



Federal Lands Highway Road Inventory Program

Road Inventory and Condition Assessment

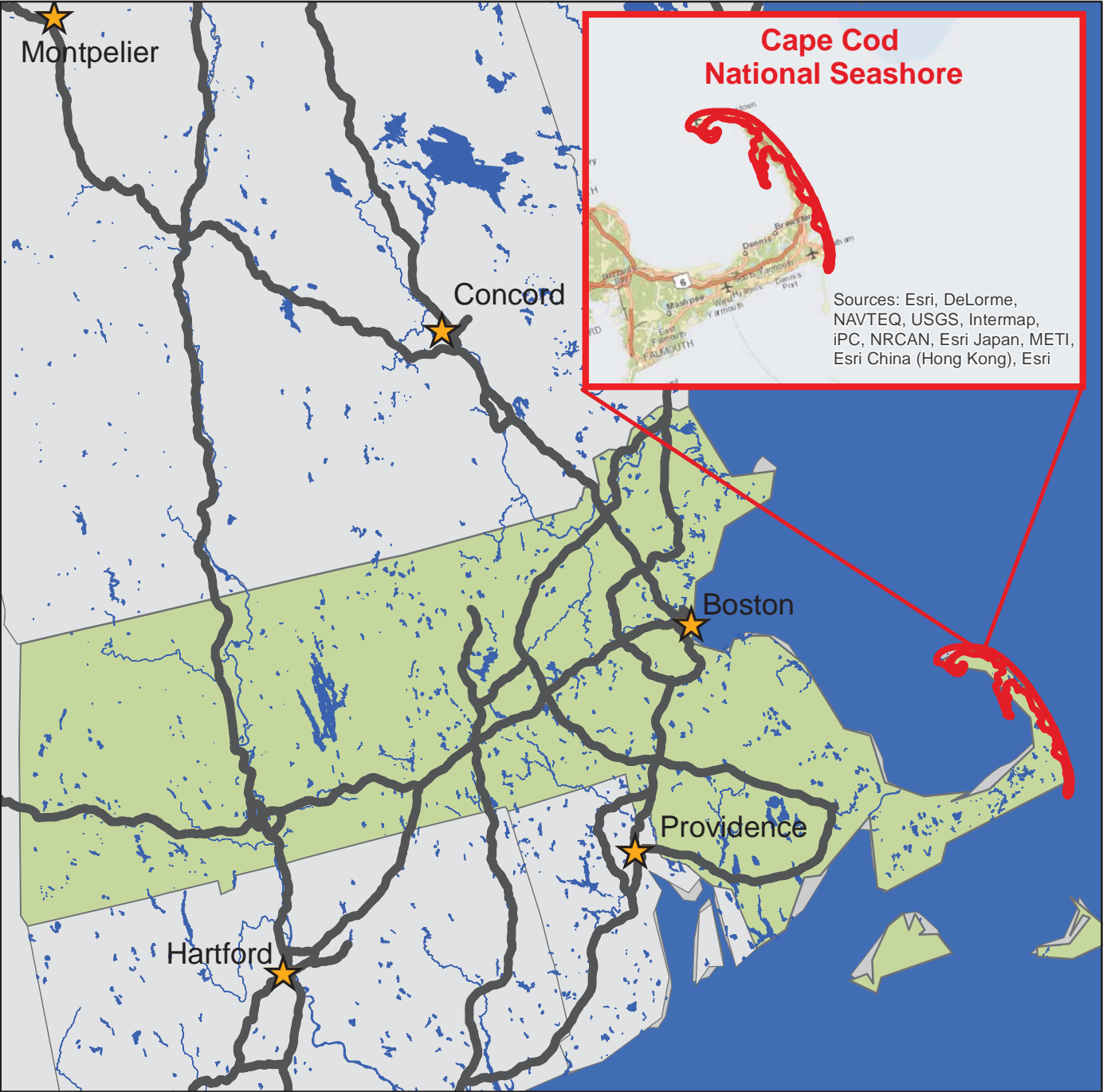


**Cape Cod National Seashore
CACO**

Cycle 5 Report

**Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 08/2013
Report Date: 03/2014**

Cape Cod National Seashore in Massachusetts





DCV = Data Collection Vehicle

TABLE OF CONTENTS

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

Section 1 Introduction



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

INTRODUCTION

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

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

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

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

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

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

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

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

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

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

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

Respectfully,

FHWA RIP Team

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Section 2 Park Route Inventory



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 03/25/2014

(Numerical By Route #)

Page 1 of 9

Shading Color Key:

White = Paved Routes, DCV Driven

Yellow = Unpaved Routes, DCV not Driven

Blue = All Paved Parking Areas

Green = All Unpaved Parking Areas

Red text denotes approx. mileage

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= Concession Route Flag ON

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

** DCV - Data Collection Vehicle

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

CACO

CAPE COD NATIONAL SEASHORE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description		Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
					From	To								
0010	5	32428		DOANE ROAD	FROM ROUTE 0019 (NAUSET ROAD) AT MP 0.21	TO ROUTE 5001 (OCEAN VIEW DRIVE) AT START	N/A	1.01	0.00	1.01	1		AS	5
0011	5	32431		CABLE ROAD	FROM NAUSET ROAD	TO INTERSECTION OF ROUTES 0211 (NAUSET LIGHT BEACH ACCESS ROAD) AND ROUTE 5001 (OCEAN VIEW DRIVE)	N/A	0.93	0.00	0.93	1		AS	5
0012	5	32437		MARCONI BEACH ROAD	FROM STATE ROUTE 6	TO ROUTE 0906 (MARCONI BEACH PARKING)	N/A	1.62	0.00	1.62	1		AS	4
0013	5	32440		MARCONI SITE ROAD	FROM ROUTE 0012 (MARCONI BEACH ROAD) AT MP 0.13	TO ROUTE 0907 (MARCONI STATION SITE PARKING)	N/A	0.98	0.00	0.98	1		AS	4
0014	5	32451		RACE POINT ROAD	FROM PARK BOUNDARY AT PAVEMENT CHANGE	TO ROUTE 0902 (RACE POINT BEACH PARKING)	N/A	1.94	0.00	1.94	1		AS	1
0015	5	32456		PROVINCE LANDS ROAD	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 1.19	TO INTERSECTION OF ROUTES 0017 (MOORS ROAD) AND 0018ZZ (STATE ROUTE 6)	N/A	2.32	0.00	2.32	1		AS	1
0017	5	32459		MOORS ROAD	FROM INTERSECTION OF ROUTES 0015 (PROVINCE LANDS ROAD) AND 0018ZZ (STATE ROUTE 6)	TO PARK BOUNDARY AT PAVEMENT CHANGE	N/A	0.89	0.00	0.89	1		AS	1
0018ZZ	5	32463		STATE ROUTE 6	FROM INTERSECTION OF ROUTES 0015 (PROVINCE LANDS ROAD) AND 0017 (MOORS ROAD)	TO PARK BOUNDARY AT PAVEMENT CHANGE	N/A	0.60	0.00	0.60	1		AS	1
0019	5	32467		NAUSET ROAD	FROM ROUTE 0223 (MACPHERSON WAY)	TO STATE ROUTE 6	N/A	0.87	0.00	0.87	1		AS	5
0020	5	32471		OLD DEWLINE ROAD	FROM SOUTH HIGHLANDS ROAD (TOWN ROAD)	TO INTERSECTION OF ROUTES 0232 (NTAFS ACCESS ROAD) AND 0227 (NTAFS LANDING ROAD)	N/A	0.53	0.00	0.53	1		AS	3
0200	4	32476		FORT HILL AREA ROAD	FROM GOVERNOR PRENCE ROAD (TOWN ROAD)	TO ROUTE 0915 (FORT HILL AREA PARKING)	N/A	0.30	0.00	0.30	3		AS	5

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Page 2 of 9

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CAPE COD NATIONAL SEASHORE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	From	To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0201	4	32477		DOANE ROCK PICNIC AREA ROAD	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.39	TO ROUTE 0911B (DOANE ROCK PICNIC AREA B PARKING)	N/A	0.14	0.00	0.14	3		AS	5
0202ZZ	5	32478		TOMAHAWK TRAIL ROADS	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.31	TO END OF LOOPS	N/A	0.65	0.00	0.65	3		AS	5
0204	4	32480		MARCONI EMPLOYEE PARKING ROAD	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT MP 0.05	TO ROUTE 0917 (PARK HEADQUARTERS EMPLOYEE PARKING)	N/A	0.13	0.00	0.13	5		AS	4
0205	4	32481		HEAD OF THE MEADOW BEACH ROAD	FROM HEAD OF THE MEADOW ROAD (TOWN ROAD)	TO ROUTE 0927 (HEAD OF THE MEADOW PARKING)	N/A	0.12	0.00	0.12	3		AS	2
0206	4	32483		PILGRIM HEIGHTS ROAD	FROM STATE ROUTE 6	TO END OF LOOP	N/A	0.87	0.00	0.87	3		AS	2
0207	NC	32484		HIGH HEAD ROAD	FROM TOWN ROAD	TO ROUTE 0920 (HIGH HEAD ROAD PARKING)	N/A	0.00	0.40	0.40	3		GR	
0209	4	32487		RACE POINT COAST GUARD STATION ROAD	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 1.87	TO ROUTE 0928 (RACE POINT RANGER STATION PARKING)	N/A	0.16	0.00	0.16	3		AS	1
0211	4	32489		NAUSET LIGHT BEACH ACCESS ROAD	FROM INTERSECTION OF ROUTES 5001 (OCEAN VIEW DRIVE) AND ROUTE 0011 (CABLE ROAD)	TO ROUTE 0912 (NAUSET LIGHT BEACH PARKING)	N/A	0.06	0.00	0.06	3		AS	5
0223	4	32517		MACPHERSON WAY	FROM ROUTE 0019 (NAUSET ROAD) AT START	TO END OF PAVEMENT	N/A	0.14	0.00	0.14	3		AS	5
0227	4	32524		NTAFS LANDING ROAD	FROM INTERSECTION OF ROUTES 0020 (OLD DEWLINE ROAD) AND 0232 (NTAFS ACCESS ROAD)	TO INTERSECTION OF ROUTES 0233 (NTAFS FUEL HOUSE ROAD) AND 0229ZZ (SEWAGE TREATMENT PARKING ROADS)	N/A	0.19	0.00	0.19	6	20,064	AS	3
0228	4	32525		WELL ROAD	FROM ROUTE 0230ZZ (NTAFS RESIDENCE ACCESS ROADS)	TO END OF PAVEMENT	N/A	0.05	0.00	0.05	6	3,168	AS	3
0229ZZ	4	32529		SEWAGE TREATMENT PARKING ROADS	FROM INTERSECTION OF ROUTES 0227 (NTAFS LANDING ROAD) AND 0233 (NTAFS FUEL HOUSE ROAD)	TO END	N/A	0.30	0.00	0.30	6	12,672	AS	3
0230ZZ	4	32527		NTAFS RESIDENCE ACCESS ROADS	FROM ROUTE 0227 (NTAFS LANDING ROAD)	THROUGH RESIDENCE AREA	N/A	0.44	0.00	0.44	6	46,464	AS	3

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 03/25/2014

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Page 3 of 9

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0231	4	32538		NAC LABORATORY ACCESS ROAD	FROM ROUTE 0020 (OLD DEWLINE ROAD) AT MP 0.49 TO ROUTE 0922 (NAC LABORATORY PARKING)	N/A	0.08	0.00	0.08	5		AS	3
0232	4	32541		NTAFS ACCESS ROAD	FROM INTERSECTION OF ROUTES 0020 (OLD DEWLINE ROAD) AND 0227 (NTAFS LANDING ROAD) TO PAVEMENT CHANGE AT FAA ACCESS ROAD	N/A	0.19	0.00	0.19	6		AS	3
0233	4	32544		NTAFS FUEL HOUSE ROAD	FROM ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.15 TO INTERSECTION OF ROUTES 0227 (NTAFS LANDING ROAD) AND 0229ZZ (SEWAGE TREATMENT PARKING ROADS)	N/A	0.08	0.00	0.08	6	8,448	AS	3
0234ZZ	5		■	NORTH OF HIGHLAND CAMPGROUND ROADS	FROM HEAD OF THE MEADOW ROAD THROUGH CAMPGROUND	N/A	1.15	0.20	1.35	3		AS	2
0235	5		■	HIGHLAND LIGHTHOUSE ROAD	FROM ROUTE 0949 (HIGHLAND MUSEUM PARKING) TO END AT LIGHTHOUSE	N/A	0.12	0.00	0.12	3		AS	3
0401	4	32553		B-WELL ROAD	FROM ROUTE 0013 (MARCONI SITE ROAD) AT MP 0.28 TO END OF PAVEMENT	N/A	0.25	0.00	0.25	4		AS	4
0402	4	32554		MARCONI RESIDENCE ROAD	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT MP 0.07 TO END	N/A	0.14	0.00	0.14	5		AS	4
0403	4	32556		MARCONI MAINTENANCE AREA ROAD	FROM ROUTE 0013 (MARCONI SITE ROAD) AT MP 0.04 TO ROUTE 0909ZZ (MARCONI MAINTENANCE PARKING AREAS)	N/A	0.11	0.00	0.11	5		AS	4
0405	4	32558		COAST GUARD BEACH SHUTTLE PICKUP ROAD	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.43 TO END OF LOOP	N/A	0.00	0.00	0.00	3	21,896	AS	5
0407ZZ	4	32567		TIN PAN ALLEYS	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 0.08 THROUGH RESIDENCE AREA	N/A	0.19	0.00	0.19	5		AS	1
0900	4	32578		BEECH FOREST PARKING	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 0.13 TO PARKING	N/A	0.00	0.00	0.00		44,989	AS	1
0901	4	32580		PROVINCE LANDS VISITOR CENTER PARKING	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 1.00 TO PARKING	N/A	0.00	0.00	0.00		96,344	AS	1
0902	4	32581		RACE POINT BEACH PARKING	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 1.90 TO ROUTE 0014 (RACE POINT ROAD) AT END	N/A	0.00	0.00	0.00		139,406	AS	1

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Page 4 of 9

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CAPE COD NATIONAL SEASHORE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0903	4	32582		RACE POINT AIR STATION PARKING	ADJACENT TO ROUTE 0209 (RACE POINT COAST GUARD STATION ROAD) AT MP 0.06	N/A	0.00	0.00	0.00		9,718	AS	1
0904	4	32583		PROVINCE LANDS ROAD PARKING	FROM ROUTE 0015 (PROVINCE LANDS ROAD) AT MP 0.41 TO PARKING	N/A	0.00	0.00	0.00		4,769	AS	1
0905AZZ	4	32584		PILGRIM HEIGHTS WEST PARKING AREAS	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.44	N/A	0.00	0.00	0.00		17,424	AS	2
0905BZZ	4	32585		PILGRIM HEIGHTS EAST PARKING AREAS	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.65	N/A	0.00	0.00	0.00		18,528	AS	2
0906	4	32586		MARCONI BEACH PARKING	FROM ROUTE 0012 (MARCONI BEACH ROAD) AT MP 1.42 TO ROUTE 0012 (MARCONI BEACH ROAD) AT END	N/A	0.00	0.00	0.00		221,405	AS	4
0907	4	32587		MARCONI STATION SITE PARKING	FROM ROUTE 0013 (MARCONI SITE ROAD) AT END TO PARKING	N/A	0.00	0.00	0.00		23,393	AS	4
0908	4	32588		PARK HEADQUARTERS PARKING	FROM ROUTE 0013 (MARCONI SITE ROAD) AT MP 0.14 TO ROUTE 0013 (MARCONI SITE ROAD) AT MP 0.22	N/A	0.00	0.00	0.00		22,880	AS	4
0909ZZ	4	32589		MARCONI MAINTENANCE PARKING AREAS	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT MP 0.10 TO PARKING	N/A	0.00	0.00	0.00		57,753	AS	4
0910	4	32590		MARCONI RESIDENCE ROAD PARKING	ADJACENT TO ROUTE 0402 (MARCONI RESIDENCE ROAD) AT MP 0.06	N/A	0.00	0.00	0.00		1,331	AS	4
0911A	4	32593		DOANE ROCK AREA 1 PARKING	FROM ROUTE 0201 (DOANE ROCK PICNIC AREA ROAD) AT MP 0.04 TO ROUTE 0201 (DOANE ROCK PICNIC AREA ROAD) AT MP 0.06	N/A	0.00	0.00	0.00		7,349	AS	5
0911B	4	32594		DOANE ROCK AREA 2 PARKING	FROM ROUTE 0201 (DOANE ROCK PICNIC AREA ROAD) AT END TO PARKING	N/A	0.00	0.00	0.00		14,506	AS	5
0912	4	32595		NAUSET LIGHT BEACH PARKING	FROM ROUTE 0211 (NAUSET LIGHT BEACH ACCESS ROAD) AT END TO PARKING	N/A	0.00	0.00	0.00		73,134	AS	5
0913	4	32596		COAST GUARD BEACH ENVIRONMENTAL EDUCATION CENTER PARKING	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.97 TO PARKING	N/A	0.00	0.00	0.00		57,492	AS	5

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Page 5 of 9

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0914	4	32597		LITTLE CREEK PARKING	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.42	TO PARKING	N/A	0.00	0.00	0.00		209,582	AS	5
0915	4	32598		FORT HILL AREA PARKING	FROM ROUTE 0200 (FORT HILL AREA ROAD) AT END	TO PARKING	N/A	0.00	0.00	0.00		4,130	AS	5
0916	4	32599		FORT HILL LOWER PARKING AREA	FROM ROUTE 0200 (FORT HILL AREA ROAD) AT MP 0.12	TO PARKING	N/A	0.00	0.00	0.00		4,736	AS	5
0917	4	32600		PARK HEADQUARTERS EMPLOYEE PARKING	FROM ROUTE 0204 (MARCONI EMPLOYEE PARKING ROAD) AT END	TO HELIPAD	N/A	0.00	0.00	0.00		28,389	AS	4
0918	4	32601		OLD VEHICLE STORAGE PARKING	FROM ROUTE 0204 (MARCONI EMPLOYEE PARKING ROAD) AT MP 0.13	TO PARKING	N/A	0.00	0.00	0.00		6,603	CO	4
0919	4	32602		SALT POND VISITOR CENTER PARKING	FROM ROUTE 0019 (NAUSET ROAD) AT MP 0.64	TO ROUTE 0019 (NAUSET ROAD) AT MP 0.80	N/A	0.00	0.00	0.00		97,975	AS	5
0920	NC	32603		HIGH HEAD ROAD PARKING	FROM ROUTE 0207 (HIGH HEAD ROAD) AT END	TO PARKING	N/A	0.00	0.00	0.00			GR	
0921	NC	38488		SPECTACLE POND ROAD AND PARKING	FROM LONG POND ROAD	TO PARKING	N/A	0.00	0.00	0.00			GR	
0922	4	32648		NAC LABORATORY PARKING	FROM ROUTE 0231 (NAC LABORATORY ACCESS ROAD) AT END	TO PARKING	N/A	0.00	0.00	0.00		8,440	AS	3
0925	4	32649		PROVINCE LANDS MAINTENANCE PARKING	FROM ROUTE 0407ZZ (TIN PAN ALLEYS)	TO ROUTE 0407ZZ (TIN PAN ALLEYS) AT MP 0.05	N/A	0.00	0.00	0.00		31,875	AS	1
0927	4	32651		HEAD OF THE MEADOW PARKING	FROM ROUTE 0205 (HEAD OF THE MEADOW BEACH ROAD) AT END	TO PARKING	N/A	0.00	0.00	0.00		121,191	AS	2
0928	5	32652		RACE POINT RANGER STATION PARKING	FROM ROUTE 0209 (RACE POINT COAST GUARD STATION ROAD) AT END	TO PARKING	N/A	0.00	0.00	0.00		19,408	AS	1
0929	5	32653		HERRING COVE SOUTH BEACH PARKING	FROM ROUTE 0015 (PROVINCE LANDS ROAD)	TO ROUTE 0017 (MOORS ROAD)	N/A	0.00	0.00	0.00		210,865	AS	1
0930	4	32654		GREAT ISLAND TRAIL AND PICNIC PARKING	FROM CHEQUESSET NECK ROAD (WELLFLEET TOWN ROAD)	TO PARKING	N/A	0.00	0.00	0.00		28,087	AS	6

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 03/25/2014

(Numerical By Route #)

Page 6 of 9

Shading Color Key:

Red text denotes approx. mileage

White = Paved Routes, DCV Driven

Yellow = Unpaved Routes, DCV not Driven

Blue = All Paved Parking Areas

Green = All Unpaved Parking Areas

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Black = State, Local or Private non-NPS Routes

■ = Concession Route Flag ON

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

** DCV - Data Collection Vehicle

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

CACO

CAPE COD NATIONAL SEASHORE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0931	4	32655		NAUSET RANGER STATION PARKING	FROM NAUSET ROAD TO PARKING	N/A	0.00	0.00	0.00		4,004	AS	5
0935A	4	32656		OLD DEWLINE ROAD PARKING A	ADJACENT TO ROUTE 0020 (OLD DEWLINE ROAD) AT MP 0.51	N/A	0.00	0.00	0.00		3,808	AS	3
0935B	5	32657		OLD DEWLINE ROAD PARKING B	ADJACENT TO ROUTE 0020 (OLD DEWLINE ROAD) AT MP 0.49	N/A	0.00	0.00	0.00		1,520	AS	3
0937A	4	32658		NTAFS ACCESS ROAD A PARKING	ADJACENT TO ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.06	N/A	0.00	0.00	0.00		8,142	AS	3
0937B	4	32659		NTAFS ACCESS ROAD B PARKING	ADJACENT TO ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.06	N/A	0.00	0.00	0.00		9,737	AS	3
0937C	4	32660		NTAFS ACCESS ROAD C PARKING	ADJACENT TO ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.12	N/A	0.00	0.00	0.00		2,200	AS	3
0938	4	32661		AIR FORCE MAINTENANCE AREA PARKING	FROM ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.13 TO ROUTE 0232 (NTAFS ACCESS ROAD) AT MP 0.15	N/A	0.00	0.00	0.00		38,380	AS	3
0939A	4	32662		NTAFS FUEL HOUSE ROAD A PARKING	ADJACENT TO ROUTE 0233 (NTAFS FUEL HOUSE ROAD) ON RIGHT	N/A	0.00	0.00	0.00		3,125	AS	3
0939B	4	32663		NTAFS FUEL HOUSE ROAD B PARKING	ADJACENT TO ROUTE 0233 (NTAFS FUEL HOUSE ROAD) ON LEFT	N/A	0.00	0.00	0.00		4,080	AS	3
0939C	5	32664		NTAFS FUEL HOUSE ROAD C PARKING	FROM ROUTE 0233 (NTAFS FUEL HOUSE ROAD) ON LEFT TO PARKING	N/A	0.00	0.00	0.00		6,059	AS	3
0940	4	32665		HEAT PLANT PARKING	FROM ROUTE 0227 (NTAFS LANDING ROAD) TO ROUTE 0233 (NTAFS FUEL HOUSE ROAD)	N/A	0.00	0.00	0.00		6,828	AS	3
0941	4	32666		WATER PLANT PARKING	FROM ROUTE 0227 (NTAFS LANDING ROAD) TO ROUTE 0937A (NTAFS ACCESS ROAD A PARKING)	N/A	0.00	0.00	0.00		20,663	AS	3
0943	4	32668		SEWAGE TREATMENT PARKING	FROM HELIPAD OFF ROUTE 0229BZ (SEWAGE TREATMENT PARKING ROAD B) TO PARKING	N/A	0.00	0.00	0.00		2,432	AS	3
0944	NC	32551		CRANBERRY BOG TRAIL PARKING	ADJACENT TO NORTH PAMET ROAD	N/A	0.00	0.00	0.00		1,600	GR	

