

**Final Report** 

# Road Inventory and Condition Assessment of Paved Routes Point Reyes National Seashore





Federal Lands Highway Road Inventory Program Prepared By: Federal Highway Administration Eastern Federal Lands Highway Division Road Inventory Program (RIP)

**Report Date: November 2015** 

#### Point Reyes National Seashore in California



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

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# Section 1 Introduction





#### Introduction

The Federal Highway Administration's (FHWA), Road Inventory Program (RIP) inventories all roads and parking areas in the National Park System, and performs condition inspections on all paved roads and parking areas for the National Park Service (NPS). This report contains the results of the Cycle 6 condition assessment of paved roads and parking lots for this park unit. This assessment was done using an automated, state-of-the-art pavement inspection vehicle as well as manual ratings. This information represents the condition of the paved assets at the time of the inspection. The pavement management system utilized by FHWA and the NPS uses these assessments to estimate future conditions and help prioritize pavement maintenance and rehabilitation projects. Further information about RIP data and its role in managing paved roads and bridges can be obtained by contacting the NPS Regional Transportation Program Manager.

#### A History of the Road Inventory Program:

The FHWA, in the mid-1970s, was charged with the task of identifying surface condition deficiencies and corrective priorities on 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 a Memorandum of Agreement (MOA) which established the RIP. This MOA was revised in 1980 to update RIP data collection standards and develop a long-range program to improve and maintain NPS roads to designated condition standards and establish a pavement management program.

The FHWA completed the initial phase of inventory in the early 1980s. As a result of this effort, each NPS unit included in the collection received a RIP Report known as the "Brown Book" which contained information that was inventoried during this first RIP phase. In the 1990s, a cyclical program was developed, and since then five cycles of collection have been completed. Cycle 6 is currently in progress. A summary of the RIP collection cycles is shown in the table below.

Cycle	Years	Parks Collected
Cycle 1	1994 - 1997	° 44 Large Parks
Cycle 2	1997 - 2001	<ul> <li>79 Large Parks</li> <li>5 Small Parks</li> </ul>
Cycle 3	2001 - 2004	<ul><li> All Large Parks</li><li> All Small Parks</li></ul>
Cycle 4	2006 - 2010	<ul> <li>86 Large Parks</li> <li>Several Small Parks</li> </ul>
Cycle 5	2010 - 2014	<ul> <li>All Large Parks (Only functional class 1, 2, 7, and new/modified routes collected)</li> <li>All Small Parks (all roads and parking areas collected)</li> </ul>
Cycle 6	2014 – 2020 ( <b>±)</b>	<ul> <li>All roads and parking areas collected at all Parks</li> <li>Additional partial collections of functional class 1, 2, and 7 roads at Large Parks</li> <li>Cycle 6 is expected to last 6 years</li> </ul>

Note: Large Parks have  $\geq 10$  Paved Miles; Small Parks have < 10 Paved Miles

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 Federal Lands Highway (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.

In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) amended Title 23 U.S.C., and under Section 203(c)(1-2) stated that the National Park Service in cooperation with the DOT/FHWA, shall maintain a comprehensive national inventory of their transportation facilities, with the goal of quantifying transportation infrastructure needs within the National Park System.

#### A History of the Pavement Management System:

In 2005, the FHWA began implementing the use of a pavement management system to assist the NPS in prioritizing Pavement Maintenance and Rehabilitation activities. The system used by FHWA is the Highway Pavement Management Application (HPMA), which 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. Regional prioritized lists and optimizations have been produced for most regions, and the Service's overall roadway Deferred Maintenance is calculated via the HPMA.

#### **Overview of Cycle 6:**

Cycle 6 launched in the spring of 2014 and will again comprise all NPS park units that are served by paved roads and/or parking areas. For Cycle 6, all paved roads (approximately 5,700 miles) and parking areas will be collected in all parks at least once, while the primary routes (functional class 1, 2, and 7 roads) at Large Parks will have additional collections. These multiple collections will provide updated condition data on a majority of the NPS's primary road network and help build a better pavement management system, allowing for more accurate pavement performance prediction models.

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

FHWA/Eastern Federal Lands 21400 Ridgetop Circle Sterling, VA 20166 (703) 404-6371 FHWA/Central Federal Lands 12300 West Dakota Ave Lakewood, CO 80228 (720) 963-3556

# Section 2 Park Route Inventory





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### Cycle 6 NPS / RIP Route ID Report

Report Date: 11/18/2015

(Numerical By Summary Route and Subcomponent #)



Shading Color Key	White = Paved Routes, DCV Driven	Grey = Paved Routes, DCV not Driven	Black = Non-NPS Routes	Concession Route
	Yellow = Unpaved Routes, DCV not Driven	Blue = Paved Parking Areas	Green = Unpaved Parking Areas	
				DCV = Data Collection Vehicle

Red text denotes:

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

MRL = Manually Rated Line MRP = Manually Rated Polygon PKG = Parking Areas

NC = Not Collected

	ROAD INVENTORY (1100 SERIES FMSS LOCATIONS)														
Route No.	ycle Collected	Iteration Collected	FMSS Number	Concessio	Route Name	Route Dese	cription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage	unction Class	Area (SQ FT)	Surf. Type	Area Map
0010	6	1	00002545	0	LIMANTOUR ROAD	FROM ROUTE 5002 (BEAR VALLEY ROAD)	TO ROUTE 0945 (LIMANTOUR BEACH MAIN PARKING LOT)		7.57	0.00	7.57	1		AS	4
0100	6	1	00002527		SOUTH BEACH ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0909 (SOUTH BEACH PARKING LOT)		0.70	0.00	0.70	2		AS	2
0101	6	1	00002512		DRAKES BEACH ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0911 (DRAKES BEACH PARKING LOT)		1.50	0.00	1.50	2		AS	2
0102	6	1	00002520		NORTH BEACH ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0910 (NORTH BEACH PARKING LOT)		0.60	0.00	0.60	2		AS	2
0103	NC		89529		SACRAMENTO LANDING ROAD (UNPAVED)	FROM END OF ROUTE 0104 (L RANCH ROAD)	TO BEGINNING OF ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED)) AND ROUTE 0954 (SACRAMENTO LANDING SUPPORT PARKING LOT)		0.00	1.07	1.07	2		GR	
0103A	6	1	90634		SACRAMENTO LANDING ROAD (PAVED)	FROM END OF ROUTE 0103 (SACRAMENTO LANDING ROAD (UNPAVED))	TO SACRAMENTO LANDING AT ROUTE 0952 (SACRAMENTO LANDING MAIN HOUSE PARKING LOT) AND ROUTE 0953 (SACRAMENTO PIER PARKING LOT)		0.19	0.00	0.19	2		AS	3
0104	6	1	2480		L RANCH ROAD	FROM ROUTE 5003 (PIERCE POINT ROAD)	TO BEGINNING OR ROUTE 0103 (SACRAMENTO LANDING ROAD (UNPAVED)) AND ROUTE 0109 (MARSHALL BEACH ROAD) AT MP 1.32		0.14	1.18	1.32	2		AS	3
0105	NC		00002604		PALOMARIN ROAD	FROM END MESA ROAD / PARK BOUNDARY	TO ROUTE 0936 (PALOMARIN TRAILHEAD PARKING LOT)		0.00	1.20	1.20	2		GR	

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(Numerical By Summary Route and Subcomponent #)



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Red text denotes:

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

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				Ę		ROAD INVENTORY (1	100 SERIES FMSS I	OCATIONS)				a			
Route No.	Cycle Collected	lteration Collected	FMSS Number	Concessia	Route Name	Route Dese	cription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage		Area (SQ FT)	Surf. Type	Area Map
0106	NC		12318		OLEMA MARSH ROAD	FROM ROUTE 5002 (BEAR VALLEY ROAD)	TO END OF LOOP AT RESIDENCE		0.00	0.30	0.30	2		GR	
0107	NC		32708		MUDDY HOLLOW ROAD	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 5.94	TO ROUTE 0943 (MUDDY HOLLOW PARKING LOT) AND ROUTE 0421 (MUDDY HOLLOW PUMPHOUSE ROAD) ON LEFT		0.00	0.20	0.20	2		GR	
0108	NC		46133		BEAR VALLEY TRAIL ROAD	FROM END OF ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO GLEN TRAIL		0.00	3.10	3.10	6		GR	
0109	NC				MARSHALL BEACH ROAD	FROM END OF ROUTE 0104 (L RANCH ROAD)	TO ROUTE 0217 (MARSHALL BEACH TRAIL ROAD) AND ROUTE 0933 (MARSHALL BEACH UNPAVED PARKING LOT)		0.00	1.26	1.26	2		GR	
0200ZZ	6	1	00002491		LIGHTHOUSE ROAD	FROM END OF ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO DEAD END AT LIGHTHOUSE APARTMENT GARAGES		1.51	0.00	1.51	1		AS	1
0201	6	1	00002499		CHIMNEY ROCK ROAD	FROM END OF ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO BEGINNING OF ROUTE 0401 (LIFEBOAT STATION ROAD) AT ROUTE 0917 (CHIMNEY ROCK LOWER (TRAILHEAD) PARKING LOT) ON RIGHT		0.91	0.00	0.91	2		AS	1
0202	6	1	89543		SCHOONER BAY ROAD (OYSTER FARM ROAD)	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0950 (SCHOONER BAY PARKING LOT) ON RIGHT AND DRAKES BAY OYSTER PARKING (NON-NPS)		0.07	0.70	0.77	3		AS	2

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PKG = Parking Areas NC = Not Collected

	ROAD INVENTORY (1100 SERIES FMSS LOCATIONS)														
Route No.	Cycle Collected	Iteration Collected	FMSS Number	Concessic	Route Name	Route Des	cription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage		Area (SQ FT)	Surf. Type	Area Map
0203A	6	1	00002535		ESTERO TRAILHEAD ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO BEGINNING OF ROUTE 0203B (HOME RANCH ROAD) AT CATTLE GUARD JUST PAST ROUTE 0918 (ESTERO PARKING LOT)		0.97	0.00	0.97	3		AS	2
0203B	6	1	99954		HOME RANCH ROAD	FROM END OF ROUTE 0203A (ESTERO TRAILHEAD ROAD) AT CATTLEGUARD	TO END OF PAVEMENT AT HOME RANCH		0.75	0.00	0.75	6		AS	2
0204	6	1	00002534		MOUNT VISION ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0919 (MOUNT VISION TRAILHEAD UPPER PARKING LOT) ON LEFT AND PAVED INVERNESS RIDGE TRAIL STRAIGHT AHEAD		3.86	0.00	3.86	2		AS	4
0205	6	1	32713		MCCLURES BEACH ACCESS ROAD	FROM END OF ROUTE 5003 (PIERCE POINT ROAD) AT ROUTE 0921 (PIERCE POINT UPPER PARKING LOT)	TO ROUTE 0912 (MCCLURES BEACH PARKING LOT)		0.20	0.00	0.20	2		AS	3
0206	6	1	35177		LIMANTOUR BEACH ACCESS ROAD	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.48	TO ROUTE 0904 (LIMANTOUR (SOUTH) PARKING LOT)		0.37	0.00	0.37	2		AS	4
0210	6	1	12324		LAGUNA ROAD	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 5.94	TO ROUTE 0942 (EDUCATION CENTER PARKING LOT)		0.65	0.00	0.65	3		AS	4
0211	6	1	32719		BEAR VALLEY TRAILHEAD ROAD	FROM ROUTE 5002 (BEAR VALLEY ROAD)	TO BEGINNING OF ROUTE 0108 (BEAR VALLEY TRAIL ROAD) AT ROUTE 0914 (BEAR VALLEY TRAILHEAD PARKING LOT) ON LEFT		0.33	0.00	0.33	2		AS	5A
0213	NC		00002592		FIVE BROOKS ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO ROUTE 0939 (FIVE BROOKS TRAILHEAD PARKING LOT)		0.00	0.23	0.23	2		GR	

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### Cycle 6 NPS / RIP Route ID Report

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NC = Not Collected

	ROAD INVENTORY (1100 SERIES FMSS LOCATIONS)														
Route No.	Cycle Collected	lteration Collected	FMSS Number	Concessic	Route Name	Route Dese	ription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage		Area (SQ FT)	Surf. Type	Area Map
0214	NC		12326		COAST CAMP ROAD	FROM ROUTE 0210 (LAGUNA ROAD)	TO COAST CAMPGROUND		0.00	2.90	2.90	6		GR	
0215	NC		12327		SKY CAMP ROAD	FROM ROUTE 0907 (SKY TRAILHEAD PARKING LOT)	TO SKY CAMPGROUND		0.00	1.30	1.30	6		GR	
0216	NC		12328		GLEN CAMP ROAD	FROM INTERSECTION OF ROUTE 0218 (WILDCAT CAMPGROUND ROAD) AND ROUTE 0219ZZ (STEWART TRAIL AND MILL POND CREST ROAD)	TO GLEN CAMPGROUND		0.00	1.20	1.20	6		GR	
0217	NC		3107		MARSHALL BEACH TRAIL ROAD	FROM ROUTE 0109 (MARSHALL BEACH ROAD)	TO MARSHALL BEACH CAMPGROUND		0.00	1.20	1.20	6		GR	
0218	NC		32722		WILDCAT CAMPGROUND ROAD	FROM INTERSECTION OF ROUTE 0216 (GLEN CAMP ROAD) AND ROUTE 0219ZZ (STEWART TRAIL AND MILL POND CREST ROAD)	TO WILDCAT CAMPGROUND		0.00	1.20	1.20	6		GR	
0219ZZ	NC		34147		STEWART TRAIL AND MILL POND CREST ROAD	FROM ROUTE 0939 (FIVE BROOKS TRAILHEAD PARKING LOT)	TO INTERSECTION OF ROUTE 0216 (GLEN CAMP ROAD) AND ROUTE 0218 (WILDCAT CAMPGROUND ROAD)		0.00	6.52	6.52	3		GR	
0220	6	1	117012		U.S. COAST GUARD ACCESS ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO USCG FACILITY ENTRANCE ROAD (AT CATTLE GUARD AND A SIGN)		0.53	0.00	0.53	3		AS	2
0221	NC		116469		STEWART HORSE CAMP ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO STEWART HORSE CAMP		0.00	0.50	0.50	3		GR	
0222	6	1	89542		COMMONWEAL ROAD	FROM MESA ROAD (NON-NPS)	TO END AT MP 1.09		0.41	0.68	1.09	3		AS	6
0401	6	1	32716		LIFEBOAT STATION ROAD	FROM END OF ROUTE 0201 (CHIMNEY ROCK ROAD)	TO ROUTE 0944 (LIFEBOAT STATION PARKING LOT)		0.35	0.00	0.35	5		AS	1

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### Cycle 6 NPS / RIP Route ID Report

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				DCV = Data Collection Vehicle

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	ROAD INVENTORY (1100 SERIES FMSS LOCATIONS)														
Route	cle llected	lteration Collected	FMSS	ncessi		Route Des	cription	Maintenance		Unpaved	Total	nctio	Area		Area
No.	င် ပိ	Col	Number	ŝ	Route Name	From	То	District	Miles	Miles	Mileage	Ξõ	(SQ FT)	Туре	Мар
0402	6	1	103737		FISH DOCKS (MENDOZA) ACCESS ROAD	FROM ROUTE 0401 (LIFEBOAT STATION ROAD)	TO END OF PAVEMENT AT DOCKS		0.14	0.00	0.14	6		AS	1
0403	NC		89457		RED BARN CLASSROOM ROAD	FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO ROUTE 0947 (RED BARN CLASSROOM PARKING LOT)		0.00	0.07	0.07	5		GR	
0404	6	1	35179		LIMANTOUR RESIDENCE ROAD WEST	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.32	TO END OF PAVEMENT AT LIMANTOUR RESIDENCE DRIVEWAY		0.09	0.00	0.09	6		AS	4
0408	6	1	32721		MORGAN HORSE RANCH ROAD	FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO END OF LOOP		0.23	0.00	0.23	3		AS	5A
0410	6	1	32724		BEAR VALLEY MAINTENANCE ACCESS ROAD	FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO ROUTE 0902B (BEAR VALLEY R&T PAD PARKING LOT)		0.22	0.00	0.22	5		AS	5A
0411	6	1	89415		RCA HISTORIC ROAD (NDOC ROAD)	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0931 (NDOC OFFICE PARKING LOT)		0.24	0.00	0.24	3		AS	2
0413	NC		89412		MOUNT VISION FIRE LANE	FROM ROUTE 0204 (MOUNT VISION ROAD)	TO RESIDENCE 535		0.00	0.30	0.30	6		GR	
0414	NC		89414		LUPTON RANCH ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO LUPTON RANCH		0.00	0.30	0.30	6		GR	
0415	NC		89416		PCLC LEARNING CENTER ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO ROUTE 0960 (LEARNING CENTER PARKING LOT)		0.00	0.20	0.20	5		GR	
0416	6	1	3110		CROSS MARIN TRAIL ROAD	FROM ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)	to state park boundary Sign		1.61	0.00	1.61	5		AS	5
0417	NC		91081		KULE LOKLO ACCESS ROAD	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 0.88	TO KULE LOKLO CAMPGROUND AND ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)		0.00	0.30	0.30	5		GR	
0418	NC		12323		SUNNYSIDE DRIVE	FROM ROUTE 0010 (LIMANTOUR ROAD)	TO GATE AT ROBERTS DRIVE (PRIVATE ROAD)		0.00	1.00	1.00	5		GR	

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	-	-		uo		ROAD INVENTORY (1	100 SERIES FMSS I	OCATIONS)				nal			
Route	ile lectec	lteration Collected	FMSS	Icessi		Route Des	cription	Maintenance	Paved	Unpaved Miles	Total	nctio Iss	Area	Surf.	
No.	δ S	lter Col	Number	S	Route Name	From	То	District	Miles	Miles	Mileage	G. F.	(SQ FT)	Туре	Мар
0419	NC		3102		RANDALL TRAIL ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO ROUTE 0420 (BOLINAS RIDGE TRAIL ROAD)		0.00	1.60	1.60	6		GR	
0420	NC		32703		BOLINAS RIDGE TRAIL ROAD	FROM ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)	TO BOLINAS-FAIRFAX ROAD		0.00	11.10	11.10	6		GR	
0421	NC		32711		MUDDY HOLLOW PUMPHOUSE ROAD	FROM END OF ROUTE 0107 (MUDDY HOLLOW ROAD)	TO PUMP HOUSE		0.00	0.50	0.50	6		GR	
0422	NC		228937		BEAR VALLEY WATER SYSTEM ACCESS ROAD	FROM MORGAN TRAIL	TO BEAR VALLEY WATER TANK		0.00	0.50	0.50	6		GR	
0423	6	1	116481		HISTORIC GIACOMINI RANCH ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO END OF PAVEMENT AND UNPAVED AREAS AROUND RANCH		0.03	0.00	0.03	6		AS	5
0424	NC		228319		STEWART TRAIL SPUR ROAD	FROM ROUTE 0219ZZ (STEWART TRAIL AND MILL POND CREST ROAD)	TO STEWART HORSE CAMP WATER SYSTEM		0.00	0.15	0.15	6		GR	
0425	NC		101390		TOMALES BEACH ROAD	FROM ROUTE 5003 (PIERCE POINT ROAD)	TO TOMALES BEACH CAMPGROUND		0.00	0.90	0.90	6		GR	
0426	NC		238610		GIACOMINI WETLANDS BARN ROAD	FROM C STREET	TO BARN PARKING / END OF LOOP		0.00	0.30	0.30	6		GR	
0427	NC		101318		CHEDA RANCH ROAD	FROM SIR FRANCIS DRAKE BOULEVARD	TO CHEDA RANCH SITE		0.00	0.45	0.45	6		GR	
0428	NC		104149		PINE RIDGE ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 0204 (MOUNT VISION ROAD) AT MP 1.77		0.00	1.10	1.10	6		GR	
0429	NC		109808		ESTERO CAMPGROUND ROAD	FROM ROUTE 0203A (ESTERO TRAILHEAD ROAD)	TO ESTERO CAMP		0.00	1.00	1.00	6		GR	
0430	NC		116480		RESIDENCE 519 DRIVEWAY ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO RESIDENCE		0.00	0.10	0.10	5		GR	
0431	NC		237697		DUCK COVE ROAD	FROM ROUTE 0104 (L RANCH ROAD)	TO ROUTE 0432 (BEACH ROAD)		0.00	1.75	1.75	6		GR	
0432	NC		237703		BEACH ROAD	FROM ROUTE 0431 (DUCK COVE ROAD)	TO BEACH		0.00	0.30	0.30	6		GR	

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### Cycle 6 NPS / RIP Route ID Report

Report Date: 11/18/2015

(Numerical By Summary Route and Subcomponent #)



Shading Color Key	White = Paved Routes, DCV Driven	Grey = Paved Routes, DCV not Driven	Black = Non-NPS Routes	Concession Route
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				Ę		ROAD INVENTORY (	1100 SERIES FMSS L	OCATIONS)				امر			
Route No.	Cycle Collected	lteration Collected	FMSS Number	Concessio	Route Name	Route Des	cription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage	ctio ss	Area (SQ FT)	Surf. Type	Area Map
0433	6	1			WILKINS RESIDENCE DRIVEWAY	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO END OF LOOP		0.16	0.00	0.16	5		AS	6
0500	6	1	35178		LIMANTOUR RESIDENCE ROAD EAST	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.32	TO END AT RESIDENCE DRIVEWAY		0.37	0.00	0.37	5		AS	4
	_	_		ų		NON-NPS	ROADS INVENTOR	Y				امر			
Route No.	Cycle Collected	lteration Collected	FMSS Number	Concessi	Route Name	Route Des	cription To	Maintenance District	Paved Miles	Unpaved Miles	Total Mileage	Functio Class	Area (SQ FT)	Surf. Type	Area Map
5000	6	1	12321		SIR FRANCIS DRAKE BOULEVARD EAST	FROM ROUTE 0416 (CROSS MARIN TRAIL ROAD) ON LEFT	TO ROUTE 5004 (CALIFORNIA HIGHWAY 1)		1.79	0.00	1.79			AS	5
5001	4	1	12321		SIR FRANCIS DRAKE BOULEVARD WEST	FROM END OF ROUTE 5002 (BEAR VALLEY ROAD)	TO ROUTE 0200ZZ (LIGHTHOUSE ROAD) ON RIGHT AND ROUTE 0201 (CHIMNEY ROCK ROAD) ON LEFT		30.00	0.00	30.00			AS	1,2,4
5002	4	1	57780		BEAR VALLEY ROAD	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO BEGINNING OF ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)		2.75	0.00	2.75			AS	4,5,5A
5003	4	1	00002479		PIERCE POINT ROAD	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO BEGINNING OF ROUTE 0205 (MCCLURES BEACH ACCESS ROAD)		8.50	0.00	8.50			AS	3,4
5004	6	1	12322		CALIFORNIA HIGHWAY 1	FROM ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY) ON RIGHT	TO NICK'S COVE (MILLER BOAT LAUNCH) ON LEFT		24.37	0.00	24.37			AS	3,4,5,6, KEY
5005	NC		235076		POINT REYES - PETALUMA ROAD	FROM PETALUMA	TO POINT REYES STATION		0.00	0.00	0.00			AS	

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Report Date: 11/18/2015

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				Ē	PAR	KING AREA INVENTORY (1	300 SERIES FMSS LOCATIO	ONS)				
Route	le ected	lteration Collected	FMSS	cessio		Route De	scription	Maintenance	Access	Area	Surf.	Area
No.	လို မိ	lter Coll	Number	Con	Route Name	From	То	District	Level	(SQ FT)	Туре	Мар
0900	6	1	89506		HEADQUARTERS ADMINISTRATION PARKING LOT	FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)	TO PARKING		PUBLIC	8,998	AS	5A
0901	6	1	89505		BEAR VALLEY VISITOR CENTER PARKING LOT	FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)		PUBLIC	28,546	AS	5A
0902A	6	1	105920		BEAR VALLEY R&T PARKING LOT	FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)	TO PARKING		PUBLIC	7,880	AS	5A
0902B	6	1	89520		BEAR VALLEY R&T PAD PARKING LOT	FROM END OF ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)	TO PARKING		NONPUBLIC	22,455	AS	5A
0902C	6	1	89508		SCIENCE CAMPUS PARKING	ADJACENT TO ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD) ON RIGHT			PUBLIC	7,389	AS	5A
0902D	6	1	103628		FIRE CACHE / RANGER (BUILDING 77) PARKING LOT	FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)	TO PARKING		PUBLIC	5,311	AS	5A
0902E	6	1	89507		BEAR VALLEY HEADQUARTERS B & U SHOP PARKING LOT	FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)	TO PARKING		PUBLIC	15,131	AS	5A
0903	6	1	89516		LIGHTHOUSE APARTMENTS PARKING LOT	ADJACENT TO ROUTE 0200ZZ (LIGHTHOUSE ROAD)			NONPUBLIC	1,041	AS	1
0904	6	1	89517		LIMANTOUR (SOUTH) PARKING LOT	FROM END OF ROUTE 0206 (LIMANTOUR BEACH ACCESS ROAD)	TO PARKING		PUBLIC	10,119	AS	4
0906	NC		89440		ADAM'S PIT (BAYVIEW TRAIL) PARKING LOT	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 4.46	TO PARKING		PUBLIC	18,000	GR	
0907	NC		89439		SKY TRAILHEAD PARKING LOT	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 3.44	TO ROUTE 0215 (SKY CAMP ROAD)		PUBLIC	4,800	GR	
0908	NC		89441		LIMANTOUR BUS PARKING LOT	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 5.41	TO PARKING		PUBLIC	5,000	GR	
0909	6	1	89514		SOUTH BEACH PARKING LOT	FROM END OF ROUTE 0100 (SOUTH BEACH ROAD)	TO PARKING		PUBLIC	96,288	AS	2

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Report Date: 11/18/2015

### Cycle 6 NPS / RIP Route ID Report

(Numerical By Summary Route and Subcomponent #)



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	Yellow = Unpaved Routes, DCV not Driven	Blue = Paved Parking Areas	Green = Unpaved Parking Areas	1
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				F	PAR	KING AREA INVENTORY (1	300 SERIES FMSS LOCATIO	ONS)				
Route	Cycle Collected	ation lected	FMSS	Icessio		Route De	scription	Maintenance	Access	Area	Surf.	
No.	° °	Col	Number	Con	Route Name	From	То	District	Level	(SQ FT)	Туре	Мар
0910	6	1	89512		NORTH BEACH PARKING LOT	FROM END OF ROUTE 0102 (NORTH BEACH ROAD)	TO PARKING		PUBLIC	37,356	AS	2
0911	6	1	89513		DRAKES BEACH PARKING LOT	FROM END OF ROUTE 0101 (DRAKES BEACH ROAD)	TO PARKING		PUBLIC	184,364	AS	2
0912	6	1	89509		MCCLURES BEACH PARKING	FROM END OF ROUTE 0205 (MCCLURES BEACH ACCESS ROAD)	TO PARKING		PUBLIC	15,389	AS	3
0913	NC		89420		MOUNT VISION MIDDLE PARKING LOT	FROM ROUTE 0204 (MOUNT VISION ROAD) AT MP 3.23	TO PARKING		PUBLIC	25,200	GR	
0914	NC		89437		BEAR VALLEY TRAILHEAD PARKING LOT	FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)	TO ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)		PUBLIC	80,000	GR	
0915	6	1	89518		LAGUNA TRAILHEAD PARKING LOT	FROM ROUTE 0210 (LAGUNA ROAD)	TO PARKING		PUBLIC	6,380	AS	4
0917	NC		89429		CHIMNEY ROCK LOWER (TRAILHEAD) PARKING LOT	FROM ROUTE 0201 (CHIMNEY ROCK ROAD)	TO END OF ROUTE 0201 (CHIMNEY ROCK ROAD)		PUBLIC	18,000	GR	
0918	NC		89423		ESTERO PARKING LOT	FROM ROUTE 0203A (ESTERO TRAILHEAD ROAD)	TO ROUTE 0203A (ESTERO TRAILHEAD ROAD)		PUBLIC	12,180	GR	
0919	NC		89422		MOUNT VISION TRAILHEAD UPPER PARKING LOT	ADJACENT TO END OF ROUTE 0204 (MOUNT VISION ROAD) AT MP 3.83			PUBLIC	12,180	GR	
0921	NC		89430		PIERCE POINT UPPER PARKING LOT	FROM ROUTE 0205 (MCCLURES BEACH ACCESS ROAD)	TO PARKING		PUBLIC	12,000	GR	
0922	NC		89428		CHIMNEY ROCK UPPER PARKING LOT	FROM ROUTE 0201 (CHIMNEY ROCK ROAD)	TO PARKING		PUBLIC	5,000	GR	
0923	NC		89425		BULL POINT PARKING LOT	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO PARKING		PUBLIC	4,800	GR	
0924	NC		89427		ABBOTT'S LAGOON PARKING LOT	FROM ROUTE 5003 (PIERCE POINT ROAD)	TO ROUTE 5003 (PIERCE POINT ROAD)		PUBLIC	15,000	GR	
0925	6	1	103636		MORGAN HORSE RANCH HANDICAPPED PARKING LOT	ADJACENT TO ROUTE 0408 (MORGAN HORSE RANCH ROAD)			PUBLIC	657	AS	5A

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Report Date: 11/18/2015

#### Cycle 6 NPS / RIP Route ID Report

(Numerical By Summary Route and Subcomponent #)



