Federal Lands Highway

Road Inventory Program

Road Inventory and Condition Assessment

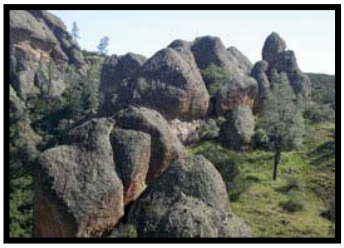
Pinnacles National Monument

PINN - 8450

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 09/2011
Report Date: 10/2012

Pinnacles National Monument
in
California



DCV = Data Collection Vehicle

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Section 1
Introduction

Pinnacles National Monument

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 168 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

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

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

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

** DCV - Data Collection Vehicle NC - Not Collected

PINN

PINNACLES NATIONAL MONUMENT

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From	Route Description To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0010	5	35145		BEAR GULCH/EAST ENTRANCE ROAD	FROM EAST PARK BOUNDARY/END OF ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))	TO ROUTE 0907 (MOSES SPRINGS PARKING)	EAST	2.72	0.00	2.72	1		AS	2
0011	5	35126		CHALONE CREEK ROAD	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO END AT MP 0.73	EAST	0.58	0.15	0.73	1		AS	2
0100ZZ	5	100138		PINNACLES CAMPGROUND ROADS	FROM ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))	THROUGH CAMPGROUND ROADS	EAST	1.91	0.06	1.97	2		AS	2
0200	5	59594		CHALONE RESIDENCE ROAD	FROM ROUTE 0011 (CHALONE CREEK ROAD)	TO ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)	EAST	0.14	0.00	0.14	3		AS	2
0202	5	35134		CHAPARRAL ROAD	FROM U.S. HIGHWAY 146/NON NPS AT CATTLE GUARD	TO ROUTE 0912 (CHAPARRAL DAY USE AREA PARKING)	WEST	2.51	0.00	2.51	1		AS	1
0203	5	235457		CHAPARRAL OVERLOOK ROAD	FROM 0202 (CHAPARRAL ROAD)	TO ROUTE 0913 (CHAPARRAL OVERLOOK PARKING)	WEST	0.06	0.00	0.06	3		AS	1
0401	NC	89622		HEADQUARTERS SERVICE ROAD	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO END	EAST	0.00	0.11	0.11	6		GR	
0402	5	35140		CONDOR GULCH ROAD	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO ROUTE 0902 (CONDOR GULCH PARKING)	EAST	0.25	0.00	0.25	6		AS	2
0405	NC	35150		NORTH CHALONE PEAK ROAD	FROM WEST PARK BOUNDARY	TO END	EAST	0.00	1.47	1.47	6		GR	
0408	NC	59595		CHAPARRAL MAINTENANCE AREA	FROM ROUTE 0202 (CHAPARRAL ROAD)	TO MAINTENANCE AREA	WEST	0.00	0.05	0.05	6		GR	
0409	NC	35149		FIRE ACCESS ROAD	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO END	EAST	0.00	1.50	1.50	6		GR	
0410	NC	100113		FEED SITE ROAD	FROM ROUTE 0413 (GRASSY CANYON ROAD)	TO HILLTOP	EAST	0.00	0.00	0.00	6		NV	
0411	NC	100114		FACILITY SITE ROAD	FROM ROUTE 0413 (GRASSY CANYON ROAD)	TO FACILITY	EAST	0.00	0.00	0.00	6		NV	
0412	NC	100116		OBSERVATION SITE ROAD	FROM ROUTE 0413 (GRASSY CANYON ROAD)	TO OBSERVATION SITE	EAST	0.00	0.00	0.00	6		NV	

Cycle 5 NPS/RIP Route ID Report

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Black = State, Local or Private non-NPS Routes
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Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From	Route Description To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0413	NC	100118		GRASSY CANYON ROAD	FROM ROUTE 0409 (FIRE ACCESS ROAD)	TO INTERSECTION OF ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD) AND ROUTE 0411 (FACILITY SITE ROAD)	EAST	0.00	0.00	0.00	6		NV	
0414	NC	111057		RANCH WELL ACCESS ROAD	FROM RANCH ROAD AT BACON HOMESTEAD	TO RANCH WELL	EAST	0.00	0.00	0.00	6		NV	
0415	NC	111078		RANCH ROAD	FROM U.S. HIGHWAY 25 (AIRLINE HIGHWAY)	TO REGAN EASEMENT	EAST	0.00	0.00	0.00	6		NV	
0416	NC	111082		RANCH ROAD (REGAN EASEMENT)	FROM END OF ROUTE 0415 (RANCH ROAD)	TO BACON HOMESTEAD	EAST	0.00	0.00	0.00	6		NV	
0417	NC	89623		ACCESS ROAD CAMPGROUND TANK	FROM ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)	TO CAMPGROUND WATER CAVE	EAST	0.00	0.00	0.00	6		NV	
0900	5	59596		HEADQUARTERS/VISITOR CENTER PARKING	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	EAST	0.00	0.00	0.00		17,597	AS	2
0901	5	59597		HEADQUARTERS SERVICE PARKING	FROM ROUTE 0900 (HEADQUARTERS/VISITOR CENTER PARKING)	TO PARKING	EAST	0.00	0.00	0.00		6,237	AS	2
0902	5	59598		CONDOR GULCH PARKING	FROM END OF ROUTE 0402 (CONDOR GULCH ROAD)	TO PARKING	EAST	0.00	0.00	0.00		7,668	AS	2
0903	5	59599		CONDOR GULCH RESTROOM PARKING	ADJACENT TO ROUTE 0402 (CONDOR GULCH ROAD)		EAST	0.00	0.00	0.00		4,506	AS	2
0904	5	59600		MOSES SPRINGS PICNIC PARKING	ADJACENT TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)		EAST	0.00	0.00	0.00		3,535	AS	2
0905	5	59601		RESIDENCE 2 PARKING	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD) ON LEFT	TO PARKING	EAST	0.00	0.00	0.00		4,729	AS	2
0906	5	59602		RESIDENCE 19 PARKING	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD) ON LEFT	TO PARKING	EAST	0.00	0.00	0.00		3,647	AS	2
0907	5	59603		MOSES SPRINGS PARKING	FROM END OF ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO PARKING	EAST	0.00	0.00	0.00		8,067	AS	2

Cycle 5 NPS/RIP Route ID Report

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Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From	Route Description To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0908ZZ	5	59604		CHALONE CREEK PARKING AREAS	ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT AND LEFT		EAST	0.00	0.00	0.00		10,248	AS	2
0909	5	59605		CHALONE CREEK MAINTENANCE AREA	FROM ROUTE 0011 (CHALONE CREEK ROAD) AND END OF ROUTE 0200 (CHALONE RESIDENCE ROAD)	TO ROUTE 0011 (CHALONE CREEK ROAD) AND ROUTE 0908ZZ (CHALONE CREEK PARKING AREAS)	EAST	0.00	0.00	0.00		26,317	AS	2
0910	NC	235456		OLD PINNACLES TRAILHEAD PARKING	FROM END OF ROUTE 0011 (CHALONE CREEK ROAD)	TO TRAILHEAD PARKING	WEST	0.00	0.00	0.00		10,500	GR	
0911	5	59607		CHAPARRAL RANGER STATION PARKING	ADJACENT TO ROUTE 0202 (CHAPARRAL ROAD)		WEST	0.00	0.00	0.00		1,687	AS	1
0912	5	59608		CHAPARRAL DAY USE AREA PARKING	FROM END OF ROUTE 0202 (CHAPARRAL ROAD)	TO PARKING	WEST	0.00	0.00	0.00		19,532	AS	1
0913	NC	59609		CHAPARRAL OVERLOOK PARKING	FROM ROUTE 0203 (CHAPARRAL OVERLOOK ROAD)	TO OVERLOOK	WEST	0.00	0.00	0.00		28,350	GR	
0914	NC	89621		PEAKS VIEW PARKING AREA	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	TO PARKING	EAST	0.00	0.00	0.00			GR	
0915	5	101139		PINNACLES CAMPGROUND PARKING	FROM ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)	TO ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)	EAST	0.00	0.00	0.00		10,220	AS	2
0916	NC	109971		OVERFLOW PINNACLES CAMPGROUND PARKING	FROM ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)	TO PARKING	EAST	0.00	0.00	0.00			GR	
0917	5	235455		FIRE WAYSIDE PARKING	ADJACENT TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)		EAST	0.00	0.00	0.00		3,130	AS	2
5000	5			U.S. HIGHWAY 146 (PINNACLES HIGHWAY)	FROM U.S. HIGHWAY 25 (AIRLINE HIGHWAY)	TO PARK BOUNDARY AT BEGINNING OF ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)	EAST	2.45	0.00	2.45			AS	2

Cycle 5 NPS/RIP Route ID Report

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= Concession Route Flag ON

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CYCLE 5 SUMMARY TOTALS FOR PINNACLES NATIONAL MONUMENT

CYCLE 5 ROUTE TOTALS

DCV Driven Route Miles	8.11
Manually Rated Route Miles	0.06
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	8.17
Manually Rated Routes (SQFT)	0.00
TOTAL UNPAVED PARK ROUTE MILES	3.34

CYCLE 5 CONCESSION TOTALS

Concession Paved Route Miles	0.00
Concession Unpaved Route Miles	0.00
TOTAL CONCESSION ROUTE MILES	0.00
Concession Paved Parking Area SQFT	0
Concession Unpaved Parking Area SQFT	0
TOTAL CONCESSION PARKING AREA SQFT	0
Concession Manually Rated Rotes SQFT	0

* CYCLE 5 PARKING AREA TOTALS

Paved Parking (SQFT)	127,120
Unpaved Parking (SQFT)	38,850
TOTAL PARKING (SQFT)	165,970

CYCLE 5 WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	67
**Manually Rated Routes PCR	90
**Parking PCR	78
***Total Equivalent Lane Miles	15.69

* - 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

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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 Assets. 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 PINN

Shading Color Key:
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White = Paved Routes, DCV Driven | Yellow = Unpaved Routes, DCV not Driven | Blue = All Paved Parking Areas | Green = All Unpaved Parking Areas
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PINN

PINNACLES NATIONAL MONUMENT

Asset Entered in FMSS System

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0100ZZ	100138	5	PINNACLES CAMPGROUND ROADS	FROM ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))	THROUGH CAMPGROUND ROADS		2	1.91	0.06	1.97	
0908ZZ	59604	5	CHALONE CREEK PARKING AREAS	ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT AND LEFT				0.00	0.00	0.00	10,248

Asset PINN-0100ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0100AZ	100138	5	PINNACLES CAMPGROUND ROAD A	FROM ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))	TO END OF LOOP		2	0.96	0.00	0.96	
0100BZ	100138	5	PINNACLES CAMPGROUND ROAD B	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)	TO END OF PAVEMENT		2	0.42	0.00	0.42	
0100CZ	100138	5	PINNACLES CAMPGROUND ROAD C	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)	TO END OF LOOP AT MP 0.18		2	0.12	0.06	0.18	
0100DZ	100138	5	PINNACLES CAMPGROUND ROAD D	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)	TO END OF LOOP		2	0.14	0.00	0.14	
0100EZ	100138	5	PINNACLES CAMPGROUND ROAD E	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)	TO END OF PAVEMENT		2	0.03	0.00	0.03	
0100FZ	100138	5	PINNACLES CAMPGROUND ROAD F	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)	TO ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)		2	0.15	0.00	0.15	
0100GZ	100138	5	PINNACLES CAMPGROUND ROAD G	FROM ROUTE 0100BZ (PINNACLES CAMPGROUND ROAD B)	TO END OF PAVEMENT		2	0.09	0.00	0.09	

NPS/RIP Subcomponent Details for PINN

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Red text denotes approx. mileage

White = Paved Routes, DCV Driven | Yellow = Unpaved Routes, DCV not Driven | Blue = All Paved Parking Areas | Green = All Unpaved Parking Areas

Grey = Paved Routes, DCV not Driven | Black = State, Local or Private non-NPS Routes | = Concession Route Flag ON

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

PINN

PINNACLES NATIONAL MONUMENT

Asset PINN-0908ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0908AZ	59604	5	CHALONE CREEK PICNIC AREA PARKING A	ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT				0.00	0.00	0.00	380
0908BZ	59604	5	CHALONE CREEK PICNIC AREA PARKING B	FROM ROUTE 0200 (CHALONE RESIDENCE ROAD) ON LEFT	TO PARKING			0.00	0.00	0.00	8,491
0908CZ	59604	5	CHALONE CREEK PICNIC AREA PARKING C	ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON LEFT				0.00	0.00	0.00	566
0908DZ	59604	5	CHALONE CREEK PICNIC AREA PARKING D	ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT				0.00	0.00	0.00	811

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - PINN

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Addition**	**Comments**
0100ZZ	PINNACLES CAMPGROUND ROADS	OTHER	ROUTES WERE ADDED IN CYCLE 5 ROUTE ID MEETING.
0203	CHAPARRAL OVERLOOK ROAD	RECONSTRUCTED	NEW ROUTE ADDED IN CYCLE 5.
0915	PINNACLES CAMPGROUND PARKING	OTHER	NEW ROUTE ADDED IN CYCLE 5.
0917	FIRE WAYSIDE PARKING	OTHER	NEW ROUTE ADDED IN CYCLE 5.
5000	U.S. HIGHWAY 146 (PINNACLES HIGHWAY)	OTHER	NEW ROUTE ADDED IN CYCLE 5.

ROUTES MODIFIED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Modification**	**Comments**
0011	CHALONE CREEK ROAD	RECONSTRUCTED	ROUTE 0910 FROM CYCLE 3 WAS WASHED OUT. ROUTE 0011 NOW EXTENDS OVER THIS AREA. ROUTE 0910 IS NOW UNPAVED.
0901	HEADQUARTERS SERVICE PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0908ZZ	CHALONE CREEK PARKING AREAS	RECONSTRUCTED	AREA WAS RECONSTRUCTED. CYCLE 3 ROUTES 0908A, 0908B, & 0908C WERE IN THIS GENERAL AREA.
0909	CHALONE CREEK MAINTENANCE AREA	RECONSTRUCTED	AREA RECONSTRUCTED, A NEW SECTION OF PARKING WAS ADDED IN CYCLE 5. THEREFORE THE SQUARE FEET AREA HAS INCREASED.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - PINN

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0200	CHALONE RESIDENCE ROAD	RECONSTRUCTED	AREA RECONSTRUCTED AFTER WASHOUT.
0402	CONDOR GULCH ROAD	FUNCTIONAL CLASS CHANGE	CHANGED FROM FUNCTIONAL CLASS 3 TO 6 AT THE CYCLE 5 ROUTE ID MEETING.

Section 3
Park Summary Information

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

PINN: 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	1.58	19.48%	3.29	40.57%	0.86	10.60%	0.08	0.99%	**5.81**
2	0.24	2.96%			0.12	1.48%	1.55	19.11%	**1.91**
3	0.04	0.49%	0.06	0.74%			0.04	0.49%	**0.14**
4									
5									
6	0.08	0.99%	0.10	1.23%	0.07	0.86%			**0.25**
7									
8									
Totals	**1.94**	**23.92%**	**3.45**	**42.54%**	**1.05**	**12.95%**	**1.67**	**20.59%**	**8.11**

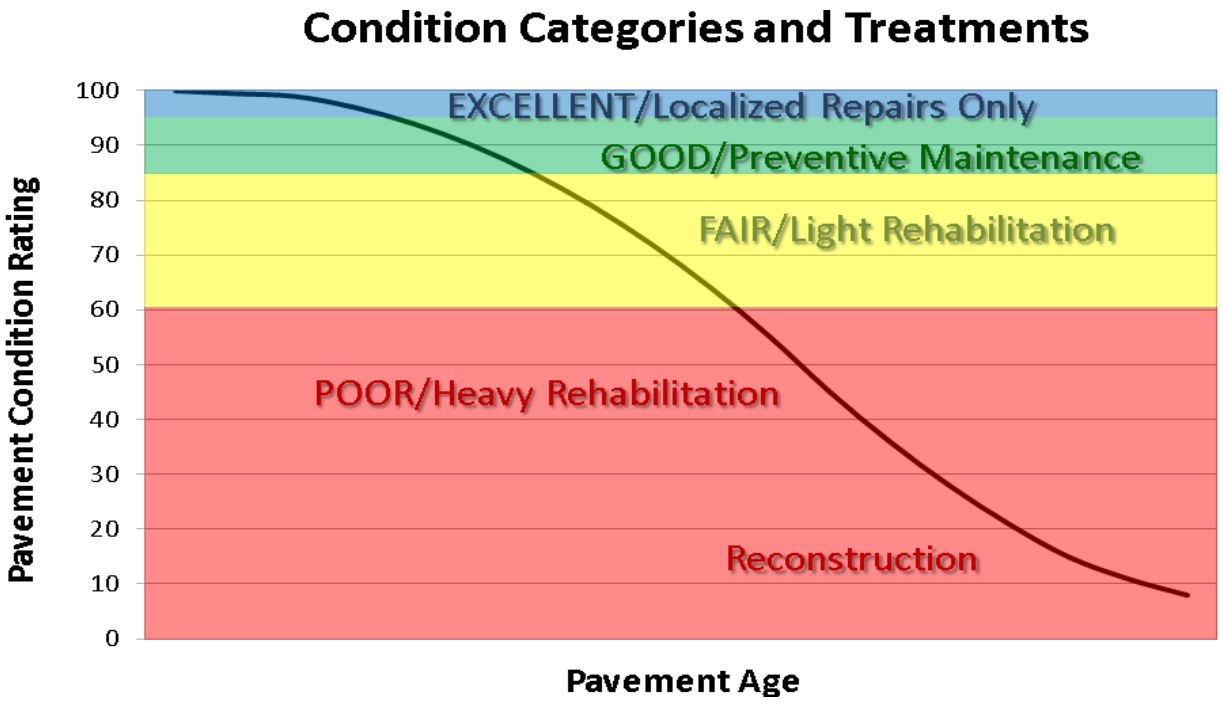
Note: **The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class 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.