Cycle 5 NPS/RIP Route ID Report

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Blue = All Paved Parking Areas
Red = Concession Route Flag ON

Green = All Unpaved Parking Areas

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CYCLE 5 COLLECTED SUMMARY TOTALS FOR CAPE COD NATIONAL SEASHORE

<u>CYCLE 5 COLLECTED ROUTE TOTALS</u>	
DCV Driven Route Miles	12.94
Manually Rated Route Miles	0.09
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	13.02
Manually Rated Routes (SQFT)	0.00

<u>* CYCLE 5 COLLECTED PARKING AREA TOTALS</u>	
Paved Parking (SQFT)	436,159

<u>CYCLE 5 COLLECTED CONCESSION TOTALS</u>	
Concession Paved Route Miles	1.28
Concession Paved Parking Area SQFT	85,704
Concession Manually Rated Routes SQFT	4,804

<u>CYCLE 5 COLLECTED WEIGHTED AVERAGE PARK VALUES</u>	
DCV Driven PCR	91
**Manually Rated Routes PCR	45
**Parking PCR	50
***Total Equivalent Lane Miles	36.45

TOTAL PARK SUMMARY FOR CAPE COD NATIONAL SEASHORE

<u>ROUTE TOTALS</u>	
TOTAL PAVED PARK ROUTE MILES	17.55
TOTAL PAVED PARKING (SQFT)	1,890,987

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

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

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

Cycle 5 NPS/RIP Route ID Report

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General Park Road Functional Classification Table

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

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

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

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

Surface Type Abbreviations:

- AS - Asphaltic Concrete Pavement**
- CO - Portland Cement Concrete Pavement**
- BR - Brick or Pavers Road Bed**
- CB - Cobble Stone Road Bed**
- GR - Gravel Road Bed**
- SA - Sand Road Bed**
- NV - Native or Dirt Material Road Bed**
- OT - Other Materials Road Bed**

NPS/RIP Subcomponent Details for CACO

Road Inventory Program 03/25/2014

(Numerical By Subcomponent #)

Page 1 of 6

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CACO

CAPE COD NATIONAL SEASHORE

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0018ZZ	32463	5	STATE ROUTE 6	FROM INTERSECTION OF ROUTES 0015 (PROVINCE LANDS ROAD) AND 0017 (MOORS ROAD)	TO PARK BOUNDARY AT PAVEMENT CHANGE		1	0.60	0.00	0.60	
0202ZZ	32478	5	TOMAHAWK TRAIL ROADS	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.31	TO END OF LOOPS		3	0.65	0.00	0.65	
0229ZZ	32529	4	SEWAGE TREATMENT PARKING ROADS	FROM INTERSECTION OF ROUTES 0227 (NTAFS LANDING ROAD) AND 0233 (NTAFS FUEL HOUSE ROAD)	TO END		6	0.30	0.00	0.30	12,672
0230ZZ	32527	4	NTAFS RESIDENCE ACCESS ROADS	FROM ROUTE 0227 (NTAFS LANDING ROAD)	THROUGH RESIDENCE AREA		6	0.44	0.00	0.44	46,464
0234ZZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROADS	FROM HEAD OF THE MEADOW ROAD	THROUGH CAMPGROUND		3	1.15	0.20	1.35	
0407ZZ	32567	4	TIN PAN ALLEYS	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 0.08	THOUGH RESIDENCE AREA		5	0.19	0.00	0.19	
0905AZZ	32584	4	PILGRIM HEIGHTS WEST PARKING AREAS	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.44				0.00	0.00	0.00	17,424
0905BZZ	32585	4	PILGRIM HEIGHTS EAST PARKING AREAS	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.65				0.00	0.00	0.00	18,528
0909ZZ	32589	4	MARCONI MAINTENANCE PARKING AREAS	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT MP 0.10	TO PARKING			0.00	0.00	0.00	57,753
0948ZZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND PARKING AREAS	FROM ROUTE 0234ZZ (NORTH OF HIGHLAND CAMPGROUND ROADS)	TO PARKING			0.00	0.00	0.00	20,119

NPS/RIP Subcomponent Details for CACO

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Page 2 of 6

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CACO

CAPE COD NATIONAL SEASHORE

CACO-0018ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description		Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From						
0018AZ	32463	5	WESTBOUND STATE ROUTE 6	FROM INTERSECTION OF ROUTES 0015 (PROVINCE LANDS ROAD) AND 0017 (MOORS ROAD)		1	0.35	0.00	0.35	
0018BZ	32463	5	EASTBOUND STATE ROUTE 6	FROM PARK BOUNDARY AT PAVEMENT CHANGE		1	0.25	0.00	0.25	
				TO PARK BOUNDARY AT PAVEMENT CHANGE						
				TO MERGE WITH ROUTE 0018AZ (WESTBOUND STATE ROUTE 6)						

CACO-0202ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description		Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From						
0202AZ	32478	4	TOMAHAWK TRAIL ROAD A	FROM ROUTE 0010 (DOANE ROAD) AT MP 0.31		3	0.59	0.00	0.59	
0202BZ	32478	5	TOMAHAWK TRAIL ROAD B	FROM ROUTE 0202AZ (TOMAHAWK TRAIL ROAD A)		3	0.06	0.00	0.06	
				TO END OF LOOP						
				TO END OF LOOP						

CACO-0229ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description		Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From						
0229AZ	32529	4	SEWAGE TREATMENT PARKING ROAD A	FROM INTERSECTION OF ROUTES 0227 (NTAFS LANDING ROAD) AND 0233 (NTAFS FUEL HOUSE ROAD)		6	0.17	0.00	0.17	7,181
0229BZ	32529	4	SEWAGE TREATMENT PARKING ROAD B	FROM ROUTE 0229AZ (SEWAGE TREATMENT PARKING ROAD A)		6	0.13	0.00	0.13	5,491
				TO END OF PAVEMENT						
				TO END OF PAVEMENT						

NPS/RIP Subcomponent Details for CACO

Road Inventory Program 03/25/2014

(Numerical By Subcomponent #)

Page 3 of 6

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CACO

CAPE COD NATIONAL SEASHORE

CACO-0230ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0230AZ	32527	4	NTAFS RESIDENCE STREET A	FROM INTERSECTION OF ROUTES 0230Z (NTAFS RESIDENCE ACCESS ROAD) AND 0230BZ (NTAFS RESIDENCE STREET B)	TO END OF PAVEMENT		6	0.05	0.00	0.05	5,280
0230BZ	32527	4	NTAFS RESIDENCE STREET B	FROM INTERSECTION OF ROUTES 0230Z (NTAFS RESIDENCE ACCESS ROAD) AND 0230AZ (NTAFS RESIDENCE STREET A)	TO END OF PAVEMENT		6	0.05	0.00	0.05	5,280
0230Z	32527	4	NTAFS RESIDENCE ACCESS ROAD	FROM ROUTE 0227 (NTAFS LANDING ROAD)	TO ROUTE 0227 (NTAFS LANDING ROAD)		6	0.34	0.00	0.34	35,904

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CACO

CAPE COD NATIONAL SEASHORE

CACO-0234ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0234AZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD A	FROM HEAD OF THE MEADOW ROAD	TO END OF UNPAVED SECTION AT MP 0.52	■	3	0.32	0.20	0.52	
0234BZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	TO INTERSECTION WITH ROUTES 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C) AND 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)	■	3	0.21	0.00	0.21	
0234CZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD C	FROM INTERSECTION WITH ROUTES 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)) AND 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)	TO ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	■	3	0.05	0.00	0.05	
0234DZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4)	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	TO END AT UNPAVED CAMPGROUND ROADS	■	3	0.25	0.00	0.25	
0234EZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3)	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	TO END AT UNPAVED CAMPGROUND ROADS	■	3	0.07	0.00	0.07	
0234FZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD F	FROM ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))	TO END OF LOOP AT ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))	■	3	0.14	0.00	0.14	
0234GZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD G	FROM ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))	TO ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))	■	3	0.04	0.00	0.04	
0234HZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD H (AREA 2)	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	TO END AT UNPAVED CAMPGROUND ROADS	■	3	0.01	0.00	0.01	805
0234IZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD I	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	TO DEAD END	■	3	0.03	0.00	0.03	1,375
0234JZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD J	FROM ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))	TO END AT UNPAVED CAMPGROUND ROADS	■	3	0.02	0.00	0.02	1,293
0234KZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND ROAD K	FROM ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))	TO DEAD END	■	3	0.03	0.00	0.03	1,331

NPS/RIP Subcomponent Details for CACO

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Page 5 of 6

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CACO

CAPE COD NATIONAL SEASHORE

CACO-0407ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description			Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From	To						
0407AZ	32567	4	TIN PAN ALLEY A	FROM ROUTE 0014 (RACE POINT ROAD) AT MP 0.08	TO END OF PAVEMENT		5	0.14	0.00	0.14	
0407BZ	32567	4	TIN PAN ALLEY B	FROM ROUTE 0407AZ (TIN PAN ALLEY A)	TO END OF PAVEMENT		5	0.05	0.00	0.05	5,280

CACO-0905AZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description			Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From	To						
0905AAZ	32584	4	PILGRIM HEIGHTS WEST PARKING AREA A	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.44			0.00	0.00	0.00	9,682	
0905ABZ	32584	4	PILGRIM HEIGHTS WEST PARKING AREA B	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.44			0.00	0.00	0.00	7,742	

CACO-0905BZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Description			Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
			Route Name	From	To						
0905BAZ	32585	4	PILGRIM HEIGHTS EAST PARKING AREA A	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.65			0.00	0.00	0.00	8,266	
0905BBZ	32585	4	PILGRIM HEIGHTS EAST PARKING AREA B	ADJACENT TO ROUTE 0206 (PILGRIM HEIGHTS ROAD) AT MP 0.65			0.00	0.00	0.00	10,262	

NPS/RIP Subcomponent Details for CACO

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Page 6 of 6

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CACO

CAPE COD NATIONAL SEASHORE

CACO-0909ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0909AZ	32589	4	MARCONI MAINTENANCE PARKING A	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT END	TO PARKING			0.00	0.00	0.00	48,461
0909BZ	32589	4	MARCONI MAINTENANCE PARKING B	FROM ROUTE 0403 (MARCONI MAINTENANCE AREA ROAD) AT MP 0.10	TO PARKING			0.00	0.00	0.00	9,292

CACO-0948ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	From	To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0948AZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND OFFICE PARKING	FROM ROUTE 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)	TO ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)	■		0.00	0.00	0.00	9,078
0948BZ	N/A	5	NORTH OF HIGHLAND CAMPGROUND STORE PARKING	FROM ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))	TO INTERSECTION OF ROUTES 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)) AND 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)	■		0.00	0.00	0.00	10,042
0948CZ	N/A	5	18 AND OLDER BUILDING PARKING	FROM ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))	TO PARKING	■		0.00	0.00	0.00	999

ROUTES ADDED FROM PREVIOUS INVENTORY:

Route #	Route Name	Reason for Addition	Comments
0234ZZ	NORTH OF HIGHLAND CAMPGROUND ROADS	OTHER	THE CAMPGROUND ROADS WERE ADDED TO THE INVENTORY IN CYCLE 5. ALL CAMPGROUND ROADS ARE CONCESSIONAIRE ROUTES. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.
0235	HIGHLAND LIGHTHOUSE ROAD	OTHER	NEW ROUTE ADDED TO INVENTORY IN CYCLE 5. THIS IS A CONCESSIONAIRE ROUTE. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.
0948ZZ	NORTH OF HIGHLAND CAMPGROUND PARKING AREAS	OTHER	NORTH OF HIGHLAND CAMPGROUND PARKING AREAS WERE ADDED TO THE INVENTORY IN CYCLE 5. ALL CAMPGROUND PARKING AREAS ARE CONCESSIONAIRE ROUTES. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.
0949	HIGHLAND MUSEUM PARKING	OTHER	PARKING AREA ADDED TO INVENTORY IN CYCLE 5. IT IS A CONCESSION ROUTE. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.
0950	HIGHLAND LIGHTHOUSE HANDICAPPED PARKING	OTHER	PARKING AREA ADDED TO INVENTORY IN CYCLE 5. IT IS A CONCESSION ROUTE. CONDITION DATA WAS NOT COLLECTED BECAUSE THE PAVED SURFACE WAS COVERED IN GRAVEL. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.
0951	NAUSET KNOLLS MOTEL PARKING	OTHER	PARKING AREA ADDED TO INVENTORY IN CYCLE 5. IT IS A CONCESSION ROUTE. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.

ROUTES MODIFIED FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Modification	Comments
0017	MOORS ROAD	REALIGNED	ROUTE WAS REALIGNED NEAR THE INTERSECTION WITH ROUTES 0015 (PROVINCE LANDS ROAD) AND 0018ZZ (STATE ROUTE 6).
0018ZZ	STATE ROUTE 6	REALIGNED	THE INTERSECTION WITH ROUTE 0015 (PROVINCE LANDS ROAD) AND ROUTE 0017 (MOORS ROAD) WAS RECONFIGURED SINCE CYCLE 4. THE EASTBOUND LANE WAS COLLECTED IN CYCLE 5 DUE TO THE MEDIAN SEPARATION AND RECONSTRUCTION.

OTHER CHANGES FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Change	Comments
0202ZZ	TOMAHAWK TRAIL ROADS	ROUTES COMBINED	CYCLE 4 ROUTE 0202 WAS COMBINED WITH A NEW ROAD (TOMAHAWK TRAIL ROAD B) THAT WAS ADDED TO THE INVENTORY IN CYCLE 5.
0407ZZ	TIN PAN ALLEYS	ROUTE NAME	ROUTE NAME CHANGED FROM "PROVINCE LANDS RESIDENCE ROADS".
0911A	DOANE ROCK AREA 1 PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "DOANE ROCK PICNIC AREA A PARKING".
0911B	DOANE ROCK AREA 2 PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "DOANE ROCK PICNIC AREA B PARKING".
0914	LITTLE CREEK PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "COAST GUARD BEACH BUS STOP PARKING".
0915	FORT HILL AREA PARKING	ROUTE NAME	ROUTE NAME CHANGED FROM "FORT HILL UPPER PARKING AREA".
0928	RACE POINT RANGER STATION PARKING	SQ FEET CHANGE	A PORTION OF THE SHAPE WAS REMOVED BECAUSE IT HAS BEEN PERMANENTLY COVERED BY SAND DUNES.
0929	HERRING COVE SOUTH BEACH PARKING	ROUTE SPLIT	PARKING AREA SPLIT INTO ROUTES 0929 AND 0946 IN CYCLE 5. ROUTE 0929 GPS WAS RECOLLECTED TO SHOW NEW ACCESS ROAD, ADDED BIKE LANE, AND SLIGHT RECONSTRUCTION AROUND THE BEACH HOUSE. ROUTE NAME CHANGED FROM "HERRING COVE BEACH PARKING".
0935B	OLD DEWLINE ROAD PARKING B	SQ FEET CHANGE	IMPROVED GPS WAS COLLECTED IN CYCLE 5 AND THE SQUARE FOOTAGE WAS UPDATED.
0939C	NTAFS FUEL HOUSE ROAD C PARKING	SQ FEET CHANGE	IMPROVED GPS WAS COLLECTED IN CYCLE 5 AND THE SQUARE FOOTAGE WAS UPDATED.

OTHER CHANGES FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Change	Comments
0946	HERRING COVE NORTH BEACH PARKING	ROUTE SPLIT	SPLIT FROM CYCLE 4 ROUTE 0929. GPS RECOLLECTED IN CYCLE 5 TO SHOW A WIDER ENTRANCE FOR THE NEW BIKE LANE. FMSS NUMBER NOT AVAILABLE AT THE TIME OF CYCLE 5 REPORT PUBLICATION.

Section 3

Park Summary Information



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

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

F.C.	Pavement Condition Rating (PCR)								TOTAL MILES
	Poor (0-60)		Fair (61-84)		Good (85-94)		Excellent (95-100)		
	MILES	%	MILES	%	MILES	%	MILES	%	
1	0.42	3.25%	1.94	14.99%	3.74	28.90%	5.59	43.20%	11.69
2									
3	0.23	1.78%	0.61	4.71%	0.35	2.70%	0.06	0.46%	1.25
4									
5									
6									
7									
8									
Totals	0.65	5.02%	2.55	19.71%	4.09	31.61%	5.65	43.66%	12.94

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

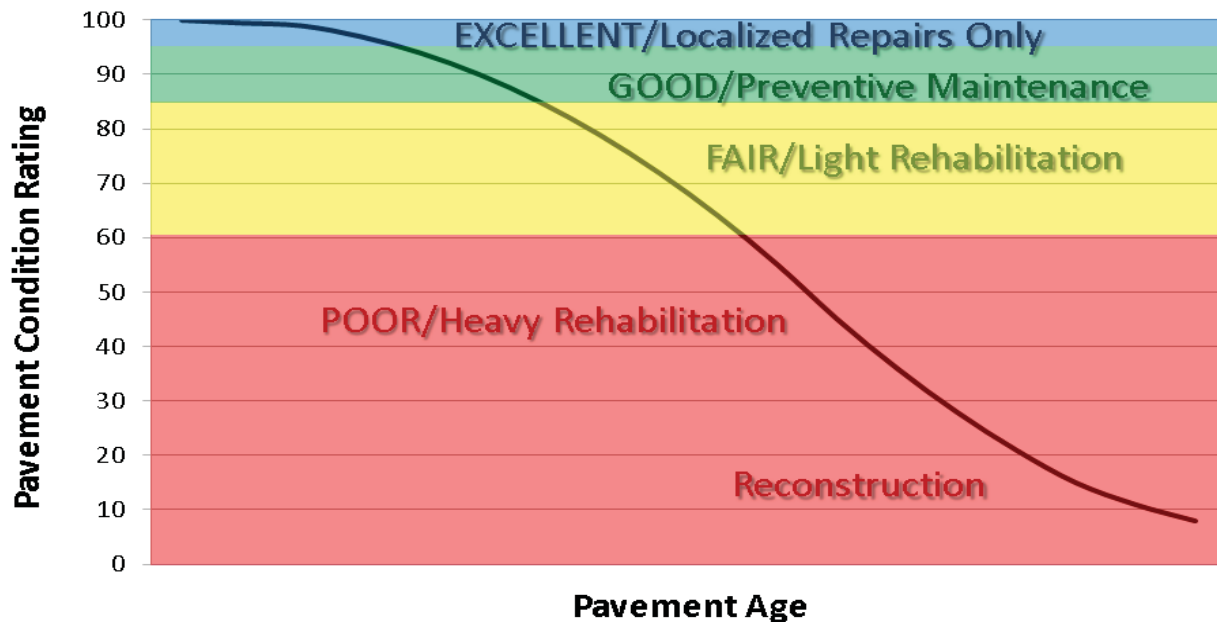
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

