



**national park service**

**The Road Inventory  
of  
Bryce Canyon National Park  
BRCA – 1330  
Cycle 4**



**Prepared By:  
Federal Highway Administration  
Road Inventory Program  
Cycle 4**



# Bryce Canyon National Park in Utah





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# Bryce Canyon National Park



## **Section 1** **Introduction**

## INTRODUCTION

**Background:** In 1976, the National Park Service (NPS) and the Federal Highway Administration (FHWA) entered into a Memorandum of Agreement (MOA), establishing the Road Inventory Program (RIP). In 1980, the NPS and the FHWA terminated the 1976 MOA and entered into a new MOA that provided for the completion of the initial phase of the RIP. The purpose of the RIP, per the 1980 MOA was to maintain and update RIP data in order to develop long-range costs and programs to bring National Park Service (NPS) roads up to, or to maintain, designated standards, and establish a maintenance management program.

The FHWA's Federal Lands Highway (FLH) was assigned the task of identifying condition deficiencies and corrective priorities along with associated corrective costs, inventorying maintenance features (e.g., culverts, signs, guardrail, etc.), summarizing the data and findings in a report and providing a photographic record of the road system.

The FLH completed the initial phase of the RIP in the early 1980's. As a result of this effort, each park received a RIP book, also known as the "Brown Book," that included the information collected during this initial RIP phase.

In an effort to maintain and update the RIP data, a cyclical data collection and reporting process was reestablished in the 1990's. The FLH completed two cycles of RIP data collection between 1994 and 2001. Cycle 1 was collected in 44 large parks from 1994 to 1996. This data was found to be unusable for comparison to future cycles. Cycle 2 data was collected from March 1997 to January 2001 in 79 large parks and 5 small parks containing 4,874 route miles. Each park received a copy of a Cycle 2 RIP Report, also known as the "Blue Book". Cycle 3 was completed from 2001 through 2004, and included data collection in all parks that contain pavement.

Since 1984, the RIP Program has been funded through the Federal Lands Highway Program's Park Roads and Parkways (PRP) Program. Currently, the NPS Washington Headquarters' Park Facility Management Division is responsible for coordinating the RIP program with the FLH. The FLH Washington office coordinates policy and prepares national reports and needs assessment studies for congress.

In 1998, the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) amended Title 23 U.S.C., and inserted Section 204(a)(6) which requires the Federal Highway Administration and the National Park Service, to develop, by rule, a Pavement Management System (PMS) for the park roads and parkways serving the National Park System. As a result of the requirements in TEA-21, the NPS and FHWA are in the process of developing a PMS. The PMS will assist the decision-makers in effectively spending limited PRP Program funds. The PMS

will provide information for planning and programming road maintenance, rehabilitation, and reconstruction activities. RIP data will provide the basic information for this system.

Key information included in the RIP is the mileage inventory and condition assessments accomplished by the RIP Program. The mileage and condition data are used in the current allocation formula of PRP Program funds.

**RIP Cycle 4:** Cycle 4 data collection was initiated in spring 2006, where 86 large parks, consisting of 5,553 route miles and 6,232 paved parking areas, were selected as a representative sample of the entire NPS paved road network. Cycle 4 is scheduled for completion in spring 2009 and will serve the PMS in further development of its pavement preservation techniques.

In the Cycle 4 Reports, a general condition rating of excellent, good, fair and poor is ascribed to each one-mile section of paved roadway, and to each paved parking area. This condition rating system provides a realistic means of assessing the general funding needs for road improvements. Along with these descriptive condition ratings, a numerical rating between 0 and 100 is ascribed to each mile of road and to each parking area. This numerical rating is called a Pavement Condition Rating (PCR). The PCR rating system is described in Section 10 of this report.

All of the fieldwork required for obtaining inventory, condition, and maintenance feature information is coordinated with each park and the regional offices to ensure that the information in the RIP reports is accurate.

The FLH is responsible for all the data presented in this report. Anyone having questions or comments regarding the contents of this report is encouraged to contact the FHWA RIP Coordinator. It is our aim to provide exceptional customer satisfaction in our delivery of the RIP program.

The FHWA RIP Team

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# Bryce Canyon National Park



## **Section 2**

### **Park Summary Information**

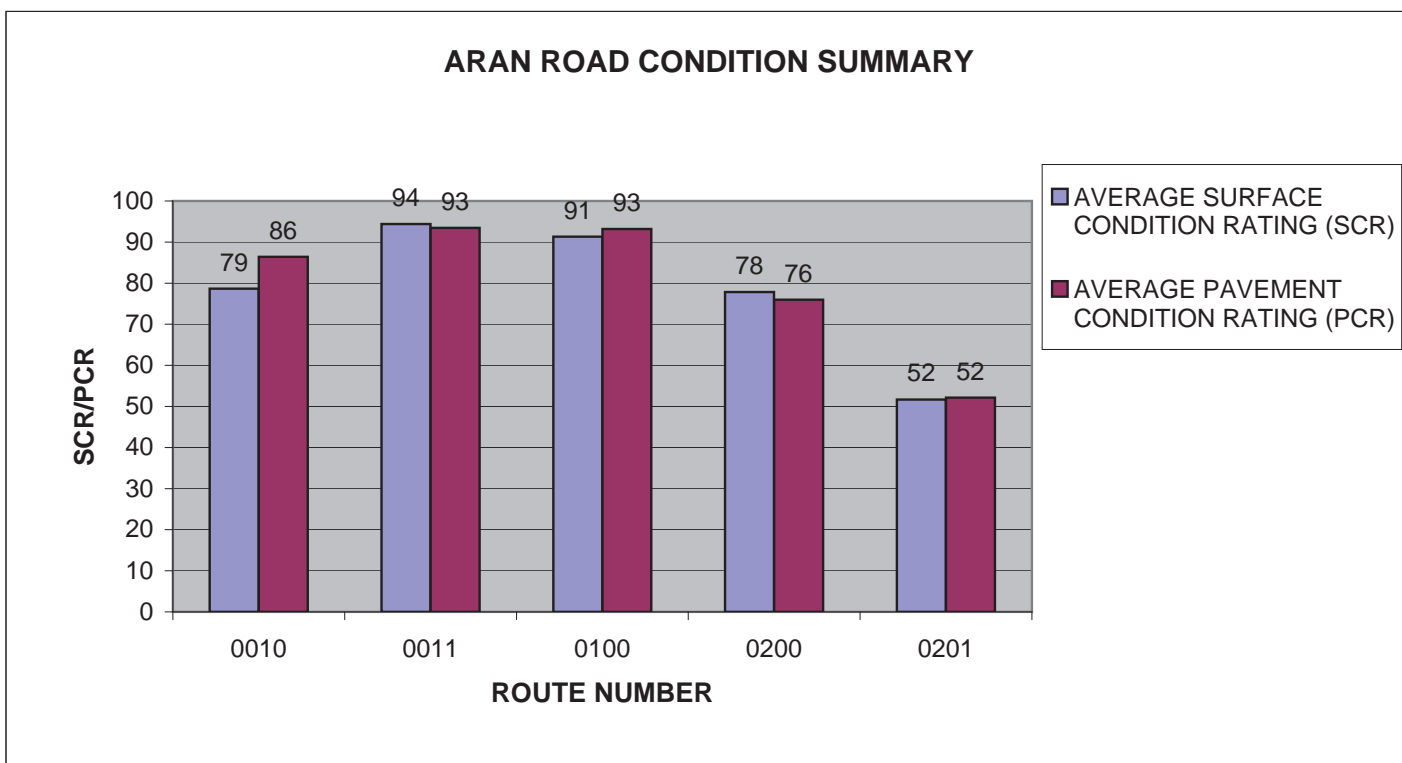
## BRCA: PAVED ROUTE MILES AND PERCENTAGES BY FUNCTIONAL CLASS AND PCR

F.C.	Pavement Condition Rating (PCR)								TOTAL MILES
	Poor (<=60)		Fair (61-84)		Good (85-94)		Excellent (95-100)		
	MILES	%	MILES	%	MILES	%	MILES	%	
1	0.09	0.32%	5.77	20.71%	13.06	46.88%	2.16	7.75%	21.08
2	0.09	0.32%	1.12	4.02%	0.82	2.94%	0.21	0.75%	2.24
3	2.22	7.97%	0.24	0.86%	0.13	0.47%	0.39	1.40%	2.98
4									
5	0.66	2.37%	0.32	1.15%	0.28	1.01%	0.20	0.72%	1.46
6	0.06	0.22%	0.04	0.14%					0.10
7									
8									
<b>Totals</b>	<b>3.12</b>	<b>11.20%</b>	<b>7.49</b>	<b>26.88%</b>	<b>14.29</b>	<b>51.29%</b>	<b>2.96</b>	<b>10.62%</b>	<b>27.86</b>



