



Federal Lands Highway Road Inventory Program

Road Inventory and Condition Assessment

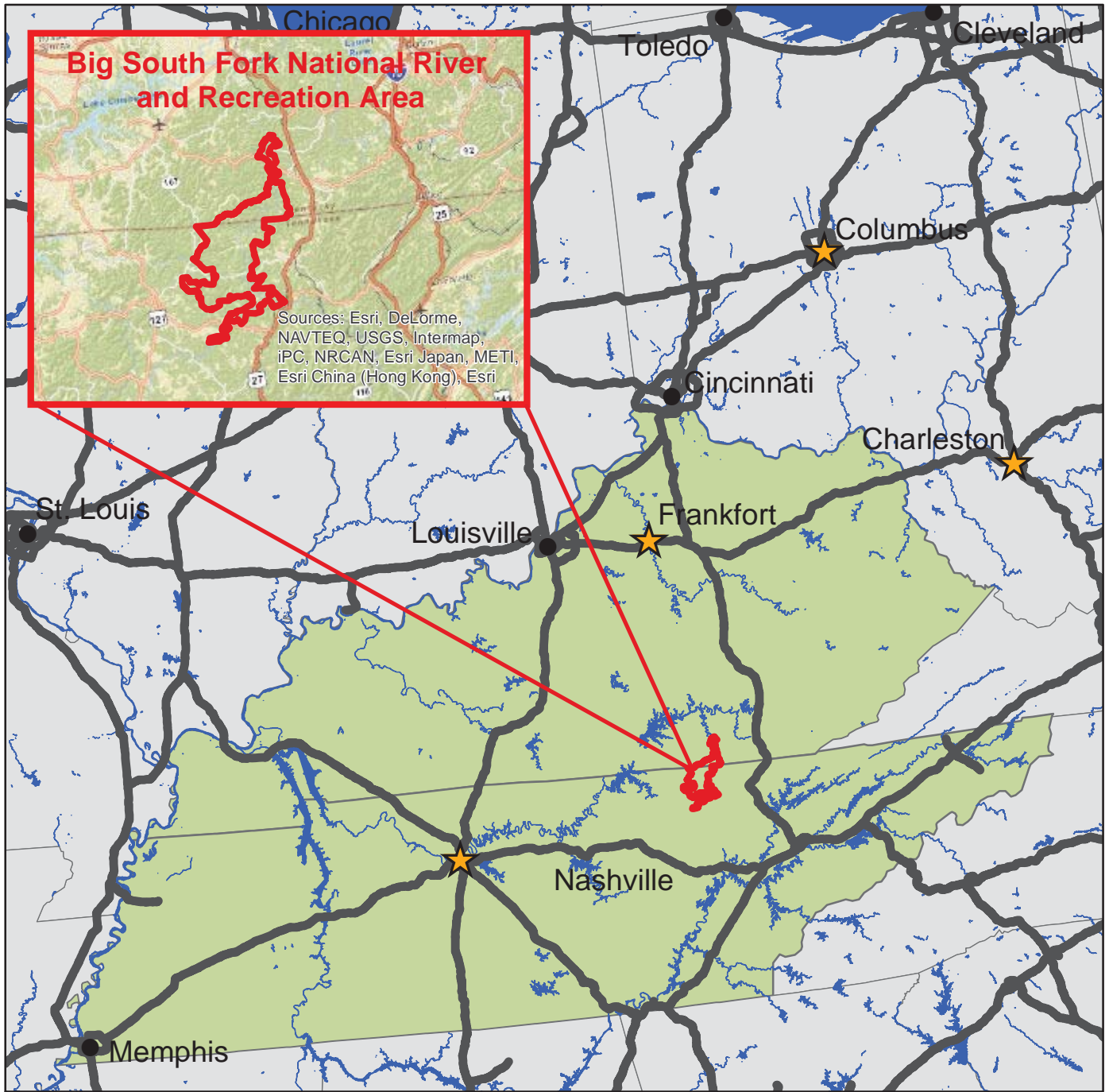


Big South Fork National River and Recreation Area BISO

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 11/2012
Report Date: 07/2013

Big South Fork National River and Recreation Area in Kentucky and Tennessee





DCV = Data Collection Vehicle

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Section 1 Introduction



Big South Fork National River and Recreation Area



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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Section 2

Park Route Inventory



Big South Fork National River and Recreation Area



Federal Lands Highway
Road Inventory Program

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 07/06/2013

(Numerical By Route #)

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Shading Color Key:
Red text denotes approx. mileage

White = Paved Routes, DCV Driven
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Yellow = Unpaved Routes, DCV not Driven
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= 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

BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

Rte. No.	Cycle Collected	FMS 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	57058		LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)	FROM EAST PARK BOUNDARY TO WEST PARK BOUNDARY	N/A	7.56	0.00	7.56	1		AS	3,4,5
0011	NC	57068		DIVIDE ROAD	FROM WEST PARK BOUNDARY TO NORTH PARK BOUNDARY AT TENNESSEE/KENTUCKY STATE LINE	N/A	0.00	7.65	7.65	1		GR	
0101	5	57061		BANDY CREEK ROAD	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) AT MP 3.10 TO END OF PAVEMENT AT ROUTE 0401 (WEST BANDY CREEK ROAD)	N/A	1.94	0.00	1.94	2		AS	4
0102	5	53545		STABLE ROAD	FROM ROUTE 0101 (BANDY CREEK ROAD) TO END OF LOOP	N/A	0.18	0.00	0.18	2		AS	4
0103	NC	56779		DUNCAN HOLLOW ROAD	FROM ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS) TO END OF ROUTE AT GATE	N/A	0.00	4.20	4.20	2		GR	
0104	NC	60357		LAGOON ROAD	FROM END OF ROUTE 0102 (STABLE ROAD) TO END OF ROUTE	N/A	0.00	0.28	0.28	2		GR	
0105	5	57060		EAST RIM OVERLOOK ROAD	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) AT MP 0.63 TO ROUTE 0913 (EAST RIM OVERLOOK PARKING)	N/A	0.69	0.00	0.69	2		AS	3
0107	NC	56768		CUMBERLAND VALLEY TRAILHEAD ROAD	FROM STATE HIGHWAY 297 TO ROUTE 0919 (CUMBERLAND VALLEY TRAILHEAD PARKING) AND TO END OF LOOP	N/A	0.00	0.21	0.21	2		GR	
0108	NC	57071		TWIN ARCHES ROAD	FROM ROUTE 0011 (DIVIDE ROAD) AT MP 4.04 TO ROUTE 0920 (TWIN ARCHES TRAILHEAD PARKING)	N/A	0.00	2.06	2.06	2		GR	
0109	NC	60359		FORK RIDGE ROAD	FROM ROUTE 0011 (DIVIDE ROAD) AT MP 1.0 ON RIGHT TO MIDDLE CREEK EQUESTRIAN TRAILHEAD	N/A	0.00	1.00	1.00	2		GR	
0110	5	60485		BREWSTER BRIDGE ROAD	FROM END OF ROUTE 5052 (TENNESSEE HIGHWAY 52) TO ROUTE 0925 (BREWSTER BRIDGE TRAILHEAD PARKING) ON LEFT	N/A	0.58	0.00	0.58	2		AS	7
0111	NC	60488		HONEY CREEK OVERLOOK ROAD	FROM HONEY CREEK ROAD TO ROUTE 0926 (HONEY CREEK OVERLOOK PARKING)	N/A	0.00	0.88	0.88	2		GR	

Cycle 5 NPS/RIP Route ID Report

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0112	NC	60489		STATION CAMP ROAD	FROM EAST PARK BOUNDARY TO ROUTE 0957 (STATION CAMP RIVER PARKING)	N/A	0.00	4.30	4.30	2		GR	
0114	NC	60491		LITTLE BILL SLAVEN ROAD	FROM FOSTERS CROSS ROADS CHURCH ROAD AT STATE LINE TO END OF ROUTE AT GATE	N/A	0.00	2.26	2.26	2		GR	
0115	NC	60361		BEAR CREEK ROAD	FROM JCT OF LEE HOLLOW ROAD AND BEAR CREEK ROAD TO EAST PARK BOUNDARY	N/A	0.00	2.23	2.23	2		GR	
0116	NC	60363		LEE HOLLOW ROAD	FROM ROUTE 0115 (BEAR CREEK ROAD) TO GATE	N/A	0.00	0.71	0.71	2		GR	
0117	5	57063		BLUE HERON ROAD (HWY 742)	FROM EAST PARK BOUNDARY TO ROUTE 0935 (MINE 18 PARKING)	N/A	3.14	0.00	3.14	2		AS	2
0118	5	57064		BLUE HERON OVERLOOK ROAD	FROM ROUTE 0117 (BLUE HERON ROAD (HWY 742)) TO ROUTE 0936 (BLUE HERON OVERLOOK PARKING)	N/A	1.33	0.00	1.33	2		AS	2
0119	NC	60366		YAHOO FALLS ROAD	FROM ROUTE 5700 (KENTUCKY HIGHWAY 700) TO END OF LOOP	N/A	0.00	1.69	1.69	2		GR	
0121	NC	55918		YAMACRAW EAST ACCESS ROAD	FROM ROUTE 5092 (KENTUCKY HIGHWAY 92) TO ROUTE 0960 (YAMACRAW EAST PARKING)	N/A	0.00	0.09	0.09	2		GR	
0122	NC	55919		YAMACRAW WEST ACCESS ROAD	FROM STATE HIGHWAY 1363 TO ROUTE 0959 (YAMACRAW WEST PARKING)	N/A	0.00	0.11	0.11	2		GR	
0123	NC	56840		ALFRED SMITH ROAD	FROM ROUTE 0103 (DUNCAN HOLLOW ROAD) AT MP 2.184 TO END OF ROUTE	N/A	0.00	2.36	2.36	2		GR	
0125	NC	105006		ZENITH ROAD	FROM PARK BOUNDARY TO END OF ROUTE	N/A	0.00	0.87	0.87	2		GR	
0200ZZ	4	53577		BANDY CREEK CAMPGROUND AREA A ACCESS ROADS	FROM ROUTE 0101 (BANDY CREEK ROAD) THROUGH CAMPGROUND	N/A	0.77	0.00	0.77	3		AS	4
0201	4	53581		BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD	FROM ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS) TO END OF LOOP	N/A	0.38	0.00	0.38	3		AS	4
0202	4	53594		BANDY CREEK CAMPGROUND AREA B ACCESS ROAD	FROM ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD) AT MP 0.01 TO END OF LOOP	N/A	0.15	0.00	0.15	3		AS	4

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0203	4	53596		BANDY CREEK CAMPGROUND AREA C ACCESS ROAD	FROM ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD) AT MP 0.06 TO END OF LOOP	N/A	0.28	0.00	0.28	3		AS	4
0204	4	57023		BANDY CREEK CAMPGROUND AREA C LOOP ROAD	FROM ROUTE 0203 (BANDY CREEK CAMPGROUND AREA C ACCESS ROAD) AT MP 0.11 TO END OF LOOP	N/A	0.06	0.00	0.06	3		AS	4
0205	4	55695		BREWSTER BRIDGE PICNIC AREA LOOP	FROM ROUTE 0110 (BREWSTER BRIDGE ROAD) TO ROUTE 0110 (BREWSTER BRIDGE ROAD)	N/A	0.08	0.00	0.08	3		AS	7
0206	4	53606		BANDY CREEK CAMPGROUND AREA D LOOP 1 ROAD	FROM ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD) AT MP 0.18 TO END OF LOOP	N/A	0.10	0.00	0.10	3		AS	4
0207	4	53607		BANDY CREEK CAMPGROUND AREA D LOOP 2 ROAD	FROM ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD) AT MP 0.27 TO END OF LOOP	N/A	0.08	0.00	0.08	3		AS	4
0208	4	53608		BANDY CREEK CAMPGROUND AREA E ACCESS ROAD	FROM ROUTE 0101 (BANDY CREEK ROAD) AT MP 1.61 TO END OF LOOP	N/A	0.32	0.00	0.32	3		AS	4
0209	4	53609		BANDY CREEK CAMPGROUND AREA E LOOP ROAD	FROM ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD) AT MP 0.05 TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD) AT MP 0.11	N/A	0.17	0.00	0.17	3		AS	4
0210	4	53610		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 1	FROM ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD) TO ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD)	N/A	0.04	0.00	0.04	3	2,598	AS	4
0211	4	53612		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 2	FROM ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD) TO ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD)	N/A	0.05	0.00	0.05	3	3,326	AS	4
0212	4	53613		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 3	FROM ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD) TO ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD)	N/A	0.04	0.00	0.04	3	2,577	AS	4
0213	4	53615		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 4	FROM ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD) TO ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD)	N/A	0.05	0.00	0.05	3	3,194	AS	4
0214	4	53617		BANDY CREEK AREA F ACCESS ROAD	FROM ROUTE 0101 (BANDY CREEK ROAD) AT MP 1.91 TO ROUTE 0909 (BANDY CREEK TRAILHEAD AND EQUESTRIAN PARKING)	N/A	0.09	0.00	0.09	3		AS	4

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(Numerical By Route #)

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BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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0216	NC	57072		TERRY CEMETERY ROAD	FROM ROUTE 0011 (DIVIDE ROAD) AT MP 4.73 ON LEFT TO GOBBLERS KNOB TRAILHEAD	N/A	0.00	1.00	1.00	4		GR	
0217	NC	60373		HATTIE BLEVINS CEMETERY ROAD	FROM ROUTE 0011 (DIVIDE ROAD) AT MP 4.55 ON LEFT TO ROUTE 0922 ON LEFT	N/A	0.00	1.26	1.26	4		GR	
0218	NC	60374		JOE BRANCH ROAD	FROM SOUTH PARK BOUNDARY TO ROUTE 0924 (JOE BRANCH PICNIC AREA PARKING) ON LEFT	N/A	0.00	1.76	1.76	4		GR	
0219	NC	60376		CONFLUENCE ROAD	FROM NORTH PARK BOUNDARY ON AIRPORT ROAD TO END OF LOOP	N/A	0.00	0.93	0.93	4		GR	
0221	NC	55846		STATION CAMP HORSE CAMP ROAD	FROM ROUTE 0112 (STATION CAMP ROAD) TO END	N/A	0.00	1.00	1.00	3		GR	
0222	NC	60378		BIG ISLAND ROAD	FROM ROUTE 0112 (STATION CAMP ROAD) AT MP 2.03 ON RIGHT TO END	N/A	0.00	1.83	1.83	4		GR	
0223	NC	60379		DICK GAP ROAD	FROM BALD KNOB ROAD (COUNTY NAME)/BEECH GROVE ROAD (STATE NAME) TO ROUTE 0931 (DICK GAP TRAILHEAD PARKING)	N/A	0.00	1.29	1.29	4		GR	
0224	NC	60380		WATERS CEMETERY ROAD	FROM ROUTE 0223 (DICK GAP ROAD) AT 0.118 TO END OF LOOP	N/A	0.00	1.15	1.15	4		GR	
0225	4	53618		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 5	FROM ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD) TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD)	N/A	0.04	0.00	0.04	3	2,598	AS	4
0226	4	53619		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 6	FROM ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD) TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD)	N/A	0.04	0.00	0.04	3	2,682	AS	4
0227	4	53620		BANDY CREEK CAMPGROUND AREA E LOOP PULLOUT 7	FROM ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD) TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD)	N/A	0.04	0.00	0.04	3	2,556	AS	4
0228	4	53578		BANDY CREEK CAMPGROUND AREA A LOOP ROAD	FROM ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS) TO END OF LOOP	N/A	0.06	0.00	0.06	3		AS	4
0229	4	53911		BLUE HERON CAMPGROUND ROAD	FROM ROUTE 0117 (BLUE HERON ROAD (HWY 742)) AT MP 0.21 TO END OF LOOP	N/A	0.83	0.00	0.83	3		AS	2

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0230	4	53912		BLUE HERON CAMPGROUND LOOP 1	FROM ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) AT MP 0.72	TO ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) AT MP 0.75	N/A	0.06	0.00	0.06	3		AS	2
0231	4	53913		BLUE HERON CAMPGROUND LOOP 2	FROM ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) AT MP 0.64	TO ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) AT MP 0.67	N/A	0.15	0.00	0.15	3		AS	2
0232	NC	55671		ALUM FORD PRIMITIVE CAMPGROUND RD	FROM ROUTE 5700 (KENTUCKY HIGHWAY 700)	TO END OF ROUTE	N/A	0.00	0.16	0.16	4		GR	
0233	NC	55682		BEAR CREEK HORSE CAMP LOOP ROAD	FROM END OF ROUTE 0116 (LEE HOLLOW ROAD)	TO END OF LOOP	N/A	0.00	0.34	0.34	3		GR	
0235	NC	56841		JOHN LITTON ROAD	FROM ROUTE 0103 (DUNCAN HOLLOW ROAD) AT MP 0.86 ON RIGHT	TO END	N/A	0.00	0.84	0.84	3		GR	
0237	NC	57069		JACK RIDGE ROAD	FROM ROUTE 0401 (WEST BANDY CREEK ROAD) AT MP 1.09 ON RIGHT	TO GATE	N/A	0.00	0.10	0.10	3		NV	
0240	NC	116798		ZENITH PICNIC AREA ACCESS ROAD	FROM ROUTE 0125 (ZENITH ROAD) AT MP 0.784 ON LEFT	TO END OF ROUTE	N/A	0.00	0.75	0.75	3		GR	
0241	NC	114647		WEST ENTRANCE STORAGE ROAD	FROM ROUTE 0401 (WEST BANDY CREEK ROAD) AT MP 3.0 ON RIGHT	TO END OF ROUTE	N/A	0.00	0.07	0.07	3		GR	
0242	NC	104981		OSCAR BLEVINS FARM ACCESS ROAD	FROM ROUTE 0401 (WEST BANDY CREEK ROAD) AT MP 1.410 ON LEFT	TO END OF LOOP	N/A	0.00	0.21	0.21	3		GR	
0261	NC	104614		SLAVEN CEMETERY ROAD	FROM ROUTE 0112 (STATION CAMP ROAD) AT MP 3.042 ON LEFT	TO END OF ROUTE	N/A	0.00	0.09	0.09	3		GR	
0268	NC	104965		GUY KIDD CEMETERY ACCESS ROAD	FROM LAUREL RIDGE MULTIPLE PURPOSE TRAIL	TO END OF ROUTE	N/A	0.00	1.00	1.00	4		GR	
0276	NC	105022		BIG CREEK BOAT ACCESS ROAD	FROM KENTUCKY BIG CREEK ROAD	TO END OF ROUTE AT RIVER	N/A	0.00	0.64	0.64	4		GR	
0280A	NC	105024		WORLEY ROAD	FROM PARK BOUNDARY	TO RIVER ACCESS	N/A	0.00	0.47	0.47	4		GR	
0281	NC	107902		PARK ROAD	FROM MT. HELEN ROAD AT PARK BOUNDARY	TO MT. HELEN TRAILHEAD	N/A	0.00	0.40	0.40	4		GR	
0282	NC	116802		CAT RIDGE RD	FROM LAUREL RIDGE MULTI-USE TRAIL	TO BRADLEY KIDD HOMESITE	N/A	0.00	1.00	1.00	4		GR	
0283	NC	114620		MICHIGAN CAMP ROAD	FROM TERRY CEMETERY MULTI-USE TRAIL	TO JURDAN BOYATT GRAVEYARD	N/A	0.00	1.70	1.70	4		GR	