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

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

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

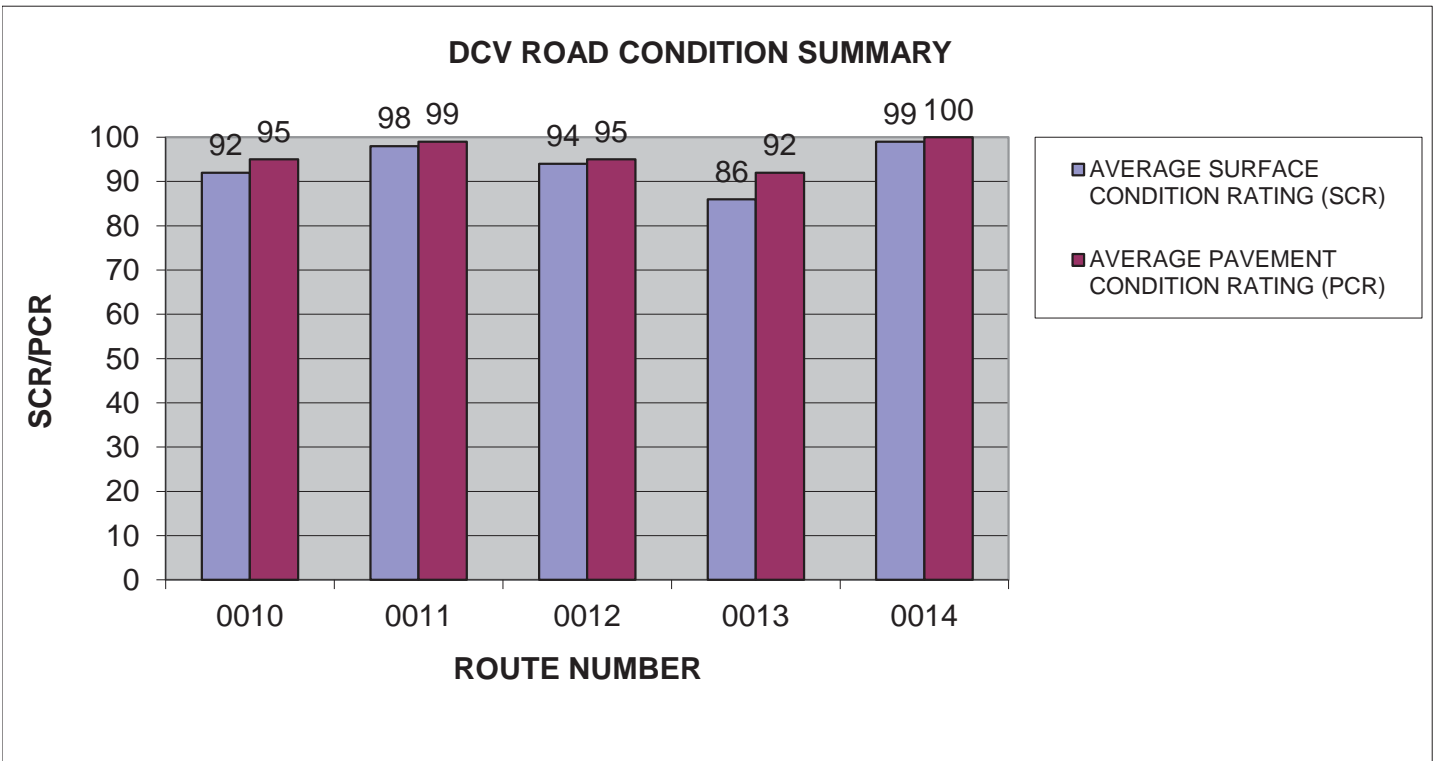
Condition Categories and Treatments



CACO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

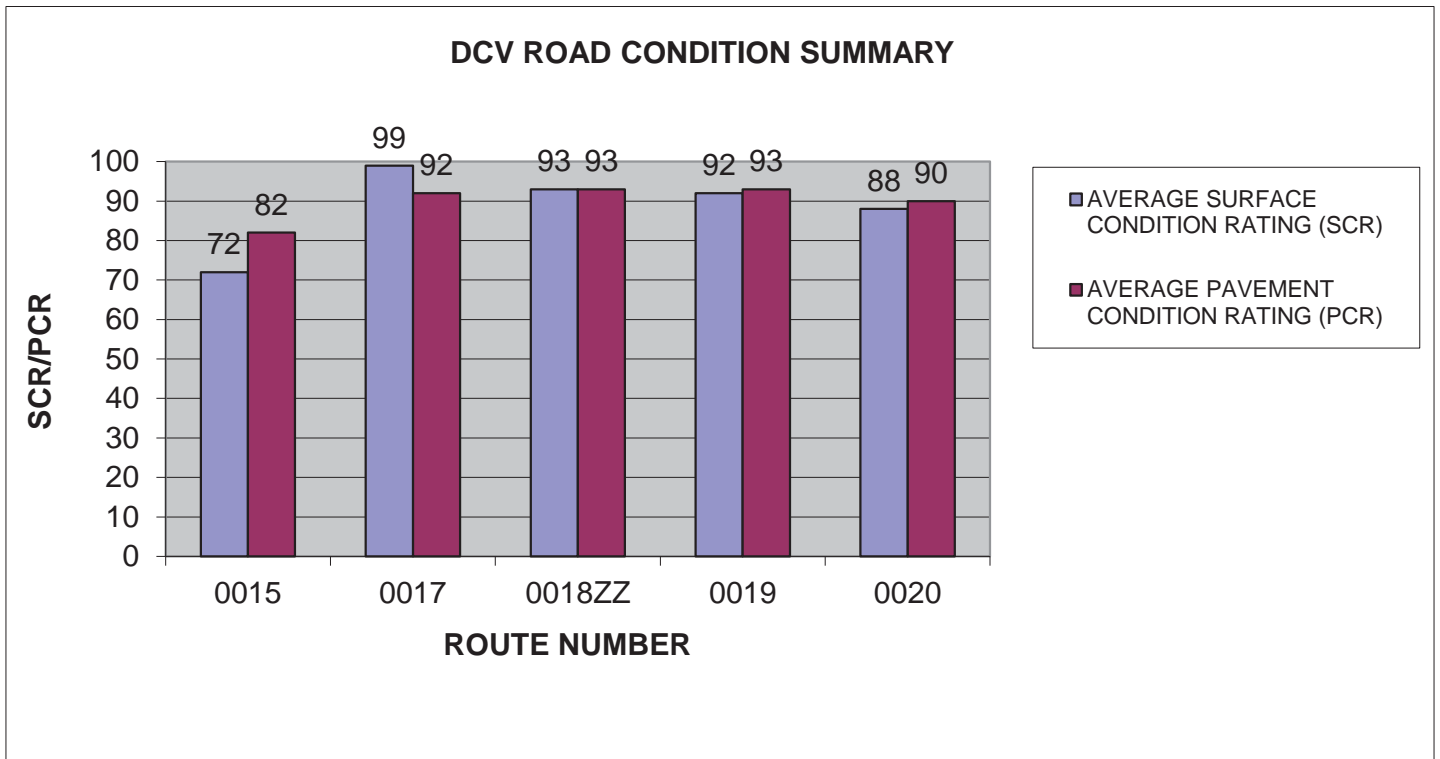
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	DOANE ROAD	1	1.01	ASPHALT	92	95
0011	CABLE ROAD	1	0.93	ASPHALT	98	99
0012	MARCONI BEACH ROAD	1	1.62	ASPHALT	94	95
0013	MARCONI SITE ROAD	1	0.98	ASPHALT	86	92
0014	RACE POINT ROAD	1	1.94	ASPHALT	99	100



CACO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

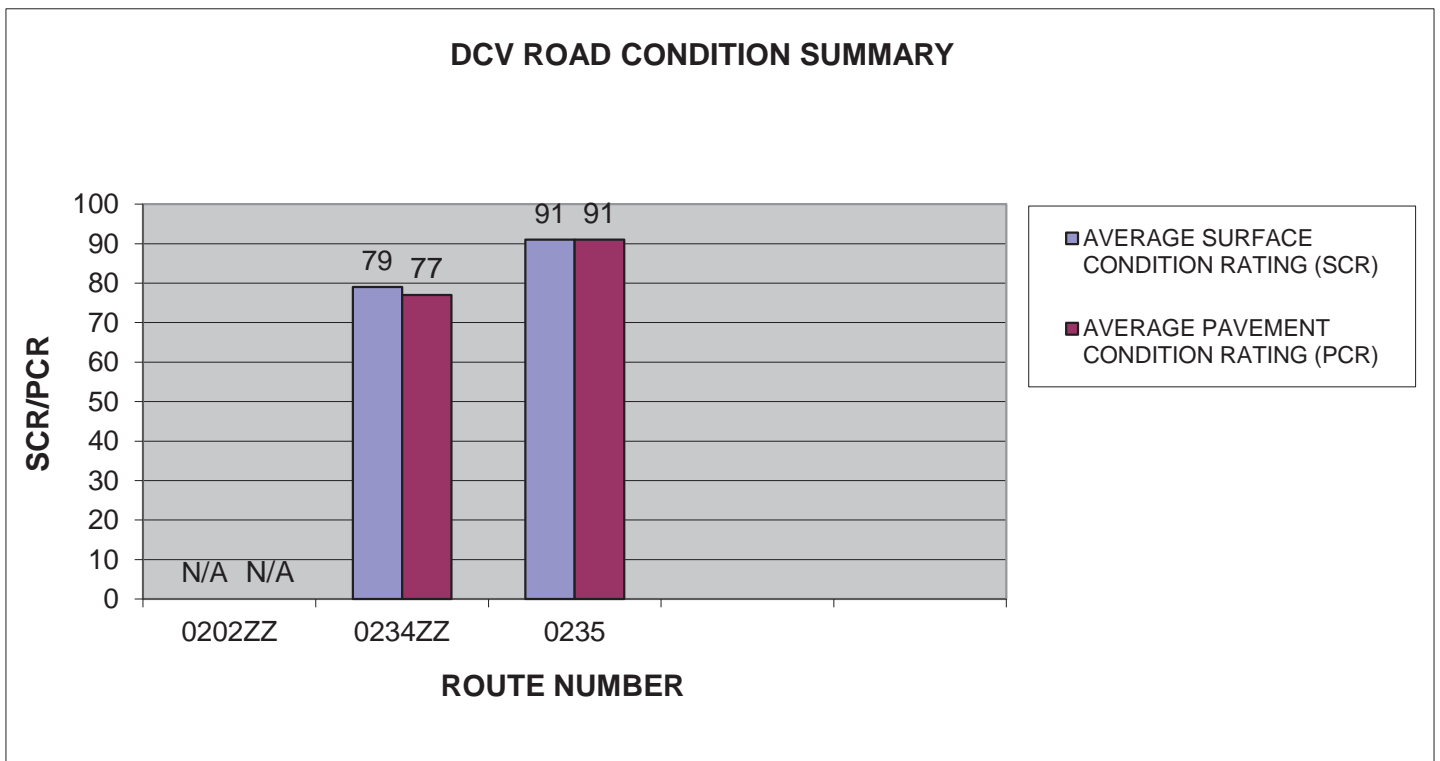
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0015	PROVINCE LANDS ROAD	1	2.32	ASPHALT	72	82
0017	MOORS ROAD	1	0.89	ASPHALT	99	92
0018ZZ	STATE ROUTE 6	1	0.60	ASPHALT	93	93
0019	NAUSET ROAD	1	0.87	ASPHALT	92	93
0020	OLD DEWLINE ROAD	1	0.53	ASPHALT	88	90



CACO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0202ZZ	TOMAHAWK TRAIL ROADS	3	0.65	ASPHALT	N/A	N/A
0234ZZ	NORTH OF HIGHLAND CAMPGROUND ROADS	3	1.15	ASPHALT	79	77
0235	HIGHLAND LIGHTHOUSE ROAD	3	0.12	ASPHALT	91	91



Section 4

Park Route Location Maps

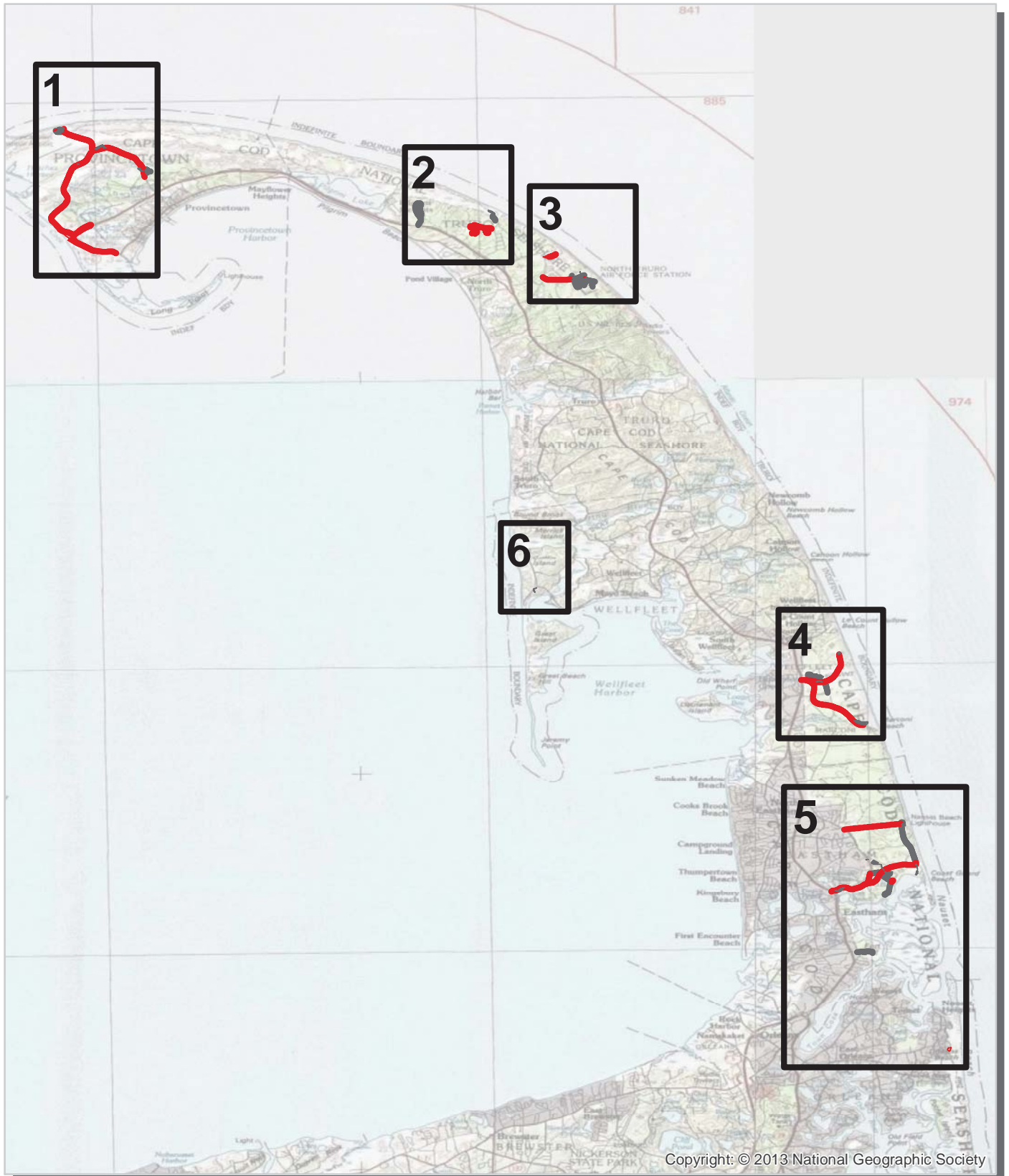


Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

Cape Cod National Seashore Route Location Map Key Map

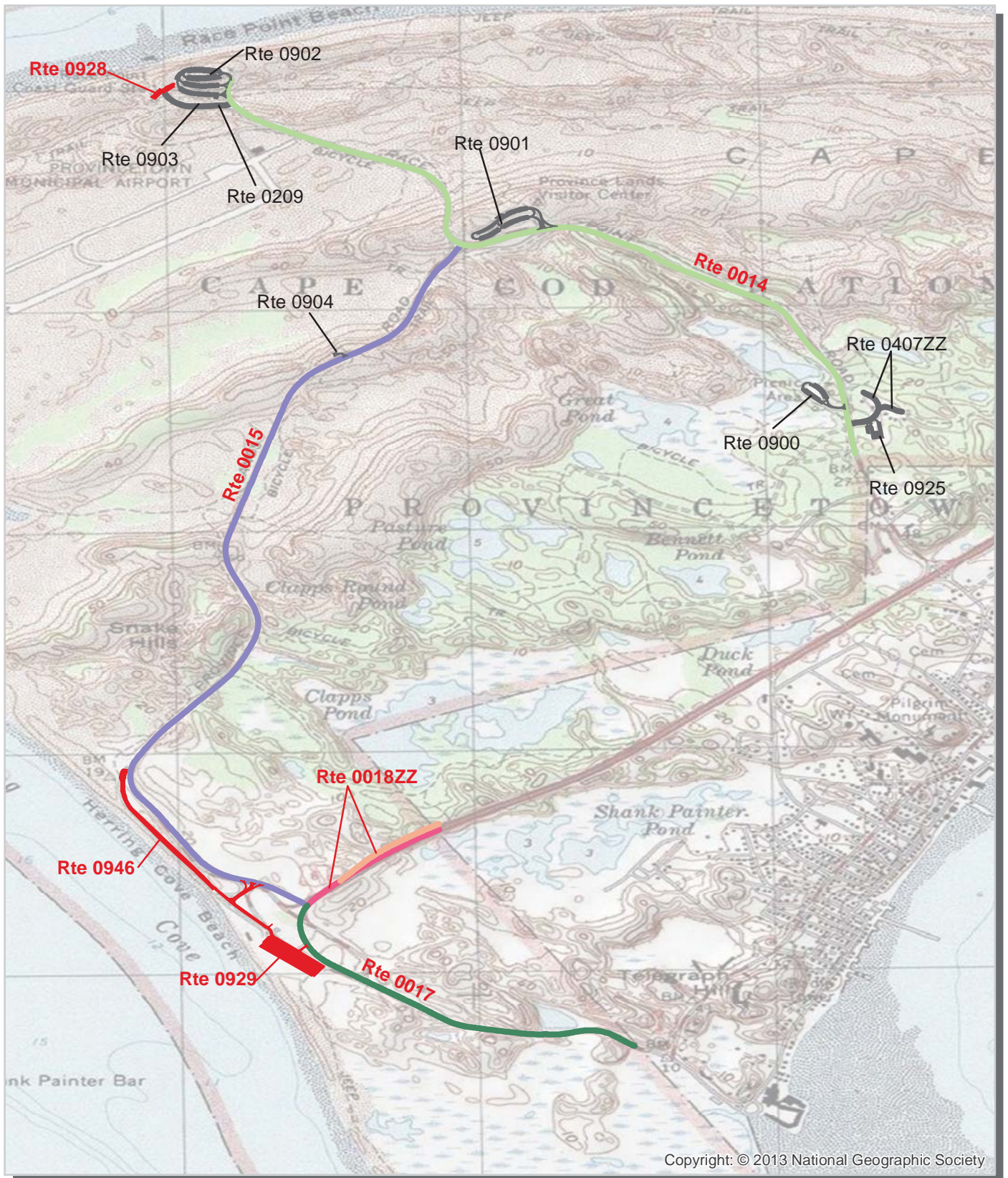


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— Cycle 5 Collected Routes
— Routes Collected in Previous Cycle



Cape Cod National Seashore Route Location Map Area 1



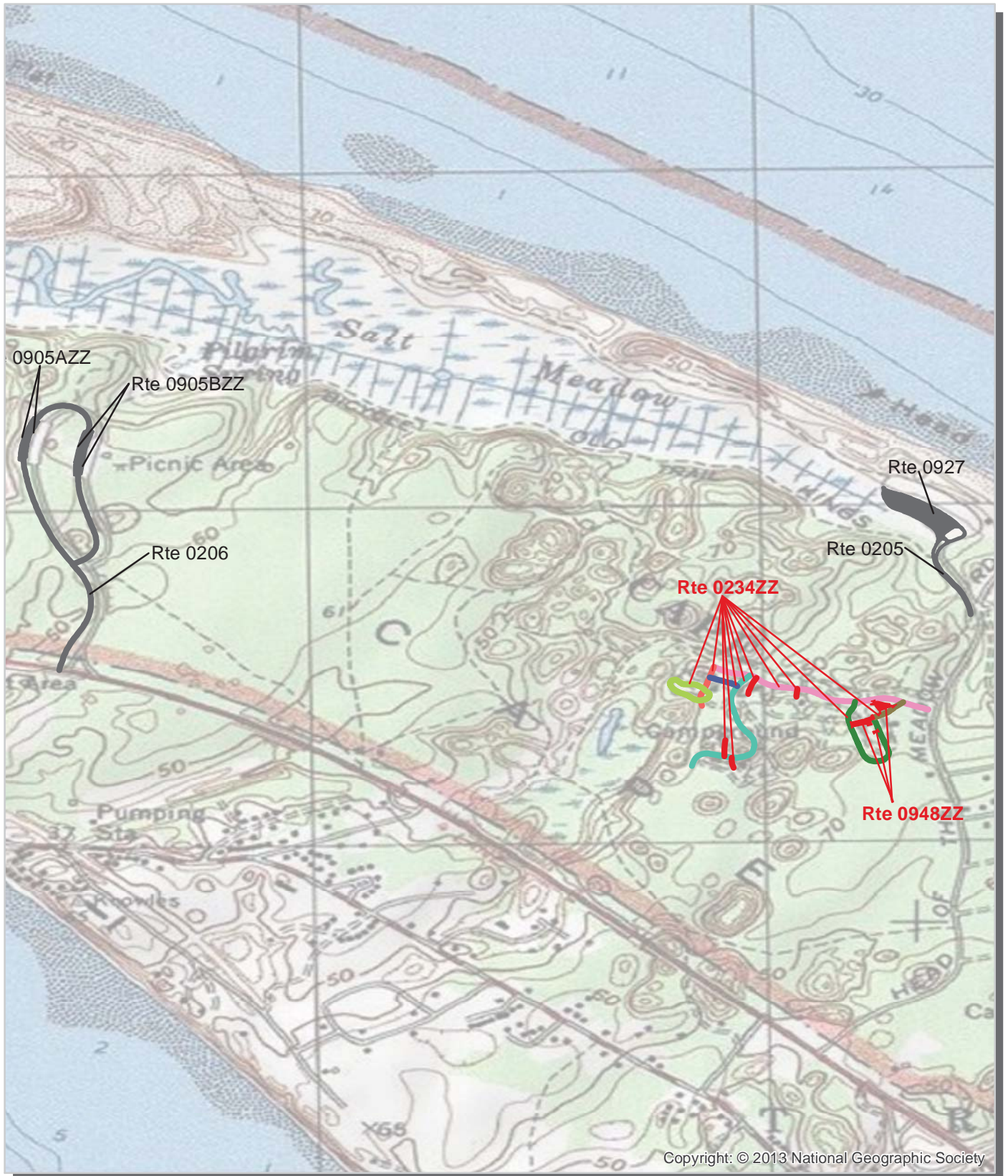
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Unique colors used to differentiate routes

