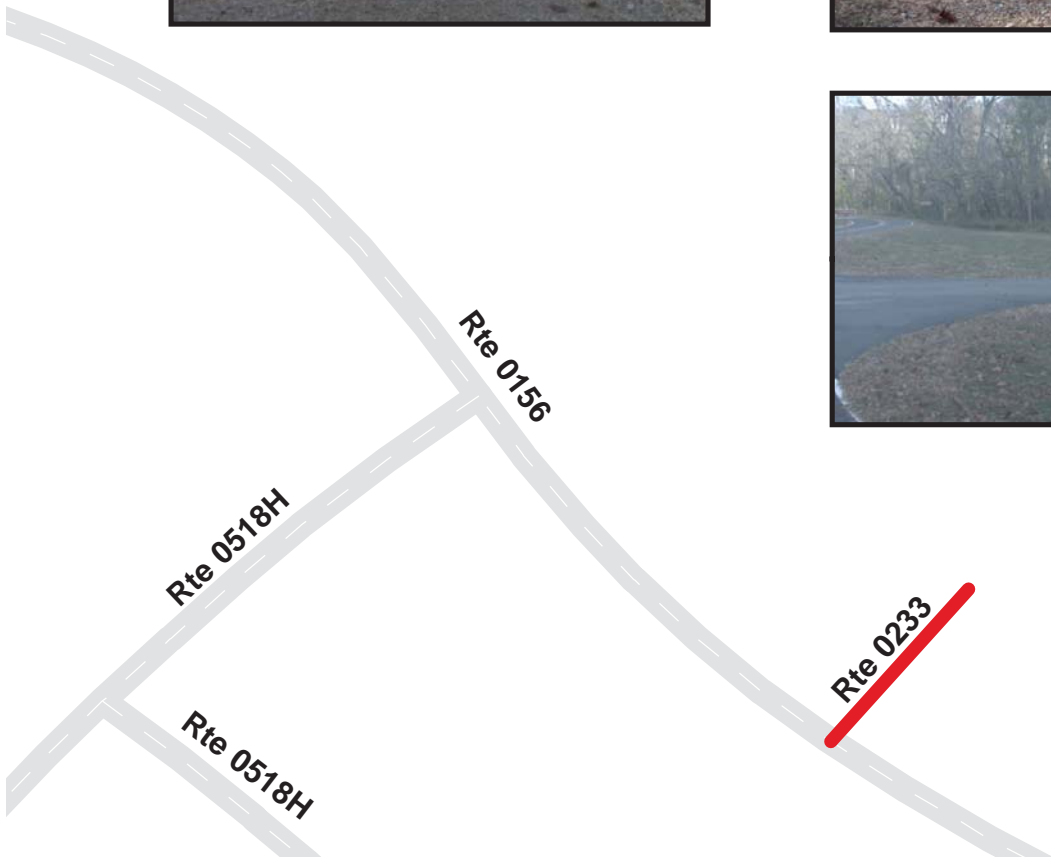
OZARK NATIONAL SCENIC RIVERWAYS

Route 0233

ALLEY SPRING BLUFF HOLE ROAD
FROM ROUTE 0156 (ALLEY SPRING CAMPGROUND ROAD)
TO END AT MP 0.21

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0233	PUBLIC	10/25/2012	1,267	0.02	0.01	20
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths



Section 7
Parking Area
Condition Rating Sheets



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

OZARK NATIONAL SCENIC RIVERWAYS

Route 0991

ALLEY SPRING RESIDENCE PARKING
FROM ROUTE 0414 (ALLEY SPRING RESIDENCE ROAD)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0991	NONPUBLIC	10/25/2012	3,477	0.06	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



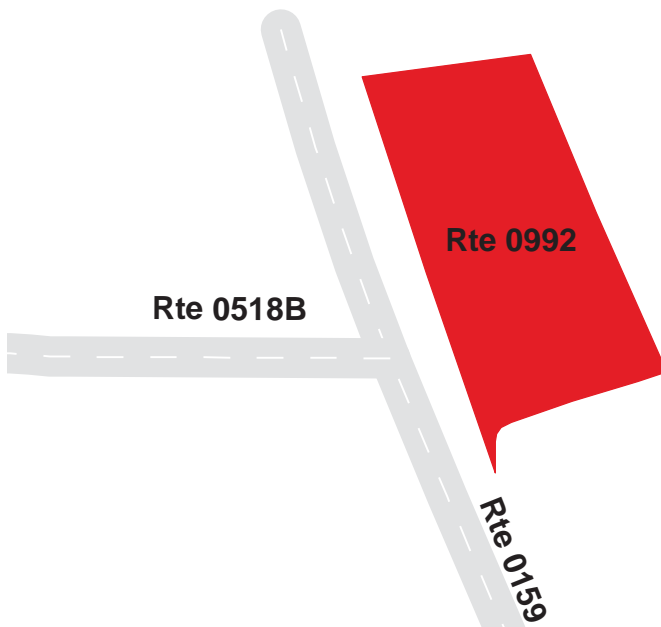
OZARK NATIONAL SCENIC RIVERWAYS

Route 0992

ALLEY SPRING BOAT LAUNCH PARKING B
ADJACENT TO ROUTE 0159 (ALLEY SPRING BOAT LAUNCH ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0992	PUBLIC	10/25/2012	2,439	0.04	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



Section 8

Route Maintenance Features Summaries



Ozark National Scenic Riverways



Federal Lands Highway
Road Inventory Program

OZAR: DCV ROUTE MAINTENANCE FEATURES SUMMARY

Notice: Culverts and drop inlets were NOT marked by NPS in Cycle 5 along new or re-aligned DCV driven routes.