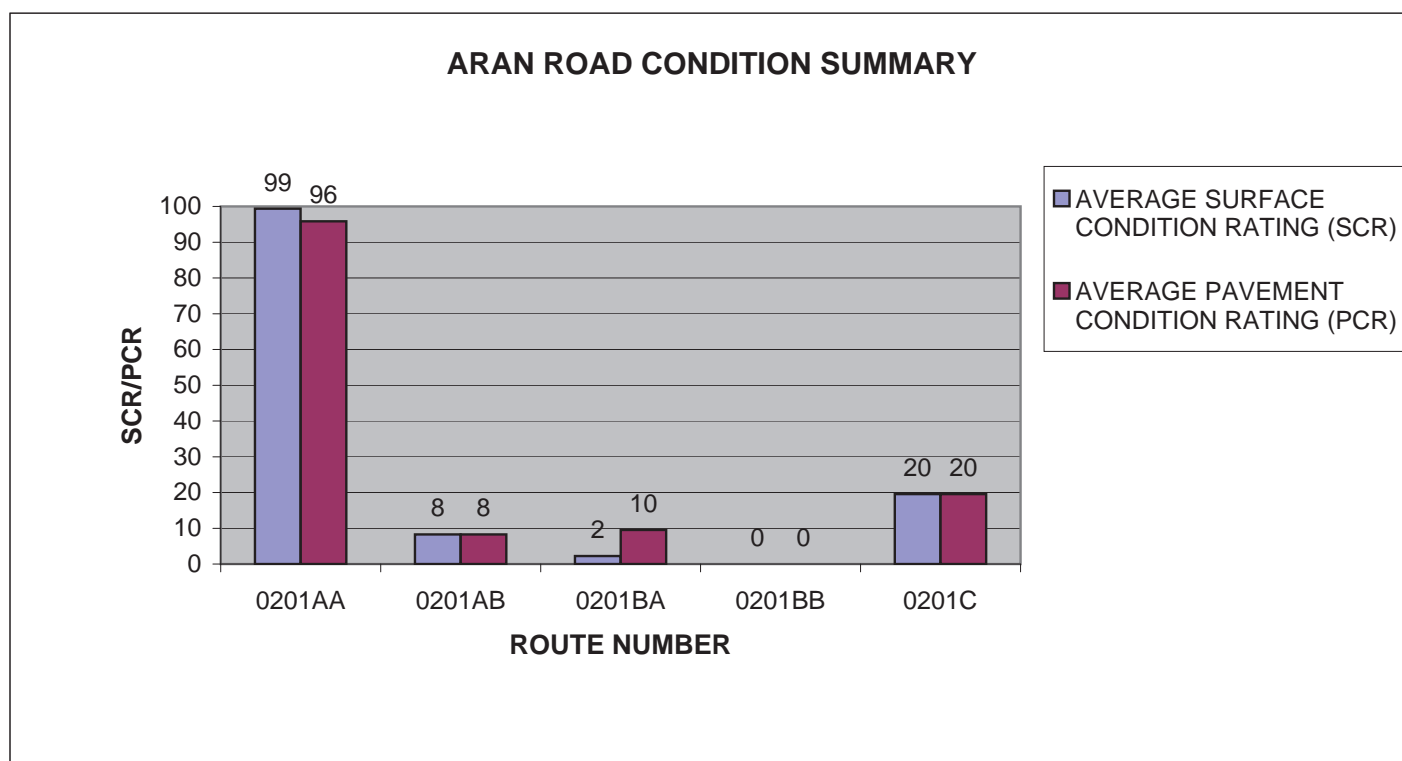
# BRCA: ARAN ROAD CONDITION SUMMARY

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	ROUTE LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	MAIN PARK ROAD	1	18.20	ASPHALT	79	86
0011	LODGE LOOP ROAD	1	0.93	ASPHALT	94	93
0100	BRYCE POINT ACCESS ROAD	1	1.95	ASPHALT	91	93
0200	FAIRYLAND ROAD	2	0.97	ASPHALT	78	76
0201	NORTH CAMPGROUND ROAD	3	0.61	ASPHALT	52	52



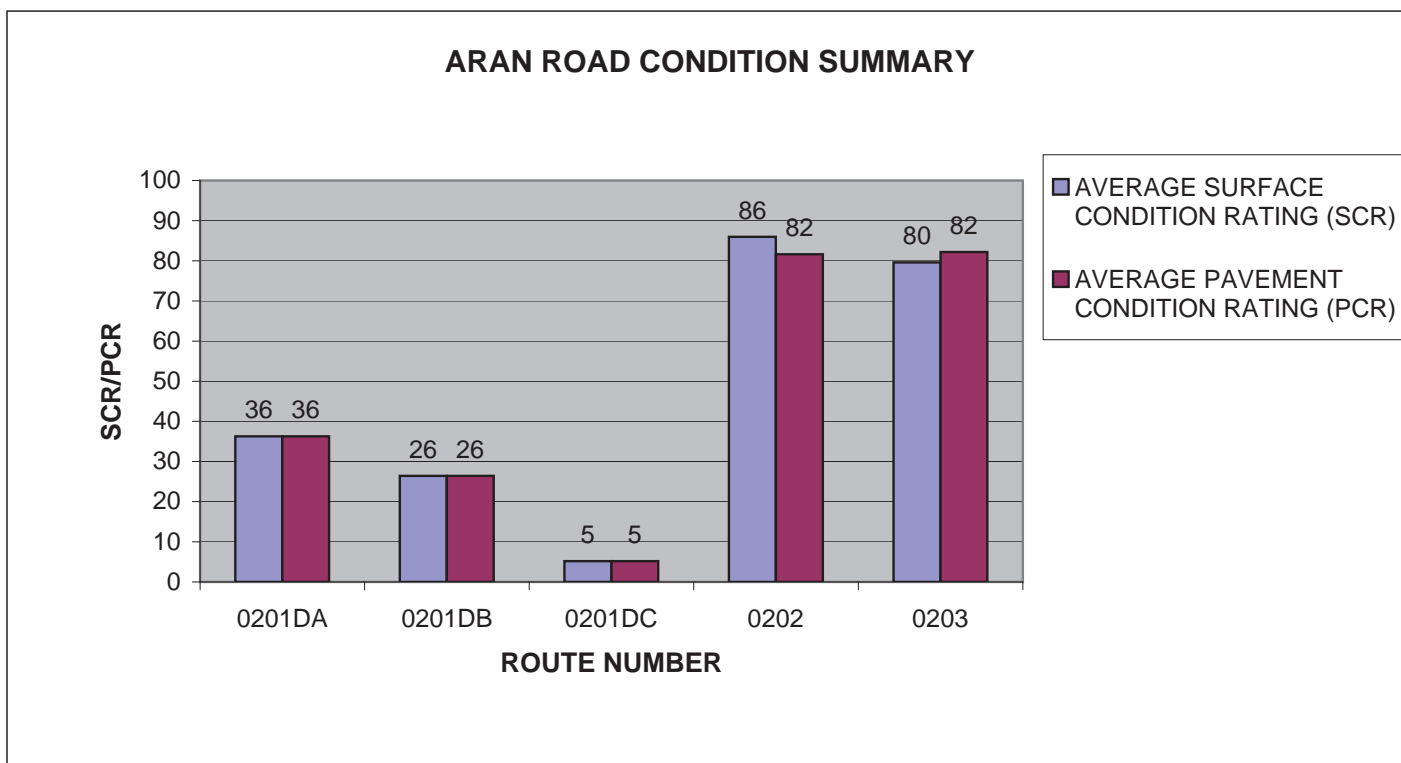
# BRCA: ARAN ROAD CONDITION SUMMARY

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	ROUTE LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0201AA	NORTH CAMPGROUND LOOP ROAD A, OUTERLOOP	3	0.29	ASPHALT	99	96
0201AB	NORTH CAMPGROUND LOOP ROAD A, CONNECTOR	3	0.07	ASPHALT	8	8
0201BA	NORTH CAMPGROUND LOOP ROAD B, OUTERLOOP	3	0.17	ASPHALT	2	10
0201BB	NORTH CAMPGROUND LOOP ROAD B	3	0.04	ASPHALT	0	0
0201C	NORTH CAMPGROUND LOOP ROAD C	3	0.14	ASPHALT	20	20