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				Ē	PAR	KING AREA INVENTORY (1	300 SERIES FMSS LOCATIO	NS)				
Route	e ected	lteration Collected	FMSS	cession		Route De	Route Description Maintenance					Area
No.	C C	lterc Coll	Number	Con	Route Name	From	То	District	Level	(SQ FT)	Туре	Мар
0927	6	1	89510		MCI EXHIBIT PULLOUT	FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)		PUBLIC	4,713	AS	2
0930	6	1	89515		LIGHTHOUSE PARKING LOT	FROM ROUTE 0200ZZ (LIGHTHOUSE ROAD)	TO PARKING		PUBLIC	14,357	AS	1
0931	6	1	89511		NDOC OFFICE PARKING LOT	FROM END OF ROUTE 0411 (RCA HISTORIC ROAD (NDOC ROAD))	TO PARKING		PUBLIC	20,955	AS	2
0932	NC		102181		FIRE CACHE ADMINISTRATION OFFICE PARKING LOT	ADJACENT TO ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)			PUBLIC	4,761	GR	
0933	NC		14603		MARSHALL BEACH UNPAVED PARKING LOT	FROM END OF ROUTE 0109 (MARSHALL BEACH ROAD)	TO PARKING		PUBLIC	13,750	GR	
0934	NC		89419		MOUNT VISION OVERLOOK LOWER PARKING LOT	ADJACENT TO ROUTE 0204 (MOUNT VISION ROAD) AT MP 2.35			PUBLIC	4,000	GR	
0935	NC		89424		COAST GUARD CEMETERY PARKING LOT	FROM ROUTE 0220 (U.S. COAST GUARD ACCESS ROAD)	TO PARKING		PUBLIC	900	GR	
0936	NC		89431		PALOMARIN TRAILHEAD PARKING LOT	FROM END OF ROUTE 0105 (PALOMARIN ROAD)	TO PARKING		PUBLIC	33,000	GR	
0937	NC		89432		PALOMARIN SURFER BEACH TRAILHEAD PARKING LOT	FROM ROUTE 0105 (PALOMARIN ROAD)	TO ROUTE 0105 (PALOMARIN ROAD)		PUBLIC	6,000	GR	
0938	NC		89433		PALOMARIN PRBO PARKING LOT	FROM ROUTE 0105 (PALOMARIN ROAD)	TO PARKING		PUBLIC	12,800	GR	
0939	NC		89434		FIVE BROOKS TRAILHEAD PARKING LOT	FROM END OF ROUTE 0213 (FIVE BROOKS ROAD)	TO BEGINNING OF ROUTE 0219ZZ (STEWART TRAIL AND MILL POND CREST ROAD)		PUBLIC	48,000	GR	
0940	NC		89435		TOMALES BAY (MARTINELLI'S) TRAILHEAD PARKING LOT	FROM ROUTE 5004 (CALIFORNIA HIGHWAY 1)	TO PARKING		PUBLIC	7,200	GR	
0941	NC		89438		BEAR VALLEY HORSE / BUS PARKING LOT	FROM ROUTE 0901 (BEAR VALLEY VISITOR CENTER PARKING LOT)	TO ROUTE 0408 (MORGAN HORSE RANCH ROAD)		PUBLIC	10,000	GR	

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Report Date: 11/18/2015

### Cycle 6 NPS / RIP Route ID Report

(Numerical By Summary Route and Subcomponent #)



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	PARKING AREA INVENTORY (1300 SERIES FMSS LOCATIONS)											
Route	Cycle Collected	rtion ected	FMSS	cession		Route De	scription	Maintenance	Access	Area	Surf.	Area
No.	Cycl	ltero Coll	Number	Con	Route Name	From	То	District	Level	(SQ FT)	Туре	Μαρ
0942	NC		89442		EDUCATION CENTER PARKING LOT	FROM END OF ROUTE 0210 (LAGUNA ROAD)	TO PARKING		PUBLIC	2,000	GR	
0943	NC		89443		MUDDY HOLLOW PARKING	FROM END OF ROUTE 0107 (MUDDY HOLLOW ROAD)	TO PARKING		PUBLIC	7,500	GR	
0944	NC		89452		LIFEBOAT STATION PARKING LOT	FROM END OF ROUTE 0401 (LIFEBOAT STATION ROAD)	TO PARKING		PUBLIC	10,000	GR	
0945	NC		89453		LIMANTOUR BEACH MAIN PARKING LOT	FROM END OF ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.57	TO PARKING		PUBLIC	70,000	GR	
0946	NC		89455		OTTINGERS HILL PARKING LOT	ADJACENT TO ROUTE 0428 (PINE RIDGE ROAD)			PUBLIC	5,000	GR	
0947	NC		89458		RED BARN CLASSROOM PARKING LOT	FROM END OF ROUTE 0403 (RED BARN CLASSROOM ROAD)	TO PARKING		PUBLIC	6,000	GR	
0948	NC		89523		SEA LION OVERLOOK PARKING LOT	ADJACENT TO ROUTE 0200ZZ (LIGHTHOUSE ROAD)			PUBLIC	720	GR	
0949	NC		89524		BEAR VALLEY RESOURCE PARKING LOT	ADJACENT TO ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)			PUBLIC	2,600	GR	
0950	NC		89526		SCHOONER BAY PARKING LOT	ADJACENT TO END OF ROUTE 0202 (SCHOONER BAY ROAD (OYSTER FARM ROAD)) ON RIGHT			PUBLIC	16,900	GR	
0951	NC		90584		KEHOE BEACH TRAILHEAD TURNOUT	ADJACENT TO ROUTE 5003 (PIERCE POINT ROAD) ON WEST SIDE			PUBLIC	2,800	GR	
0952	6	1	90633		SACRAMENTO LANDING MAIN HOUSE PARKING LOT	FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))	TO ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))		PUBLIC	7,645	AS	3
0953	6	1	97171		SACRAMENTO PIER PARKING LOT	FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))	TO PARKING		PUBLIC	3,642	AS	3
0954	6	1	97175		SACRAMENTO LANDING SUPPORT PARKING LOT	FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))	TO PARKING		PUBLIC	6,381	AS	3
0956	NC		105919		OLEMA MARSH PARKING LOT	ADJACENT TO ROUTE 0106 (OLEMA MARSH ROAD)			PUBLIC	5,000	GR	

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Report Date: 11/18/2015

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	PARKING AREA INVENTORY (1300 SERIES FMSS LOCATIONS)												
Route No.	Cycle Collected	lteration Collected	FMSS Number	Concessio	Route Name	Route De	scription To	Maintenance District	Access Level	Area (SQ FT)	Surf. Type	Area Map	
0958	NC		105922		SCHOONER BAY EXHIBIT PULLOUT	ADJACENT TO ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)			PUBLIC	3,000	GR		
0959	6	1	116372		LIMANTOUR PICNIC AREA ADA PARKING LOT	FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.52	TO PARKING		PUBLIC	4,264	AS	4	
0960	NC		110255		LEARNING CENTER PARKING LOT	FROM END OF ROUTE 0415 (PCLC LEARNING CENTER ROAD)	TO PARKING		PUBLIC	1,920	GR		
0961	6	1	89519		CROSS MARIN TRAILHEAD PARKING LOT	FROM ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)	TO ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)		PUBLIC	12,708	со	5	
0962	6	1	230204		COMMONWEAL PARKING LOT	FROM ROUTE 0222 (COMMONWEAL ROAD)	TO ROUTE 0222 (COMMONWEAL ROAD)		PUBLIC	28,248	AS	6	
0964	6	1			WILKINS RESIDENCE PARKING LOT	FROM ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY)	TO PARKING		NONPUBLIC	6,412	AS	6	

Page 13 of 14 Report Date: 1		Cycle 6 NPS / RIP Rou (Numerical By Summary Route and S	•	Federal Lands Highway Road Inventory Program
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#### Cycle 6 Summary Totals for Point Reyes National Seashore

Cycle 6 Route Totals								
	NPS Maintained	Concessionaire Maintained	Park Totals					
Paved Roads, Data Collection Vehicle Rated (Miles)	21.91	0	21.91					
Paved Roads, Manually Rated Length (Miles)	2.78	0	2.78					
Paved Roads, Manually Rated Area (Sq. Ft.)	0	0	0					
Unpaved Roads (Miles)	46.16	0.50	46.66					
Paved Parking (Sq. Ft.)	528,381	28,248	556,629					
Unpaved Parking (Sq. Ft.)	486,011	0	486,011					

Cycle 6 Lane Miles and Overall Pavement Condition							
Lanes Pavement Miles* Condition Rating							
Data Collection Vehicle Routes	41.79	76					
Manually Rated Roads	2.73	55					
Parking Areas	9.58	65					

 $\ast$  Equivalent Lane Miles are calculated by route using the following equations:

\*\*Parking and Manually Rated Routes are assigned the following PCR values based on the type of observed distresses:

- DCV and MRLs = - MRPs and PKGs =

= (PAVE\_WIDTH x PAVED\_MI) / 11 foot lane = SQ\_FEET / 5280 / 11 foot lane

-Excellent = 97 -Good = 90 -Fair = 73 -Poor = 53, 30, or 0 -Construction / Not Rated = -1 Page 14 of 14

### Cycle 6 NPS / RIP Route ID Report

Report Date: 11/18/2015

(Numerical By Summary Route and Subcomponent #)



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#### General Park Road Functional Classification (FC) Table

FC	Туре	User Access	Description	Route Numbers	Surface Types
1	Principal Park Road Rural Parkway	Public	Roads which constitute the main access route, circulatory tour, or thoroughfare for park visitors. Rural Parkways (e.g. Natchez Trace) are numbered 0001 - 0009.	0001 - 0009 0010 - 0099	AS - Asphaltic Concrete Pavement BR - Brick or Pavers Road Bed
2	Connector Park Road	Public	Roads which provide access within a park to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, etc.	0100 - 0199	CB - Cobble Stone Road Bed
3	Special Purpose Park Road	Public	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.	0200 - 0299	CO - Portland Cement Concrete Pavement GR - Gravel Road Bed
4	Primitive Park Road	Public	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. Note: Functional Classes 3 and 4 have the same route numbers because, historically, they were numbered similarly.	0200 - 0299	NV - Native or Dirt Material Road Bed
5	Administrative Park Road	Public	All public roads intended for access to administrative developments or structures such as park offices, employee quarters, or utility areas.	0400 - 0499	OT - Other Materials Road Bed
6	Administrative Park Road (Restricted Access)	Nonpublic	All roads normally closed to the public, including patrol roads, truck trails, and other similar roads. 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.	0400 - 0499	
7	Urban Parkway	Public	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.	0001 - 0009	
8	City Street	Public	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.	0600 - 0699	
N/A	Non-NPS Roads	Public	State, County, or City owned roads which border, traverse, or provide access to Park Facilities or Locations. Non-NPS roads are not assigned functional classes and are driven for GPS and Video Log only.	5000 - 5999	1

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 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.

Page I of I	ge 1 of 1	<b>age</b>	
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Report Date: 11/18/2015

#### NPS / RIP Subcomponent Details for PORE

(Numerical By Summary Route and Subcomponent #)



Shading Color Key	White = Paved Routes, DCV Driven	Grey = Paved Routes, DCV not Driven	Black = Paved Routes, Non-NPS	Concession Route
	Yellow = Unpaved Routes, DCV not Driven	Blue = Paved Parking Areas	Green = Unpaved Parking Areas	
	ventory Program (RIP).	DCV = Data Collection Vehicle MRL = Manually Rated Line MRP = Manually Rated Polygon		

PKG = Parking Areas NC = Not Collected

## **PORE** Point Reyes National Seashore

	SUMMARY ROUTE INVENTORY FOR ROADS (1100 SERIES FMSS LOCATIONS)											
Route Number	FMSS Number	Cycle Collected	lteration Collected	Concessi	Route Name	Route I	Description To	Paved Miles	Unpaved Miles	Total Mileage	Functior Class	Area (SQ FT)
0200ZZ	00002491	6	1		LIGHTHOUSE ROAD	FROM END OF ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO DEAD END AT LIGHTHOUSE APARTMENT GARAGES	1.51	0.00	1.51	1	
0219ZZ	34147				STEWART TRAIL AND MILL POND CREST ROAD	FROM ROUTE 0939 (FIVE BROOKS TRAILHEAD PARKING LOT)	TO INTERSECTION OF ROUTE 0216 (GLEN CAMP ROAD) AND ROUTE 0218 (WILDCAT CAMPGROUND ROAD)	0.00	6.52	6.52	3	

PORE-	0200ZZ		5	ponent Breakdown						nal	
Route Number	FMSS Number	Cycle Collecte	lteration Collected Concessi	Route Name	Route D	Description To	Paved Miles	Unpaved Miles	Total Mileage	Functio Class	Area (SQ FT)
0200AZ	00002491	6	1	LIGHTHOUSE MAIN ROAD	FROM END OF ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)	TO END OF LOOP AT ROUTE 0930 (LIGHTHOUSE PARKING LOT)	1.08	0.00	1.08	1	
0200BZ	00002491	6	1	LIGHTHOUSE HANDICAPPED ROAD	FROM ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)	TO DEAD END AT LIGHTHOUSE APARTMENT GARAGES	0.44	0.00	0.44	1	

#### PORE-0219ZZ Subcomponent Breakdown Paved Unpaved Total 5 8 Miles Miles Mileage 2 Concessio Route FMSS Vumber Number Solected **Route Description** Area (SQ FT) **Route Name** From То 0219AZ 34147 STEWART TRAIL ROAD FROM ROUTE 0939 (FIVE BROOKS TO INTERSECTION OF ROUTE 0216 (GLEN 0.00 6.30 6.30 3 TRAILHEAD PARKING LOT) CAMP ROAD) AND ROUTE 0218 (WILDCAT CAMPGROUND ROAD) 0219BZ 34147 MILL POND CREST ROAD FROM ROUTE 0219AZ (STEWART TRAIL TO FIVE BROOKS STABLES 0.00 0.22 0.22 3 ROAD)

### Route Identification Changes to Paved Routes from Previous Cycle Point Reyes National Seashore

	<b>ROUTES REMOVED FROM PREVIOUS INVENTORY:</b>										
Route No.	Route Name	Type of Change	Comments								
0905	LIMANTOUR RESIDENCE ROAD WEST PARKING		ROUTE 0905 WAS REMOVED AS A PARKING LOT LOCATION BECAUSE THE PARK CONSIDERS IT TO BE A TURNAROUND AT THE END OF ROUTE 0404.								

	ROUTES ADDED FROM PREVIOUS INVENTORY:											
Route No.	Route Name	Type of Change	Comments									
0433	WILKINS RESIDENCE DRIVEWAY	OTHER	PAVED ROUTE ADDED TO INVENTORY IN CYCLE 6 PER THE REQUEST OF THE PARK.									
0964	WILKINS RESIDENCE PARKING LOT	OTHER	PAVED PARKING AREA ADDED TO INVENTORY IN CYCLE 6 PER THE REQUEST OF THE PARK.									
5004	CALIFORNIA HIGHWAY 1	OTHER	NON-NPS ROAD ADDED TO INVENTORY IN CYCLE 6 PER THE REQUEST OF THE PARK.									
5005	POINT REYES - PETALUMA ROAD	OTHER	NON-NPS ROAD ADDED TO INVENTORY IN CYCLE 6 BECAUSE IT IS IN FMSS. PARK STAFF DID NOT WANT THE DATA COLLECTION VEHICLE (DCV) TO DRIVE IT FOR GPS AND VIDEO.									

	ROUT	TES MODIFIED FROM PF	REVIOUS INVENTORY:
Route No.	Route Name	Type of Change	Comments
0103A	SACRAMENTO LANDING ROAD (PAVED)	ROUTE SPLIT	A PAVED PORTION OF ROUTE 0103 WAS IDENTIFIED AND COLLECTED IN CYCLE 6 AS ROUTE 0103A BECAUSE ROUTES 0103 AND 0103A ARE SEPARATE LOCATIONS IN FMSS.
0104	L RANCH ROAD	SURFACE TYPE CHANGE	THE BEGINNING PORTION OF ROUTE 0104 WAS UPDATED TO ASPHALT IN CYCLE 6. THE ROAD WAS INVENTORIED AS ENTIRELY UNPAVED IN CYCLE 5.
0200ZZ	LIGHTHOUSE ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 1 BECAUSE IT IS A PRIMARY PARK ROAD FOR VISITORS. ALSO, CYCLE 5 ROUTE 0200 WAS COLLECTED IN TWO SECTIONS IN CYCLE 6: THE MAIN ROAD ENDING AT THE TRAFFIC CIRCLE, AND THE GATED HANDICAPPED PORTION STARTING FROM THE CIRCLE.
0201	CHIMNEY ROCK ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS A CONNECTOR ROAD TO TRAILS AND OVERLOOKS.
0204	MOUNT VISION ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT IS A CONNECTOR ROAD TO TRAILS AND OVERLOOKS.

### Route Identification Changes to Paved Routes from Previous Cycle Point Reyes National Seashore

	ROUTES MODIFIED FROM PREVIOUS INVENTORY:											
Route No.	Route Name	Type of Change	Comments									
0205	MCCLURES BEACH ACCESS ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT PROVIDES ACCESS TO THE BEACH.									
0206	LIMANTOUR BEACH ACCESS ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT PROVIDES ACCESS TO THE BEACH.									
0211	BEAR VALLEY TRAILHEAD ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 3 TO 2 BECAUSE IT PROVIDES ACCESS TO THE MAIN VISITOR CENTER AND HIKING TRAILS.									
0220	U.S. COAST GUARD ACCESS ROAD	ROUTE NAME	ROUTE NAME CHANGED FROM "US COAST GUARD CEMETERY ROAD" IN ORDER TO MATCH FMSS.									
0404	LIMANTOUR RESIDENCE ROAD WEST	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 5 TO 6 BECAUSE THE ROAD IS RESTRICTED TO PUBLIC VEHICLES.									
0408	MORGAN HORSE RANCH ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 5 TO 3 BECAUSE IT IS A SPECIAL PURPOSE ROAD FOR HANDICAPPED PARKING.									
0411	RCA HISTORIC ROAD (NDOC ROAD)	ROUTE NAME	ROUTE NAME CHANGED FROM "NORTH DISTRICT OPERATIONS CENTER ROAD" IN ORDER TO MATCH FMSS.									
0416	CROSS MARIN TRAIL ROAD	OTHER	MANUALLY RATED BECAUSE THE ROAD IS NARROW AND THERE WAS A COLLAPSED CULVERT NEAR MILE POST 1.50. IN PREVIOUS CYCLES THIS ROUTE WAS MISIDENTIFIED AND THE DATA COLLECTION VEHICLE COLLECTED A PORTION OF SIR FRANCIS DRAKE BOULEVARD WHICH RUNS PARALLEL TO THIS ROUTE.									
0423	HISTORIC GIACOMINI RANCH ROAD	SURFACE TYPE CHANGE	SURFACE TYPE CHANGED FROM GRAVEL TO ASPHALT.									
0901	BEAR VALLEY VISITOR CENTER PARKING LOT	RECONSTRUCTED	PARKING AREA WAS PARTIALLY RECONSTRUCTED AND GPS WAS RECOLLECTED IN CYCLE 6 TO SHOW THE UPDATED GEOMETRY.									
0902B	BEAR VALLEY R&T PAD PARKING LOT	ROUTE NAME	ROUTE NAME CHANGED FROM "BEAR VALLEY R AND T EQUIPMENT PARKING" IN ORDER TO MATCH FMSS.									
0902C	SCIENCE CAMPUS PARKING LOT	ROUTE NAME	ROUTE NAME CHANGED FROM "BEAR VALLEY HQ RESIDENCE PARKING" IN ORDER TO MATCH FMSS.									
0902D	FIRE CACHE / RANGER (BUILDING 77) PARKING LOT	ROUTE SPLIT	CYCLE 5 ROUTE 0902D WAS SPLIT IN CYCLE 6 IN ORDER TO MATCH TWO LOCATIONS IN FMSS (IT WAS SPLIT INTO ROUTE 0902D AND 0902E). ROUTE NAME CHANGED FROM "BEAR VALLEY BLDG 77 PARKING".									

### Route Identification Changes to Paved Routes from Previous Cycle Point Reyes National Seashore

	ROUT	TES MODIFIED FROM PI	REVIOUS INVENTORY:
Route No.	Route Name	Type of Change	Comments
0902E	BEAR VALLEY HEADQUARTERS B & U SHOP PARKING LOT	ROUTE SPLIT	ROUTE 0902E WAS SPLIT FROM CYCLE 5 ROUTE 0902D. AN ADDITIONAL PAVED AREA BEHIND THE BUILDING WAS ADDED TO THE PARKING LOT IN CYCLE 6.
0912	MCCLURES BEACH PARKING LOT	RECONSTRUCTED	A PORTION OF THE PARKING AREA WAS RECENTLY RECONSTRUCTED (THE BUS LANE AND TURNAROUND). GPS AND SQ FT WERE UPDATED IN CYCLE 6.
0930	LIGHTHOUSE PARKING LOT	SQ FEET CHANGE	THE PARKING LOT GPS AND SQ FT WERE UPDATED IN CYCLE 6 BY REMOVING THE TRAFFIC CIRCLE ON ROUTE 0200ZZ FROM THE PARKING LOT SHAPE.
0952	SACRAMENTO LANDING MAIN HOUSE PARKING LOT	SURFACE TYPE CHANGE	PARKING AREA SURFACE TYPE WAS UPDATED IN CYCLE 6; CHANGED FROM GRAVEL TO ASPHALT.
0953	SACRAMENTO PIER PARKING LOT	SURFACE TYPE CHANGE	PARKING AREA SURFACE TYPE WAS UPDATED IN CYCLE 6; CHANGED FROM GRAVEL TO ASPHALT.
0954	SACRAMENTO LANDING SUPPORT PARKING LOT	OTHER	ROUTE NAME CHANGED FROM "SACRAMENTO LANDING DORM PARKING" IN ORDER TO MATCH FMSS. PARKING AREA SURFACE TYPE WAS UPDATED IN CYCLE 6; CHANGED FROM GRAVEL TO ASPHALT.

# Section 3 Park Summary Information





#### Parkwide Paved Route Condition Summary Point Reyes National Seashore

Table 1: Paved Route Miles and Parking Area Square Footages by Access Level and PCR

[	POOR (PCR of 0 - 60)	FAIR (PCR of 61 - 84)	GOOD (PCR of 85 - 94)	EXCELLENT (PCR of 95 -100)								
	PAVED ROADS											
Functional Class	Length (miles)	Length (miles)	Length (miles)	Length (miles)	Total Mileage by FC							
1	0.70	4.00	3.09	1.30	9.08							
2	1.71	3.28	3.05	0.76	8.80							
3	1.10	0.97	0.25	0.78	3.10							
4												
5	0.38	1.92	0.24	0.17	2.71							
6	0.92		0.04	0.05	1.01							
7												
8												
Total Mileage by PCR	4.80	10.17	6.67	3.06	24.69							
		PAVED P	ARKING									
Access Level	Area (sq. ft.)	Area (sq. ft.)	Area (sq. ft.)	Area (sq. ft.)	Total Area							
PUBLIC	159,369	306,294	32,810		498,473							
NONPUBLIC	29,908				29,908							
Total Area by PCR	189,277	306,294	32,810	0	528,381							

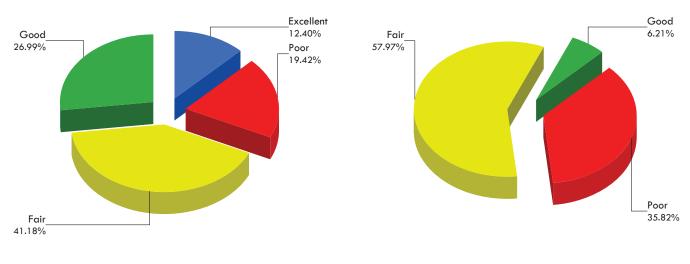
#### Breakdown of Pavement Condition Rating (PCR) Based on Access Level

#### NOTES:

1. Data are reported in the table only for paved roads and parking lots that received a condition rating.

2. Non-linear roads (MRP collected routes) are measured by area and converted to equivalent route miles based on a 22-ft pavement width in order to be included in the mileage totals for paved roads shown above.

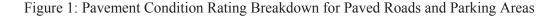
3. Quantities in the table above are derived from the route condition data within the PMS\_20, PMS\_MRL, PMS\_MRP, and PMS\_PKG tables in the Park geodatabase.



#### **Parkwide Condition Percentages**

**Road Condition Percentages** 

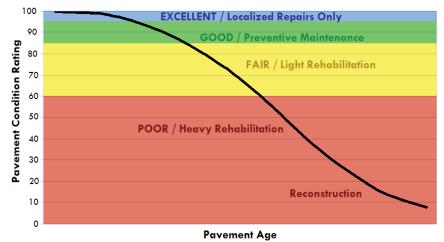
**Parking Area Condition Percentages** 



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

The Road Inventory Program aims to provide assistance in translating the excellent / good / fair / poor rating categories into pavement needs categories. The PCR can be used to indicate the place in the Pavement Life Cycle and the type of treatments that should be considered now and into the future.

- Excellent / New: PCR of 95-100
  - o Pavements in this range will require only spot repairs
- Good: PCR of 85-94
  - o 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
  - o Pavements in this range will likely be candidates of Light Rehabilitation (L3R). Examples include singlelift 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.



#### **CONDITION CATEGORIES AND TREATMENTS**

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 at the time in which the data were 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.



#### Cycle 6 - Road Inventory Program

Road Condition Summary Report for Data Collection Vehicle (DCV) Rated Roads

#### **Point Reyes National Seashore**

Condition (Rating / Index) Legend

EXCELLENT (95 - 100)	
GOOD (85 - 94)	
FAIR (61 - 84)	
POOR (0 - 60)	
NR = NOT RATED	

Notes:

• This condition summary report contains only the roads rated with the Data Collection Vehicle (DCV).

• Condition on roads that were manually rated and parking areas are shown in separate reports.

• Additional details on individual road ratings can be found in Section 5 of the Cycle 6 RIP Report.

• Refer to the RIP Report Appendix for an explanation of the rating system and rating methods.

Route No.	<u>Route-</u> FMSS No.	Level Condition for Roads Rated with the Data Co Route Name	Dillection Vehicle (DCV) Functiona Class	ıl Surf. Type	Paved Length (Miles)	Pavement Condition Rating (PCR)	Roughness Condition Index (RCI)	Surface Condition Rating (SCR)	Structural Crack Index	Alligator Crack Index	Longitudinal Cracking Index	Transverse Cracking Index	Patch / Pothole Index	Rutting Index
PORE-0010	00002545	LIMANTOUR ROAD	1	AS	7.57	83	69	92	92	99	93	97	99	97
PORE-0100	00002527	SOUTH BEACH ROAD	2	AS	0.70	76	45	97	100	100	100	98	100	97
PORE-0101	00002512	DRAKES BEACH ROAD	2	AS	1.50	60	80	46	46	56	90	96	100	78
PORE-0102	00002520	NORTH BEACH ROAD	2	AS	0.60	93	100	89	99	100	99	99	100	89
PORE-0104	2480	L RANCH ROAD	2	AS	0.14	43	NR	43	43	52	91	94	98	83
PORE-0200AZ	00002491	LIGHTHOUSE MAIN ROAD	1	AS	1.08	70	37	92	97	100	97	100	100	92
PORE-0200BZ	00002491	LIGHTHOUSE HANDICAPPED ROAD	1	AS	0.44	71	NR	71	71	87	84	98	94	92
PORE-0201	00002499	CHIMNEY ROCK ROAD	2	AS	0.91	0	NR	0	0	0	82	97	99	76
PORE-0203A	00002535	ESTERO TRAILHEAD ROAD	3	AS	0.97	95	NR	95	97	99	98	100	100	95
PORE-0204	00002534	MOUNT VISION ROAD	2	AS	3.86	81	NR	81	94	99	95	98	99	81
PORE-0205	32713	MCCLURES BEACH ACCESS ROAD	2	AS	0.20	70	NR	70	70	84	86	99	98	88
PORE-0206	35177	LIMANTOUR BEACH ACCESS ROAD	2	AS	0.37	74	NR	74	74	100	74	89	100	93
PORE-0210	12324	LAGUNA ROAD	3	AS	0.65	69	NR	69	69	88	81	84	99	91
PORE-0211	32719	BEAR VALLEY TRAILHEAD ROAD	2	AS	0.33	91	NR	91	91	99	92	92	97	96
PORE-0220	117012	U.S. COAST GUARD ACCESS ROAD	3	AS	0.53	57	47	64	64	86	78	94	98	95
PORE-0222	89542	COMMONWEAL ROAD	3	AS	0.41	0	NR	0	0	0	89	100	98	53
PORE-0401	32716	LIFEBOAT STATION ROAD	5	AS	0.35	59	NR	59	59	87	72	88	95	84
PORE-0404	35179	LIMANTOUR RESIDENCE ROAD WEST	6	AS	0.09	95	NR	95	95	100	95	100	100	99
PORE-0408	32721	MORGAN HORSE RANCH ROAD	3	AS	0.23	82	NR	82	90	100	90	82	100	92



#### Cycle 6 - Road Inventory Program

Road Condition Summary Report for Data Collection Vehicle (DCV) Rated Roads

#### **Point Reyes National Seashore**

Condition (Rating / Index) Legend

EXCELLENT (95 - 100)
GOOD (85 - 94)
FAIR (61 - 84)
POOR (0 - 60)
NR = NOT RATED

Notes:

• This condition summary report contains only the roads rated with the Data Collection Vehicle (DCV).