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BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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
0284	NC	239839		ALUM CREEK ROAD	FROM ROUTE 5092 (KENTUCKY HIGHWAY 92) TO ALUM CREEK	N/A	0.00	2.00	2.00	4		GR	
0285	NC	239980		RALPH BURKE ROAD	FROM HIGHWAY 297 TO NORTH WHITE OAK MULTI-USE TRAIL	N/A	0.00	0.14	0.14	4		GR	
0286	NC	239981		UPPER BURKE FIELDS ROAD	FROM HIGHWAY 298 TO NORTH WHITE OAK MULTI-USE TRAIL	N/A	0.00	0.14	0.14	4		GR	
0401	NC	56943		WEST BANDY CREEK ROAD	FROM END OF ROUTE 0101 (BANDY CREEK ROAD) TO ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297))	N/A	0.00	3.02	3.02	3		GR	
0402	NC	53249		FIRING RANGE ROAD	FROM ROUTE 0105 (EAST RIM OVERLOOK ROAD) TO ROUTE 0915 (FIRING RANGE PARKING)	N/A	0.00	0.06	0.06	6		GR	
0403	NC	53251		LOG DORM ROAD	FROM BEGIN ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) AT MP 0.36 TO ROUTE 0918 (LOG DORM PARKING)	N/A	0.00	0.19	0.19	6		GR	
0404	4	53914		BLUE HERON MAINTENANCE ROAD	FROM ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) AT MP 0.36 TO ROUTE 0937 (BLUE HERON MAINTENANCE AREA)	N/A	0.04	0.00	0.04	5		AS	2
0405	NC	56858		JOHN SMITH ROAD	FROM ANGEL FALLS VILLAGE ROAD AT PARK BOUNDARY TO END OF ROUTE AT GATE	N/A	0.00	0.30	0.30	5		GR	
0406	5	239976		BLUE HERON RESIDENCE ACCESS ROAD	FROM ROUTE 0117 (BLUE HERON ROAD (HWY 742)) TO RESIDENCE	N/A	0.06	0.00	0.06	6		AS	2
0407	5	53260		EAST RIM MAINTENANCE AREA ROAD	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) AT MP 0.64 TO ROUTE 0917 (MAINTENANCE AREA)	N/A	0.16	0.00	0.16	5		AS	3
0900	4	54062		LEATHERWOOD DAY USE PARKING	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) TO PARKING	N/A	0.00	0.00	0.00		37,331	AS	3
0901	4	53252		RESOURCE MANAGEMENT PARKING	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) TO PARKING	N/A	0.00	0.00	0.00		18,782	AS	3
0902	4	53621		BANDY CREEK DUMP STATION	FROM ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS) TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)	N/A	0.00	0.00	0.00		2,609	AS	4

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BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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0903	4	53622		SWIMMING POOL PARKING	FROM ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS) TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)	N/A	0.00	0.00	0.00		12,625	AS	4
0904	4	53579		BANDY CREEK CAMPGROUND AREA A RESTROOM 1 PARKING	ADJACENT TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)	N/A	0.00	0.00	0.00		1,160	AS	4
0905	4	53562		RENTAL BARN PARKING	FROM ROUTE 0101 (BANDY CREEK ROAD) TO PARKING	N/A	0.00	0.00	0.00		11,023	AS	4
0906	4	53571		VISITOR CENTER PARKING	FROM ROUTE 0102 (STABLE ROAD) TO ROUTE 0102 (STABLE ROAD)	N/A	0.00	0.00	0.00		14,328	AS	4
0907A	4	53564		BANDY CREEK PICNIC AREA PARKING A	FROM ROUTE 0102 (STABLE ROAD) TO ROUTE 0102 (STABLE ROAD)	N/A	0.00	0.00	0.00		27,351	AS	4
0907B	4	53567		BANDY CREEK PICNIC AREA PARKING B	ADJACENT TO ROUTE 0102 (STABLE ROAD)	N/A	0.00	0.00	0.00		1,064	AS	4
0907C	4	53569		BANDY CREEK PICNIC AREA PARKING C	ADJACENT TO ROUTE 0102 (STABLE ROAD)	N/A	0.00	0.00	0.00		1,833	AS	4
0907D	4	105027		BANDY CREEK PICNIC AREA PARKING D	ADJACENT TO ROUTE 0102 (STABLE ROAD)	N/A	0.00	0.00	0.00		396	AS	4
0908	4	53573		BANDY CREEK COMFORT STATION PARKING	FROM ROUTE 0214 (BANDY CREEK AREA F ACCESS ROAD) TO ROUTE 0214 (BANDY CREEK AREA F ACCESS ROAD)	N/A	0.00	0.00	0.00		23,661	AS	4
0909	4	53642		BANDY CREEK TRAILHEAD AND EQUESTRIAN PARKING	FROM END OF ROUTE 0214 (BANDY CREEK AREA F ACCESS ROAD) TO PARKING	N/A	0.00	0.00	0.00		19,158	AS	4
0911	NC	53559		STABLE PARKING	FROM ROUTE 0104 (LAGOON ROAD) TO PARKING	N/A	0.00	0.00	0.00		880	GR	
0912	4	53253		PARK HEADQUARTERS PARKING	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) TO PARKING	N/A	0.00	0.00	0.00		19,291	AS	3
0913	4	56850		EAST RIM OVERLOOK PARKING	FROM END OF ROUTE 0105 (EAST RIM OVERLOOK ROAD) TO PARKING	N/A	0.00	0.00	0.00		14,584	AS	3
0914	4	56846		SUNSET TRAILHEAD PARKING	ADJACENT TO ROUTE 0105 (EAST RIM OVERLOOK ROAD)	N/A	0.00	0.00	0.00		2,230	AS	3
0915	NC	53254		FIRING RANGE PARKING	FROM END OF ROUTE 0402 (FIRING RANGE ROAD) TO PARKING	N/A	0.00	0.00	0.00		5,100	GR	

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BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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0916	5	53255		MAINTENANCE AREA PARKING	FROM ROUTE 0407 (EAST RIM MAINTENANCE AREA ROAD) AT MP 0.740 TO PARKING	N/A	0.00	0.00	0.00		7,527	AS	3
0917	NC	53256		MAINTENANCE AREA	FROM ROUTE 0407 (EAST RIM MAINTENANCE AREA ROAD) TO PARKING	N/A	0.00	0.00	0.00		42,090	GR	
0918	NC	53257		LOG DORM PARKING	FROM END OF ROUTE 0403 (LOG DORM ROAD) TO PARKING	N/A	0.00	0.00	0.00		6,408	GR	
0919	NC	56769		CUMBERLAND VALLEY TRAILHEAD PARKING	FROM ROUTE 0107 (CUMBERLAND VALLEY TRAILHEAD ROAD) TO PARKING	N/A	0.00	0.00	0.00		58	GR	
0920	NC	60381		TWIN ARCHES TRAILHEAD PARKING	FROM ROUTE 0108 (TWIN ARCHES ROAD) TO PARKING	N/A	0.00	0.00	0.00		7,800	GR	
0921	NC	56911		TERRY CEMETERY PARKING	FROM ROUTE 0216 (TERRY CEMETERY ROAD) TO PARKING	N/A	0.00	0.00	0.00		6,200	GR	
0923	NC	56915		CHARIT CREEK PARKING	FROM CHARIT CREEK TRAIL TO PARKING	N/A	0.00	0.00	0.00		6,314	GR	
0924	NC	55803		JOE BRANCH PICNIC AREA PARKING	FROM ROUTE 0218 (JOE BRANCH ROAD) TO PARKING	N/A	0.00	0.00	0.00		450	OT	
0925	4	55689		BREWSTER BRIDGE TRAILHEAD PARKING	FROM END OF ROUTE 0110 (BREWSTER BRIDGE ROAD) TO PARKING	N/A	0.00	0.00	0.00		27,042	AS	7
0926	4	55795		HONEY CREEK OVERLOOK PARKING	FROM END OF ROUTE 0111 (HONEY CREEK OVERLOOK ROAD) TO PARKING	N/A	0.00	0.00	0.00		7,875	AS	6
0927	NC	55788		BURNT MILL PARKING	FROM BURNT MILL ROAD TO PARKING	N/A	0.00	0.00	0.00		2,700	GR	
0928	NC	55792		CONFLUENCE PARKING	FROM ROUTE 0219 (CONFLUENCE ROAD) AT MP 0.87 ON LEFT TO PARKING	N/A	0.00	0.00	0.00		900	GR	
0929	NC	56910		STATION CAMP TRAILHEAD PARKING	FROM ROUTE 0112 (STATION CAMP ROAD) AT MP 0.4 ON RIGHT TO ROUTE 0112 (STATION CAMP ROAD) AT MP 0.444	N/A	0.00	0.00	0.00		37,500	GR	
0930	NC	56902		PETERS MOUNTAIN TRAILHEAD PARKING	FROM LAUREL RIDGE MULTIPLE PURPOSE TRAIL TO PARKING	N/A	0.00	0.00	0.00		100	GR	
0931	NC	56774		DICK GAP TRAILHEAD PARKING	FROM END OF ROUTE 0223 (DICK GAP ROAD) TO PARKING	N/A	0.00	0.00	0.00		450	GR	
0932	NC	56906		SLAVENS BRANCH TRAILHEAD PARKING	FROM ROUTE 0114 (LITTLE BILL SLAVEN ROAD) AT MP 1.772 TO ROUTE 0114 (LITTLE BILL SLAVEN ROAD) AT MP 1.833	N/A	0.00	0.00	0.00		1,800	GR	

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BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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0933	NC	55683		BEAR CREEK HORSE CAMP PARKING	FROM ROUTE 0116 (LEE HOLLOW ROAD) AT MP 0.695 TO PARKING	N/A	0.00	0.00	0.00		3,600	GR	
0934	4	54045		ROARING PUNCH CREEK PARKING	ADJACENT TO ROUTE 0117 (BLUE HERON ROAD (HWY 742))	N/A	0.00	0.00	0.00		2,349	AS	2
0935	4	54043		MINE 18 PARKING	FROM END OF ROUTE 0117 (BLUE HERON ROAD (HWY 742)) TO PARKING	N/A	0.00	0.00	0.00		70,091	AS	2
0936	4	56679		BLUE HERON OVERLOOK PARKING	FROM END OF ROUTE 0118 (BLUE HERON OVERLOOK ROAD) TO PARKING	N/A	0.00	0.00	0.00		37,162	AS	2
0937	NC	53915		BLUE HERON MAINTENANCE AREA	FROM END OF ROUTE 0404 (BLUE HERON MAINTENANCE ROAD) TO PARKING	N/A	0.00	0.00	0.00		1,000	GR	
0938	NC	60443		YAHOO FALLS TRAILHEAD PARKING	FROM ROUTE 0119 (YAHOO FALLS ROAD) AT MP 1.46 LEFT TO PARKING	N/A	0.00	0.00	0.00		2,000	GR	
0939	4	53258		RANGER STATION PARKING	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) TO PARKING	N/A	0.00	0.00	0.00		3,979	AS	3
0940ZZ	4	53580		BANDY CREEK CAMPGROUND AREA A RESTROOM 2 PARKING AREAS	ADJACENT TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)	N/A	0.00	0.00	0.00		2,073	AS	4
0941	4	53599		BANDY CREEK CAMPGROUND AREA C RESTROOM PARKING	ADJACENT TO ROUTE 0203 (BANDY CREEK CAMPGROUND AREA C ACCESS ROAD)	N/A	0.00	0.00	0.00		1,501	AS	4
0942ZZ	4	53602		BANDY CREEK CAMPGROUND AREA D RESTROOM 1 PARKING	ADJACENT TO ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD)	N/A	0.00	0.00	0.00		1,927	AS	4
0943	4	53604		BANDY CREEK CAMPGROUND AREA D RESTROOM 2 PARKING	ADJACENT TO ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD)	N/A	0.00	0.00	0.00		1,316	AS	4

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0944	4	53625		BANDY CREEK CAMPGROUND PAY KIOSK PARKING	ADJACENT TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)	N/A	0.00	0.00	0.00		1,122	AS	4
0945	NC	56912		WEST ENTRANCE TRAILHEAD PARKING	FROM ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) TO PARKING	N/A	0.00	0.00	0.00		4,840	GR	
0946	4	60449		KENTUCKY RANGER STATION PARKING	FROM KENTUCKY STATE ROUTE 92 TO PARKING	N/A	0.00	0.00	0.00		31,674	AS	1
0947	4	53916		BLUE HERON DUMP STATION	FROM ROUTE 0229 (BLUE HERON CAMPGROUND ROAD) TO ROUTE 0229 (BLUE HERON CAMPGROUND ROAD)	N/A	0.00	0.00	0.00		1,999	AS	2
0948	4	53918		BLUE HERON RESTROOM PARKING	ADJACENT TO ROUTE 0229 (BLUE HERON CAMPGROUND ROAD)	N/A	0.00	0.00	0.00		790	AS	2
0949	4	53919		BLUE HERON TRAILHEAD PARKING	ADJACENT TO ROUTE 0118 (BLUE HERON OVERLOOK ROAD)	N/A	0.00	0.00	0.00		2,118	AS	2
0950	4	60454		MINE 18 OVERLOOK PARKING	ADJACENT TO ROUTE 0118 (BLUE HERON OVERLOOK ROAD)	N/A	0.00	0.00	0.00		1,892	AS	2
0951	4	56772		DEVILS JUMP OVERLOOK PARKING	ADJACENT TO ROUTE 0118 (BLUE HERON OVERLOOK ROAD)	N/A	0.00	0.00	0.00		4,178	AS	2
0952A	4	61122		RIVER PARKING A	ADJACENT TO ROUTE 0117 (BLUE HERON ROAD (HWY 742))	N/A	0.00	0.00	0.00		2,607	AS	2
0952B	4	61123		RIVER PARKING B	ADJACENT TO ROUTE 0117 (BLUE HERON ROAD (HWY 742))	N/A	0.00	0.00	0.00		1,234	AS	2
0952C	4	114656		RIVER PARKING C	ADJACENT TO ROUTE 0117 (BLUE HERON ROAD (HWY 742))	N/A	0.00	0.00	0.00		1,622	AS	2
0952D	4	114657		RIVER PARKING D	ADJACENT TO ROUTE 0117 (BLUE HERON ROAD (HWY 742))	N/A	0.00	0.00	0.00		1,921	AS	2
0953	4	114651		BLUE HERON PULLOUT	ADJACENT TO ROUTE 0229 (BLUE HERON CAMPGROUND ROAD)	N/A	0.00	0.00	0.00		1,797	AS	2

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0968	NC	56914		BEAR CREEK OVERLOOK PARKING AREA	FROM ROUTE 0115 (BEAR CREEK ROAD) AT MP 1.17 TO PARKING	N/A	0.00	0.00	0.00		1,500	GR	
0969	4	114652		BANDY CREEK COMFORT STATION PICNIC SHELTER AREA	FROM ROUTE 0214 (BANDY CREEK AREA F ACCESS ROAD) TO PARKING	N/A	0.00	0.00	0.00		5,599	AS	4
0970	4	105057		BANDY CREEK CAMPGROUND AREA E RESTROOM 1 PARKING	ADJACENT TO ROUTE 0209 (BANDY CREEK CAMPGROUND AREA E LOOP ROAD)	N/A	0.00	0.00	0.00		1,574	AS	4
0971A	4	105059		BANDY CREEK CAMPGROUND AREA E RESTROOM 2 PARKING A	ADJACENT TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD)	N/A	0.00	0.00	0.00		1,162	AS	4
0971B	4	105058		BANDY CREEK CAMPGROUND AREA E RESTROOM 2 PARKING B	ADJACENT TO ROUTE 0208 (BANDY CREEK CAMPGROUND AREA E ACCESS ROAD)	N/A	0.00	0.00	0.00		997	AS	4
0972	NC	55680		BEAR CREEK HORSE CAMP DUMP STATION	FROM ROUTE 0233 (BEAR CREEK HORSE CAMP LOOP ROAD) TO ROUTE 0233 (BEAR CREEK HORSE CAMP LOOP ROAD)	N/A	0.00	0.00	0.00			GR	
0973	NC	55849		STATION CAMP DUMP STATION	FROM ROUTE 0221 (STATION CAMP HORSE CAMP ROAD) TO ROUTE 0221 (STATION CAMP HORSE CAMP ROAD)	N/A	0.00	0.00	0.00			GR	
0975	NC	105061		CHARIT CREEK TRAILHEAD PARKING	FROM ROUTE 0109 (FORK RIDGE ROAD) AT MP 4.44 ON LEFT TO PARKING	N/A	0.00	0.00	0.00		8,245	GR	
0977	NC	105063		CHIMNEY ROCK PARKING	FROM ROUTE 0112 (STATION CAMP ROAD) AT MP 3.01 ON RIGHT TO PARKING	N/A	0.00	0.00	0.00		3,344	GR	
0980	NC	105065		BEAR CREEK GAGE STATION PARKING	FROM ROUTE 0115 (BEAR CREEK ROAD) AT MP 1.37 ON RIGHT TO ROUTE 0115 (BEAR CREEK ROAD)	N/A	0.00	0.00	0.00			GR	
0982	NC	105067		YAHOO FALLS GROUP PICNIC PARKING	FROM ROUTE 0119 (YAHOO FALLS ROAD) AT MP 1.384 BOTH SIDES TO PARKING	N/A	0.00	0.00	0.00			GR	
0983	NC	105068		ALUM FORD PRIMITIVE CAMPGROUND PARKING	FROM END OF ROUTE 0232 (ALUM FORD PRIMITIVE CAMPGROUND RD) TO PARKING	N/A	0.00	0.00	0.00			GR	