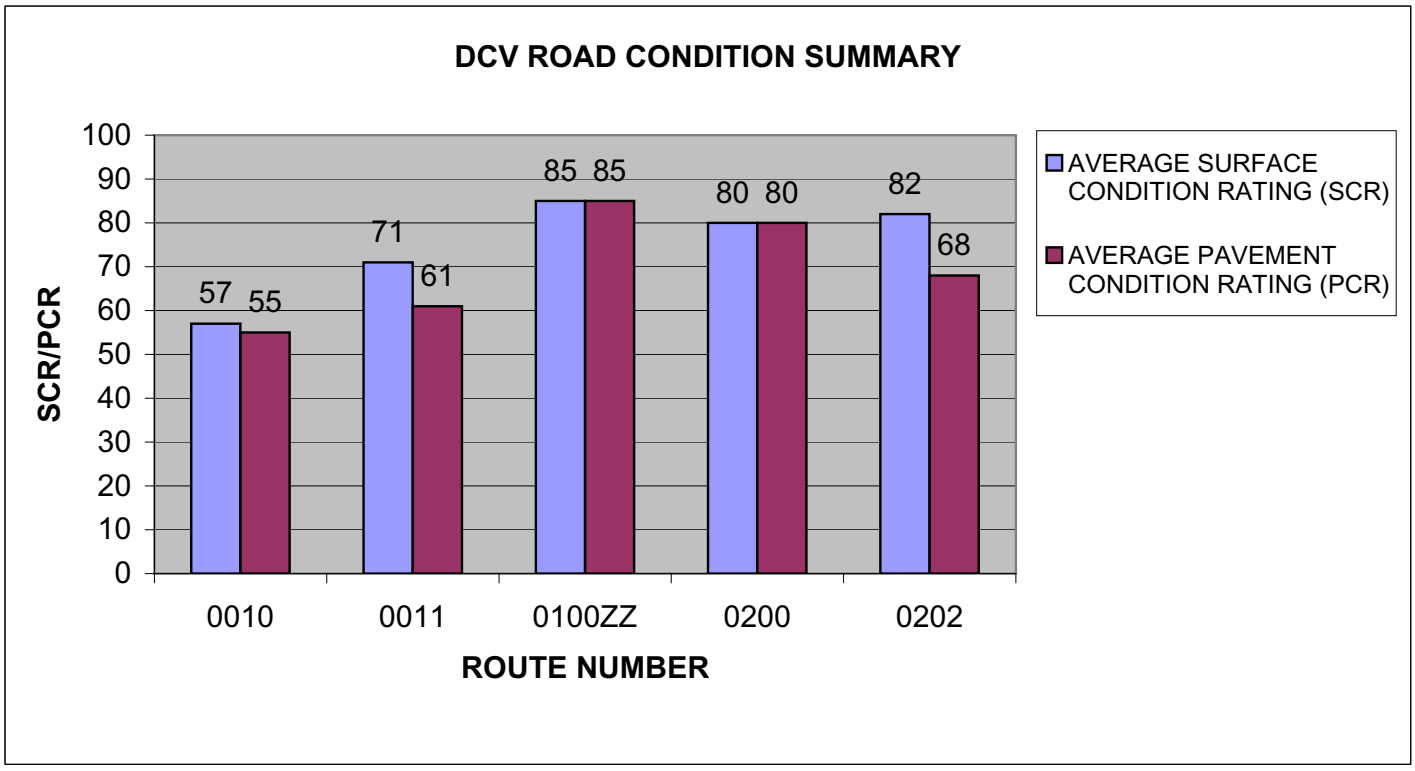
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely 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.



PINN: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

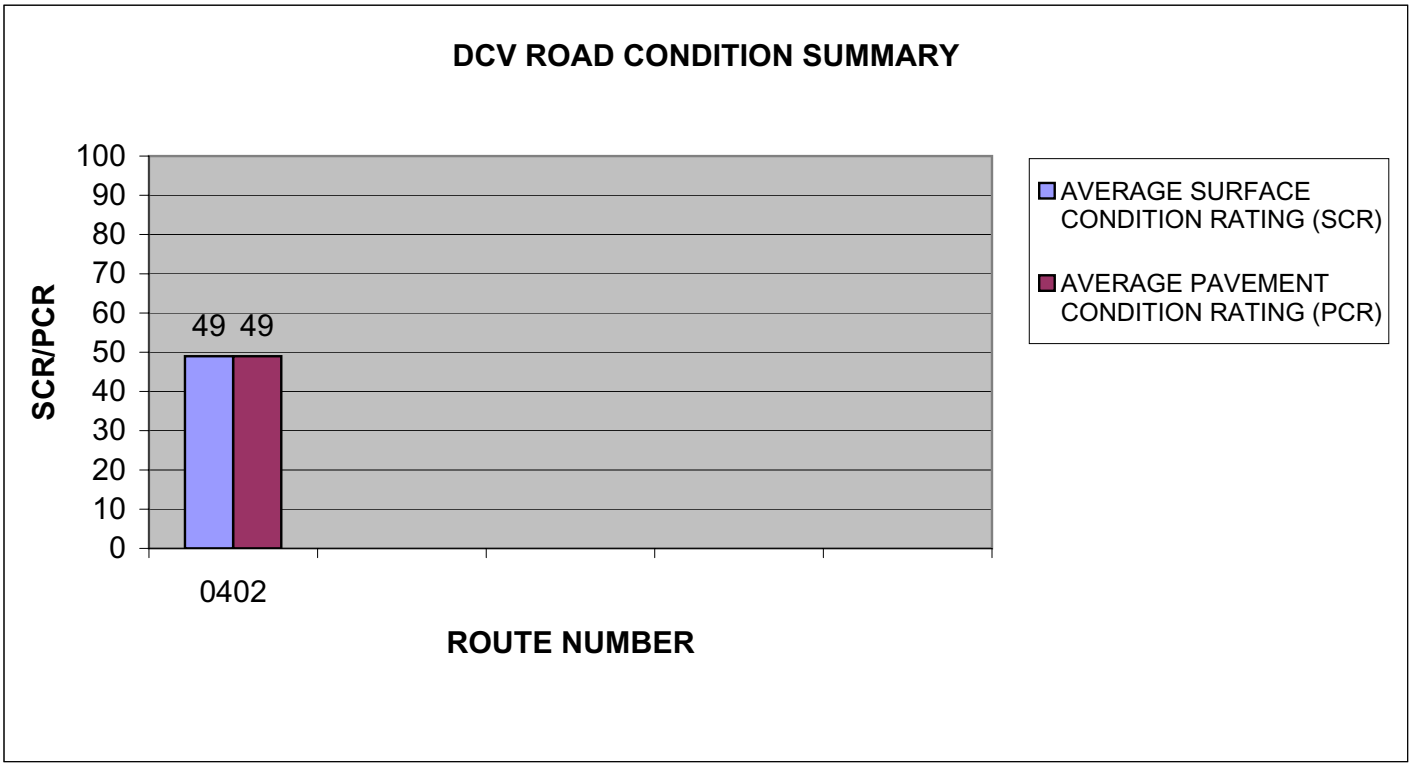
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	BEAR GULCH/EAST ENTRANCE ROAD	1	2.72	ASPHALT	57	55
0011	CHALONE CREEK ROAD	1	0.58	ASPHALT	71	61
0100ZZ	PINNACLES CAMPGROUND ROADS	2	1.91	ASPHALT	85	85
0200	CHALONE RESIDENCE ROAD	3	0.14	ASPHALT	80	80
0202	CHAPARRAL ROAD	1	2.51	ASPHALT	82	68



PINN: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

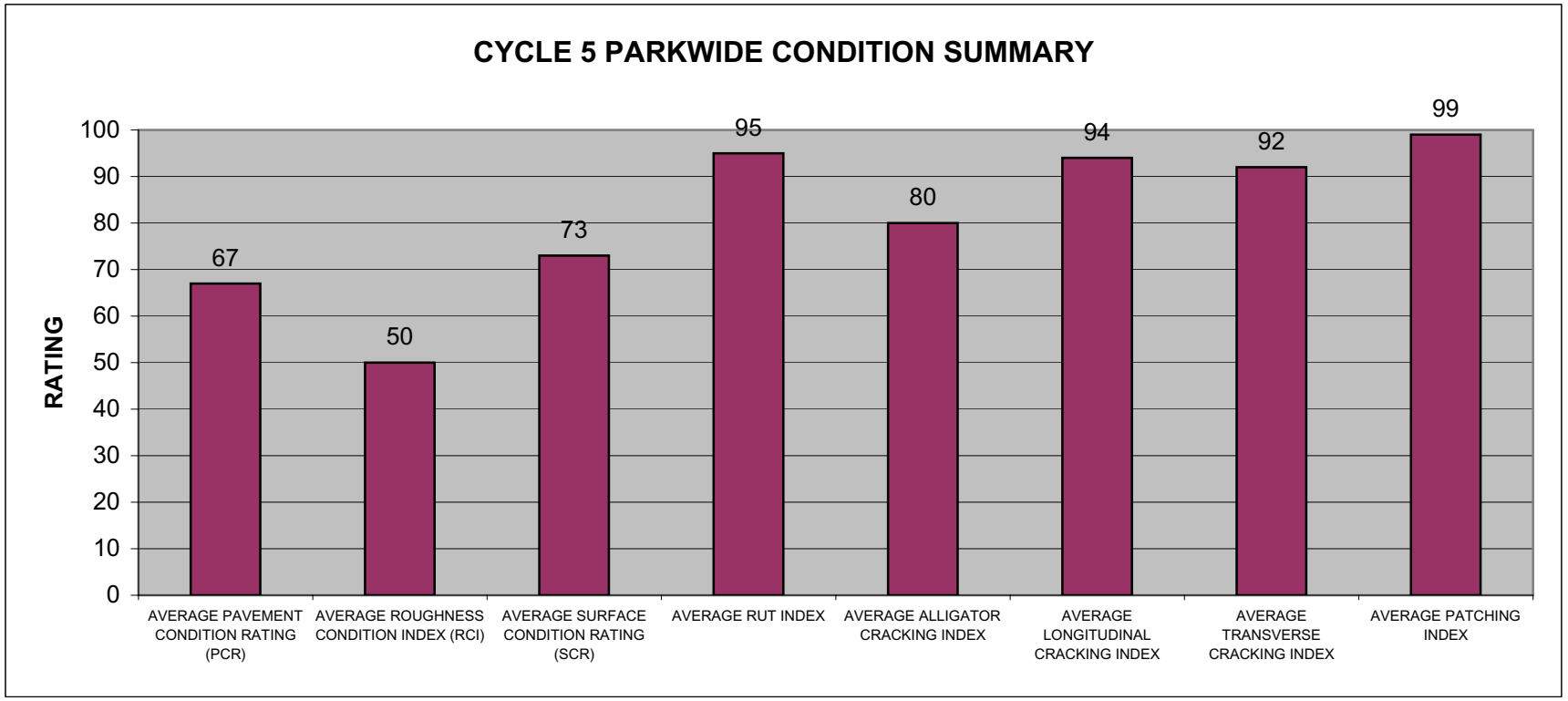
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0402	CONDOR GULCH ROAD	6	0.25	ASPHALT	49	49



PINN: PARKWIDE DCV 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
67	50	73	95	80	94	92	99

All Index values are based on Data Collection Vehicle (DCV) driven roads that were collected in Cycle-5.
Roughness data is only collected on routes with lengths greater than 0.5 miles and a posted speed limit of 25 MPH or greater.