• Condition on roads that were manually rated and parking areas are shown in separate reports.

• Additional details on individual road ratings can be found in Section 5 of the Cycle 6 RIP Report.

• Refer to the RIP Report Appendix for an explanation of the rating system and rating methods.

Route No.	<u>Route-</u> FMSS No.	Level Condition for Roads Rated with the Data Co Route Name	<u>ollection Vehicle (DCV)</u> Functiona Class	l Surf. Type	Paved Length (Miles)	Pavement Condition Rating (PCR)	Roughness Condition Index (RCI)	Surface Condition Rating (SCR)	Structural Crack Index	Alligator Crack Index	Longitudinal Cracking Index	Transverse Cracking Index	Patch / Pothole Index	Rutting Index
PORE-0410	32724	BEAR VALLEY MAINTENANCE ACCESS ROAD	5	AS	0.22	84	NR	84	84	100	84	90	100	92
PORE-0411	89415	RCA HISTORIC ROAD (NDOC ROAD)	3	AS	0.24	72	NR	72	72	88	84	80	85	89
PORE-0433	N/A	WILKINS RESIDENCE DRIVEWAY	5	AS	0.16	0	NR	0	0	0	71	3	100	91
PORE-0500	35178	LIMANTOUR RESIDENCE ROAD EAST	5	AS	0.37	89	NR	89	89	100	89	100	100	98



### Cycle 6 - Road Inventory Program **Road Condition Summary Report for**

**Manually Rated Roads** 

#### **Point Reyes National Seashore**

Notes:

- This condition summary report contains only the roads that were manually rated.
  - MRL = Manually Rated Line (a linear road)
  - MRP = Manually Rated Polygon (a non-linear road)
- Condition on roads that were rated with the Data Collection Vehicle (DCV) are shown in a separate report.
- A road is manually rated when it is determined to be unsuitable for the DCV to drive.
- Additional details on individual road ratings can be found in Section 5 of the Cycle 6 RIP Report.
- Refer to the RIP Report Appendix for an explanation of the rating system and rating methods.

Route No.	FMSS No.	Route-Level Condition for Manually Rated Line (MRL) Roads	Function Class	al Surf. Type	Paved Length (Miles)	Pavement Condition Rating (PCR)	Roughness Condition Index (RCI)	Surface Condition Rating (SCR)	Structural Crack Index	tor Crack I	Longitudinal Cracking Index	Transverse Cracking Index	Patch / Pothole Index	Rutting Index
PORE-0103A	90634	SACRAMENTO LANDING ROAD (PAVED)	2	AS	0.19	64	NR	64	NR	NR	NR	NR	NR	NR
PORE-0202	89543	SCHOONER BAY ROAD (OYSTER FARM ROAD)	3	AS	0.07	30	NR	30	NR	NR	NR	NR	NR	NR
PORE-0203B	99954	HOME RANCH ROAD	6	AS	0.75	30	NR	30	NR	NR	NR	NR	NR	NR
PORE-0402	103737	FISH DOCKS (MENDOZA) ACCESS ROAD	6	AS	0.14	53	NR	53	NR	NR	NR	NR	NR	NR
PORE-0416	3110	CROSS MARIN TRAIL ROAD	5	AS	1.61	73	NR	73	NR	NR	NR	NR	NR	NR
PORE-0423	116481	HISTORIC GIACOMINI RANCH ROAD	6	AS	0.03	0	NR	0	NR	NR	NR	NR	NR	NR

Condition (Rating / Index) Legend

EXCELLENT (95 - 100)	
GOOD (85 - 94)	
FAIR (61 - 84)	
POOR (0 - 60)	
NR = NOT RATED	



#### Cycle 6 - Road Inventory Program

Parking Area Condition Summary Report

#### **Point Reyes National Seashore**

Notes:

- A PCR of 0 indicates a paved parking area in very poor condition. Individual distresses could not be identified.
- Additional details on individual parking areas can be found in Section 6 of the Cycle 6 RIP Report.
- Refer to the RIP Report Appendix for an explanation of the rating system and rating methods.

Condition (Rating / Index) Legend

EXCELLENT (97)
GOOD (90)
FAIR (73)
POOR* (0, 30, 53)
NR = NOT RATED

**Concrete Surface Distresses** 

Asphalt Surface Distresses

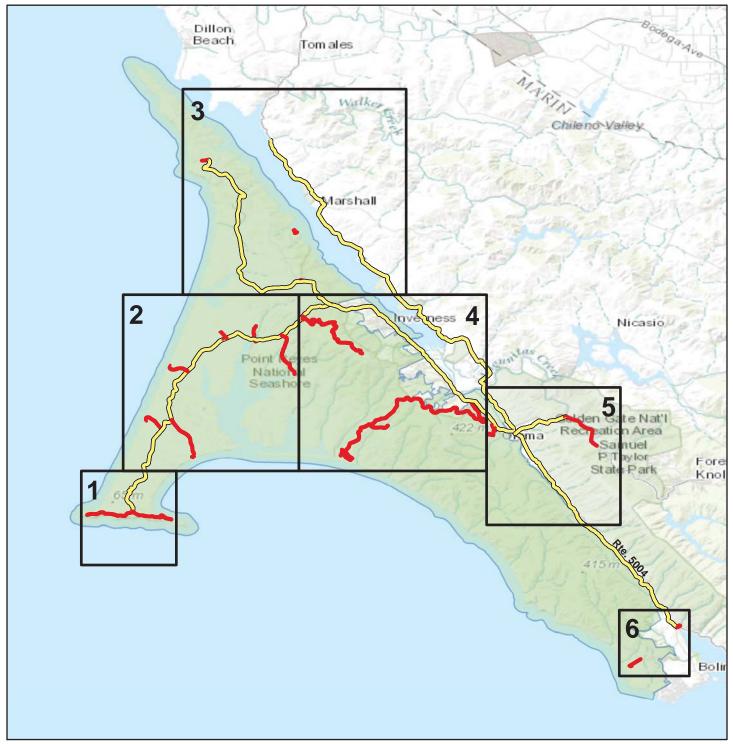
								•								
		Condition Rating Details for Parking Areas				ondition )	cking	cking	Distortions	Patching		/ <b>G</b> u			8	atching
Route No.	FMSS No.	Route Name	User Access	Surf. Type	Area (Sq. Ft.)	Pavement Con Rating (PCR)	Alligator Crack	Longitudinal / Tranverse Crac	Rutting / Distor	Potholes / Patc	HMA Patching	Surface Raveling Bleeding	Joint Faulting	Slab Cracking	Joint Distresse	Pop-Outs Potholes / Pat
PORE-0900	89506	HEADQUARTERS ADMINISTRATION PARKING LOT	PUBLIC	AS	8,998	73	73	90	90	90	90	90				
PORE-0901	89505	BEAR VALLEY VISITOR CENTER PARKING LOT	PUBLIC	AS	28,546	90	90	90	90	97	90	97				
PORE-0902A	105920	BEAR VALLEY R&T PARKING LOT	PUBLIC	AS	7,880	73	97	97	73	90	97	73				
PORE-0902B	89520	BEAR VALLEY R&T PAD PARKING LOT	NONPUBLIC	AS	22,455	30	30	90	90	90	90	73				
PORE-0902C	89508	SCIENCE CAMPUS PARKING LOT	PUBLIC	AS	7,389	73	90	90	90	90	97	73				
PORE-0902D	103628	FIRE CACHE / RANGER (BUILDING 77) PARKING LOT	PUBLIC	AS	5,311	73	73	90	90	97	90	73				
PORE-0902E	89507	BEAR VALLEY HEADQUARTERS B & U SHOP PARKING LOT	PUBLIC	AS	15,131	73	90	90	90	90	90	73				
PORE-0903	89516	LIGHTHOUSE APARTMENTS PARKING LOT	NONPUBLIC	AS	1,041	53	73	90	53	53	90	90				
PORE-0904	89517	LIMANTOUR (SOUTH) PARKING LOT	PUBLIC	AS	10,119	73	97	90	90	97	90	73				
PORE-0909	89514	SOUTH BEACH PARKING LOT	PUBLIC	AS	96,288	53	90	53	90	90	97	73				
PORE-0910	89512	NORTH BEACH PARKING LOT	PUBLIC	AS	37,356	73	97	90	90	90	97	73				
PORE-0911	89513	DRAKES BEACH PARKING LOT	PUBLIC	AS	184,364	73	90	90	73	90	97	73				
PORE-0912	89509	MCCLURES BEACH PARKING LOT	PUBLIC	AS	15,389	73	97	90	73	90	90	73				
PORE-0915	89518	LAGUNA TRAILHEAD PARKING LOT	PUBLIC	AS	6,380	30	30	53	73	53	97	73				
PORE-0925	103636	MORGAN HORSE RANCH HANDICAPPED PARKING LOT	PUBLIC	AS	657	53	97	53	90	97	97	73				
PORE-0927	89510	MCI EXHIBIT PULLOUT	PUBLIC	AS	4,713	53	53	90	90	97	97	73				
PORE-0930	89515	LIGHTHOUSE PARKING LOT	PUBLIC	AS	14,357	73	73	90	90	90	97	73				
PORE-0931	89511	NDOC OFFICE PARKING LOT	PUBLIC	AS	20,955	53	53	90	90	90	90	90				
PORE-0952	90633	SACRAMENTO LANDING MAIN HOUSE PARKING LOT	PUBLIC	AS	7,645	30	53	53	30	30	90	73				
PORE-0953	97171	SACRAMENTO PIER PARKING LOT	PUBLIC	AS	3,642	30	73	53	30	53	97	73				
PORE-0954	97175	SACRAMENTO LANDING SUPPORT PARKING LOT	PUBLIC	AS	6,381	30	53	53	30	73	97	73				,
PORE-0959	116372	LIMANTOUR PICNIC AREA ADA PARKING LOT	PUBLIC	AS	4,264	90	97	97	97	97	97	90				
PORE-0961	89519	CROSS MARIN TRAILHEAD PARKING LOT	PUBLIC	CO	12,708	53							53	53	73 7	73 90
PORE-0962	230204	COMMONWEAL PARKING LOT	PUBLIC	AS	28,248	NR										
PORE-0964	N/A	WILKINS RESIDENCE PARKING LOT	NONPUBLIC	AS	6,412	30	30	53	53	73	90	73				

# Section 4 Park Route Location Maps





#### Point Reyes National Seashore ROUTE LOCATION MAP Key Map



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

	NPS Collected Routes		Non-NPS Collected Routes	
	Miles		Γ	1
0	10	2	0	1
			4-	1

### **Point Reyes National Seashore**

**ROUTE LOCATION MAP** 

Area Map 1



Note: Unique colors are used to differentiate roads.

#### Non-NPS Collected Routes

#### Miles

0

N

### **Point Reyes National Seashore**

**ROUTE LOCATION MAP** 

Area Map 2



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

#### Note: Unique colors are used to differentiate roads.

#### Non-NPS Collected Routes



N

**ROUTE LOCATION MAP** 

Area Map 3



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

#### Note: Unique colors are used to differentiate roads.

0

#### Non-NPS Collected Routes

### Miles 2

4

N

**ROUTE LOCATION MAP** 

Area Map 4



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

#### Note: Unique colors are used to differentiate roads.

0

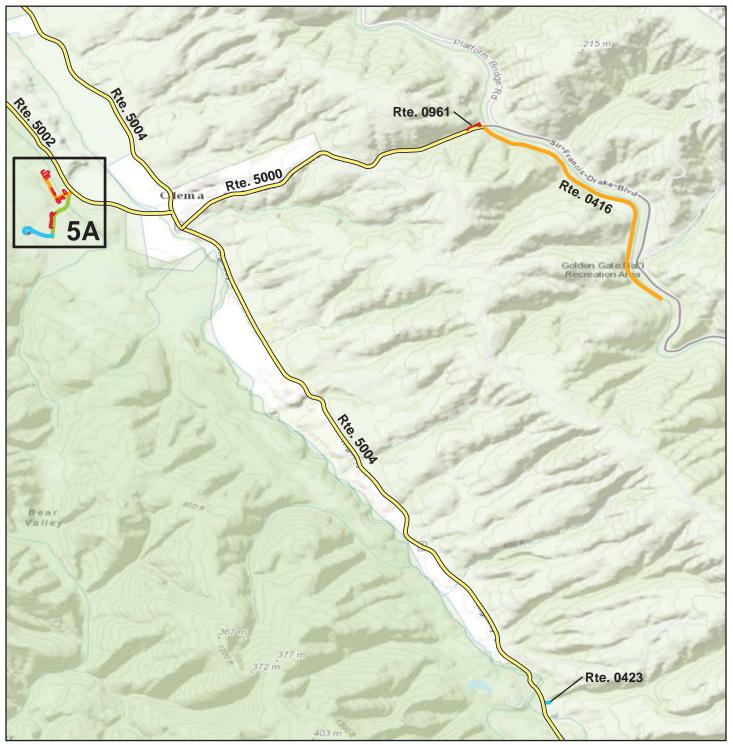
#### Non-NPS Collected Routes

## Miles 2

N

**ROUTE LOCATION MAP** 

Area Map 5



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

#### Note: Unique colors are used to differentiate roads.

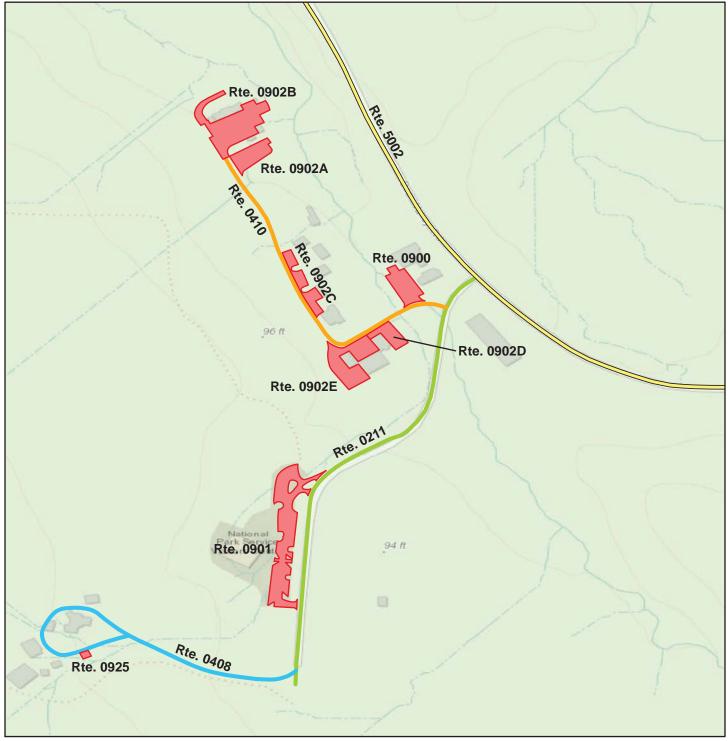
#### Non-NPS Collected Routes



Ν

**ROUTE LOCATION MAP** 

Area Map 5A



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

#### Note: Unique colors are used to differentiate roads.

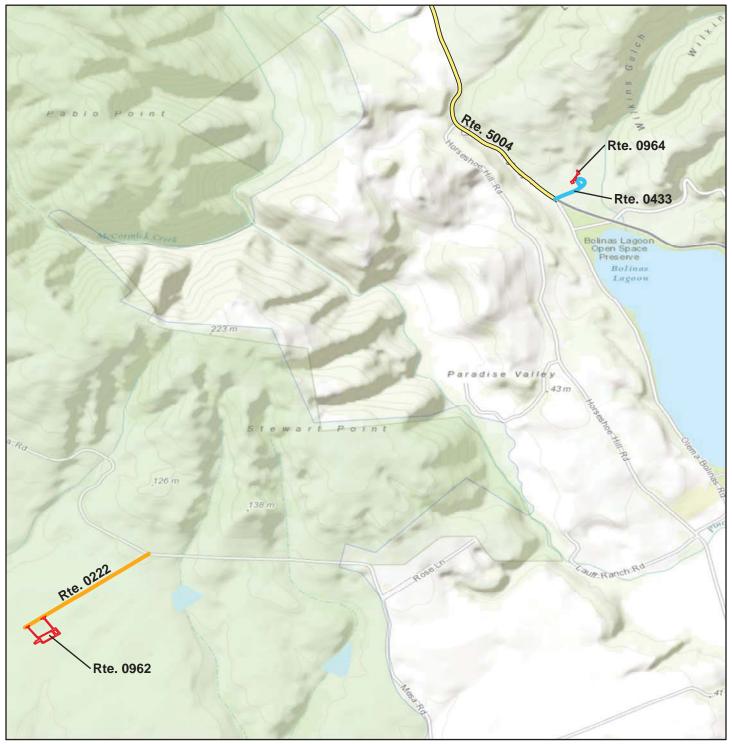
#### **Non-NPS Collected Routes**

### Miles 0.2

N

### Point Reyes National Seashore ROUTE LOCATION MAP

Area Map 6



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

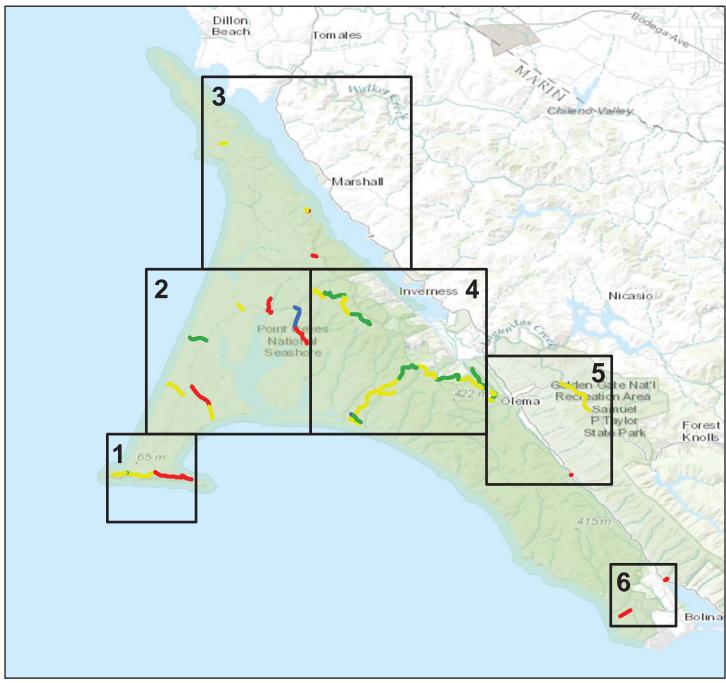
#### Note: Unique colors are used to differentiate roads.

#### Non-NPS Collected Routes

2

Miles 1 N

### Point Reyes National Seashore ROUTE CONDITION MAP PCR - MILE BY MILE Key Map



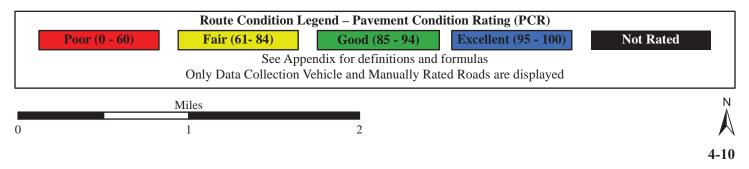
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

	Route Condition Le	gend – Pavement Con	dition Rating (PCR)	
<b>Poor</b> (0 - 60)	<b>Fair</b> (61- 84)	Good (85 - 94)	Excellent (95 - 100)	Not Rated
	See Appe	endix for definitions and	formulas	
	Only Data Collection V	ehicle and Manually Ra	ted Roads are displayed	
	Miles			
	ivilies			
0	10		20	

ROUTE CONDITION MAP PCR - MILE BY MILE Area Map 1



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



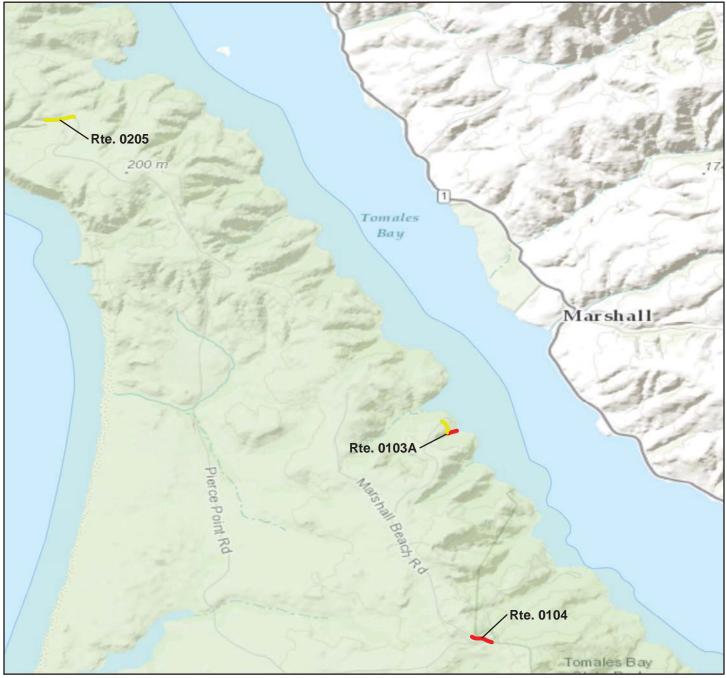
ROUTE CONDITION MAP PCR - MILE BY MILE Area Map 2



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Poor (0 -		Legend – Pavement Condition Rating (PCR) Good (85 - 94) Excellent (95 - 100)	Not Rated
	See App	pendix for definitions and formulas	
	Only Data Collection	Vehicle and Manually Rated Roads are displayed	
	Miles		Ņ
		1	
0	2	4	

ROUTE CONDITION MAP PCR - MILE BY MILE Area Map 3

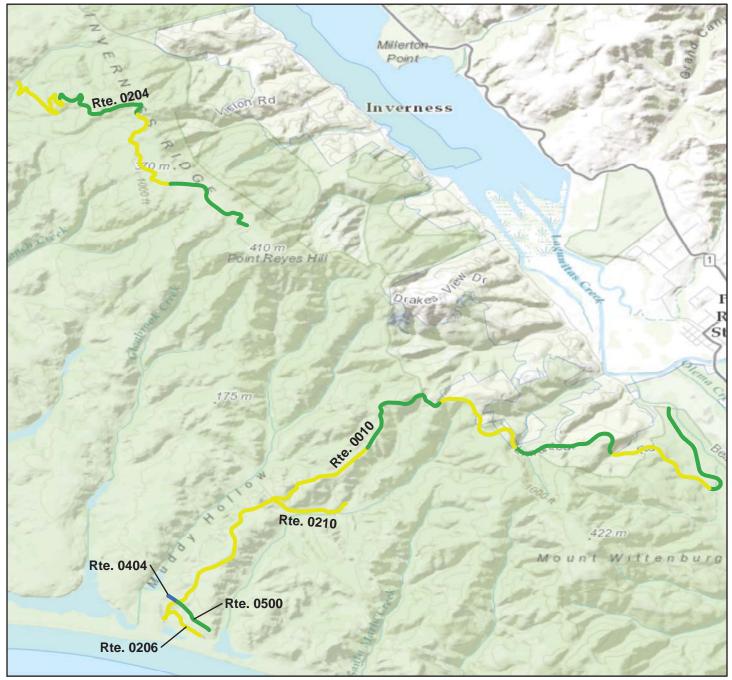


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

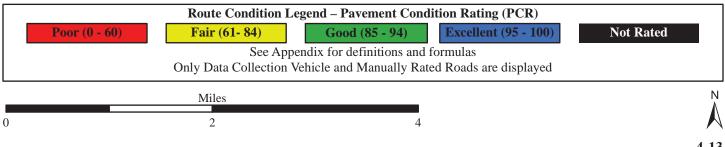
	Route Condition L	egend – Pavement Con	dition Rating (PCR)	
<b>Poor</b> (0 - 60)	Fair (61- 84)	Good (85 - 94)	Excellent (95 - 100)	Not Rated
	See App	endix for definitions and	formulas	
	Only Data Collection V	ehicle and Manually Ra	ted Roads are displayed	
	Maria			N
	Miles			Â
0	2		4	
				4.10

### Point Reyes National Seashore ROUTE CONDITION MAP PCR - MILE BY MILE

Area Map 4



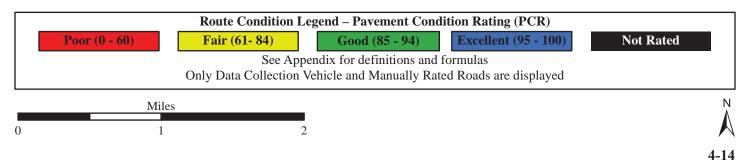
Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



### **Point Reyes National Seashore** ROUTE CONDITION MAP PCR - MILE BY MILE Area Map 5

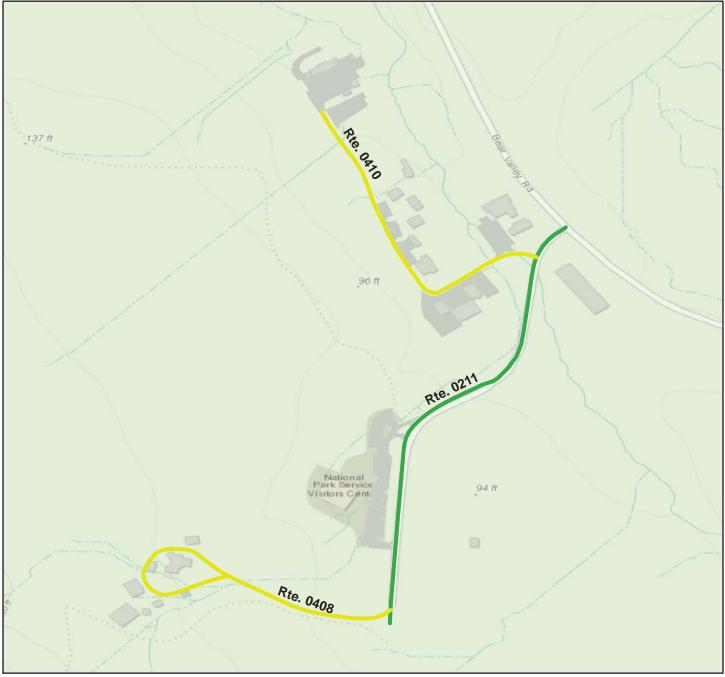


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

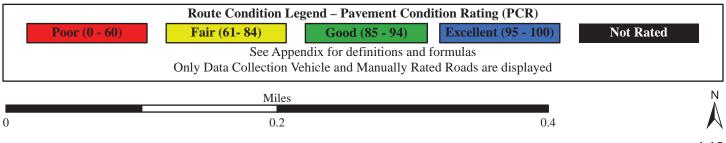


ROUTE CONDITION MAP PCR - MILE BY MILE

Area Map 5A

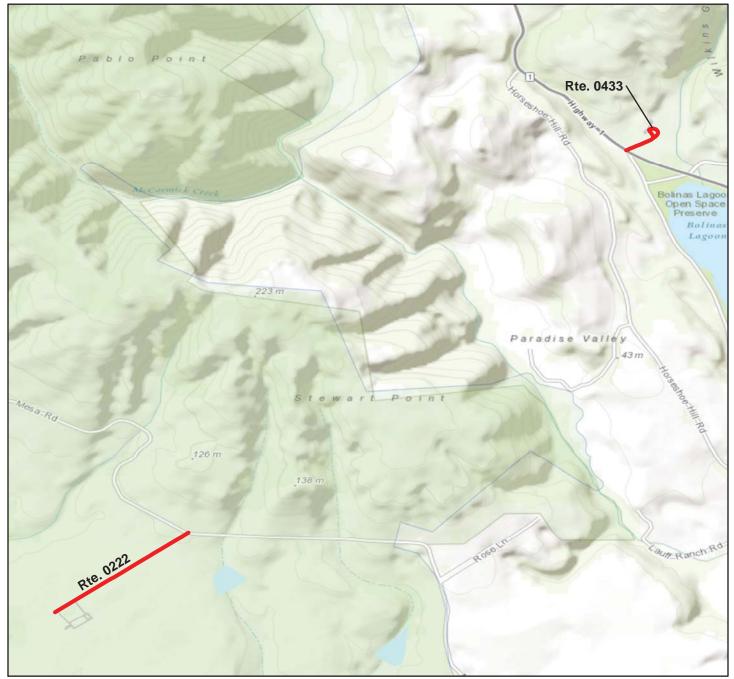


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

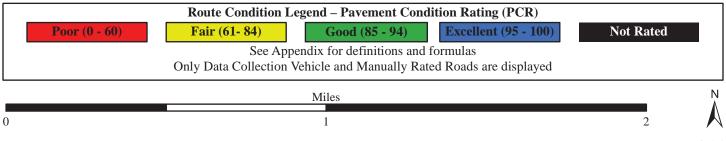


ROUTE CONDITION MAP PCR - MILE BY MILE

Area Map 6



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



# Section 5 Paved Road Condition Rating Sheets



**Point Reyes National Seashore** 



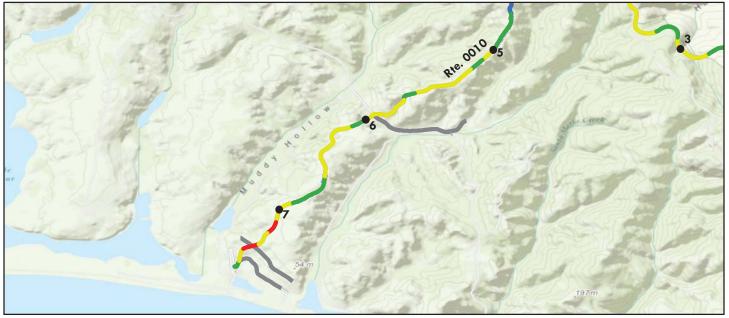
### Point Reyes National Seashore ROUTE 0010: LIMANTOUR ROAD