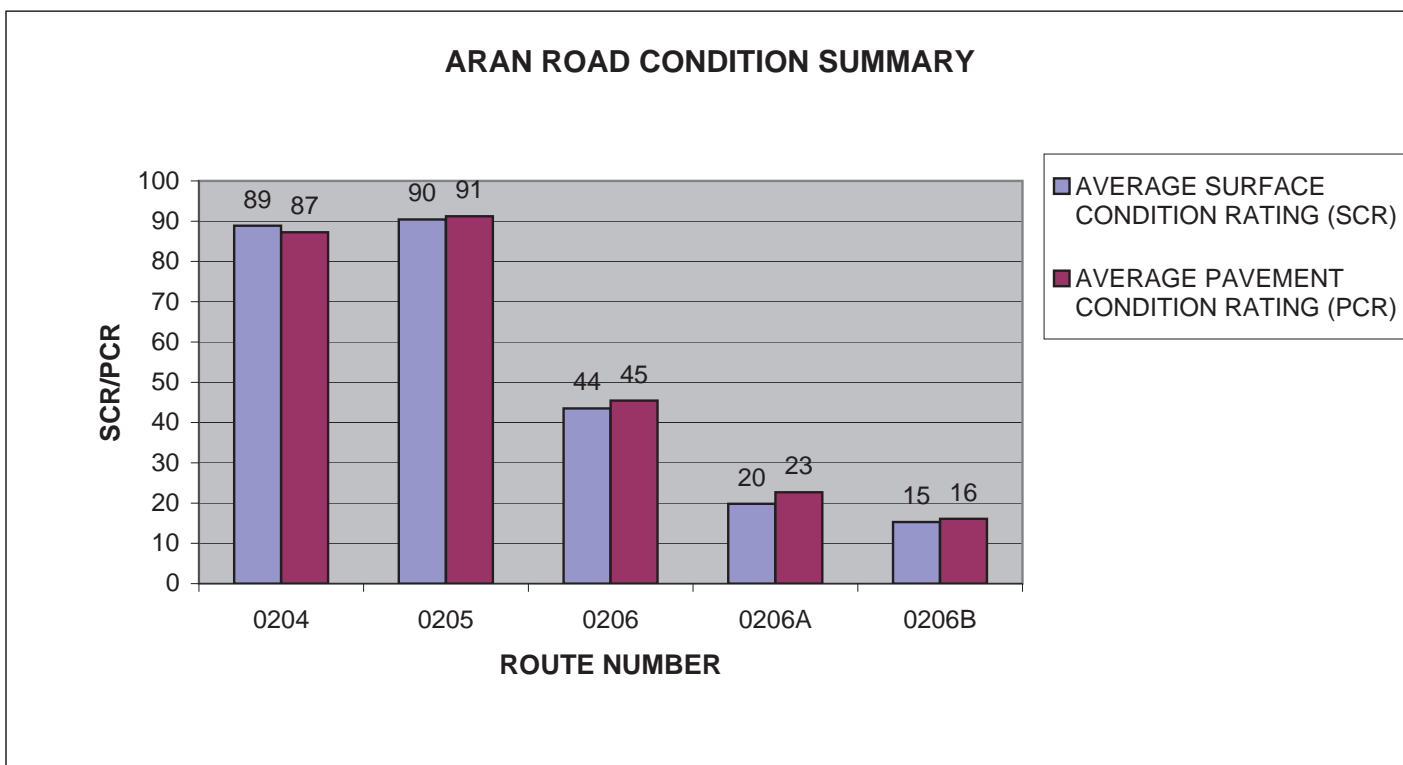
# BRCA: ARAN ROAD CONDITION SUMMARY

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	ROUTE LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0201DA	NORTH CAMPGROUND LOOP ROAD D, OUTERLOOP	3	0.32	ASPHALT	36	36
0201DB	NORTH CAMPGROUND LOOP ROAD D, CONNECTOR #1	3	0.09	ASPHALT	26	26
0201DC	NORTH CAMPGROUND LOOP ROAD D, CONNECTOR #2	3	0.05	ASPHALT	5	5
0202	SUNRISE POINT ACCESS ROAD	2	0.51	ASPHALT	86	82
0203	SUNSET POINT ACCESS ROAD	2	0.15	ASPHALT	80	82



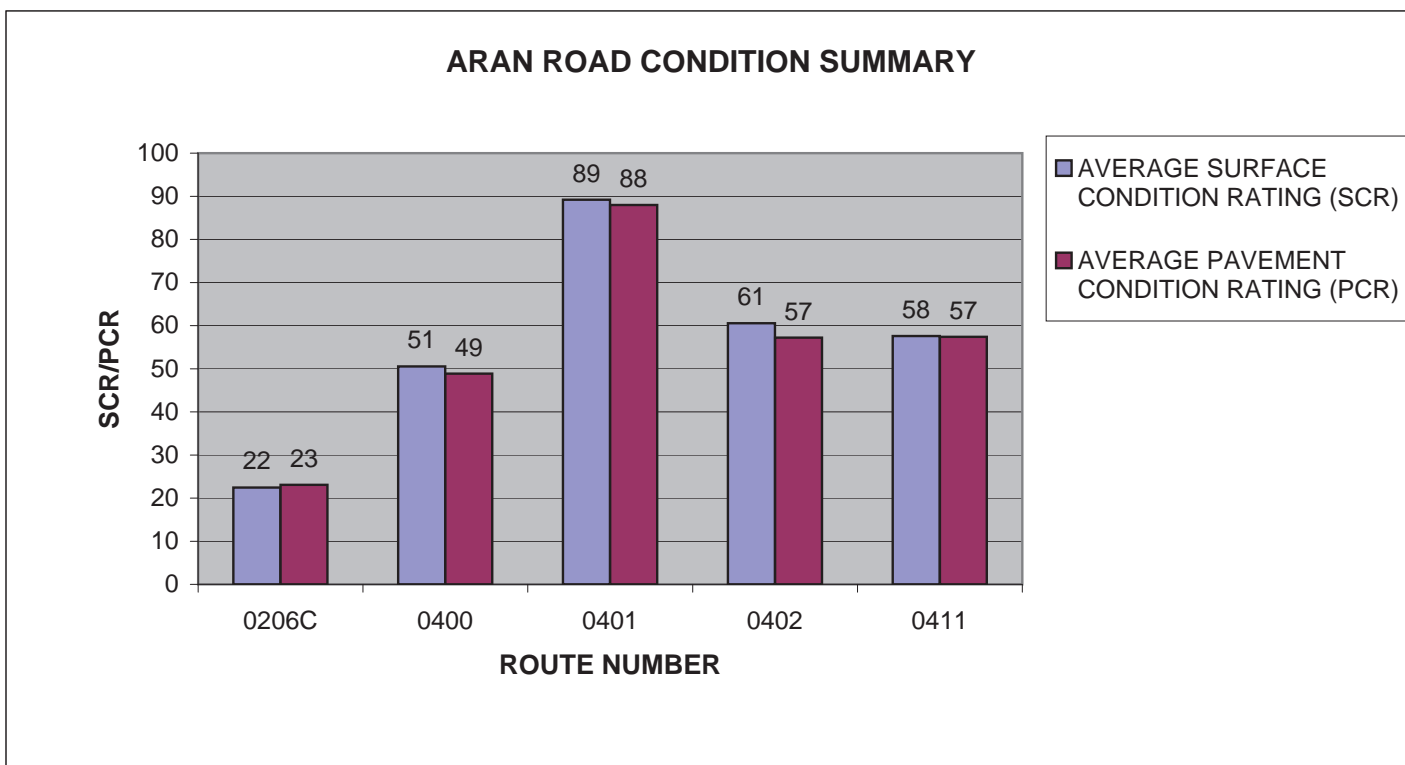
# BRCA: ARAN ROAD CONDITION SUMMARY

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	ROUTE LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0204	INSPIRATION POINT ACCESS ROAD	2	0.23	ASPHALT	89	87
0205	PARIA VIEW ACCESS ROAD	2	0.38	ASPHALT	90	91
0206	SUNSET CAMPGROUND ROAD	3	0.32	ASPHALT	44	45
0206A	SUNSET CAMPGROUND ROAD LOOP A	3	0.43	ASPHALT	20	23
0206B	SUNSET CAMPGROUND ROAD LOOP B	3	0.2	ASPHALT	15	16



# BRCA: ARAN ROAD CONDITION SUMMARY

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	ROUTE LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0206C	SUNSET CAMPGROUND ROAD LOOP C	3	0.25	ASPHALT	22	23
0400	HISTORIC HOUSING DISTRICT ACCESS ROAD	5	0.34	ASPHALT	51	49
0401	MIXING CIRCLE ROAD	5	2.25	ASPHALT	89	88
0402	MISSION 66 HOUSING LOOP ROAD	5	0.48	ASPHALT	61	57
0411	MAINTENANCE COMPLEX ROAD	6	0.1	ASPHALT	58	57