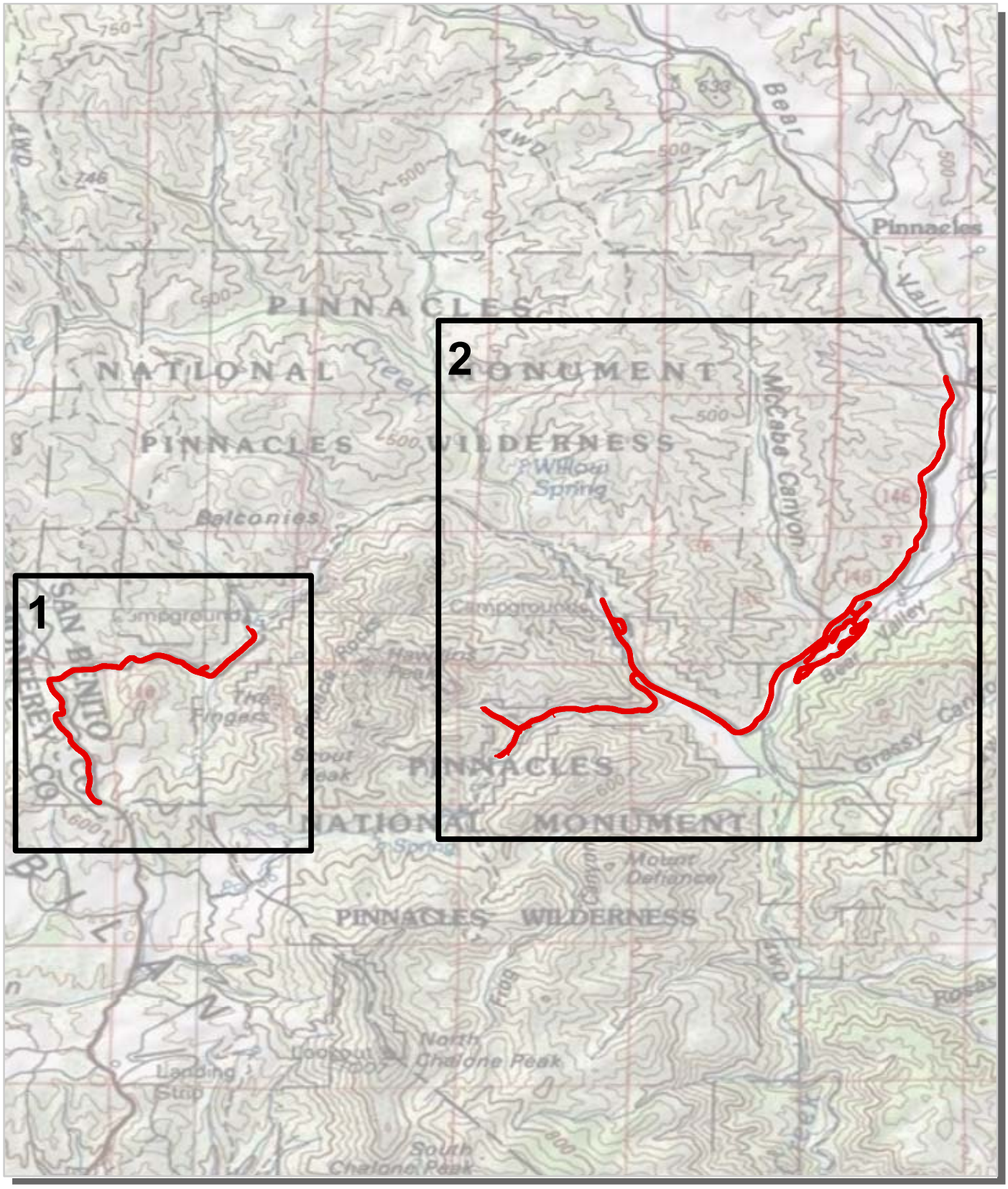


Section 4
Park Route Location Maps

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

Pinnacles National Monument
Route Location Map
Key Map



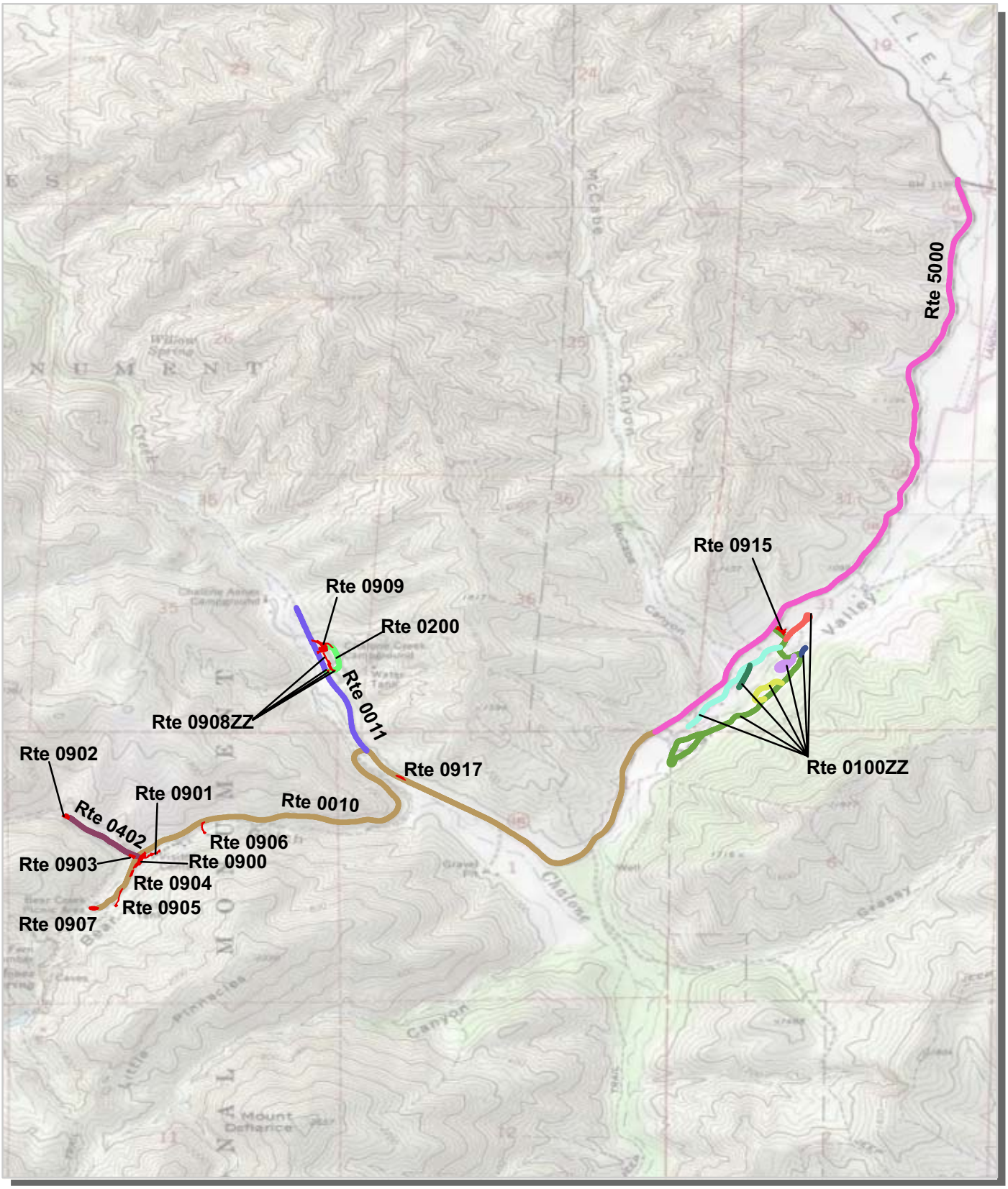
Pinnacles National Monument
Route Location Map
Area 1

Unique colors used to differentiate routes

0.3 0.15 0 0.3
Miles

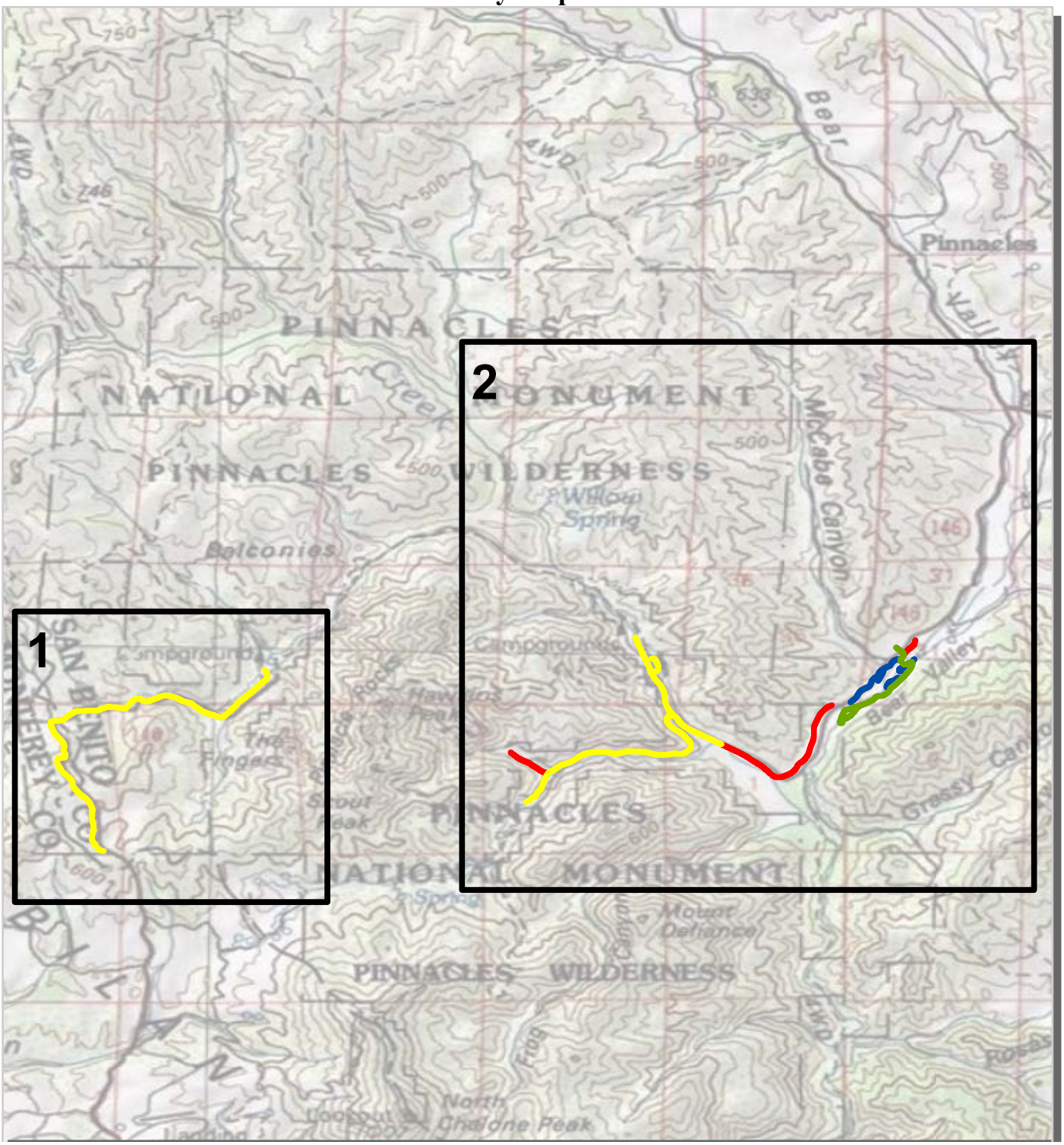
N

Pinnacles National Monument
Route Location Map
Area 2



Unique colors used to differentiate routes

Pinnacles National Monument
Route Condition Map
PCR - Mile by Mile
Key Map



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

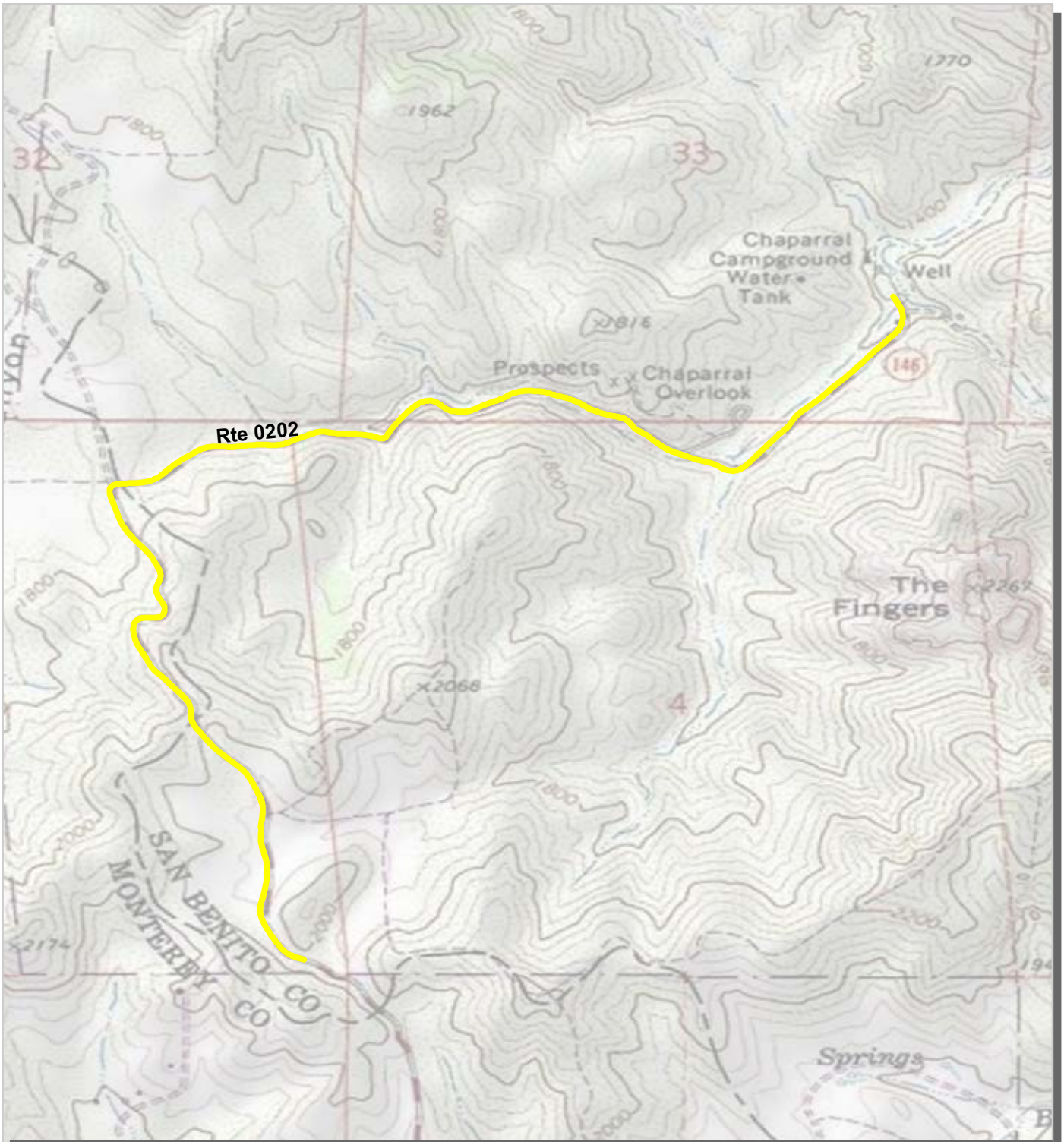
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

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

1 0.5 0 1 Miles

N

Pinnacles National Monument
Route Condition Map
PCR - Mile by Mile
Area 1



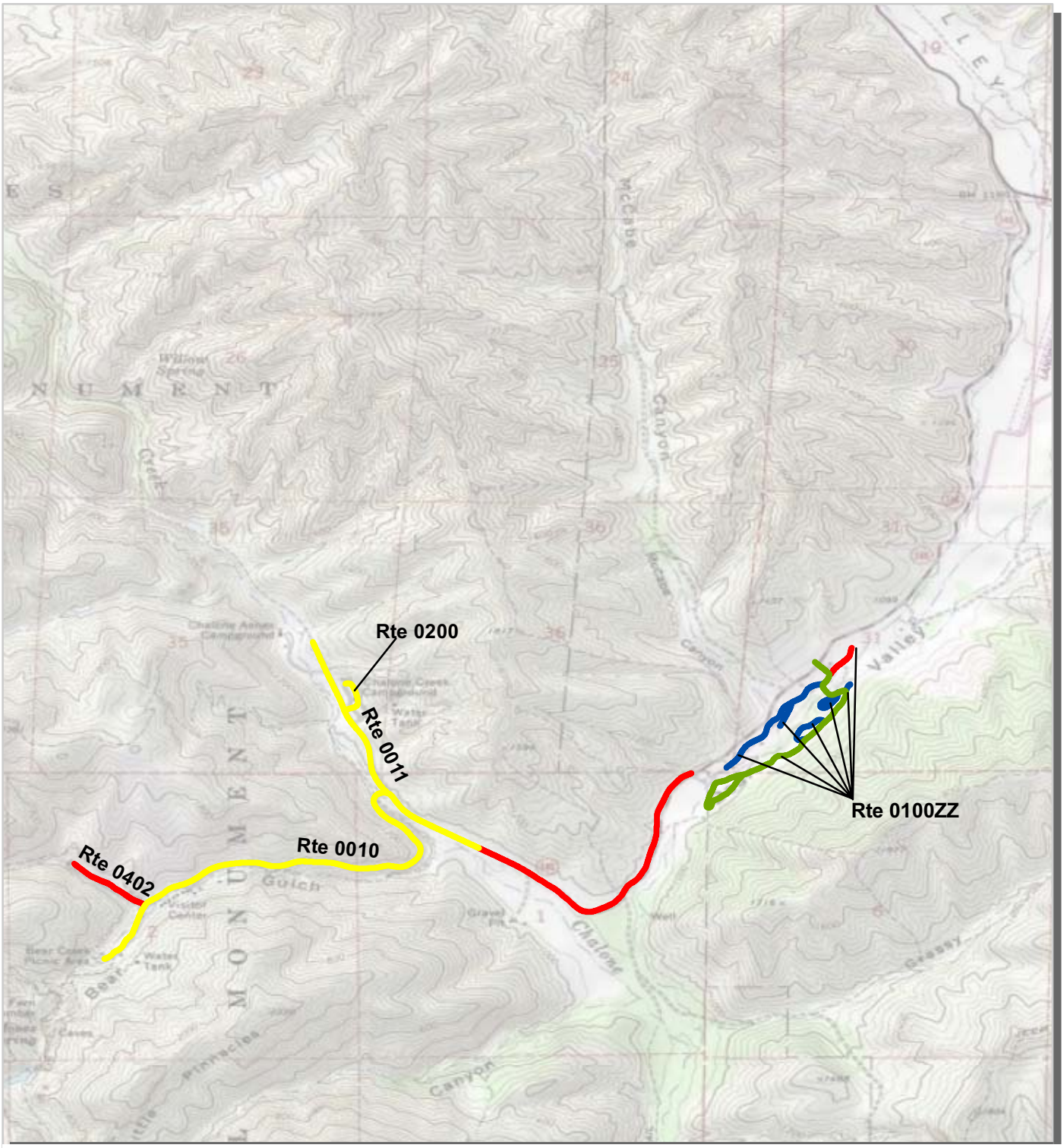
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.3 0.15 0 0.3 Miles

N

Pinnacles National Monument
Route Condition Map
PCR - Mile by Mile
Area 2



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

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

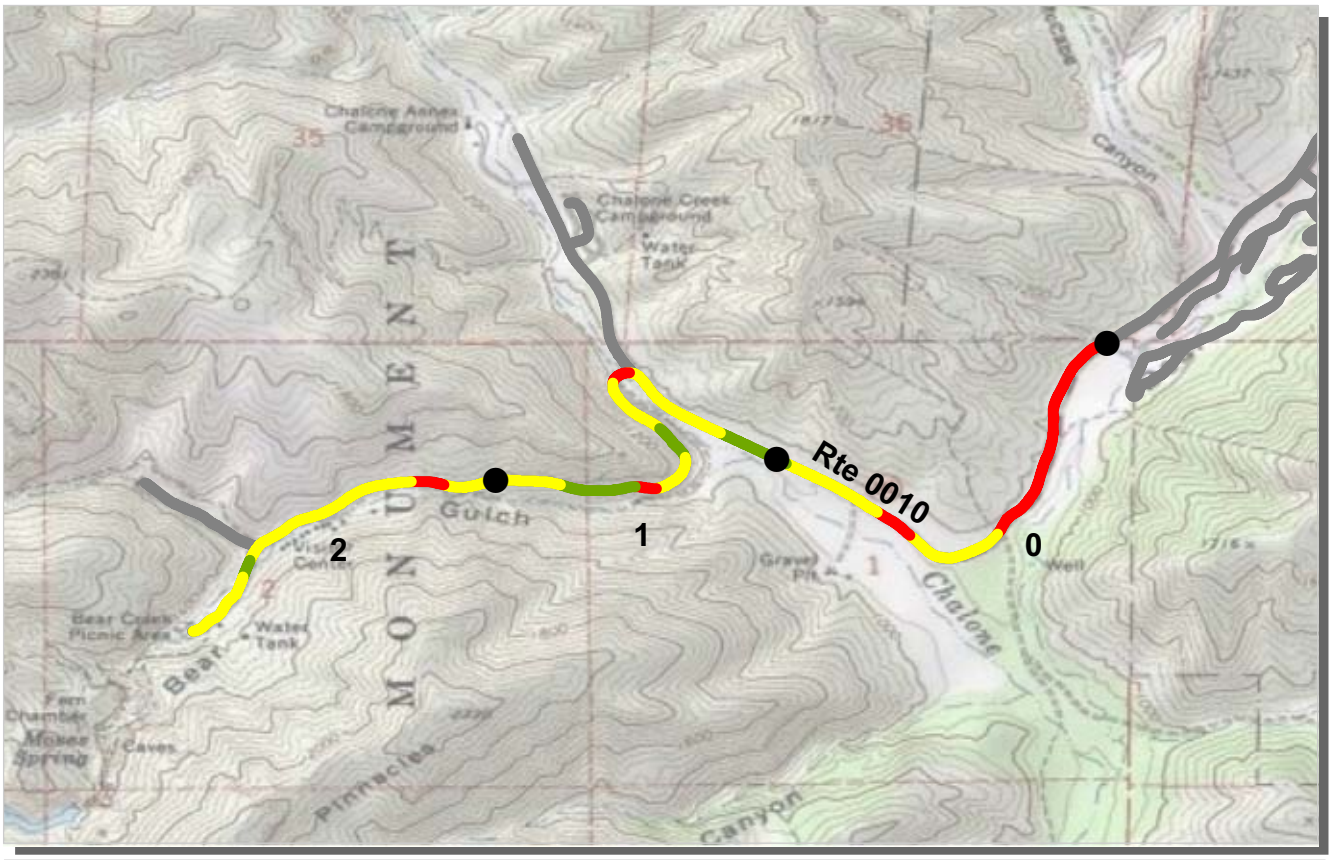
0.6 0.3 0 0.6 Miles

N

Section 5
Paved Route
Condition Rating Sheets

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program



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

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

ROUTE: 0010 BEAR GULCH/EAST ENTRANCE ROAD
PINN : PINNACLES NATIONAL MONUMENT

COLLECTED: 9/20/2011
PACIFIC WEST REGION **TOTAL LENGTH: 2.72 Miles**

Section Number	0	1	2		
Section Length (mi)	1.00	1.00	0.72		
Cross Section Information					
Number of Lanes	2	2	2		
Paved Width (ft)	27	20	21		
Lane Width (ft)	12	9	10		
Roadway Condition Information					
SCR (Surface Condition Rating)	4	88	88		
PCR (Pavement Condition Rating)	20	78	73		
Distress Index Values					
Structural Crack Index	4	91	93		
Transverse Cracking Index	89	88	88		
Patching Index	100	100	100		
Rutting Index	92	97	95		
Roughness Condition Index (RCI)	45	62	51		