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** DCV - Data Collection Vehicle

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

BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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
0984	NC	116814		BIG CREEK RIVER ACCESS PARKING	FROM END OF ROUTE 0276 (BIG CREEK BOAT ACCESS ROAD)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0985	NC	105064		YAMACRAW LOOP TRAILHEAD PARKING	FROM EAST SIDE OF YAMACRAW BRIDGE OFF OF ROUTE 5092 (KENTUCKY HIGHWAY 92)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0986	NC	239984		RUGBY TRAILHEAD PARKING (LAUREL DALE CEMETERY)	FROM END OF LAUREL DALE CEMETERY ROAD	TO PARKING	N/A	0.00	0.00	0.00			GR	
0987	NC	235889		ZENITH PARKING LOT	FROM END OF ROUTE 0125 (ZENITH ROAD)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0988	NC	56869		MIDDLE CREEK TRAILHEAD PARKING	FROM ROUTE 0011 (DIVIDE ROAD)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0989	NC	56903		ROCK CREEK TRAILHEAD PARKING	FROM ROUTE 0217 (HATTIE BLEVINS CEMETERY ROAD)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0990	NC	116813		DUNCAN HOLLOW PARKING	FROM ROUTE 0103 (DUNCAN HOLLOW ROAD) AT MITCHELLS FIELD	TO PARKING	N/A	0.00	0.00	0.00			GR	
0991	NC	113682		MILL CREEK TRAILHEAD PARKING	FROM MILL CREEK ROAD NEAR THE END	TO PARKING	N/A	0.00	0.00	0.00			GR	
0992	NC	56863		LEDBETTER TRAILHEAD PARKING	FROM LEDBETTER MULTI-USE TRAIL	TO PARKING	N/A	0.00	0.00	0.00			GR	
0993	NC	240182		CHARIT CREEK HIKING TRAILHEAD PARKING	FROM FORK RIDGE MULTI-USE TRAIL PAST ROUTE 0964 (MIDDLE CREEK EQUESTRIAN TRAILHEAD PARKING)	TO PARKING	N/A	0.00	0.00	0.00			GR	
0994	NC	240181		CHARIT CREEK EQUESTRIAN PARKING	FROM FORK RIDGE MULTI-USE TRAIL PAST ROUTE 0964 (MIDDLE CREEK EQUESTRIAN TRAILHEAD PARKING)	TO PARKING	N/A	0.00	0.00	0.00			GR	
5052	5			TENNESSEE HIGHWAY 52	FROM INTERSECTION WITH BREWSTERTOWN ROAD	TO BEGINNING OF ROUTE 0110 (BREWSTER BRIDGE ROAD)	N/A	1.01	0.00	1.01			AS	7
5092	5			KENTUCKY HIGHWAY 92	FROM PARK BOUNDARY	TO PARK BOUNDARY	N/A	0.79	0.00	0.79			AS	9

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 07/06/2013

(Numerical By Route #)

Page 14 of 16

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

BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description		Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
					From	To								
5154	5			TENNESSEE HIGHWAY 154	FROM PARK BOUNDARY	TO PARK BOUNDARY	N/A	0.39	0.00	0.39			AS	8
5700	5			KENTUCKY HIGHWAY 700	FROM PARK BOUNDARY	TO ALUM FORD CAMPGROUND	N/A	0.93	0.00	0.93			AS	9

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 07/06/2013

(Numerical By Route #)

Page 15 of 16

Shading Color Key:
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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

CYCLE 5 COLLECTED SUMMARY TOTALS FOR BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

CYCLE 5 COLLECTED ROUTE TOTALS

DCV Driven Route Miles	15.63
Manually Rated Route Miles	0.00
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	15.63
Manually Rated Routes (SQFT)	0

* CYCLE 5 COLLECTED PARKING AREA TOTALS

Paved Parking (SQFT)	7,527
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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	90
**Manually Rated Routes PCR	N/A
**Parking PCR	45
***Total Equivalent Lane Miles	37.19

TOTAL PARK SUMMARY FOR BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

ROUTE TOTALS

TOTAL PAVED PARK ROUTE MILES	19.55
TOTAL PAVED PARKING (SQFT)	446,205

* - 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

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	

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** 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 BISO

Road Inventory Program 07/06/2013

(Numerical By Subcomponent #)

Page 1 of 2

Shading Color Key:

White = Paved Routes, DCV Driven

Yellow = Unpaved Routes, DCV not Driven

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BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

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
0200ZZ	53577	4	BANDY CREEK CAMPGROUND AREA A ACCESS ROADS	FROM ROUTE 0101 (BANDY CREEK ROAD)	THROUGH CAMPGROUND		3	0.77	0.00	0.77	
0940ZZ	53580	4	BANDY CREEK CAMPGROUND AREA A RESTROOM 2 PARKING AREAS	ADJACENT TO ROUTE 0200ZZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROADS)				0.00	0.00	0.00	2,073
0942ZZ	53602	4	BANDY CREEK CAMPGROUND AREA D RESTROOM 1 PARKING	ADJACENT TO ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD)				0.00	0.00	0.00	1,927

BISO-0200ZZ 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
0200AZ	53577	4	BANDY CREEK CAMPGROUND AREA A ACCESS ROAD A	FROM ROUTE 0101 (BANDY CREEK ROAD) AT MP 1.71	TO END OF LOOP		3	0.69	0.00	0.69	
0200BZ	53577	4	BANDY CREEK CAMPGROUND AREA A ACCESS ROAD B	FROM ROUTE 0200AZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROAD A) AT MP 0.59	TO END OF LOOP		3	0.08	0.00	0.08	

BISO-0940ZZ 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
0940AZ	53580	4	BANDY CREEK CAMPGROUND AREA A RESTROOM 2 PARKING A	ADJACENT TO ROUTE 0200AZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROAD A)				0.00	0.00	0.00	445
0940BZ	53580	4	BANDY CREEK CAMPGROUND AREA A RESTROOM 2 PARKING B	ADJACENT TO ROUTE 0200AZ (BANDY CREEK CAMPGROUND AREA A ACCESS ROAD A)				0.00	0.00	0.00	1,628

NPS/RIP Subcomponent Details for BISO

Road Inventory Program 07/06/2013

(Numerical By Subcomponent #)

Page 2 of 2

Shading Color Key:

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Grey = Paved Routes, DCV not Driven

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BISO

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

BISO-0942ZZ 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
0942AZ	53602	4	BANDY CREEK CAMPGROUND AREA D RESTROOM 1 PARKING A	ADJACENT TO ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD)				0.00	0.00	0.00	693
0942BZ	53602	4	BANDY CREEK CAMPGROUND AREA D RESTROOM 1 PARKING B	ADJACENT TO ROUTE 0201 (BANDY CREEK CAMPGROUND AREAS B C AND D ACCESS ROAD)				0.00	0.00	0.00	1,234

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - BISO

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	Route Name	Reason for Addition	Comments
0406	BLUE HERON RESIDENCE ACCESS ROAD	OTHER	ROUTE ADDED IN CYCLE 5.
5052	TENNESSEE HIGHWAY 52	OTHER	ROUTE ADDED IN CYCLE 5.
5092	KENTUCKY HIGHWAY 92	OTHER	ROUTE ADDED IN CYCLE 5.
5154	TENNESSEE HIGHWAY 154	OTHER	ROUTE ADDED IN CYCLE 5.
5700	KENTUCKY HIGHWAY 700	OTHER	ROUTE ADDED IN CYCLE 5.
OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	Route Name	Type of Change	Comments
0407	EAST RIM MAINTENANCE AREA ROAD	ROUTE SPLIT	ROUTE 0916 WAS SPLIT INTO ROUTE 0916 AND 0407 IN CYCLE 5 BECAUSE THE PARK MANAGES THEM SEPARATELY.
0916	MAINTENANCE AREA PARKING	ROUTE SPLIT	ROUTE 0916 WAS SPLIT INTO ROUTE 0916 AND 0407 IN CYCLE 5 BECAUSE THE PARK MANAGES THEM SEPARATELY.
0942ZZ	BANDY CREEK CAMPGROUND AREA D RESTROOM 1 PARKING	ROUTES COMBINED	ROUTES 0942A AND 0942B WERE COMBINED IN CYCLE 5 INTO 0942ZZ.

Section 3

Park Summary Information



Big South Fork National River and Recreation Area



Federal Lands Highway
Road Inventory Program

BISO: 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	0.16	1.02%	0.94	6.01%	2.36	15.09%	4.10	26.21%	7.56
2	0.62	3.96%	0.77	4.92%	2.43	15.54%	4.04	25.83%	7.86
3									
4									
5	0.16	1.02%							0.16
6					0.06	0.38%			0.06
7									
8									
Totals	0.94	6.01%	1.71	10.93%	4.85	31.01%	8.14	52.05%	15.64

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.

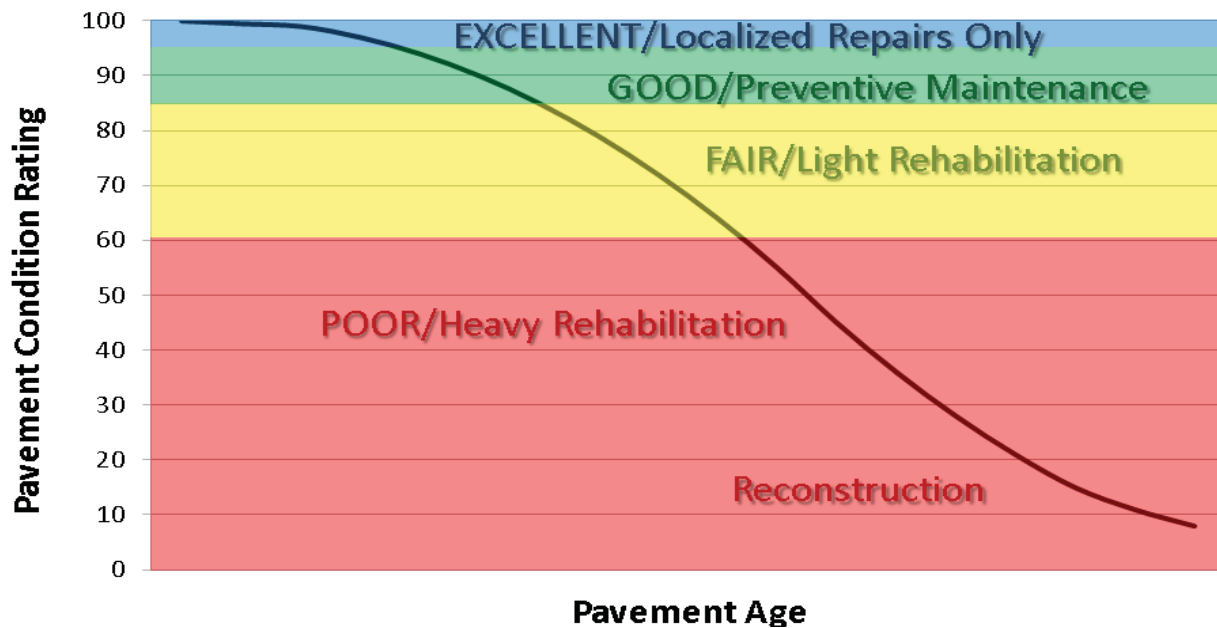
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

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.

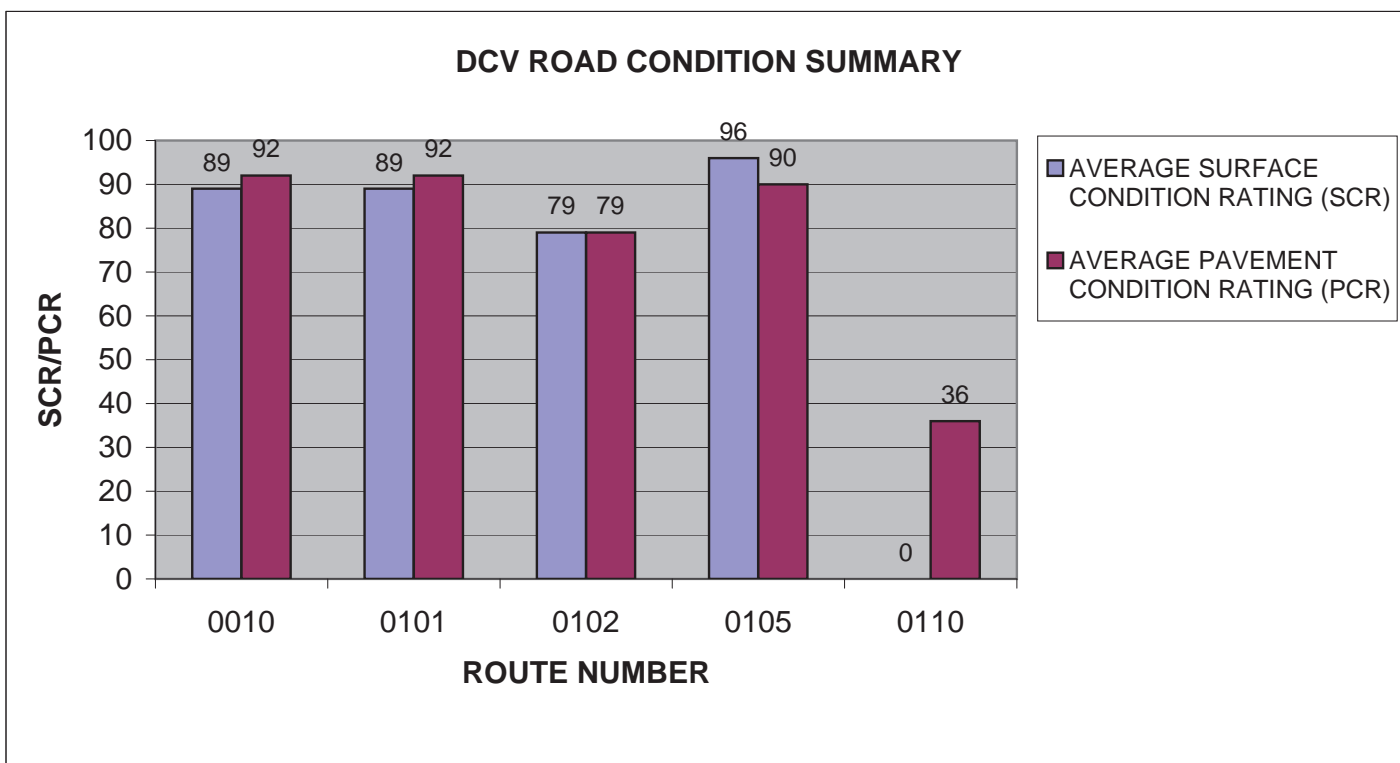
Condition Categories and Treatments



BISO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

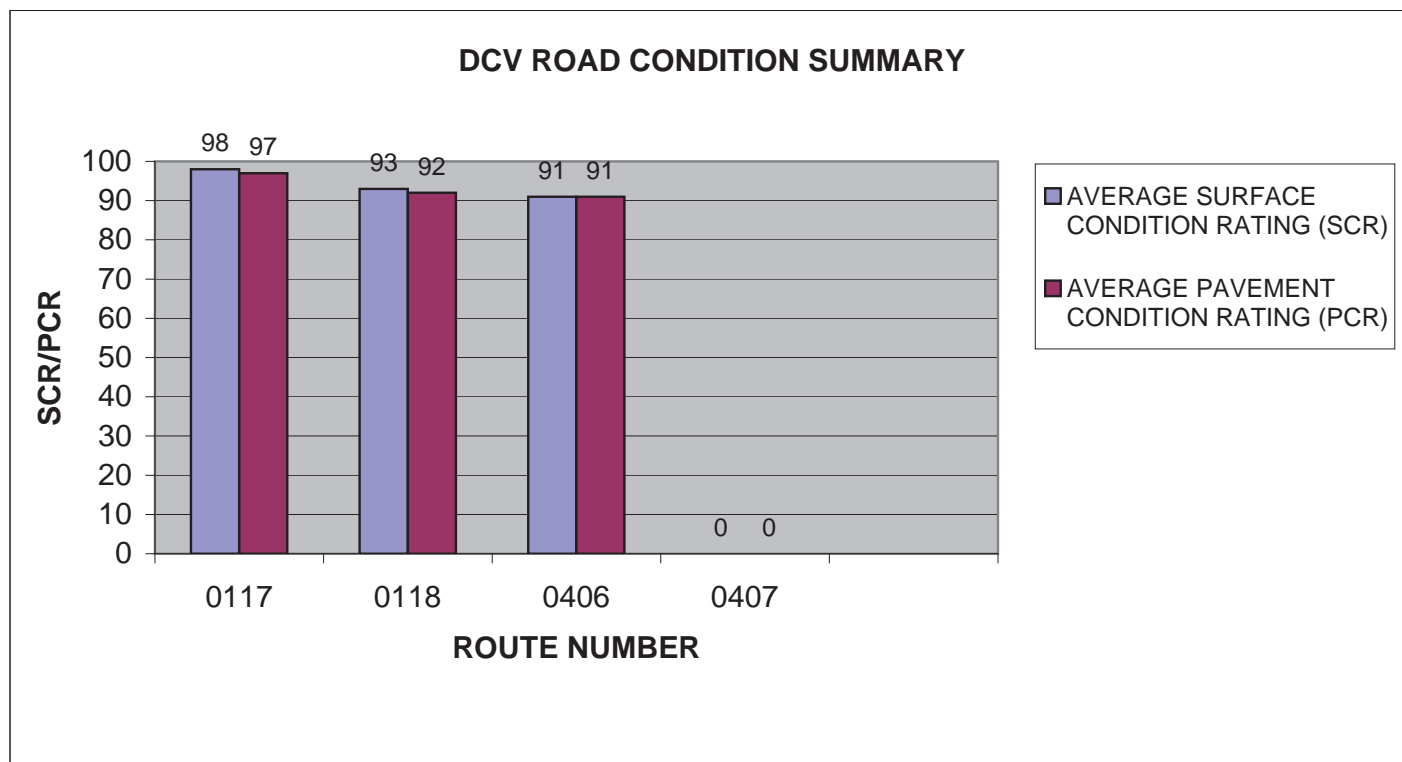
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)	1	7.56	ASPHALT	89	92
0101	BANDY CREEK ROAD	2	1.94	ASPHALT	89	92
0102	STABLE ROAD	2	0.18	ASPHALT	79	79
0105	EAST RIM OVERLOOK ROAD	2	0.69	ASPHALT	96	90
0110	BREWSTER BRIDGE ROAD	2	0.58	ASPHALT	0	36



