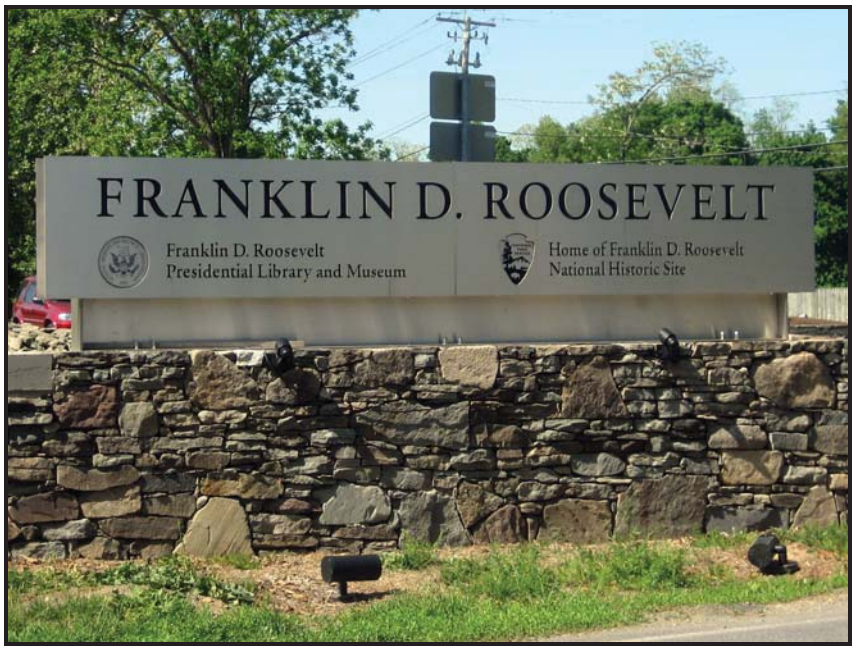
Federal Lands Highway

Road Inventory Program

Road Inventory and Condition Assessment



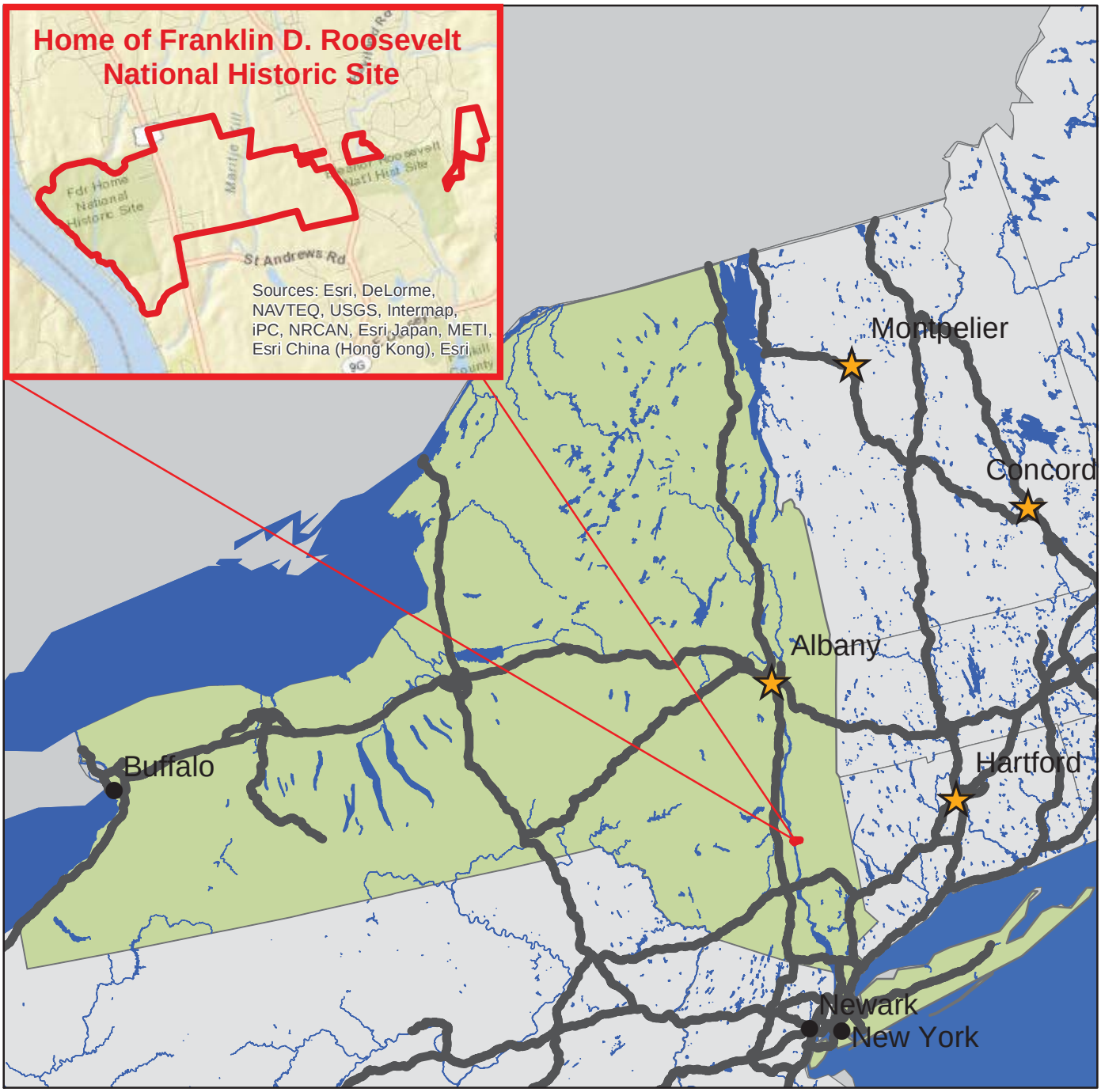
Home of Franklin D. Roosevelt National Historic Site