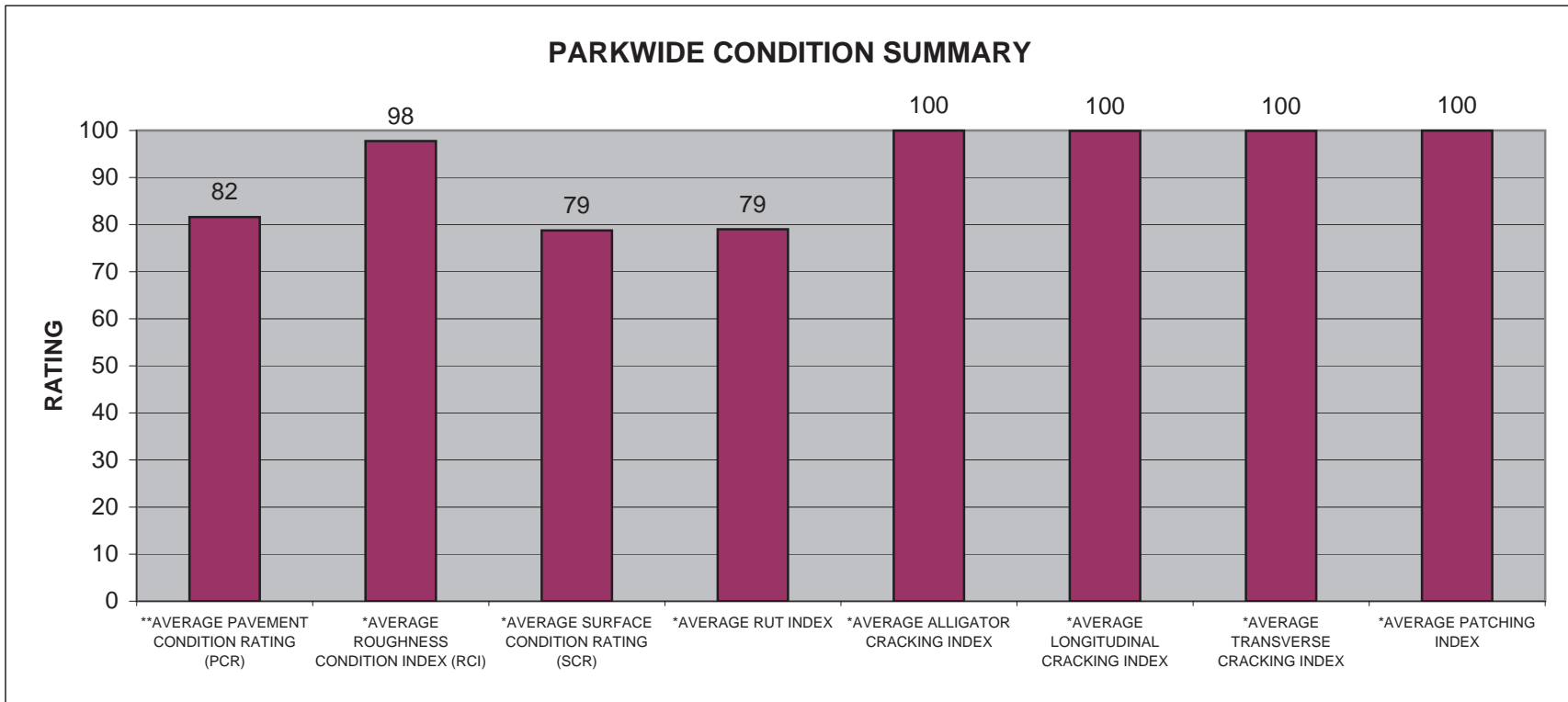


# BRCA: PARKWIDE CONDITION SUMMARY

**AVERAGE PAVEMENT CONDITION RATING (PCR)	*AVERAGE ROUGHNESS CONDITION INDEX (RCI)	*AVERAGE SURFACE CONDITION RATING (SCR)	*AVERAGE RUT INDEX	*AVERAGE ALLIGATOR CRACKING INDEX	*AVERAGE LONGITUDINAL CRACKING INDEX	*AVERAGE TRANSVERSE CRACKING INDEX	*AVERAGE PATCHING INDEX
82	98	79	79	100	100	100	100

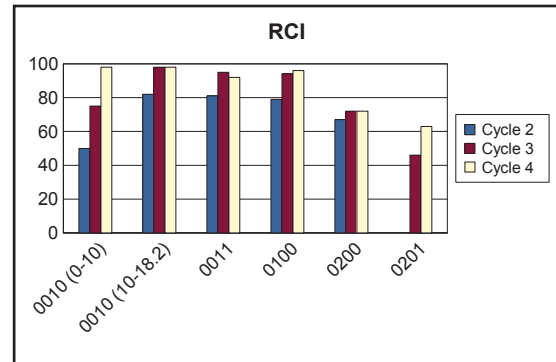
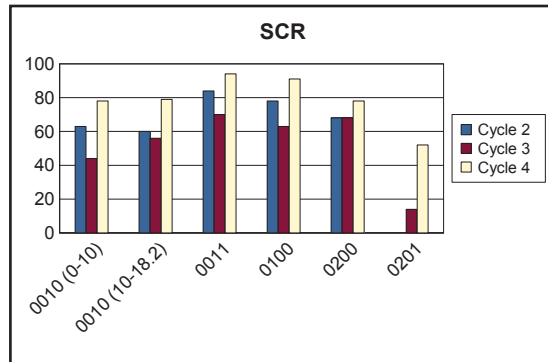
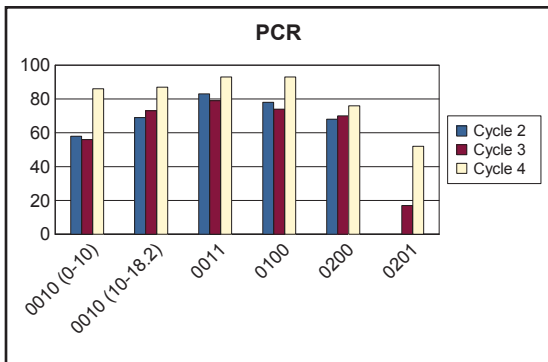
\*\* PCR Index is based on all ARAN-driven roads, parking areas, and manually rated routes.

\* Index values are based on ARAN-driven roads only.



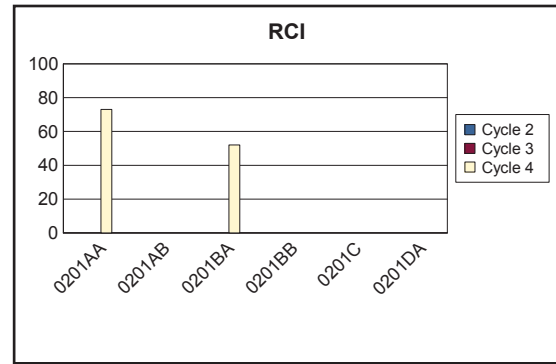
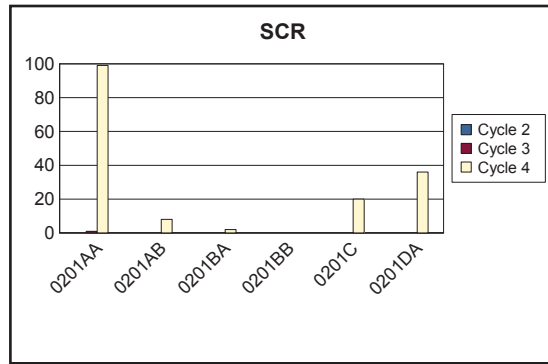
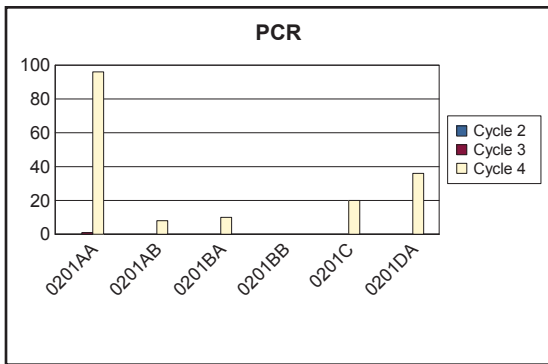
# BRCA CYCLE 2 vs CYCLE 3 vs CYCLE 4 CONDITION COMPARISONS

ROUTE NUMBER	PAVED MILES	FROM MILEPOST	TO MILEPOST	PAVEMENT CONDITION RATING (PCR)			PERCENT CHANGE	SURFACE CONDITION RATING (SCR)			PERCENT CHANGE	ROUGHNESS CONDITION INDEX (RCI)			PERCENT CHANGE	COMMENT
				CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		
0010	10.00	0.00	10.00	58	56	86	+54%	63	44	78	+77%	50	75	98	+31%	
0010	8.20	10.00	18.20	69	73	87	+19%	60	56	79	+41%	82	98	98	0%	
0011	0.93	0.00	0.93	83	79	93	+18%	84	70	94	+34%	81	95	92	-3%	
0100	1.95	0.00	1.95	78	74	93	+26%	78	63	91	+44%	79	94	96	+2%	
0200	0.97	0.00	0.97	68	70	76	+9%	68	68	78	+15%	67	72	72	0%	
0201	0.61	0.00	0.61	N/A	17	52	+206%	N/A	14	52	+271%	N/A	46	63	+37%	



# BRCA CYCLE 2 vs CYCLE 3 vs CYCLE 4 CONDITION COMPARISONS

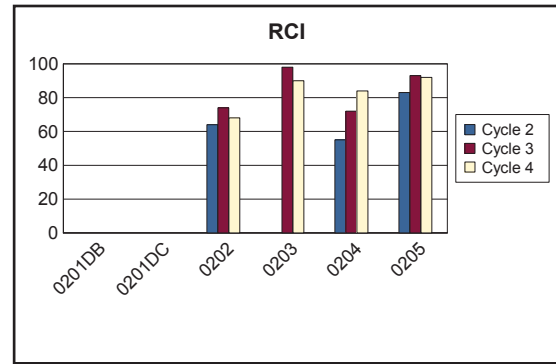
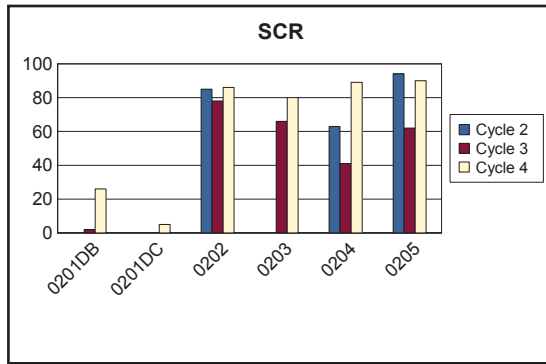
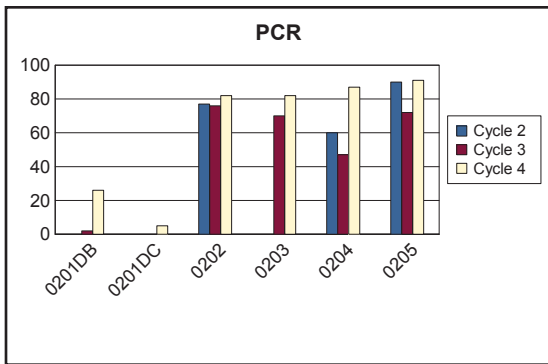
ROUTE NUMBER	PAVED MILES	FROM MILEPOST	TO MILEPOST	PAVEMENT CONDITION RATING (PCR)			PERCENT CHANGE	SURFACE CONDITION RATING (SCR)			PERCENT CHANGE	ROUGHNESS CONDITION INDEX (RCI)			COMMENT	
				CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		
0201AA	0.29	0.00	0.29	N/A	1	96	+9500%	N/A	1	99	+9800%	N/A	N/A	73	N/A	RCI not collected in Cycle 3.
0201AB	0.07	0.00	0.07	N/A	0	8	N/A	N/A	0	8	N/A	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.
0201BA	0.17	0.00	0.17	N/A	0	10	N/A	N/A	0	2	N/A	N/A	N/A	52	N/A	RCI not collected in Cycle 3.
0201BB	0.04	0.00	0.04	N/A	0	0	N/A	N/A	0	0	N/A	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.
0201C	0.14	0.00	0.14	N/A	0	20	N/A	N/A	0	20	N/A	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.
0201DA	0.32	0.00	0.32	N/A	0	36	N/A	N/A	0	36	N/A	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.