Sources: Esri, HERE, DeLorme, TomTom, Internap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>								
Poor (0 - 60) Fair (6	61- 84) Good (85 - 94)		<b>Excellent (95 - 100)</b>		Not Rated			
	See Appendix for def	initions and fo	ormulas					
Inspection Date:         3/5/2015         Beginning Section MP         0         1         2         3         4								
Paved Length (Miles): 7.57	Section Length (MI)	1	1	1	1	1		
Surface Type: ASPHALT	Route Summary							
Roadway Condition Information								
Pavement Condition Rating (PCR)	83	88	84	88	84	91		
Surface Condition Rating (SCR)	92	87	96	95	96	97		
Roughness Condition Index (RCI)	69	90	67	77	66	82		
Distress Index Values								
Structural Crack Index	92	87	97	95	96	97		
Alligator Crack Index	99	98	100	99	99	100		
Longitudinal Crack Index	93	89	97	96	97	97		
Transverse Cracking Index	97	92	99	99	99	98		
Patching Index	99	100	97	98	100	100		
Rutting Index	97	96	96	98	97	99		
International Roughness Index (IRI)	206	140	211	180	217	164		
Lane & Width Information								
Number of Lanes	2	2	2	2	2	2		
Paved Width (ft)	27.7	32.7	32.1	31	27.9	24.2		
Lane Width (ft)	12.7	14.1	13.8	13.6	12.9	11.8		

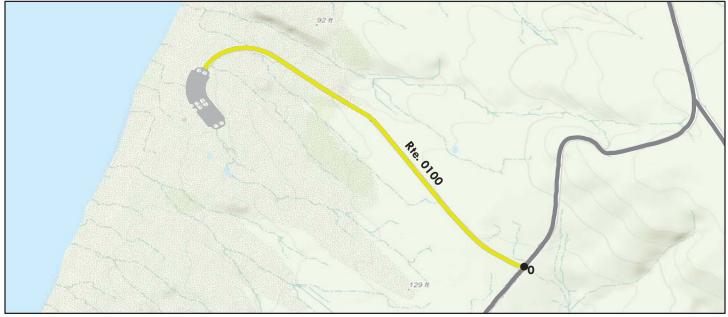
### Point Reyes National Seashore ROUTE 0010: LIMANTOUR ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)								
<b>Poor (0 - 60) Fair (</b>	61- 84) Good (	(85 - 94)	Excellent (	95 - 100)	Not Rated			
See Appendix for definitions and formulas								
Inspection Date: 3/5/2015	Beginning Section MP	5	6	7				
Paved Length (Miles): 7.57	Section Length (MI)	1	1	0.57				
Surface Type: ASPHALT	Route Summary							
Roadway Condition Information								
Pavement Condition Rating (PCR)	83	82	80	63				
Surface Condition Rating (SCR)	92	95	94	73				
Roughness Condition Index (RCI)	69	62	58	48				
Distress Index Values								
Structural Crack Index	92	95	94	73				
Alligator Crack Index	99	100	100	100				
Longitudinal Crack Index	93	95	94	73				
Transverse Cracking Index	97	96	99	98				
Patching Index	99	100	100	100				
Rutting Index	97	97	98	93				
International Roughness Index (IRI)	206	233	249	295				
Lane & Width Information								
Number of Lanes	2	2	2	2				
Paved Width (ft)	27.7	24.3	24	24.4				
Lane Width (ft)	12.7	11.4	11.5	12.1				

### **Point Reyes National Seashore** ROUTE 0100: SOUTH BEACH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)									
<b>Poor (0 - 60)</b> Fair (6	61-84) Good	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated					
See Appendix for definitions and formulas									
Inspection Date: 3/6/2015	Beginning Section MP	0							
Paved Length (Miles): 0.7	Section Length (MI)	0.7							
Surface Type: ASPHALT	Route Summary			• •					
Roadway Condition Information									
Pavement Condition Rating (PCR)	76	76							
Surface Condition Rating (SCR)	97	97							
Roughness Condition Index (RCI)	45	45							
Distress Index Values									
Structural Crack Index	100	100							
Alligator Crack Index	100	100							
Longitudinal Crack Index	100	100							
Transverse Cracking Index	98	98							
Patching Index	100	100							
Rutting Index	97	97							
International Roughness Index (IRI)	309	309							
Lane & Width Information									
Number of Lanes	2	2							
Paved Width (ft)	22.6	22.6							
Lane Width (ft)	10.5	10.5							

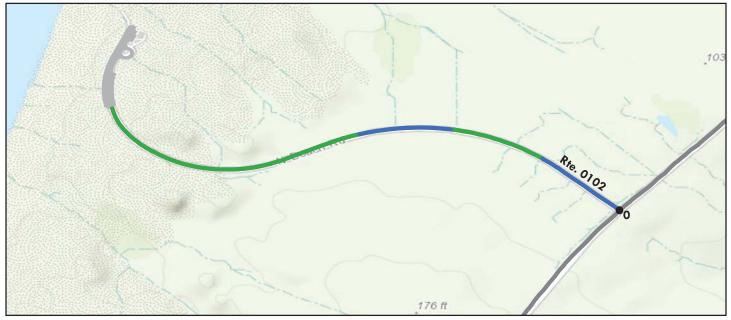
### **Point Reyes National Seashore** ROUTE 0101: DRAKES BEACH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)								
<b>Poor (0 - 60)</b> Fair (0	61- 84) Good (	(85 - 94)	Excellent (9	5 - 100)	Not Rated			
See Appendix for definitions and formulas								
Inspection Date: 3/6/2015	Beginning Section MP	0	1					
Paved Length (Miles): 1.5	Section Length (MI)	1	0.5					
Surface Type: ASPHALT	Route Summary				• •			
Roadway Condition Information								
Pavement Condition Rating (PCR)	60	49	80					
Surface Condition Rating (SCR)	46	26	83					
Roughness Condition Index (RCI)	80	83	76					
Distress Index Values								
Structural Crack Index	46	26	85					
Alligator Crack Index	56	39	88					
Longitudinal Crack Index	90	87	97					
Transverse Cracking Index	96	95	97					
Patching Index	100	100	100					
Rutting Index	78	76	83					
International Roughness Index (IRI)	168	161	180					
Lane & Width Information								
Number of Lanes	2	2	2					
Paved Width (ft)	32.8	33.1	32.1					
Lane Width (ft)	13.5	13.6	13.4					

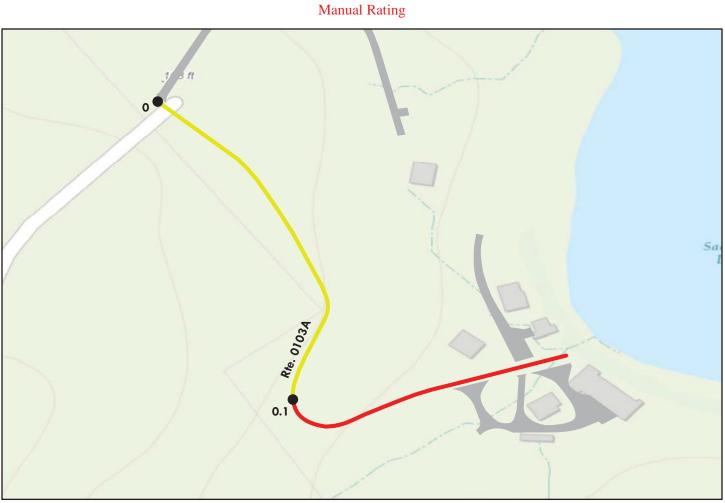
### **Point Reyes National Seashore** ROUTE 0102: NORTH BEACH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)									
<b>Poor (0 - 60) Fair (</b>	61- 84) Good	(85 - 94)	Excellent (95 - 100)	Not Rated					
See Appendix for definitions and formulas									
Inspection Date: 3/6/2015	Beginning Section MP	0							
Paved Length (Miles): 0.6	Section Length (MI)	0.6							
Surface Type: ASPHALT	Route Summary			• •					
Roadway Condition Information									
Pavement Condition Rating (PCR)	93	93							
Surface Condition Rating (SCR)	89	89							
Roughness Condition Index (RCI)	100	100							
Distress Index Values									
Structural Crack Index	99	99							
Alligator Crack Index	100	100							
Longitudinal Crack Index	99	99							
Transverse Cracking Index	99	99							
Patching Index	100	100							
Rutting Index	89	89							
International Roughness Index (IRI)	106	106							
Lane & Width Information									
Number of Lanes	2	2							
Paved Width (ft)	32.6	32.6							
Lane Width (ft)	13.3	13.3							

### **Point Reyes National Seashore** ROUTE 0103A: SACRAMENTO LANDING ROAD (PAVED)



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)								
<b>Poor (0 - 60)</b>	Fair (61- 84) Good	(85 - 94)	Excellent (9	95 - 100)	Not Rat	ted		
	See Appendix for de	finitions and f	ormulas					
<b>Inspection Date:</b> 4/29/2014	Beginning Section MI	0.00	0.10					
Paved Length (Miles): 0.19	Section Length (MI)	0.10	0.09					
Surface Type: ASPHALT	Route Summary							
<b>Roadway Condition Information</b>								
Pavement Condition Rating (PCR	) 64	73	53					
Lane & Width Information								
Number of Lanes	1	1	1					
Paved Width (ft)	11.9	13.5	10					
Lane Width (ft)	11.9	13.5	10					

### **Point Reyes National Seashore** ROUTE 0103A: SACRAMENTO LANDING ROAD (PAVED)

#### **Condition Photos**

Condition photos are shown only for manually rated roads. Use the PathView program to see images of DCV rated roads.



PORE\_0103A\_5607.JPG



PORE\_0103A\_5610.JPG



PORE\_0103A\_5613.JPG



PORE\_0103A\_5608.JPG



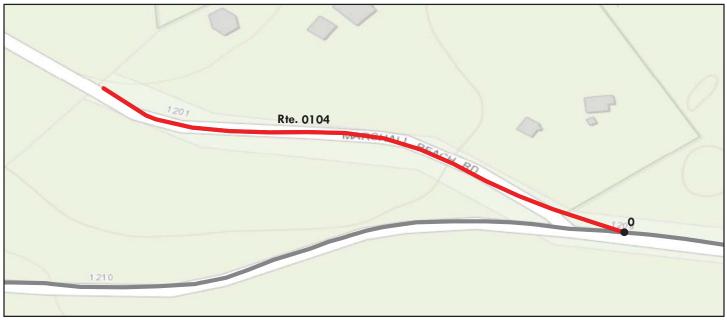
PORE\_0103A\_5612.JPG



PORE\_0103A\_5616.JPG

### Point Reyes National Seashore ROUTE 0104: L RANCH ROAD

#### Data Collection Vehicle (DCV) Rating



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)										
<b>Poor (0 - 60)</b> Fair (6)	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated						
	See Appendix for definitions and formulas									
Inspection Date: 3/6/2015	<b>Beginning Section MP</b>	0								
Paved Length (Miles): 0.14	Section Length (MI)	0.14								
Surface Type: ASPHALT	Route Summary									
Roadway Condition Information										
Pavement Condition Rating (PCR)	43	43								
Surface Condition Rating (SCR)	43	43								
Roughness Condition Index (RCI)	N/A	N/A								
Distress Index Values										
Structural Crack Index	43	43								
Alligator Crack Index	52	52								
Longitudinal Crack Index	91	91								
Transverse Cracking Index	94	94								
Patching Index	98	98								
Rutting Index	83	83								
International Roughness Index (IRI)	N/A	N/A								
Lane & Width Information										
Number of Lanes	1	1								
Paved Width (ft)	8.8	8.8								
Lane Width (ft)	8.8	8.8								

### Point Reyes National Seashore ROUTE 0200ZZ: LIGHTHOUSE ROAD

Summary Route



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Note: The weighted average summary PCR value is calculated from only the sections of road where the PCR was collected. The overall PCR for the summary route may not reflect individual subcomponent ratings.

	Route C	Condition Legend – Pav	ement Cond	ition Rating (	PCR)		
<b>Poor</b> (0 - 60	) Fair (6	1- 84) Good	(85 - 94)	Excellent (	95 - 100)	Not Ra	ted
		See Appendix for de	finitions and f	formulas			
Inspection Date:	3/6/2015						
Paved Length (Mile	s): 1.51						
Surface Type:	ASPHALT	Route Summary					
<b>Roadway Condition</b>	Information						
Pavement Condition	n Rating (PCR)	70					
Lane & Width Infor	rmation						
Number of Lanes		2					
Paved Width (ft)		15.5					
Lane Width (ft)		8					

### **Point Reyes National Seashore** ROUTE 0200AZ: LIGHTHOUSE MAIN ROAD

Subcomponent of Route PORE-0200ZZ Data Collection Vehicle (DCV) Rating

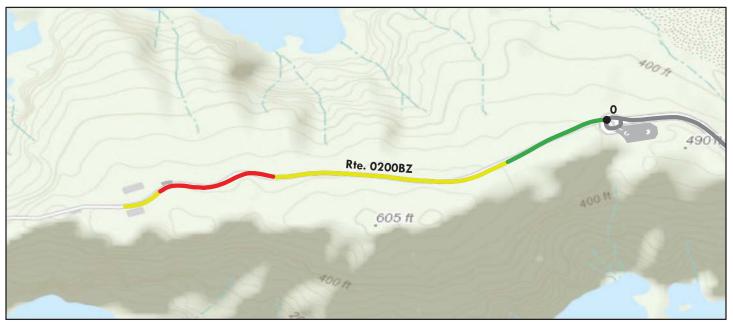


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)								
Poor (0 - 60) Fair (	61- 84) Good (	(85 - 94)	Excellent (95 -	100)	Not Rated			
See Appendix for definitions and formulas								
Inspection Date: 3/6/2015	Beginning Section MP	0	1					
Paved Length (Miles): 1.08	Section Length (MI)	1	0.08					
Surface Type: ASPHALT	Route Summary				•			
Roadway Condition Information								
Pavement Condition Rating (PCR)	70	70	90					
Surface Condition Rating (SCR)	92	92	90					
Roughness Condition Index (RCI)	37	37	N/A					
Distress Index Values								
Structural Crack Index	97	97	90					
Alligator Crack Index	100	99	100					
Longitudinal Crack Index	97	98	90					
Transverse Cracking Index	100	100	100					
Patching Index	100	100	100					
Rutting Index	92	92	95					
International Roughness Index (IRI)	359	356	N/A					
Lane & Width Information								
Number of Lanes	2	2	2					
Paved Width (ft)	15	15	14.7					
Lane Width (ft)	7.3	7.2	7.5					

### **Point Reyes National Seashore** ROUTE 0200BZ: LIGHTHOUSE HANDICAPPED ROAD

Subcomponent of Route PORE-0200ZZ Data Collection Vehicle (DCV) Rating



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>					
<b>Poor (0 - 60)</b> Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated	
	See Appendix for def	initions and f	ormulas		
Inspection Date: 3/6/2015	<b>Beginning Section MP</b>	0			
Paved Length (Miles): 0.44	Section Length (MI)	0.44			
Surface Type: ASPHALT	Route Summary			· ·	
Roadway Condition Information					
Pavement Condition Rating (PCR)	71	71			
Surface Condition Rating (SCR)	71	71			
Roughness Condition Index (RCI)	N/A	N/A			
Distress Index Values					
Structural Crack Index	71	71			
Alligator Crack Index	87	87			
Longitudinal Crack Index	84	84			
Transverse Cracking Index	98	98			
Patching Index	94	94			
Rutting Index	92	92			
International Roughness Index (IRI)	N/A	N/A			
Lane & Width Information					
Number of Lanes	2	2			
Paved Width (ft)	16.6	16.6			
Lane Width (ft)	9.8	9.8			

**ROUTE 0201: CHIMNEY ROCK ROAD** 



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>					
<b>Poor (0 - 60) Fair (6</b>	Good (Good (	(85 - 94)	Excellent (95 - 100)	Not Rated	
	See Appendix for def	initions and f	formulas		
Inspection Date: 3/6/2015	Beginning Section MP	0			
Paved Length (Miles): 0.91	Section Length (MI)	0.91			
Surface Type: ASPHALT	Route Summary			• •	
Roadway Condition Information					
Pavement Condition Rating (PCR)	0	0			
Surface Condition Rating (SCR)	0	0			
Roughness Condition Index (RCI)	N/A	N/A			
Distress Index Values					
Structural Crack Index	0	0			
Alligator Crack Index	0	0			
Longitudinal Crack Index	82	82			
Transverse Cracking Index	97	97			
Patching Index	99	99			
Rutting Index	76	76			
International Roughness Index (IRI)	N/A	N/A			
Lane & Width Information					
Number of Lanes	1	1			
Paved Width (ft)	12.3	12.3			
Lane Width (ft)	11.1	11.1			

### **Point Reyes National Seashore** ROUTE 0202: SCHOONER BAY ROAD (OYSTER FARM ROAD)

Manual Rating
Sin FRANCIS DRAKE BLVD

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>					
<b>Poor</b> (0 - 60)	Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated
See Appendix for definitions and formulas					
Inspection Date:	4/29/2014	<b>Beginning Section MP</b>	0.00		
Paved Length (Miles)	): 0.07	Section Length (MI)	0.07		
Surface Type:	ASPHALT	Route Summary			
<b>Roadway Condition</b>	Information				
Pavement Condition	Rating (PCR)	30	30		
Lane & Width Inform	nation				
Number of Lanes		2	2		
Paved Width (ft)		16	16		
Lane Width (ft)		8	8		

### **Point Reyes National Seashore** ROUTE 0202: SCHOONER BAY ROAD (OYSTER FARM ROAD)

#### **Condition Photos**

Condition photos are shown only for manually rated roads. Use the PathView program to see images of DCV rated roads.



PORE\_0202\_7747.JPG



PORE\_0202\_7749.JPG



PORE\_0202\_7748.JPG



PORE\_0202\_7750.JPG

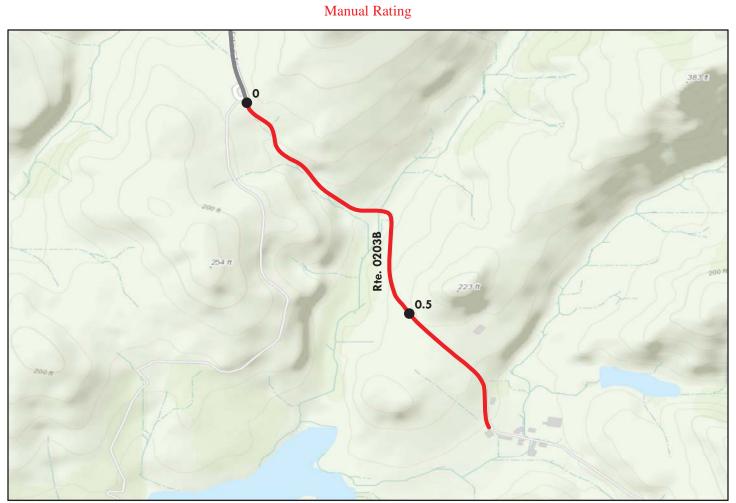
### **Point Reyes National Seashore** ROUTE 0203A: ESTERO TRAILHEAD ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)					
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated	
	See Appendix for def	initions and f	ormulas		
Inspection Date: 3/6/2015	<b>Beginning Section MP</b>	0			
Paved Length (Miles): 0.97	Section Length (MI)	0.97			
Surface Type: ASPHALT	Route Summary		•		
Roadway Condition Information					
Pavement Condition Rating (PCR)	95	95			
Surface Condition Rating (SCR)	95	95			
Roughness Condition Index (RCI)	N/A	N/A			
Distress Index Values					
Structural Crack Index	97	97			
Alligator Crack Index	99	99			
Longitudinal Crack Index	98	98			
Transverse Cracking Index	100	100			
Patching Index	100	100			
Rutting Index	95	95			
International Roughness Index (IRI)	N/A	N/A			
Lane & Width Information					
Number of Lanes	1	1			
Paved Width (ft)	10.9	10.9			
Lane Width (ft)	10.8	10.8			

ROUTE 0203B: HOME RANCH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)							
<b>Poor</b> (0 - 60)	Fair (6	1- 84) Good (85 - 94)		Excellent (95 - 100)		Not Rated	
See Appendix for definitions and formulas							
Inspection Date:	4/29/2014	<b>Beginning Section MP</b>	0.00	0.50			
Paved Length (Miles)	): 0.75	Section Length (MI)	0.50	0.25			
Surface Type:	ASPHALT	Route Summary					
Roadway Condition I	Information						
Pavement Condition	Rating (PCR)	30	30	30			
Lane & Width Inform	nation						
Number of Lanes		1	1	1			
Paved Width (ft)		12.7	12	14			
Lane Width (ft)		12.7	12	14			

### **Point Reyes National Seashore** ROUTE 0203B: HOME RANCH ROAD

#### **Condition Photos**

Condition photos are shown only for manually rated roads. Use the PathView program to see images of DCV rated roads.



PORE\_0203B\_2252.JPG



PORE\_0203B\_2254.JPG



PORE\_0203B\_2253.JPG

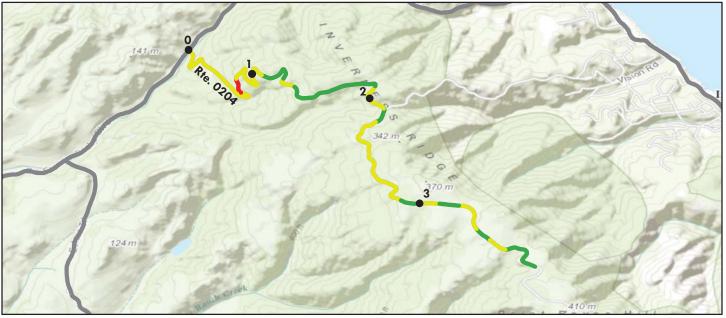


PORE\_0203B\_2255.JPG



PORE\_0203B\_2256.JPG

**ROUTE 0204: MOUNT VISION ROAD** 



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)						
Poor (0 - 60) Fair	(61- 84) Good (	(85 - 94)	Excellent (	95 - 100)	Not Rat	ed
	See Appendix for def	initions and f	ormulas			
Inspection Date: 3/6/2015	Beginning Section MP	0	1	2	3	
Paved Length (Miles): 3.86	Section Length (MI)	1	1	1	0.86	
Surface Type: ASPHALT	Route Summary				•	
Roadway Condition Information						
Pavement Condition Rating (PCR)	81	73	85	82	86	
Surface Condition Rating (SCR)	81	73	85	82	86	
Roughness Condition Index (RCI)	N/A	N/A	N/A	N/A	N/A	
Distress Index Values						
Structural Crack Index	94	89	99	94	94	
Alligator Crack Index	99	99	100	99	100	
Longitudinal Crack Index	95	90	99	95	94	
Transverse Cracking Index	98	99	100	98	93	
Patching Index	99	99	100	98	98	
Rutting Index	81	73	85	82	86	
International Roughness Index (IRI)	N/A	N/A	N/A	N/A	N/A	
Lane & Width Information						
Number of Lanes	2	1	2	1		
Paved Width (ft)	13.9	13.4	15.5	12.5	14.2	
Lane Width (ft)	11.1	12.8	8.4	12	11.4	

### **Point Reyes National Seashore** ROUTE 0205: MCCLURES BEACH ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)					
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated	
	See Appendix for def	initions and f	ormulas		
Inspection Date: 3/6/2015	<b>Beginning Section MP</b>	0			
Paved Length (Miles): 0.2	Section Length (MI)	0.2			
Surface Type: ASPHALT	Route Summary				
Roadway Condition Information					
Pavement Condition Rating (PCR)	70	70			
Surface Condition Rating (SCR)	70	70			
Roughness Condition Index (RCI)	N/A	N/A			
Distress Index Values					
Structural Crack Index	70	70			
Alligator Crack Index	84	84			
Longitudinal Crack Index	86	86			
Transverse Cracking Index	99	99			
Patching Index	98	98			
Rutting Index	88	88			
International Roughness Index (IRI)	N/A	N/A			
Lane & Width Information					
Number of Lanes	2	2			
Paved Width (ft)	18.1	18.1			
Lane Width (ft)	8.8	8.8			

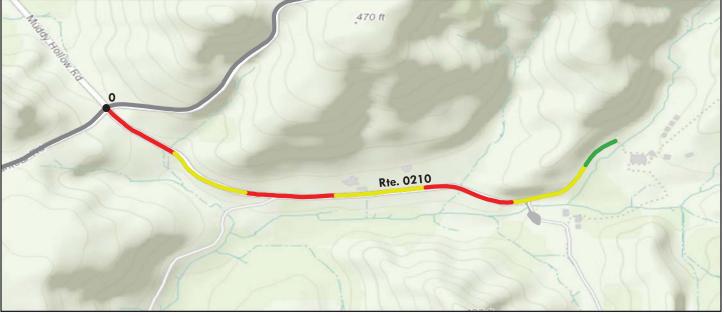
### **Point Reyes National Seashore** ROUTE 0206: LIMANTOUR BEACH ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route C	Route Condition Legend – Pavement Condition Rating (PCR)					
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated		
	See Appendix for def	initions and f	ormulas			
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0				
Paved Length (Miles): 0.37	Section Length (MI)	0.37				
Surface Type: ASPHALT	Route Summary			•		
Roadway Condition Information						
Pavement Condition Rating (PCR)	74	74				
Surface Condition Rating (SCR)	74	74				
Roughness Condition Index (RCI)	N/A	N/A				
Distress Index Values						
Structural Crack Index	74	74				
Alligator Crack Index	100	100				
Longitudinal Crack Index	74	74				
Transverse Cracking Index	89	89				
Patching Index	100	100				
Rutting Index	93	93				
International Roughness Index (IRI)	N/A	N/A				
Lane & Width Information						
Number of Lanes	2	2				
Paved Width (ft)	21.4	21.4				
Lane Width (ft)	10.3	10.3				

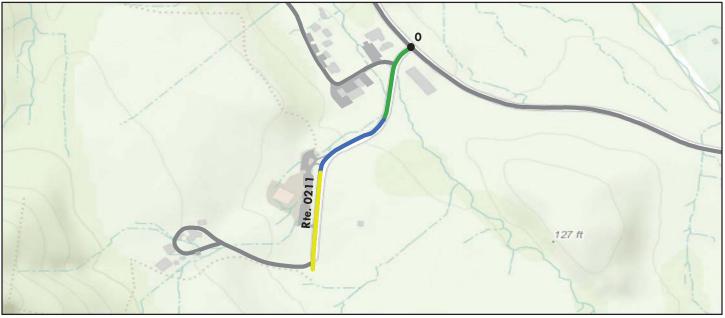
ROUTE 0210: LAGUNA ROAD



Sources: Esri, HERE, DeLorme, TomTom, Internap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)						
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated		
	See Appendix for def	See Appendix for definitions and formulas				
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0				
Paved Length (Miles): 0.65	Section Length (MI)	0.65				
Surface Type: ASPHALT	Route Summary			· ·		
Roadway Condition Information						
Pavement Condition Rating (PCR)	69	69				
Surface Condition Rating (SCR)	69	69				
Roughness Condition Index (RCI)	N/A	N/A				
Distress Index Values						
Structural Crack Index	69	69				
Alligator Crack Index	88	88				
Longitudinal Crack Index	81	81				
Transverse Cracking Index	84	84				
Patching Index	99	99				
Rutting Index	91	91				
International Roughness Index (IRI)	N/A	N/A				
Lane & Width Information						
Number of Lanes	2	2				
Paved Width (ft)	13.7	13.7				
Lane Width (ft)	8.3	8.3				

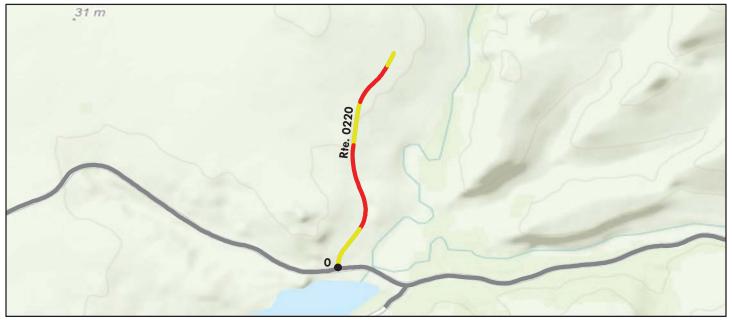
### **Point Reyes National Seashore** ROUTE 0211: BEAR VALLEY TRAILHEAD ROAD