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

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

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

ROUTE: 0011 CHALONE CREEK ROAD
PINN : PINNACLES NATIONAL MONUMENT

COLLECTED: 9/20/2011

PACIFIC WEST REGION **TOTAL LENGTH: 0.58 Miles**

Section Number	0				
Section Length (mi)	0.58				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	22				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	71				
PCR (Pavement Condition Rating)	61				
Distress Index Values					
Structural Crack Index	71				
Transverse Cracking Index	81				
Patching Index	98				
Rutting Index	96				
Roughness Condition Index (RCI)	45				

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

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

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

ROUTE: 0100ZZ PINNACLES CAMPGROUND ROADS
PINN : PINNACLES NATIONAL MONUMENT

Summary Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 1.91 Miles**

Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	85				
PCR (Pavement Condition Rating)	85				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

NOTES:
Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.
NC - Not Collected N/A - Not Applicable

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

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

ROUTE: 0100AZ PINNACLES CAMPGROUND ROAD A
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.96 Miles**

Section Number	0				
Section Length (mi)	0.96				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	14				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	87				
PCR (Pavement Condition Rating)	87				
Distress Index Values					
Structural Crack Index	87				
Transverse Cracking Index	100				
Patching Index	98				
Rutting Index	98				
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

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

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

ROUTE: 0100BZ PINNACLES CAMPGROUND ROAD B
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.42 Miles**

Section Number	0				
Section Length (mi)	0.42				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	15				
Lane Width (ft)	7				
Roadway Condition Information					
SCR (Surface Condition Rating)	95				
PCR (Pavement Condition Rating)	95				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
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

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

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

ROUTE: 0100CZ PINNACLES CAMPGROUND ROAD C
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.12 Miles**

Section Number	0				
Section Length (mi)	0.12				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	16				
Lane Width (ft)	16				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	0				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	95				
Patching Index	94				
Rutting Index	90				
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

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

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

ROUTE: 0100DZ PINNACLES CAMPGROUND ROAD D
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.14 Miles**

Section Number	0				
Section Length (mi)	0.14				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	97				
PCR (Pavement Condition Rating)	97				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	97				
Roughness Condition Index (RCI)	NC				

NOTES:
Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.
NC - Not Collected N/A - Not Applicable

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

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

ROUTE: 0100EZ PINNACLES CAMPGROUND ROAD E
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.03 Miles**

Section Number	0				
Section Length (mi)	0.03				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	11				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	98				
PCR (Pavement Condition Rating)	98				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	98				
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

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

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

ROUTE: 0100FZ PINNACLES CAMPGROUND ROAD F
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.15 Miles**

Section Number	0				
Section Length (mi)	0.15				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	11				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	100				
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

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

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

ROUTE: 0100GZ PINNACLES CAMPGROUND ROAD G
PINN : PINNACLES NATIONAL MONUMENT

Subcomponent Record **COLLECTED: 9/20/2011**
PACIFIC WEST REGION **TOTAL LENGTH: 0.09 Miles**

Section Number	0				
Section Length (mi)	0.09				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
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

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

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

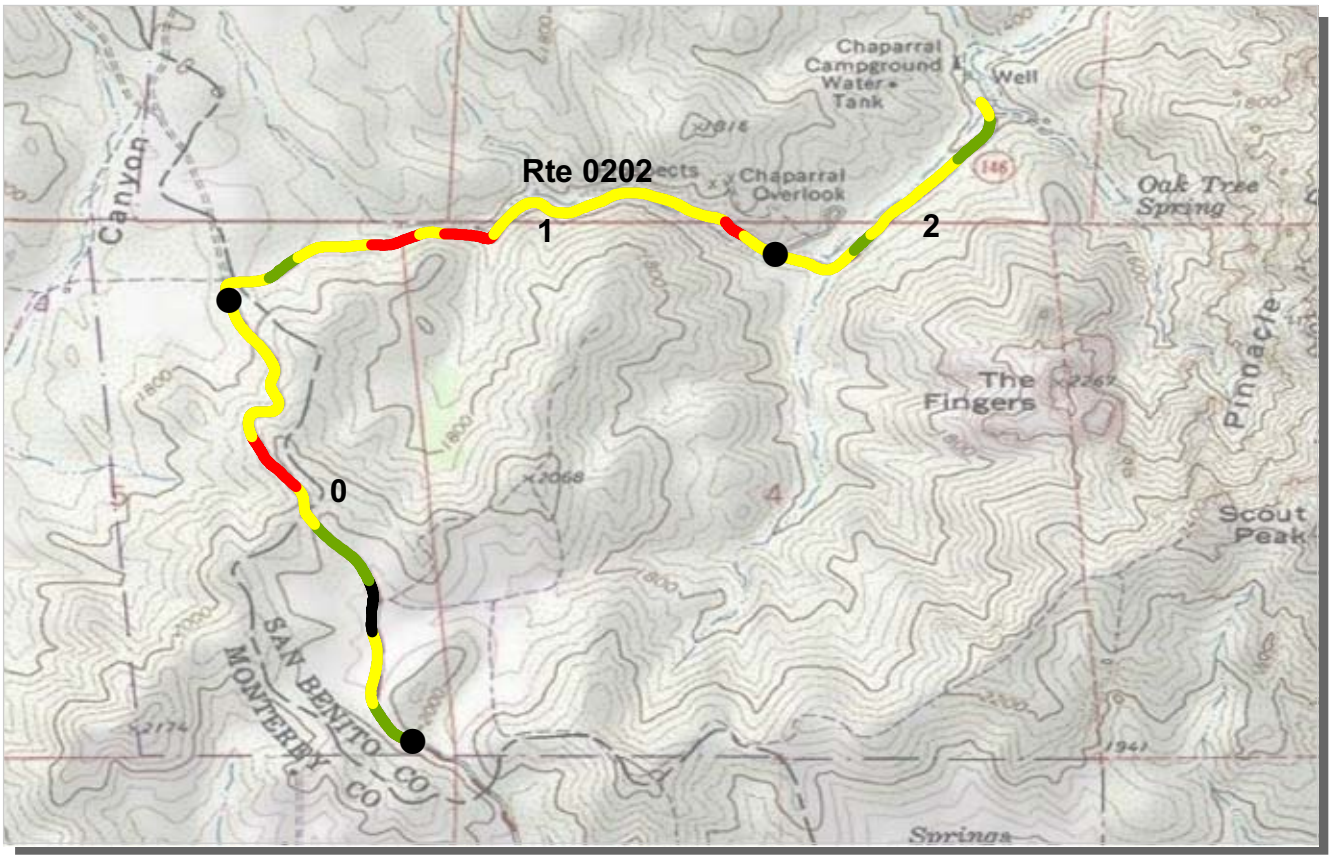
ROUTE: 0200 CHALONE RESIDENCE ROAD
PINN : PINNACLES NATIONAL MONUMENT

COLLECTED: 9/20/2011

PACIFIC WEST REGION **TOTAL LENGTH: 0.14 Miles**

Section Number	0				
Section Length (mi)	0.14				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	20				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	80				
PCR (Pavement Condition Rating)	80				
Distress Index Values					
Structural Crack Index	87				
Transverse Cracking Index	94				
Patching Index	93				
Rutting Index	80				
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



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

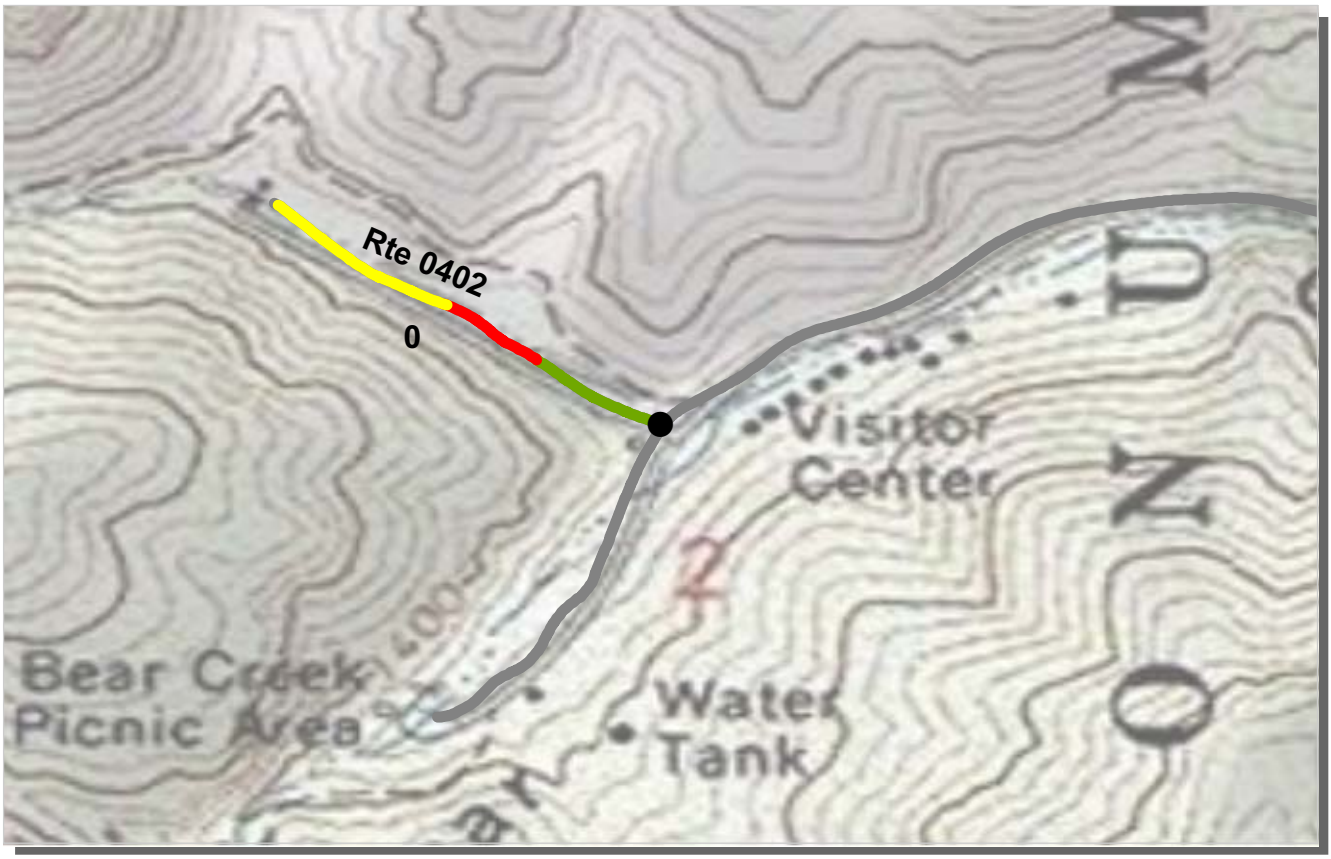
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0202 CHAPARRAL ROAD
PINN : PINNACLES NATIONAL MONUMENT

COLLECTED: 9/20/2011
PACIFIC WEST REGION **TOTAL LENGTH: 2.51 Miles**

Section Number	0	1	2		
Section Length (mi)	1.00	1.00	0.51		
Cross Section Information					
Number of Lanes	2	2	2		
Paved Width (ft)	17	16	17		
Lane Width (ft)	8	8	12		
Roadway Condition Information					
SCR (Surface Condition Rating)	76	83	93		
PCR (Pavement Condition Rating)	68	65	75		
Distress Index Values					
Structural Crack Index	76	83	96		
Transverse Cracking Index	90	91	95		
Patching Index	100	100	100		
Rutting Index	96	95	93		
Roughness Condition Index (RCI)	55	39	48		

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



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

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

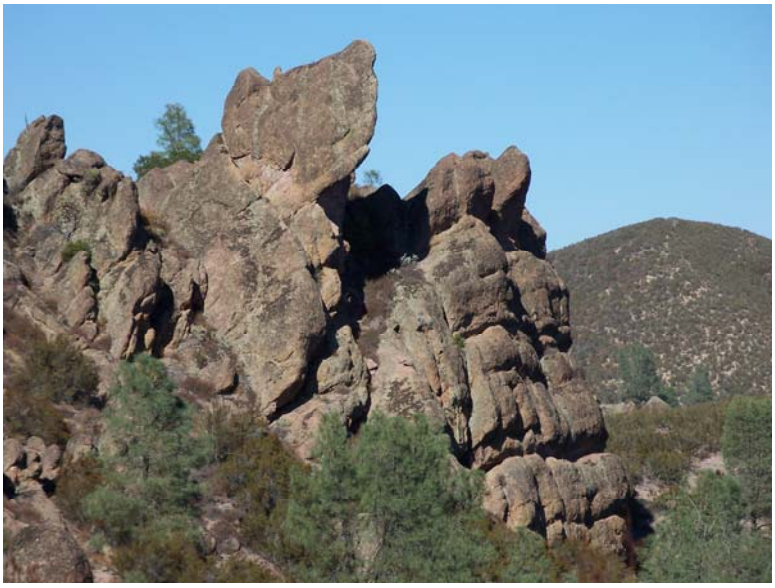
ROUTE: 0402 CONDOR GULCH ROAD
PINN : PINNACLES NATIONAL MONUMENT

COLLECTED: 9/20/2011
PACIFIC WEST REGION **TOTAL LENGTH: 0.25 Miles**

Section Number	0				
Section Length (mi)	0.25				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	49				
PCR (Pavement Condition Rating)	49				
Distress Index Values					
Structural Crack Index	49				
Transverse Cracking Index	97				
Patching Index	100				
Rutting Index	83				
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

Section 6
Manually Rated Paved Route Condition Rating Sheets



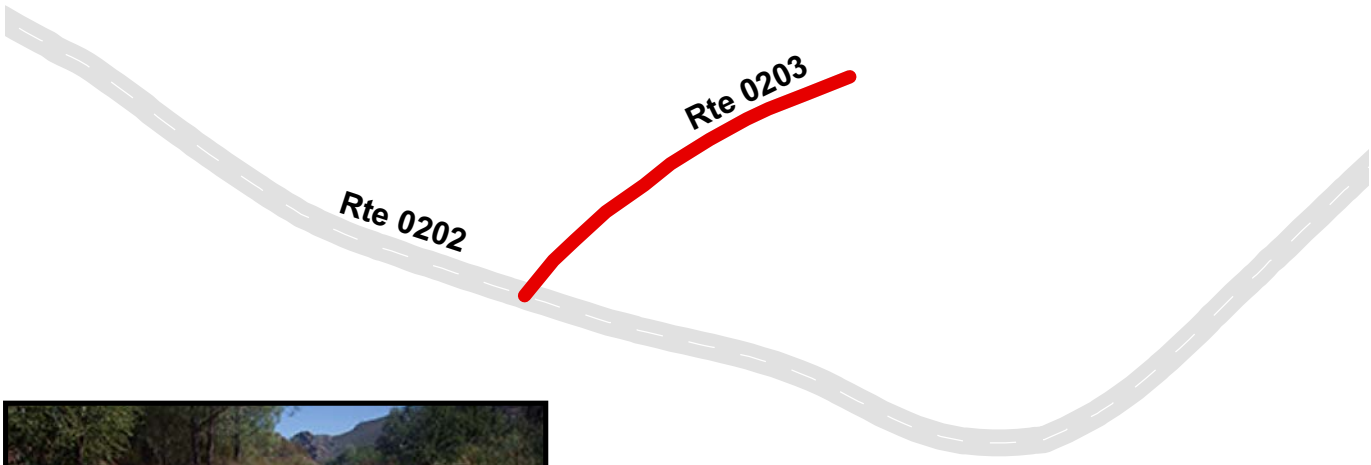
Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