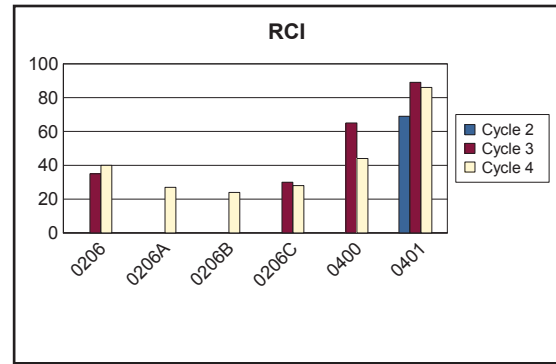
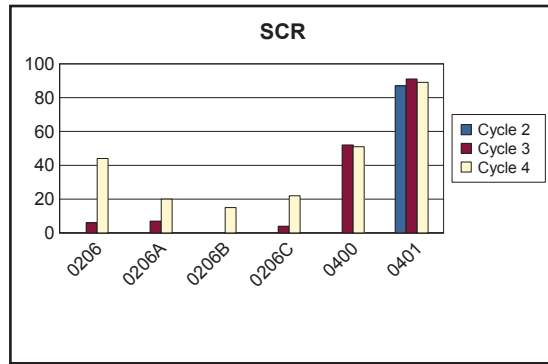
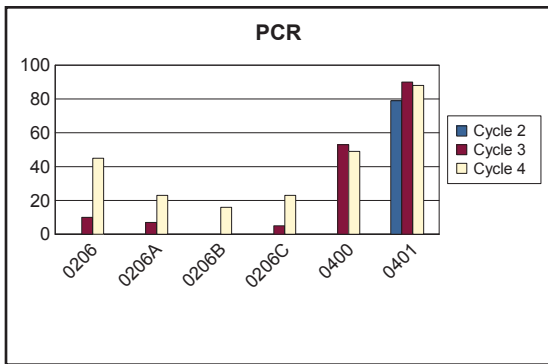
# BRCA CYCLE 2 vs CYCLE 3 vs CYCLE 4 CONDITION COMPARISONS

ROUTE NUMBER	PAVED MILES	FROM MILEPOST	TO MILEPOST	PAVEMENT CONDITION RATING (PCR)			PERCENT CHANGE	SURFACE CONDITION RATING (SCR)			PERCENT CHANGE	ROUGHNESS CONDITION INDEX (RCI)			COMMENT	
				CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		
0201DB	0.09	0.00	0.09	N/A	2	26	+1200%	N/A	2	26	+1200%	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.
0201DC	0.05	0.00	0.05	N/A	0	5	N/A	N/A	0	5	N/A	N/A	N/A	N/A	N/A	RCI not collected in Cycle 3 or 4.
0202	0.51	0.00	0.51	77	76	82	+8%	85	78	86	+10%	64	74	68	-8%	
0203	0.34	0.00	0.34	N/A	70	82	+17%	N/A	66	80	+21%	N/A	98	90	-8%	
0204	0.26	0.00	0.26	60	47	87	+85%	63	41	89	+117%	55	72	84	+17%	
0205	0.38	0.00	0.38	90	72	91	+26%	94	62	90	+45%	83	93	92	-1%	



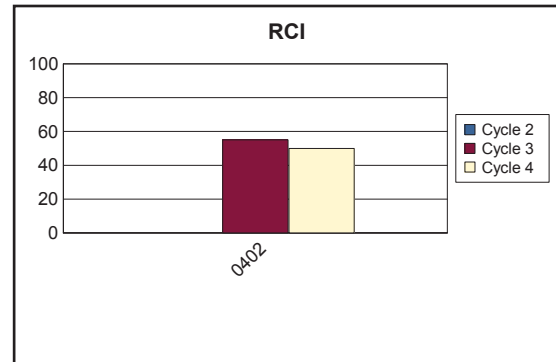
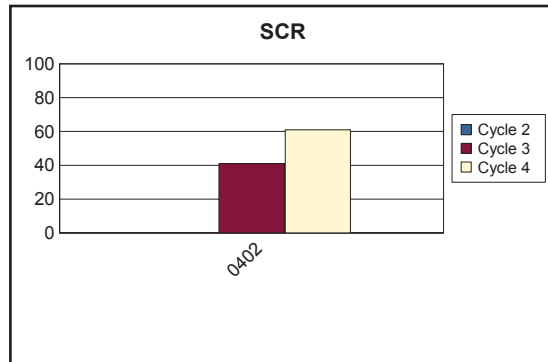
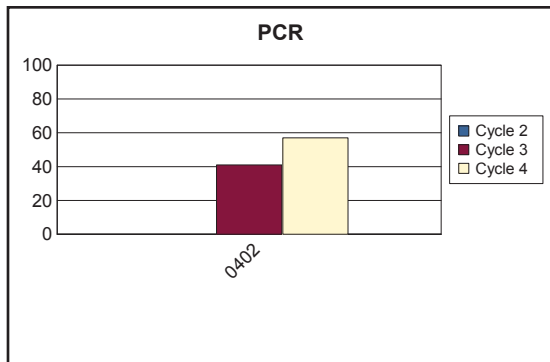
# BRCA CYCLE 2 vs CYCLE 3 vs CYCLE 4 CONDITION COMPARISONS

ROUTE NUMBER	PAVED MILES	FROM MILEPOST	TO MILEPOST	PAVEMENT CONDITION RATING (PCR)			PERCENT CHANGE	SURFACE CONDITION RATING (SCR)			PERCENT CHANGE	ROUGHNESS CONDITION INDEX (RCI)			COMMENT	
				CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		
0206	0.32	0.00	0.32	N/A	10	45	+350%	N/A	6	44	+633%	N/A	35	40	+14%	
0206A	0.43	0.00	0.43	N/A	7	23	+229%	N/A	7	20	+186%	N/A	N/A	27	N/A	RCI not collected in Cycle 3.
0206B	0.20	0.00	0.20	N/A	0	16	N/A	N/A	0	15	N/A	N/A	N/A	24	N/A	RCI not collected in Cycle 3.
0206C	0.25	0.00	0.25	N/A	5	23	+360%	N/A	4	22	+450%	N/A	30	28	-7%	
0400	0.34	0.00	0.34	N/A	53	49	-8%	N/A	52	51	-2%	N/A	65	44	-32%	
0401	0.64	0.00	0.64	79	90	88	-2%	87	91	89	-2%	69	89	86	-3%	



# BRCA CYCLE 2 vs CYCLE 3 vs CYCLE 4 CONDITION COMPARISONS

ROUTE NUMBER	PAVED MILES	FROM MILEPOST	TO MILEPOST	PAVEMENT CONDITION RATING (PCR)			PERCENT CHANGE	SURFACE CONDITION RATING (SCR)			PERCENT CHANGE	ROUGHNESS CONDITION INDEX (RCI)			PERCENT CHANGE	COMMENT
				CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		CYCLE 2	CYCLE 3	CYCLE 4		
0402	0.48	0.00	0.48	N/A	41	57	+39%	N/A	41	61	+49%	N/A	55	50	-9%	