Sources: Esri, HERE, DeLorme, TomTom, Internap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)					
<b>Poor (0 - 60) Fair (</b>	61- 84) Good	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated	
	See Appendix for def	finitions and f	formulas		
Inspection Date: 3/5/2015	Beginning Section MP	0			
Paved Length (Miles): 0.33	Section Length (MI)	0.33			
Surface Type: ASPHALT	Route Summary			•	
Roadway Condition Information					
Pavement Condition Rating (PCR)	91	91			
Surface Condition Rating (SCR)	91	91			
Roughness Condition Index (RCI)	N/A	N/A			
Distress Index Values					
Structural Crack Index	91	91			
Alligator Crack Index	99	99			
Longitudinal Crack Index	92	92			
Transverse Cracking Index	92	92			
Patching Index	97	97			
Rutting Index	96	96			
International Roughness Index (IRI)	N/A	N/A			
Lane & Width Information					
Number of Lanes	2	2			
Paved Width (ft)	22.9	22.9			
Lane Width (ft)	12	12			

### **Point Reyes National Seashore** ROUTE 0220: U.S. COAST GUARD ACCESS ROAD

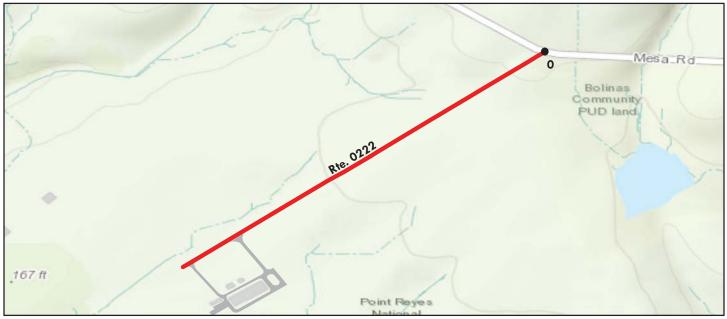


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)							
<b>Poor (0 - 60) Fair (</b>	61- 84) Good	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/6/2015	Beginning Section MP	0					
Paved Length (Miles): 0.53	Section Length (MI)	0.53					
Surface Type: ASPHALT	Route Summary		• •	•			
Roadway Condition Information							
Pavement Condition Rating (PCR)	57	57					
Surface Condition Rating (SCR)	64	64					
Roughness Condition Index (RCI)	47	47					
Distress Index Values							
Structural Crack Index	64	64					
Alligator Crack Index	86	86					
Longitudinal Crack Index	78	78					
Transverse Cracking Index	94	94					
Patching Index	98	98					
Rutting Index	95	95					
International Roughness Index (IRI)	300	300					
Lane & Width Information							
Number of Lanes	2	2					
Paved Width (ft)	18.8	18.8					
Lane Width (ft)	9.4	9.4					

# **Point Reyes National Seashore**

ROUTE 0222: COMMONWEAL ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.41	Section Length (MI)	0.41					
Surface Type: ASPHALT	Route Summary		•	• •			
Roadway Condition Information							
Pavement Condition Rating (PCR)	0	0					
Surface Condition Rating (SCR)	0	0					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	0	0					
Alligator Crack Index	0	0					
Longitudinal Crack Index	89	89					
Transverse Cracking Index	100	100					
Patching Index	98	98					
Rutting Index	53	53					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	12.7	12.7					
Lane Width (ft)	12.7	12.7					

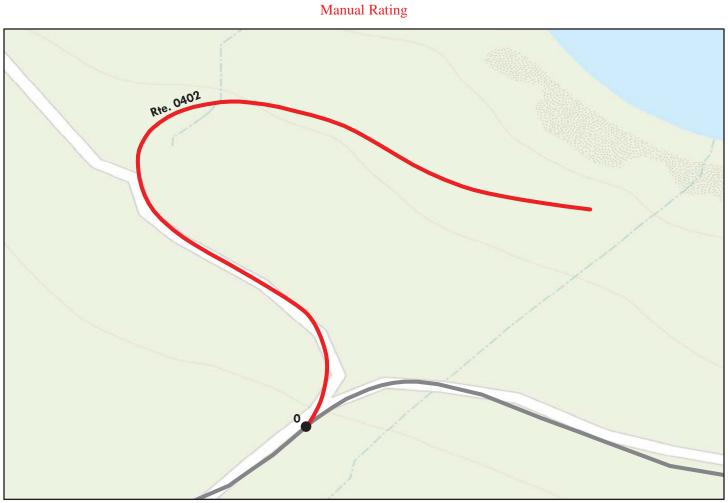
### **Point Reyes National Seashore** ROUTE 0401: LIFEBOAT STATION ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
<b>Poor (0 - 60) Fair (6</b>	1- 84) Good	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/6/2015	Beginning Section MP	0					
Paved Length (Miles): 0.35	Section Length (MI)	0.35					
Surface Type: ASPHALT	Route Summary			• •			
Roadway Condition Information							
Pavement Condition Rating (PCR)	59	59					
Surface Condition Rating (SCR)	59	59					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	59	59					
Alligator Crack Index	87	87					
Longitudinal Crack Index	72	72					
Transverse Cracking Index	88	88					
Patching Index	95	95					
Rutting Index	84	84					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	10.9	10.9					
Lane Width (ft)	10.7	10.7					

# **Point Reyes National Seashore** ROUTE 0402: FISH DOCKS (MENDOZA) ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)						
<b>Poor</b> (0 - 60)	Fair (6	<b>1- 84</b> ) Good (	85 - 94)	Excellent (95 - 100)	Not Rated	
		See Appendix for def	initions and f	ormulas		
Inspection Date:	4/29/2014	<b>Beginning Section MP</b>	0.00			
Paved Length (Miles)	): 0.14	Section Length (MI)	0.14			
Surface Type:	ASPHALT	Route Summary		•	• •	
Roadway Condition I	Information					
Pavement Condition	Rating (PCR)	53	53			
Lane & Width Inform	nation					
Number of Lanes		1	1			
Paved Width (ft)		10.6	10.6			
Lane Width (ft)		10.6	10.6			

### **Point Reyes National Seashore** ROUTE 0404: LIMANTOUR RESIDENCE ROAD WEST



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Route Condition Legend – Pavement Condition Rating (PCR)							
<b>Poor (0 - 60) Fair (6</b>	<b>Good</b> (	(85 - 94)	Excellent (95 - 100)	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	Beginning Section MP	0					
Paved Length (Miles): 0.09	Section Length (MI)	0.09					
Surface Type: ASPHALT	Route Summary		•				
Roadway Condition Information							
Pavement Condition Rating (PCR)	95	95					
Surface Condition Rating (SCR)	95	95					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	95	95					
Alligator Crack Index	100	100					
Longitudinal Crack Index	95	95					
Transverse Cracking Index	100	100					
Patching Index	100	100					
Rutting Index	99	99					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	11.2	11.2					
Lane Width (ft)	10.1	10.1					

### **Point Reyes National Seashore** ROUTE 0408: MORGAN HORSE RANCH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Internap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.23	Section Length (MI)	0.23					
Surface Type: ASPHALT	Route Summary			- <b>-</b>			
Roadway Condition Information							
Pavement Condition Rating (PCR)	82	82					
Surface Condition Rating (SCR)	82	82					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	90	90					
Alligator Crack Index	100	100					
Longitudinal Crack Index	90	90					
Transverse Cracking Index	82	82					
Patching Index	100	100					
Rutting Index	92	92					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	10.3	10.3					
Lane Width (ft)	10.3	10.3					

### **Point Reyes National Seashore** ROUTE 0410: BEAR VALLEY MAINTENANCE ACCESS ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
Poor (0 - 60) Fair (6)	L- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.22	Section Length (MI)	0.22					
Surface Type: ASPHALT	Route Summary			- <b>i</b>			
Roadway Condition Information							
Pavement Condition Rating (PCR)	84	84					
Surface Condition Rating (SCR)	84	84					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	84	84					
Alligator Crack Index	100	100					
Longitudinal Crack Index	84	84					
Transverse Cracking Index	90	90					
Patching Index	100	100					
Rutting Index	92	92					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	2	2					
Paved Width (ft)	19.4	19.4					
Lane Width (ft)	10	10					

### **Point Reyes National Seashore** ROUTE 0411: RCA HISTORIC ROAD (NDOC ROAD)

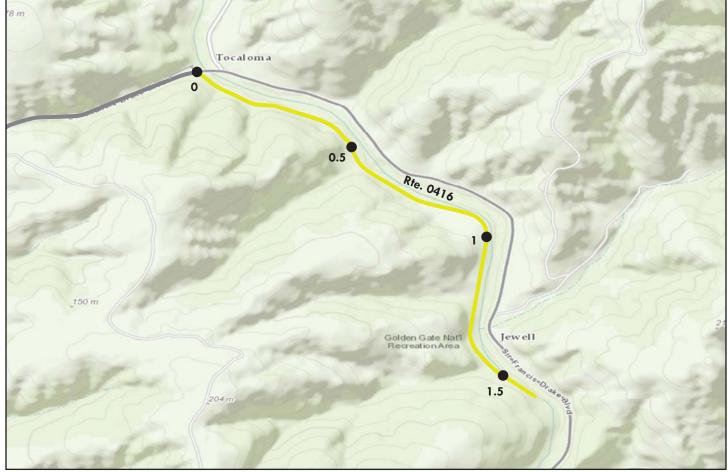


Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/6/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.24	Section Length (MI)	0.24					
Surface Type: ASPHALT	Route Summary		•	• •			
Roadway Condition Information							
Pavement Condition Rating (PCR)	72	72					
Surface Condition Rating (SCR)	72	72					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	72	72					
Alligator Crack Index	88	88					
Longitudinal Crack Index	84	84					
Transverse Cracking Index	80	80					
Patching Index	85	85					
Rutting Index	89	89					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	2	2					
Paved Width (ft)	15.6	15.6					
Lane Width (ft)	7.5	7.5					

### **Point Reyes National Seashore** ROUTE 0416: CROSS MARIN TRAIL ROAD

### Manual Rating



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
<b>Poor</b> (0 - 60)	Fair (61	<b>I- 84</b> ) Good (	(85 - 94)	Excellent (	95 - 100)	Not Rat	ted
	_	See Appendix for def	initions and f	ormulas			
Inspection Date: 4/	/29/2014	<b>Beginning Section MP</b>	0.00	0.50	1.00	1.50	
Paved Length (Miles): 1.	.61	Section Length (MI)	0.50	0.50	0.50	0.11	
Surface Type: A	SPHALT	Route Summary					
<b>Roadway Condition Info</b>	ormation						
Pavement Condition Rat	ting (PCR)	73	73	73	73	73	
Lane & Width Informat	ion						
Number of Lanes		1	1	1	1	1	
Paved Width (ft)		9.5	9.5	9.5	9.5	9.5	
Lane Width (ft)		9.5	9.5	9.5	9.5	9.5	

Note: Route had a collapsed culvert near mile post 1.50

### **Point Reyes National Seashore** ROUTE 0416: CROSS MARIN TRAIL ROAD

#### **Condition Photos**

Condition photos are shown only for manually rated roads. Use the PathView program to see images of DCV rated roads.



PORE\_0416\_7762.JPG



PORE\_0416\_7764.JPG



PORE\_0416\_7763.JPG



PORE\_0416\_7765.JPG

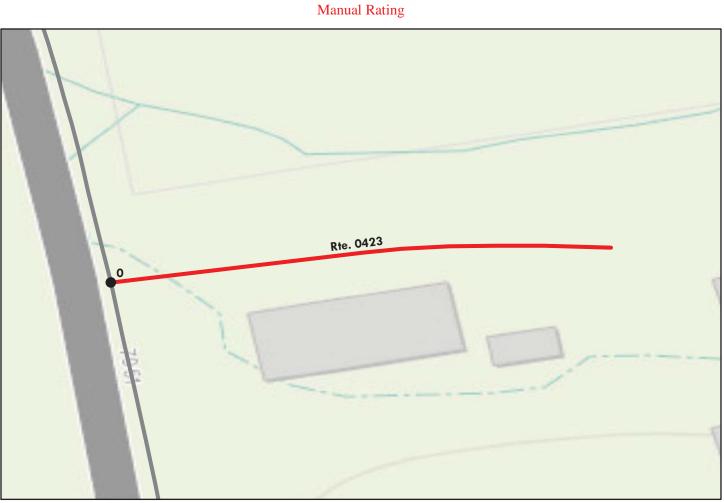


PORE\_0416\_7766.JPG



PORE\_0416\_7767.JPG

### **Point Reyes National Seashore** ROUTE 0423: HISTORIC GIACOMINI RANCH ROAD



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>						
<b>Poor</b> (0 - 60)	Fair (6	<b>1- 84</b> ) Good (	85 - 94)	Excellent (95 - 100)	Not Rated	
		See Appendix for def	initions and f	ormulas		
Inspection Date:	4/29/2014	<b>Beginning Section MP</b>	0.00			
Paved Length (Miles	<b>b):</b> 0.03	Section Length (MI)	0.03			
Surface Type:	ASPHALT	Route Summary		•		
<b>Roadway Condition</b>	Information					
Pavement Condition	Rating (PCR)	0	0			
Lane & Width Infor	mation					
Number of Lanes		2	2			
Paved Width (ft)		15	15			
Lane Width (ft)		7.5	7.5			

### **Point Reyes National Seashore** ROUTE 0423: HISTORIC GIACOMINI RANCH ROAD

#### **Condition Photos**

Condition photos are shown only for manually rated roads. Use the PathView program to see images of DCV rated roads.



PORE\_0423\_5637.JPG



PORE\_0423\_5639.JPG

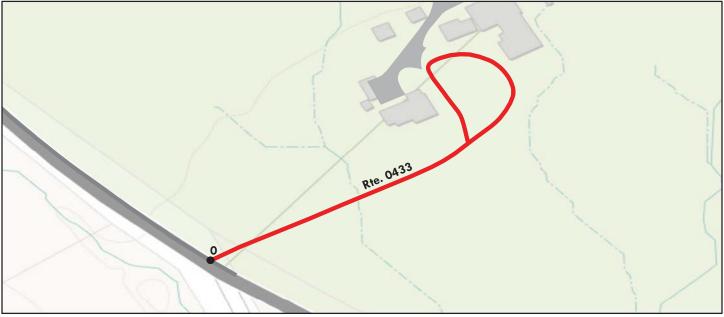


PORE\_0423\_5638.JPG



PORE\_0423\_5640.JPG

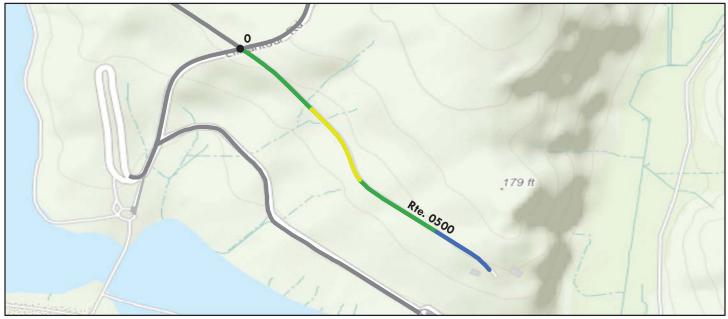
### **Point Reyes National Seashore** ROUTE 0433: WILKINS RESIDENCE DRIVEWAY



Sources: Esri, HERE, DeLorme, TomTom, Internap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
<b>Poor (0 - 60) Fair (6</b>	L- 84) Good (	(85 - 94)	<b>Excellent (95 - 100)</b>	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.16	Section Length (MI)	0.16					
Surface Type: ASPHALT	Route Summary		•				
Roadway Condition Information							
Pavement Condition Rating (PCR)	0	0					
Surface Condition Rating (SCR)	0	0					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	0	0					
Alligator Crack Index	0	0					
Longitudinal Crack Index	71	71					
Transverse Cracking Index	3	3					
Patching Index	100	100					
Rutting Index	91	91					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	8.8	8.8					
Lane Width (ft)	8.8	8.8					

### **Point Reyes National Seashore** ROUTE 0500: LIMANTOUR RESIDENCE ROAD EAST



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

<b>Route Condition Legend – Pavement Condition Rating (PCR)</b>							
Poor (0 - 60) Fair (6	1- 84) Good (	(85 - 94)	Excellent (95 - 100)	Not Rated			
See Appendix for definitions and formulas							
Inspection Date: 3/5/2015	<b>Beginning Section MP</b>	0					
Paved Length (Miles): 0.37	Section Length (MI)	0.37					
Surface Type: ASPHALT	Route Summary		•	_ · _ ·			
Roadway Condition Information							
Pavement Condition Rating (PCR)	89	89					
Surface Condition Rating (SCR)	89	89					
Roughness Condition Index (RCI)	N/A	N/A					
Distress Index Values							
Structural Crack Index	89	89					
Alligator Crack Index	100	100					
Longitudinal Crack Index	89	89					
Transverse Cracking Index	100	100					
Patching Index	100	100					
Rutting Index	98	98					
International Roughness Index (IRI)	N/A	N/A					
Lane & Width Information							
Number of Lanes	1	1					
Paved Width (ft)	15	15					
Lane Width (ft)	13.3	13.3					

# Section 6 Paved Parking Area Condition Rating Sheets



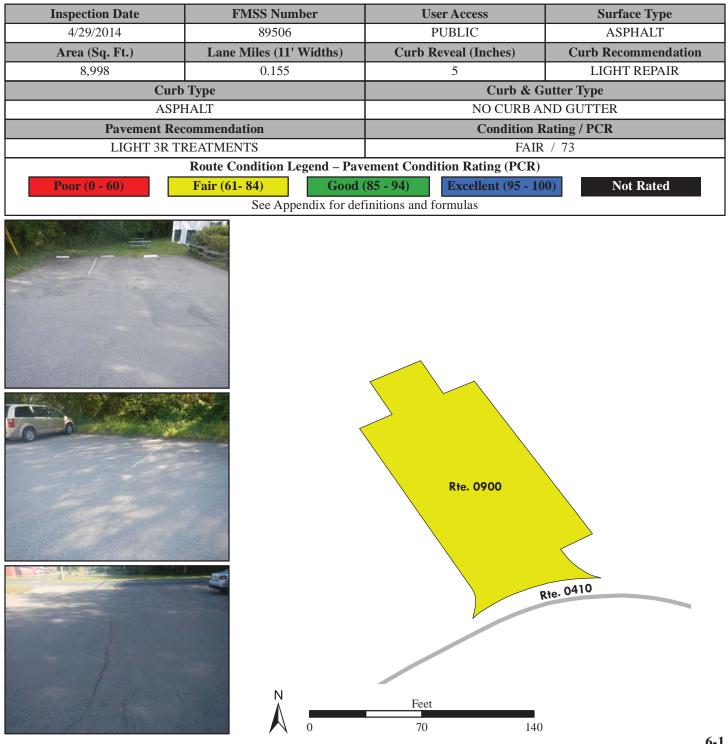
**Point Reyes National Seashore** 



# **Point Reyes National Seashore ROUTE 0900: HEADQUARTERS ADMINISTRATION PARKING LOT**

Manual Rating

#### FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)

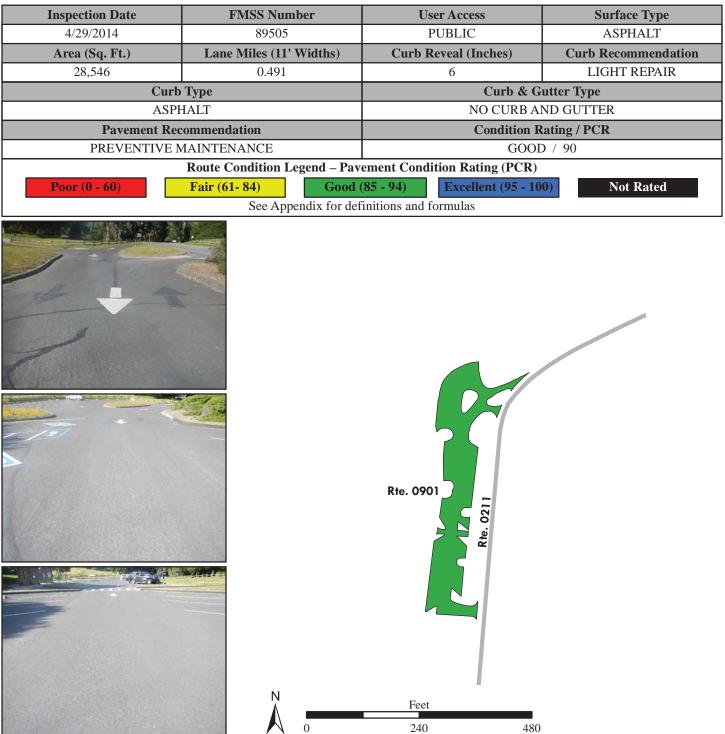


### **Point Reyes National Seashore** ROUTE 0901: BEAR VALLEY VISITOR CENTER PARKING LOT

Manual Rating

FROM ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)

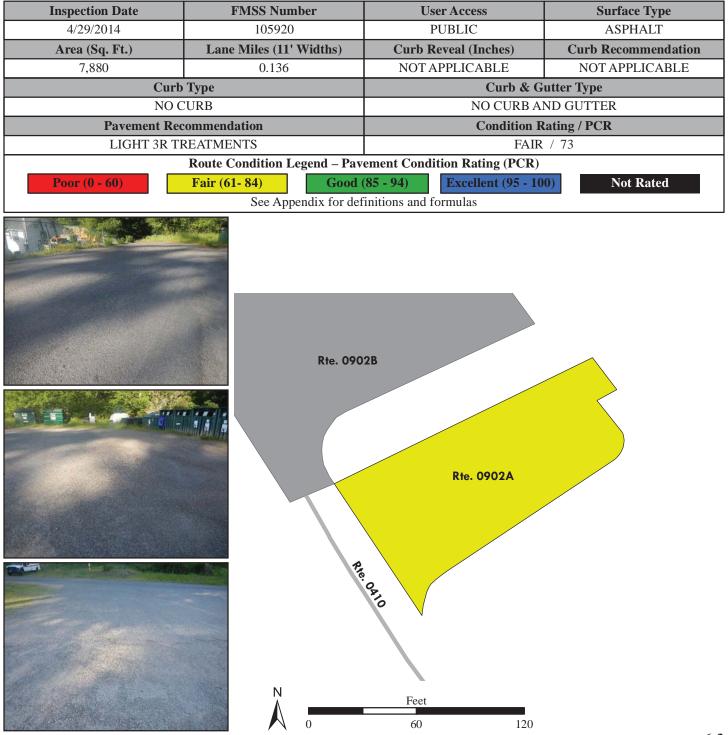
TO ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)



# **Point Reyes National Seashore** ROUTE 0902A: BEAR VALLEY R&T PARKING LOT

Manual Rating

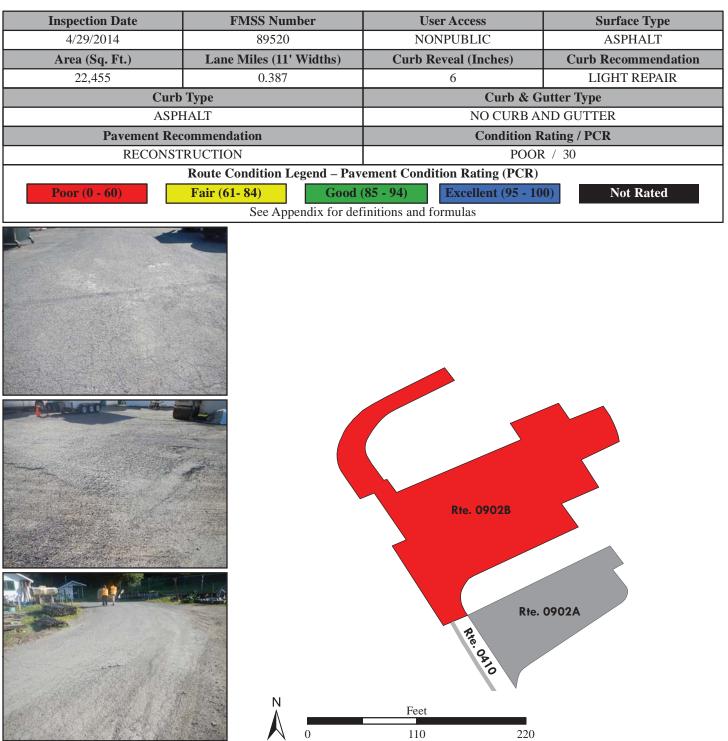
#### FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)



# **Point Reyes National Seashore** ROUTE 0902B: BEAR VALLEY R&T PAD PARKING LOT

Manual Rating

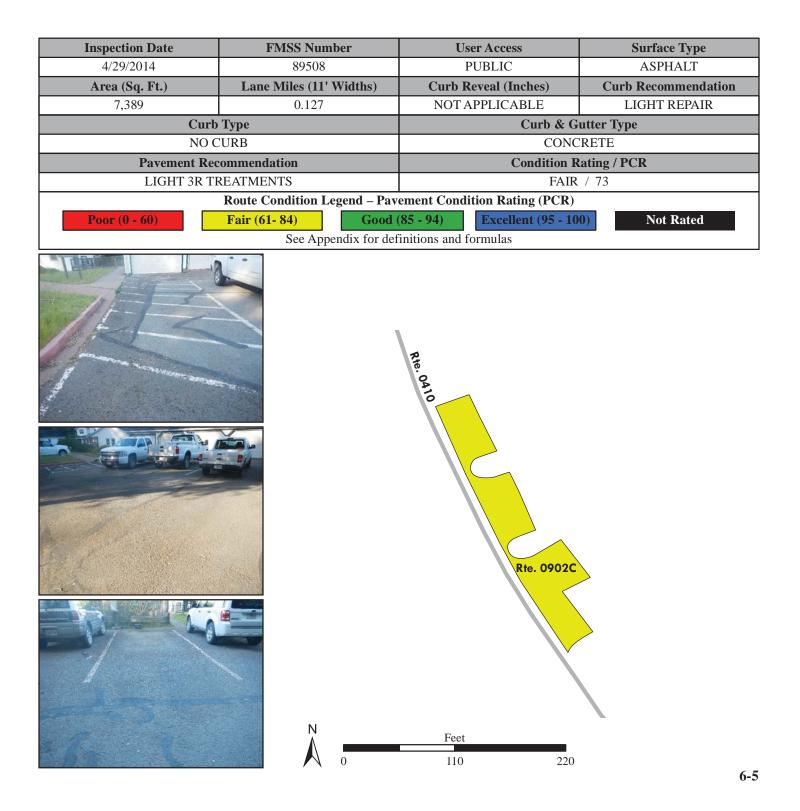
#### FROM END OF ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)



### **Point Reyes National Seashore** ROUTE 0902C: SCIENCE CAMPUS PARKING LOT

Manual Rating

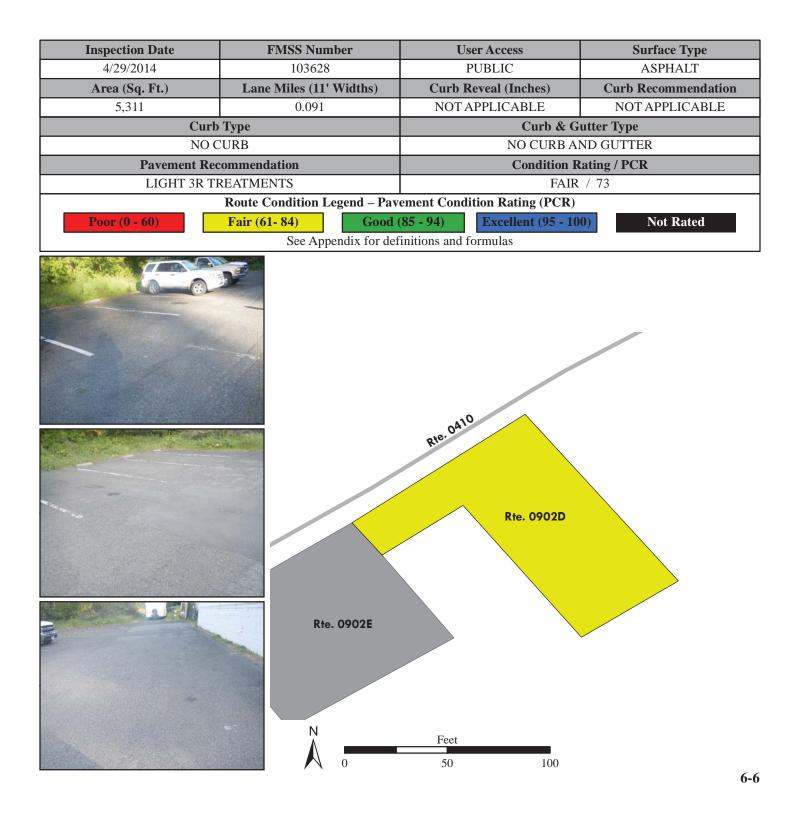
ADJACENT TO ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD) ON RIGHT