PINNACLES NATIONAL MONUMENT
Route 0203
CHAPARRAL OVERLOOK ROAD
FROM 0202 (CHAPARRAL ROAD)
TO ROUTE 0913 (CHAPARRAL OVERLOOK PARKING)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0203	PUBLIC	9/20/2011	3,801	0.07	0.06	12.2
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
1	0	1	NO CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths



340 170 0 340
Feet

N

Section 7
Parking Area
Condition Rating Sheets

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

PINNACLES NATIONAL MONUMENT
Route 0900
HEADQUARTERS/VISITOR CENTER PARKING
FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)

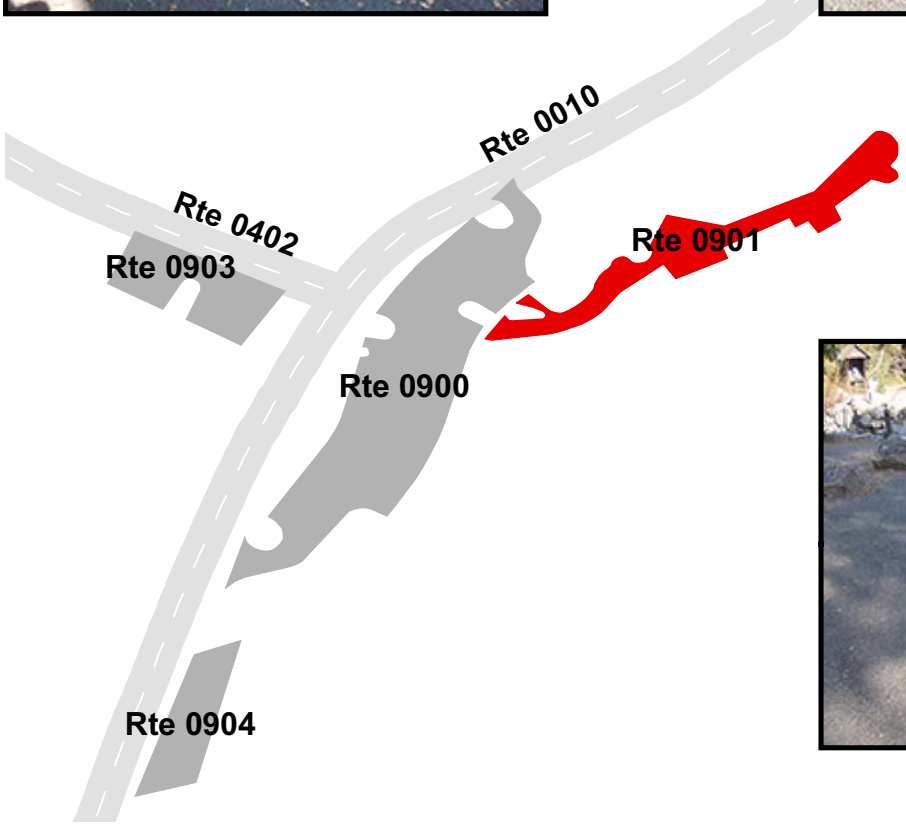
Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0900	PUBLIC	11/18/2010	17,597	0.30	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths

PINNACLES NATIONAL MONUMENT
Route 0901
HEADQUARTERS SERVICE PARKING
FROM ROUTE 0900 (HEADQUARTERS/VISITOR CENTER PARKING)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901	NONPUBLIC	11/18/2010	6,237	0.11	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



400 200 0 400 Feet

N

PINNACLES NATIONAL MONUMENT

Route 0902

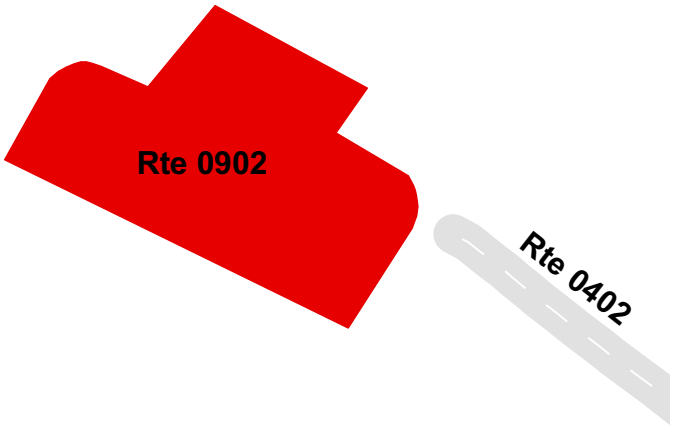
CONDOR GULCH PARKING

FROM END OF ROUTE 0402 (CONDOR GULCH ROAD)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0902	NONPUBLIC	11/18/2010	7,668	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



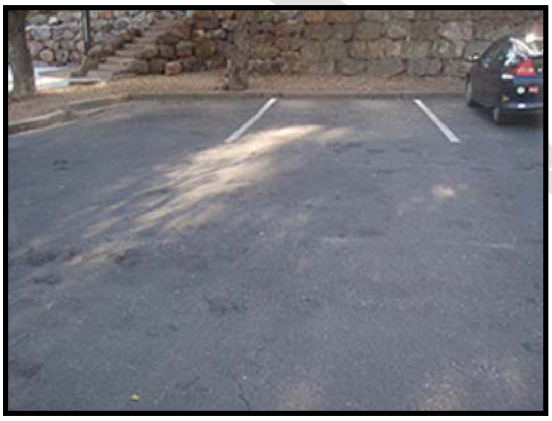
200 100 0 200 Feet

N

PINNACLES NATIONAL MONUMENT
Route 0903
CONDOR GULCH RESTROOM PARKING
ADJACENT TO ROUTE 0402 (CONDOR GULCH ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903	PUBLIC	11/18/2010	4,506	0.08	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



PINNACLES NATIONAL MONUMENT

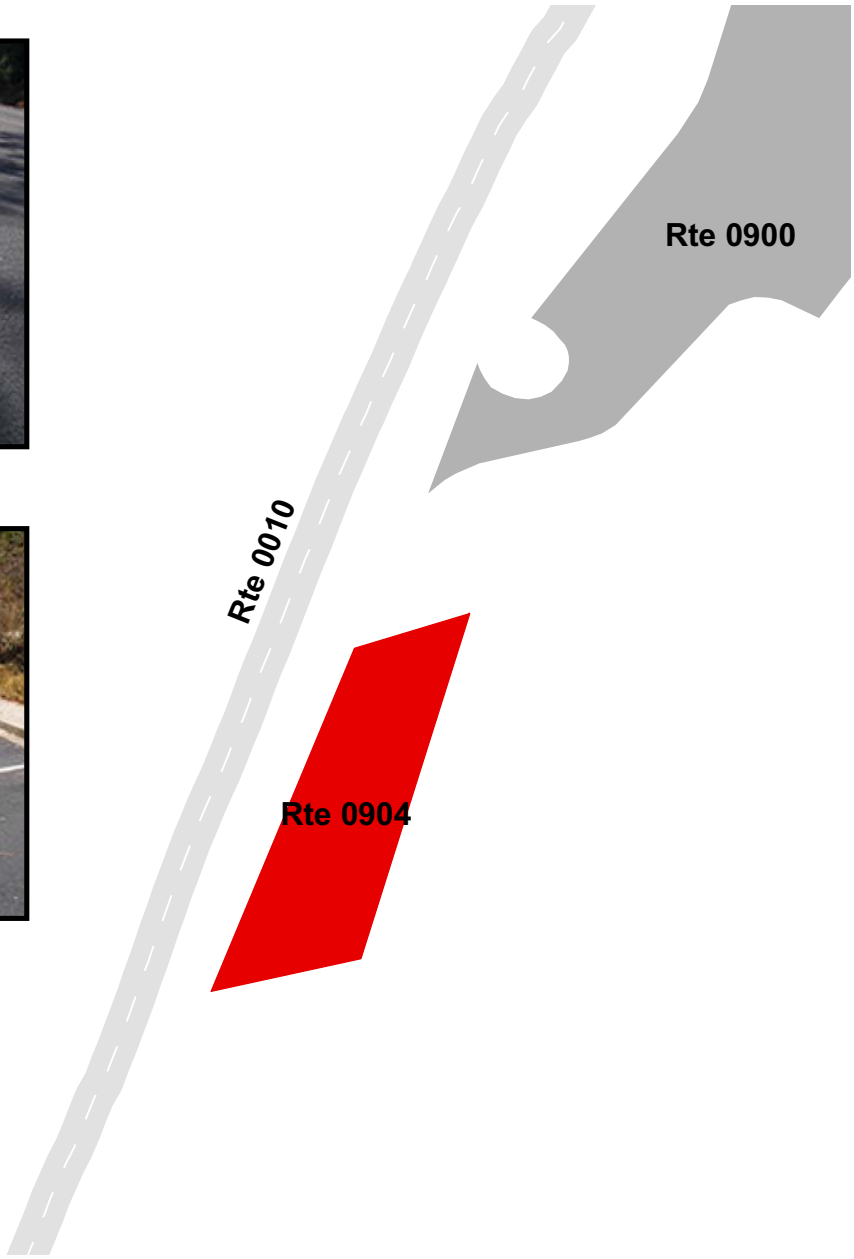
Route 0904

MOSES SPRINGS PICNIC PARKING

ADJACENT TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904	PUBLIC	11/18/2010	3,535	0.06	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



150 75 0 150 Feet

N

PINNACLES NATIONAL MONUMENT

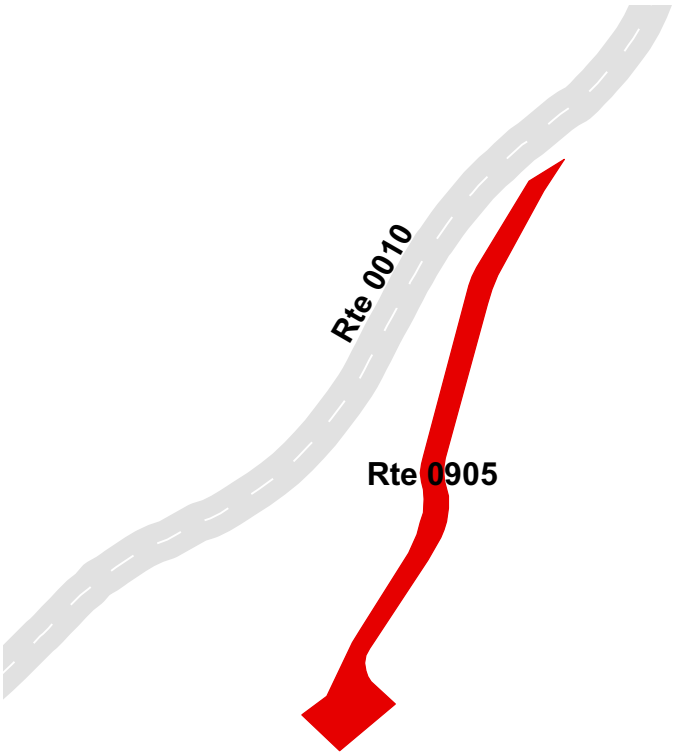
Route 0905

RESIDENCE 2 PARKING

FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD) ON LEFT
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0905	NONPUBLIC	11/18/2010	4,729	0.08	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



300 150 0 300 Feet

N

PINNACLES NATIONAL MONUMENT

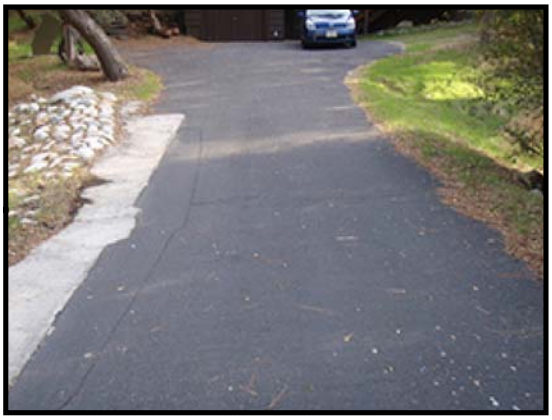
Route 0906

RESIDENCE 19 PARKING

FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD) ON LEFT
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0906	NONPUBLIC	11/18/2010	3,647	0.06	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



PINNACLES NATIONAL MONUMENT

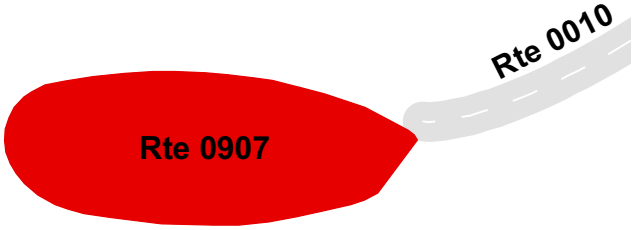
Route 0907

MOSES SPRINGS PARKING

FROM END OF ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0907	PUBLIC	11/18/2010	8,067	0.14	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



150 75 0 150
Feet

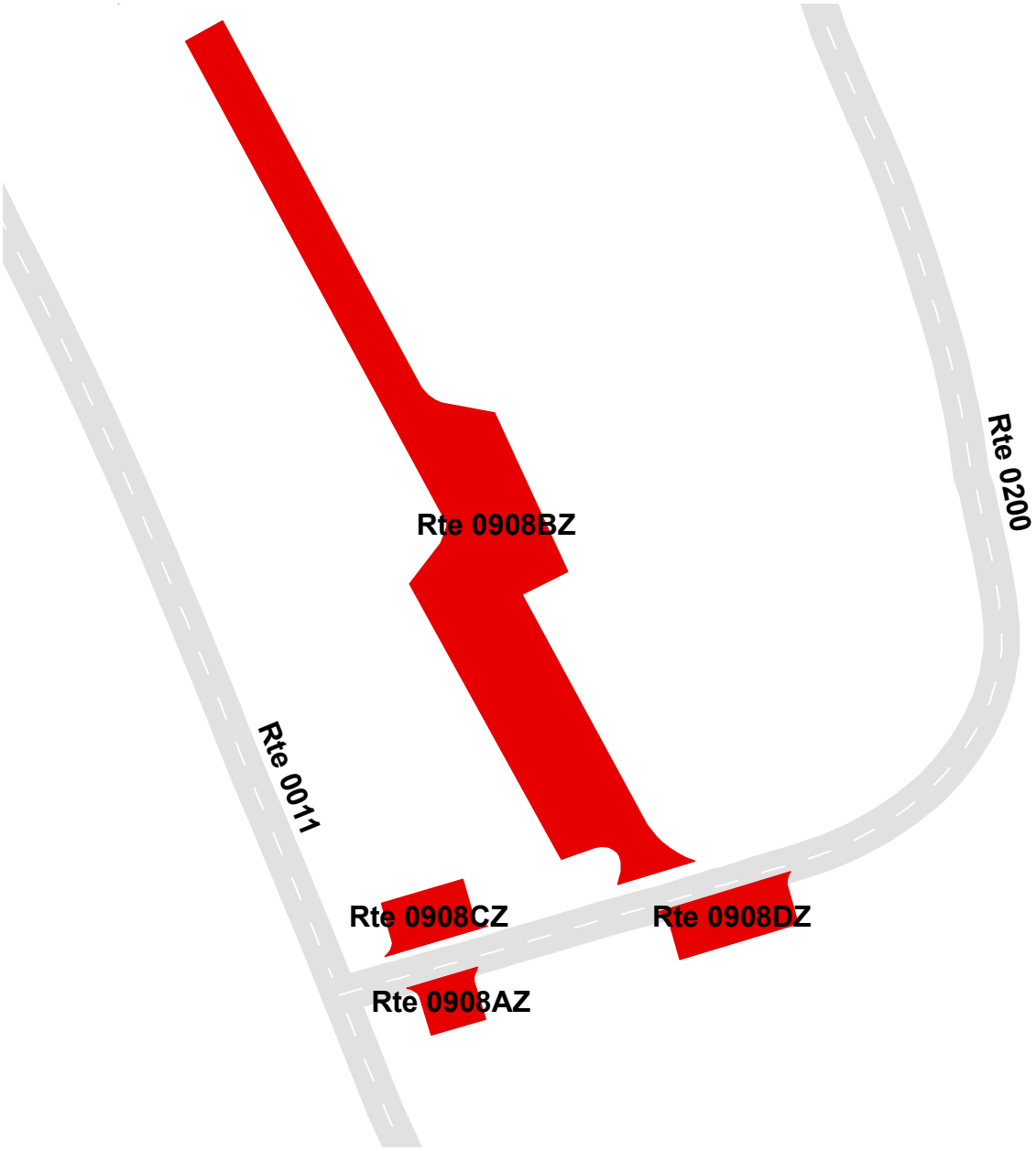
N

PINNACLES NATIONAL MONUMENT
Route 0908ZZ
CHALONE CREEK PARKING AREAS
ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT AND LEFT