BISO: 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)
0117	BLUE HERON ROAD (HWY 742)	2	3.14	ASPHALT	98	97
0118	BLUE HERON OVERLOOK ROAD	2	1.33	ASPHALT	93	92
0406	BLUE HERON RESIDENCE ACCESS ROAD	6	0.06	ASPHALT	91	91
0407	EAST RIM MAINTENANCE AREA ROAD	5	0.16	ASPHALT	0	0



Section 4

Park Route Location Maps

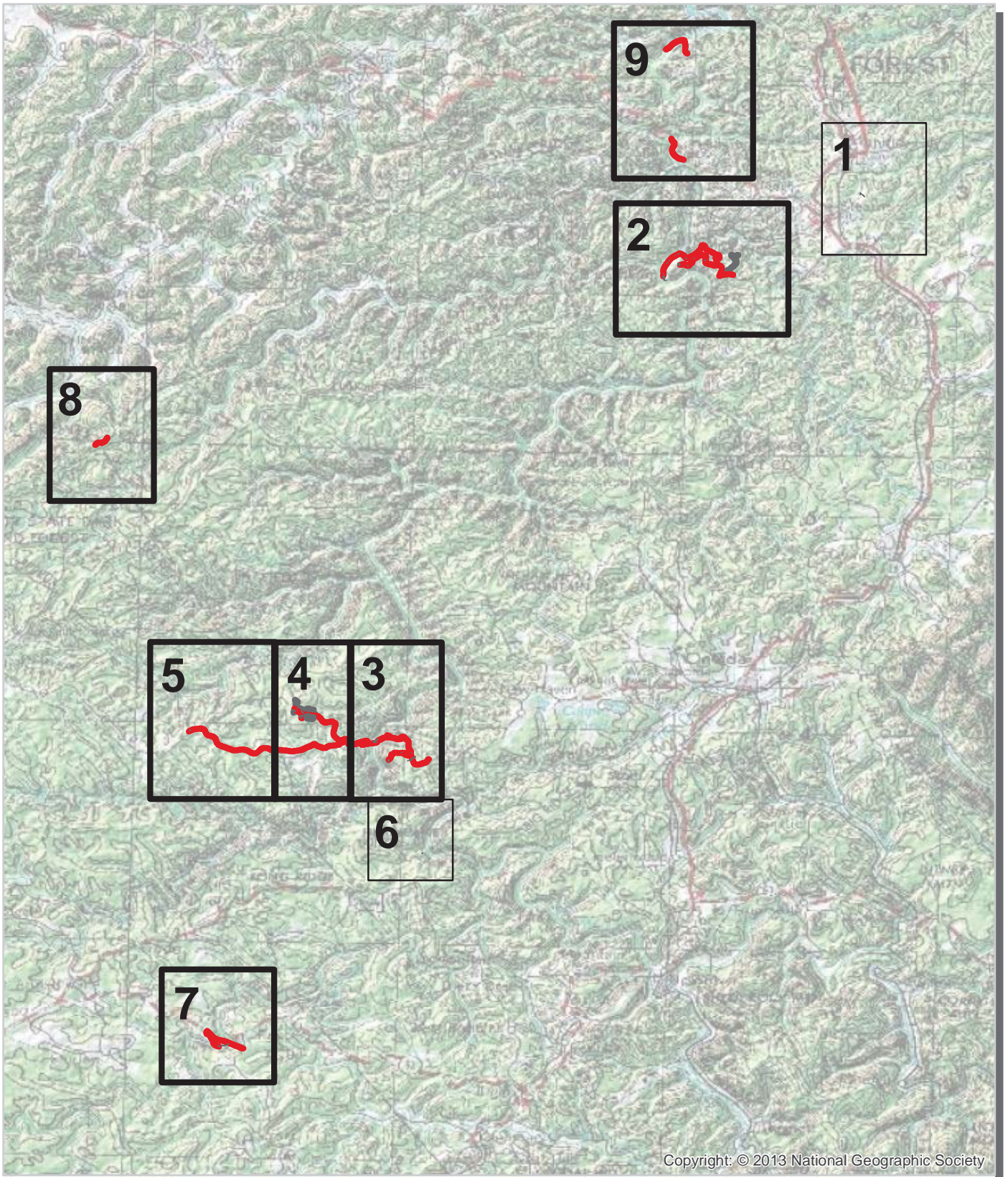


Big South Fork National River and Recreation Area



Federal Lands Highway
Road Inventory Program

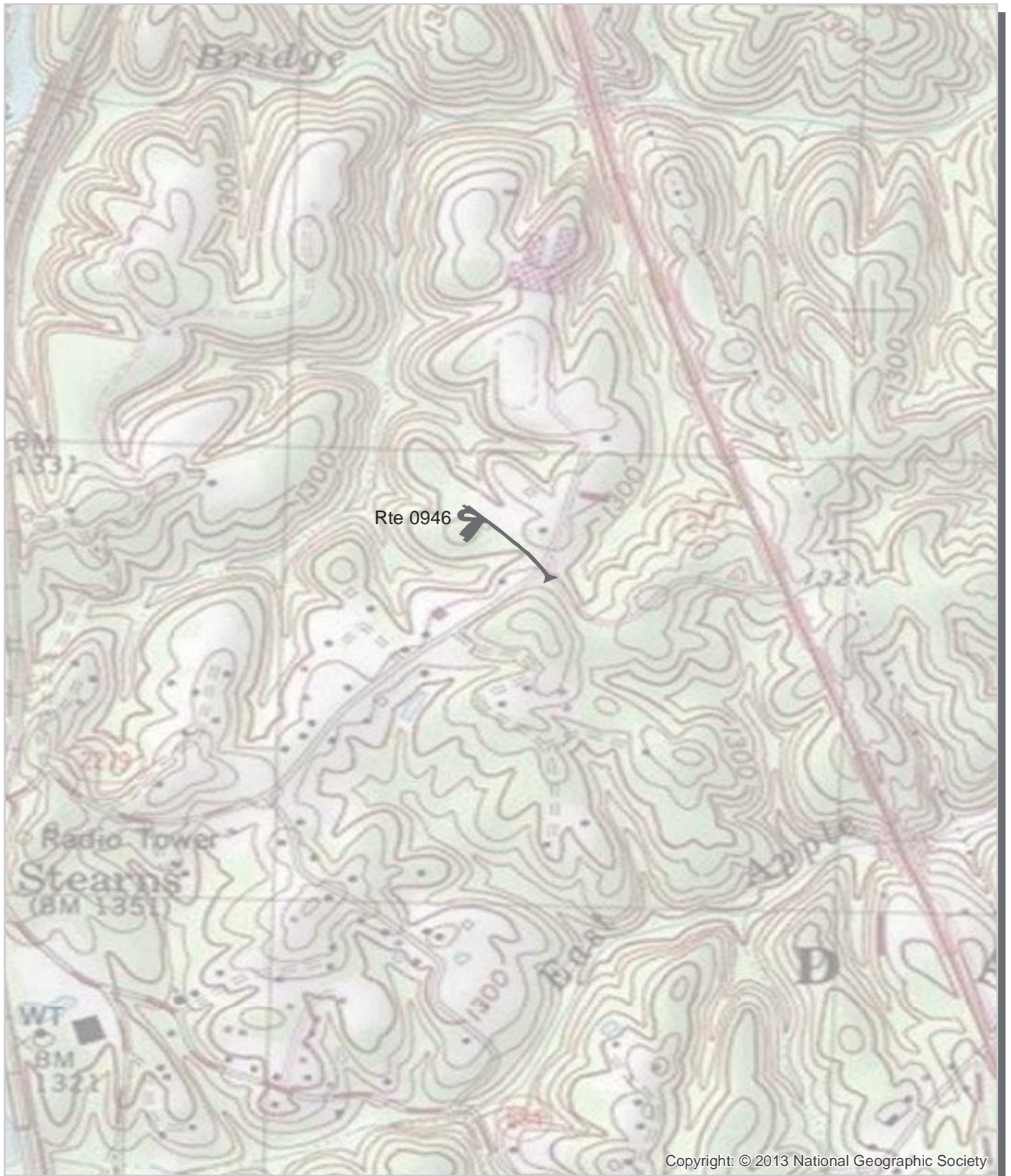
Big South Fork National River and Recreation Area Route Location Map Key Map



 Cycle 5 Collected Routes
 Routes Collected in Previous Cycle

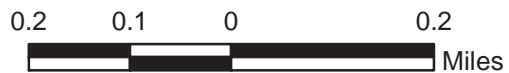


Big South Fork National River and Recreation Area Route Location Map Area 1

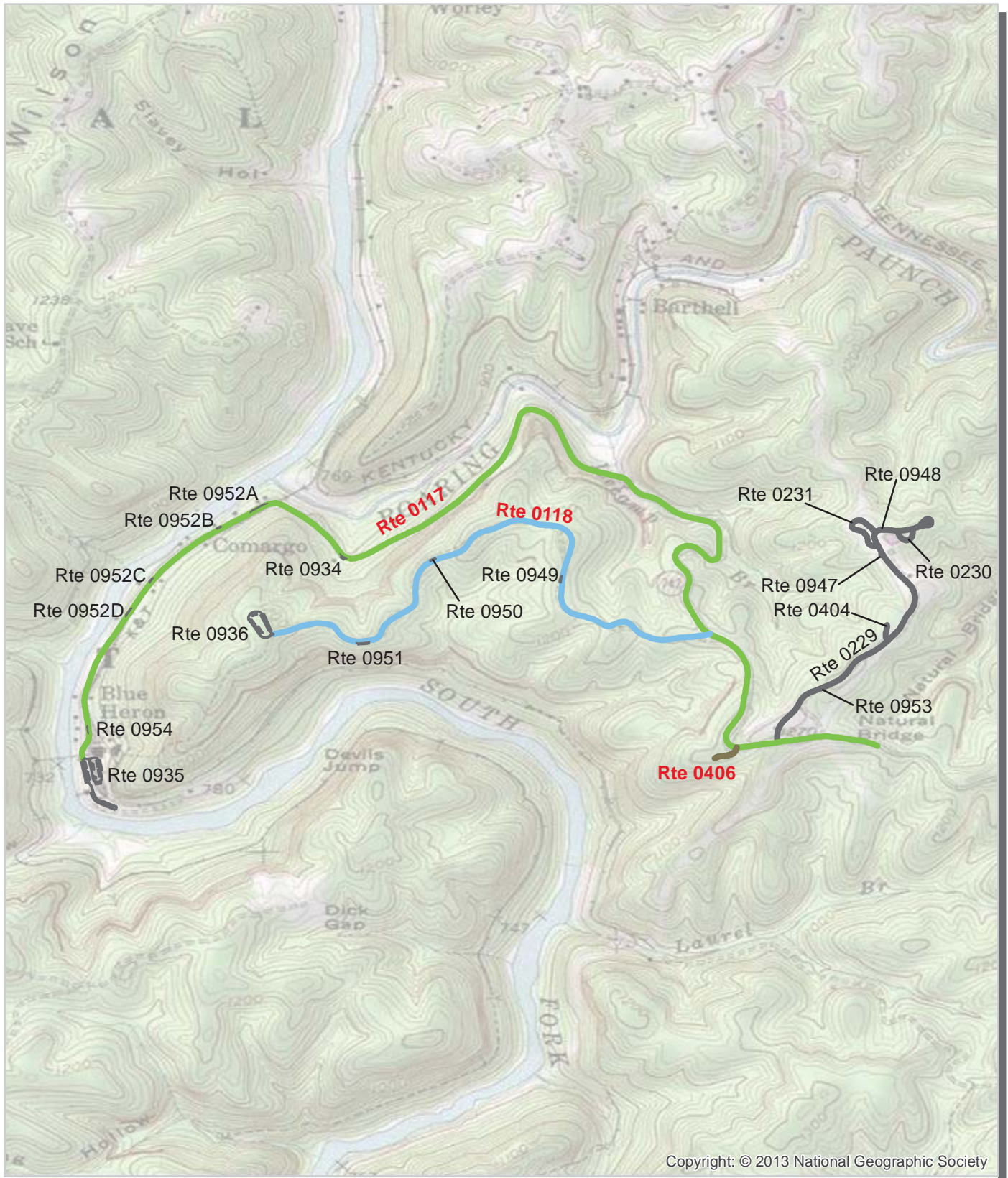


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

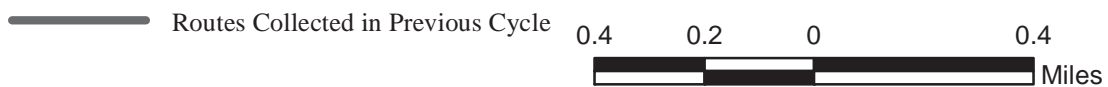


Big South Fork National River and Recreation Area Route Location Map Area 2

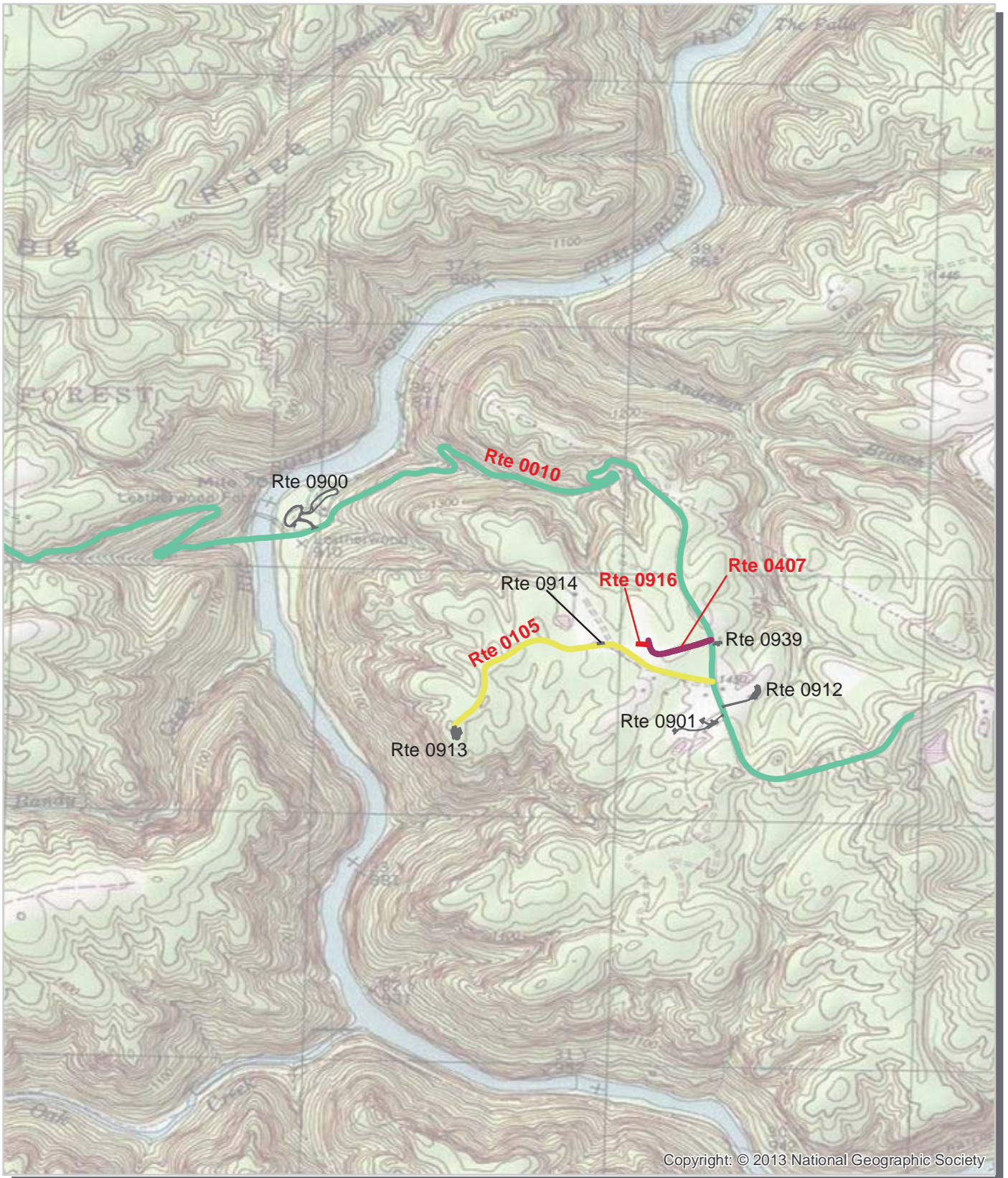


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Unique colors used to differentiate routes