HOFR

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 04/2013
Report Date: 11/2013

Home of Franklin D. Roosevelt National Historic Site
in
New York



DCV = Data Collection Vehicle

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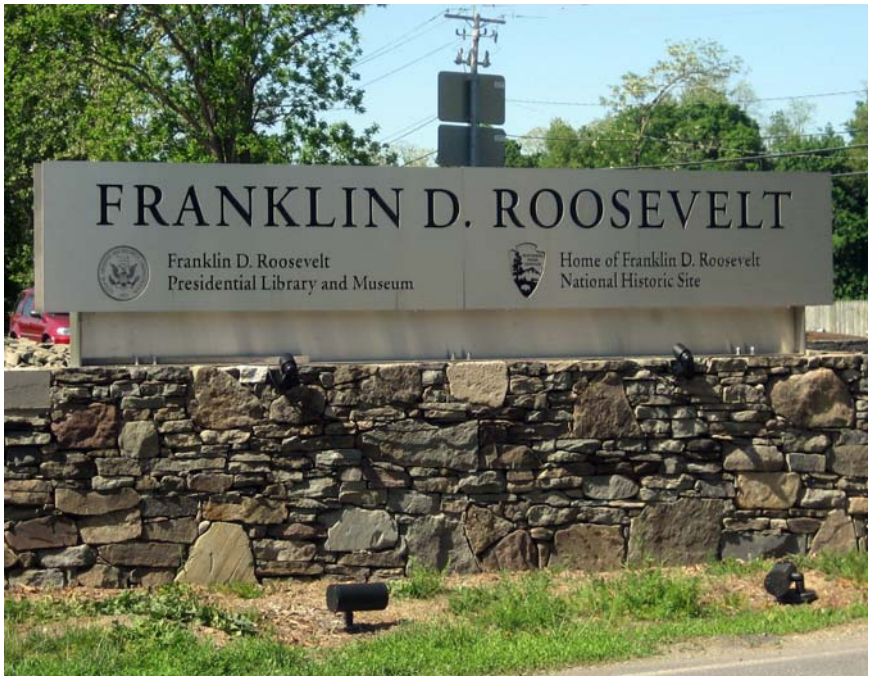
Introduction



Home of Franklin D. Roosevelt National Historic Site

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

Home of Franklin D. Roosevelt National Historic Site

Federal Lands Highway
Road Inventory Program

Cycle 5 NPS/RIP Route ID Report

Shading Color Key:
Red text denotes approx. mileage

White = Paved Routes, DCV Driven | Yellow = Unpaved Routes, DCV not Driven | Blue = All Paved Parking Areas | Green = All Unpaved Parking Areas
Grey = Paved Routes, DCV not Driven | Black = State, Local or Private non-NPS Routes | = Concession Route Flag ON