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908ZZ	PUBLIC	11/18/2010	10,248	0.18	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	SUMMARY/53

* Lane miles are based on 11' lane widths



PINNACLES NATIONAL MONUMENT
Route 0908AZ
CHALONE CREEK PICNIC AREA PARKING A
ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908AZ	PUBLIC	11/18/2010	380	0.01	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

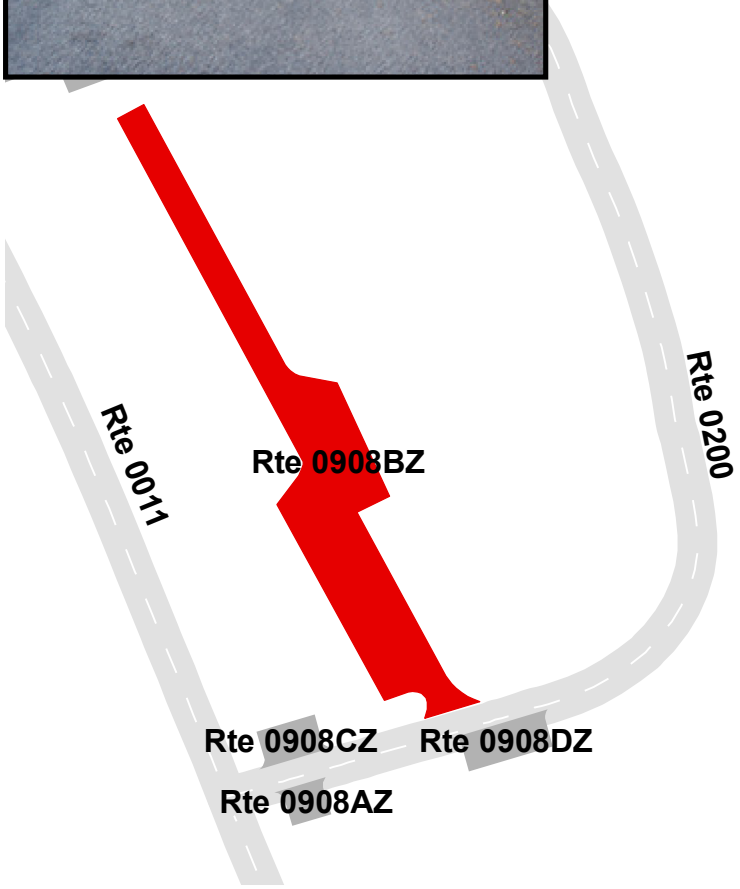
* Lane miles are based on 11' lane widths

50 25 0 50 Feet

PINNACLES NATIONAL MONUMENT
Route 0908BZ
CHALONE CREEK PICNIC AREA PARKING B
FROM ROUTE 0200 (CHALONE RESIDENCE ROAD) ON LEFT
TO PARKING
Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908BZ	PUBLIC	11/18/2010	8,491	0.15	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



200 100 0 200
Feet

N

PINNACLES NATIONAL MONUMENT
Route 0908CZ
CHALONE CREEK PICNIC AREA PARKING C
ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON LEFT

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908CZ	PUBLIC	11/18/2010	566	0.01	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths

50 25 0 50 Feet

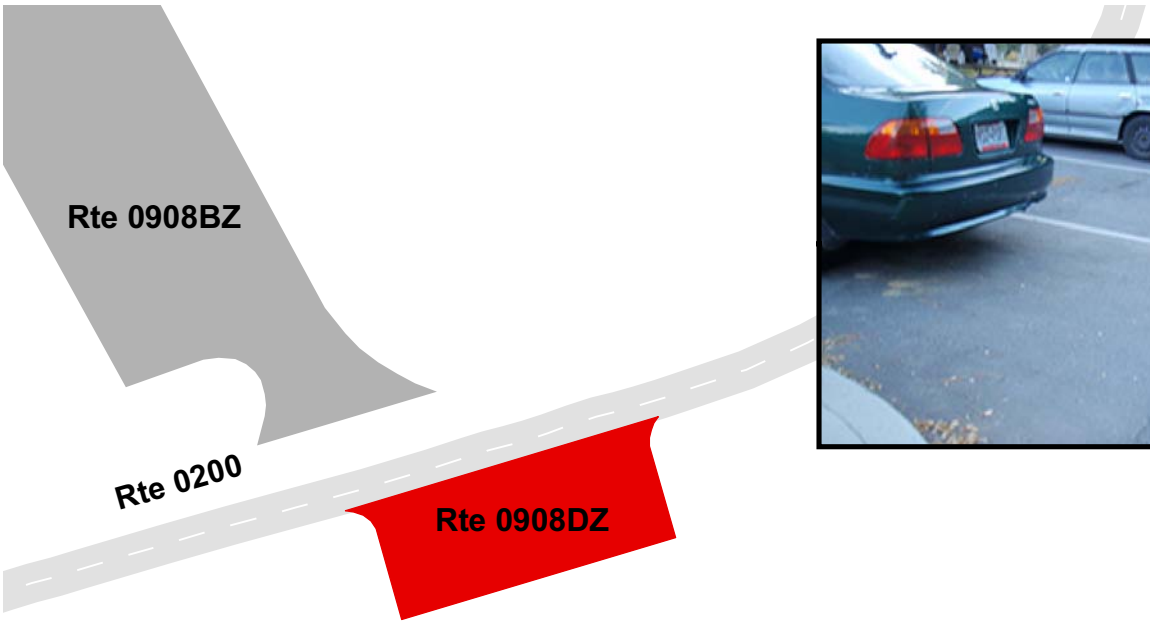
N

PINNACLES NATIONAL MONUMENT
Route 0908DZ
CHALONE CREEK PICNIC AREA PARKING D
ADJACENT TO ROUTE 0200 (CHALONE RESIDENCE ROAD) ON RIGHT

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908DZ	PUBLIC	11/18/2010	811	0.01	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



50 25 0 50 Feet

N

PINNACLES NATIONAL MONUMENT
Route 0909
CHALONE CREEK MAINTENANCE AREA

FROM ROUTE 0011 (CHALONE CREEK ROAD) AND END OF ROUTE 0200 (CHALONE RESIDENCE ROAD)
TO ROUTE 0011 (CHALONE CREEK ROAD) AND ROUTE 0908ZZ (CHALONE CREEK PARKING AREAS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0909	NONPUBLIC	11/18/2010	26,317	0.45	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	0	2	NO CURB AND GUTTER	ASPHALT CURB	FAIR/73

* Lane miles are based on 11' lane widths

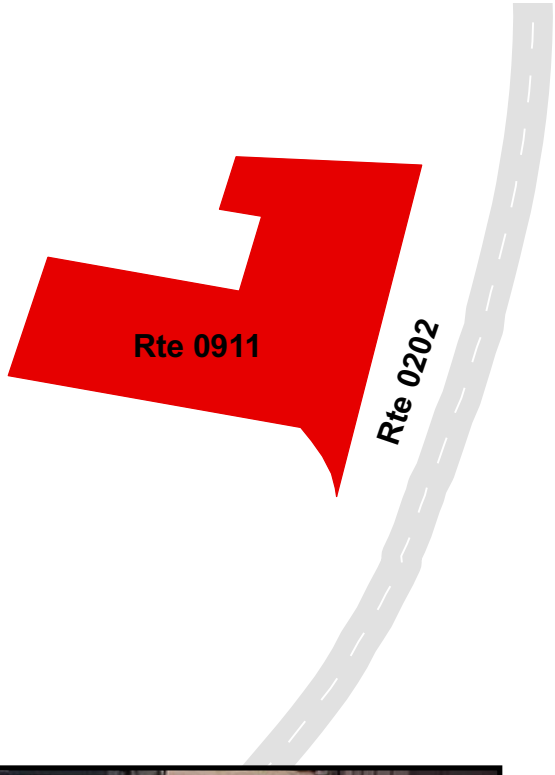
310 155 0 310 Feet

N

PINNACLES NATIONAL MONUMENT
Route 0911
CHAPARRAL RANGER STATION PARKING
ADJACENT TO ROUTE 0202 (CHAPARRAL ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0911	PUBLIC	11/19/2010	1,687	0.03	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



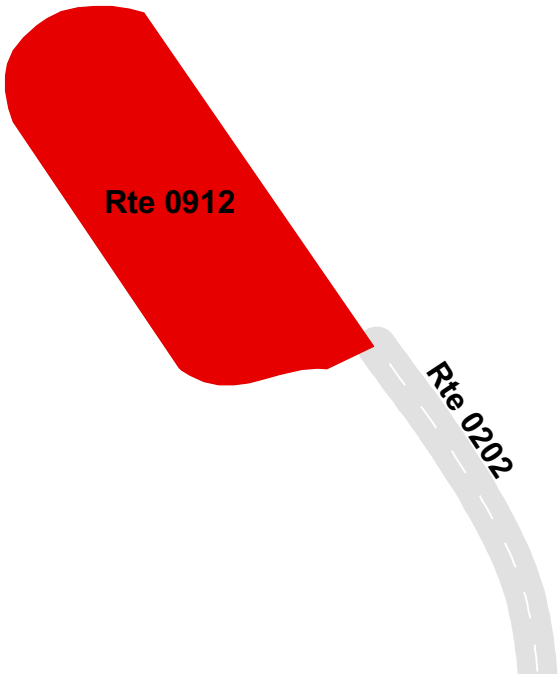
50 25 0 50 Feet

N

PINNACLES NATIONAL MONUMENT
Route 0912
CHAPARRAL DAY USE AREA PARKING
FROM END OF ROUTE 0202 (CHAPARRAL ROAD)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0912	PUBLIC	11/19/2010	19,532	0.34	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



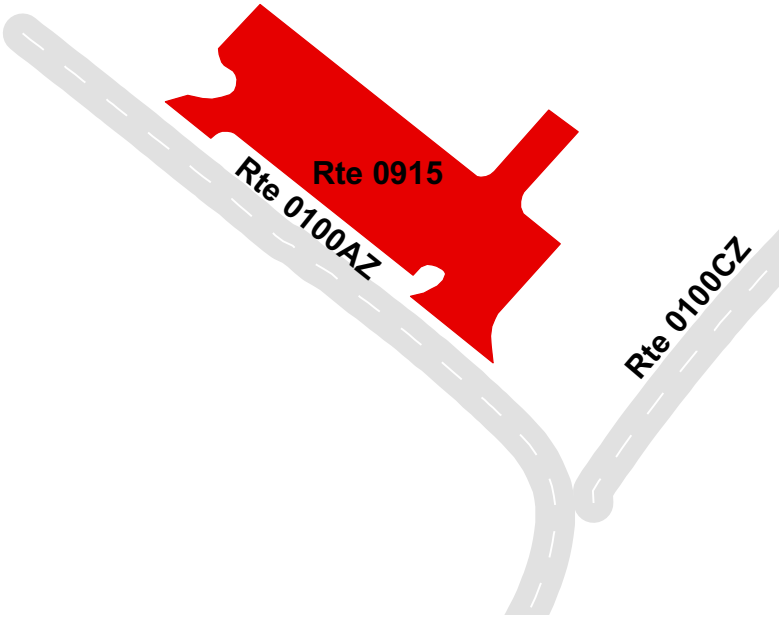
200 100 0 200
Feet

N

PINNACLES NATIONAL MONUMENT
Route 0915
PINNACLES CAMPGROUND PARKING
FROM ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)
TO ROUTE 0100ZZ (PINNACLES CAMPGROUND ROADS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0915	PUBLIC	11/18/2010	10,220	0.18	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

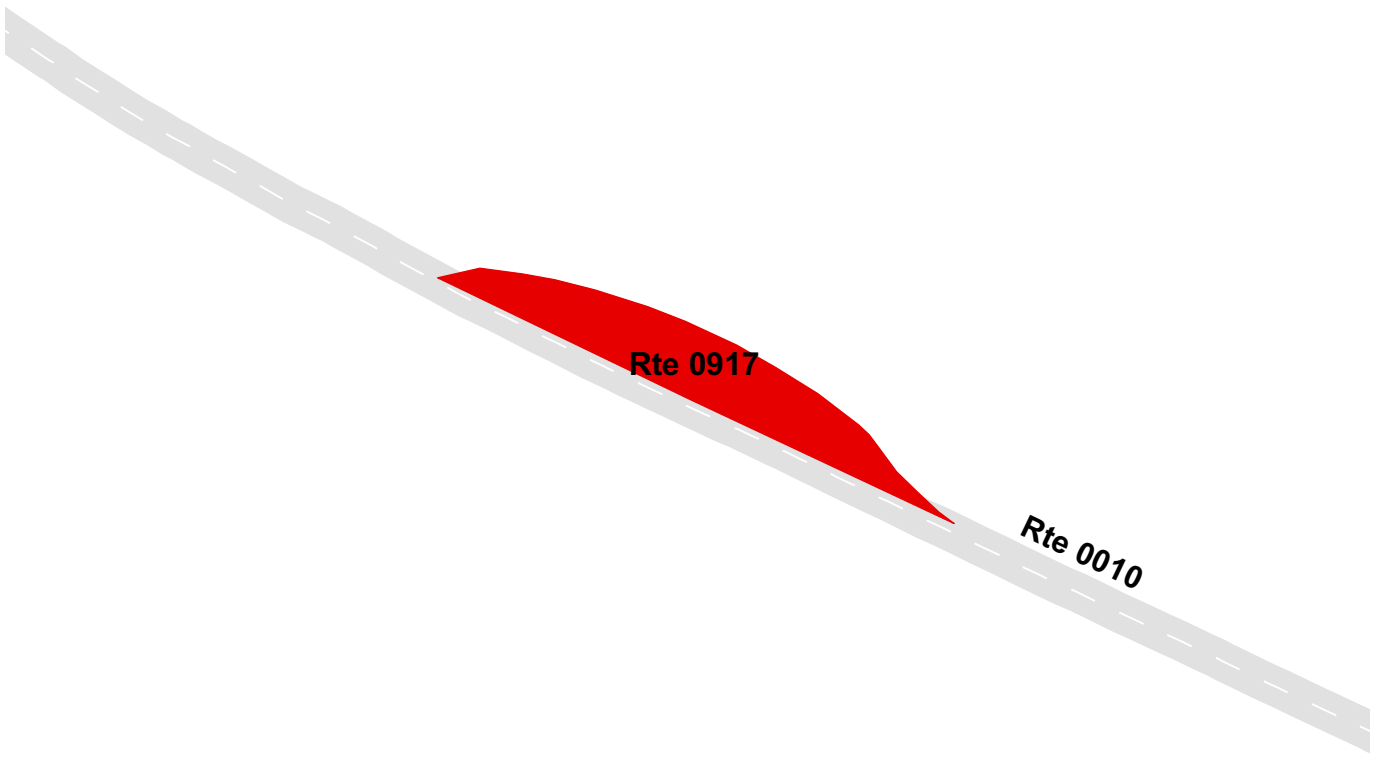
* Lane miles are based on 11' lane widths



PINNACLES NATIONAL MONUMENT
Route 0917
FIRE WAYSIDE PARKING
ADJACENT TO ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0917	PUBLIC	11/18/2010	3,130	0.05	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



Section 8
Parkwide/Route
Maintenance Features Summaries

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

PINN: PARKWIDE MAINTENANCE FEATURES SUMMARY
Includes DCV, MRL, MRP & PKG routes collected in Cycle-5

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all DCV driven routes. Culverts, drop inlets, and gates were also collected on all Manually Rated Routes and Paved Parking areas. These totals are reflected below.

FEATURE	LINEAR FEET	COUNT
BRIDGE	--	1
CATTLE GUARD	--	2
CULVERT	--	54
CURB	2,287	--
DROP INLET	--	1
GATE	--	10
GUARD/GUIDE RAIL	253	--
CABLE	0	--
NON-CABLE	253	--
GUARD/GUIDE WALL	169	--
BOLLARD	0	--
TEMPORARY BARRIER	0	--
NON TEMP/BOLLARD	169	--
INTERSECTION	--	85
LOW WATER CROSSING	190	3
MILE MARKER	--	0
OVERPASS	--	0
PARK BOUNDARY	--	1
PAVED DITCH	63	--
PULLOUT	633	8
RAILROAD CROSSING	--	0
RETAINING WALL	433	4
SIGN	--	187
STATE BOUNDARY	--	0
TRAFFIC LIGHT	--	0
TUNNEL	0	0

PINN: DCV ROUTE MAINTENANCE FEATURES SUMMARY

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5.