# **Point Reyes National Seashore** ROUTE 0902D: FIRE CACHE / RANGER (BUILDING 77) PARKING LOT

Manual Rating

#### FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)



# **Point Reyes National Seashore** ROUTE 0902E: BEAR VALLEY HEADQUARTERS B & U SHOP PARKING LOT

Manual Rating

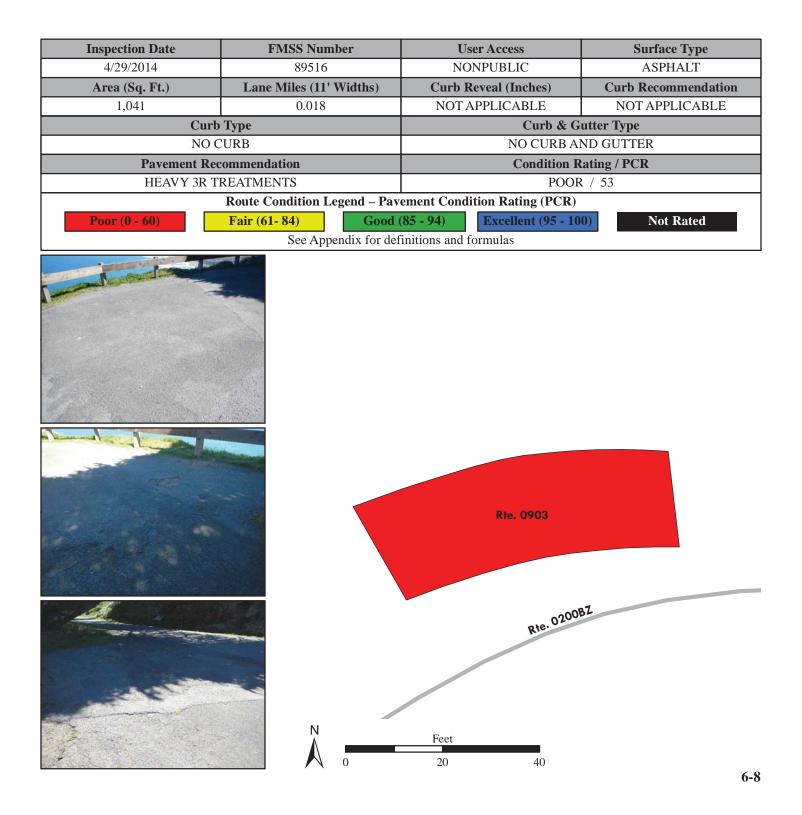
#### FROM ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)



### **Point Reyes National Seashore** ROUTE 0903: LIGHTHOUSE APARTMENTS PARKING LOT

#### Manual Rating

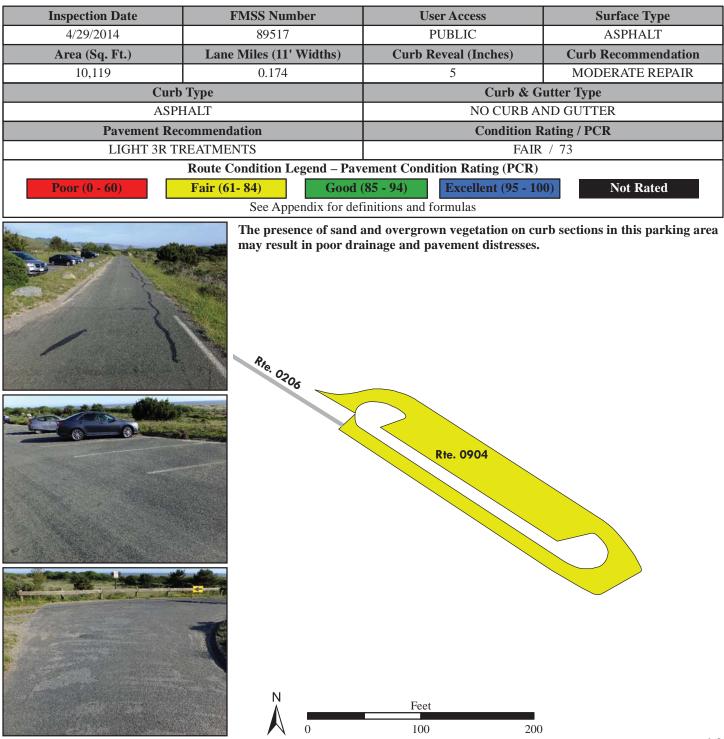
ADJACENT TO ROUTE 0200ZZ (LIGHTHOUSE ROAD)



# **Point Reyes National Seashore** ROUTE 0904: LIMANTOUR (SOUTH) PARKING LOT

#### Manual Rating

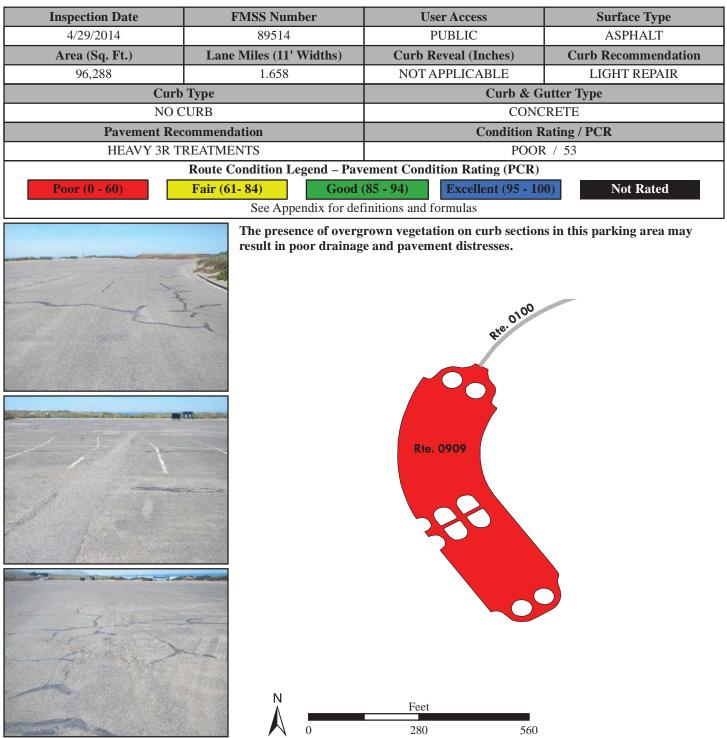
#### FROM END OF ROUTE 0206 (LIMANTOUR BEACH ACCESS ROAD)



### **Point Reyes National Seashore** ROUTE 0909: SOUTH BEACH PARKING LOT

#### Manual Rating

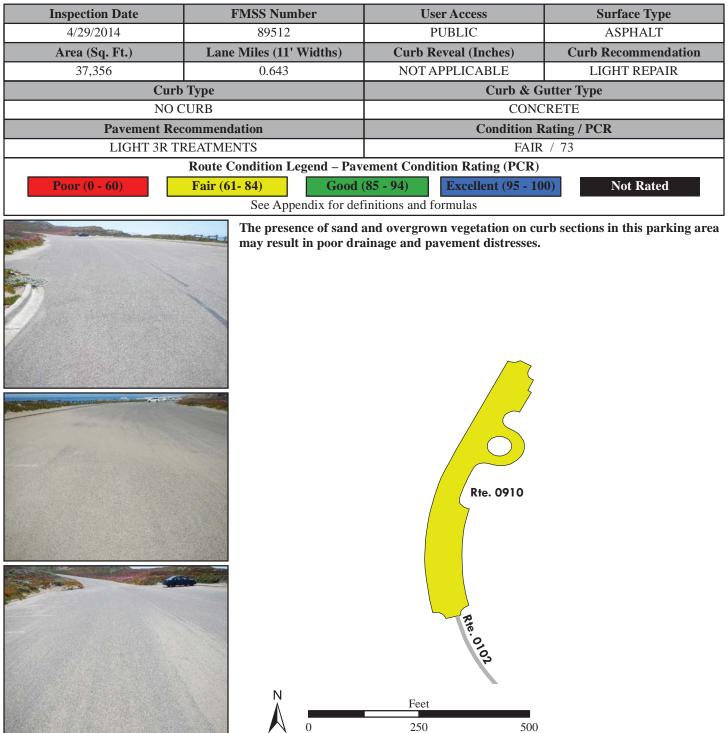
#### FROM END OF ROUTE 0100 (SOUTH BEACH ROAD)



### **Point Reyes National Seashore** ROUTE 0910: NORTH BEACH PARKING LOT

#### Manual Rating

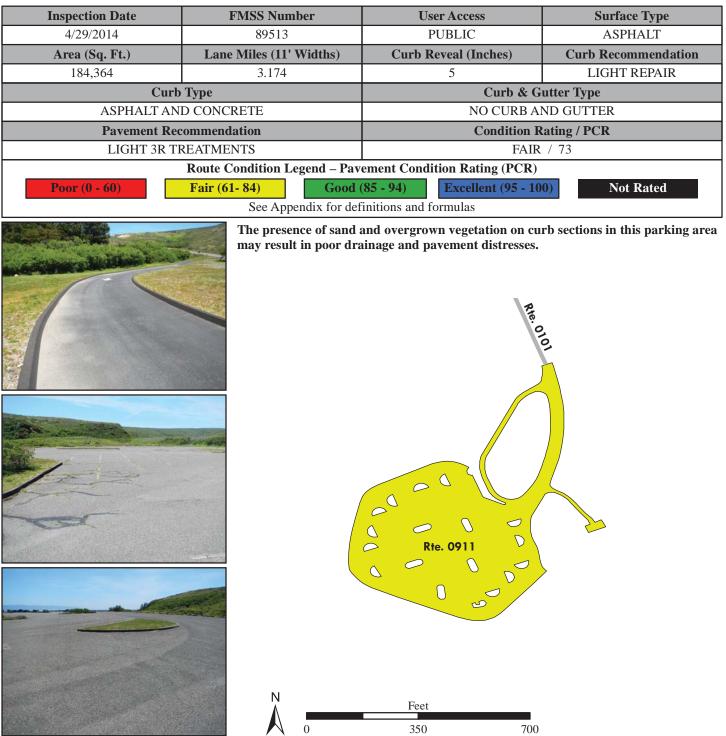
#### FROM END OF ROUTE 0102 (NORTH BEACH ROAD)



### **Point Reyes National Seashore** ROUTE 0911: DRAKES BEACH PARKING LOT

#### Manual Rating

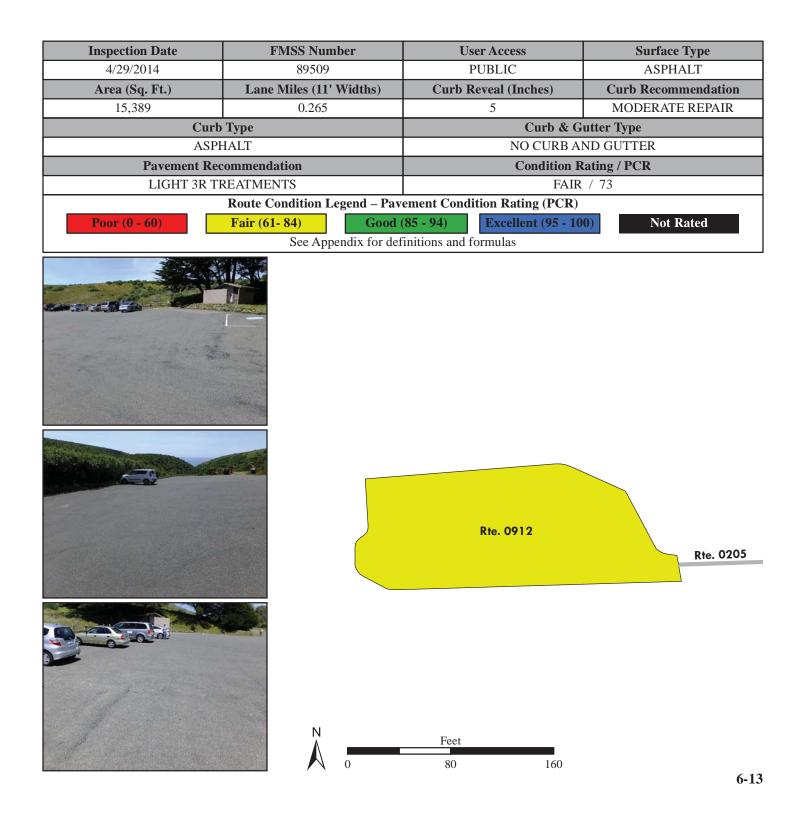
#### FROM END OF ROUTE 0101 (DRAKES BEACH ROAD)



# **Point Reyes National Seashore** ROUTE 0912: MCCLURES BEACH PARKING LOT

Manual Rating

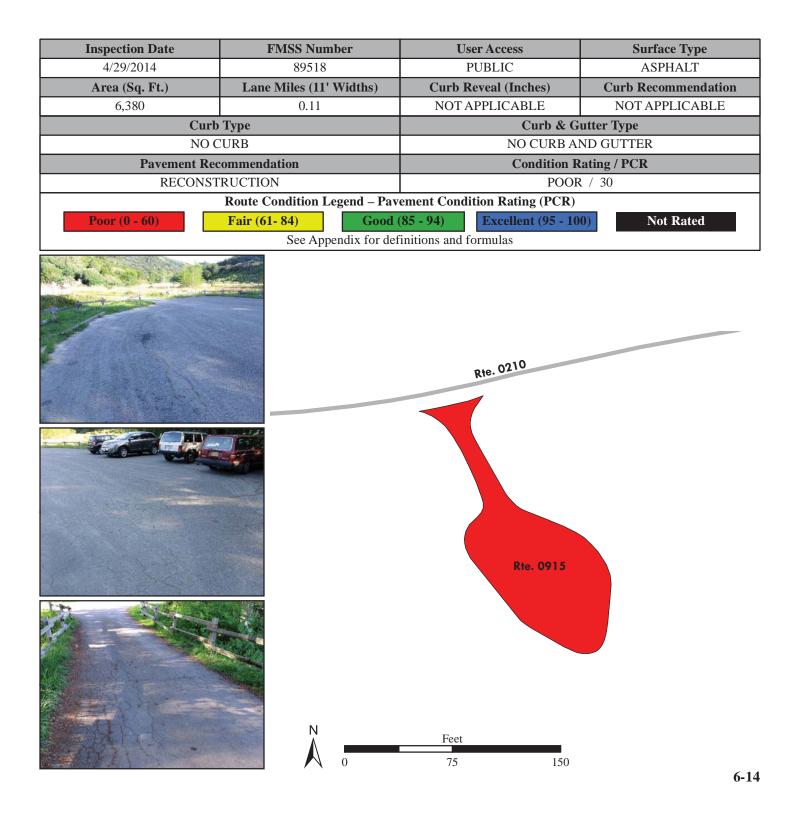
#### FROM END OF ROUTE 0205 (MCCLURES BEACH ACCESS ROAD)



# **Point Reyes National Seashore** ROUTE 0915: LAGUNA TRAILHEAD PARKING LOT

Manual Rating

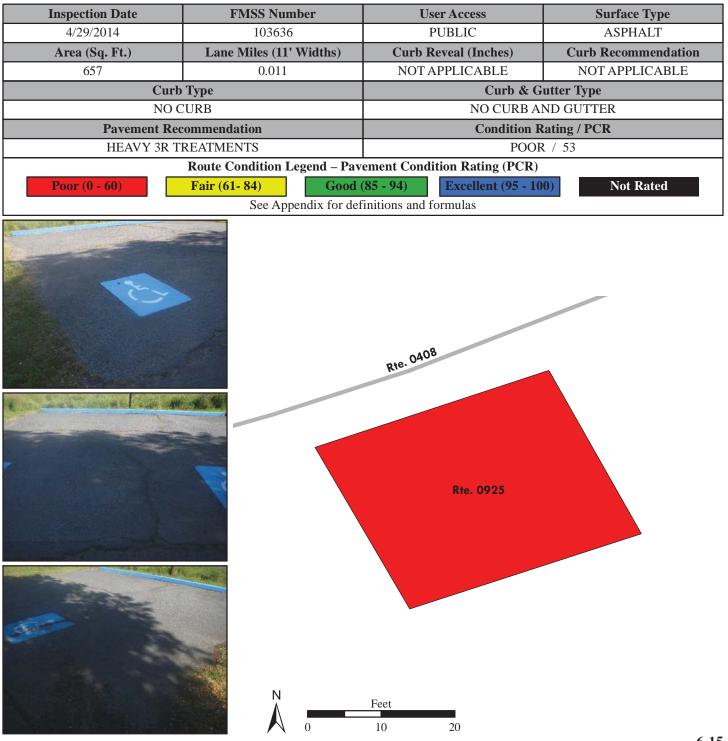
FROM ROUTE 0210 (LAGUNA ROAD)



# **Point Reyes National Seashore** ROUTE 0925: MORGAN HORSE RANCH HANDICAPPED PARKING LOT

#### Manual Rating

ADJACENT TO ROUTE 0408 (MORGAN HORSE RANCH ROAD) ON RIGHT

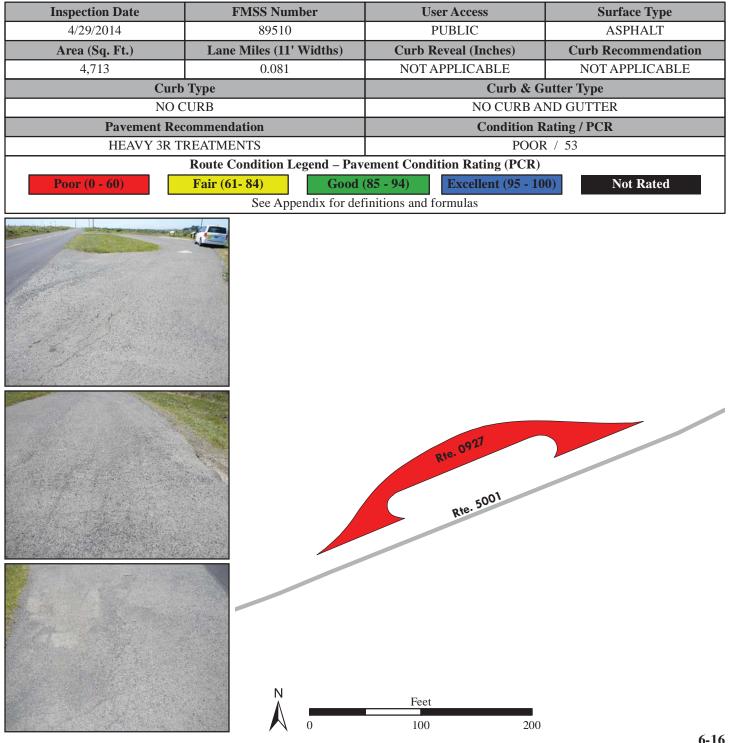


### **Point Reyes National Seashore ROUTE 0927: MCI EXHIBIT PULLOUT**

**Manual Rating** 

FROM ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)

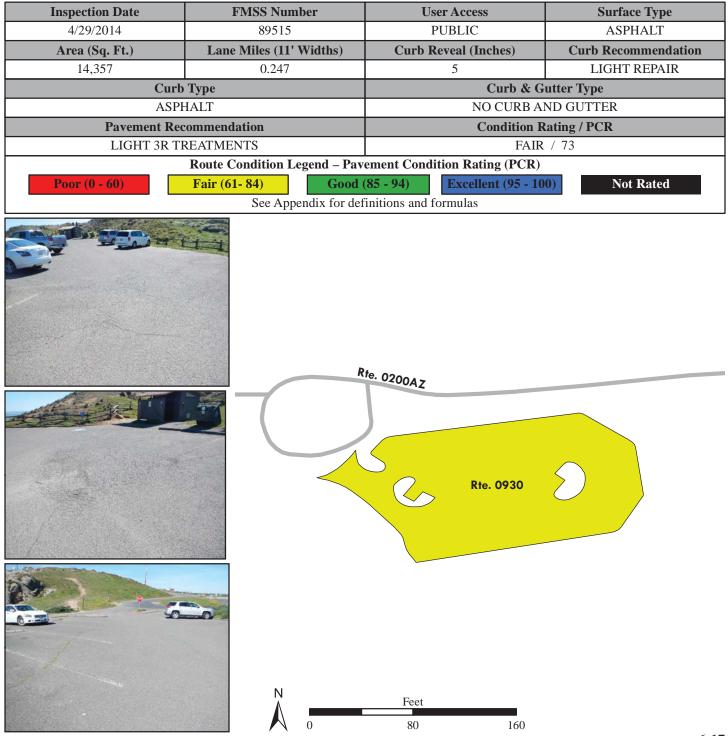
TO ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)



### **Point Reyes National Seashore** ROUTE 0930: LIGHTHOUSE PARKING LOT

Manual Rating

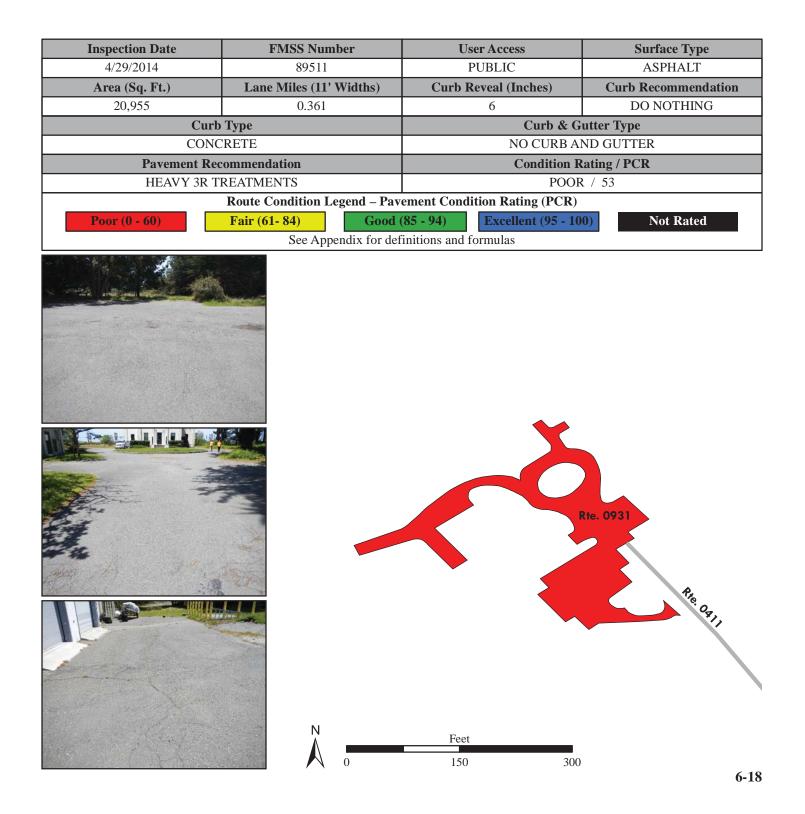
FROM ROUTE 0200ZZ (LIGHTHOUSE ROAD)



### **Point Reyes National Seashore** ROUTE 0931: NDOC OFFICE PARKING LOT

Manual Rating

#### FROM END OF ROUTE 0411 (RCA HISTORIC ROAD (NDOC ROAD))

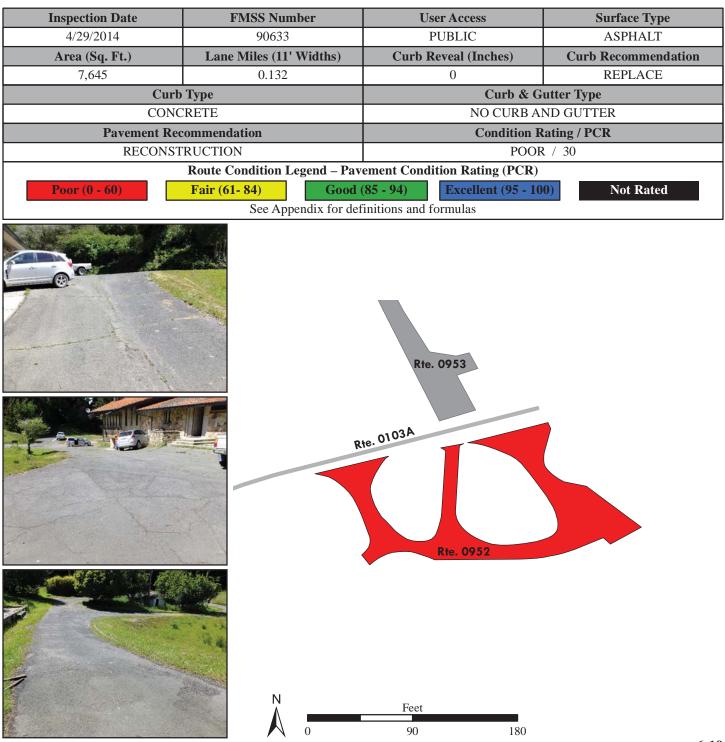


# **Point Reyes National Seashore** ROUTE 0952: SACRAMENTO LANDING MAIN HOUSE PARKING LOT

Manual Rating

FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))

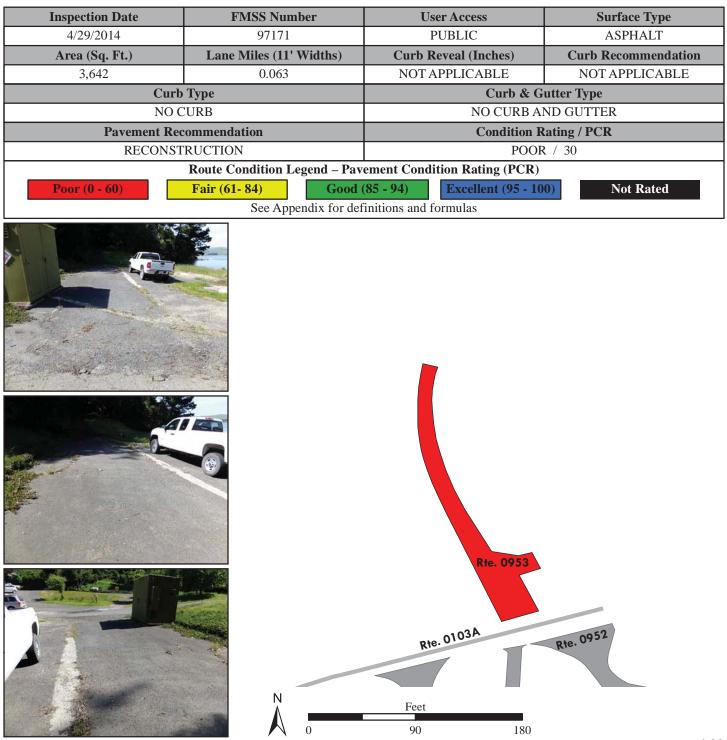
TO ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))



### **Point Reyes National Seashore** ROUTE 0953: SACRAMENTO PIER PARKING LOT

Manual Rating

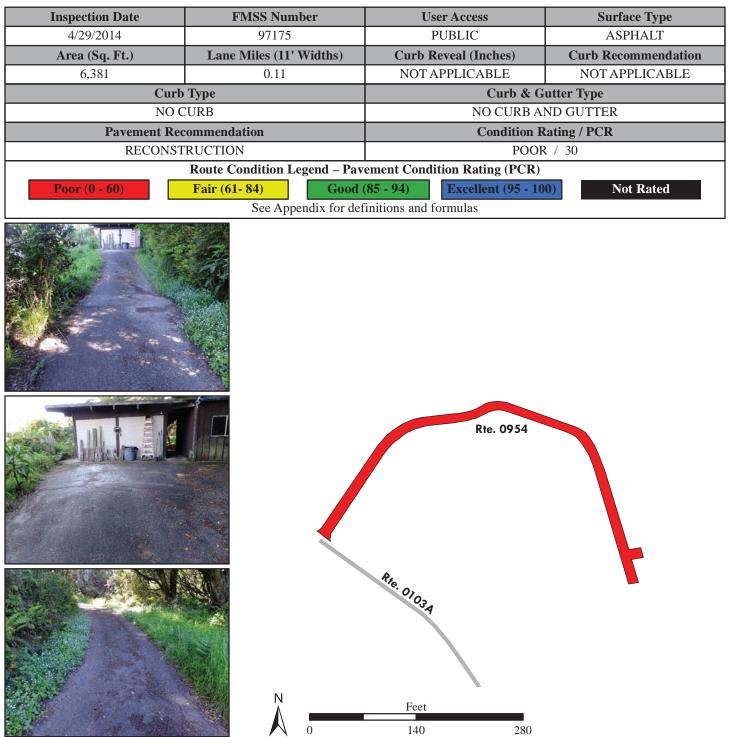
#### FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))