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

** DCV - Data Collection Vehicle NC - Not Collected

HOFR

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From	Route Description To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0010	5	60421		OLD ORCHARD ROAD	FROM U.S. ROUTE 9 (ALBANY POST ROAD)	TO ROUTE 0900 (FDR LIBRARY PARKING)	N/A	0.20	0.00	0.20	1		AS	1
0011	5	60448		WALLACE CENTER ENTRY/EXIT ROAD	FROM U.S. ROUTE 9 (ALBANY POST ROAD)	TO END OF LOOP	N/A	0.30	0.00	0.30	1		AS	1
0012	5	60484		TOP COTTAGE ENTRANCE DRIVE	FROM POTTERS BEND	TO END OF LOOP	N/A	0.15	0.00	0.15	1		AS	3
0200ZZ	5	104431		ROOSEVELT FARM LANE ROAD AND CONNECTOR ROAD	FROM U.S. ROUTE 9 (ALBANY POST ROAD) AND ROUTE 0906 (FARM LANE WEST PARKING)	TO NEW YORK STATE ROUTE 9G (VIOLET AVENUE)	N/A	0.80	1.25	2.05	3	37,843	AS	2
0400	NC	60422		HISTORIC ENTRANCE ROAD	FROM U.S. ROUTE 9 (ALBANY POST ROAD)	TO END OF ROUTE 0402 (SERVICE ROAD)	N/A	0.00	0.20	0.20	6		GR	
0402	5	60424		SERVICE ROAD	FROM ROUTE 0901 (WALLACE CENTER PARKING LOT)	TO END OF PAVEMENT / END OF ROUTE 0400 (HISTORIC ENTRANCE ROAD)	N/A	0.22	0.00	0.22	6		AS	1
0403	5	60425		DUPLEX ROAD	FROM ROUTE 0402 (SERVICE ROAD)	TO END	N/A	0.14	0.00	0.14	6		AS	1
0404	NC	60426		GRAVEL PIT SERVICE ROAD	FROM ROUTE 0405 (FARM ROAD)	TO ROUTE 0405 (FARM ROAD)	N/A	0.00	0.32	0.32	6		NV	
0405	NC	60427		FARM ROAD	FROM ROUTE 0403 (DUPLEX ROAD)	TO PARK BOUNDARY	N/A	0.00	0.62	0.62	6		NV	
0406	5	60428		BELLEFIELD MANSION REAR SERVICE DRIVE	FROM ROUTE 0407 (BELLEFIELD MANSION LOOP)	TO ROUTE 0901 (WALLACE CENTER PARKING LOT)	N/A	0.15	0.00	0.15	3		AS	1
0407	5	60429		BELLEFIELD MANSION LOOP	FROM U.S. ROUTE 9 (ALBANY POST ROAD)	TO U.S. ROUTE 9 (ALBANY POST ROAD)	N/A	0.23	0.00	0.23	1		AS	1
0408	NC	60430		BELLEFIELD ALLEE	FROM ROUTE 0010 (OLD ORCHARD ROAD)	TO ROUTE 0900 (FDR LIBRARY PARKING)	N/A	0.00	0.05	0.05	6		NV	
0409	NC	60431		UPPER FIELD ROAD	FROM ROUTE 0400 (HISTORIC ENTRANCE ROAD)	TO PARK BOUNDARY	N/A	0.00	0.20	0.20	6		GR	
0410	NC	104165		KESSLER SERVICE ROAD	FROM KESSLER DRIVE	TO HORTICULTURAL RECYCLING AREA	N/A	0.00	0.25	0.25	5		NV	
0900	5	60432		FDR LIBRARY PARKING	FROM END OF ROUTE 0010 (OLD ORCHARD ROAD)	TO ROUTE 0901 (WALLACE CENTER PARKING LOT)	N/A	0.00	0.00	0.00		11,180	AS	1

Cycle 5 NPS/RIP Route ID Report

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

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** DCV - Data Collection Vehicle NC - Not Collected