FEATURE	ROUTE 0518A ALLEY SPRING CAMPGROUND LOOP A	ROUTE 0518B ALLEY SPRING CAMPGROUND LOOP B	UNIT
BRIDGE	0	0	EACH
CATTLE GUARD	0	0	EACH
CULVERT	0	0	EACH
CURB	0	0	LINEAR FEET
DROP INLET	0	0	EACH
GATE	0	0	EACH
GUARD/GUIDE RAIL	0	47	LINEAR FEET
CABLE	0	0	LINEAR FEET
NON-CABLE	0	47	LINEAR FEET
GUARD/GUIDE WALL	0	0	LINEAR FEET
BOLLARD	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	LINEAR FEET
NON TEMP/BOLLARD	0	0	LINEAR FEET
INTERSECTION	4	6	EACH
LOW WATER CROSSING	0	0	EACH
LOW WATER CROSSING	0	0	LINEAR FEET
MILE MARKER	0	0	EACH
OVERPASS	0	0	EACH
PARK BOUNDARY	0	0	EACH
PAVED DITCH	0	0	LINEAR FEET
PULLOUT	0	0	EACH
PULLOUT	0	0	LINEAR FEET
RAILROAD CROSSING	0	0	EACH
RETAINING WALL	0	0	EACH
RETAINING WALL	0	0	LINEAR FEET
SIGN	0	5	EACH
STATE BOUNDARY	0	0	EACH
TRAFFIC LIGHT	0	0	EACH
TUNNEL	0	0	EACH
TUNNEL	0	0	LINEAR FEET

STRUCTURE LIST

This park is classified as a large park. Therefore, in Cycle 5, BIP-Structures were inventoried only if they were located along routes that were modified or previously uncollected by RIP, so this report does not provide an all-inclusive listing of all BIP-Structures in the park.

Section 9

Route Maintenance Features

Road Logs



Ozark National Scenic Riverways



**Federal Lands Highway
Road Inventory Program**

OZAR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0518A: ALLEY SPRING CAMPGROUND LOOP A

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0518C (ALLEY SPRING CAMPGROUND LOOP C (SITES 301-320))
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0518C (ALLEY SPRING CAMPGROUND LOOP C (SITES 301-320))
0.000	0.082	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	LEFT	ROUTE 0518C (ALLEY SPRING CAMPGROUND LOOP C (SITES 301-320))
0.012	0.052	DEBRIS ON ROAD	N/A	N/A
0.082	0.082	INTERSECTION	LEFT	ROUTE 0518B (ALLEY SPRING CAMPGROUND LOOP B)
0.082	0.082	INTERSECTION	RIGHT	ROUTE 0518B (ALLEY SPRING CAMPGROUND LOOP B)
0.082	0.082	ROUTE END	N/A	TO ROUTE 0518B (ALLEY SPRING CAMPGROUND LOOP B)

OZAR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0518B: ALLEY SPRING CAMPGROUND LOOP B

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0159 (ALLEY SPRING BOAT LAUNCH ROAD) AT MP 0.12
0.000	0.000	INTERSECTION	LEFT	ROUTE 0159 (ALLEY SPRING BOAT LAUNCH ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0159 (ALLEY SPRING BOAT LAUNCH ROAD)
0.000	0.149	ONE-WAY	N/A	N/A
0.060	0.060	INTERSECTION	LEFT	ROUTE 0945A (ALLEY SPRINGS CAMPGROUND PARKING A)
0.096	0.101	GUARD/GUIDE RAIL	RIGHT	N/A
0.097	0.101	GUARD/GUIDE RAIL	LEFT	N/A
0.102	0.102	SIGN	LEFT	GUIDE, CAMPGROUND HOST
0.136	0.136	INTERSECTION	RIGHT	ROUTE 0518A (ALLEY SPRING CAMPGROUND LOOP A)
0.138	0.138	SIGN	LEFT	GUIDE, CAMP HOST
0.139	0.139	SIGN	RIGHT	REGULATORY, ONE WAY DO NOT ENTER
0.149	0.149	SIGN	RIGHT	GUIDE, 518
0.149	0.149	INTERSECTION	LEFT	ROUTE 0156 (ALLEY SPRING CAMPGROUND ROAD)
0.149	0.149	INTERSECTION	RIGHT	ROUTE 0156 (ALLEY SPRING CAMPGROUND ROAD)
0.149	0.149	SIGN	RIGHT	GUIDE, 518
0.149	0.149	ROUTE END	N/A	TO ROUTE 0156 (ALLEY SPRING CAMPGROUND ROAD) AT MP 0.29 ON RIGHT

Section 10 Appendix



Ozark National Scenic Riverways



**Federal Lands Highway
Road Inventory Program**

Explanation of Changes to the RIP Index Equations and Determination of PCR

In 2005, the FHWA began implementing the use of a Pavement Management System to assist the National Park Service in prioritizing Pavement Maintenance and Rehabilitation activities. The PMS used by FHWA is the Highway Pavement Management Application (HPMA) and this software has the ability to store inventory and condition data from RIP and forecast future performance using prediction models. Outputs include performance and condition reports at the National, Region, Park, or Route level. A regional prioritized list and optimization have been produced for most regions and the Federal Highway Deferred Maintenance is calculated via the HPMA as well.