# **Point Reyes National Seashore** ROUTE 0954: SACRAMENTO LANDING SUPPORT PARKING LOT

Manual Rating

#### FROM ROUTE 0103A (SACRAMENTO LANDING ROAD (PAVED))

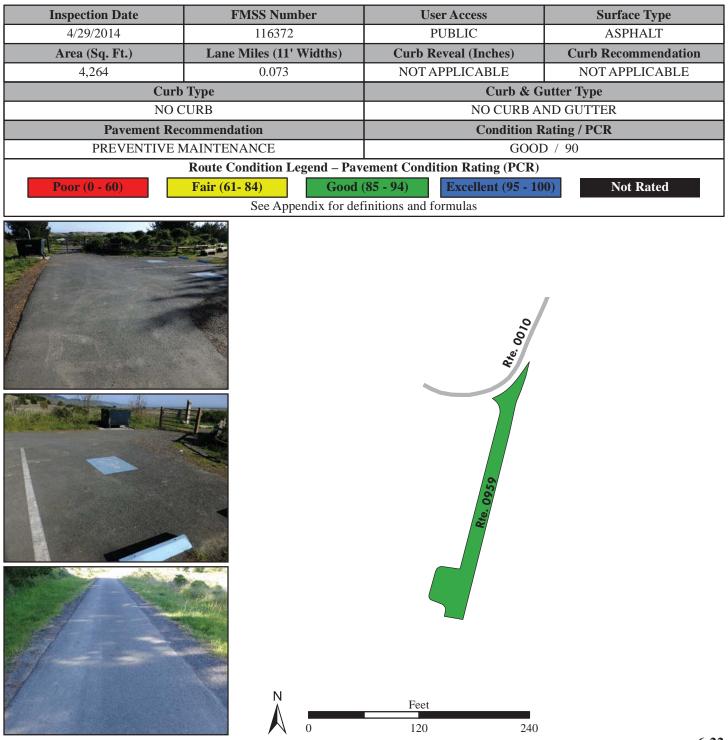


# **Point Reyes National Seashore** ROUTE 0959: LIMANTOUR PICNIC AREA ADA PARKING LOT

Manual Rating

#### FROM ROUTE 0010 (LIMANTOUR ROAD) AT MP 7.52

#### TO PARKING

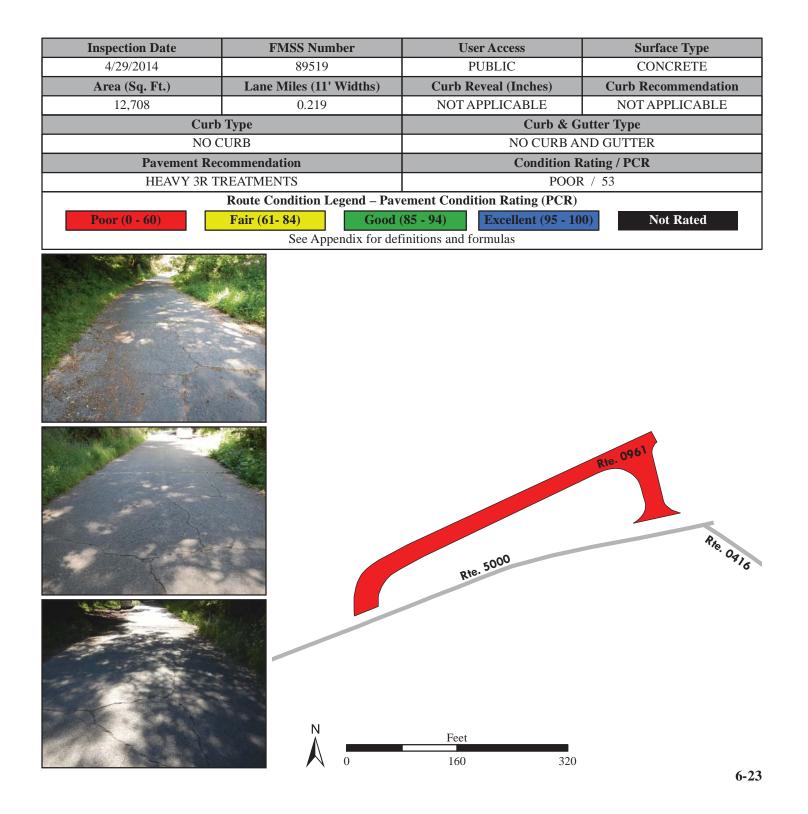


## **Point Reyes National Seashore** ROUTE 0961: CROSS MARIN TRAILHEAD PARKING LOT

Manual Rating

FROM ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)

TO ROUTE 5000 (SIR FRANCIS DRAKE BOULEVARD EAST)

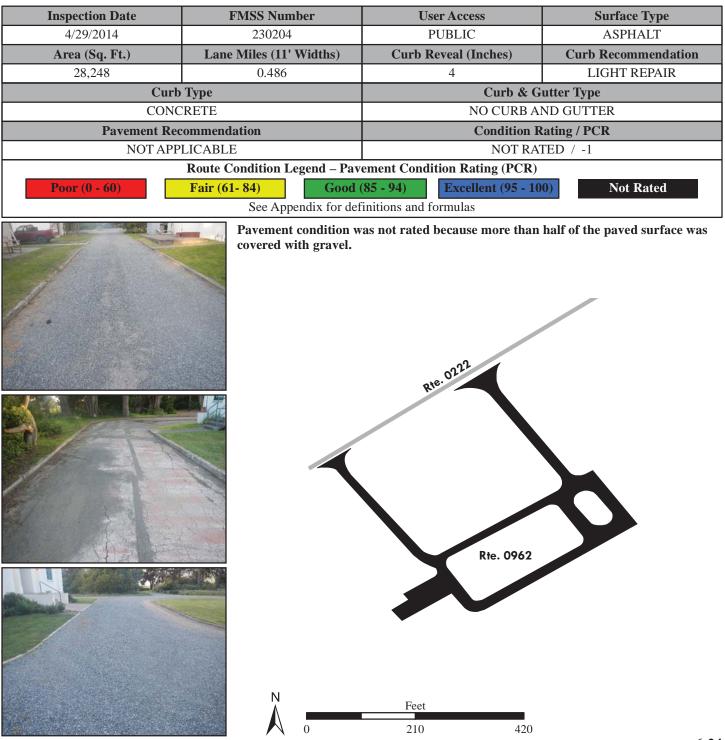


## **Point Reyes National Seashore** ROUTE 0962: COMMONWEAL PARKING LOT

Manual Rating

FROM ROUTE 0222 (COMMONWEAL ROAD)

TO ROUTE 0222 (COMMONWEAL ROAD)

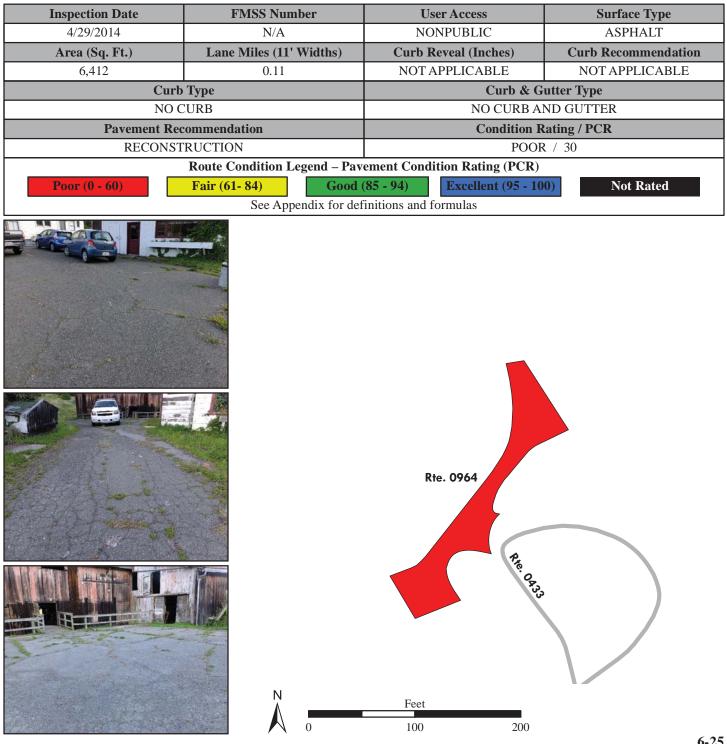


# **Point Reyes National Seashore ROUTE 0964: WILKINS RESIDENCE PARKING LOT**

Manual Rating

#### FROM ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY)

#### TO PARKING



# Section 7 Road Milepost Information



# **Point Reyes National Seashore**



#### **Road Milepost Information**

This report section contains road milepost information for all paved roads in the park that were collected with the Data Collection Vehicle (DCV). The milepost data is obtained from the DCV by using a distance measuring instrument (DMI) that is calibrated to record mileage to the nearest thousandth of a mile. Park roads that were manually rated did not have milepost data collected, and thus are not included in this report section.

For Cycle 6, the information presented in this section differs from previous RIP cycles in that it does not contain the roadside features inventories for the paved park roads. Some examples of the features previously collected are signs, culverts/drop inlets, guardrails, curbing, pullouts, etc. If the park was collected in a previous RIP cycle, then the latest features data can be obtained by referencing the following:

#### Where to find the latest Features Inventories for NPS Parks:

- For Small Parks (parks with less than 10 miles of paved roads):
  - Refer to Cycle 5 data (collected 2010 2014)
    - Features were reported in Section 9 of the *Cycle 5* RIP report
    - Video of features can be viewed using the *PathViewVO* program and *Cycle 5* data
- For Large Parks (parks with more than 10 miles of paved roads):
  - Refer to Cycle 4 data (collected 2006 2009)
    - Features were reported in Section 9 of the *Cycle 4* RIP report
    - Video of features can be viewed using the *VisiData* program and *Cycle 4* data
  - Note: Features inventories were updated in Large Parks in *Cycle 5* only on a route by route basis if the route was new or modified in *Cycle 5*. If this is the case for a particular route, then features for the route can be obtained using the *PathViewVO* program and *Cycle 5* data (same as above for Small parks).

#### Milepost Events Verified in Cycle 6

In Cycle 6, the following events were collected and reported in Section 7 of this report:

- Intersections with roads and parking areas
- All bridges and culverts with BIP Numbers (bridge inspection program numbers)
- Mile Marker Signs
- One-Way travel directions
- Overpasses
- Tunnels
- Low Water Crossings (LWCR)
- Surface type changes
- Construction areas where no pavement condition data was obtained

#### **GPS Mileage Matching**

A consistent survey milepost and constant route length as recorded by the Data Collection Vehicle (DCV) is a challenge to maintain from one collection cycle to the next. The challenge is due to many factors such as driver characteristics, DMI calibration, tire pressure etc. After Cycle 4 (~2010), a decision was made to hold constant the length of roads so long as there was no physical change from reconstruction projects or realignments that would result in a change to the length of a road. Consequently, the "GPS Mileage Match" was implemented to specify which cycle the route length is being matched. Route mileages and GPS are matched to a previous collection whenever there is no physical change to a route alignment. The route mileage and GPS is not matched to previous cycles whenever it is determined that a road length and GPS needs to be updated. When this happens the GPS and length is updated to the cycle that displays the change, and that collection cycle is used as the matching cycle in subsequent collections of the road. Thus, the Cycle 6 GIS could be either the survey length collected in Cycle 4, Cycle 5, or Cycle 6 and therefore, may not match the survey milepost displayed in the latest Cycle 6 DCV video which is viewable in **PathView VO**.

The features inventories and road logs collected on NPS routes contain mileposts that are determined from the corresponding cycle that the GPS is matched to. Therefore, the mileposts contained in the Cycle 4 or 5 features inventories or the Cycle 6 road logs may not exactly match the survey milepost collected in the latest Cycle 6 video of the road.

#### Locating Mile Marker Signs

For routes that have mile marker signs along them, the milepost reported by RIP will most likely not line up exactly with the sign located in the field. This could be happening for many reasons, most likely due to either the error falling within the acceptable calibration range of the vehicle, or the level of accuracy that the mile marker signs were placed in the field.

Because mile marker signs are important features in many project plans and location descriptions, RIP is reporting locations of mile marker signs in three ways in Cycle 6:

- 1. Mileposts from Cycle 6 GIS: the official RIP milepost taken from the features inventories and the matching GPS/mileage cycle as described above. This is the milepost that should be used on project plans and when finding locations in the field
- 2. Mileposts from Cycle 6 Video: milepost shown to help locate the mile marker sign in the latest *PathView VO* video.
- 3. Latitude / Longitude: a constant way of locating a mile marker sign so long as the park has not moved the sign

The mileposts from Cycle 6 Video and GIS should be nearly the same, but on longer roads it has been observed that the Video milepost deviates more from the official GIS milepost that comes from the matching cycle.

#### **PORE: Mile Marker Sign Locations**

#### PORE-0010: LIMANTOUR ROAD

MILE MARKER (MM) SIGN	CYCLE 6 GIS MILEPOST (MP)	CYCLE 6 VIDEO MILEPOST (MP)	SIDE IN VIDEO	LATITUDE	LONGITUDE
MILE MARKER 1	1.063	1.053	RIGHT	38.047705	-122.806527
MILE MARKER 2	2.112	2.091	RIGHT	38.053523	-122.819495
MILE MARKER 3	3.163	3.144	RIGHT	38.055025	-122.833586
MILE MARKER 4	4.200	4.180	RIGHT	38.060098	-122.846204
MILE MARKER 5	5.238	5.210	RIGHT	38.050212	-122.856805
MILE MARKER 6	6.257	6.220	RIGHT	38.043236	-122.871736
MILE MARKER 7	7.280	7.255	RIGHT	38.031453	-122.879504

NOTES:

MILE MARKER (MM): Mile Marker sign located along the roadside MILEPOST (MP): Milepost obtained from RIP GIS or the Data Collection Vehicle (DCV) video

### **ROUTE 0010: LIMANTOUR ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 5002 (BEAR VALLEY ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 5002 (BEAR VALLEY ROAD)
0.88	0.88	INTERSECTION	L	ROUTE 0417 (KULE LOKLO ACCESS ROAD)
1.06	1.06	MILE MARKER	R	MILE MARKER 1
2.11	2.11	MILE MARKER	R	MILE MARKER 2
3.16	3.16	MILE MARKER	R	MILE MARKER 3
3.44	3.44	INTERSECTION	L	ROUTE 0907 (SKY TRAILHEAD PARKING LOT)
3.75	3.75	INTERSECTION	R	UNPAVED FIRE LANE
4.20	4.20	MILE MARKER	R	MILE MARKER 4
4.46	4.46	INTERSECTION	R	ROUTE 0906 (ADAM'S PIT (BAYVIEW TRAIL) PARKING LOT)
5.24	5.24	MILE MARKER	R	MILE MARKER 5
5.41	5.41	INTERSECTION	L	ROUTE 0908 (LIMANTOUR BUS PARKING LOT)
5.94	5.94	INTERSECTION	L	ROUTE 0210 (LAGUNA ROAD)
5.94	5.94	INTERSECTION	R	ROUTE 0107 (MUDDY HOLLOW ROAD)
6.26	6.26	MILE MARKER	R	MILE MARKER 6
6.87	6.87	INTERSECTION	L	UNPAVED ROUTE
6.96	6.96	INTERSECTION	R	UNPAVED PARKING (LIMANTOUR ESTERO OVERLOOK PARKING)
7.28	7.28	MILE MARKER	R	MILE MARKER 7
7.32	7.32	INTERSECTION	L	ROUTE 0500 (LIMANTOUR RESIDENCE ROAD EAST)
7.32	7.32	INTERSECTION	R	ROUTE 0404 (LIMANTOUR RESIDENCE ROAD WEST)
7.48	7.48	INTERSECTION	L	ROUTE 0206 (LIMANTOUR BEACH ACCESS ROAD)
7.52	7.52	INTERSECTION	L	ROUTE 0959 (LIMANTOUR PICNIC AREA ADA PARKING LOT)
7.53	7.53	INTERSECTION	L	ROUTE 0010 (LIMANTOUR ROAD) OPPOSITE LANE
7.57	7.57	INTERSECTION	N/A	ROUTE 0945 (LIMANTOUR BEACH MAIN PARKING LOT)

#### **ROUTE 0100: SOUTH BEACH ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.70	0.70	INTERSECTION	N/A	ROUTE 0909 (SOUTH BEACH PARKING LOT)

# **ROUTE 0101: DRAKES BEACH ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.96	0.96	INTERSECTION	L	PAVED ROUTE (HISTORIC D RANCH ACCESS)
1.50	1.50	INTERSECTION	N/A	ROUTE 0911 (DRAKES BEACH PARKING LOT)

#### **ROUTE 0102: NORTH BEACH ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.09	0.09	INTERSECTION	R	UNPAVED ROUTE
0.60	0.60	INTERSECTION	N/A	ROUTE 0910 (NORTH BEACH PARKING LOT)

#### **ROUTE 0104: L RANCH ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5003 (PIERCE POINT ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 5003 (PIERCE POINT ROAD)
0.14	0.14	INTERSECTION	N/A	ROUTE 0104 (L RANCH ROAD) UNPAVED SECTION

# **ROUTE 0200AZ: LIGHTHOUSE MAIN ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	N/A	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	L	ROUTE 0201 (CHIMNEY ROCK ROAD)
0.02	0.02	INTERSECTION	L	ROUTE 0201 (CHIMNEY ROCK ROAD) SPUR
0.18	0.18	INTERSECTION	R	UNPAVED ROUTE (AUTHORIZED VEHICLES ONLY)
0.36	0.36	INTERSECTION	R	UNPAVED ROUTE (AUTHORIZED VEHICLES ONLY)
0.53	0.53	INTERSECTION	L	UNPAVED ROUTE
0.82	0.82	INTERSECTION	L	ROUTE 0948 (SEA LION OVERLOOK PARKING LOT)
1.04	1.04	ONE-WAY START	N/A	N/A
1.04	1.04	INTERSECTION	L	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)
1.05	1.05	INTERSECTION	R	ROUTE 0200BZ (LIGHTHOUSE HANDICAPPED ROAD)
1.06	1.06	INTERSECTION	R	ROUTE 0930 (LIGHTHOUSE PARKING LOT)
1.08	1.08	INTERSECTION	N/A	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)
1.08	1.08	ONE-WAY END	N/A	N/A
1.08	1.08	INTERSECTION	L	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)

## **ROUTE 0200BZ: LIGHTHOUSE HANDICAPPED ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)
0.08	0.08	INTERSECTION	L	UNPAVED PARKING (RADIO TOWER)
0.30	0.30	INTERSECTION	L	ACCESSIBILITY (HANDICAPPED) PARKING
0.39	0.39	INTERSECTION	R	ROUTE 0903 (LIGHTHOUSE APARTMENTS PARKING LOT)
0.44	0.44	INTERSECTION	N/A	DEAD END AT SIDEWALK AT END OF GARAGE

## **ROUTE 0201: CHIMNEY ROCK ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 0200AZ (LIGHTHOUSE MAIN ROAD)
0.00	0.00	INTERSECTION	N/A	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.01	0.01	INTERSECTION	R	ROUTE 0201 (CHIMNEY ROCK ROAD) SPUR
0.09	0.09	INTERSECTION	L	UNPAVED ROUTE
0.31	0.31	INTERSECTION	R	ROUTE 0922 (CHIMNEY ROCK UPPER PARKING LOT)
0.89	0.89	INTERSECTION	R	ROUTE 0917 (CHIMNEY ROCK LOWER (TRAILHEAD) PARKING LOT)
0.91	0.91	INTERSECTION	R	ROUTE 0917 (CHIMNEY ROCK LOWER (TRAILHEAD) PARKING LOT)
0.91	0.91	INTERSECTION	N/A	ROUTE 0401 (LIFEBOAT STATION ROAD)

## ROUTE 0203A: ESTERO TRAILHEAD ROAD

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.32	0.32	INTERSECTION	R	UNPAVED ROUTE
0.92	0.92	INTERSECTION	R	ROUTE 0429 (ESTERO CAMPGROUND ROAD)
0.93	0.93	INTERSECTION	R	ROUTE 0918 (ESTERO PARKING LOT)
0.96	0.96	INTERSECTION	R	ROUTE 0918 (ESTERO PARKING LOT)
0.97	0.97	INTERSECTION	N/A	ROUTE 0203B (HOME RANCH ROAD)

# **ROUTE 0204: MOUNT VISION ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
1.24	1.24	INTERSECTION	L	UNPAVED ROUTE (PARK RESIDENCE #1)
1.77	1.77	INTERSECTION	L	ROUTE 0428 (PINE RIDGE ROAD)
1.88	1.88	INTERSECTION	L	UNPAVED ROUTE (PARK RESIDENCE #2)
2.10	2.10	INTERSECTION	L	UNPAVED FIRE ROAD
2.35	2.35	INTERSECTION	R	ROUTE 0934 (MOUNT VISION OVERLOOK LOWER PARKING LOT)
3.23	3.23	INTERSECTION	R	ROUTE 0913 (MOUNT VISION MIDDLE PARKING LOT)
3.83	3.83	INTERSECTION	L	ROUTE 0919 (MOUNT VISION TRAILHEAD UPPER PARKING LOT)
3.86	3.86	INTERSECTION	N/A	PAVED TRAIL (INVERNESS RIDGE TRAIL)

## **ROUTE 0205: MCCLURES BEACH ACCESS ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 0921 (PIERCE POINT UPPER PARKING LOT)
0.00	0.00	INTERSECTION	N/A	ROUTE 5003 (PIERCE POINT ROAD)
0.20	0.20	INTERSECTION	N/A	ROUTE 0912 (MCCLURES BEACH PARKING LOT)

## **ROUTE 0206: LIMANTOUR BEACH ACCESS ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 0010 (LIMANTOUR ROAD)
0.08	0.08	INTERSECTION	L	UNPAVED ROUTE
0.37	0.37	INTERSECTION	N/A	ROUTE 0904 (LIMANTOUR (SOUTH) PARKING LOT)
0.37	0.37	INTERSECTION	L	ROUTE 0904 (LIMANTOUR (SOUTH) PARKING LOT)

#### **ROUTE 0210: LAGUNA ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	N/A	ROUTE 0107 (MUDDY HOLLOW ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 0010 (LIMANTOUR ROAD)
0.23	0.23	INTERSECTION	R	ROUTE 0214 (COAST CAMP ROAD)
0.29	0.29	INTERSECTION	L	PAVED PARKING (POINT REYES HOSTEL ACCESS AND PARKING)
0.36	0.36	INTERSECTION	L	PAVED PARKING (POINT REYES HOSTEL ACCESS AND PARKING)
0.51	0.51	INTERSECTION	R	ROUTE 0915 (LAGUNA TRAILHEAD PARKING LOT)
0.64	0.64	INTERSECTION	L	UNPAVED ROUTE (FIRE LANE)
0.65	0.65	INTERSECTION	N/A	ROUTE 0942 (EDUCATION CENTER PARKING LOT)

## **ROUTE 0211: BEAR VALLEY TRAILHEAD ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5002 (BEAR VALLEY ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 5002 (BEAR VALLEY ROAD)
0.03	0.03	INTERSECTION	R	ROUTE 0410 (BEAR VALLEY MAINTENANCE ACCESS ROAD)
0.13	0.13	INTERSECTION	L	ROUTE 0403 (RED BARN CLASSROOM ROAD)
0.18	0.18	INTERSECTION	R	ROUTE 0901 (BEAR VALLEY VISITOR CENTER PARKING LOT)
0.19	0.19	INTERSECTION	R	ROUTE 0901 (BEAR VALLEY VISITOR CENTER PARKING LOT)
0.27	0.27	INTERSECTION	L	ROUTE 0914 (BEAR VALLEY TRAILHEAD PARKING LOT)
0.27	0.27	INTERSECTION	R	ROUTE 0901 (BEAR VALLEY VISITOR CENTER PARKING LOT)
0.32	0.32	INTERSECTION	R	ROUTE 0408 (MORGAN HORSE RANCH ROAD)
0.33	0.33	INTERSECTION	L	ROUTE 0914 (BEAR VALLEY TRAILHEAD PARKING LOT)
0.33	0.33	INTERSECTION	N/A	ROUTE 0108 (BEAR VALLEY TRAIL ROAD)

## ROUTE 0220: U.S. COAST GUARD ACCESS ROAD

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.18	0.18	INTERSECTION	R	ROUTE 0935 (COAST GUARD CEMETERY PARKING LOT)
0.19	0.19	INTERSECTION	R	UNPAVED PARKING
0.53	0.53	INTERSECTION	N/A	PAVED ROUTE (US COAST GUARD ROAD / NON NPS)

# ROUTE 0222: COMMONWEAL ROAD

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	PAVED ROUTE (MESA ROAD / NON NPS)
0.00	0.00	INTERSECTION	R	PAVED ROUTE (MESA ROAD / NON NPS)
0.02	0.02	INTERSECTION	L	UNPAVED ROUTE
0.35	0.35	INTERSECTION	L	ROUTE 0962 (COMMONWEAL PARKING LOT)
0.40	0.40	INTERSECTION	L	ROUTE 0962 (COMMONWEAL PARKING LOT)
0.41	0.41	INTERSECTION	N/A	ROUTE 0222 (COMMONWEAL ROAD) UNPAVED SECTION

## **ROUTE 0401: LIFEBOAT STATION ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	N/A	ROUTE 0201 (CHIMNEY ROCK ROAD)
0.00	0.00	INTERSECTION	R	ROUTE 0917 (CHIMNEY ROCK LOWER (TRAILHEAD) PARKING LOT)
0.03	0.03	INTERSECTION	L	ROUTE 0402 (FISH DOCKS (MENDOZA) ACCESS ROAD)
0.15	0.15	INTERSECTION	R	UNPAVED ROUTE
0.35	0.35	INTERSECTION	N/A	ROUTE 0944 (LIFEBOAT STATION PARKING LOT)

## **ROUTE 0404: LIMANTOUR RESIDENCE ROAD WEST**

FROM MIL EPOST	TO MILEPOST	FFATUDE	SIDE	COMMENT
MILEPUSI	MILEPUSI	FLAIURE	SIDE	COMINIENT
0.00	0.00	INTERSECTION	R	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	N/A	ROUTE 0500 (LIMANTOUR RESIDENCE ROAD EAST)
0.09	0.09	INTERSECTION	N/A	END OF PAVEMENT

## **ROUTE 0408: MORGAN HORSE RANCH ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)
0.02	0.02	INTERSECTION	R	ROUTE 0941 (BEAR VALLEY HORSE / BUS PARKING LOT)
0.10	0.10	INTERSECTION	L	ROUTE 0408 (MORGAN HORSE RANCH ROAD)
0.20	0.20	INTERSECTION	R	ROUTE 0925 (MORGAN HORSE RANCH HANDICAPPED PARKING LOT)
0.23	0.23	INTERSECTION	N/A	ROUTE 0408 (MORGAN HORSE RANCH ROAD)
0.23	0.23	INTERSECTION	L	ROUTE 0408 (MORGAN HORSE RANCH ROAD)

#### **ROUTE 0410: BEAR VALLEY MAINTENANCE ACCESS ROAD**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 0211 (BEAR VALLEY TRAILHEAD ROAD)
0.02	0.02	INTERSECTION	R	ROUTE 0900 (HEADQUARTERS ADMINISTRATION PARKING LOT)
0.04	0.04	INTERSECTION	L	ROUTE 0902D (FIRE CACHE / RANGER (BUILDING 77) PARKING LOT)
0.05	0.05	INTERSECTION	R	ROUTE 0949 (BEAR VALLEY RESOURCE PARKING LOT)
0.06	0.06	INTERSECTION	L	ROUTE 0902E (BEAR VALLEY HEADQUARTERS B & U SHOP PARKING LOT)
0.12	0.12	INTERSECTION	R	ROUTE 0902C (SCIENCE CAMPUS PARKING LOT)
0.17	0.17	INTERSECTION	R	ROUTE 0932 (FIRE CACHE ADMINISTRATION OFFICE PARKING LOT)
0.20	0.20	INTERSECTION	L	ROUTE 0417 (KULE LOKLO ACCESS ROAD)
0.21	0.21	INTERSECTION	R	ROUTE 0902A (BEAR VALLEY R&T PARKING LOT)
0.22	0.22	INTERSECTION	N/A	ROUTE 0902B (BEAR VALLEY R&T PAD PARKING LOT)

# **ROUTE 0411: RCA HISTORIC ROAD (NDOC ROAD)**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.00	0.00	INTERSECTION	L	ROUTE 5001 (SIR FRANCIS DRAKE BOULEVARD WEST)
0.22	0.22	INTERSECTION	L	ROUTE 0931 (NDOC OFFICE PARKING LOT)
0.24	0.24	INTERSECTION	N/A	ROUTE 0931 (NDOC OFFICE PARKING LOT)

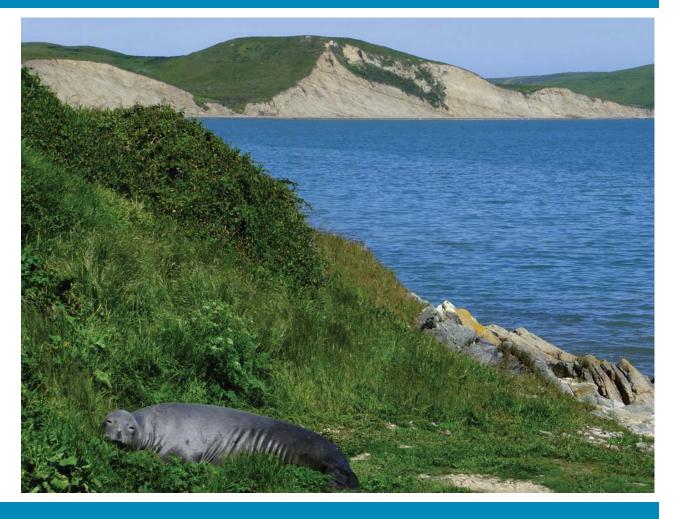
## **ROUTE 0433: WILKINS RESIDENCE DRIVEWAY**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	L	ROUTE 5004 (CALIFORNIA HIGHWAY 1)
0.00	0.00	INTERSECTION	R	CALIFORNIA HIGHWAY 1
0.08	0.08	INTERSECTION	L	ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY)
0.13	0.13	INTERSECTION	R	ROUTE 0964 (WILKINS RESIDENCE PARKING LOT)
0.16	0.16	INTERSECTION	L	ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY)
0.16	0.16	INTERSECTION	R	ROUTE 0433 (WILKINS RESIDENCE DRIVEWAY)

### **ROUTE 0500: LIMANTOUR RESIDENCE ROAD EAST**

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.00	0.00	INTERSECTION	R	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	L	ROUTE 0010 (LIMANTOUR ROAD)
0.00	0.00	INTERSECTION	N/A	ROUTE 0404 (LIMANTOUR RESIDENCE ROAD WEST)
0.37	0.37	INTERSECTION	N/A	END AT RESIDENCE DRIVEWAY

# Section 8 Appendix



**Point Reyes National Seashore** 



#### Improvements to the RIP Index Equations and Determination of PCR

In 2005, the Federal Highway Administration (FHWA) began implementing the use of a Pavement Management System (PMS) to assist the National Park Service (NPS) in prioritizing Pavement Maintenance and Rehabilitation activities. The PMS used by FHWA is the Highway Pavement Management Application (HPMA) which has the ability to store inventory and condition data from the Road Inventory Program (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 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 RIP 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.