— Routes Collected in Previous Cycle

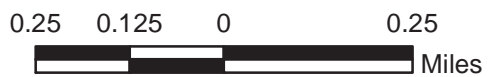


Cape Cod National Seashore Route Location Map Area 2

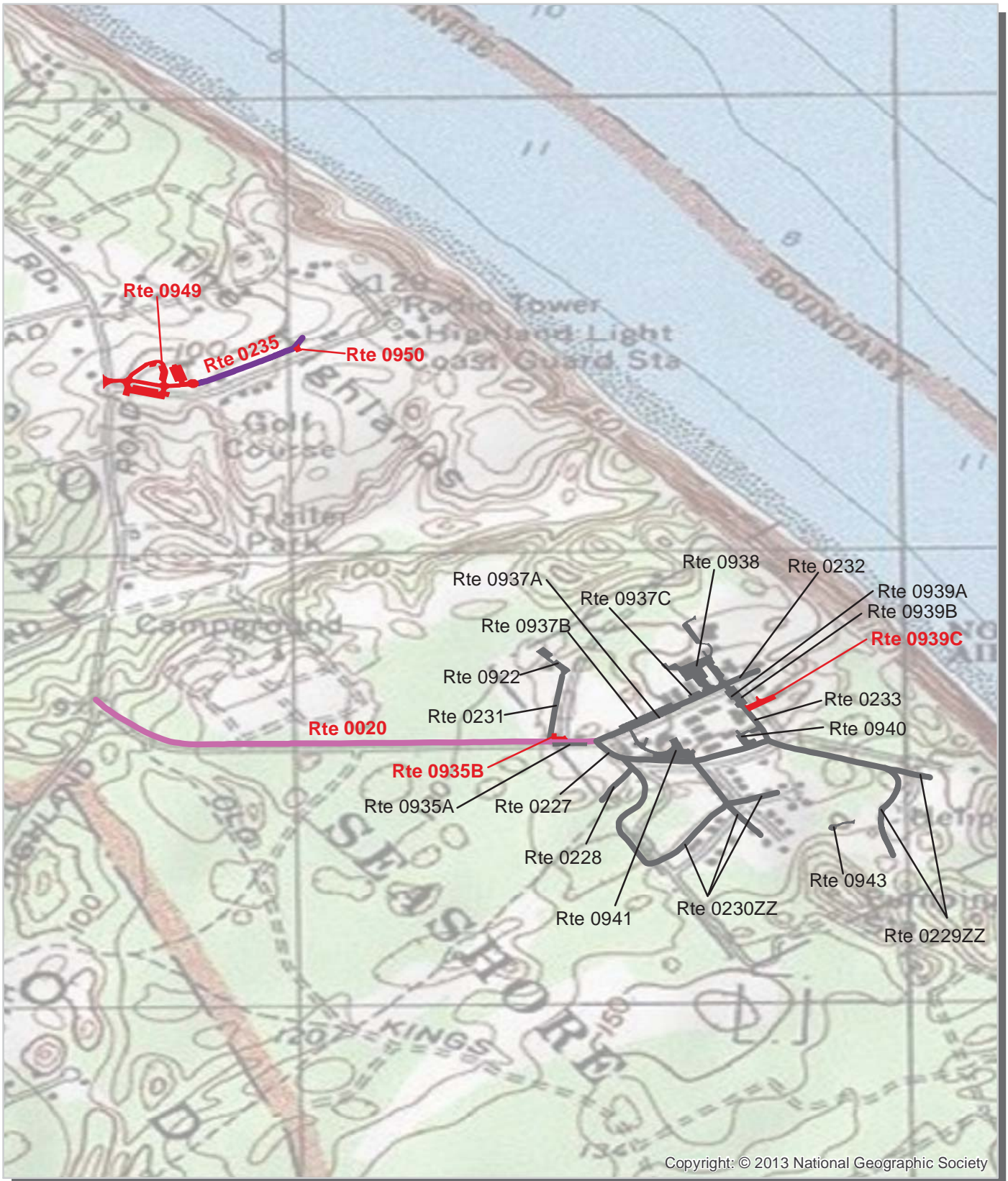


Unique colors used to differentiate routes

Routes Collected in Previous Cycle



Cape Cod National Seashore Route Location Map Area 3

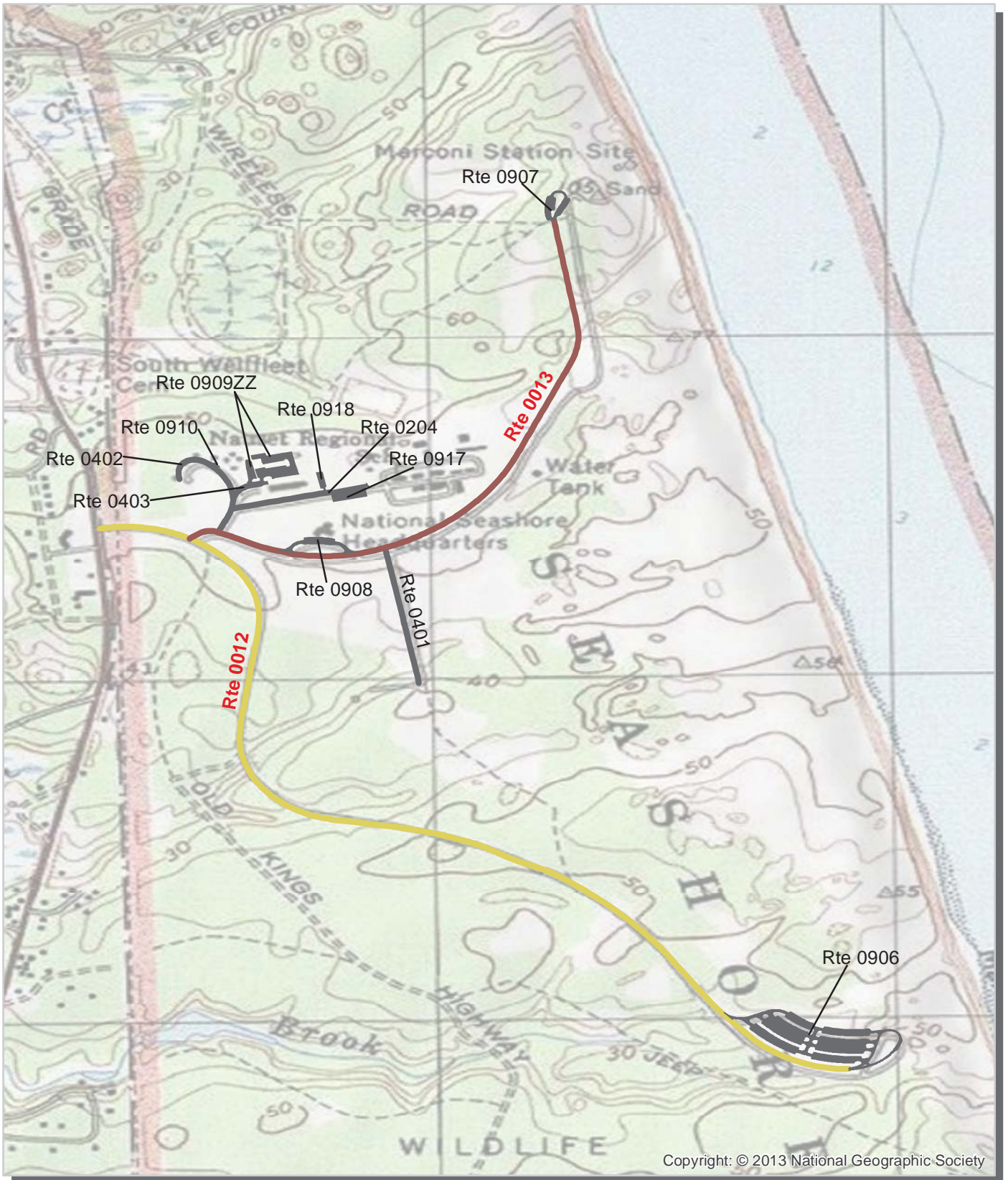


Unique colors used to differentiate routes

Routes Collected in Previous Cycle

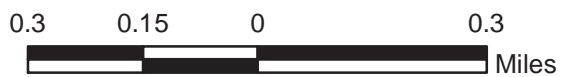


Cape Cod National Seashore Route Location Map Area 4

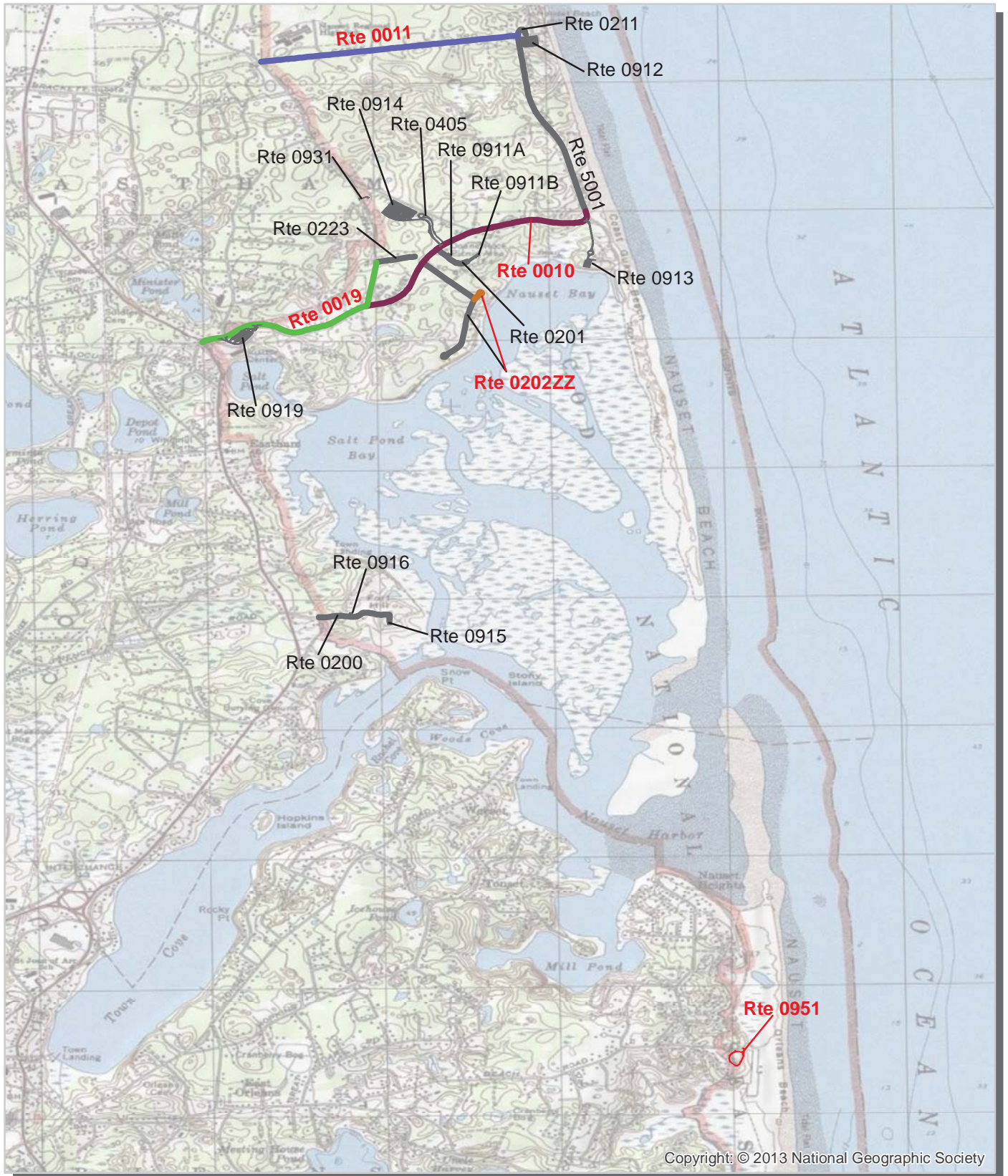


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



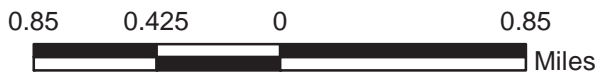
Cape Cod National Seashore Route Location Map Area 5



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Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



Cape Cod National Seashore
Route Location Map
Area 6

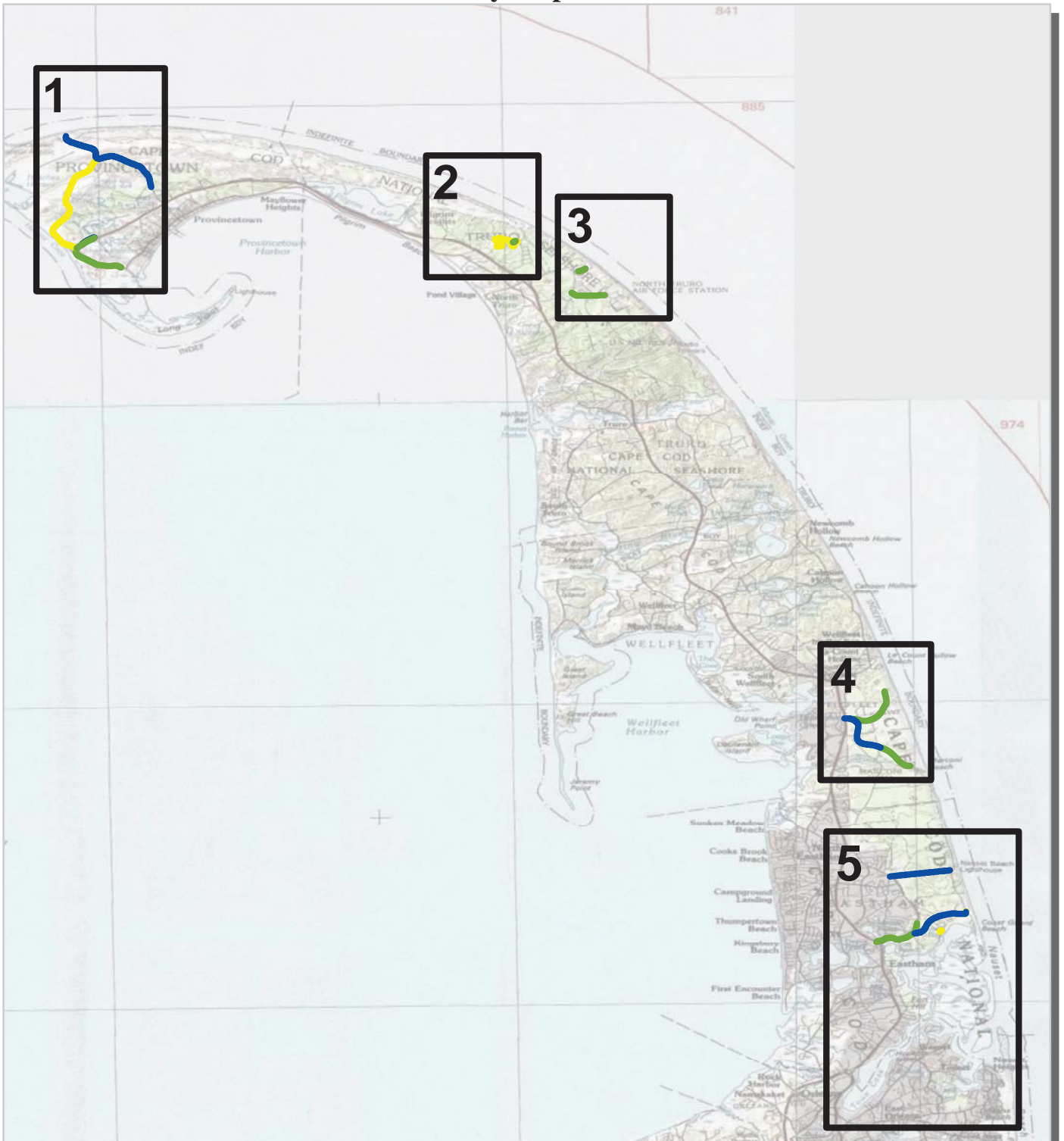


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



Cape Cod National Seashore Route Condition Map PCR - Mile by Mile Key Map



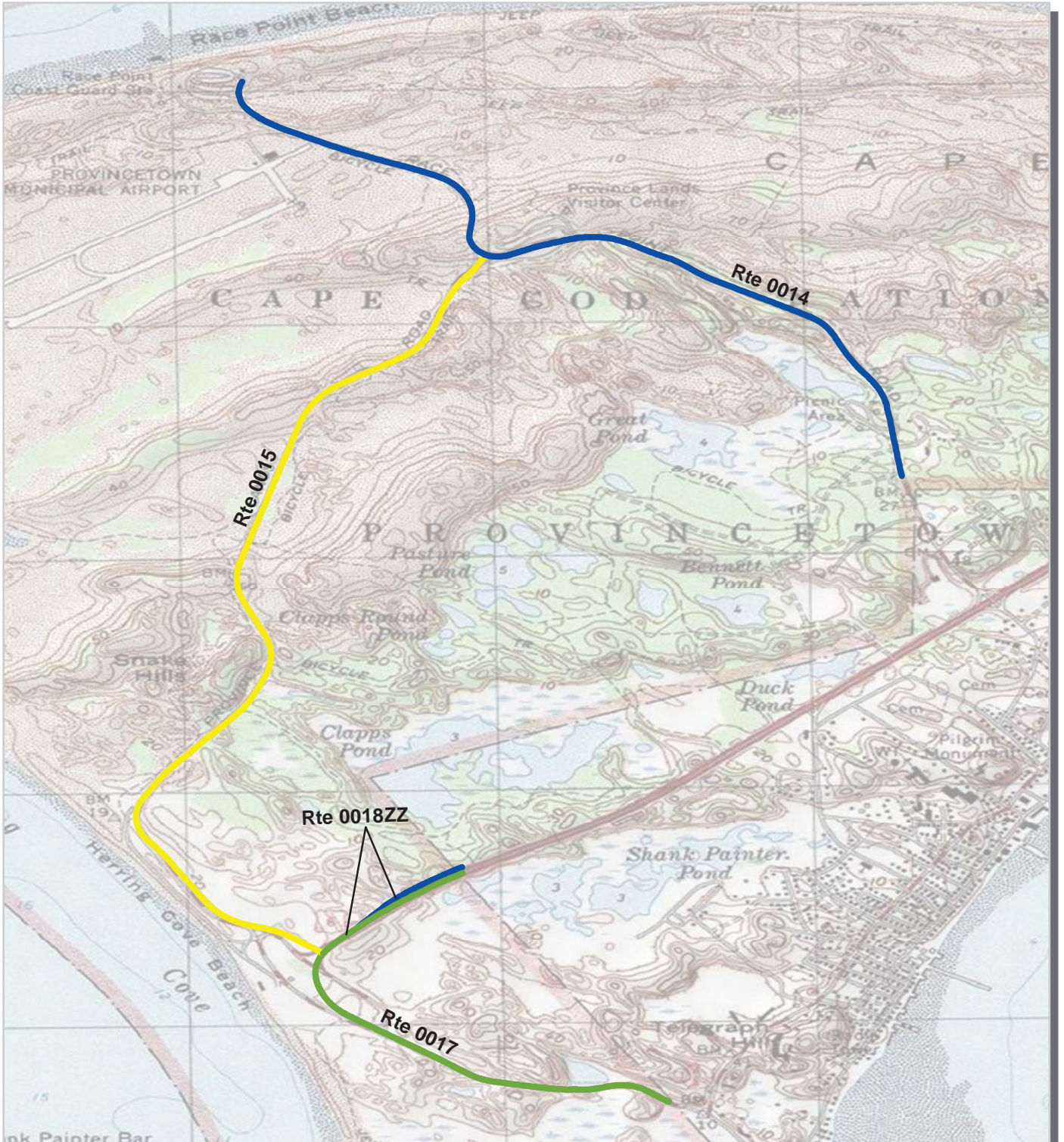
PCR	Poor	Fair	Good	Excellent	No Data
					
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

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



Cape Cod National Seashore Route Condition Map PCR - Mile by Mile Area 1



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

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



**Cape Cod National Seashore
Route Condition Map
PCR - Mile by Mile
Area 2**



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

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



Cape Cod National Seashore Route Condition Map PCR - Mile by Mile Area 3

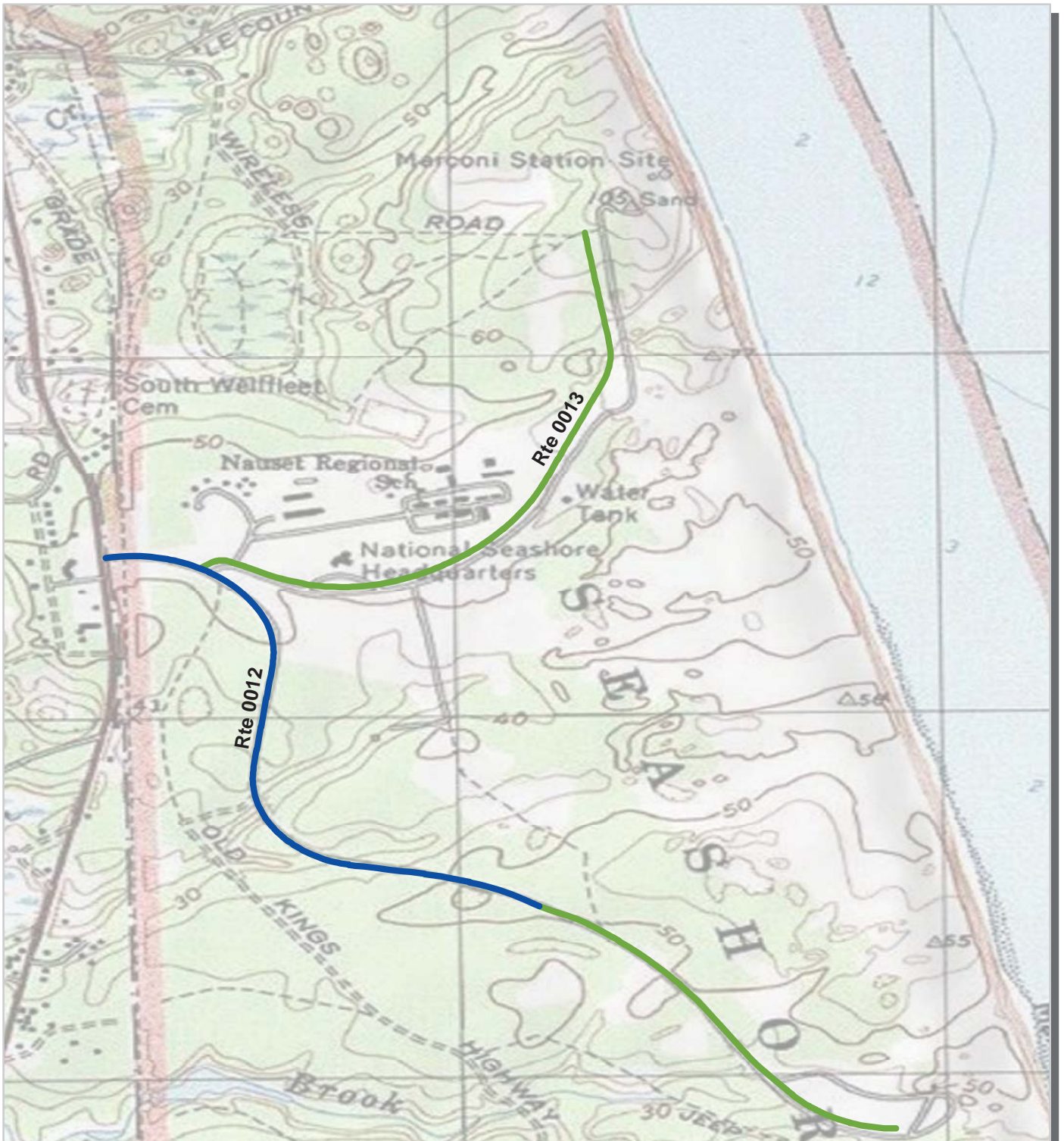


PCR	Poor	Fair	Good	Excellent	No Data
	█	█	█	█	█
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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



Cape Cod National Seashore Route Condition Map PCR - Mile by Mile Area 4

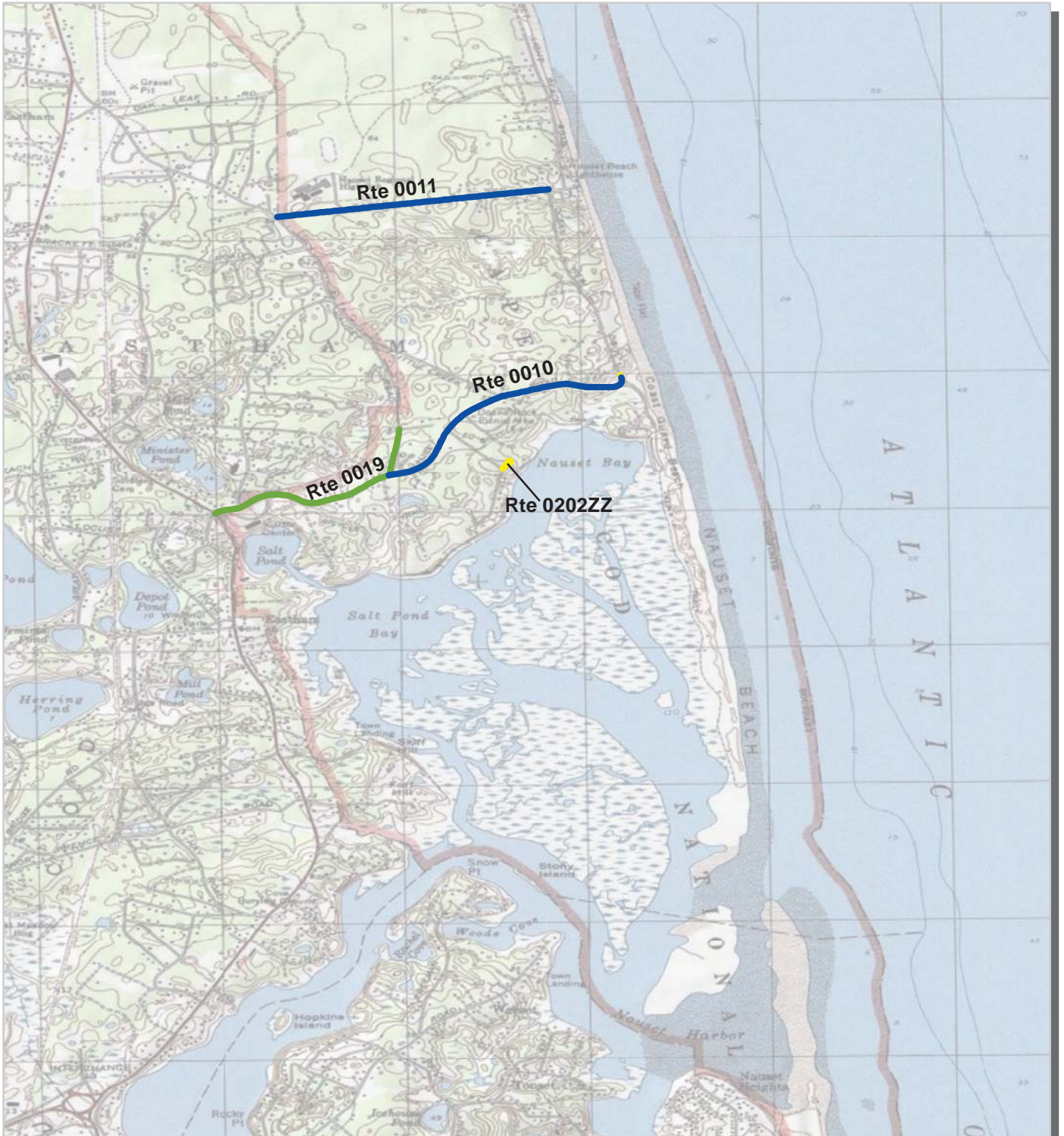


PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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