In an effort to improve the accuracy of treatment recommendations and pavement condition descriptions in relation to the distresses and indexes that comprise the Pavement Condition Rating (PCR), an extensive study was completed throughout 2010 that resulted in changes to the Road Inventory Program condition reporting method and specifically, the calculation of PCR. It was determined that a better representation of PCR could be achieved by modifying the relative impact certain distresses would have on the overall rating.

Through the use of HPMA data, it was noted that false failure indicators existed with the existing PCR model, and that it would be necessary to reduce their impact. The distresses affected in this way were Rutting and Roughness. Conversely, experience showed that roadways with extensive cracking present were often shown to have a high PCR. Therefore, the crack index models were adjusted to be more sensitive to changes in crack severity or quantity. It was also determined that these issues were not due to a problem with data acquisition (i.e. the RIP “van”), but with the way the collected data was processed. The final change was to provide guidance on when to use the Roughness Condition Index (RCI) in the PCR calculation. Roughness data is of little value to determining overall condition on routes that, due to their length or geometrics, have lower vehicle operating speeds. Therefore, in Cycle 5, only routes that have lengths of one half mile or greater and posted speed limits of 25 mph or greater will have RCI reported and included in the PCR calculations.

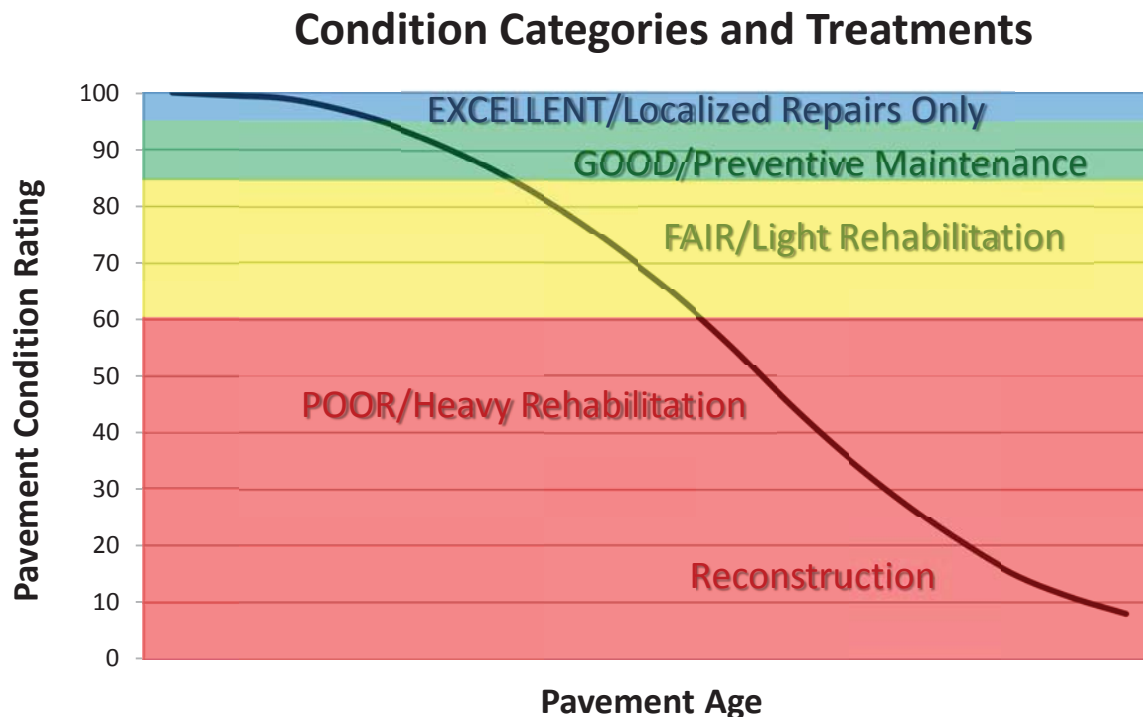
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation needs that were represented. These changes will allow greater use of RIP and HPMA data for not simply condition data reporting, but also as a reliable tool for project identification and selection.

Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

In addition to the RIP Index changes that were implemented in Cycle 5, we will provide greater assistance in translating good/fair/poor categories into pavement needs categories. The PCR can be used to indicate the place in the Pavement Life Cycle and the types of treatments that should be considered now and into the future.

- Excellent/New: PCR of 95-100. Pavements in this range will require only spot repairs.
- Good: PCR of 85-94. Pavements in this range will likely be candidates for Preventive Maintenance. Examples include Chip and Slurry Seals, Micro Surfacing and Thin Overlays.
- Fair: PCR of 61-84. Pavements in this range will likely be candidates of Light Rehabilitation (L3R). Examples include single-lift overlays up to 2.5 inches in total thickness, milling and overlays.
- Poor: PCR of 60 or below. Pavements in this range will likely be candidates of Heavy Rehabilitation or Reconstruction (H3R or 4R). Examples include Pulverization, Multiple Lift Overlays, and Reconstruction.

Specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely on RIP data. Additionally, RIP produces a snapshot of conditions the year in which the data was collected. For further information or to obtain additional Pavement Management System's data from our Highway Pavement Management Application (HPMA) please contact the Eastern Federal Lands pavement team.



DESCRIPTION OF RATING SYSTEM

The Federal Highway Administration (FHWA), National Park Service Road Inventory Program (NPS-RIP), collects condition data on paved roads, parkways, and parking areas in park units nationwide. Road surface condition data is collected using an automated Data Collection Vehicle (DCV). Roads having brick, cobblestone, or wood surfaces are not normally surveyed with the DCV, but are manually rated for the purpose of assigning a condition rating. Unpaved roads, parkways, and parking areas are not currently being evaluated for condition. Paved campground pads and driveways are also not currently being evaluated for condition.

The FHWA RIP is implemented based on the premise that an accurate pavement surface condition assessment can be accomplished using automated crack detection technology as applied to digital images. Various methods of pavement condition assessment have been developed over the years with varying degrees of accuracy and acceptance. The use of digital photography to record pavement images and subsequent crack detection and classification has undergone continuous improvements over the past decade. Digital cameras with increasingly superior resolution and high definition have become more affordable, and the proprietary programming code and algorithms have been improved in crack detection software.

With the use of high quality digital photography and automated crack detection software, FHWA RIP is tasked with executing a pavement condition assessment on about 5000 miles of National Park Service roads and parkways. Foremost in setting up the basis of pavement distress identification is employing the distress identification protocols used by FHWA. There is no single distress identification system that is universal among entities conducting a program of distress identification. For the purpose of the NPS-RIP, FHWA employs distress identification protocols that are specific to this program.

FHWA has referenced the “*Distress Identification Manual for the Long-Term Pavement Performance Program*”, Publication No. FHWA-RD 03-031, June 2003, as the point-of-reference for distress types on NPS pavement. The FHWA RIP distress types are similar to those described in the LTPP manual with some modifications. The document, “*Distress Identification Manual for the NPS Road Inventory Program, Cycle 5, 2010-2013*” was developed using the “*Distress Identification Manual for the Long-Term Pavement Performance Program*” as a guideline. Definitions of severity levels based on crack width contained in this document adhere to the LTPP Distress ID Manual. Modifications have been made to the definition of Alligator and Longitudinal Cracking and determination of Alligator Cracking severity. This manual also addresses Rutting and Roughness and its application to NPS-RIP.

In 2010, FHWA RIP began the fifth cycle of data collection in national parks. For Cycle 5, data will be collected in approximately 81 large parks (10 or more paved route miles) on Functional Class 1, 2, and 7 routes plus any new routes or parking areas previously not collected, totaling an estimated 4,459 paved route miles. Additionally, 231 small parks will be collected comprising approximately 529 paved route miles and associated paved parking areas. The data is used to support the National Park Service road maintenance program and Pavement Management System (PMS) developed and maintained by FHWA.

This “*Distress Identification Manual for the NPS Road Inventory Program, Cycle 5, 2010-2013*” will be used as a reference resource in crack detection and classification, determination of distress severity and extent, and in the calculation of distress index values for the FHWA RIP Cycle 5.

SURFACE DISTRESSES

Surface Condition Rating - SCR

Surface distresses are measured in the primary lane only. In the classification and measurement of all paved surface condition data, results will be reported in the database in record intervals of 0.02 miles (105.6 feet) (smallest granularity) along the route.

Surface distresses determined from digital images

- Transverse Cracks
- Longitudinal Cracks
- Alligator Cracks
- Patching/Potholes

Surface distress measured by DCV (Data Collection Vehicle) LRMS (Laser Rut Measuring System)

- Rutting

Each of the five surface distresses is assigned a computed surface distress index

- Transverse Crack Index
- Longitudinal Crack Index
- Alligator Crack Index
- Patching/Pothole Index
- Rutting Index

Surface distress data are classified as listed above, measured for severity, and quantified for extent. Classification, severity, and extent of these five surface distresses comprise the three main elements for calculation of SCR (Surface Condition Rating).

In addition to the five surface distresses, a **Structural Crack Index** is computed, which is a combination of the Longitudinal Crack Index and the Alligator Crack Index. The Structural Crack Index is then used in lieu of the LC and AC indices to compute SCR.

Roughness Condition Index - RCI

Additional condition data measured by DCV (lasers and accelerometers)

- Roughness (IRI)

Roughness is measured by FHWA's DCV and reported as International Roughness Index (IRI) in inches/mile. Using IRI, the Roughness Condition Index (RCI) is computed.

Pavement Condition Rating - PCR

Using the SCR (computed from the five surface distresses) and the RCI, an overall Pavement Condition Rating (PCR) is computed. The formula for PCR is:

$$\text{Asphalt PCR} = (0.60 * \text{SCR}) + (0.40 * \text{RCI})$$

$$\text{Concrete PCR} = \text{RCI}$$

A detailed description of each distress index formula, roughness index formula, SCR and PCR is provided in this document beginning on page 8.