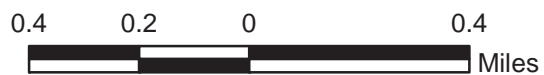


Big South Fork National River and Recreation Area Route Location Map Area 3

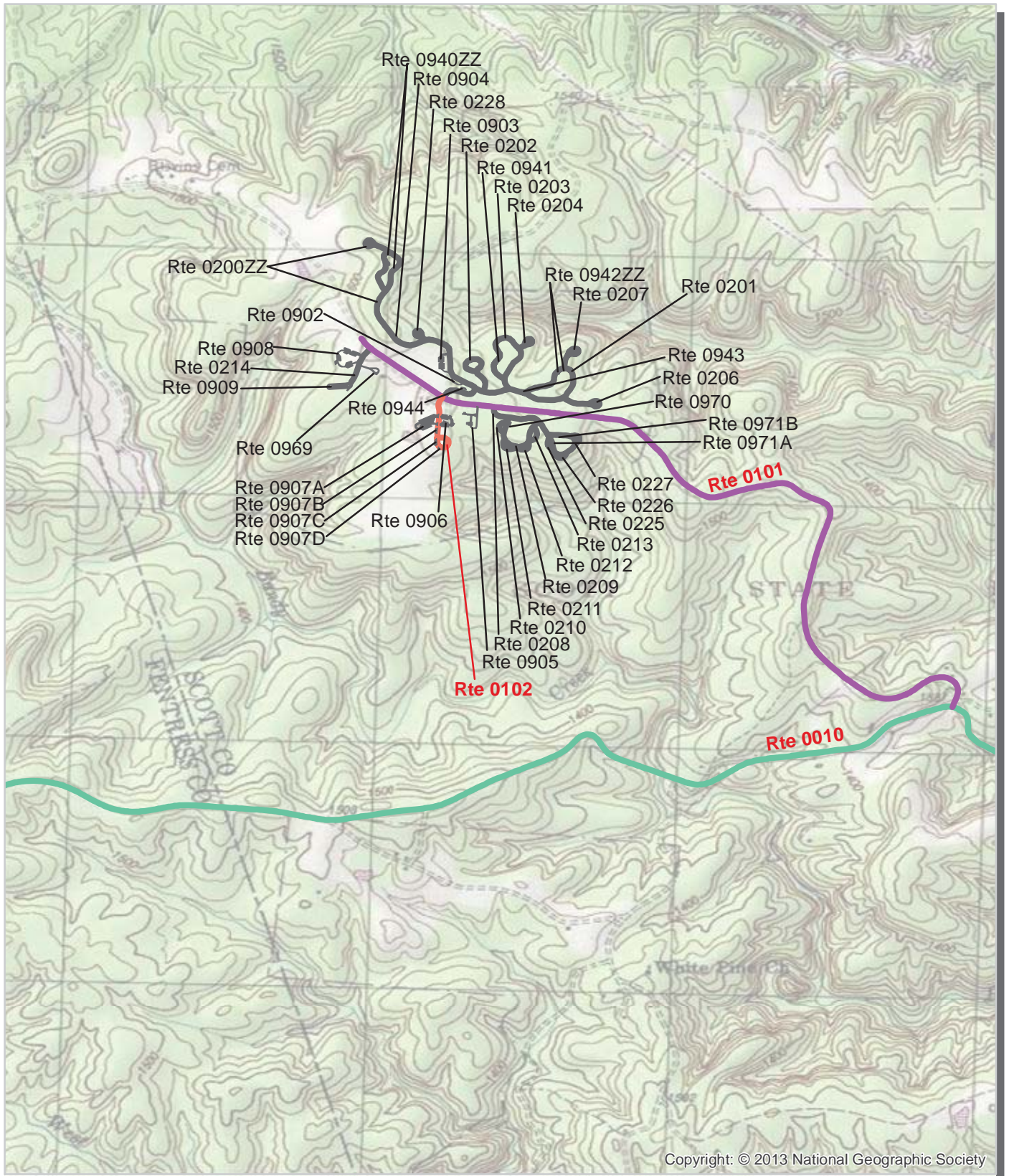


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



Big South Fork National River and Recreation Area Route Location Map Area 4



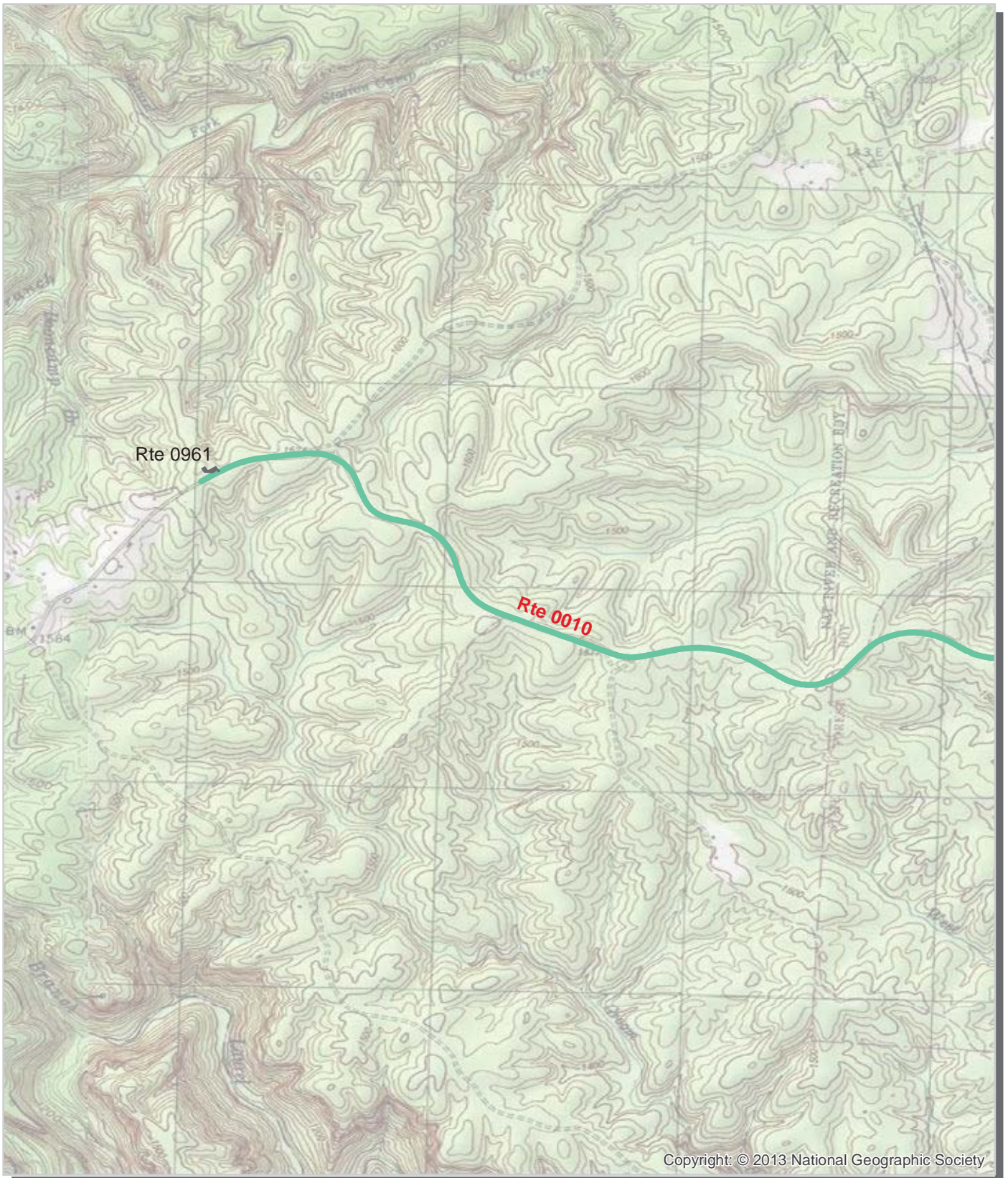
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Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