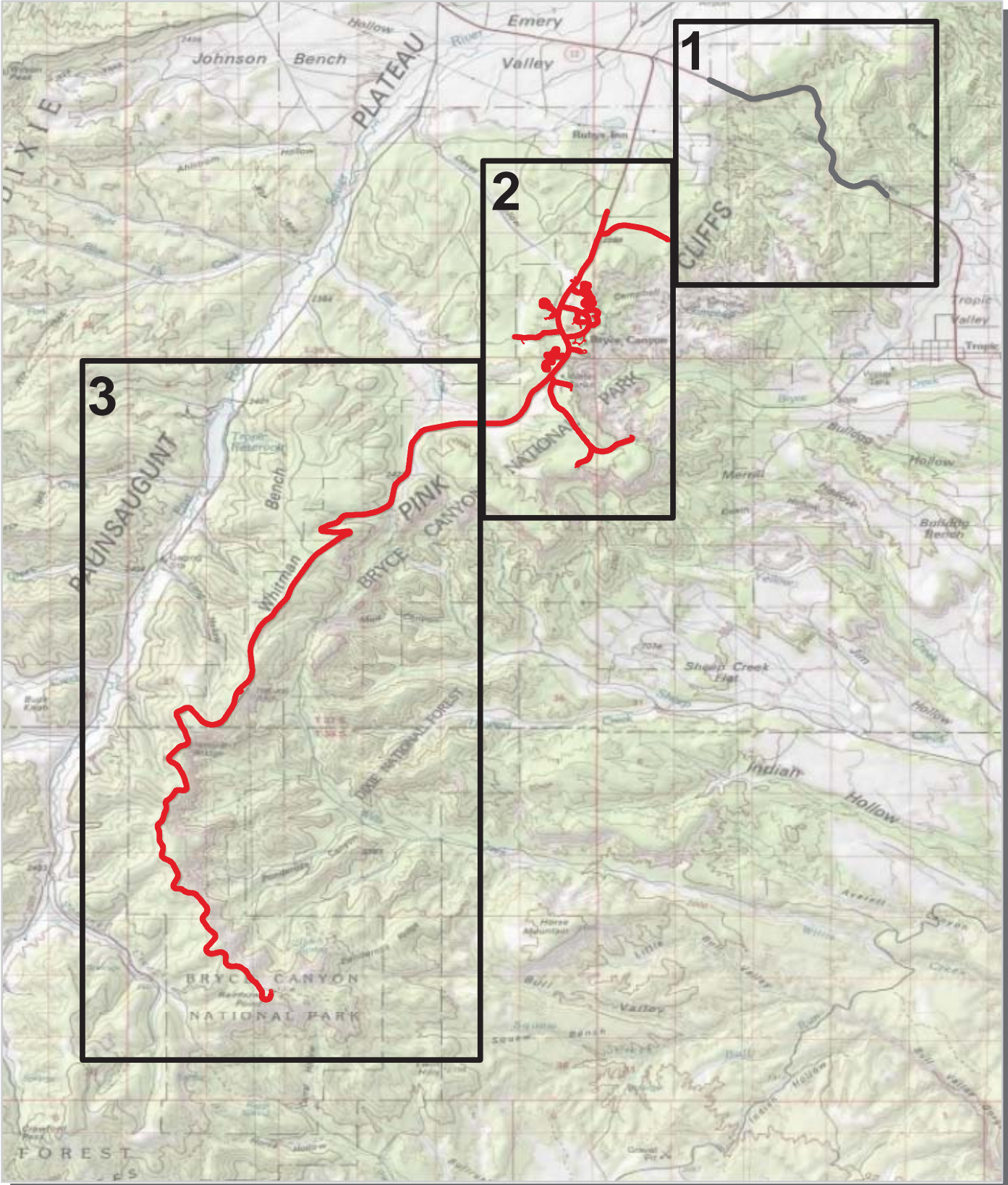


# Bryce Canyon National Park



## **Section 3** **Park Route Location / Condition** **Maps**

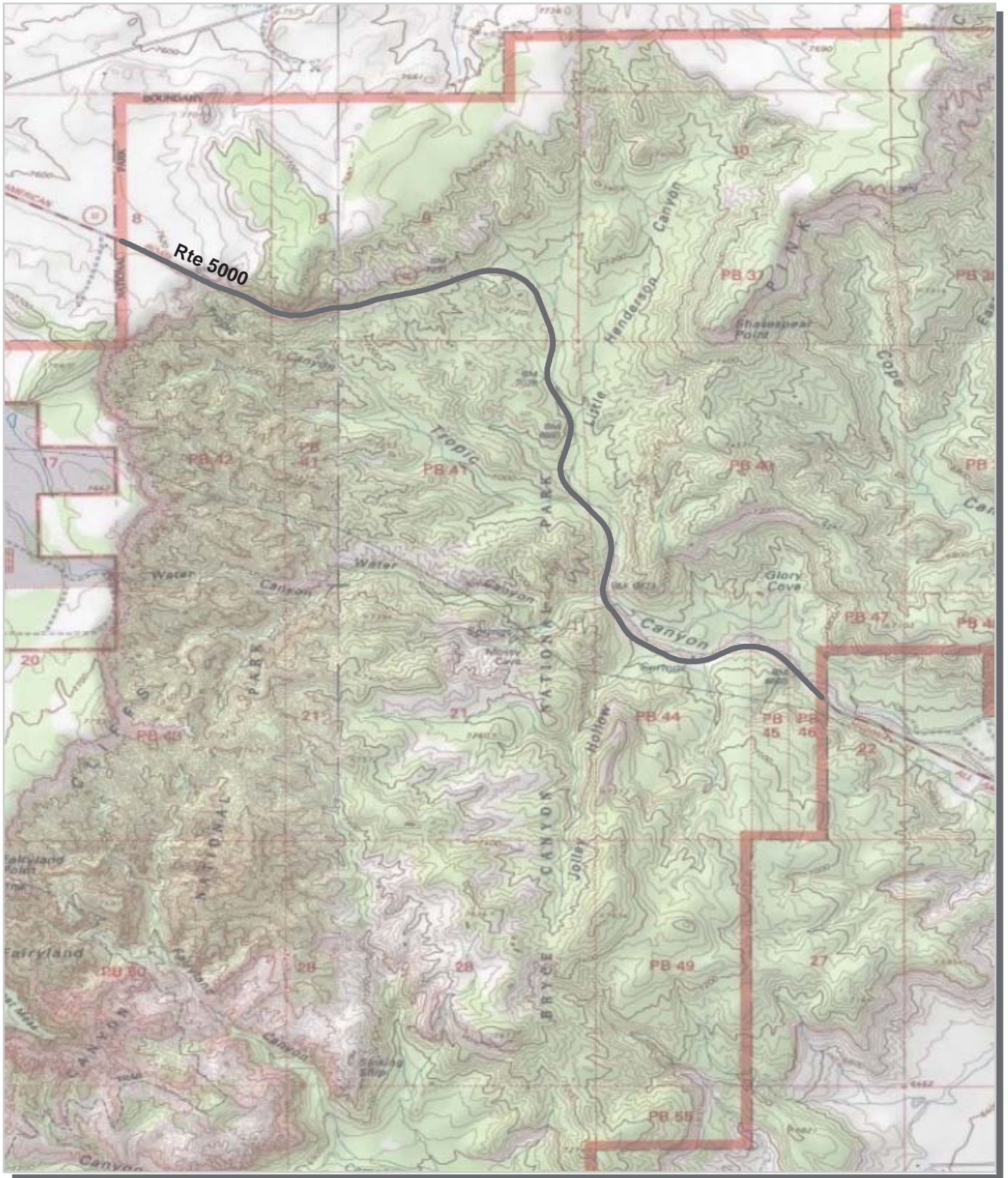
Bryce Canyon National Park  
Route Location Map  
Key Map



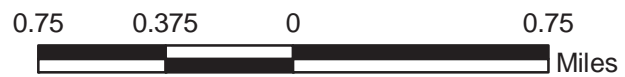
— Park Owned Routes



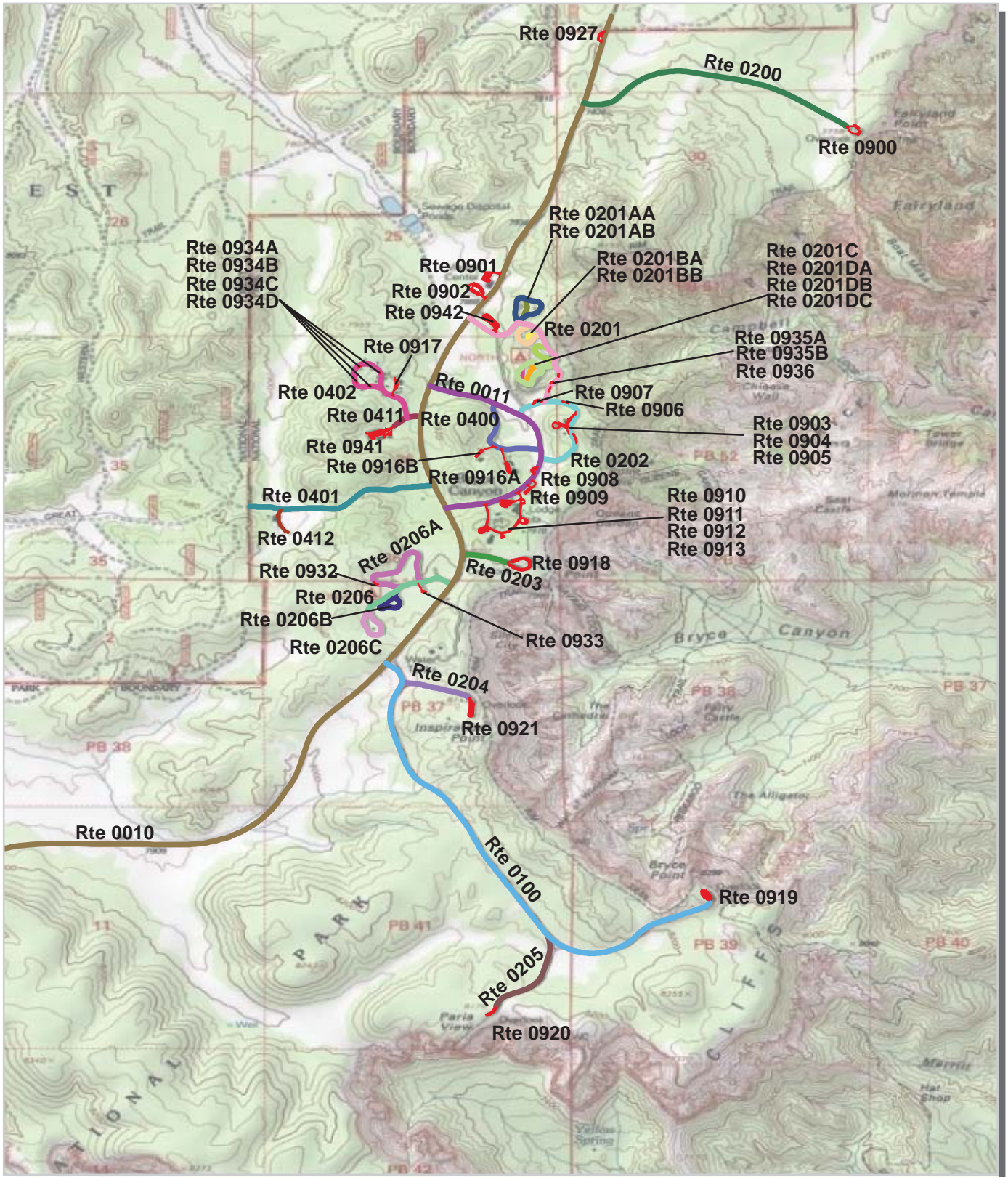
# Bryce Canyon National Park Route Location Map Area 1