Each classified surface distress will fall into one or more *severity*...LOW, MEDIUM, or HIGH based on criteria listed. For each severity, an *extent* is established based on the measured quantity of the distress within that severity. Within each *severity* individual distresses are assigned a *Maximum Allowable Extent* (MAE). For example, LOW severity transverse cracking may be allowed up to 21.1 cracks within a 0.02 interval before it reaches MAE and fails.

The index formulas are based on a scale of 0-100. A PCR index value of 100 would indicate a “new” road with no measurable distresses or rough ride. A PCR value of 60 is determined to be *terminable serviceability* and the road is considered failed. The range of index values with condition descriptors is:

POOR (≤ 60), FAIR (61 - 84), GOOD (85 - 94), EXCELLENT (95 - 100)

Index values are generally computed based on cumulative deducts of the measured severities. As shown in the index formulas below, as any single severity reaches or exceeds MAE, the index computes to a value of 60 or less, and the road fails for that 0.02 interval.

Note: As a result of a unique combination of measured surface distresses and IRI, index values occasionally compute to less than 0 or greater than 100. In this instance, an index value < 0 defaults to 0. Index values > 100 default to 100. For all indices, a higher value indicates a better road condition, and a lower value indicates a poorer road condition.

On the following page, Table 1 summarizes the different types of distresses measured.

TABLE 1: Distress Summary

ASPHALT-SURFACED PAVEMENT DISTRESS TYPES with RUTTING and ROUGHNESS				
DISTRESS TYPE	UNIT OF MEASURE...	...CONVERTED TO	DEFINED SEVERITY LEVELS?	MEASURED BY
Alligator Cracking	Square Feet	Percent of Lane Per 0.02 Mile	Yes	Digital Image Crack Detection Software
Transverse Cracking	Linear Feet	Number of Cracks Per 0.02 Mile	Yes	Digital Image Crack Detection Software
Longitudinal Cracking	Linear feet	Percent of Lane Length Per 0.02 Mile	Yes	Digital Image Crack Detection Software
Patching/Potholes	Square Feet	Percent of Lane Per 0.02 Mile	No	Digital Image Crack Detection Software
Rutting	Inches	Rut Depth Per 0.02 Mile	Yes	DCV – Laser Rut Measuring System (LRMS)
Roughness	IRI	*RCI Per 0.02 Mile	No	DCV – Lasers /Accelerometers

***Note: Roughness is measured on concrete roadways, but surface distresses and rutting are not measured. For concrete, PCR = RCI**

ALLIGATOR CRACKING

Description

Alligator cracking is considered a combination of fatigue and block cracking. It is a series of interconnected cracks in various stages of development. Alligator cracking develops into a many-sided pattern that resembles chicken wire or alligator skin. It can occur anywhere in the road lane. Alligator cracking must have a quantifiable area.

Severity Levels

LOW

An area of cracks with no or very few interconnecting cracks and the cracks are not spalled. Cracks are ≤ 0.25 in (6mm) in mean width. Cracks in the pattern are no further apart than 1 foot (0.328 m). May be sealed cracks with sealant in good condition and a crack width that cannot be determined.

MEDIUM

An area of interconnected cracks that form a complete pattern. Cracks may be slightly spalled. Cracks are >0.25 in. (6 mm) and ≤ 0.75 in. (19 mm) or any crack with a mean width ≤ 19 mm and adjacent low severity cracking. Cracks in the pattern are no further apart than 6 in. (150 mm).

HIGH

An area of interconnected cracks forming a complete pattern. Cracks are moderately or severely spalled. Cracks are >0.75 in (19mm) or any crack with a mean width ≤ 0.75 in (19mm) and adjacent medium to high severity random cracking.

A combination of observed crack width and crack pattern is used to determine overall severity of alligator cracking. Based on above description of each severity, the highest level of crack width and crack pattern determines overall severity. Table 2 illustrates this.

TABLE 2: Alligator Crack Severity Levels

ALLIGATOR CRACKING SEVERITY LEVELS		Crack Pattern		
		LOW	MED	HIGH
Crack Width	LOW	L	M	H
	MED	M	M	H
	HI	H	H	H

LONGITUDINAL CRACKING

Description

Longitudinal cracking occurs predominantly parallel to the pavement centerline. It can occur anywhere within the lane. Longitudinal cracks occurring in the wheelpath may be noteworthy.

Severity Levels

LOW

Cracks with a mean width of < 0.25 in. (6 mm). Sealed cracks with sealant in good condition and a width that cannot be determined.

MED

Cracks with a mean width > 0.25 in. (6 mm) and ≤ 0.75 in. (19 mm). Also, any crack with a mean width < 0.75 in. (19 mm) and adjacent random low severity cracking.

HIGH

Cracks with a mean width > 0.75 in. (19 mm). Also, any crack with a mean width < 0.75 in. (19 mm) and adjacent random medium to high severity cracking.

TRANSVERSE CRACKING

Description

Transverse cracking occurs predominantly perpendicular to the pavement centerline. It can occur anywhere within the lane.

Severity Levels

LOW

Cracks with a mean width of < 0.25 in. (6 mm). Sealed cracks with sealant in good condition and a width that cannot be determined.

MED

Cracks with a mean width > 0.25 in. (6 mm) and ≤ 0.75 in. (19 mm). Also, any crack with a mean width < 0.75 in. (19 mm) and adjacent random low severity cracking.