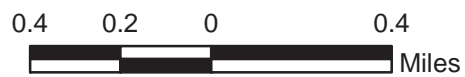


Big South Fork National River and Recreation Area Route Location Map Area 5

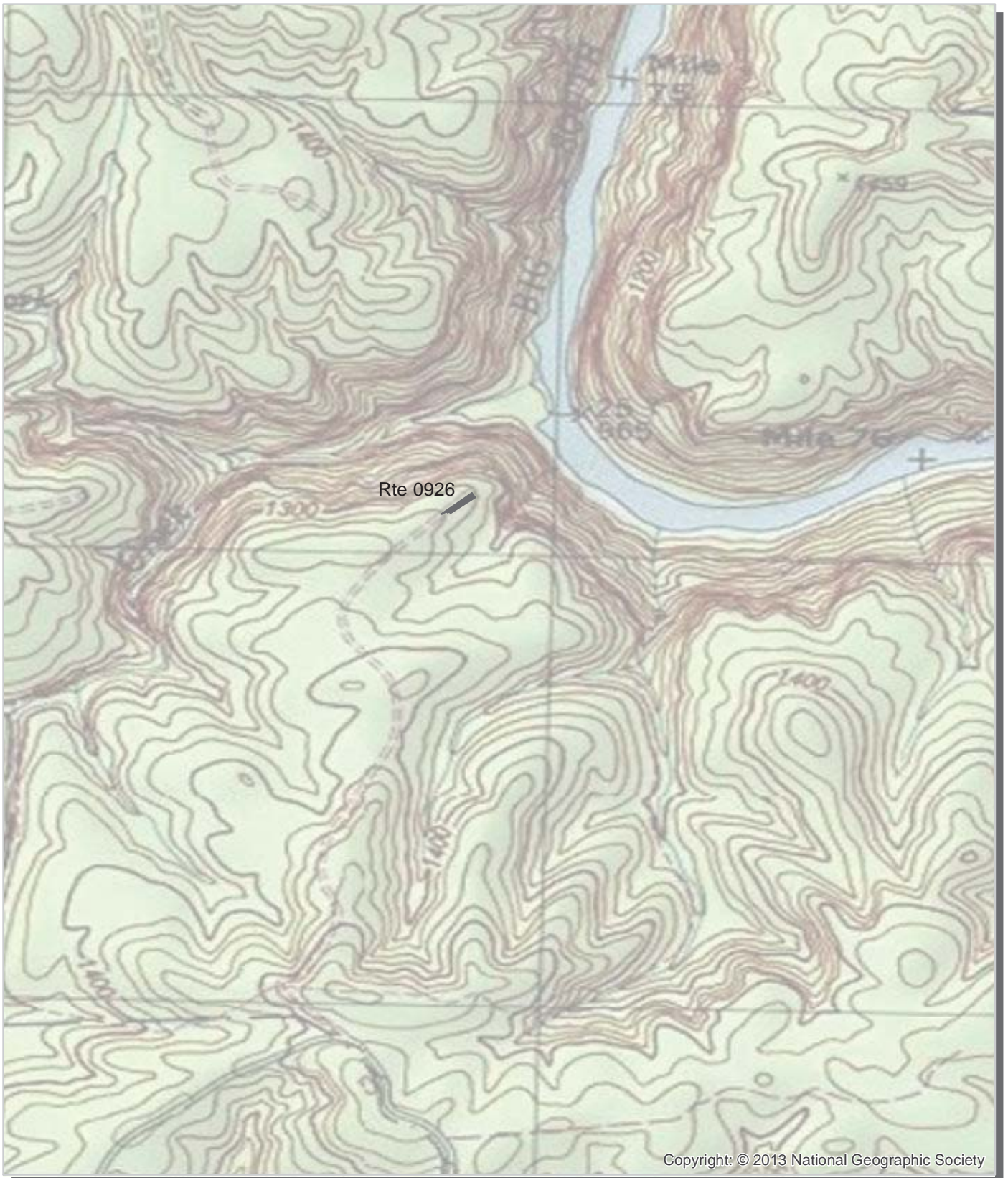


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

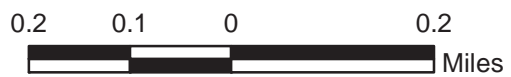


**Big South Fork National River and Recreation Area
Route Location Map
Area 6**

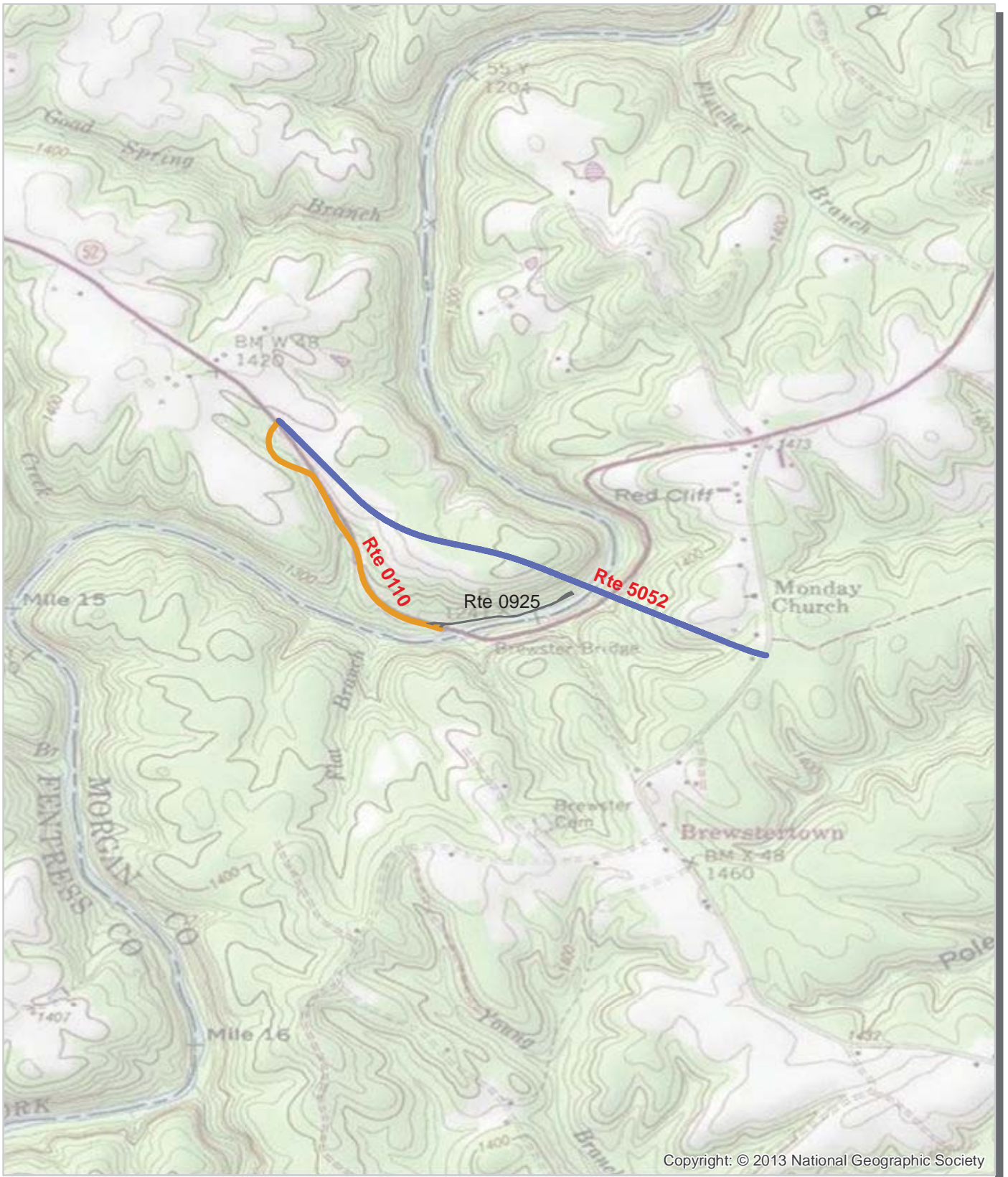


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

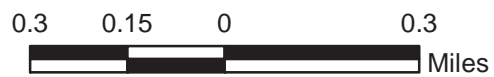


Big South Fork National River and Recreation Area Route Location Map Area 7

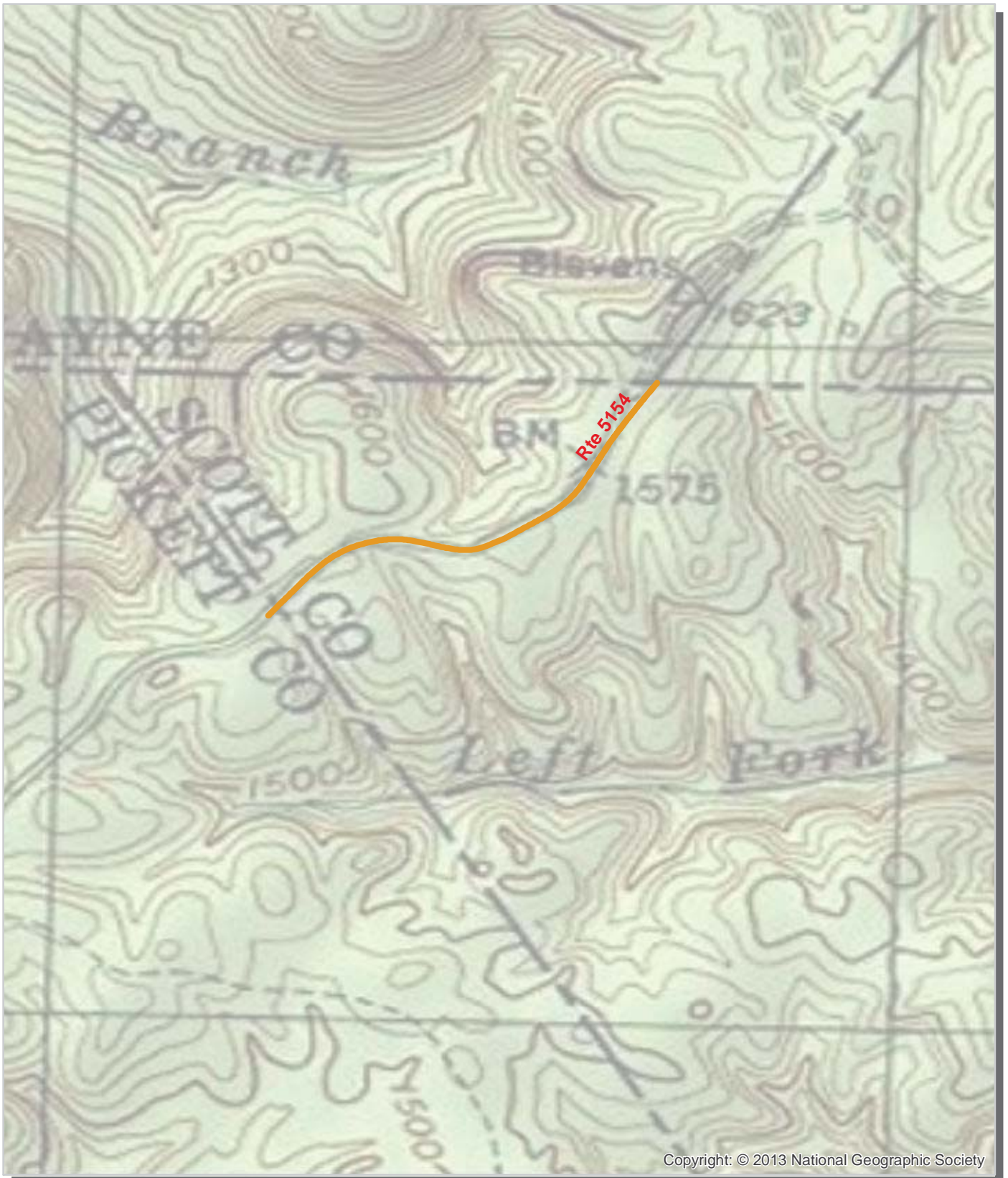


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

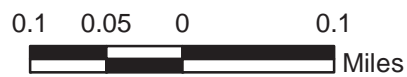


**Big South Fork National River and Recreation Area
Route Location Map
Area 8**

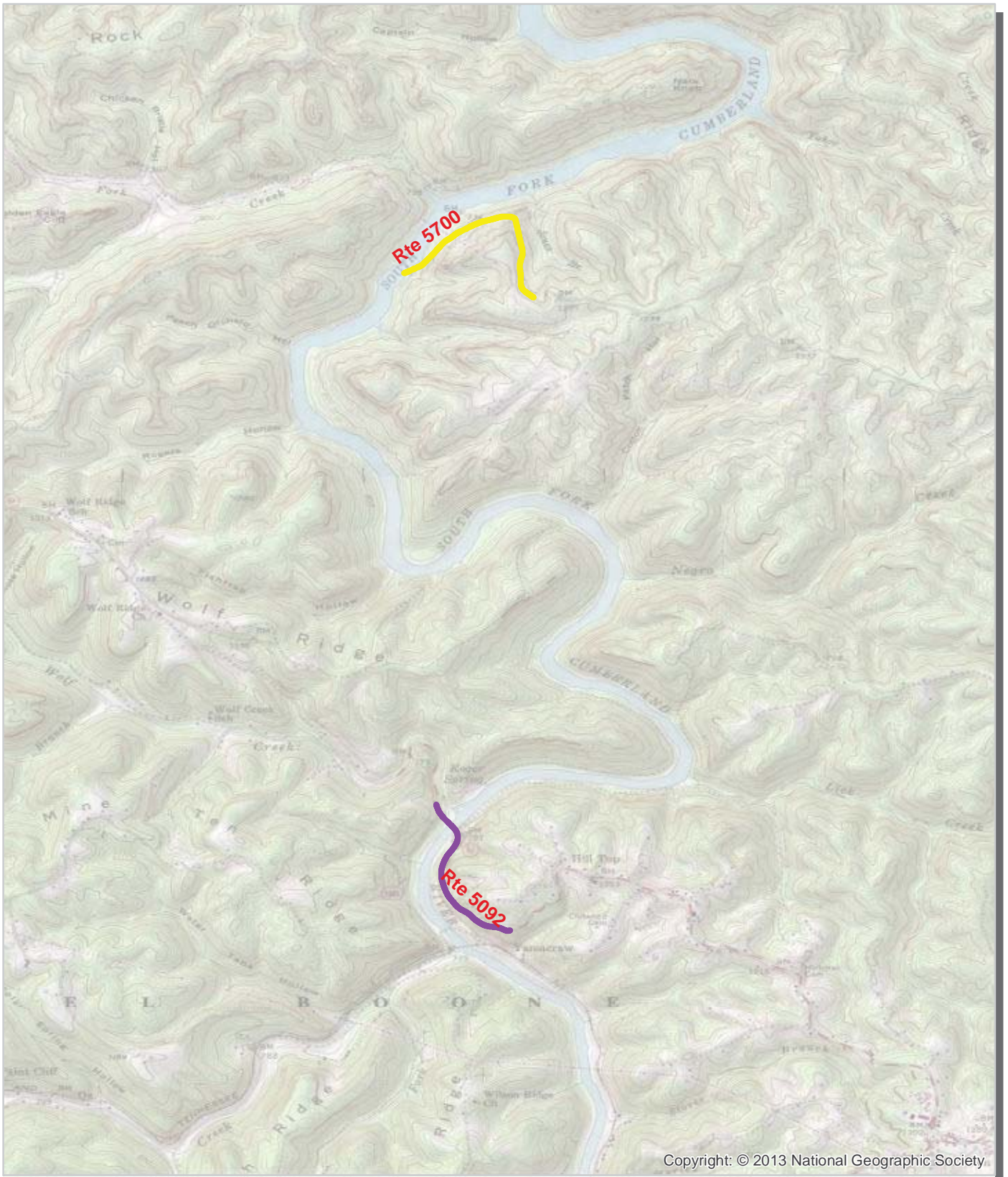


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

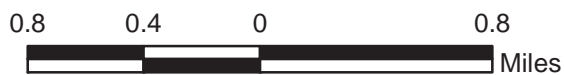


Big South Fork National River and Recreation Area Route Location Map Area 9

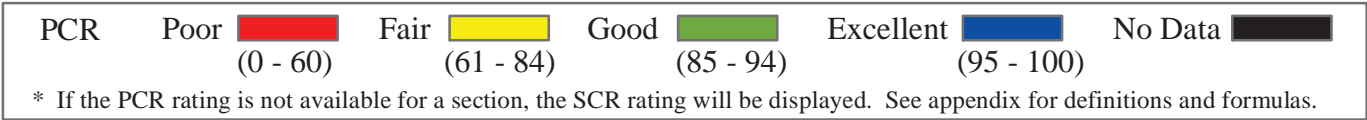
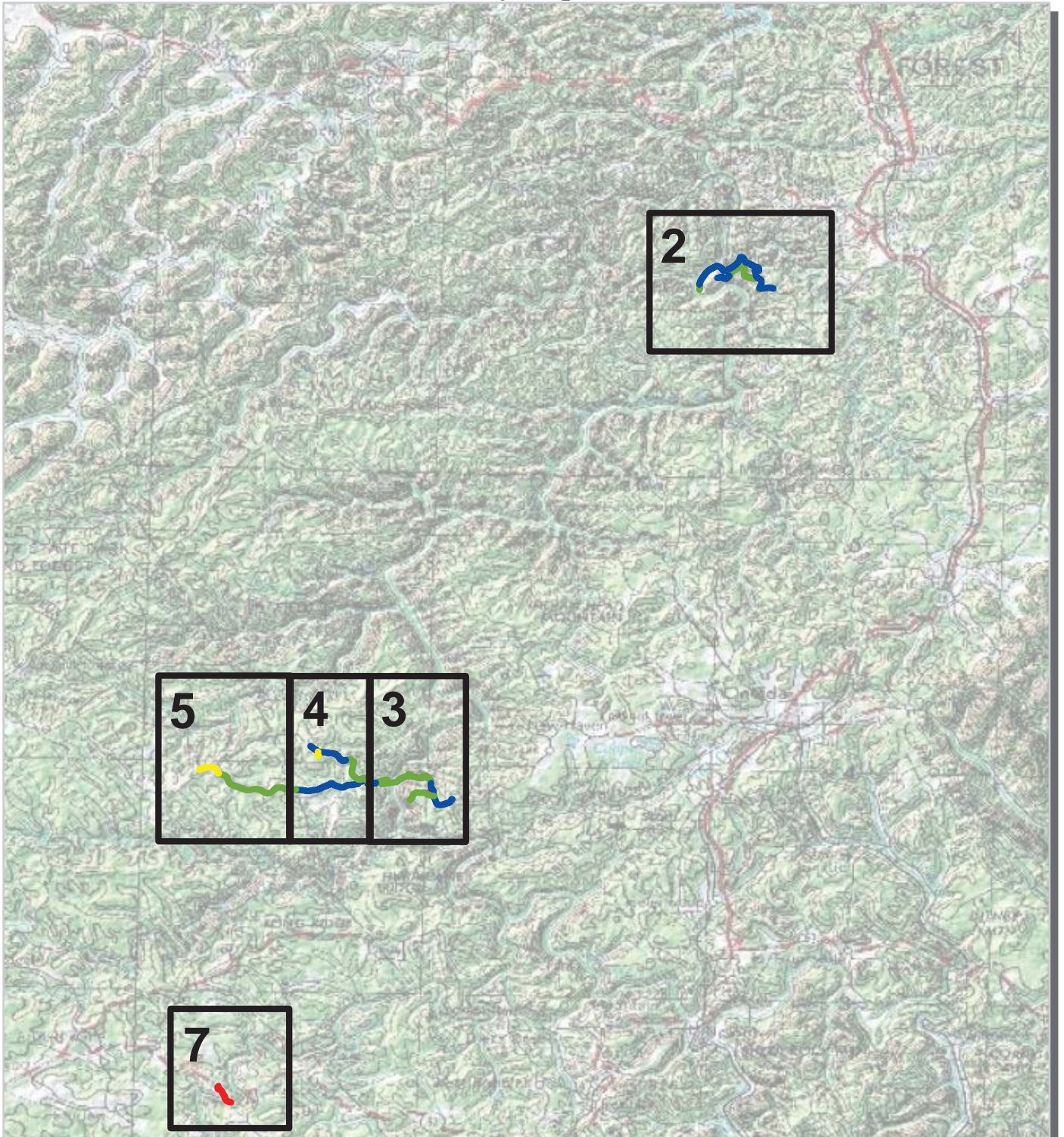


Unique colors used to differentiate routes

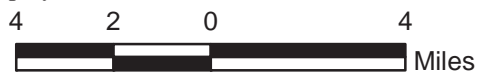
— Routes Collected in Previous Cycle



Big South Fork National River and Recreation Area Route Condition Map PCR - Mile by Mile Key Map



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

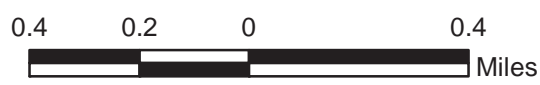
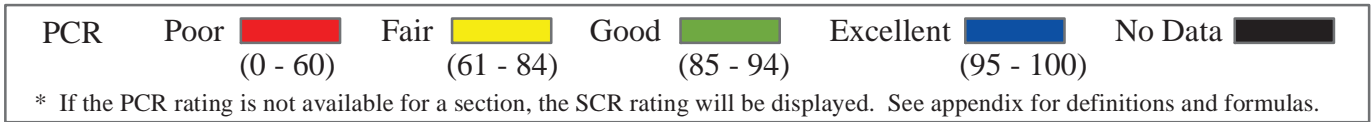
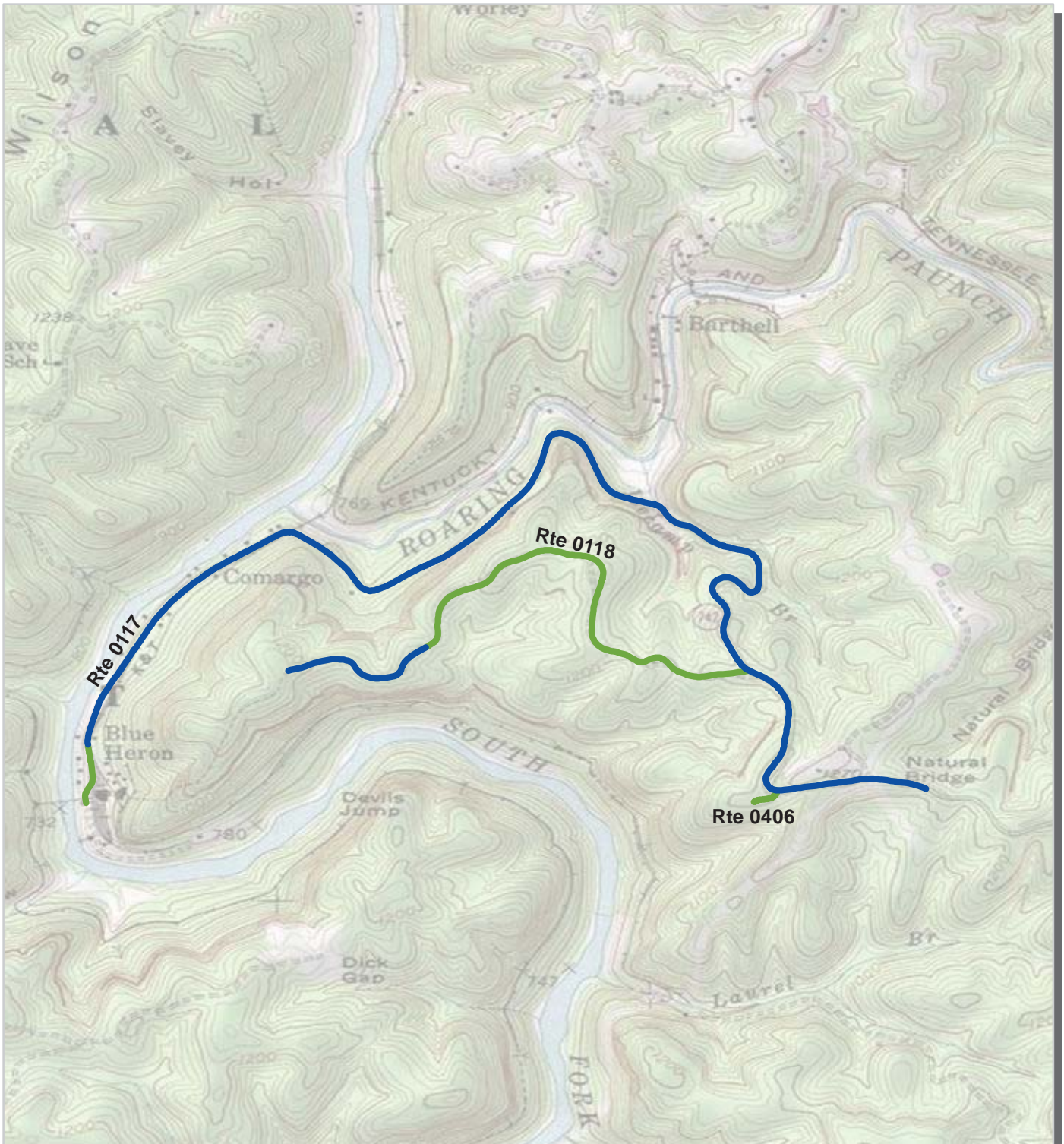