Unique colors used to differentiate routes



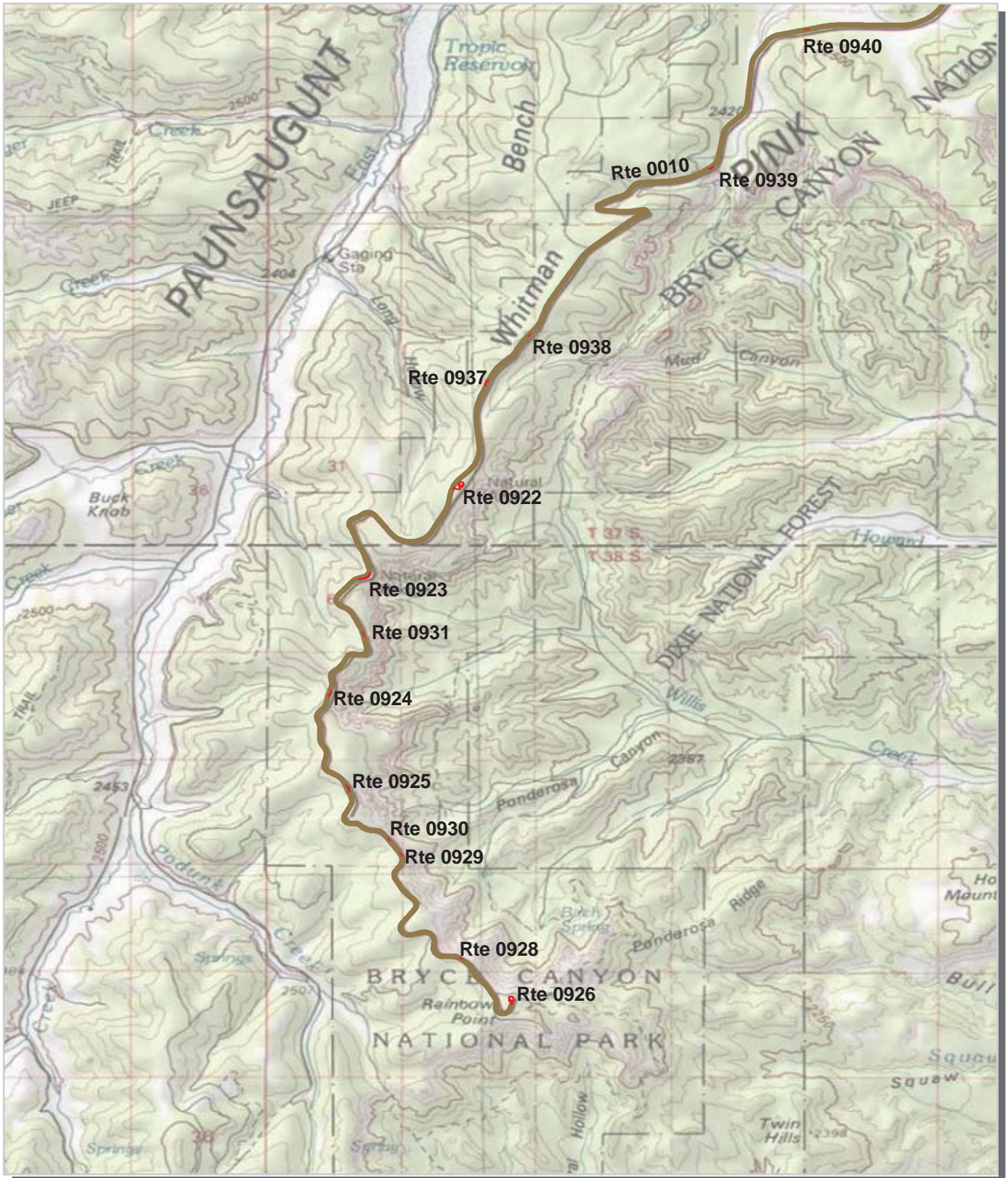
# Bryce Canyon National Park Route Location Map Area 2