Cape Cod National Seashore Route Condition Map PCR - Mile by Mile Area 5



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

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



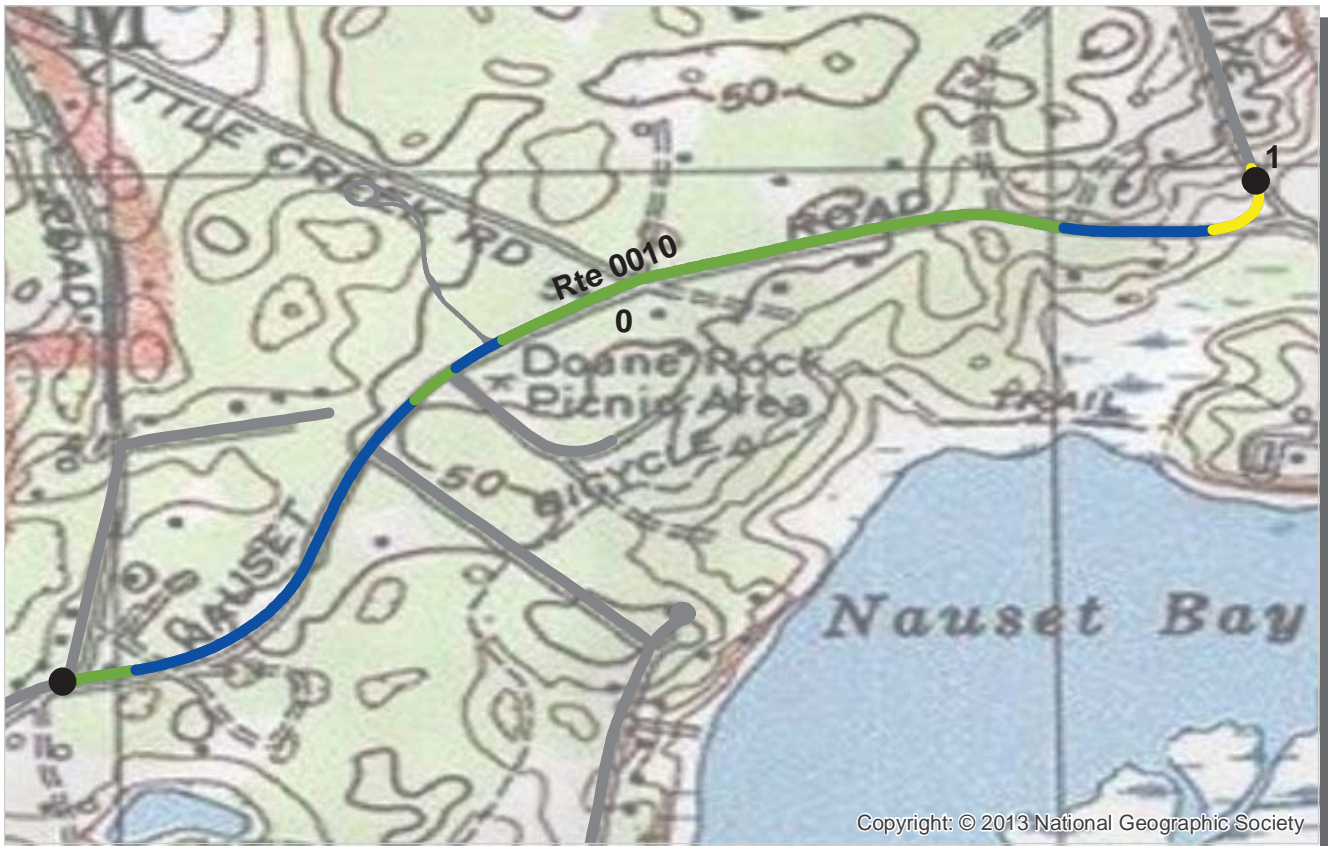
Section 5
Paved Route
Condition Rating Sheets



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program



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

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

ROUTE: 0010 DOANE ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 1.01 Miles

NORTHEAST REGION

Section Number	0	1			
Section Length (mi)	1.00	0.01			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	24	26			
Lane Width (ft)	10	10			
Roadway Condition Information					
SCR (Surface Condition Rating)	92	75			
PCR (Pavement Condition Rating)	95	71			
Distress Index Values					
Structural Crack Index	99	95			
Transverse Cracking Index	99	75			
Patching Index	100	100			
Rutting Index	92	100			
Roughness Condition Index (RCI)	100	64			

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



ROUTE: 0010 DOANE ROAD



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

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

ROUTE: 0011 CABLE ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 0.93 Miles

NORTHEAST REGION

<i>Section Number</i>	0				
<i>Section Length (mi)</i>	0.93				
<i>Cross Section Information</i>					
Number of Lanes	2				
Paved Width (ft)	23				
Lane Width (ft)	10				
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	98				
PCR (Pavement Condition Rating)	99				
<i>Distress Index Values</i>					
Structural Crack Index	100				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	98				
Roughness Condition Index (RCI)	100				

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

ROUTE: 0011 CABLE ROAD



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

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

ROUTE: 0012 MARCONI BEACH ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 1.62 Miles

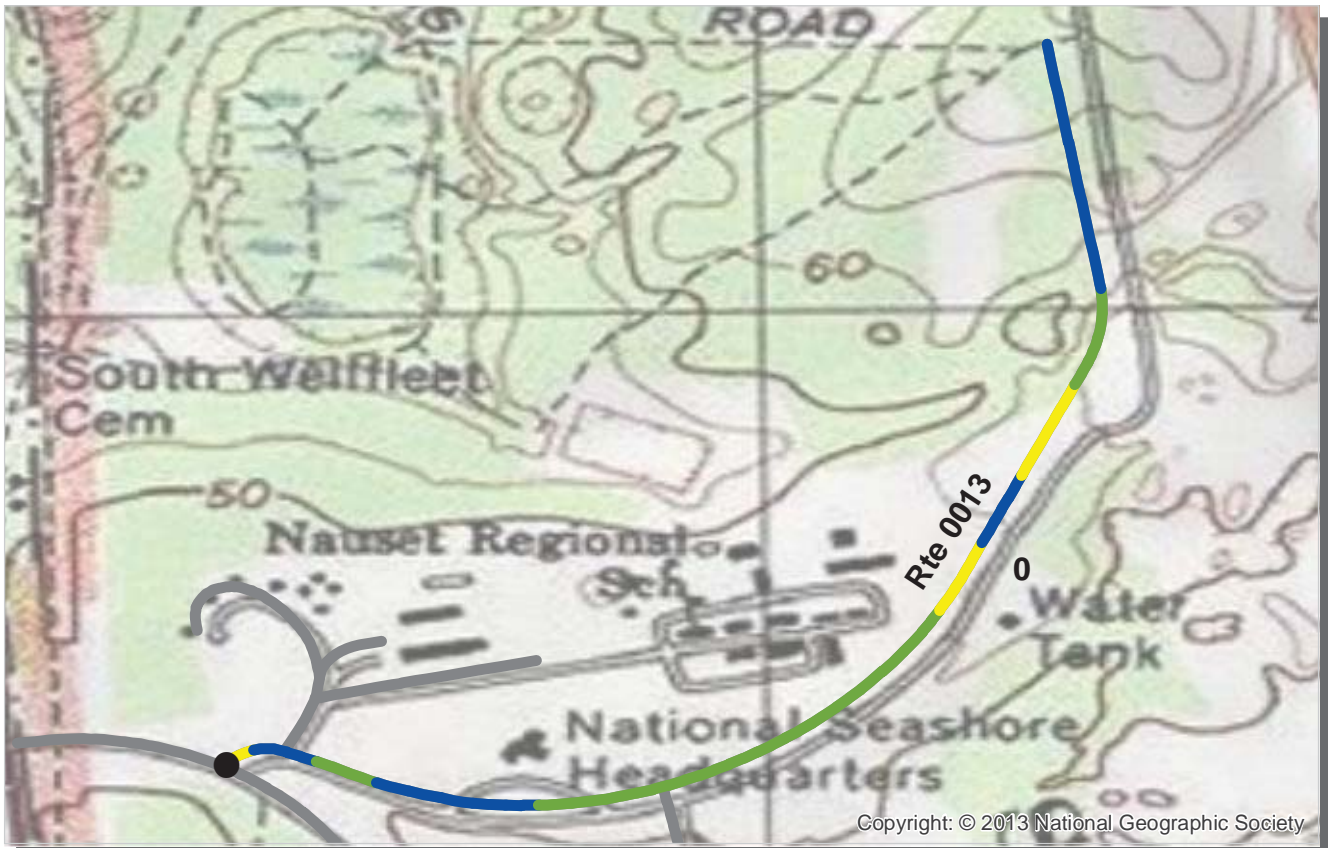
NORTHEAST REGION

<i>Section Number</i>	0	1			
<i>Section Length (mi)</i>	1.00	0.62			
<i>Cross Section Information</i>					
Number of Lanes	2	2			
Paved Width (ft)	26	24			
Lane Width (ft)	10	11			
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	94	95			
PCR (Pavement Condition Rating)	95	94			
<i>Distress Index Values</i>					
Structural Crack Index	99	100			
Transverse Cracking Index	94	95			
Patching Index	100	100			
Rutting Index	99	96			
Roughness Condition Index (RCI)	96	93			

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



ROUTE: 0012 MARCONI BEACH ROAD



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

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

ROUTE: 0013 MARCONI SITE ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 0.98 Miles

NORTHEAST REGION

<i>Section Number</i>	0				
<i>Section Length (mi)</i>	0.98				
<i>Cross Section Information</i>					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	11				
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	86				
PCR (Pavement Condition Rating)	92				
<i>Distress Index Values</i>					
Structural Crack Index	98				
Transverse Cracking Index	86				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	100				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0013 MARCONI SITE ROAD



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

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

ROUTE: 0014 RACE POINT ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 1.94 Miles

NORTHEAST REGION

<i>Section Number</i>	0	1			
<i>Section Length (mi)</i>	1.00	0.94			
<i>Cross Section Information</i>					
Number of Lanes	2	2			
Paved Width (ft)	23	27			
Lane Width (ft)	10	11			
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	100	98			
PCR (Pavement Condition Rating)	100	99			
<i>Distress Index Values</i>					
Structural Crack Index	100	99			
Transverse Cracking Index	100	98			
Patching Index	100	100			
Rutting Index	100	98			
Roughness Condition Index (RCI)	100	100			

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



ROUTE: 0014 RACE POINT ROAD



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

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

ROUTE: 0015 PROVINCE LANDS ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 2.32 Miles

NORTHEAST REGION

Section Number	0	1	2		
Section Length (mi)	1.00	1.00	0.32		
Cross Section Information					
Number of Lanes	2	2	3		
Paved Width (ft)	24	24	31		
Lane Width (ft)	10	10	11		
Roadway Condition Information					
SCR (Surface Condition Rating)	74	74	60		
PCR (Pavement Condition Rating)	84	83	71		
Distress Index Values					
Structural Crack Index	74	74	60		
Transverse Cracking Index	85	86	67		
Patching Index	100	100	100		
Rutting Index	88	88	95		
Roughness Condition Index (RCI)	100	97	88		

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



ROUTE: 0015 PROVINCE LANDS ROAD



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

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

ROUTE: 0017 MOORS ROAD
CACO : CAPE COD NATIONAL SEASHORE

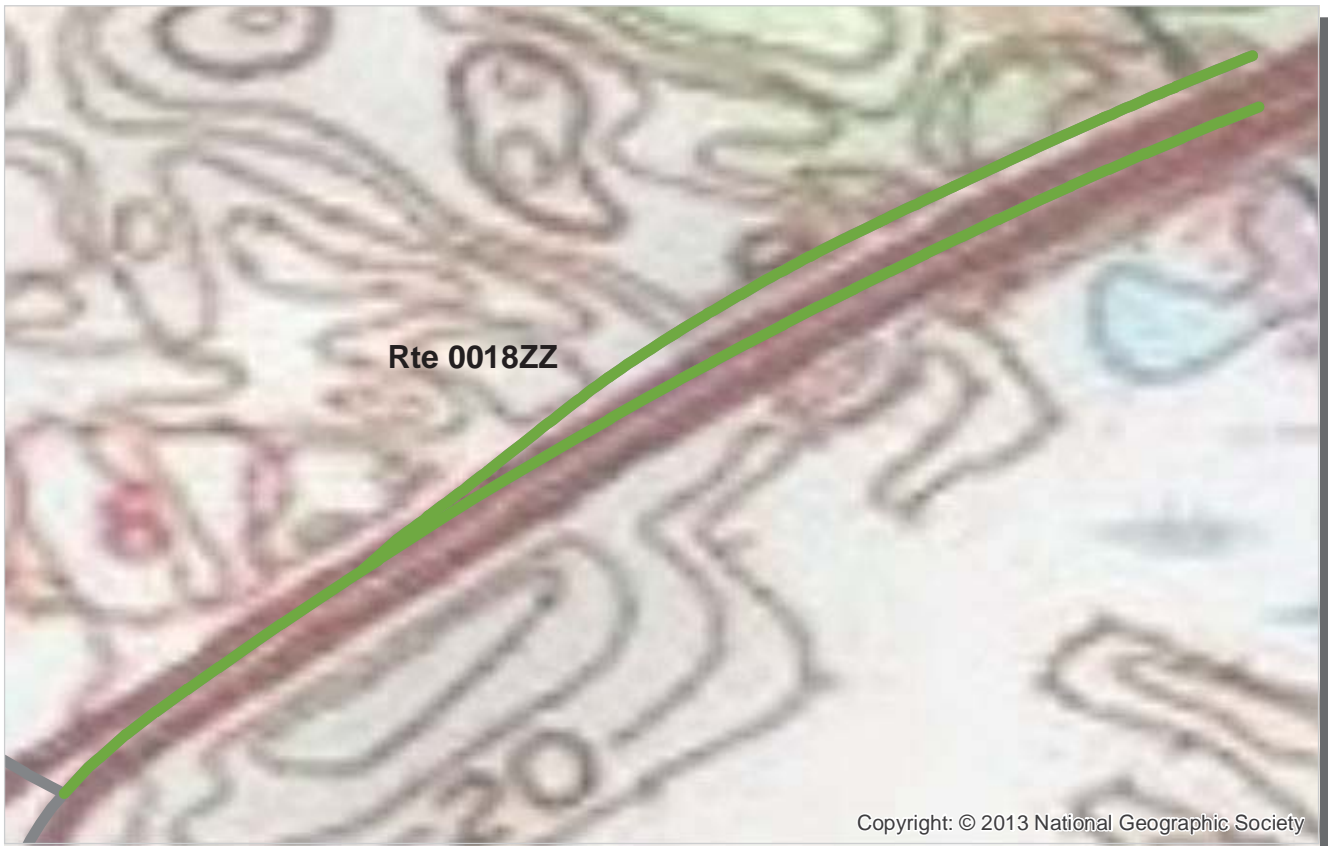
COLLECTED: 8/16/2013
TOTAL LENGTH: 0.89 Miles

NORTHEAST REGION

Section Number	0				
Section Length (mi)	0.89				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	32				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	92				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	82				

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

ROUTE: 0017 MOORS ROAD



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

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

ROUTE: 0018ZZ STATE ROUTE 6
CACO : CAPE COD NATIONAL SEASHORE

Summary Record **COLLECTED: 8/16/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.60 Miles**

Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	93				
PCR (Pavement Condition Rating)	93				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

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



ROUTE: 0018ZZ STATE ROUTE 6



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

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

ROUTE: 0018AZ WESTBOUND STATE ROUTE 6
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.35 Miles

Section Number	0				
Section Length (mi)	0.35				
Cross Section Information					
Number of Lanes	4				
Paved Width (ft)	52				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	92				
PCR (Pavement Condition Rating)	92				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	92				
Roughness Condition Index (RCI)	NC				

NOTES:

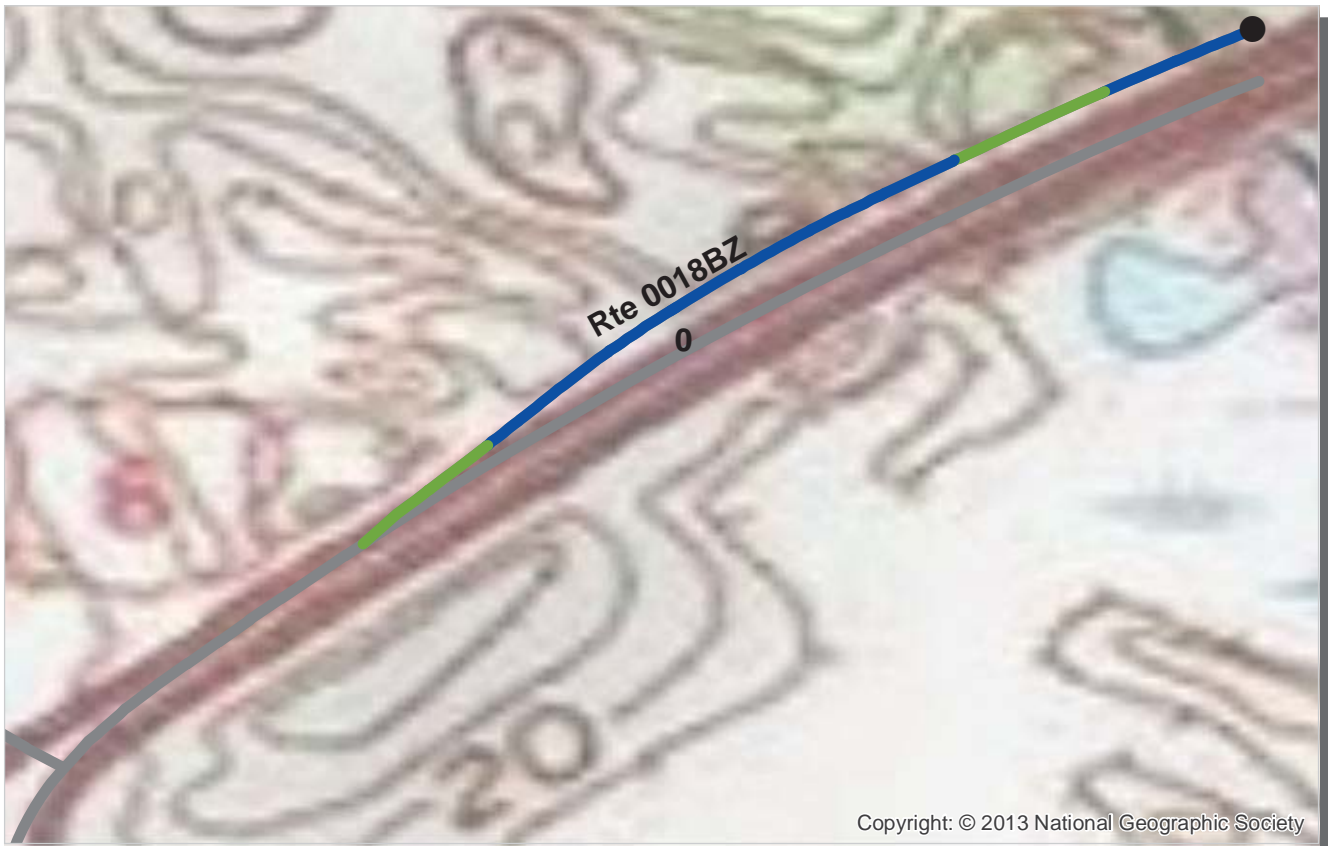
Structural Crack Index is a combination of the Longitudinal Cracking Index and Alligator Cracking Index.