Big South Fork National River and Recreation Area

Route Condition Map

PCR - Mile by Mile

Area 2

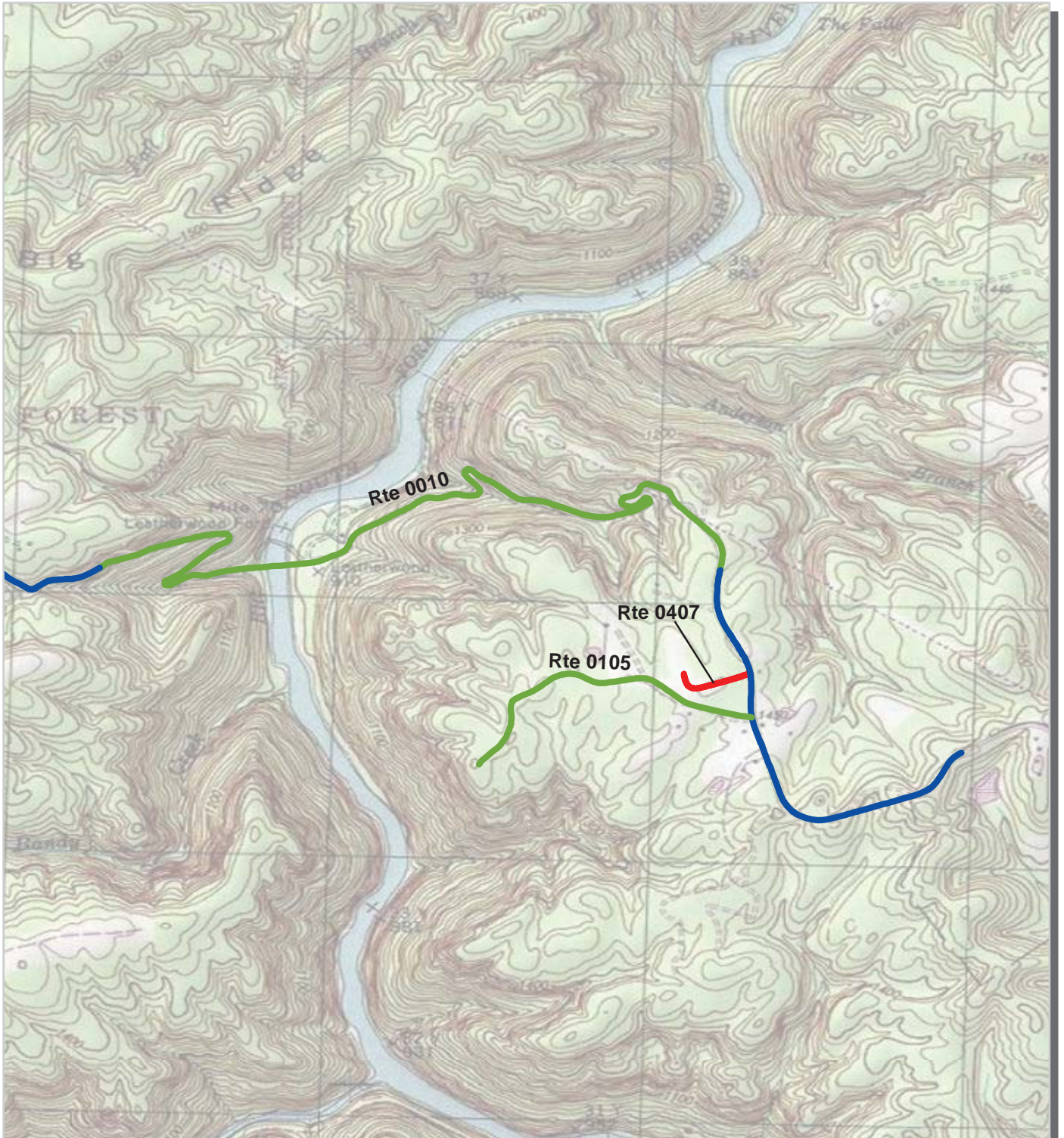


Big South Fork National River and Recreation Area

Route Condition Map

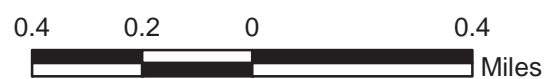
PCR - Mile by Mile

Area 3

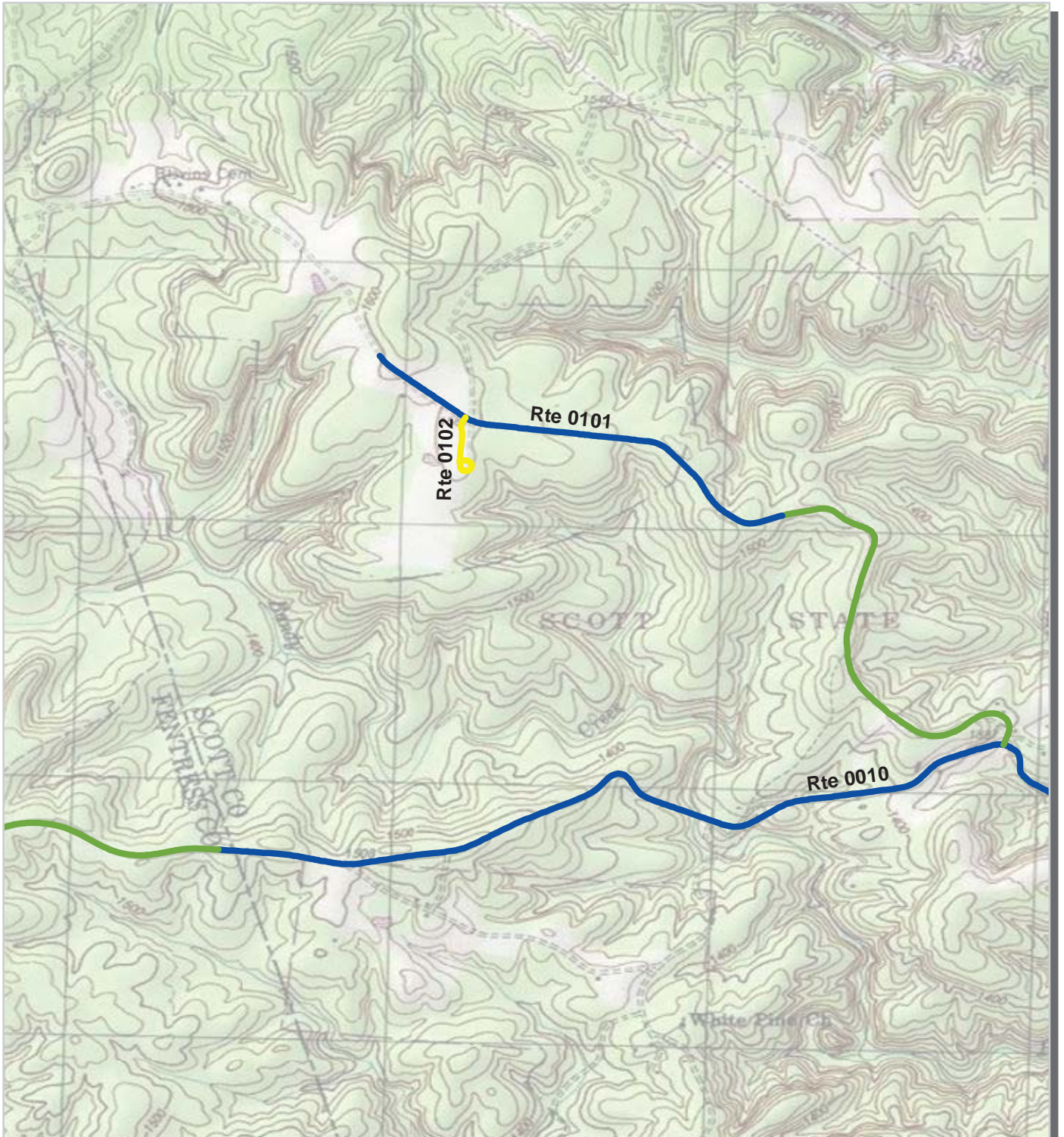


PCR	Poor		Fair		Good		Excellent		No Data	
	(0 - 60)		(61 - 84)		(85 - 94)		(95 - 100)			

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

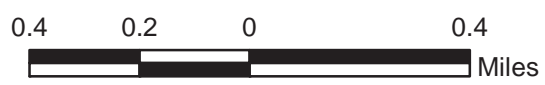


**Big South Fork National River and Recreation Area
Route Condition Map
PCR - Mile by Mile
Area 4**



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.

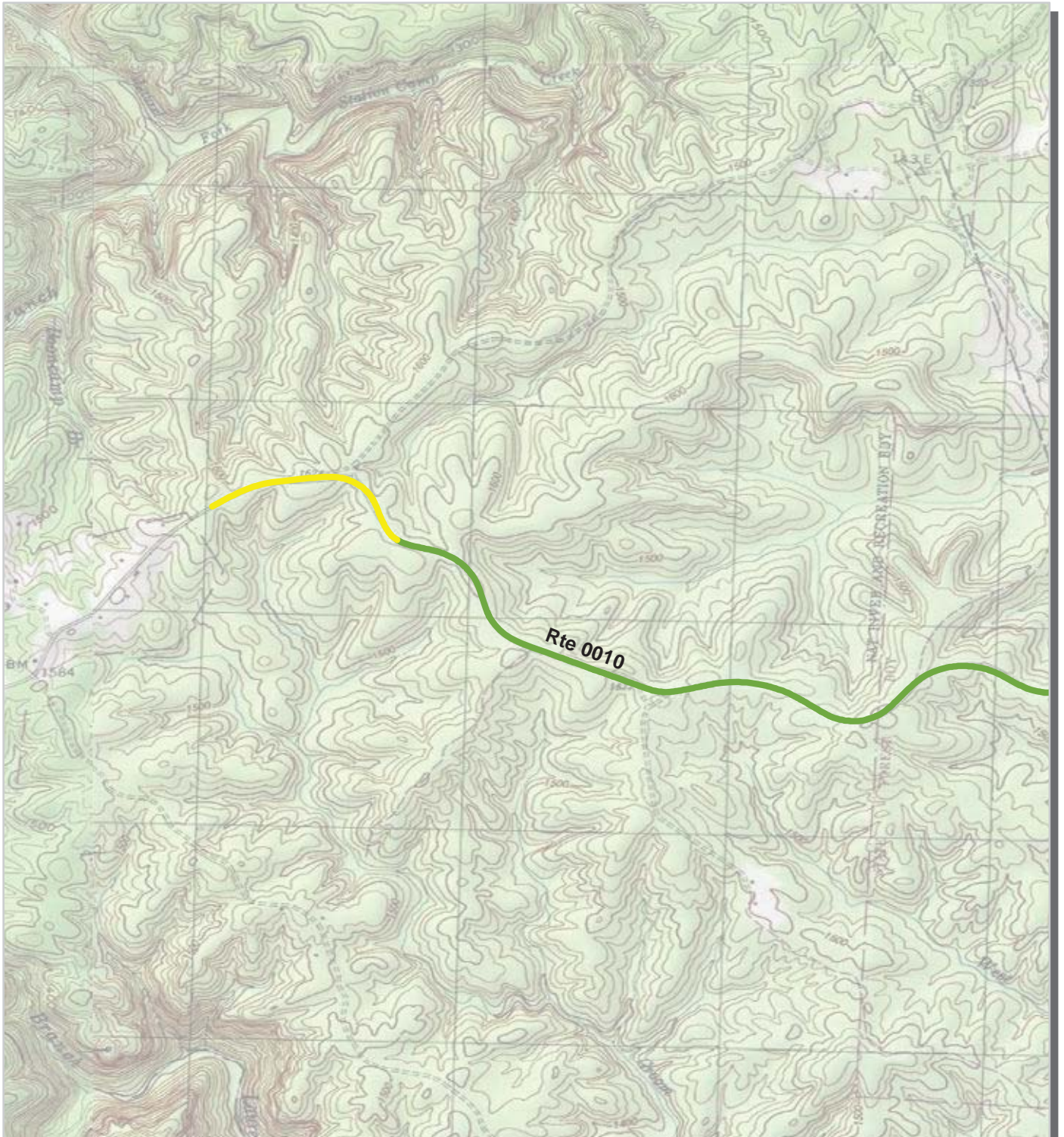


Big South Fork National River and Recreation Area

Route Condition Map

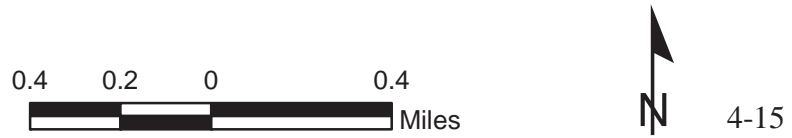
PCR - Mile by Mile

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.

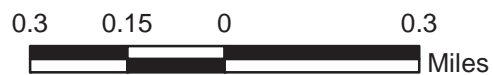
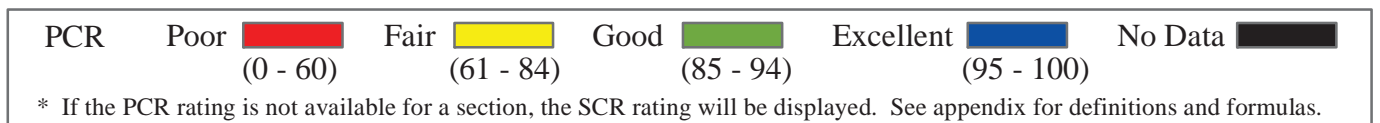
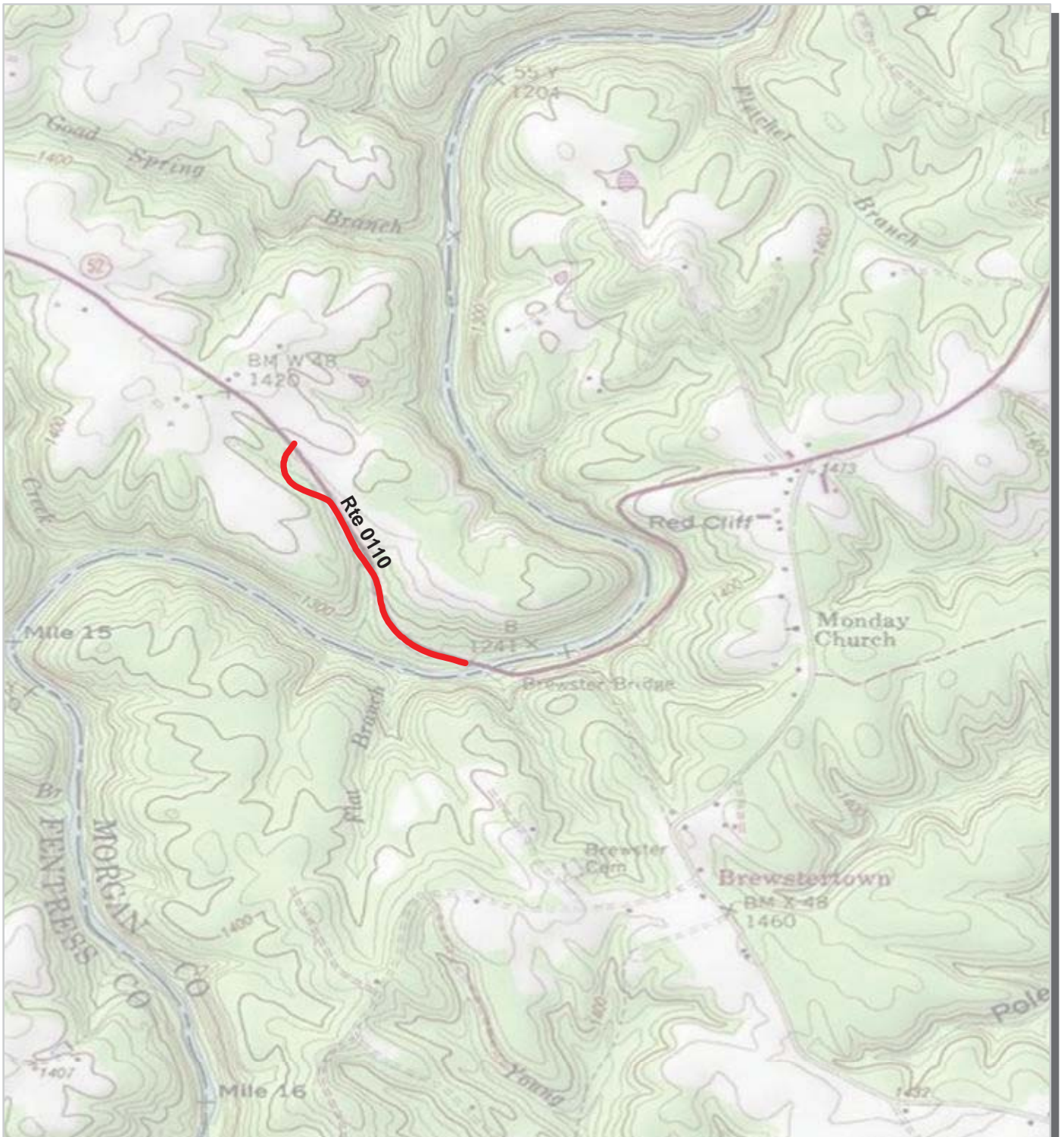


Big South Fork National River and Recreation Area

Route Condition Map

PCR - Mile by Mile

Area 7



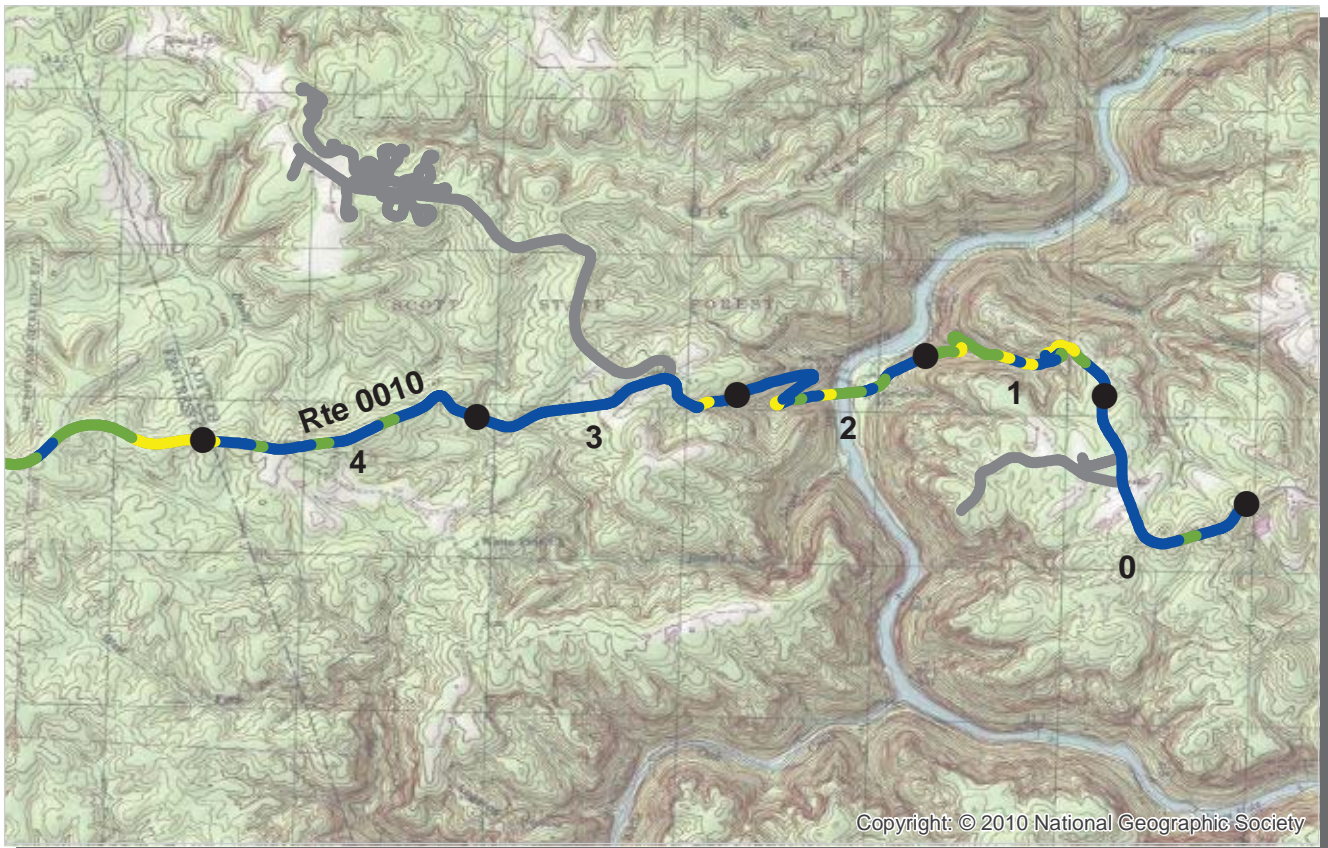
Section 5
Paved Route
Condition Rating Sheets



Big South Fork National River
and Recreation Area



Federal Lands Highway
Road Inventory Program



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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: 0010 LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 7.56 Miles

SOUTHEAST REGION

Section Number	0	1	2	3	4
Section Length (mi)	1.00	1.00	1.00	1.00	1.00
Cross Section Information					
Number of Lanes	2	2	2	2	2
Paved Width (ft)	25	26	27	28	29
Lane Width (ft)	11	10	10	10	10
Roadway Condition Information					
SCR (Surface Condition Rating)	98	96	96	98	92
PCR (Pavement Condition Rating)	99	91	94	99	95
Distress Index Values					
Structural Crack Index	98	96	96	99	92
Transverse Cracking Index	100	98	99	98	98
Patching Index	100	100	100	100	100
Rutting Index	100	98	98	99	99
Roughness Condition Index (RCI)	100	84	90	100	100