HOFR

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From	Route Description To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0901	5	60447		WALLACE CENTER PARKING LOT	FROM ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)	TO ROUTE 0402 (SERVICE ROAD) AND ROUTE 0900 (FDR LIBRARY PARKING)	N/A	0.00	0.00	0.00		78,269	AS	1
0902	NC	104167		MAINTENANCE AREA	FROM ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE)	TO MAINTENANCE AREA	N/A	0.00	0.00	0.00		500	GR	
0903A	5	104169		BELLEFIELD PARKING A	ADJACENT TO ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) ON RIGHT		N/A	0.00	0.00	0.00		2,715	AS	1
0903B	5	104173		BELLEFIELD PARKING B	ADJACENT TO ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) ON LEFT		N/A	0.00	0.00	0.00		1,095	AS	1
0904	NC			FARM LANE EAST PARKING	ADJACENT TO ROUTE 0200ZZ (ROOSEVELT FARM LANE ROADS)		N/A	0.00	0.00	0.00			GR	
0905	5			FARM LANE EAST HANDICAP PARKING	ADJACENT TO UNPAVED PORTION OF ROUTE 0200ZZ (ROOSEVELT FARM LANE ROADS), NEAR NEW YORK STATE ROUTE 9G (VIOLET AVENUE)		N/A	0.00	0.00	0.00		289	AS	2
0906	5	23598		FARM LANE WEST PARKING	FROM U.S. ROUTE 9 (ALBANY POST ROAD)	TO UNPAVED PORTION OF ROUTE 0200ZZ (ROOSEVELT FARM LANE ROADS)	N/A	0.00	0.00	0.00		35,240	AS	1

Cycle 5 NPS/RIP Route ID Report

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Yellow = Unpaved Routes, DCV not Driven
Blue = All Paved Parking Areas
Green = All Unpaved Parking Areas
Grey = Paved Routes, DCV not Driven
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= Concession Route Flag ON

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CYCLE 5 SUMMARY TOTALS FOR HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

CYCLE 5 ROUTE TOTALS

DCV Driven Route Miles	1.38
Manually Rated Route Miles	0.80
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	2.19
Manually Rated Routes (SQFT)	0.00
TOTAL UNPAVED PARK ROUTE MILES	2.89

CYCLE 5 CONCESSION TOTALS

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

* CYCLE 5 PARKING AREA TOTALS

Paved Parking (SQFT)	128,788
Unpaved Parking (SQFT)	500
TOTAL PARKING (SQFT)	129,288

CYCLE 5 WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	85
**Manually Rated Routes PCR	75
**Parking PCR	92
***Total Equivalent Lane Miles	5.06

* - 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 HOFR

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HOFR

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0200ZZ	104431	5	ROOSEVELT FARM LANE ROAD AND CONNECTOR ROAD	FROM U.S. ROUTE 9 (ALBANY POST ROAD) AND ROUTE 0906 (FARM LANE WEST PARKING)	TO NEW YORK STATE ROUTE 9G (VIOLET AVENUE)		3	0.80	1.25	2.05	37,843

HOFR-0200ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0200AAZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 01	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.21	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.31		3	0.10	0.00	0.10	5,122
0200ABZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 02	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.53	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.54		3	0.01	0.00	0.01	581
0200ACZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 03	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.58	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.70		3	0.12	0.00	0.12	5,845
0200ADZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 04	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.71	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.73		3	0.02	0.00	0.02	760
0200AEZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 05	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.75	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.77		3	0.02	0.00	0.02	1,267
0200AFZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 06	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.81	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.03		3	0.22	0.00	0.22	9,124
0200AGZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 07	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.07	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.13		3	0.06	0.00	0.06	3,485
0200AHZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 08	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.15	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.20		3	0.05	0.00	0.05	2,281
0200AIZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 09	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.28	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.31		3	0.03	0.00	0.03	1,352
0200AJZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 10	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.33	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.38		3	0.05	0.00	0.05	2,070