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0018AZ WESTBOUND STATE ROUTE 6



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

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

ROUTE: 0018BZ EASTBOUND STATE ROUTE 6
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.25 Miles

Section Number	0				
Section Length (mi)	0.25				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	29				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	96				
PCR (Pavement Condition Rating)	96				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	96				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0018BZ EASTBOUND STATE ROUTE 6



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

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

ROUTE: 0019 NAUSET ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 0.87 Miles

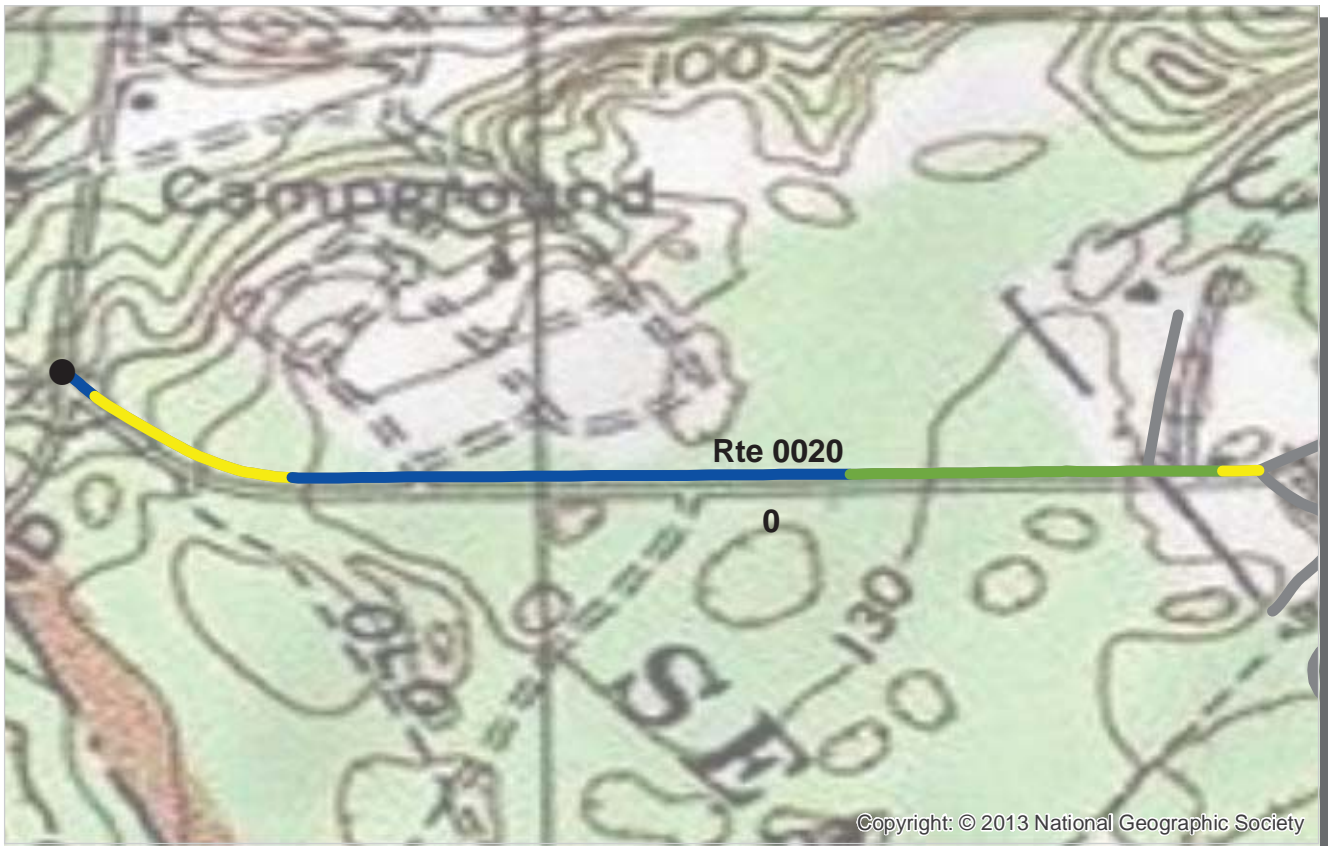
NORTHEAST REGION

Section Number	0				
Section Length (mi)	0.87				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	26				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	92				
PCR (Pavement Condition Rating)	93				
Distress Index Values					
Structural Crack Index	98				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	92				
Roughness Condition Index (RCI)	95				

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



ROUTE: 0019 NAUSET ROAD



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

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

ROUTE: 0020 OLD DEWLINE ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 0.53 Miles

NORTHEAST REGION

Section Number	0				
Section Length (mi)	0.53				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	20				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	88				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	88				
Roughness Condition Index (RCI)	92				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0020 OLD DEWLINE ROAD



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

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

ROUTE: 0202ZZ TOMAHAWK TRAIL ROADS
CACO : CAPE COD NATIONAL SEASHORE

Summary Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.65 Miles

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

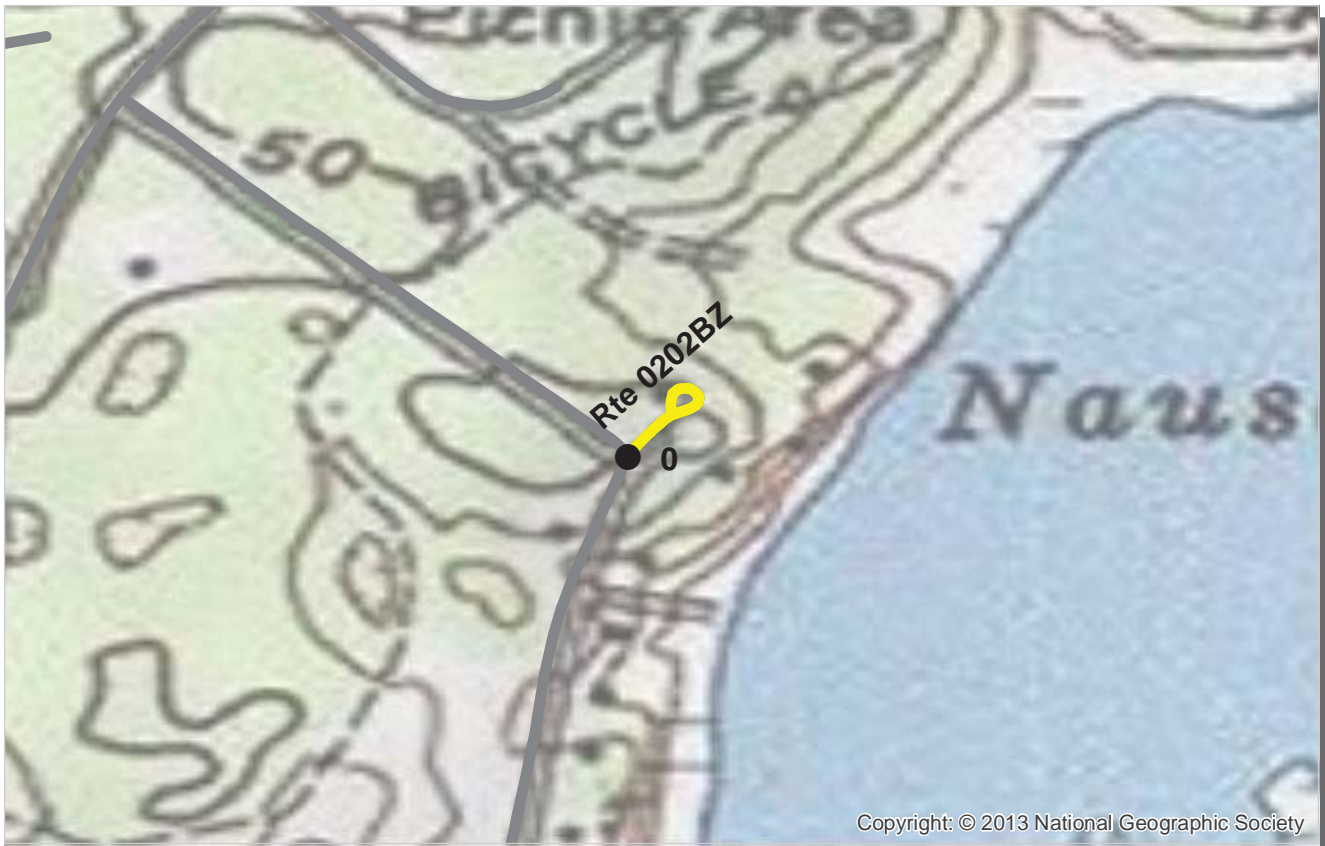
NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0202ZZ TOMAHAWK TRAIL ROADS



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

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

ROUTE: 0202BZ TOMAHAWK TRAIL ROAD B
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.06 Miles

Section Number	0				
Section Length (mi)	0.06				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	10				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	74				
PCR (Pavement Condition Rating)	74				
Distress Index Values					
Structural Crack Index	87				
Transverse Cracking Index	74				
Patching Index	100				
Rutting Index	86				
Roughness Condition Index (RCI)	NC				

NOTES:

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

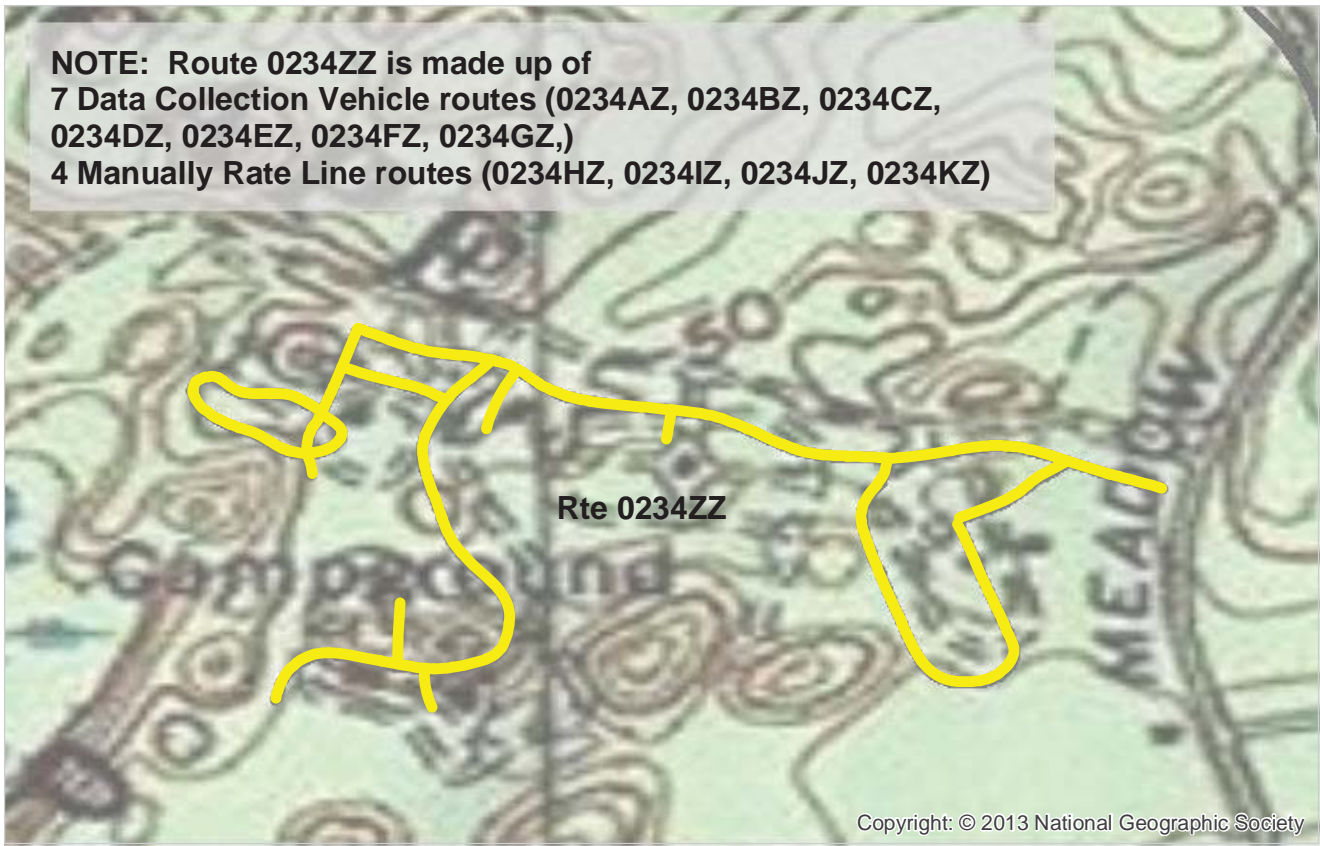
See Section 10 for explanation of SCR, PCR, & all Distress Index Values.

NC - Not Collected N/A - Not Applicable



ROUTE: 0202BZ TOMAHAWK TRAIL ROAD B

**NOTE: Route 0234ZZ is made up of
7 Data Collection Vehicle routes (0234AZ, 0234BZ, 0234CZ,
0234DZ, 0234EZ, 0234FZ, 0234GZ,)
4 Manually Rate Line routes (0234HZ, 0234IZ, 0234JZ, 0234KZ)**



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

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

**ROUTE: 0234ZZ NORTH OF HIGHLAND CAMPGROUND ROADS
CACO : CAPE COD NATIONAL SEASHORE**

Summary Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 1.15 Miles

Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	79				
PCR (Pavement Condition Rating)	77				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

NOTES:

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

NC - Not Collected N/A - Not Applicable

**ROUTE: 0234ZZ NORTH OF HIGHLAND CAMPGROUND
ROADS**



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

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

ROUTE: 0234BZ NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)

CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.21 Miles

Section Number	0				
Section Length (mi)	0.21				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	10				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	73				
PCR (Pavement Condition Rating)	73				
Distress Index Values					
Structural Crack Index	87				
Transverse Cracking Index	78				
Patching Index	100				
Rutting Index	73				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0234BZ NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)



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

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

ROUTE: 0234CZ NORTH OF HIGHLAND CAMPGROUND ROAD C
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record COLLECTED: 8/16/2013
NORTHEAST REGION TOTAL LENGTH: 0.05 Miles

Section Number	0				
Section Length (mi)	0.05				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	10				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	92				
PCR (Pavement Condition Rating)	92				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	94				
Patching Index	100				
Rutting Index	92				
Roughness Condition Index (RCI)	NC				

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

ROUTE: 0234CZ NORTH OF HIGHLAND CAMPGROUND ROAD C



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

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

ROUTE: 0234DZ NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4)

CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.25 Miles

Section Number	0				
Section Length (mi)	0.25				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	80				
PCR (Pavement Condition Rating)	80				
Distress Index Values					
Structural Crack Index	90				
Transverse Cracking Index	80				
Patching Index	100				
Rutting Index	90				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0234DZ NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4)



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

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

ROUTE: 0234EZ NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3)
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record

COLLECTED: 8/16/2013

NORTHEAST REGION

TOTAL LENGTH: 0.07 Miles

Section Number	0				
Section Length (mi)	0.07				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	17				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	69				
PCR (Pavement Condition Rating)	69				
Distress Index Values					
Structural Crack Index	90				
Transverse Cracking Index	69				
Patching Index	100				
Rutting Index	77				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0234EZ NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3)



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

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

ROUTE: 0234GZ NORTH OF HIGHLAND CAMPGROUND ROAD G
CACO : CAPE COD NATIONAL SEASHORE

Subcomponent Record COLLECTED: 8/16/2013
NORTHEAST REGION TOTAL LENGTH: 0.04 Miles

Section Number	0				
Section Length (mi)	0.04				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	80				
PCR (Pavement Condition Rating)	80				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	80				
Patching Index	100				
Rutting Index	86				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0234GZ NORTH OF HIGHLAND CAMPGROUND ROAD G



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

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

ROUTE: 0235 HIGHLAND LIGHTHOUSE ROAD
CACO : CAPE COD NATIONAL SEASHORE

COLLECTED: 8/16/2013
TOTAL LENGTH: 0.12 Miles

NORTHEAST REGION

Section Number	0				
Section Length (mi)	0.12				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	14				
Lane Width (ft)	7				
Roadway Condition Information					
SCR (Surface Condition Rating)	91				
PCR (Pavement Condition Rating)	91				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	91				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0235 HIGHLAND LIGHTHOUSE ROAD

Section 6
Manually Rated Paved Route
Condition Rating Sheets



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

CAPE COD NATIONAL SEASHORE

Route 0234ZZ

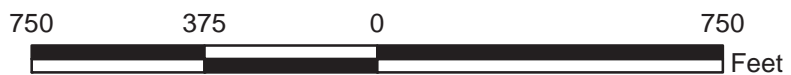
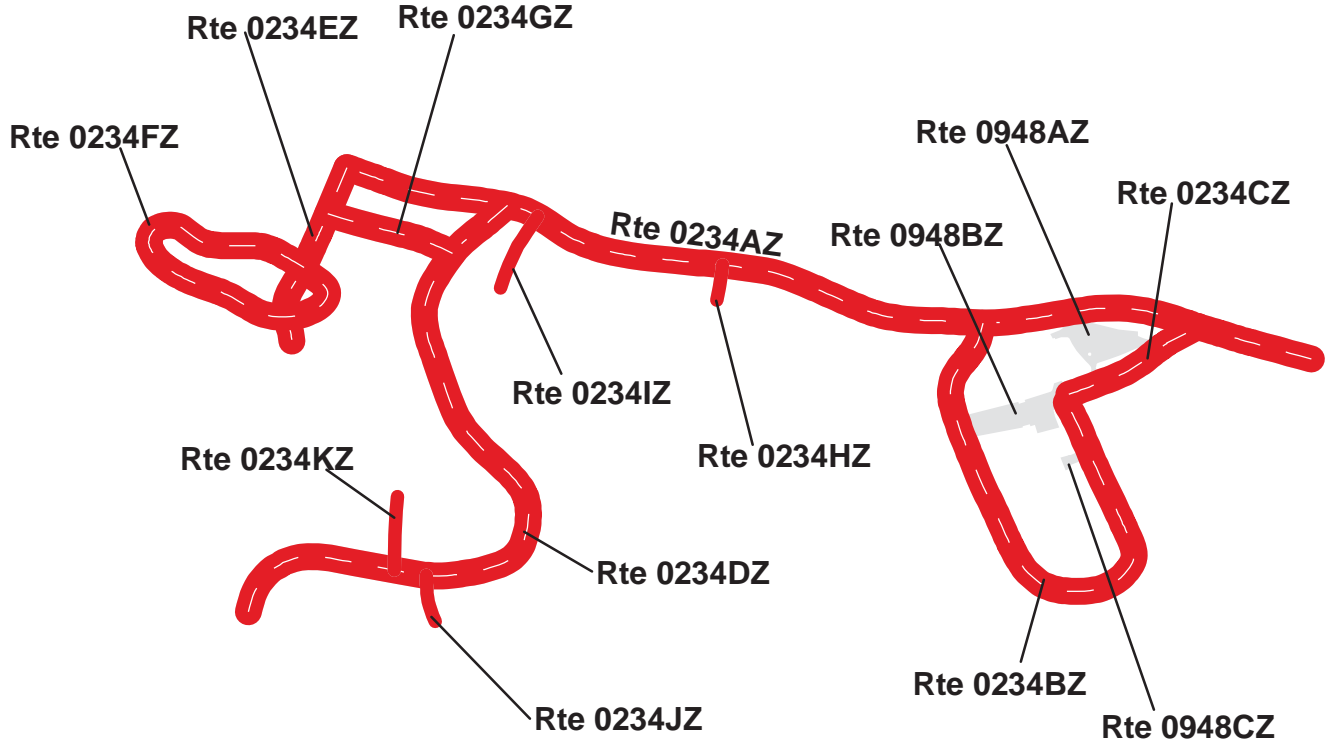
NORTH OF HIGHLAND CAMPGROUND ROADS
FROM HEAD OF THE MEADOW ROAD
THROUGH CAMPGROUND

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0234ZZ	PUBLIC	8/16/2013	N/A	1.45	1.15	13.9
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	2	N/A	N/A	SUMMARY/77	AS

* Lane miles are based on 11' lane widths

NOTE: Route 0234ZZ is made up of
7 Data Collection Vehicle routes (0234AZ, 0234BZ, 0234CZ,
0234DZ, 0234EZ, 0234FZ, 0234GZ,) **4 Manually Rate Line routes (0234HZ, 0234IZ, 0234JZ, 0234KZ)**



CAPE COD NATIONAL SEASHORE

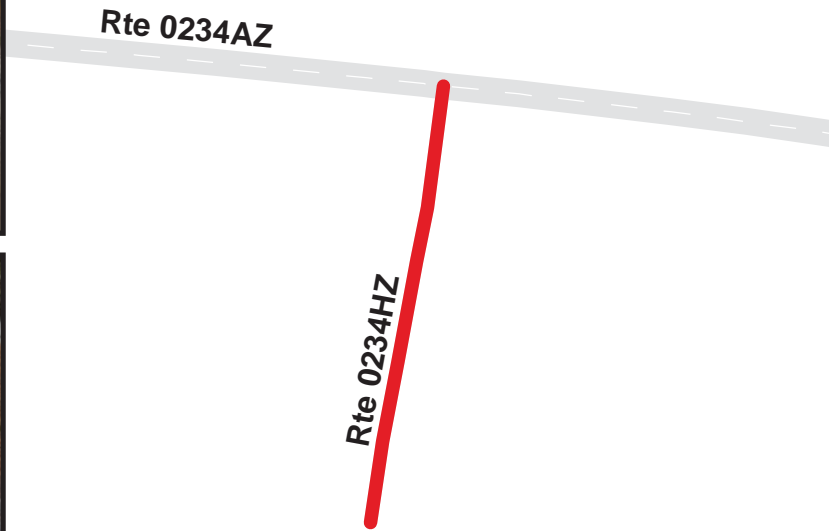
Route 0234HZ

NORTH OF HIGHLAND CAMPGROUND ROAD H (AREA 2)
 FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
 TO END AT UNPAVED CAMPGROUND ROADS

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0234HZ	PUBLIC	6/29/2013	805	0.01	0.01	12.7
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	0	NO CURB AND GUTTER	ASPHALT CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

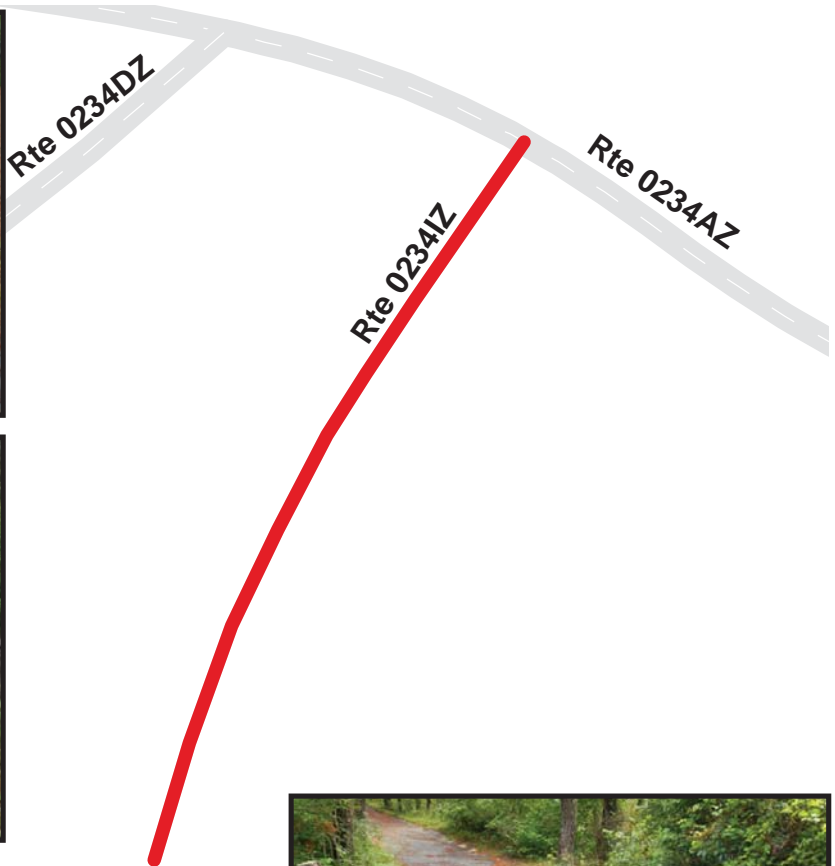
Route 0234IZ

NORTH OF HIGHLAND CAMPGROUND ROAD I
 FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
 TO DEAD END

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0234IZ	PUBLIC	6/29/2013	1,375	0.02	0.03	9.3
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	0	NO CURB AND GUTTER	ASPHALT CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

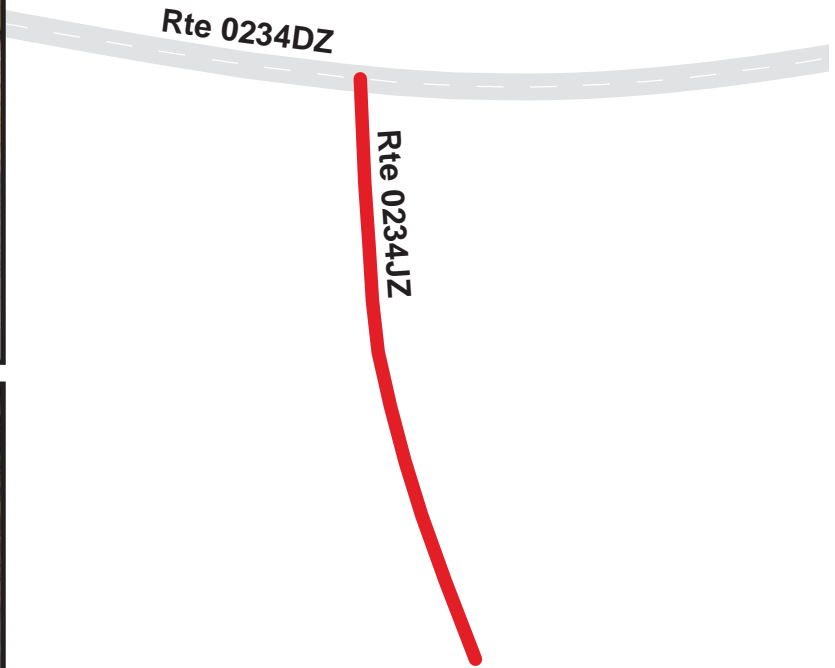
Route 0234JZ

NORTH OF HIGHLAND CAMPGROUND ROAD J
 FROM ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))
 TO END AT UNPAVED CAMPGROUND ROADS