FEATURE	ROUTE 0010 BEAR GULCH/EAST ENTRANCE ROAD	ROUTE 0011 CHALONE CREEK ROAD	ROUTE 0100ZZ PINNACLES CAMPGROUND ROADS	ROUTE 0200 CHALONE RESIDENCE ROAD	ROUTE 0202 CHAPARRAL ROAD	ROUTE 0402 CONDOR GULCH ROAD	UNIT
BRIDGE	1	0	0	0	0	0	EACH
CATTLE GUARD	1	0	0	0	1	0	EACH
CULVERT	25	6	7	1	9	1	EACH
CURB	1,495	264	79	132	306	11	LINEAR FEET
DROP INLET	0	0	0	0	0	0	EACH
GATE	2	0	3	0	1	1	EACH
GUARD/GUIDE RAIL	253	0	0	0	0	0	LINEAR FEET
CABLE	0	0	0	0	0	0	LINEAR FEET
NON-CABLE	253	0	0	0	0	0	LINEAR FEET
GUARD/GUIDE WALL	169	0	0	0	0	0	LINEAR FEET
BOLLARD	0	0	0	0	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	169	0	0	0	0	0	LINEAR FEET
INTERSECTION	13	9	45	8	6	4	EACH
LOW WATER CROSSING	0	1	0	0	2	0	EACH
LOW WATER CROSSING	0	37	0	0	153	0	LINEAR FEET
MILE MARKER	0	0	0	0	0	0	EACH
OVERPASS	0	0	0	0	0	0	EACH
PARK BOUNDARY	1	0	0	0	0	0	EACH
PAVED DITCH	0	0	63	0	0	0	LINEAR FEET
PULLOUT	1	0	2	0	2	3	EACH
PULLOUT	137	0	58	0	201	237	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	2	0	0	2	0	0	EACH
RETAINING WALL	359	0	0	74	0	0	LINEAR FEET
SIGN	58	13	77	4	32	3	EACH
STATE BOUNDARY	0	0	0	0	0	0	EACH
TRAFFIC LIGHT	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	LINEAR FEET

PINN: STRUCTURE LIST

ROUTE NUMBER	FUNCTIONAL CLASS	MILEPOST START	MILEPOST END	FEATURE	STRUCTURE NUMBER
0010	1	1.348	1.373	BRIDGE	8450-001

Section 9
Route Maintenance Features
Road Logs

Pinnacles National Monument

Federal Lands Highway
Road Inventory Program

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: BEAR GULCH/EAST ENTRANCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM EAST PARK BOUNDARY/END OF ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))
0.000	0.000	PARK BOUNDARY	N/A	N/A
0.000	0.000	INTERSECTION	N/A	ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))
0.002	0.002	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.003	0.003	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.003	0.003	SIGN	LEFT	REGULATORY, STOP
0.004	0.004	GATE	N/A	N/A
0.005	0.005	CATTLE GUARD	N/A	N/A
0.012	0.012	SIGN	N/A	REGULATORY, KEEP RIGHT
0.013	0.020	CURB	N/A	N/A
0.016	0.016	SIGN	N/A	GUIDE, PLEASE PAY ENTRANCE FEE
0.016	0.016	SIGN	N/A	GUIDE, ENTRANCE FEE 5.00 PINNACLES ANNUAL PASS 15.00 INTERAGENCY SENIOR PASS 10.00 INTERAGENCY ANNUAL P
0.016	0.016	SIGN	N/A	WARNING, SLOW
0.016	0.016	SIGN	LEFT	GUIDE, PINNACLES NATIONAL MONUMENT
0.016	0.016	SIGN	N/A	GUIDE, ELEVATION 980 FT
0.017	0.017	SIGN	N/A	REGULATORY, UNABLE TO READ FROM VIDEO
0.031	0.054	CURB	LEFT	N/A
0.032	0.032	SIGN	RIGHT	GUIDE, PEAKS VIEW .8 MILES OLD PINNACLES 1.8 MILES BEAR GULCH 2.4 MILES
0.046	0.046	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.046	0.046	SIGN	RIGHT	REGULATORY, SPEED CHECKED BY RADAR
0.117	0.131	CURB	LEFT	N/A
0.161	0.197	CURB	LEFT	N/A
0.379	0.379	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.400	0.400	INTERSECTION	RIGHT	UNPAVED PARKING
0.495	0.495	INTERSECTION	LEFT	UNPAVED ROUTE
0.521	0.521	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.641	0.641	CULVERT	N/A	N/A
0.670	0.670	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: BEAR GULCH/EAST ENTRANCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.711	0.711	SIGN	LEFT	WARNING, 20 M.P.H.
0.711	0.711	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.777	0.777	CULVERT	N/A	N/A
0.778	0.778	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.786	0.786	SIGN	RIGHT	GUIDE, PEAKS VIEW AREA
0.790	0.824	CURB	LEFT	N/A
0.801	0.827	PULLOUT	RIGHT	N/A
0.831	0.831	SIGN	RIGHT	GUIDE, NATIONAL PARK SERVICE DEPARTMENT OF THE INTERIOR
0.831	0.831	SIGN	RIGHT	GUIDE, WELCOME TO PINNACLES NATIONAL MONUMENT
0.839	0.839	INTERSECTION	LEFT	ROUTE 0914 (PEAKS VIEW PARKING AREA)
0.871	0.871	SIGN	LEFT	GUIDE, PEAKS VIEW AREA
0.982	0.982	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.982	0.982	SIGN	RIGHT	REGULATORY, YOUR SPEED
0.982	0.982	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.025	1.025	CULVERT	N/A	N/A
1.063	1.063	CULVERT	N/A	N/A
1.137	1.137	CULVERT	N/A	N/A
1.153	1.153	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.182	1.182	INTERSECTION	RIGHT	ROUTE 0917 (FIRE WAYSIDE PARKING)
1.208	1.208	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
1.212	1.212	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
1.253	1.253	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.256	1.256	CULVERT	N/A	N/A
1.274	1.274	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
1.274	1.274	SIGN	LEFT	REGULATORY, SPEED CHECKED BY RADAR
1.274	1.274	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
1.306	1.344	CURB	LEFT	N/A
1.318	1.318	CULVERT	N/A	N/A
1.323	1.323	SIGN	RIGHT	GUIDE, BEAR GULCH OLD PINNACLES

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: BEAR GULCH/EAST ENTRANCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.330	1.330	SIGN	RIGHT	GUIDE, OLD PINNACLES VISITOR CENTER HIGHWAY
1.333	1.333	INTERSECTION	RIGHT	ROUTE 0011 (CHALONE CREEK ROAD)
1.340	1.340	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.344	1.347	GUARD/GUIDE WALL	LEFT	N/A
1.344	1.350	GUARD/GUIDE WALL	RIGHT	N/A
1.344	1.344	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
1.347	1.373	GUARD/GUIDE RAIL	LEFT	N/A
1.348	1.373	BRIDGE	N/A	8450-001 (CHALONE CREEK BRIDGE)
1.350	1.372	GUARD/GUIDE RAIL	RIGHT	N/A
1.372	1.377	GUARD/GUIDE WALL	RIGHT	N/A
1.373	1.377	GUARD/GUIDE WALL	LEFT	N/A
1.377	1.419	CURB-AND-GUTTER	LEFT	N/A
1.378	1.378	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
1.439	1.439	CULVERT	N/A	N/A
1.441	1.441	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
1.461	1.461	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
1.463	1.463	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
1.534	1.534	CULVERT	N/A	N/A
1.614	1.614	CULVERT	N/A	N/A
1.673	1.673	SIGN	LEFT	REGULATORY, NO PARKING
1.718	1.718	CULVERT	N/A	N/A
1.721	1.748	CURB-AND-GUTTER	LEFT	N/A
1.762	1.762	CULVERT	N/A	N/A
1.808	1.808	CULVERT	N/A	N/A
1.826	1.841	CURB-AND-GUTTER	RIGHT	N/A
1.829	1.842	GUARD/GUIDE WALL	LEFT	N/A
1.842	1.881	CURB	LEFT	N/A
1.912	1.912	CULVERT	N/A	N/A
1.980	1.980	CULVERT	N/A	N/A
2.024	2.024	SIGN	LEFT	REGULATORY, NO PARKING

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: BEAR GULCH/EAST ENTRANCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.026	2.026	CULVERT	N/A	N/A
2.098	2.098	CULVERT	N/A	N/A
2.146	2.146	CULVERT	N/A	N/A
2.229	2.229	CULVERT	N/A	N/A
2.246	2.246	INTERSECTION	LEFT	ROUTE 0906 (RESIDENCE 19 PARKING)
2.274	2.274	CULVERT	N/A	N/A
2.326	2.326	CULVERT	N/A	N/A
2.341	2.341	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
2.364	2.364	SIGN	LEFT	REGULATORY, STAY ON TRAIL
2.392	2.392	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
2.392	2.392	SIGN	RIGHT	WARNING, CONGESTED AREA
2.431	2.431	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
2.451	2.451	INTERSECTION	LEFT	ROUTE 0900 (HEADQUARTERS/VISITOR CENTER PARKING)
2.460	2.460	SIGN	LEFT	REGULATORY, DO NOT ENTER
2.473	2.473	CULVERT	N/A	N/A
2.484	2.484	INTERSECTION	RIGHT	ROUTE 0402 (CONDOR GULCH ROAD)
2.505	2.505	SIGN	RIGHT	GUIDE, PICNIC AREA BEAR GULCH CAVES RESERVOR HIGH PEAKS TRAIL
2.519	2.519	SIGN	LEFT	GUIDE, BEAR GULCH NATURE CENTER HEADQUARTERS
2.523	2.523	INTERSECTION	LEFT	ROUTE 0900 (HEADQUARTERS/VISITOR CENTER PARKING)
2.529	2.537	CURB-AND-GUTTER	LEFT	N/A
2.530	2.530	SIGN	RIGHT	GUIDE, ROAD ENDS BUSES AND TRAILERS TURN HERE
2.537	2.538	GUARD/GUIDE WALL	LEFT	N/A
2.542	2.542	CULVERT	N/A	N/A
2.552	2.552	INTERSECTION	LEFT	ROUTE 0904 (MOSES SPRINGS PICNIC PARKING)
2.562	2.562	GATE	N/A	N/A
2.563	2.563	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
2.601	2.601	CULVERT	N/A	N/A
2.603	2.603	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.603	2.603	SIGN	LEFT	WARNING, CONGESTED AREA

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: BEAR GULCH/EAST ENTRANCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.611	2.611	INTERSECTION	LEFT	ROUTE 0905 (RESIDENCE 2 PARKING)
2.617	2.617	CULVERT	N/A	N/A
2.617	2.647	RETAINING WALL	LEFT	N/A
2.628	2.628	SIGN	LEFT	GUIDE, EMPLOYEE RESIDENCE
2.656	2.694	RETAINING WALL	LEFT	N/A
2.701	2.701	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
2.718	2.718	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
2.720	2.720	INTERSECTION	N/A	ROUTE 0907 (MOSES SPRINGS PARKING)
2.720	2.720	ROUTE END	N/A	TO ROUTE 0907 (MOSES SPRINGS PARKING)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: CHALONE CREEK ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.046	0.046	SIGN	LEFT	GUIDE, BEAR GULCH VISITOR CENTER HIGHWAY
0.060	0.060	CULVERT	N/A	N/A
0.081	0.081	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.094	0.094	SIGN	RIGHT	REGULATORY, NO PARKING ALONG ROADWAY
0.106	0.106	CULVERT	N/A	N/A
0.187	0.187	SIGN	RIGHT	WARNING, DIP
0.188	0.188	CULVERT	N/A	N/A
0.220	0.220	CULVERT	N/A	N/A
0.223	0.252	CURB	LEFT	N/A
0.230	0.230	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.245	0.253	CURB	RIGHT	N/A
0.255	0.262	LOW WATER CROSSING	N/A	N/A
0.260	0.273	CURB	LEFT	N/A
0.271	0.271	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.278	0.278	INTERSECTION	RIGHT	UNPAVED ROUTE
0.293	0.293	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.318	0.318	INTERSECTION	RIGHT	ROUTE 0200 (CHALONE RESIDENCE ROAD)
0.334	0.334	SIGN	LEFT	GUIDE, TRAIL HEAD PARKING END OF ROAD
0.366	0.366	CULVERT	N/A	N/A
0.398	0.398	INTERSECTION	RIGHT	ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)
0.403	0.403	SIGN	RIGHT	GUIDE, MAINTENANCE AREA
0.442	0.442	INTERSECTION	RIGHT	ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)
0.468	0.468	INTERSECTION	LEFT	PAVED ROUTE (ABANDONED)
0.491	0.491	CULVERT	N/A	N/A
0.522	0.522	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
0.534	0.534	SIGN	LEFT	REGULATORY, NO PARKING ALONG ROADWAY

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: CHALONE CREEK ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.534	0.534	SIGN	RIGHT	REGULATORY, NO PARKING ALONG ROADWAY
0.581	0.581	INTERSECTION	LEFT	ROUTE 0011 (CHALONE CREEK ROAD) UNPAVED SECTION
0.581	0.581	INTERSECTION	N/A	ROUTE 0011 (CHALONE CREEK ROAD) UNPAVED SECTION
0.581	0.581	ROUTE END	N/A	TO END AT MP 0.73

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100AZ: PINNACLES CAMPGROUND ROAD A

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))
0.000	0.000	SIGN	N/A	GUIDE, DAY USE AREAS HIGHWAY 25
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (U.S. HIGHWAY 146 (PINNACLES HIGHWAY))
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.007	0.007	SIGN	RIGHT	GUIDE, NATIONAL PARK SERVICE
0.007	0.007	SIGN	RIGHT	GUIDE, PINNACLES VISITOR CENTER PINNACLES CAMPGROUND
0.018	0.018	INTERSECTION	LEFT	ROUTE 0915 (PINNACLES CAMPGROUND PARKING)
0.019	0.019	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.029	0.029	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.029	0.029	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.042	0.042	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.042	0.042	SIGN	RIGHT	GUIDE, PAY ENTRANCE FEE AT VISITOR CENTER RV AND BUS PARKING
0.042	0.042	SIGN	RIGHT	GUIDE, U.S. FEE AREA
0.045	0.045	INTERSECTION	LEFT	ROUTE 0915 (PINNACLES CAMPGROUND PARKING)
0.054	0.054	SIGN	N/A	REGULATORY, EXIT
0.054	0.054	SIGN	N/A	GUIDE, SHOWER & POOL PARKING
0.055	0.055	SIGN	RIGHT	REGULATORY, STOP
0.056	0.056	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.057	0.057	SIGN	N/A	REGULATORY, NO FIRES ALLOWED
0.057	0.057	SIGN	N/A	REGULATORY, NO SMOKING ON TRAILS
0.057	0.057	SIGN	N/A	GUIDE, FIRE DANGER TODAY
0.058	0.058	SIGN	N/A	GUIDE, PICNIC AREA & PARKING CAMPING
0.060	0.060	INTERSECTION	LEFT	ROUTE 0100CZ (PINNACLES CAMPGROUND ROAD C)
0.060	0.060	SIGN	RIGHT	GUIDE, BENCH TRAILHEAD
0.060	0.060	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.070	0.070	INTERSECTION	LEFT	UNPAVED ROUTE
0.100	0.100	INTERSECTION	RIGHT	ROUTE 0100BZ (PINNACLES CAMPGROUND ROAD B)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100AZ: PINNACLES CAMPGROUND ROAD A

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.103	0.103	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.103	0.103	SIGN	N/A	REGULATORY, UNABLE TO READ FROM VIDEO
0.103	0.103	SIGN	N/A	GUIDE, NO GENERATORS AT ANY TIME
0.103	0.103	SIGN	N/A	GUIDE, NONELEC SITES GROUP & RV SITES
0.103	0.103	SIGN	N/A	GUIDE, QUIET HOURS ARE 10 PM TO 6AM
0.108	0.108	SIGN	LEFT	REGULATORY, YIELD
0.113	0.113	SIGN	RIGHT	REGULATORY, SPEED LIMIT 5
0.123	0.133	CURB	RIGHT	N/A
0.129	0.129	CULVERT	N/A	N/A
0.130	0.135	CURB	LEFT	N/A
0.131	0.131	CULVERT	N/A	N/A
0.132	0.132	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.133	0.133	CULVERT	N/A	N/A
0.133	0.145	PAVED DITCH	LEFT	N/A
0.155	0.155	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.155	0.155	SIGN	LEFT	REGULATORY, SPEED LIMIT 5
0.162	0.162	INTERSECTION	RIGHT	ROUTE 0100DZ (PINNACLES CAMPGROUND ROAD D)
0.168	0.168	SIGN	RIGHT	GUIDE, SITES 6-14
0.168	0.168	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.191	0.191	INTERSECTION	LEFT	ROUTE 0100EZ (PINNACLES CAMPGROUND ROAD E)
0.193	0.193	SIGN	N/A	GUIDE, SITES 17-19
0.193	0.193	SIGN	N/A	REGULATORY, EXIT
0.193	0.193	SIGN	N/A	GUIDE, SITES 20-83
0.194	0.198	PULLOUT	LEFT	N/A
0.200	0.200	SIGN	LEFT	REGULATORY, NO WOOD GATHERING
0.200	0.200	GATE	N/A	N/A
0.200	0.200	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.232	0.239	PULLOUT	RIGHT	N/A
0.268	0.268	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.320	0.320	INTERSECTION	RIGHT	ROUTE 0100FZ (PINNACLES CAMPGROUND ROAD F)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100AZ: PINNACLES CAMPGROUND ROAD A