Unique colors used to differentiate routes



# Bryce Canyon National Park Route Location Map Area 3

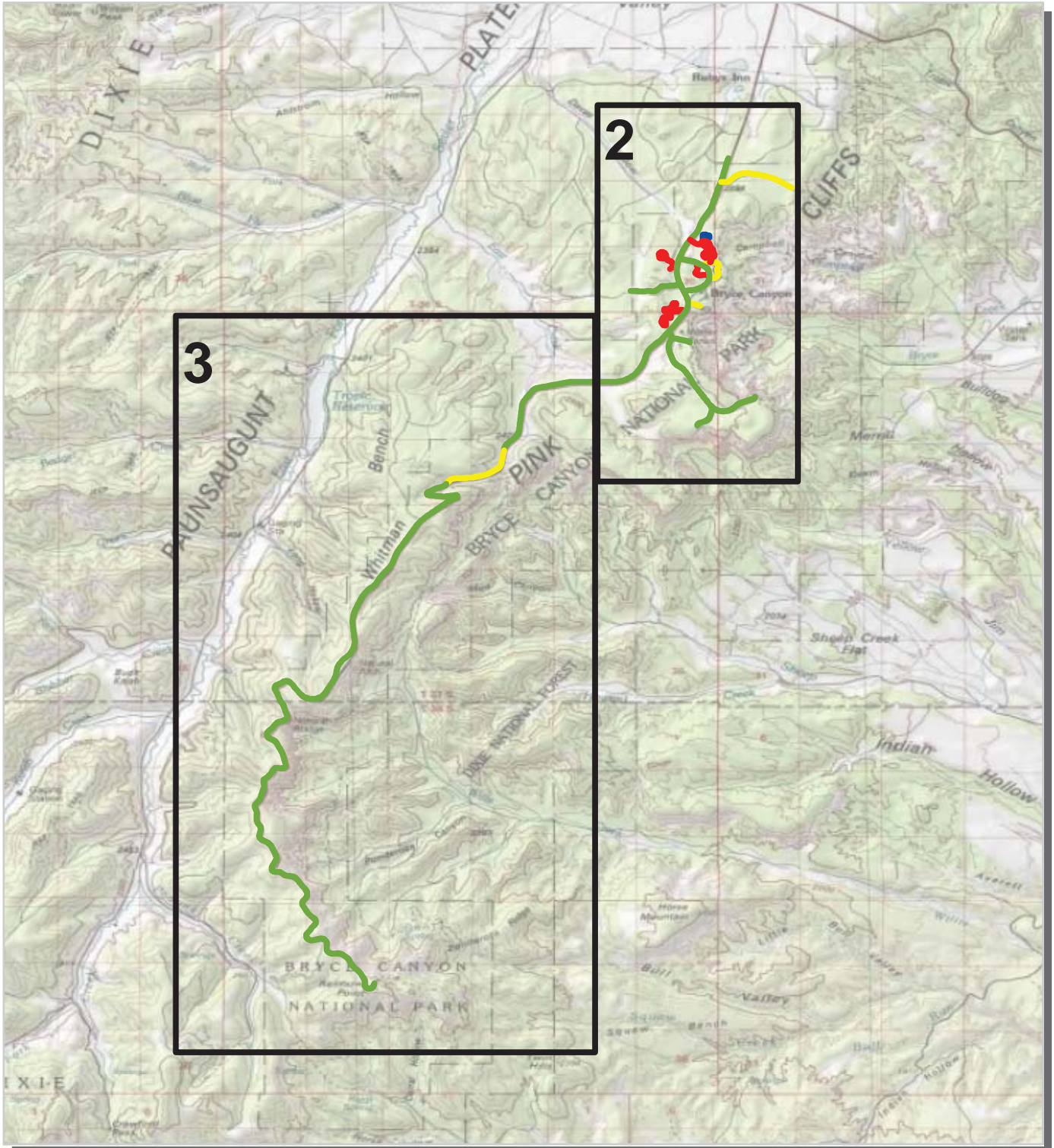


Unique colors used to differentiate routes





# Bryce Canyon National Park Route Condition Map PCR - Mile by Mile Key Map

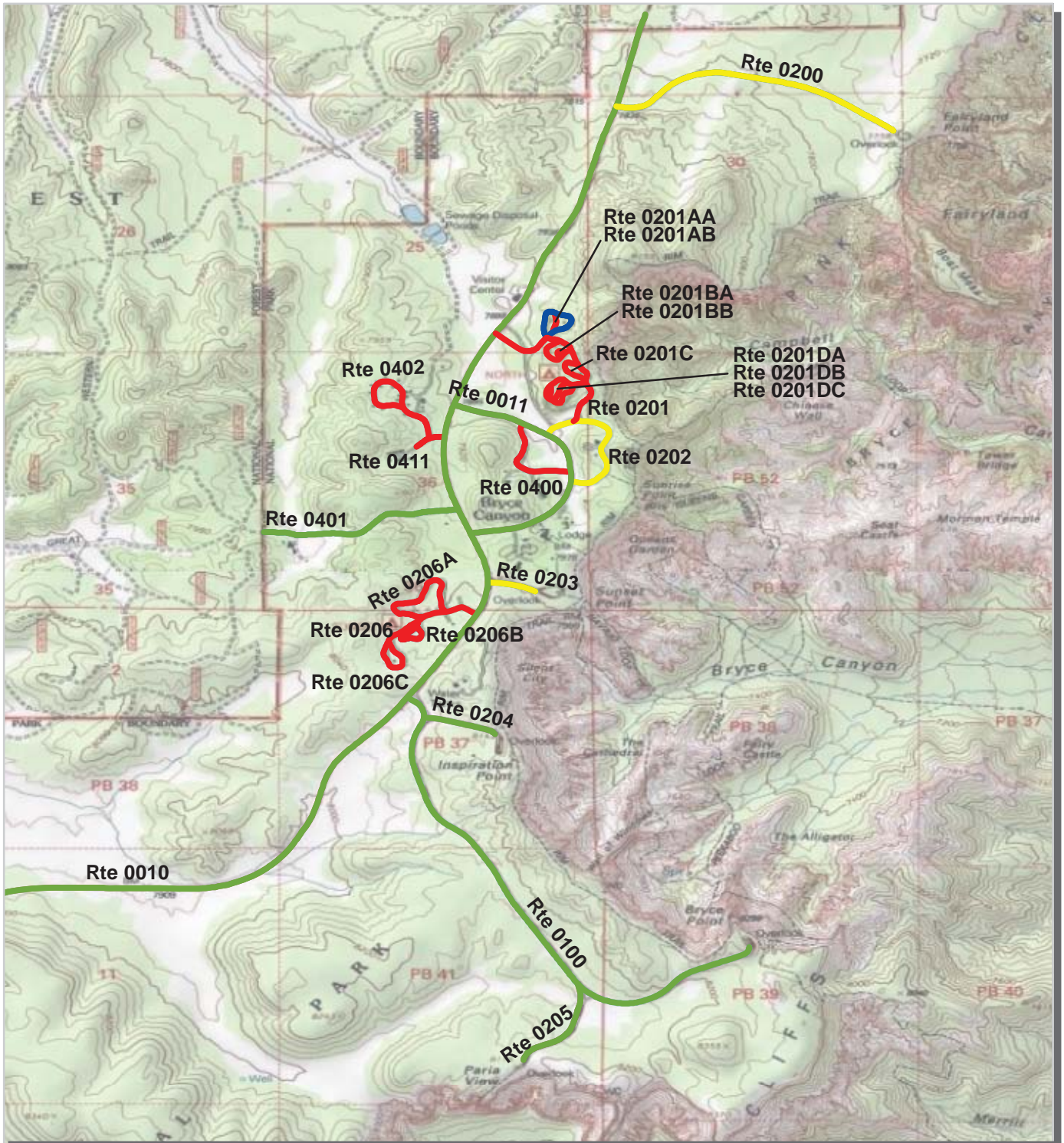


PCR	Poor (≤60)	Fair (61 - 84)	Good (85 - 94)	Excellent (95 - 100)	No Data

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



# Bryce Canyon National Park Route Condition Map PCR - Mile by Mile Area 2

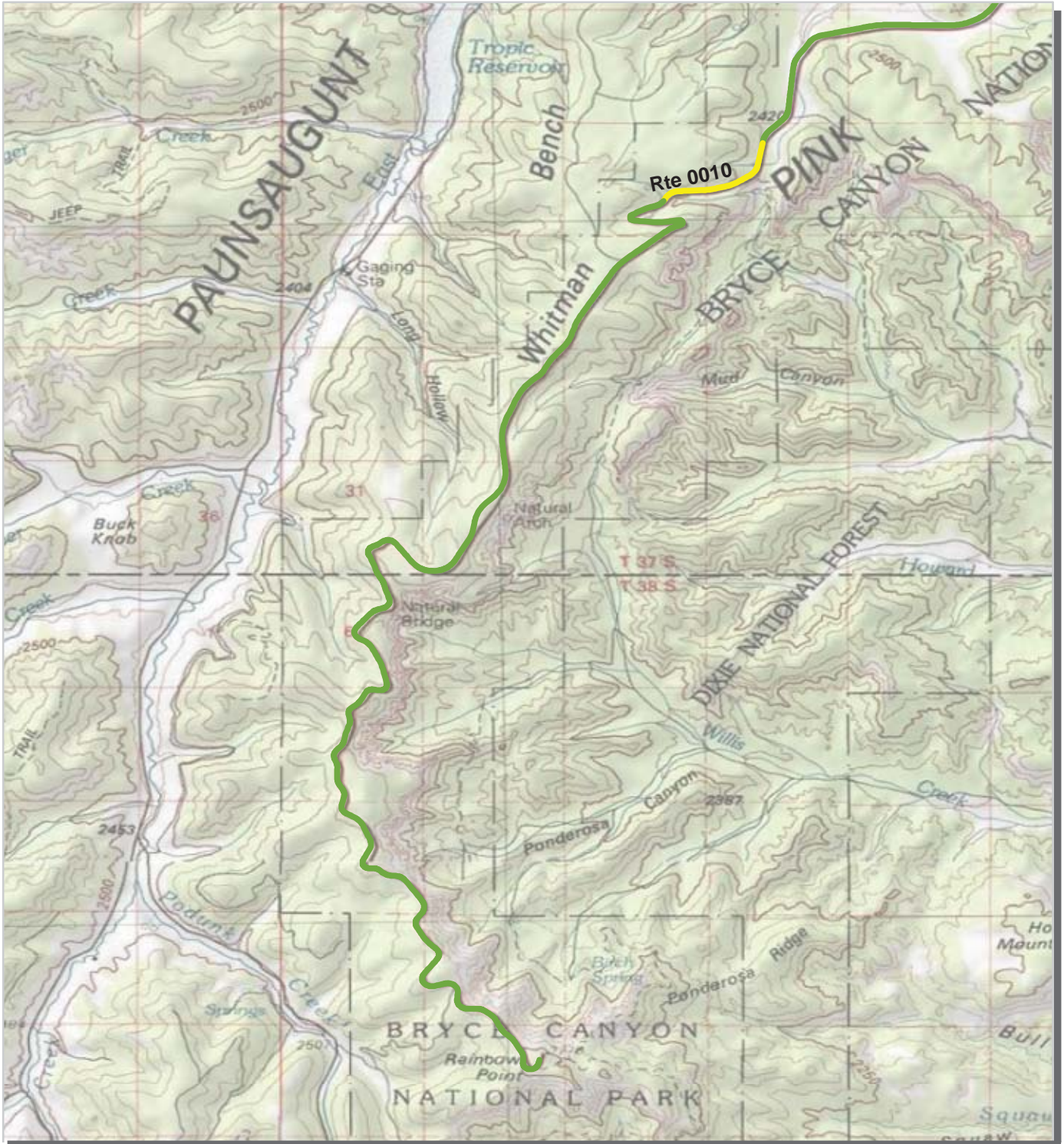


PCR	Poor	<span style="display: inline-block; width: 20px; height: 10px; background-color: red; border: 1px solid black;"></span>	Fair	<span style="display: inline-block; width: 20px; height: 10px; background-color: yellow; border: 1px solid black;"></span>	Good	<span style="display: inline-block; width: 20px; height: 10px; background-color: green; border: 1px solid black;"></span>	Excellent	<span style="display: inline-block; width: 20px; height: 10px; background-color: blue; border: 1px solid black;"></span>	No Data	<span style="display: inline-block; width: 20px; height: 10px; background-color: black; border: 1px solid black;"></span>
	(<=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.

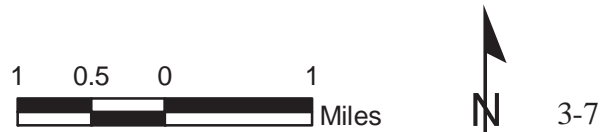


# Bryce Canyon National Park Route Condition Map PCR - Mile by Mile Area 3



PCR	Poor	Fair	Good	Excellent	No Data
	<span style="color: red;">■</span>	<span style="color: yellow;">■</span>	<span style="color: green;">■</span>	<span style="color: blue;">■</span>	<span style="color: black;">■</span>
	(<=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.



# Bryce Canyon National Park



## **Section 4** **Park Route Inventory**