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0234JZ	PUBLIC	6/29/2013	1,293	0.02	0.02	13.6
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	0	NO CURB AND GUTTER	ASPHALT CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

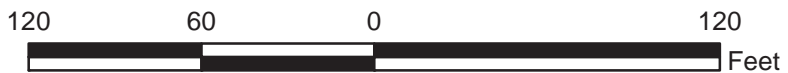
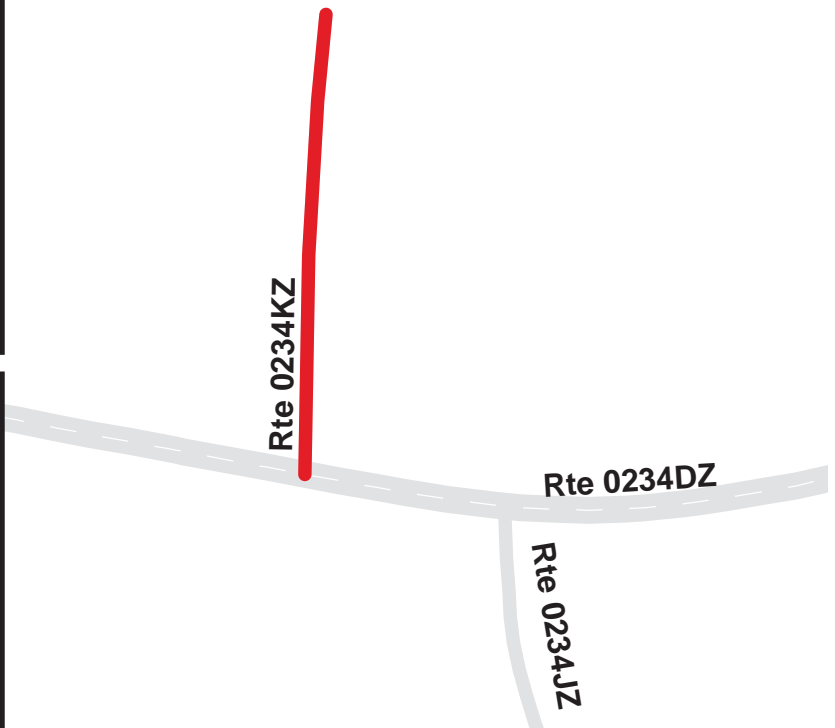
Route 0234KZ

NORTH OF HIGHLAND CAMPGROUND ROAD K
 FROM ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))
 TO DEAD END

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0234KZ	PUBLIC	6/29/2013	1,331	0.02	0.03	9
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR	Surface Type
0	0	0	NO CURB AND GUTTER	ASPHALT CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



Section 7
Parking Area
Condition Rating Sheets



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

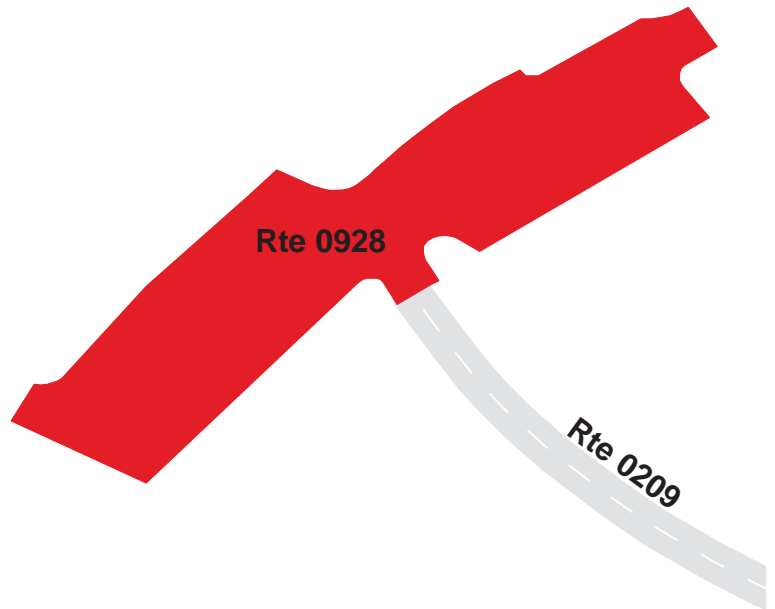
CAPE COD NATIONAL SEASHORE

Route 0928

RACE POINT RANGER STATION PARKING
FROM ROUTE 0209 (RACE POINT COAST GUARD STATION ROAD) AT END
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0928	PUBLIC	6/29/2013	19,408	0.33	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	1	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0929

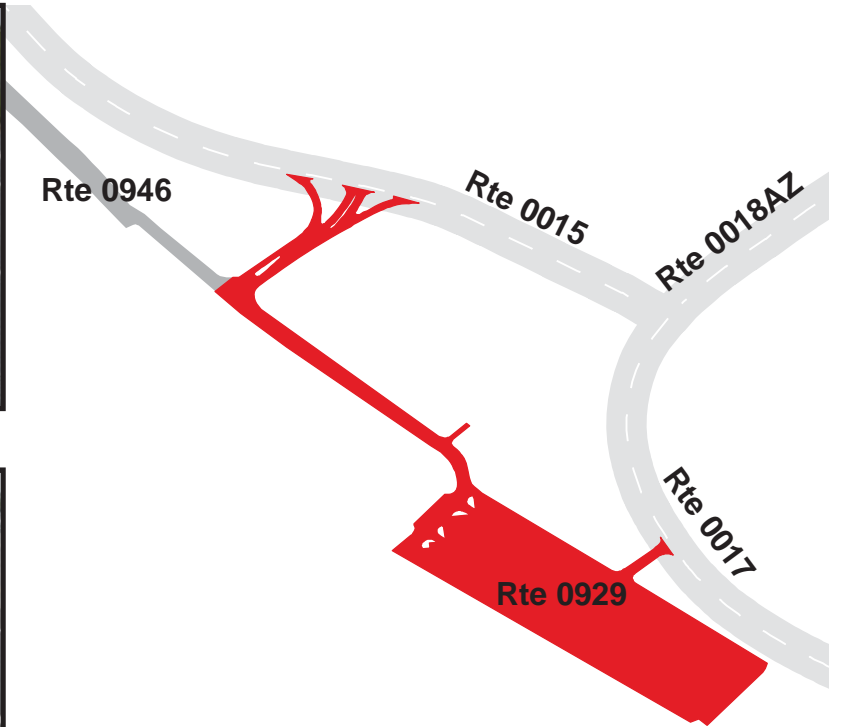
HERRING COVE SOUTH BEACH PARKING

FROM ROUTE 0015 (PROVINCE LANDS ROAD)

TO ROUTE 0017 (MOORS ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0929	PUBLIC	6/29/2013	210,865	3.63	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	2	2	NO CURB AND GUTTER	ASPHALT & STONE CURB	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

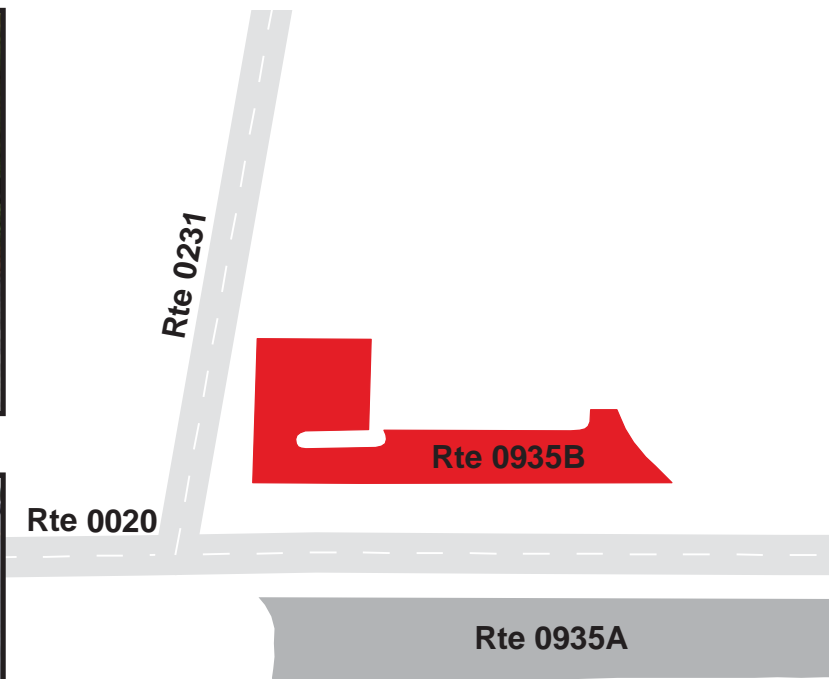
Route 0935B

OLD DEWLINE ROAD PARKING B

ADJACENT TO ROUTE 0020 (OLD DEWLINE ROAD) AT MP 0.49

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0935B	PUBLIC	6/29/2013	1,520	0.03	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



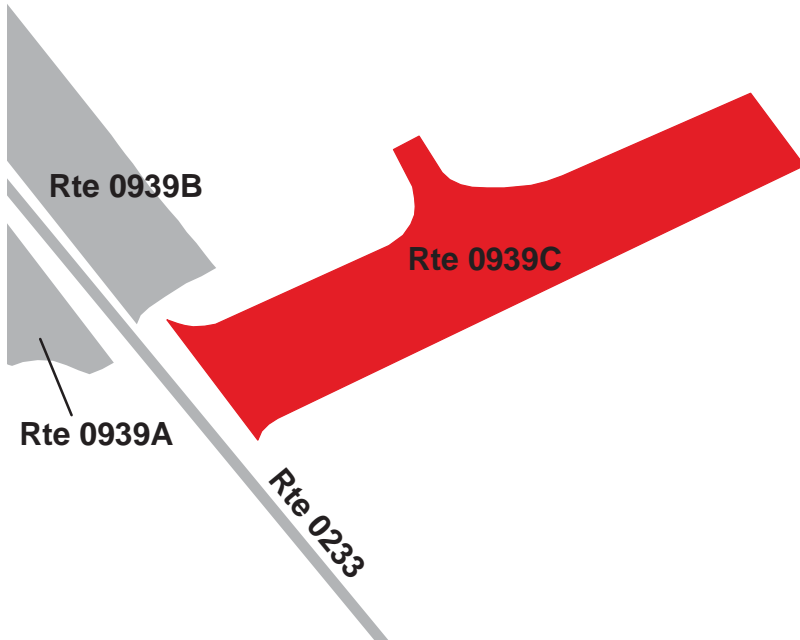
CAPE COD NATIONAL SEASHORE

Route 0939C

NTAFS FUEL HOUSE ROAD C PARKING
 FROM ROUTE 0233 (NTAFS FUEL HOUSE ROAD) ON LEFT
 TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0939C	PUBLIC	6/29/2013	6,059	0.10	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	ASPHALT & CONCRETE	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0946

HERRING COVE NORTH BEACH PARKING
 FROM ROUTE 0929 (HERRING COVE SOUTH BEACH PARKING)
 TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0946	PUBLIC	6/29/2013	112,603	1.94	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	1	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

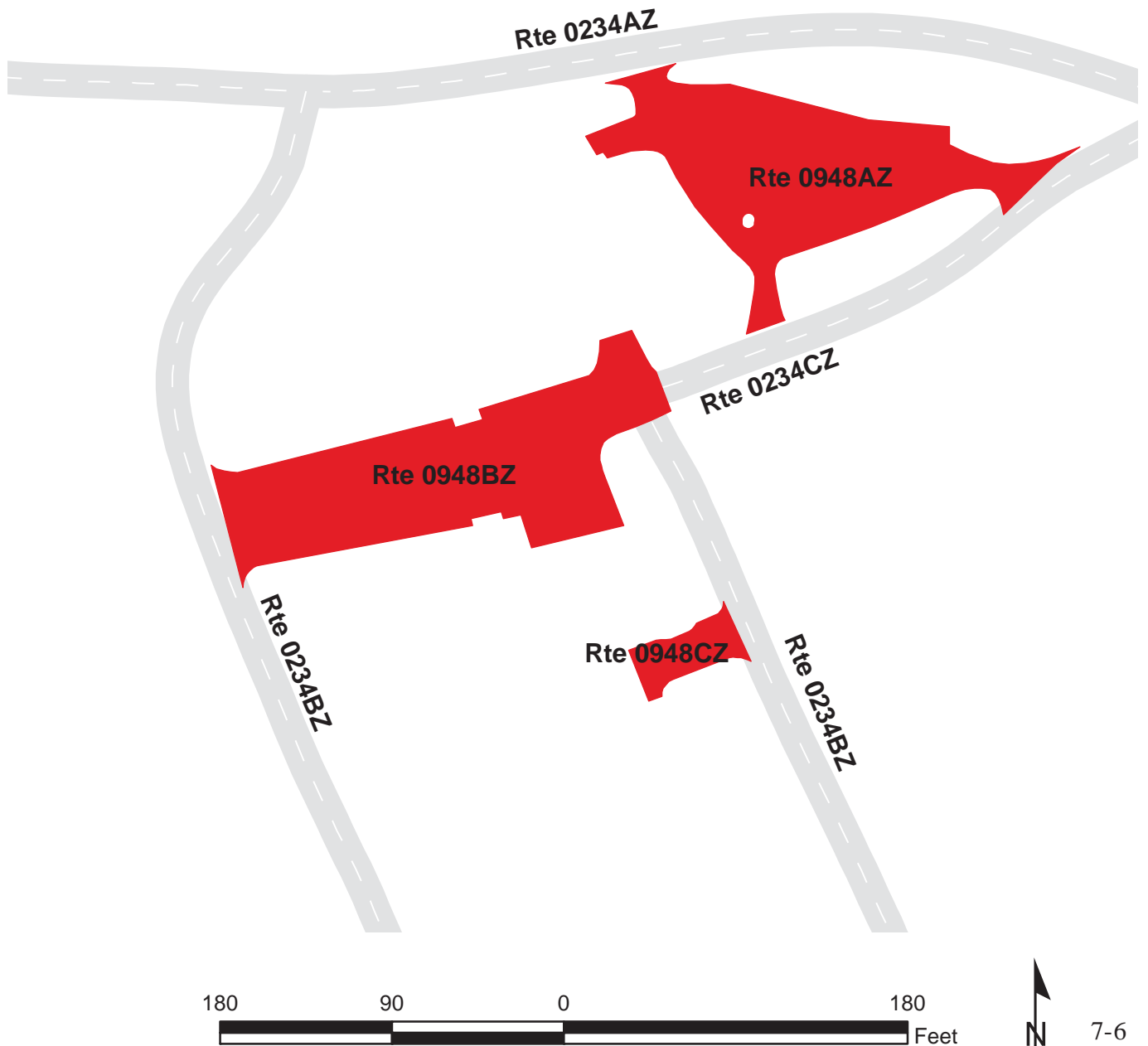
Route 0948ZZ

NORTH OF HIGHLAND CAMPGROUND PARKING AREAS
FROM ROUTE 0234ZZ (NORTH OF HIGHLAND CAMPGROUND ROADS)
TO PARKING

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0948ZZ	PUBLIC	6/29/2013	20,119	0.35	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	2	0	NO CURB AND GUTTER	ASPHALT & CONCRETE	SUMMARY/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0948AZ

NORTH OF HIGHLAND CAMPGROUND OFFICE PARKING
 FROM ROUTE 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)
 TO ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0948AZ	PUBLIC	6/29/2013	9,078	0.16	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	2	0	NO CURB AND GUTTER	ASPHALT CURB	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0948BZ

NORTH OF HIGHLAND CAMPGROUND STORE PARKING
 FROM ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))
 TO INTERSECTION OF ROUTES 0234BZ (NORTH OF HIGHLAND CAMPGROUND
 ROAD B (AREA 1)) AND 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0948BZ	PUBLIC	6/29/2013	10,042	0.17	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	ASPHALT & CONCRETE	POOR/45

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0948CZ

18 AND OLDER BUILDING PARKING

FROM ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))

TO PARKING

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0948CZ	PUBLIC	6/29/2013	999	0.02	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



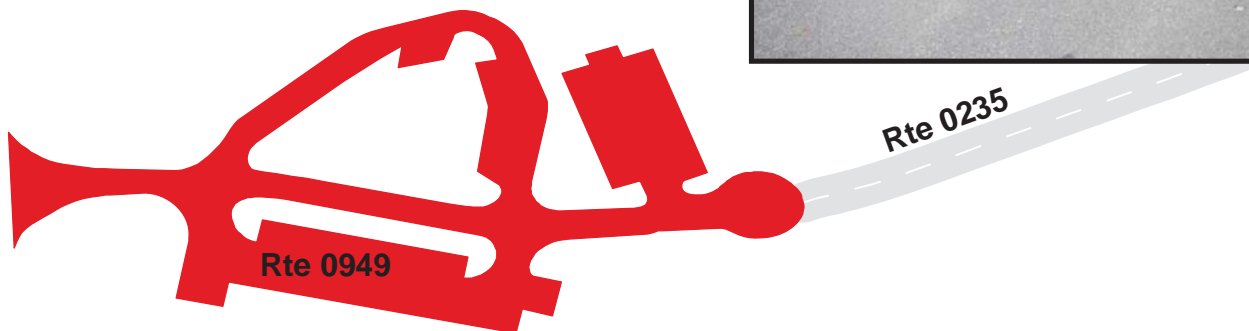
CAPE COD NATIONAL SEASHORE

Route 0949

HIGHLAND MUSEUM PARKING
FROM HIGHLAND ROAD
TO ROUTE 0235 (HIGHLAND LIGHTHOUSE ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0949	PUBLIC	6/29/2013	47,289	0.81	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



CAPE COD NATIONAL SEASHORE

Route 0950

HIGHLAND LIGHTHOUSE HANDICAPPED PARKING
 ADJACENT TO ROUTE 0235 (HIGHLAND LIGHTHOUSE ROAD) ON RIGHT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0950	PUBLIC	6/29/2013	1,012	0.02	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	NO CURB	NC/-1

* Lane miles are based on 11' lane widths

Note: Route 0950 is paved, but it has a layer of gravel to make it look unpaved, so condition data was not reported because the asphalt was not visible.



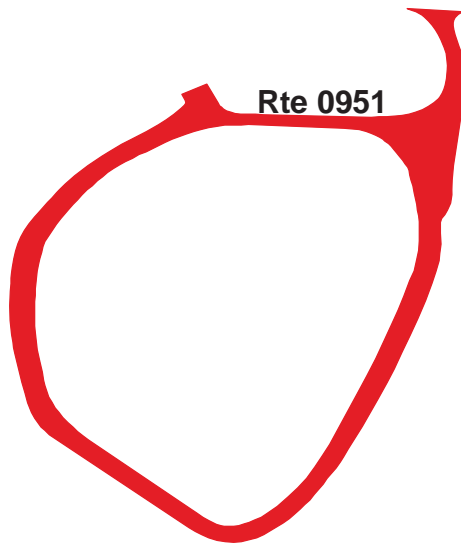
CAPE COD NATIONAL SEASHORE

Route 0951

NAUSET KNOLLS MOTEL PARKING
FROM BEACH ROAD
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0951	PUBLIC	6/29/2013	17,284	0.30	AS
Culverts	Drop Inlets	Gates	Curb & Gutter	Curb	PCR
0	0	0	NO CURB AND GUTTER	ASPHALT CURB	GOOD/90

* Lane miles are based on 11' lane widths



Section 8

Route Maintenance Features Summaries



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

CACO: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0017 MOORS ROAD	ROUTE 0234ZZ NORTH OF HIGHLAND CAMPGROUND ROADS	ROUTE 0235 HIGHLAND LIGHTHOUSE ROAD	UNIT
BRIDGE	0	0	0	EACH
CATTLE GUARD	0	0	0	EACH
CULVERT	2	0	0	EACH
CURB	5,025	4,074	0	LINEAR FEET
DROP INLET	14	0	1	EACH
GATE	0	2	0	EACH
GUARD/GUIDE RAIL	1,215	0	0	LINEAR FEET
CABLE	0	0	0	LINEAR FEET
NON-CABLE	1,215	0	0	LINEAR FEET
GUARD/GUIDE WALL	0	26	0	LINEAR FEET
BOLLARD	0	26	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	0	0	0	LINEAR FEET
INTERSECTION	4	54	7	EACH
LOW WATER CROSSING	0	0	0	EACH
LOW WATER CROSSING	0	0	0	LINEAR FEET
MILE MARKER	0	0	0	EACH
OVERPASS	0	0	0	EACH
PARK BOUNDARY	1	0	0	EACH
PAVED DITCH	0	0	0	LINEAR FEET
PULLOUT	0	0	0	EACH
PULLOUT	0	0	0	LINEAR FEET
RAILROAD CROSSING	0	0	0	EACH
RETAINING WALL	1	0	0	EACH
RETAINING WALL	169	0	0	LINEAR FEET
SIGN	62	26	13	EACH
STATE BOUNDARY	0	0	0	EACH
TRAFFIC LIGHT	0	0	0	EACH
TUNNEL	0	0	0	EACH
TUNNEL	0	0	0	LINEAR FEET