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.324	0.324	SIGN	RIGHT	REGULATORY, ONE WAY
0.325	0.325	SIGN	RIGHT	REGULATORY, NO WOOD GATHERING
0.395	0.395	SIGN	LEFT	REGULATORY, SPEED LIMIT 10
0.402	0.402	INTERSECTION	RIGHT	ROUTE 0100FZ (PINNACLES CAMPGROUND ROAD F)
0.408	0.408	SIGN	LEFT	GUIDE, SITES 49-83
0.408	0.408	SIGN	LEFT	GUIDE, SITES 33-48
0.411	0.411	GATE	N/A	N/A
0.469	0.469	SIGN	RIGHT	WARNING, NO WOOD GATHERING
0.516	0.516	CULVERT	N/A	N/A
0.633	0.633	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.636	0.636	SIGN	N/A	REGULATORY, ONE WAY
0.636	0.636	SIGN	N/A	GUIDE, SITES 58-83
0.653	0.653	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.775	0.775	CULVERT	N/A	N/A
0.950	0.950	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.962	0.962	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.962	0.962	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.962	0.962	ROUTE END	N/A	TO END OF LOOP

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100BZ: PINNACLES CAMPGROUND ROAD B

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.021	0.021	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.034	0.034	SIGN	RIGHT	GUIDE, WILDERNESS JCT 5 DEAR GULCH AREA 26 HIGH PEAKS JCT 22 DALCONIES AREA 44
0.036	0.036	INTERSECTION	RIGHT	UNPAVED ROUTE
0.041	0.041	SIGN	RIGHT	GUIDE, SITES 84-105
0.041	0.041	SIGN	RIGHT	REGULATORY, ONE WAY
0.113	0.113	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.113	0.113	SIGN	LEFT	GUIDE, AMPHITHEATER
0.114	0.114	SIGN	LEFT	REGULATORY, SPEED LIMIT 10
0.117	0.117	INTERSECTION	LEFT	ROUTE 0100GZ (PINNACLES CAMPGROUND ROAD G)
0.122	0.122	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.123	0.123	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.124	0.124	SIGN	LEFT	GUIDE, SITES
0.126	0.126	INTERSECTION	RIGHT	UNPAVED ROUTE
0.143	0.143	SIGN	LEFT	GUIDE, SITES 124-134
0.192	0.192	CULVERT	N/A	N/A
0.233	0.233	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.378	0.378	SIGN	LEFT	REGULATORY, SPEED LIMIT 10
0.424	0.424	INTERSECTION	N/A	END OF PAVEMENT
0.424	0.424	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.424	0.424	SIGN	N/A	GUIDE, UNABLE TO READ FROM VIDEO
0.424	0.424	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.424	0.424	ROUTE END	N/A	TO END OF PAVEMENT

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100CZ: PINNACLES CAMPGROUND ROAD C

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.117	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.015	0.015	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.015	0.015	SIGN	RIGHT	GUIDE, DUMP STATION PARKING ONLY
0.015	0.015	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.025	0.025	INTERSECTION	RIGHT	UNPAVED ROUTE
0.026	0.026	INTERSECTION	LEFT	UNPAVED ROUTE
0.033	0.033	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.036	0.036	SIGN	LEFT	GUIDE, SHOWER PARKING
0.050	0.050	SIGN	LEFT	GUIDE, NO PARKING
0.067	0.067	SIGN	RIGHT	GUIDE, CAMP HOST
0.081	0.081	SIGN	RIGHT	GUIDE, PICNIC AREA DAY USE ONLY NO CAMPING
0.088	0.088	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.093	0.093	SIGN	LEFT	REGULATORY, SPEED LIMIT 10
0.093	0.093	INTERSECTION	LEFT	ROUTE 0916 (OVERFLOW PINNACLES CAMPGROUND PARKING)
0.101	0.101	GATE	N/A	N/A
0.117	0.117	INTERSECTION	LEFT	ROUTE 0100CZ (PINNACLES CAMPGROUND ROAD C) UNPAVED SECTION
0.117	0.117	ROUTE END	N/A	TO END OF LOOP AT MP 0.18

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100DZ: PINNACLES CAMPGROUND ROAD D

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.026	0.026	INTERSECTION	RIGHT	ROUTE 0100DZ (PINNACLES CAMPGROUND ROAD D)
0.030	0.140	ONE-WAY	N/A	N/A
0.032	0.032	SIGN	RIGHT	REGULATORY, ONE WAY
0.140	0.140	INTERSECTION	LEFT	ROUTE 0100DZ (PINNACLES CAMPGROUND ROAD D)
0.140	0.140	INTERSECTION	RIGHT	ROUTE 0100DZ (PINNACLES CAMPGROUND ROAD D)
0.140	0.140	ROUTE END	N/A	TO END OF LOOP

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100EZ: PINNACLES CAMPGROUND ROAD E

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.030	0.030	INTERSECTION	N/A	END OF PAVEMENT
0.030	0.030	ROUTE END	N/A	TO END OF PAVEMENT

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100FZ: PINNACLES CAMPGROUND ROAD F

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.000	0.148	ONE-WAY	N/A	N/A
0.078	0.078	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.078	0.078	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.086	0.086	CULVERT	N/A	N/A
0.148	0.148	INTERSECTION	RIGHT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.148	0.148	INTERSECTION	LEFT	ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)
0.148	0.148	ROUTE END	N/A	TO ROUTE 0100AZ (PINNACLES CAMPGROUND ROAD A)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0100GZ: PINNACLES CAMPGROUND ROAD G

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0100BZ (PINNACLES CAMPGROUND ROAD B)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0100BZ (PINNACLES CAMPGROUND ROAD B)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0100BZ (PINNACLES CAMPGROUND ROAD B)
0.018	0.018	INTERSECTION	RIGHT	UNPAVED ROUTE
0.025	0.025	INTERSECTION	LEFT	UNPAVED ROUTE
0.060	0.060	INTERSECTION	RIGHT	UNPAVED ROUTE
0.082	0.082	INTERSECTION	LEFT	PAVED ROUTE
0.089	0.089	INTERSECTION	N/A	END OF PAVEMENT
0.089	0.089	ROUTE END	N/A	TO END OF PAVEMENT

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0200: CHALONE RESIDENCE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0011 (CHALONE CREEK ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0011 (CHALONE CREEK ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0011 (CHALONE CREEK ROAD)
0.004	0.004	SIGN	LEFT	REGULATORY, STOP
0.004	0.004	CULVERT	N/A	N/A
0.006	0.006	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.006	0.006	SIGN	RIGHT	GUIDE, RESIDENTIAL AREA NO PUBLIC PARKING
0.008	0.008	INTERSECTION	LEFT	ROUTE 0908CZ (CHALONE CREEK PICNIC AREA PARKING C)
0.008	0.008	INTERSECTION	RIGHT	ROUTE 0908AZ (CHALONE CREEK PICNIC AREA PARKING A)
0.016	0.016	SIGN	RIGHT	GUIDE, EMPLOYEE RESIDENCE
0.019	0.019	INTERSECTION	LEFT	ROUTE 0908BZ (CHALONE CREEK PICNIC AREA PARKING B)
0.025	0.025	INTERSECTION	RIGHT	ROUTE 0908DZ (CHALONE CREEK PICNIC AREA PARKING D)
0.060	0.068	RETAINING WALL	RIGHT	N/A
0.106	0.112	RETAINING WALL	RIGHT	N/A
0.113	0.138	CURB	LEFT	N/A
0.123	0.123	INTERSECTION	RIGHT	ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)
0.138	0.138	INTERSECTION	N/A	ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)
0.138	0.138	ROUTE END	N/A	TO ROUTE 0909 (CHALONE CREEK MAINTENANCE AREA)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0202: CHAPARRAL ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM U.S. HIGHWAY 146/NON NPS AT CATTLE GUARD
0.000	0.000	INTERSECTION	N/A	PAVED ROUTE (HIGHWAY 146 / NON NPS)
0.002	0.002	SIGN	LEFT	REGULATORY, STOP
0.003	0.003	GATE	N/A	N/A
0.004	0.004	CATTLE GUARD	N/A	N/A
0.005	0.005	SIGN	LEFT	REGULATORY, NO ROADSIDE PARKING
0.005	0.005	SIGN	LEFT	WARNING, PLEASE PULL FORWARD TO ACTIVATE GATE
0.055	0.055	SIGN	LEFT	WARNING, STOP AHEAD
0.098	0.098	SIGN	RIGHT	GUIDE, PINNACLES NATIONAL MONUMENT
0.150	0.150	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.184	0.184	SIGN	RIGHT	REGULATORY, NO SMOKING ON TRAILS
0.184	0.184	SIGN	RIGHT	GUIDE, FIRE DANGER TODAY
0.184	0.184	SIGN	RIGHT	REGULATORY, NO FIRES ALLOWED
0.201	0.201	SIGN	RIGHT	GUIDE, U.S. DEPARTMENT OF THE INTERIOR YOUR RECOVERY DOLLARS AT WORK DESIGN AND CONSTRUCTION OF A NEW VIS
0.238	0.238	SIGN	RIGHT	REGULATORY, SPEED LIMIT 5
0.245	0.245	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.250	0.280	LANE DEVIATION	N/A	N/A
0.250	0.332	CONSTRUCTION	N/A	N/A
0.323	0.323	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.339	0.339	SIGN	LEFT	REGULATORY, THINK
0.339	0.339	SIGN	LEFT	REGULATORY, DANGER
0.344	0.344	SIGN	LEFT	REGULATORY, SPEED LIMIT 5
0.391	0.391	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.485	0.485	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.601	0.601	CULVERT	N/A	N/A
0.665	0.665	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.705	0.705	CULVERT	N/A	N/A
0.726	0.726	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.731	0.731	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0202: CHAPARRAL ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.878	0.878	CULVERT	N/A	N/A
1.030	1.030	INTERSECTION	LEFT	UNPAVED ROUTE
1.186	1.186	CULVERT	N/A	N/A
1.353	1.353	CULVERT	N/A	N/A
1.467	1.467	CULVERT	N/A	N/A
1.472	1.472	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.520	1.520	CULVERT	N/A	N/A
1.742	1.760	PULLOUT	RIGHT	N/A
1.760	1.760	CULVERT	N/A	N/A
1.769	1.827	CURB	RIGHT	N/A
1.864	1.884	PULLOUT	LEFT	N/A
2.008	2.008	SIGN	RIGHT	GUIDE, CHAPARRAL AREA
2.014	2.014	INTERSECTION	LEFT	ROUTE 0203 (CHAPARRAL OVERLOOK ROAD)
2.021	2.021	CULVERT	N/A	N/A
2.077	2.091	LOW WATER CROSSING	N/A	N/A
2.190	2.190	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
2.323	2.323	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
2.361	2.361	INTERSECTION	LEFT	ROUTE 0408 (CHAPARRAL MAINTENANCE AREA)
2.366	2.366	SIGN	RIGHT	GUIDE, FEE STATION AHEAD
2.452	2.452	SIGN	RIGHT	REGULATORY, STOP
2.457	2.457	INTERSECTION	LEFT	ROUTE 0911 (CHAPARRAL RANGER STATION PARKING)
2.459	2.459	SIGN	RIGHT	GUIDE, U.S. FEE AREA
2.459	2.459	SIGN	RIGHT	GUIDE, ALL VISITORS MUST STOP PAY FEES HERE
2.465	2.465	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
2.468	2.468	SIGN	LEFT	REGULATORY, STOP
2.487	2.502	LOW WATER CROSSING	N/A	N/A
2.503	2.503	SIGN	RIGHT	GUIDE, PARK GATE OPENS 7:30 AM CLOSES 8:00 PM
2.510	2.510	INTERSECTION	N/A	ROUTE 0912 (CHAPARRAL DAY USE AREA PARKING)
2.510	2.510	ROUTE END	N/A	TO ROUTE 0912 (CHAPARRAL DAY USE AREA PARKING)

PINN: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0402: CONDOR GULCH ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all paved routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0010 (BEAR GULCH/EAST ENTRANCE ROAD)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.008	0.008	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.014	0.014	INTERSECTION	LEFT	ROUTE 0903 (CONDOR GULCH RESTROOM PARKING)
0.022	0.024	CURB-AND-GUTTER	LEFT	N/A
0.027	0.027	SIGN	LEFT	GUIDE, SERVICE ROAD NO ENTRY
0.028	0.028	GATE	N/A	N/A
0.069	0.085	PULLOUT	RIGHT	N/A
0.122	0.122	CULVERT	N/A	N/A
0.123	0.138	PULLOUT	RIGHT	N/A
0.201	0.215	PULLOUT	RIGHT	N/A
0.252	0.252	INTERSECTION	N/A	ROUTE 0902 (CONDOR GULCH PARKING)
0.252	0.252	ROUTE END	N/A	TO ROUTE 0902 (CONDOR GULCH PARKING)

Section 10
Appendix

Pinnacles National Monument

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 vis a vis the distresses and indexes that comprise the Pavement Condition Rating (PCR), an extensive study was completed throughout 2010 that has 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.

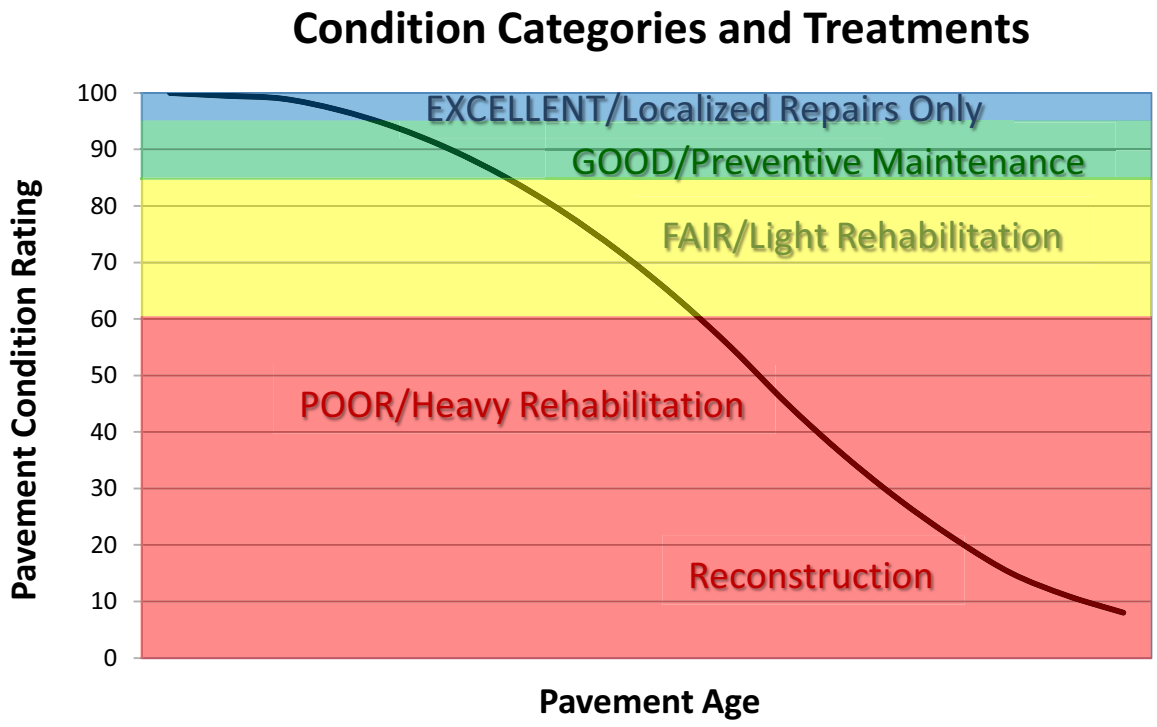
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation needs that were represented. The 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 will be implemented in Cycle 5, we will also aim to 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.

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.



DESCRIPTION OF RATING SYSTEM

The Federal Highway Administration (FHWA), Road Inventory Program (RIP) for the National Park Service (NPS), collects roadway condition data on paved surfaces (asphalt, concrete, brick, and cobblestone) on roads, parkways, and parking areas in national parks nationwide. The road surface condition data is collected using an automated Data Collection Vehicle (DCV). Roads having brick or cobblestone surfacing are not normally surveyed with the DCV, but are manually rated for condition rating.

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 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. In truth, the FHWA RIP distress types are similar to those described in the LTPP manual with some modifications. This 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 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, 168 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:

Asphalt PCR = (0.60 * SCR) + (0.40 * RCI)
Concrete PCR = RCI

A detailed description of each distress index formula, roughness index formula, SCR and PCR is provided in this document beginning on page 23.

Each classified surface distress will fall into one or more s*everity*…LOW, MEDIUM, or HIGH based on criteria listed. For each severity, an e*xtent* 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 patch may not exceed 0.30 mi. (0.48 km). (Any full-lane patch exceeding 0.30 mi. in length is considered a pavement change). 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 ≥ 0.20" and ≤ 0.49"

MED
Ruts with a measured depth ≥ 0.50" and ≤ 0.99"

HIGH
Ruts with a measured depth ≥ 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:

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

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:

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

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

PATCH_INDEX = 100 – 40 * (%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:

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

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

RUT_INDEX = 100 – 40 * [(%LOW / 535) + (%MED / 205) + (%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:

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

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 Inertial Measuring Unit (IMU) to provide accurate positioning data 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	+- 0.1 degrees
Grade	+- 0.1 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.

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 tables 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.

GLOSSARY OF TERMS AND ABBREVIATIONS

TERM OR ABBREVIATION	DESCRIPTION OR DEFINITION
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