HIGH

Cracks with a mean width > 0.75 in. (19 mm). Also, any crack with a mean width < 0.75 in. (19 mm) and adjacent random medium to high severity cracking.

PATCHING AND POTHOLES

Description

Patching is an area of pavement surface that has been removed and replaced with patching material or an area of pavement surface that has had additional patching material applied. Patching may encompass partial-lane or full-lane width. On full-lane width patching; the total, contiguous length of a patch may not exceed 0.30 mi. (0.48 km). Any full-lane width patch exceeding 0.30 mi. in length is considered a pavement change, not a patch for the purposes of distress analysis. Patching must have a quantifiable area.

Potholes are bowl-shaped holes of various sizes occurring in the pavement surface.

Severity Levels

There are no stratified severities for Patching/Potholes. They either are present or they are not.

RUTTING

Description

Rutting is a longitudinal surface depression in the wheelpath.

Severity Levels

LOW

Ruts with a measured depth $\geq 0.20''$ and $\leq 0.49''$

MED

Ruts with a measured depth $\geq 0.50''$ and $\leq 0.99''$

HIGH

Ruts with a measured depth $\geq 1.00''$

Ruts $< 0.20''$ are not included in the distress calculations.

ROUGHNESS

Description

Roughness is the measurement of the unevenness of the pavement in the direction of travel. It is measured in units of IRI (International Roughness Index), inches per mile, and is indicative of ride comfort.

Severity Levels

There are no stratified severity levels for roughness. The roughness (or smoothness) of a road surface can be defined by IRI in the following table.

TABLE 3: IRI

IRI Descriptions	
Type of Road	Typical IRI (in/mile)
New Road, no noticeable roughness	<90
Small level of roughness	90 – 126
Road of average roughness	126 – 190
Road with above average roughness	190 – 253
Road with severe roughness	253 – 380
Nearly impassable	>380

INDEX FORMULAS

Note: All index formulas listed below contain MAE applicable to 0.02 mile (105.6 feet) interval.

Alligator Crack Index

$$AC_INDEX = 100 - 40 * [(\%LOW / 35) + (\%MED / 15) + (\%HI / 5)]$$

Where:

The values *%LOW*, *%MED* and *%HI* report the percentage of the observed pavement (0.02 mile, primary lane) that contains alligator cracking within the respective severities. These values range from 0 to 100.

%LOW = Percent of total area (primary lane, 0.02 in length), low severity

%MED = Percent of total area (primary lane, 0.02 in length), medium severity

%HI = Percent of total area (primary lane, 0.02 in length), high severity

Percent of total area is computed as:

$$\frac{\text{square foot area of alligator crack severity}}{0.02 \text{ mile} * \text{lane width}}$$

In AC_INDEX, the denominators 35, 15, and 5 are the Maximum Allowable Extents (MAE) for each severity. In other words, we will allow up to 35% of low severity alligator cracking for a 0.02 interval before failure, 15% for medium severity, and so on. As you can see, if any single severity reaches MAE the resulting index value is 60, or failure.

Longitudinal Crack Index

$$LC_INDEX = 100 - 40 * [(\%LOW / 175) + (\%MED / 75) + (\%HI / 25)]$$

Where:

The values *%LOW*, *%MED*, and *%HI* report the length of longitudinal cracking within each severity as a percent of the section length (0.02 mile, primary lane).

These values are ≥ 0 and can exceed 100.

%LOW = Percent of interval length (primary lane, 0.02 in length), low severity

%MED = Percent of interval length (primary lane, 0.02 in length), medium severity

%HI = Percent of interval length (primary lane, 0.02 in length), high severity

Percent of interval length is computed as:

$$\frac{\text{length of respective longitudinal cracking}}{0.02 \text{ mile (105.6 feet)}}$$

In LC_INDEX, the denominators 175, 75, and 25 are the Maximum Allowable Extents (MAE) for each severity. In other words, we will allow up to 175% of low severity alligator cracking for a 0.02 interval before failure, 75% for medium severity, and so on. As you can see, if any single severity reaches MAE the resulting index value is 60, or failure.

Structural Crack Index

$$SC_INDEX = [100 - ((100 - AC_INDEX) + (100 - LC_INDEX))]$$

Structural Crack Index is a combination of Alligator Cracking and Longitudinal Cracking, and is used in the SCR formula in lieu of AC and LC separately.

Transverse Crack Index

$$TC_INDEX = 100 - 40 * [(LOW / 21.1) + (MED / 4.4) + (HI / 2.6)]$$

Where:

The values *LOW*, *MED* and *HI* report a count of the total number of transverse cracks (reported to three decimals) within each severity level, where one transverse crack is equal to the lane width. These values are ≥ 0 .

LOW = Number of cracks in interval (primary lane, 0.02 in length), low severity

MED = Number of cracks in interval (primary lane, 0.02 in length), medium severity

HI = Number of cracks in interval (primary lane, 0.02 in length), high severity

Number of cracks is computed as:

$$\frac{\text{Total length of transverse cracks}}{\text{Lane width}}$$

In TC_INDEX, the denominators 21.1, 4.4, and 2.6 are the Maximum Allowable Extents (MAE) for each severity. In other words, we will allow up to 21.1 low severity transverse cracks for a 0.02 interval before failure, 4.4 cracks for medium severity, and so on. As you can see, if any single severity reaches MAE the resulting index value is 60, or failure.