STRUCTURE LIST

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

Section 9
Route Maintenance Features
Road Logs



Cape Cod National Seashore



**Federal Lands Highway
Road Inventory Program**

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0017: MOORS ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM INTERSECTION OF ROUTES 0015 (PROVINCE LANDS ROAD) AND 0018ZZ (STATE ROUTE 6)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0015 (PROVINCE LANDS ROAD)
0.000	0.000	INTERSECTION	N/A	ROUTE 0018AZ (WESTBOUND STATE ROUTE 6)
0.005	0.049	CURB	RIGHT	N/A
0.023	0.023	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.025	0.025	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.075	0.075	SIGN	LEFT	GUIDE, BOSTON RACE POINT HERRING COVE BEACH
0.113	0.113	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.118	0.118	INTERSECTION	RIGHT	ROUTE 0929 (HERRING COVE SOUTH BEACH PARKING)
0.119	0.119	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.124	0.124	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.127	0.127	SIGN	LEFT	REGULATORY, SPEED LIMIT 30
0.136	0.136	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.144	0.144	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.165	0.165	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.168	0.168	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.192	0.282	CURB	RIGHT	N/A
0.197	0.197	DROP INLET	RIGHT	N/A
0.204	0.204	DROP INLET	RIGHT	N/A
0.210	0.210	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.213	0.213	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.219	0.219	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.263	0.263	SIGN	RIGHT	WARNING, 20 M.P.H.
0.263	0.263	SIGN	RIGHT	WARNING, AHEAD
0.263	0.263	SIGN	RIGHT	WARNING, RAISED CROSSWALK
0.281	0.281	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.281	0.281	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.284	0.284	SIGN	RIGHT	GUIDE, NO PETS
0.286	0.286	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0017: MOORS ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.286	0.286	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.286	0.286	SIGN	LEFT	GUIDE, TRAIL
0.286	0.648	CURB	LEFT	N/A
0.287	0.620	CURB	RIGHT	N/A
0.288	0.288	DROP INLET	LEFT	N/A
0.288	0.288	DROP INLET	RIGHT	N/A
0.299	0.299	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.306	0.306	SIGN	LEFT	WARNING, RAISED CROSSWALK
0.306	0.306	SIGN	LEFT	WARNING, 20 M.P.H.
0.306	0.306	SIGN	LEFT	WARNING, AHEAD
0.339	0.339	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.396	0.396	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.398	0.398	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.399	0.399	DROP INLET	LEFT	N/A
0.399	0.399	DROP INLET	RIGHT	N/A
0.436	0.436	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.440	0.440	DROP INLET	LEFT	N/A
0.440	0.440	DROP INLET	RIGHT	N/A
0.465	0.465	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.481	0.481	DROP INLET	LEFT	N/A
0.481	0.481	DROP INLET	RIGHT	N/A
0.520	0.520	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.600	0.600	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.605	0.605	DROP INLET	LEFT	N/A
0.647	0.647	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.653	0.797	GUARD/GUIDE RAIL	LEFT	N/A
0.659	0.659	SIGN	RIGHT	WARNING, 20 M.P.H.
0.659	0.659	SIGN	RIGHT	WARNING, RAISED CROSSWALK
0.659	0.659	SIGN	RIGHT	WARNING, AHEAD
0.664	0.664	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0017: MOORS ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.673	0.673	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.673	0.673	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.673	0.673	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.680	0.712	RETAINING WALL	RIGHT	N/A
0.685	0.685	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.685	0.685	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.685	0.685	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.700	0.700	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.702	0.702	SIGN	LEFT	WARNING, RAISED CROSSWALK
0.702	0.702	SIGN	LEFT	WARNING, AHEAD
0.702	0.702	SIGN	LEFT	WARNING, 20 M.P.H.
0.708	0.708	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.723	0.800	GUARD/GUIDE RAIL	RIGHT	N/A
0.732	0.855	CURB	RIGHT	N/A
0.749	0.749	CULVERT	N/A	N/A
0.765	0.765	CULVERT	N/A	N/A
0.808	0.808	DROP INLET	LEFT	N/A
0.808	0.808	DROP INLET	RIGHT	N/A
0.826	0.826	DROP INLET	RIGHT	N/A
0.827	0.827	SIGN	RIGHT	WARNING, 20 M.P.H.
0.827	0.827	SIGN	RIGHT	WARNING, AHEAD
0.827	0.827	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.866	0.866	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.871	0.871	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.871	0.871	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.876	0.876	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.876	0.876	SIGN	RIGHT	WARNING, END
0.876	0.876	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.879	0.879	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.879	0.879	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0017: MOORS ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.879	0.888	GUARD/GUIDE RAIL	RIGHT	N/A
0.884	0.884	SIGN	RIGHT	GUIDE, 6A WEST PROVINCETOWN CTR NEXT LEFT
0.888	0.888	PARK BOUNDARY	N/A	N/A
0.888	0.888	INTERSECTION	N/A	PAVED ROUTE (PROVINCE LANDS ROAD / NON NPS)
0.888	0.888	ROUTE END	N/A	TO PARK BOUNDARY AT PAVEMENT CHANGE

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0018BZ: EASTBOUND STATE ROUTE 6

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM PARK BOUNDARY AT PAVEMENT CHANGE
0.000	0.000	PARK BOUNDARY	N/A	N/A
0.000	0.251	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	N/A	PAVED ROUTE (STATE ROUTE 6 / NON NPS)
0.005	0.214	CURB	LEFT	N/A
0.005	0.248	CURB	RIGHT	N/A
0.013	0.013	SIGN	RIGHT	GUIDE, ENTERING CAPE COD NATIONAL SEASHORE PROVINCE LANDS
0.028	0.028	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.030	0.030	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.050	0.050	DROP INLET	LEFT	N/A
0.050	0.050	DROP INLET	RIGHT	N/A
0.050	0.050	SIGN	RIGHT	GUIDE, 6A SOUTH PROVINCETOWN LEFT LANE RACE POINT RIGHT LANE EXIT ONLY
0.078	0.078	SIGN	RIGHT	WARNING, SPEED LIMIT 30
0.117	0.117	DROP INLET	RIGHT	N/A
0.117	0.117	DROP INLET	LEFT	N/A
0.127	0.127	SIGN	RIGHT	REGULATORY, SPEED LIMIT 30
0.148	0.148	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.157	0.157	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.162	0.162	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.192	0.192	SIGN	RIGHT	REGULATORY, WRONG WAY
0.194	0.194	DROP INLET	LEFT	N/A
0.210	0.210	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.212	0.212	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.215	0.215	DROP INLET	LEFT	N/A
0.242	0.242	SIGN	RIGHT	GUIDE, PROVINCETOWN HERRING COVE BEACH RACE POINT
0.251	0.251	INTERSECTION	LEFT	ROUTE 0018AZ (WESTBOUND STATE ROUTE 6)
0.251	0.251	INTERSECTION	N/A	ROUTE 0018AZ (WESTBOUND STATE ROUTE 6)
0.251	0.251	ROUTE END	N/A	TO MERGE WITH ROUTE 0018AZ (WESTBOUND STATE ROUTE 6)

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0202BZ: TOMAHAWK TRAIL ROAD B

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0202AZ (TOMAHAWK TRAIL ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0202AZ (TOMAHAWK TRAIL ROAD A)
0.000	0.000	INTERSECTION	N/A	ROUTE 0202AZ (TOMAHAWK TRAIL ROAD A)
0.028	0.028	INTERSECTION	LEFT	ROUTE 0202BZ (TOMAHAWK TRAIL ROAD B)
0.057	0.057	INTERSECTION	N/A	ROUTE 0202BZ (TOMAHAWK TRAIL ROAD B)
0.057	0.057	INTERSECTION	RIGHT	ROUTE 0202BZ (TOMAHAWK TRAIL ROAD B)
0.057	0.057	ROUTE END	N/A	TO END OF LOOP

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234AZ: NORTH OF HIGHLAND CAMPGROUND ROAD A

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM HEAD OF THE MEADOW ROAD
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (HEAD OF THE MEADOW ROAD / NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (HEAD OF THE MEADOW ROAD / NON NPS)
0.005	0.031	CURB	LEFT	N/A
0.021	0.021	INTERSECTION	LEFT	UNPAVED ROUTE
0.031	0.031	GATE	N/A	N/A
0.037	0.037	INTERSECTION	LEFT	ROUTE 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)
0.039	0.039	SIGN	RIGHT	GUIDE, NO OPEN FIRES
0.039	0.039	SIGN	RIGHT	GUIDE, VISITORS MUST REGISTER WHEN THEY ARRIVE
0.040	0.040	SIGN	LEFT	GUIDE, NORTH OF HIGHLAND
0.040	0.040	SIGN	LEFT	GUIDE, ENTRANCE
0.040	0.040	SIGN	LEFT	GUIDE, CAMPING AREA
0.040	0.040	SIGN	LEFT	GUIDE, NO VACANCE
0.041	0.075	CURB	LEFT	N/A
0.068	0.068	SIGN	RIGHT	GUIDE, NATIONAL PARK BEACH PATH
0.071	0.071	SIGN	RIGHT	GUIDE, 10 MPH
0.080	0.080	INTERSECTION	LEFT	ROUTE 0948AZ (NORTH OF HIGHLAND CAMPGROUND OFFICE PARKING)
0.084	0.099	CURB	LEFT	N/A
0.106	0.106	INTERSECTION	LEFT	ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))
0.106	0.118	CURB	LEFT	N/A
0.108	0.108	SIGN	LEFT	GUIDE, AREA 1
0.108	0.108	SIGN	LEFT	GUIDE, SHOWERS
0.108	0.108	SIGN	LEFT	GUIDE, LAUNDROMAT
0.108	0.108	SIGN	LEFT	GUIDE, CAMP STORE
0.111	0.111	SIGN	RIGHT	GUIDE, 10 MPH
0.132	0.132	SIGN	LEFT	GUIDE, 10 MPH
0.145	0.304	CURB	RIGHT	N/A
0.184	0.184	INTERSECTION	LEFT	ROUTE 0234HZ (NORTH OF HIGHLAND CAMPGROUND ROAD H (AREA 2))

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234AZ: NORTH OF HIGHLAND CAMPGROUND ROAD A

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.252	0.252	INTERSECTION	LEFT	ROUTE 0234IZ (NORTH OF HIGHLAND CAMPGROUND ROAD I)
0.253	0.264	CURB	LEFT	N/A
0.263	0.263	INTERSECTION	LEFT	ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))
0.267	0.267	SIGN	LEFT	GUIDE, AREA 2
0.294	0.294	SIGN	LEFT	GUIDE, 10 MPH
0.309	0.309	SIGN	LEFT	GUIDE, AREA 3
0.313	0.313	INTERSECTION	LEFT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.315	0.315	INTERSECTION	N/A	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A) UNPAVED SECTION
0.315	0.315	SIGN	RIGHT	WARNING, DEAD END DO NOT ENTER
0.315	0.315	ROUTE END	N/A	TO END OF UNPAVED SECTION AT MP 0.52

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234BZ: NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A) UNPAVED SECTION
0.000	0.000	INTERSECTION	LEFT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A) UNPAVED SECTION
0.009	0.037	CURB	LEFT	N/A
0.040	0.040	INTERSECTION	LEFT	ROUTE 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)
0.042	0.051	CURB	LEFT	N/A
0.053	0.053	INTERSECTION	LEFT	UNPAVED ROUTE
0.054	0.099	CURB	RIGHT	N/A
0.054	0.061	CURB	LEFT	N/A
0.117	0.117	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.117	0.117	SIGN	RIGHT	GUIDE, ROAD END
0.155	0.187	CURB	LEFT	N/A
0.191	0.191	INTERSECTION	LEFT	ROUTE 0948CZ (18 AND OLDER BUILDING PARKING)
0.191	0.191	INTERSECTION	RIGHT	UNPAVED ROUTE
0.210	0.212	CURB	RIGHT	N/A
0.212	0.212	INTERSECTION	RIGHT	ROUTE 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C)
0.212	0.212	INTERSECTION	LEFT	ROUTE 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)
0.212	0.212	INTERSECTION	N/A	ROUTE 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)
0.212	0.212	ROUTE END	N/A	TO INTERSECTION WITH ROUTES 0234CZ (NORTH OF HIGHLAND CAMPGROUND ROAD C) AND 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234CZ: NORTH OF HIGHLAND CAMPGROUND ROAD C

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM INTERSECTION WITH ROUTES 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1)) AND 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234BZ (NORTH OF HIGHLAND CAMPGROUND ROAD B (AREA 1))
0.000	0.000	INTERSECTION	N/A	ROUTE 0948BZ (NORTH OF HIGHLAND CAMPGROUND STORE PARKING)
0.007	0.007	INTERSECTION	LEFT	ROUTE 0948AZ (NORTH OF HIGHLAND CAMPGROUND OFFICE PARKING)
0.026	0.026	SIGN	RIGHT	GUIDE, IN CASE OF EMERGENCY
0.032	0.046	CURB	LEFT	N/A
0.034	0.034	INTERSECTION	LEFT	ROUTE 0948AZ (NORTH OF HIGHLAND CAMPGROUND OFFICE PARKING)
0.046	0.046	SIGN	LEFT	GUIDE, ONE WAY DO NOT ENTER
0.046	0.046	INTERSECTION	RIGHT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.046	0.046	GATE	N/A	N/A
0.046	0.046	INTERSECTION	LEFT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.046	0.046	ROUTE END	N/A	TO ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234DZ: NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4)

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.000	0.043	CURB	LEFT	N/A
0.000	0.000	INTERSECTION	LEFT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.009	0.009	SIGN	LEFT	GUIDE, STOP
0.022	0.022	INTERSECTION	RIGHT	ROUTE 0234GZ (NORTH OF HIGHLAND CAMPGROUND ROAD G)
0.044	0.044	INTERSECTION	LEFT	UNPAVED ROUTE
0.058	0.192	CURB	RIGHT	N/A
0.101	0.101	SIGN	LEFT	GUIDE, 10 MPH
0.157	0.157	INTERSECTION	LEFT	UNPAVED ROUTE
0.184	0.184	INTERSECTION	LEFT	ROUTE 0234JZ (NORTH OF HIGHLAND CAMPGROUND ROAD J)
0.193	0.193	INTERSECTION	RIGHT	ROUTE 0234KZ (NORTH OF HIGHLAND CAMPGROUND ROAD K)
0.196	0.248	CURB	RIGHT	N/A
0.252	0.252	INTERSECTION	N/A	UNPAVED ROUTE
0.252	0.252	INTERSECTION	LEFT	UNPAVED ROUTE
0.252	0.252	ROUTE END	N/A	TO END AT UNPAVED CAMPGROUND ROADS

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234EZ: NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3)

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234AZ (NORTH OF HIGHLAND CAMPGROUND ROAD A)
0.011	0.032	CURB	RIGHT	N/A
0.015	0.015	INTERSECTION	LEFT	ROUTE 0234GZ (NORTH OF HIGHLAND CAMPGROUND ROAD G)
0.037	0.037	INTERSECTION	RIGHT	ROUTE 0234FZ (NORTH OF HIGHLAND CAMPGROUND ROAD F)
0.037	0.037	INTERSECTION	LEFT	ROUTE 0234FZ (NORTH OF HIGHLAND CAMPGROUND ROAD F)
0.038	0.056	CURB	RIGHT	N/A
0.039	0.039	SIGN	RIGHT	GUIDE, 117 TO 130
0.060	0.060	INTERSECTION	LEFT	ROUTE 0234FZ (NORTH OF HIGHLAND CAMPGROUND ROAD F)
0.060	0.060	INTERSECTION	RIGHT	ROUTE 0234FZ (NORTH OF HIGHLAND CAMPGROUND ROAD F)
0.062	0.069	CURB	RIGHT	N/A
0.069	0.069	INTERSECTION	N/A	UNPAVED ROUTE
0.069	0.069	ROUTE END	N/A	TO END AT UNPAVED CAMPGROUND ROADS

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234FZ: NORTH OF HIGHLAND CAMPGROUND ROAD F

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.000	0.000	INTERSECTION	N/A	ROUTE 0234FZ (NORTH OF HIGHLAND CAMPGROUND ROAD F)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.000	0.000	INTERSECTION	LEFT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.006	0.062	CURB	LEFT	N/A
0.060	0.106	CURB	RIGHT	N/A
0.107	0.107	INTERSECTION	RIGHT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.107	0.107	INTERSECTION	LEFT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.115	0.120	GUARD/GUIDE WALL	RIGHT	N/A
0.127	0.127	SIGN	LEFT	GUIDE, WATER NO WASHING OR BINSING
0.135	0.135	INTERSECTION	LEFT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.135	0.135	INTERSECTION	RIGHT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.135	0.135	ROUTE END	N/A	TO END OF LOOP AT ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0234GZ: NORTH OF HIGHLAND CAMPGROUND ROAD G

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.000	0.000	INTERSECTION	LEFT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0234EZ (NORTH OF HIGHLAND CAMPGROUND ROAD E (AREA 3))
0.036	0.036	INTERSECTION	LEFT	ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))
0.036	0.036	INTERSECTION	RIGHT	ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))
0.036	0.036	ROUTE END	N/A	TO ROUTE 0234DZ (NORTH OF HIGHLAND CAMPGROUND ROAD D (AREA 4))

CACO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0235: HIGHLAND LIGHTHOUSE ROAD

Notice: Culverts and drop inlets were marked by NPS and inventoried by RIP in Cycle 5 on all new or re-aligned DCV driven routes.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0949 (HIGHLAND MUSEUM PARKING)
0.000	0.000	INTERSECTION	N/A	ROUTE 0949 (HIGHLAND MUSEUM PARKING)
0.002	0.002	SIGN	RIGHT	REGULATORY, PARKING
0.003	0.003	SIGN	LEFT	GUIDE, WHEELCHAIR AVAILABLE FOR LOAN LOCATED IN LIGHTHOUSE GIFT SHOP
0.003	0.003	SIGN	RIGHT	GUIDE, PARKING
0.004	0.004	SIGN	RIGHT	GUIDE, NO STOPPING OR STANDING
0.005	0.005	SIGN	RIGHT	GUIDE, AUTHORIZED VEHICLES ONLY
0.006	0.006	SIGN	RIGHT	GUIDE, HIGHLAND LIGHT ROAD
0.006	0.006	SIGN	RIGHT	GUIDE, NO BEACH ACCESS
0.016	0.016	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.023	0.023	SIGN	LEFT	GUIDE, RETURN POWER CARTS HERE
0.023	0.023	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.024	0.024	INTERSECTION	RIGHT	GOLF CART ROAD / PATH
0.027	0.027	SIGN	LEFT	GUIDE, RETURN POWER CARTS HERE
0.030	0.030	INTERSECTION	LEFT	UNPAVED PARKING
0.040	0.040	INTERSECTION	LEFT	UNPAVED PARKING
0.059	0.059	DROP INLET	RIGHT	N/A
0.074	0.074	INTERSECTION	RIGHT	UNPAVED ROUTE (GOLF COURSE ACCESS)
0.076	0.076	SIGN	RIGHT	GUIDE, NO GOLF CARTS BEYOND THIS POINT
0.077	0.077	SIGN	RIGHT	REGULATORY, NO TRESPASSING GOLFERS ONLY
0.111	0.111	INTERSECTION	RIGHT	ROUTE 0950 (HIGHLAND LIGHTHOUSE HANDICAPPED PARKING)
0.124	0.124	INTERSECTION	N/A	DEAD END AT LIGHTHOUSE
0.124	0.124	ROUTE END	N/A	TO END AT LIGHTHOUSE

Section 10 Appendix



Cape Cod National Seashore



Federal Lands Highway
Road Inventory Program

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

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

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

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

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

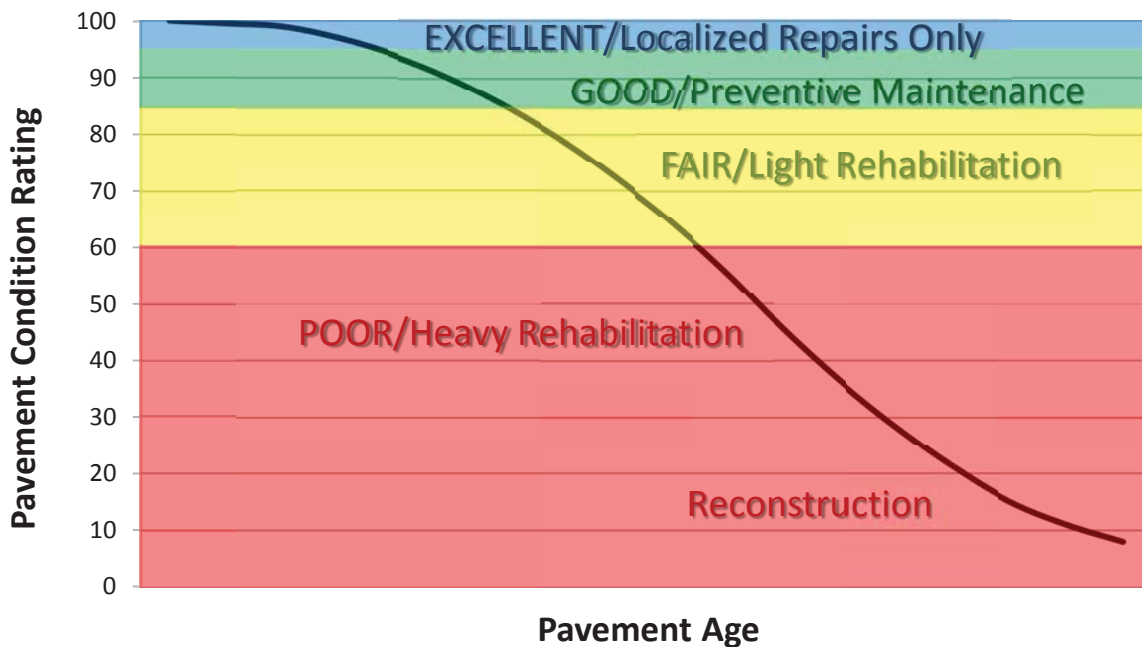
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

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

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

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

Condition Categories and Treatments



DESCRIPTION OF RATING SYSTEM

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

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

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

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

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

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

SURFACE DISTRESSES

Surface Condition Rating - SCR

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

Surface distresses determined from digital images

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

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

- Rutting

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

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

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

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

Roughness Condition Index - RCI

Additional condition data measured by DCV (lasers and accelerometers)

- Roughness (IRI)

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

Pavement Condition Rating - PCR

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

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

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

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

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

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

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

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

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

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

TABLE 1: Distress Summary

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

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

ALLIGATOR CRACKING

Description

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

Severity Levels

LOW

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

MEDIUM

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

HIGH

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

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

TABLE 2: Alligator Crack Severity Levels

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

LONGITUDINAL CRACKING

Description

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

Severity Levels

LOW

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

MED

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

HIGH

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

TRANSVERSE CRACKING

Description

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

Severity Levels

LOW

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

MED

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

HIGH

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

PATCHING AND POTHOLES

Description

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

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

Severity Levels

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

RUTTING

Description

Rutting is a longitudinal surface depression in the wheelpath.

Severity Levels

LOW

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

MED

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

HIGH

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

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

ROUGHNESS

Description

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

Severity Levels

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

TABLE 3: IRI

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

INDEX FORMULAS

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

Alligator Crack Index

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

Where:

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

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

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

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

Percent of total area is computed as:

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

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

Longitudinal Crack Index

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

Where:

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

These values are ≥ 0 and can exceed 100.

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

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

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

Percent of interval length is computed as:

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

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

Structural Crack Index

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

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

Transverse Crack Index

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

Where:

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

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

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

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

Number of cracks is computed as:

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

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

Patching Index

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

Where:

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

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

Percent of total area is computed as:

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

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

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

Rutting Index

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

Where:

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

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

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

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

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

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

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

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

Roughness Condition Index (Asphalt)

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

Where:

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

Average IRI is computed as:

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

There is no applicable threshold for failure for this index.

Roughness Condition Index (Concrete)

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

For concrete, PCR = RCI

Surface Condition Rating Index

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

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

Where:

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

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

Data Collection Vehicle Subsystems

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

CAMERAS

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

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

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

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

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

DMI (Distance Measuring Instrument)

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

ROUGHNESS (IRI)

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

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

RUTTING

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

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

GPS & INERTIAL SYSTEMS

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

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

GPS on Manually Rated Roads (MRR)

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

Geodatabase – Background and Metadata

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

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

GLOSSARY OF TERMS AND ABBREVIATIONS

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