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 LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)



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 LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 7.56 Miles

SOUTHEAST REGION

<i>Section Number</i>	5	6	7		
<i>Section Length (mi)</i>	1.00	1.00	0.56		
<i>Cross Section Information</i>					
Number of Lanes	2	2	2		
Paved Width (ft)	29	29	29		
Lane Width (ft)	10	10	10		
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	82	86	42		
PCR (Pavement Condition Rating)	89	92	65		
<i>Distress Index Values</i>					
Structural Crack Index	82	86	42		
Transverse Cracking Index	94	96	93		
Patching Index	100	100	100		
Rutting Index	100	100	100		
Roughness Condition Index (RCI)	100	100	100		

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 LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)



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: 0101 BANDY CREEK ROAD
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 1.94 Miles

SOUTHEAST REGION

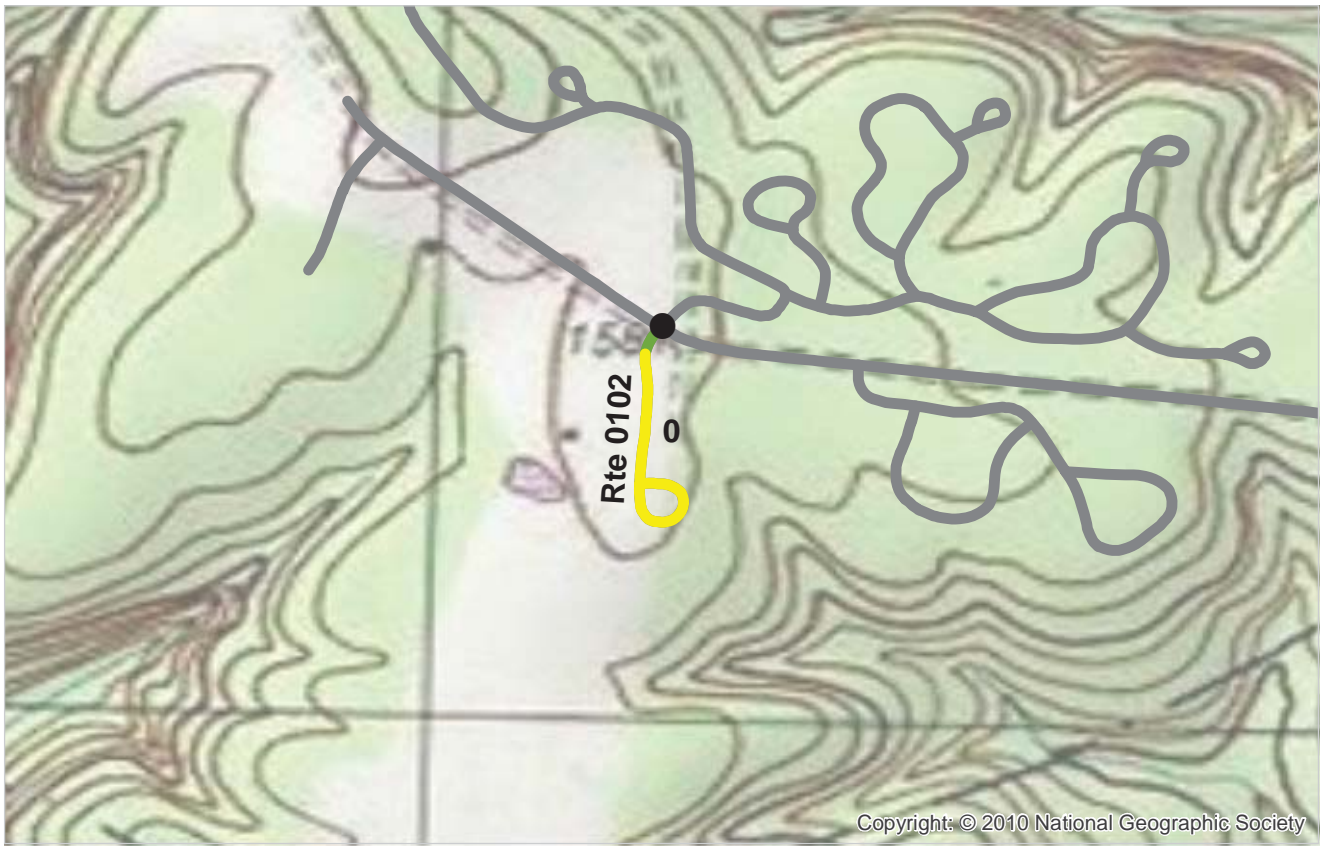
Section Number	0	1			
Section Length (mi)	1.00	0.94			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	30	29			
Lane Width (ft)	12	12			
Roadway Condition Information					
SCR (Surface Condition Rating)	86	93			
PCR (Pavement Condition Rating)	90	95			
Distress Index Values					
Structural Crack Index	86	93			
Transverse Cracking Index	90	95			
Patching Index	100	100			
Rutting Index	99	99			
Roughness Condition Index (RCI)	95	97			

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: 0101 BANDY CREEK 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: 0102 STABLE ROAD

BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 0.18 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.18				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	19				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	79				
PCR (Pavement Condition Rating)	79				
Distress Index Values					
Structural Crack Index	79				
Transverse Cracking Index	85				
Patching Index	100				
Rutting Index	94				
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: 0102 STABLE 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: 0105 EAST RIM OVERLOOK ROAD
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 0.69 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.69				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	20				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	96				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	96				
Roughness Condition Index (RCI)	82				

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: 0105 EAST RIM OVERLOOK 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: 0110 BREWSTER BRIDGE ROAD

BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 0.58 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.58				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	24				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	36				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	94				
Roughness Condition Index (RCI)	90				

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: 0110 BREWSTER BRIDGE 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: 0117 BLUE HERON ROAD (HWY 742)
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 10/31/2012
TOTAL LENGTH: 3.14 Miles

SOUTHEAST REGION

Section Number	0	1	2	3
Section Length (mi)	1.00	1.00	1.00	0.14
Cross Section Information				
Number of Lanes	2	2	2	2
Paved Width (ft)	26	27	25	22
Lane Width (ft)	12	11	11	11
Roadway Condition Information				
SCR (Surface Condition Rating)	97	98	98	97
PCR (Pavement Condition Rating)	97	98	98	88
Distress Index Values				
Structural Crack Index	97	98	98	100
Transverse Cracking Index	100	100	100	100
Patching Index	100	100	100	97
Rutting Index	99	99	98	99
Roughness Condition Index (RCI)	97	98	98	74

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: 0117 BLUE HERON ROAD (HWY 742)



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: 0118 BLUE HERON OVERLOOK ROAD
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 10/31/2012
TOTAL LENGTH: 1.33 Miles

SOUTHEAST REGION

<i>Section Number</i>	0	1			
<i>Section Length (mi)</i>	1.00	0.33			
<i>Cross Section Information</i>					
Number of Lanes	2	2			
Paved Width (ft)	20	20			
Lane Width (ft)	10	10			
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	91	99			
PCR (Pavement Condition Rating)	91	97			
<i>Distress Index Values</i>					
Structural Crack Index	91	99			
Transverse Cracking Index	100	100			
Patching Index	100	100			
Rutting Index	99	99			
Roughness Condition Index (RCI)	91	93			

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: 0118 BLUE HERON OVERLOOK 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: 0406 BLUE HERON RESIDENCE ACCESS ROAD
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 10/31/2012
TOTAL LENGTH: 0.06 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.06				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	91				
PCR (Pavement Condition Rating)	91				
Distress Index Values					
Structural Crack Index	97				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	91				
Roughness Condition Index (RCI)	NC				

NOTES:

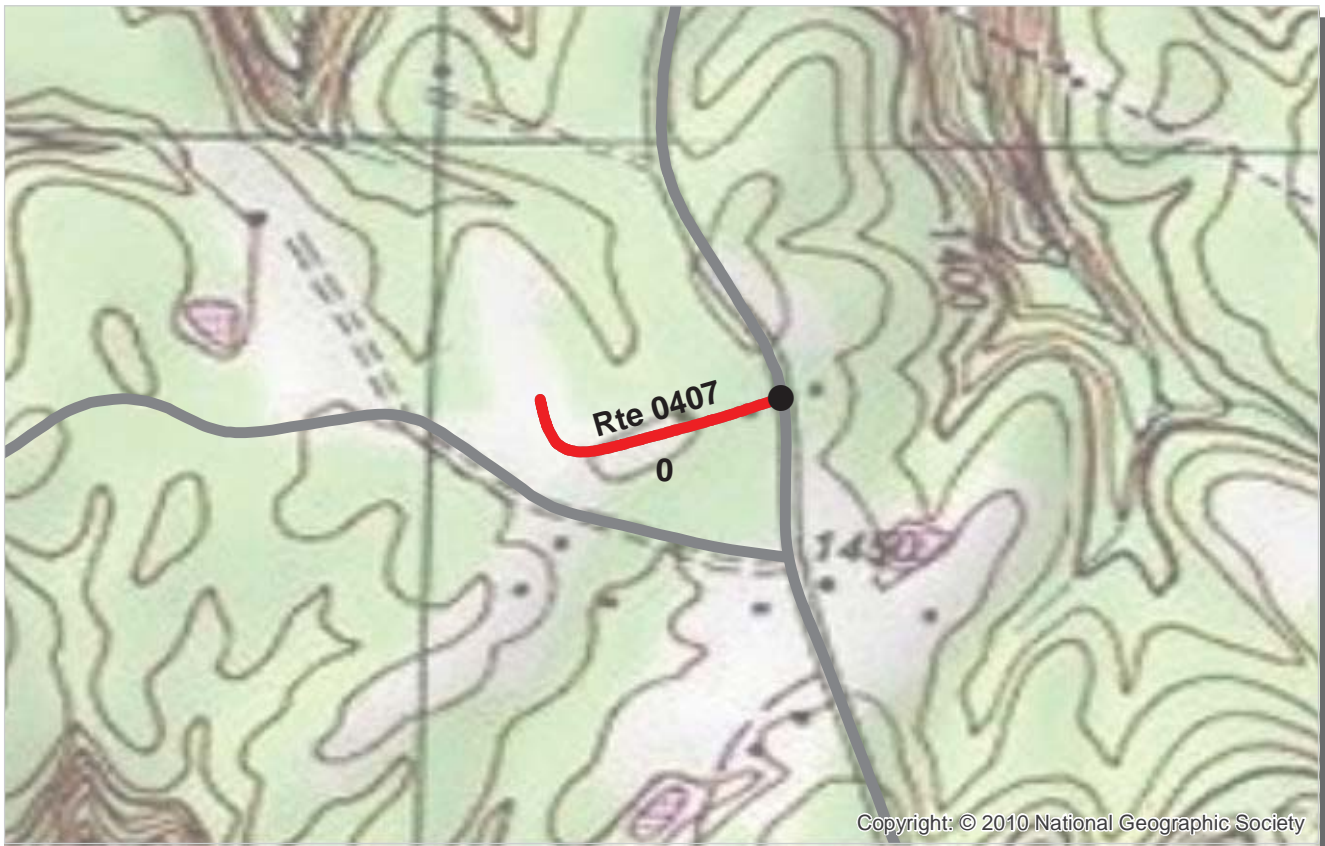
Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0406 BLUE HERON RESIDENCE 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: 0407 EAST RIM MAINTENANCE AREA ROAD
BISO : BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

COLLECTED: 11/1/2012
TOTAL LENGTH: 0.16 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.16				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	0				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	71				
Roughness Condition Index (RCI)	NC				

NOTES:

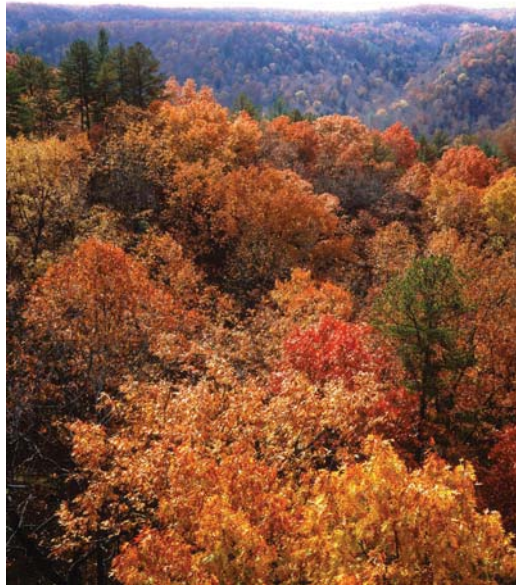
Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
 See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable



ROUTE: 0407 EAST RIM MAINTENANCE AREA ROAD

Section 6
Manually Rated Paved Route
Condition Rating Sheets



Big South Fork National River
and Recreation Area



Federal Lands Highway
Road Inventory Program

MANUALLY RATED ROUTE CONDITION RATING SHEETS

This park is classified as a Large Park. Therefore, in Cycle 5, no manually rated routes were collected unless the route was modified or previously uncollected by RIP.

Section 7
Parking Area
Condition Rating Sheets



Big South Fork National River
and Recreation Area



Federal Lands Highway
Road Inventory Program

BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA

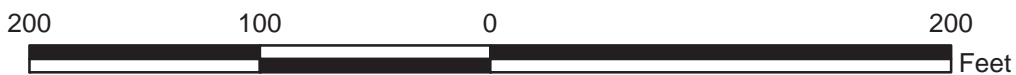
Route 0916

MAINTENANCE AREA PARKING

FROM ROUTE 0407 (EAST RIM MAINTENANCE AREA ROAD) AT MP 0.740
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0916	NONPUBLIC	5/23/2012	7,527	0.13	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



Section 8

Route Maintenance Features Summaries



Big South Fork National River and Recreation Area



Federal Lands Highway
Road Inventory Program

BISO: 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 0406 BLUE HERON RESIDENCE ACCESS ROAD	ROUTE 0407 EAST RIM MAINTENANCE AREA ROAD	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	1	EACH
GUARD/GUIDE RAIL	0	0	LINEAR FEET
CABLE	0	0	LINEAR FEET
NON-CABLE	0	0	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	3	5	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	4	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



**Big South Fork National River
and Recreation Area**



**Federal Lands Highway
Road Inventory Program**

BISO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0406: BLUE HERON RESIDENCE ACCESS ROAD

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 0117 (BLUE HERON ROAD (HWY 742))
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0117 (BLUE HERON ROAD (HWY 742))
0.000	0.000	INTERSECTION	LEFT	ROUTE 0117 (BLUE HERON ROAD (HWY 742))
0.056	0.056	INTERSECTION	N/A	DEAD END (RESIDENCE)
0.056	0.056	ROUTE END	N/A	TO RESIDENCE

BISO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0407: EAST RIM MAINTENANCE AREA ROAD

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 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297)) AT MP 0.64
0.000	0.000	INTERSECTION	LEFT	ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297))
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0010 (LEATHERWOOD FORD ROAD (STATE HIGHWAY 297))
0.000	0.000	SIGN	N/A	GUIDE, RANGER STATION
0.006	0.006	SIGN	LEFT	REGULATORY, STOP
0.122	0.122	INTERSECTION	LEFT	UNPAVED PARKING
0.144	0.144	SIGN	RIGHT	GUIDE, MAINTENANCE COMPLEX
0.150	0.150	INTERSECTION	LEFT	ROUTE 0916 (MAINTENANCE AREA PARKING)
0.152	0.152	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.156	0.156	GATE	N/A	N/A
0.158	0.158	INTERSECTION	N/A	ROUTE 0917 (MAINTENANCE AREA)
0.158	0.158	ROUTE END	N/A	TO ROUTE 0917 (MAINTENANCE AREA)

Section 10 Appendix



Big South Fork National River and Recreation Area



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.

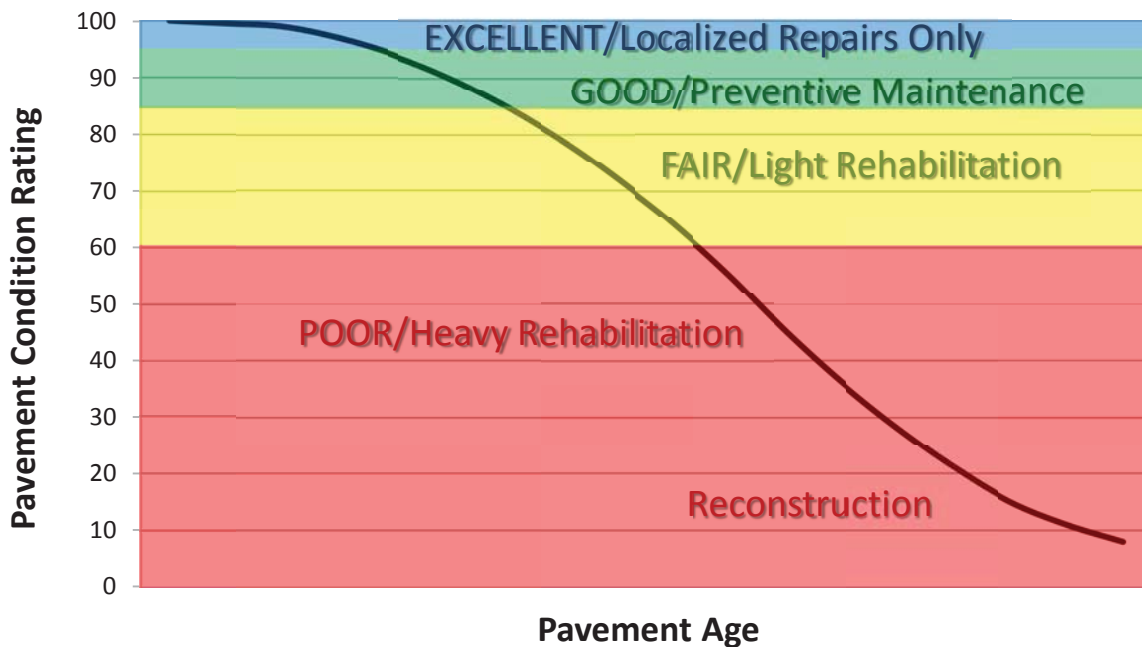
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

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.

Condition Categories and Treatments



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 SCR 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