Patching Index

$$\text{PATCH_INDEX} = 100 - 40 * (\% \text{PATCHING} / 80)$$

Where:

The value *%PATCHING* reports the percentage of the observed pavement (0.02 mile, primary lane) that contains patching/potholes. This value ranges from 0 to 100.

%PATCHING = Percent of total area (primary lane, 0.02 in length)

Percent of total area is computed as:

$$\frac{\text{square foot area of patching/potholes}}{0.02 \text{ mile} * \text{lane width}}$$

There are no severity levels for patching. It either exists or does not.

In PATCH_INDEX, the denominator 80 is the Maximum Allowable Extent (MAE) for each severity. In other words, we will allow up to 80% patching for a 0.02 interval before failure. As you can see, if patching/potholes reaches MAE the resulting index value is 60, or failure.

Rutting Index

$$\text{RUT_INDEX} = 100 - 40 * [(\% \text{LOW} / 535) + (\% \text{MED} / 205) + (\% \text{HI} / 40)]$$

Where:

20 rut depth measurements are taken per 0.02 interval for each of 2 wheel paths (left and right), resulting in a total of 40 measurements taken for both wheel paths. *Each wheelpath is analyzed independently for rut severities.* The values *%LOW*, *%MED* and *%HI* are a *total percentage* of left wheelpath percentage and right wheelpath percentage added together for the respective severity. These values range from 0 to 200.

%LOW = Percent of LOW ruts in left wheelpath based on 20 ruts, plus percent of LOW ruts in right wheelpath based on 20 ruts.

%MED = Percent of MED ruts in left wheelpath based on 20 ruts, plus percent of MED ruts in right wheelpath based on 20 ruts.

%HI = Percent of HI ruts in left wheelpath based on 20 ruts, plus percent of HI ruts in right wheelpath based on 20 ruts.

Percent of rut measurements within each severity can also be computed as:

$$\frac{\text{total number of ruts within each severity in both wheelpaths}}{20} * 100$$

In RUT_INDEX, the denominators 535, 205, and 40 are the Maximum Allowable Extents for each severity. In other words, the formula allows up to 535% low severity

ruts for a 0.02 interval before. However, since 200 is the highest measurable percentage allowed, 535% is unattainable and therefore, no amount of LOW severity rutting will cause the RUT_INDEX to fail a road. Similarly, since the MAE for MED severity rutting is 205, no amount of MED severity rutting will cause the RUT_INDEX to reach 60 and fail the road. As you can see, LOW severity rutting reaches MAE the resulting index value is 60, or failure. This formula was intentionally designed to minimize the impact of LOW and MED severity rutting on RUT_INDEX.

Roughness Condition Index (Asphalt)

$$RCI = 32 * [5 * (2.718282 ^ {(-0.0041 * AVG\ IRI)})]$$

Where:

The value *AVG IRI* reports the average value of the Left IRI and Right IRI measurements for the interval (0.02 mile, primary lane). This value can range from approximately 40 to 999.0.

Average IRI is computed as:

$$\frac{\text{Left wheelpath IRI} + \text{Right wheelpath IRI}}{2}$$

There is no applicable threshold for failure for this index.

Roughness Condition Index (Concrete)

$$RCI = -0.0012(IRI^2) + 0.0499(IRI) + 99.542$$

For concrete, PCR = RCI

Surface Condition Rating Index

SCR = *Lowest* Index Value Of: [SC_INDEX, TC_INDEX, PATCH_INDEX, RUT_INDEX]

Note: The modified S CR equation above combines AC_INDEX and LC_INDEX, and considers that a single AC/LC index value of the Structural Crack Index (SC_INDEX). The lowest of the four computed index values (SC_INDEX, TC_INDEX, PATCH_INDEX, or RUT_INDEX) becomes the SCR.

Where:

See above for determinations of SC_INDEX, TC_INDEX, PATCH_INDEX and RUT_INDEX.

The threshold for failure for this index is SCR = 60.

Data Collection Vehicle Subsystems

Data on paved roads in Cycle 5 is collected by FHWA using a Pathway Services Inc. Data Collection Vehicle (DCV), called PathRunner. The DCV is driven in the primary-direction lane at posted speed limits and less.

CAMERAS

Forward-facing and rear-facing video is collected as .jpg digital imagery at a frequency of 26.4 feet.

Two forward-facing cameras are mounted above the vehicle cab, one pointed straight ahead and the other to the right shoulder providing seamless 120 degree viewing.

CAMERA SPECIFICATIONS Two Forward/ One Rear Facing	
Camera lens/type	FUJINON CCTV LENS H16x10B-Y41
Focal length	10 mm – 160 mm
Image size	8.8 mm x 6.6mm
Image format	*.jpg
Image resolution	HD 2000 X 1200
Image pixel size	depends on distance
Zoom ratio	16x
Max Relative Aperture	1:2.5
Iris range	F25-T800 (Equivalent to F800)

Pavement images are created using a Laser Scan Imaging System. This system is composed of a single high resolution line-scan camera and two lasers configured to image an approximate 11-foot wide lane with 1 mm resolution.