Additionally, methodologies were updated in 2013 for Manually Rated Routes (paved routes that the collection vehicle is unable to drive) as well as Parking Areas to provide more accurate condition data to the HPMA. These updated methodologies allow for the efficient assessment of pavement conditions using a visual inspection method to denote specific distresses. These distresses are indicative of current conditions, the causes for current and future deterioration, and identify the level of targeted repair and rehabilitation practices required.

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 in early 2014 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.

#### **Description of the Rating System**

The Federal Highway Administration, National Park Service Road Inventory Program (NPS-RIP), 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) and manually using Manually Rated Route (MRR) procedures. 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 a network of roughly 5,700 miles of National Park Service roads and parkways. Because a subset of roads will be collected multiple times this cycle, the total collection length will be around 13,000 miles. 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 6, 2014-2020" 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.

Cycle 6 has launched in the spring of 2014 and will again comprise all parks, large and small, that are served by paved roads and/or parking areas. For Cycle 6, roughly 333 large and small parks will have all paved routes and parking areas collected at least once in the cycle, some will have multiple collections depending on the size of the park and the functional class of the route.

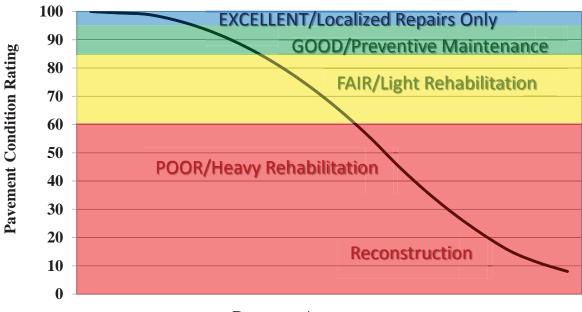
This "Distress Identification Manual for the NPS Road Inventory Program, Cycle 6, 2014-2020" will be used as a reference resource in crack detection and classification, determination of distress severity and extent, and in the calculation of distress index values for the FHWA RIP Cycle 6.

#### **Explanation of the Condition Descriptions**

In addition to the RIP Index changes that were 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 PMS data from our (HPMA) please contact the Eastern Federal Lands pavement team.



#### **Condition Categories and Treatments**

#### **Pavement Age**

#### **Description of Pavement Treatment Types**

- 1. **Preventive Maintenance** is a planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without significantly increasing the structural capacity). Preventive maintenance is typically applied to pavements in good condition having significant remaining service life. As a major component of pavement preservation, preventive maintenance is a strategy of extending the service life by applying cost-effective treatments to the surface or near-surface of structurally sound pavements. Examples of preventive treatments include asphalt crack sealing, chip sealing, slurry or micro-surfacing, thin and ultrathin hot-mix asphalt overlay, concrete joint sealing, diamond grinding, dowel-bar retrofit, and isolated, partial and/or full-depth concrete repairs to restore functionality of individual slabs.
- 2. Pavement Rehabilitation consists of structural enhancements that extend the service life of an existing pavement and/or improve its load carrying capacity. Rehabilitation techniques include restoration treatments and structural overlays. Rehabilitation projects extend the life of existing pavement structures either by restoring existing structural capacity through the elimination of age-related, environmental cracking of embrittled pavement surface or by increasing pavement thickness to strengthen existing pavement sections to accommodate existing or projected traffic loading conditions. Two sub-categories result from these distinctions, which are directly related to the restoration or increase of structural capacity.
  - Light Rehabilitation (L3R) Examples include single-lift overlays up to 2.5 inches in total thickness and milling and overlays for flexible pavements
  - Heavy Rehabilitation (H3R) Requires rehabilitation with grade improvement. H3R stands for resurfacing, restoration, and rehabilitation projects. H3R projects typically involve multi-depth (overlays greater than 2.5 inches) pavement improvement work (short of full-depth replacement) and targeted safety improvements. H3R projects generally involve retention of the existing three-dimensional alignment.
- 3. **Reconstruction** (4**R**) is defined as the replacement of the entire existing pavement structure by the placement of the equivalent or increased pavement structure. Reconstruction usually requires the complete removal and replacement of the existing pavement structure. Reconstruction may utilize either new or recycled materials incorporated into the materials used for the reconstruction of the complete pavement section. Reconstruction is required when a pavement has either failed or has become functionally obsolete.

# Appendix A

Methodology for Determining Condition Ratings with the Data Collection Vehicle (DCV)

## Surface Distresses Identified by the Data Collection Vehicle

#### 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 and rutting are determined from digital images that provide both the longitudinal and transverse profile. The images also provide an elevation profile of the road, creating a 3-dimensional image of the paved surface.

- Transverse Cracks
- Longitudinal Cracks
- Alligator Cracks
- Patching/Potholes
- 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 Surface Condition Rating (SCR).

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.

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

The index formulas are based on a scale of 0 to 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** = (less than or equal to 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.

<u>Note:</u> 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 less than 0 defaults to 0. Index values greater than 100 defaults 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.

ASPHALT-SURFACED PAVEMENT DISTRESS TYPES WITH RUTTING AND ROUGHNESS				
Distress Type	Units Of Measure	Converted To	Defined Severity Levels?	Measured By
Alligator Cracking	Square Feet	Percent of Lane Per 0.02 Mile	Yes	3 Dimensional pavement imaging system
Transverse Cracking	Linear feet	Number of Cracks Per 0.02 Mile	Yes	3 Dimensional pavement imaging system
Longitudinal Cracking	Linear feet	Percent of Lane Length Per 0.02 Mile	Yes	3 Dimensional pavement imaging system
Patching / Potholes	Square Feet	Percent of Lane Per 0.02 Mile	No	3 Dimensional pavement imaging system
Rutting	Inches	Rut Depth Per 0.02 Mile	Yes	3 Dimensional pavement imaging system
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

Table 1. Distress summary

#### **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 with little to no interconnecting cracks with no visible spalling. Cracks are less than or equal to a mean width of 0.25 in. (6mm). 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 greater than 0.25 in. (6 mm) but less than or equal to 0.75 in. (19 mm) or any crack with a mean width less than or equal to 0.75 in. (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 greater than 0.75 in. (19mm) or any crack with a mean width less than or equal to 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 as shown in Table 2.

ALLIGATOR CRACKING SEVERITY LEVELS				
	CRACK	CRACK PATTERN		
	SEVERITY	LOW	MED	HIGH
	LOW	LOW	MED	HIGH
CRACK WIDTH	MED	MED	MED	HIGH
	HIGH	HIGH	HIGH	HIGH

 Table 2. Alligator Crack Severity Levels

#### **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 less than or equal to 0.25 in. (6 mm). This also includes sealed cracks with sealant in good condition and a width that cannot be determined.

#### **MEDIUM**

Cracks with a mean width greater than 0.25 in. (6 mm) but less than 0.75 in. (19 mm). Also, any crack with a mean width less than 0.75 in. (19 mm) and adjacent random low severity cracking.

#### HIGH

Cracks with a mean width greater than 0.75 in. (19 mm). Also, any crack with a mean width less than 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 less than or equal to 0.25 in. (6 mm). Sealed cracks with sealant in good condition and a width that cannot be determined.

#### **MEDIUM**

Cracks with a mean width greater 0.25 in. (6 mm) and less than or equal to 0.75 in. (19 mm). Also, any crack with a mean width less than 0.75 in. (19 mm) and adjacent random low severity cracking.

#### HIGH

Cracks with a mean width greater than 0.75 in. (19 mm). Also, any crack with a mean width less than 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 0.100 mi. (0.161 km). (Any full-lane patch exceeding 0.100 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.

Manhole covers should not be rated as patches unless there is obvious patching around the manhole.

Speed bumps should not be rated as patches

#### **Severity Levels:**

There are no stratified severities for Patching and 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 of 0.20 inches to 0.49 inches Ruts less than 0.20 in. are not included in the distress calculations.

#### **MEDIUM**

Ruts with a measured depth of 0.50 inches to 0.99 inches

#### HIGH

Ruts with a measured depth greater than 1.00 inch

#### **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.

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	

#### **Table 3. International Roughness Index**

#### **Roughness Collection Parameters**

On shorter roads with a lower speed limit the usefulness in collecting and reporting IRI is negligible. Lower, inconsistent speeds can lead to a less accurate IRI value. Therefore RIP has put in place the following protocols for reporting IRI.

International Roughness Index (IRI) is not reported on routes with the following criteria:

- Posted speed limit is less than 25 mph
- Length of route is less than 0.50 miles

When a collected route has a posted speed limit of at least 25 mph and length of at least 0.50 miles, IRI will be collected except on road sections where the speed is less than 20 mph

Other situations may arise where the speed and length factors are met, but reporting IRI could lead to an inaccurate PCR. RIP will determine whether or not it is reasonable to report IRI on these routes on a case by case basis.

#### **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:

square foot area of alligator crack severity (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 greater than or equal to 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:

length of respective longitudinal cracking (0.02 mile)\*(105.6 ft.)

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 longitudinal 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 greater than or equal to 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:

Total length of transverse cracks 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:

square foot area of patching/potholes (0.02 mile)\*(lane width)

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

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 report the percentage of the 40 measurements within that 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 wheel path based on 20 ruts.

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

#### (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; Low, Medium, and High, respectively. Only the MAE for high severity rutting can fail a section, since 200% of *only* low severity ruts would yield a rut index of 85 and 200% of *only* medium severity ruts would yield a rut index of 61.

#### **Roughness Condition Index (Asphalt)**

$$\mathbf{RCI} = 32 * [5 * (2.718282^{(-.0041 * AVG IRI)})]$$

#### 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:

(Left wheelpath IRI) + (Right wheelpath IRI) 2

There is no applicable threshold for failure for this index.

#### **Roughness Condition Index (Concrete)**

 $\mathbf{RCI} = (-0.0012)(\mathbf{IRI}^2) + (0.0499)(\mathbf{IRI}) + 99.542$ 

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 is collected by FHWA using a Pathway Services Inc. Data Collection Vehicle (DCV), called a 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 jpeg digital imagery files at a frequency of every 26.4feet.

Two forward-facing cameras are mounted above the vehicle cab, one pointed straight ahead and the other to the right shoulder providing seamless roughly 120 degree viewing. A third camera is mounted in the rear of the vehicle, recording the left shoulder.

CAMERA SPECIFICATIONS TWO FORWARD / ONE REAR FACING CAMERA		
Camera lens/type	Prosilica GT 2750 (GigE Technology)	
Image format	*.jpg	
Image resolution	2750 x 2200, 18 frames/second	
Image pixel size	depends on distance	
Zoom ratio	16mm Fixed	
	Aperture Range F 1.8 – Infinity (P-Iris,	
Iris range	Automatic	

#### **Pavement Imaging and Rutting**

High resolution rutting data and surface imaging are collected in a single data stream using a threedimensional (3D) pavement surface transverse profile data acquisition system. The 3D camera captures a laser line as it is projected over the pavement surface and uses the location of this line to measure the height deviations of the pavement surface. These height deviations can be used to calculate rutting in both wheelpaths. These deviations also provide a grayscale image detailing the change in height throughout the surface, i.e. providing depth measurements for cracking.

PAVEMENT SURFACE AND TRANSVERSE PROFILE DATA ACQUISITION SYSTEM		
Surface Image Specifications		
Image size	1536 pixels/scan @3000 Hz	
Image width	4 meters (3950 mm nominal)	
Laser class	3B	
Power	16W (Two lasers @ 8W Ea)	
Vehicle speed limitations	62 mph	
Environment	Dry pavement, day or night	
Sensor size (approximate)	1536 pixels x 512 pixels	
Image display length	26.4 feet	
<b>Rutting Specifications</b>		
Reported rut depth units	Inches	
Vehicle speed limitations	Up to 62 mph	
Sampling rate	3000 profiles/second	
Transverse resolution	1536 points/profile	
Transverse field-of-view	14 feet	
Depth accuracy (nominal)	<1mm	
Environment	Dry pavement, day or night, above 32 degrees F	
Adherence to specifications	ASTM E1703M-95 (reapproved 2005)	

# THREE-DIMENSIONAL

#### **Distance Measuring Instrument (DMI)**

The DMI (Distance Measuring Instrument) obtains road length measurements that are accurate to 0.15%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)

IRI SPECIFICATIONS		
Reported IRI units	Inches/mile	
Vehicle speed limitations	12-62 mph	
IRI equipment certification	Texas Transportation Institute (TTI)	
Wavelengths accommodated	0.5 feet to 300 feet	
IRI computed & reported	World Bank Technical Paper Number 46	
Environment	Dry pavement, day or night, above 32 degrees	
Adherence to specifications	ASTM E950 Class 1 & AASHTO M 328	

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.

#### **GPS & Inertial Systems**

GPS is collected by an onboard system employing Omnistar real time correction and a spinning gyroscope to provide accurate positioning data in instances of satellite obstruction. All GPS coordinates are tied to an 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	± 1.75%	
Grade	± 1.75%	
Adherence to specifications	ASTM E1703M-95 (reapproved 2005)	

\*NOTE – GPS accuracy is dependent on many different factors. Satellite constellation, tree coverage, GPS receiver quality, and real-time correction availability can all affect the locational and elevation accuracies. The elevation (z coordinate) accuracy is less dependable than locational or horizontal accuracy (x/y coordinates or latitude/longitude). In areas of heavy tree coverage or poor satellite constellations, elevation data can vary by as much as +/- 100 feet.

# Appendix B

# Methodology for Determining Condition Ratings Using Manual Rating Procedures

## **Description of Manual Rating Methods**

In 2013, the Federal Highway Administration updated existing Manual Rating Procedures in an effort to better align pavement conditions for Manually Rated Routes and Parking with the Highway Pavement Management Application (HPMA). HPMA is the Pavement Management System used by the FHWA to store inventory and condition data from the Road Inventory Program (RIP) and forecast future performance using prediction models. HPMA uses pavement condition data (collected by the Road Inventory Program) to develop life cycles for pavements and recommend treatments to maximize useable pavement life while minimizing costs associated with maintenance and repair.

The Federal Highway Administration (FHWA) developed a set of manual rating methods for pavement that are appropriate for Federal Roadways. Two different methods were developed for linear roads and a separate method was developed for parking areas and nonlinear roads. These methods employ a 0 to 100 rating scale and improve consistency and objectivity in the manual evaluation of surface distresses. They are compatible with ratings that are collected by the automated Data Collection Vehicle (DCV).

- The first of the two manual evaluation methods for roads uses rating criteria to assign index values to each distress type based on a visual evaluation of severity and extent.
- The second manual evaluation method for roads is very time demanding and is best employed on only a select set of routes which may have the highest visitor use and require a more intensive assessment. This method will be used for the Manual Rating of Function Class 1, 2, 7, and 8 Roads. This method is based on measurements that are recorded for each instance of a surface distress. These measurements are converted into index values using conversion formulas.
- Parking areas and non-linear roads are rated similar to the first method shown above, however, there are some slight differences due to the non-linear nature.

The details and criteria used for each of these rating methods are outlined below.

# **Visual Inspection Method for Manually Rating Secondary Roads**

The visual inspection method for manually rated roads uses condition rating criteria that have been developed by FHWA. This criteria is based on a visual evaluation of the severity and extent of distresses to determine the overall condition of the roadway. This method is used for secondary roads that are Functional Class 3, 4, 5, and 6. This constitutes the majority of manually rated roads collected by the Road Inventory Program.

#### **Rating Section Lengths**

For this method, Manually Rated Roads are rated in sections. These sections may be made based on length of changes in surface type or condition as described below. The ratings are then aggregated to give an overall rating for the Route:

- Rating sections should be no longer than 0.25 miles in order to keep the area being rated manageable.
- A new rating section may be started based on changes in condition, width, or surface type if these changes represent a significant portion of the route (are not isolated instances).
- If the road condition, width, and surface type remain constant then new sections do not need to be created unless the road exceeds 0.25 miles.

#### **Rating Criteria**

For this method, Manually Rated Roads are evaluated using a visual inspection of the six distress types listed below. Each distress is assigned one of five index values. An overall Surface Condition Rating (SCR) and Pavement Condition Rating (PCR) are calculated based on these index values.

- Alligator Cracking
  - o Rating based on percentage of road surface affected
- Longitudinal Cracking
  - o Rating based on severity level (crack width) and percentage of road section length of longitudinal cracks
- Transverse Cracking
  - o Rating based on crack width, crack spacing, and percentage of surface affected
- Patching
  - o Rating based on percentage of road surface affected
- Rutting
  - o Rating based on percentage of road section length affected by visible rutting (>1 inch depth) that requires remediation
- Roughness
  - o Manual assessments of roughness are not made due to the subjectivity of the measurement. Therefore, roughness is not incorporated into the PCR calculation of manually rated roads.

Concrete Routes also receive a PCR rating based on visual evaluation of the following six distress types.

- Slab Faulting at Joints
- Slab Cracking and breakup
- Surface Delamination and Pop-outs
- Joint Distresses
- Patching

# **Distress Measurement Method for Manually Rating Primary Roads**

A more intensive and time demanding assessment than our standard method was developed for Primary roads that are functional class 1, 2, 7, or 8. These high visitation roads are usually accessible by the automated Data Collection Vehicle but in rare instances may need to be manually rated. The method developed is based on measuring each instance of a distress. These measurements are totaled over each section length being measured and are then converted into index values between 0 and 100 (100 being a road with no distress) using index formula equations outlined below. The goal of this method is to produce measured index values which are directly comparable to the automated DCV.

#### **Rating Section Lengths**

For the distress measurement method roads are broken into sections in order to rate. Distress measurements are totaled for each section separately in order to determine the index value for that particular section. The section length to be rated is determined based on the following rules:

- Rating sections are between 0.25 and 0.50 miles long
- A new rating section is created if there is a significant change in condition or pavement width
- If there are no significant changes in condition or pavement width, rating sections are broken at equal intervals, typically 0.50 miles

#### **Manual Distress Measurements**

#### Alligator Cracking

- Alligator cracking is measured by area (square feet). Instances of Alligator cracking are measured along the length and multiplied by the average width of the distressed area.
- The index for alligator cracking takes the total area of cracking compared to the interval length and converts it to a percentage. That percentage is then input into an index formula that yields a value between 0 and 100 (0 being the most distressed).
- Severity levels are not defined for manually measured Alligator cracks. The Alligator Crack Index formula is calculated based on an assumption of medium severity.

#### Longitudinal Cracking

- Longitudinal cracking (cracking in the direction parallel to the roadway) is measured by length (ft.).
- The index for longitudinal cracking takes the total length of cracking compared to the interval length and converts it to a percentage broken down by severity. That percentage is then input into a formula that yields a value between 0 and 100 (0 being the most distressed).
- Two severity levels are defined for manually measured Longitudinal Cracks. Lower severity cracks are those with a mean width of less than 0.25 inches. Sealed cracks with sealant in good condition are also considered lower severity. Higher severity cracks are those with a mean width of greater than 0.25 inches.

#### **Transverse Cracking**

- Transverse cracking (cracking in the direction perpendicular to the roadway) is measured by length (ft).
- The index for transverse cracking takes the total number of cracks (1 crack would encompass the full lane) broken down by severity. The total numbers of each severity are then put into a formula that yields a value between 0 and 100 (0 being the most distressed).
- Two severity levels are defined for manually measured Transverse Cracks. Lower severity cracks are those with a mean width of less than or equal to 0.25 inches. Sealed cracks with sealant in

good condition are also considered lower severity. Higher severity cracks are those with a mean width of greater than 0.25 inches.

#### **Patching and Potholes**

- Patching and Potholes are measured by area (square feet). Instances of Patching are measured along the length and multiplied by the average width of the patch.
- Instances of full lane width patching cannot be longer than 0.100 miles, otherwise is should be considered a pavement change rather than a distress.
- There are no stratified severities for Patching. It is either present or it is not.

#### Rutting

- Visible rutting is measured by length (ft.) in each wheel path. Only visible ruts are rated, which are ruts greater than 1 inch deep.
- All rutting recorded in a manual rating is considered to be high severity (> 1 inch). Lesser severities are generally not distinguishable in a visual inspection.

#### Roughness

• Manual assessments of roughness are not made due to the subjectivity of the measurement. Therefore, roughness is not incorporated into the PCR calculation of manually rated roads.

#### **Index Formulas for Distress Measurement Method:**

The method used to convert distress measurements into index values is shown below. The Surface Condition Rating and Pavement Condition Rating are calculated based on these index values.

#### **Alligator Crack Index for Manual Rating:**

**AC\_INDEX** = 100 – 40 \* (% ALLIGATOR / 15)

#### Where:

%ALLIGATOR = Percent of total area of section being rated that contains Alligator cracking.

#### Longitudinal Crack Index for Manual Rating:

 $LC_{INDEX} = 100 - 40 * [(\%LOW / 175) + (\%MED / 75)]$ 

#### Where:

%LOW = Percent length of longitudinal cracks where crack width less than or equal to 0.25 inches

%HIGH = Percent length of longitudinal cracks where crack width greater than 0.25 inches

#### **Transverse Crack Index for Manual Rating:**

 $TC\_INDEX = (100 - 40) * [(LOW / 21.1) + (MED / 4.4)]$ 

#### Where:

LOW = Count of the total number of transverse cracks within the section length whereone transverse crack is equal to the lane width and the crack width <= 0.25 inchesHIGH = Count of the total number of transverse cracks within the section length whereone transverse crack is equal to the lane width and the crack width > 0.25 inches Number of cracks is computed as: Total length of transverse cracks/Lane width

#### **Patching Index for Manual Rating:**

**PATCH\_INDEX** =(100 – 40) \* (%PATCHING / 80)

#### Where:

**%PATCHING** = Percentage of pavement section that contains patching/potholes.

#### **Rutting Index for Manual Rating:**

**RUT\_INDEX** = 100 - 40 \* (% RUTTING / 40)

#### Where:

**%RUTTING** = Percentage length of high severity rutting within the section being measured.

# Method for Manually Rating Paved Parking Areas and Non-Linear Roads

Parking areas are evaluated based on a visual inspection using condition rating criteria that has been developed by FHWA. This criteria is based on a visual evaluation of the severity and extent of distresses to determine the overall condition of the parking area. This overall condition rating is linked to the level of repair and rehabilitation practices required.

A distress index is determined for each of the distresses listed below for Asphalt and Concrete Parking areas. The overall Pavement Condition Rating (PCR) of the parking lot is driven by the most severe distress present.

#### **Rating Criteria:**

#### **Asphalt Parking Distress Types**

- Alligator Cracking
  - o Rating based on percentage of road surface affected
- Longitudinal, Transverse and Block cracking
  - o Rating based on crack width, crack spacing, and percentage of surface affected
- Rutting and Distortions
  - o Rating based on percentage of road surface affected
- Hot Mix Asphalt Patches
  - o Rating based on overall percentage of HMA patches
- Potholes and Cold Patches
  - o Rating based on percentage of road surface affected
- Surface Raveling and Bleeding
  - o Rating based on percentage of road surface affected

#### **Concrete Parking Distress Types**

- Slab Faulting at Joints
  - o Rating based on height differential between adjacent slabs or pieces of broken slabs
- Slab Cracking and breakup
  - o Rating based on quantity of cracks and if slab is acting to able distribute load as designed
- Surface Delamination and Pop-outs
  - o Rating based on percentage of road surface affected to include pop-outs, spalls and surface delamination
- Joint Distresses
  - o Rating based on sealant condition and concrete distresses at/or adjacent to joints
- Patching
  - o Rating based on percentage of road surface affected

#### **Curb Inspection and Treatments**

During inspections of manually rated parking lots and routes, the curb reveal and overall curb condition are evaluated. The curb condition is used to determine a recommendation.

#### **Curb Reveal**

The vertical distance on the curb face from the gutter flow line or pavement surface to the top of curb. When resurfacing adjacent to curb, the resulting curb reveal should be no less than 4 inches. Additionally, when resurfacing adjacent to a gutter, the resulting pavement surface should be flush with the gutter pan. In cases where a resurfacing would violate either of these parameters, the surface may need to be milled or removed to adjust to these field conditions.

#### **Curb Recommendations**

The following treatment categories are based on the overall percentage of distresses along the entire curb structure for a specific pavement structure. Distresses include spalling, cracking, loss of material and any other damage which prevents the curb from conveying storm runoff or failing to perform in its intended function.

- Overall curb damage ranging 0%-5%: o DO NOTHING
- Overall curb damage ranging 5%-20% o LIGHT REPAIR
- Overall curb damage ranging 20%-50% o MODERATE REPAIR
- Overall curb damage greater than 50%: o REPLACE

## **GPS for Manually Rated Roads and Parking**

GPS information for Manually Collected Cycle 6 Routes will be recorded using the latest hardware and software by TRIMBLE 6000 Series GeoXT. Cycle 6 GPS collection units will allow access to GPS and GLONASS, improving overall GPS reliability, accuracy and precision to submeter accuracy. Additionally, the new GPS units have an enhanced ability to collect accurate signals underneath tree cover or adjacent to buildings or natural terrain with extreme vertical gradations that typically reduce GPS accuracy. Trees and buildings create "satellite shadows", limiting the areas where you can reliably collect high-accuracy GPS data. The updated GPS receiver will deliver improved usable data under tree canopy or in natural or urban canyons. Routes that were previously collected accurately will not be recollected in Cycle 6.

TRIMBLE 6000 SERIES GeoXT GPS SPECIFICATIONS		
Receiver	Trimble Maxwell <sup>™</sup> 6 GNSS chipset	
Channels	220 channels	
Systems	GPS / GLONASS / WAAS	
Accuracy	Sub-meter	
Operation Temperature	-20 °C to +60 °C (-4 °F to +140 °F)	
Cellular and Wireless	UMTS / HSDPA / GPRS / EDGE / Wi-Fi / Bluetooth	
Internal Still Camera w/ GEOTAG ability	Autofocus 5 MP (JPG) and WMV w/ Audio	

# Appendix C Description of Cycle 6 Deliverables

# **Interim Report Delivery**

Partial report will be primarily focused on manually collected routes. The report will be released approximately four months after manual collection of parking lots and other manually collected routes to provide NPS an immediate report on the condition of routes collected manually.

The Interim Report Delivery consists of an Interim Report PDF that contains the following:

- Parking lot and manually rated route conditions
- Route ID Reports
- Route ID Changes Report.

Please note that since the Data Collection Vehicle will have not collected data at this point in time, the following will not be in the Interim Report:

- No park summary information will be provided in the report
- No DCV data will be provided in report
- No road logs will be provided in report
- No maps will be provided in report
- Any mileages collected will be approximate

All data provided in the Interim Report will also be included in the Final Report.

## **Final Report Delivery**

The Final Report will contain all data collected by Manual Inspection and the Data Collection Vehicle. All information provided in the Interim Report will be included in the Final report. Manually collected information reported in the Interim Report may be updated in the Final Report if pavement conditions have substantially changed between the Manual Inspection and Data Collection Vehicle Inspection or other unforeseen circumstances.

The final report will be released approximately 8 months after the Data Collection Vehicle completes its collection of that specific park.

Data included in the Final Report package consists of the following:

- Condition Photos: All photos taken during Cycle 6.
- **Data Video:** Data and video of each route collected by the DCV will viewable through PATHVIEW software. PATHVIEW Software and training will be provided to NPS personnel by Eastern Federal Lands.
- **GPS on All Rated Routes:** All GPS data collected from the DCV will be provided. 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 units.
  - o GPS will be provided as Shapefiles and KMLs
  - o All GPS data related to road collection with be linear referenced to the collected length
- **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 allows RIP to facilitate easier updates and enhancements in the future. A geodatabase can be thought of as simply a database containing spatial data. 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.
- **Report (RIP Report and Route ID):** A PDF report will be provided that includes a list of all routes and key data. Condition reports for each route will be included. All changes, additions and deletions to any route will be included in the report. Features along routes will not be collected in Cycle 6.

# **Partial DCV Collections**

Additional Partial DCV Collections may be done on specific parks depending on their size and overall mileage of routes within its boundaries during Cycle 6. Parks with greater than 10 miles of paved roadways will receive at least one additional Partial DCV collection during Cycle 6. Data collected during these Partial DCV Collections will not result in the delivery of an additional report to the park.

Data collected by the DCV during Partial DCV Collection will be used to improve HPMA modeling by providing additional "snapshots in time" of park pavement conditions. This improved HMPA modeling will assist in the programing and budgeting of future projects which will help maximize the life of pavement infrastructures.

Instead of receiving a report of conditions collected during the Partial DCV collection, the park will receive a formal letter from the Road Inventory Program requesting coordination for the additional Partial DCV collection, identifying the dates of the Partial DCV Collection and will reinforce the purpose and importance of the Partial DCV Collection.

# Appendix D

# **Glossary of Terms and Abbreviations**

<b>Glossary of Terms</b> a	and Abbreviations
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TERM OR ABBREVIATION	DESCRIPTION OR DEFINITION
AC	Alligator Cracking
CRS	Condition Rating Sheets (Section 5)
Curb Recommendation	Curb remediation based on overall percentage of curb distress
Curb Reveal	Height of curb exposed from gutter flow line to top of curb
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
НРМА	Highway Pavement Management Application
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
РАТСН	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