CAMERA SPECIFICATIONS Pavement Line Scan	
Image size	4280 pixels/line
Image width	4 meters (3950 mm nominal)
Laser class	3B
Power	250W
Vehicle speed limitations	62 mph
Environment	Dry pavement, day or night
Sensor size (approx)	300 mm(H) x 375 mm(L) x 200 mm(D)
Image frame length	26.4 feet

DMI (Distance Measuring Instrument)

The DMI (Distance Measuring Instrument) obtains road length measurements that are accurate to 0.1% for speeds up to 60 mph. The DMI is connected to the hub of the rear wheel on the driver's side, and is calibrated to the revolutions of the rear vehicle axle on a regular basis.

ROUGHNESS (IRI)

The collection system includes a South Dakota type laser profiler manufactured based on active Class 1 ASTM E950 standards. The dynamic profile of the pavement surface is collected from which the IRI roughness data is computed. The sensors include one accelerometer on each wheelpath, one height sensor (laser) on each wheelpath, and a distance transducer.

IRI SPECIFICATIONS	
Reported IRI units	Inches/mile
Vehicle speed limitations	12-62 mph
IRI equipment certification	Texas Transportation Institute (TTI)
Wavelengths accommodated	6 in. – 300 feet
IRI computed & reported	World Bank Technical Paper Number 46
Environment	Dry pavement, day or night, above 32 degrees F
Adherence to specifications	ASTM E950-98 (2004), ASTM E 1926-08, AASHTO MP 11-08, AASHTO PP 49-08

RUTTING

Rutting depths are measured using an INO Laser Rut Measurement System (LRMS). This system is a transverse profiling device that detects and characterizes pavement rutting. The LRMS can acquire full 4 meter width profiles of a pavement lane at normal traffic speeds and uses two laser profilers that digitize transverse sections of the pavement.

RUTTING SPECIFICATIONS	
Reported rut depth units	Inches
Vehicle speed limitations	Up to 62 mph
Sampling rate	30-150 profiles/second
Transverse resolution	1280 points/profile
Transverse field-of-view	4 m
Depth accuracy (nominal)	+/- 1 mm
Environment	Dry pavement, day or night, above 32 degrees F
Adherence to specifications	ASTM E1703M-95 (reapproved 2005)

GPS & INERTIAL SYSTEMS

GPS is collected by an onboard system employing OmniSTAR real-time correction and a gyroscope (spin-type) to provide accurate positioning data (pitch/roll/heading) in instances of satellite obstruction. All GPS coordinates are tied to image and linear distance measurements.

GPS SPECIFICATIONS	
Static accuracy	Sub-meter
Dynamic accuracy	2-3 meters
Receiver	12 satellite tracking
Coordinate system	Lat Lon WGS 84
Environment	Day or night
Cross-slope	+/- 0.5 degrees
Grade	+/- 0.5 degrees

GPS on Manually Rated Roads (MRR)

Parking areas, some roads, and other paved areas that are not fully drivable with the DCV are collected manually by field technicians. GPS is collected for these routes using portable Trimble GPS backpack units. Paved campground pads and driveways are not typically included in the inventory or GPS.

Geodatabase – Background and Metadata

In addition to this park report, a *geodatabase* containing both tabular and spatial data specific to this park has been provided. All data disseminated in the preceding report has been obtained from the tables and fields within said geodatabase. The geodatabase can be referenced for tabular data via Microsoft Access or for both tabular and spatial data via ESRI's ArcGIS Suite of software which consists of; ArcMap, ArcCatalog and ArcExplorer. Consolidating the RIP data into one database creates a seamless relationship of tabular and geographic data. It will allow RIP to facilitate easier updates and enhancements in the future.

A geodatabase can be thought of as simply a database containing spatial data. Many different tables are contained with the park's geodatabase. A complete and thorough description of the tables and fields contained within this geodatabase can be found in the *metadata*. The metadata is attached directly within the geodatabase and can be accessed via ESRI's ArcCatalog. The metadata portion of the geodatabase also includes data dictionary report functionality that formats the metadata into an easy to read report.

GLOSSARY OF TERMS AND ABBREVIATIONS

<u>TERM OR ABBREVIATION</u>	<u>DESCRIPTION OR DEFINITION</u>
AC	Alligator Cracking
CRS	Condition Rating Sheets (Section 5)
DCV	Data Collection Vehicle
Excellent	Excellent rating with an index value of 95 to 100
Fair	Fair rating with an index value from 61 to 84
FUNCT_CLASS	Functional Classification (see Route ID, Section 2)
Good	Good rating with an index value from 85 to 94
IRI	International Roughness Index
Lane Width	Width from road centerline to fogline, or from centerline to edge-of-pavement when no fogline exists
LC	Longitudinal Cracking
MRR	Manually Rated Route
MRL	Manually Rated Line
MRP	Manually Rated Polygon
N/A	Not Applicable
NC	Not Collected
PATCH	Patching and Potholes
Paved Width	Width from edge-of-pavement to edge-of-pavement
PCR	Pavement Condition Rating
PKG	Parking Area
Poor	Poor rating with an index value of 0 to 60
RCI	Roughness Condition Index
SC	Structural Cracking
SCR	Surface Condition Rating
TC	Transverse Cracking