NPS/RIP Subcomponent Details for HOFR

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HOFR

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

HOFR-0200ZZ Subcomponent Breakdown

Rte. No.	FMSS No.	Cycle Collected	Route Name	Route Description From	Route Description To	Concess Route	Func. Class	Paved Miles	Un-Paved Miles	Total Route Length	Manual Rated SQ/FT
0200AKZ	104431	5	ROOSEVELT FARM LANE ROAD SECTION 11	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.63	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.66		3	0.03	0.00	0.03	1,098
0200BAZ	104431	5	ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 01	FROM ROUTE 0906 (FARM LANE WEST PARKING)	TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.004		3	0.00	0.00	0.00	211
0200BBZ	104431	5	ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 02	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.008	TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.012		3	0.00	0.00	0.00	211
0200BCZ	104431	5	ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 03	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.028	TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.044		3	0.02	0.00	0.02	845
0200BDZ	104431	5	ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 04	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.080	TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.116		3	0.04	0.00	0.04	1,901
0200BEZ	104431	5	ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 05	FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.148	TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.19		3	0.03	0.00	0.03	1,690

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HOFR

ROUTES ADDED FROM PREVIOUS INVENTORY:

Route #	Route Name	Reason for Addition	Comments
0011	WALLACE CENTER ENTRY/EXIT ROAD	OTHER	PAVED ROUTE ADDED DURING 2008 ALIGNMENT.
0012	TOP COTTAGE ENTRANCE DRIVE	OTHER	PAVED ROUTE ADDED DURING 2008 ALIGNMENT.
0200ZZ	ROOSEVELT FARM LANE ROAD AND CONNECTOR ROAD	OTHER	ADDED IN CYCLE 5. ROUTE HAS GRAVEL AND ASPHALT SECTIONS.
0905	FARM LANE EAST HANDICAP PARKING	OTHER	PAVED ROUTE ADDED IN CYCLE 5.
0906	FARM LANE WEST PARKING	OTHER	PAVED ROUTE ADDED IN CYCLE 5.

ROUTES MODIFIED FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Modification	Comments
0010	OLD ORCHARD ROAD	REALIGNED	ROUTE WAS REALIGNED SINCE CYCLE 3 DATA COLLECTION; WAS A LOOP ROAD. ROUTE NAME CHANGED FROM "MAIN ENTRANCE ROAD".

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HOFR

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0402	SERVICE ROAD	OTHER	ROUTE LENGTH INCREASED IN CYCLE 5 DUE TO RECONSTRUCTION OF ROUTES 0900 AND 0901 AND REALIGNMENT OF ROUTE 0402 AT BEGINNING. FUNCTIONAL CLASSIFICATION CHANGED FROM 5 TO 6; THIS IS AN ADMINISTRATIVE ROAD WITH RESTRICTED ACCESS.
0406	BELLEFIELD MANSION REAR SERVICE DRIVE	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASSIFICATION CHANGED FROM 5 TO 3; ROAD PROVIDES CIRCULATION WITHIN PARK.
0900	FDR LIBRARY PARKING	OTHER	ROUTE HAS BEEN RECONSTRUCTED SINCE CYCLE 3 DATA COLLECTION AND IS NOW THE PARKING LOT FOR THE FDR LIBRARY. ROUTE NAME CHANGED FROM "MAIN VISITOR PARKING".
0901	WALLACE CENTER PARKING LOT	OTHER	ROUTE HAS BEEN RECONSTRUCTED SINCE CYCLE 3 DATA COLLECTION AND IS NOW THE PARKING LOT FOR THE VISITOR CENTER. ROUTE NAME CHANGED FROM "BUS AND RV PARKING".

Section 3
Park Summary Information

Home of Franklin D. Roosevelt National Historic Site

Federal Lands Highway
Road Inventory Program

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

F.C.	Pavement Condition Rating (PCR)								TOTAL MILES
	Poor (0-60)		Fair (61-84)		Good (85-94)		Excellent (95-100)		
	MILES	%	MILES	%	MILES	%	MILES	%	
1	0.16	11.51%	0.15	10.79%	0.28	20.14%	0.29	20.86%	**0.88**
2									
3			0.04	2.88%	0.04	2.88%	0.07	5.04%	**0.15**
4									
5									
6	0.04	2.88%	0.14	10.07%	0.04	2.88%	0.14	10.07%	**0.36**
7									
8									
Totals	**0.20**	**14.39%**	**0.33**	**23.74%**	**0.36**	**25.90%**	**0.50**	**35.97%**	**1.39**

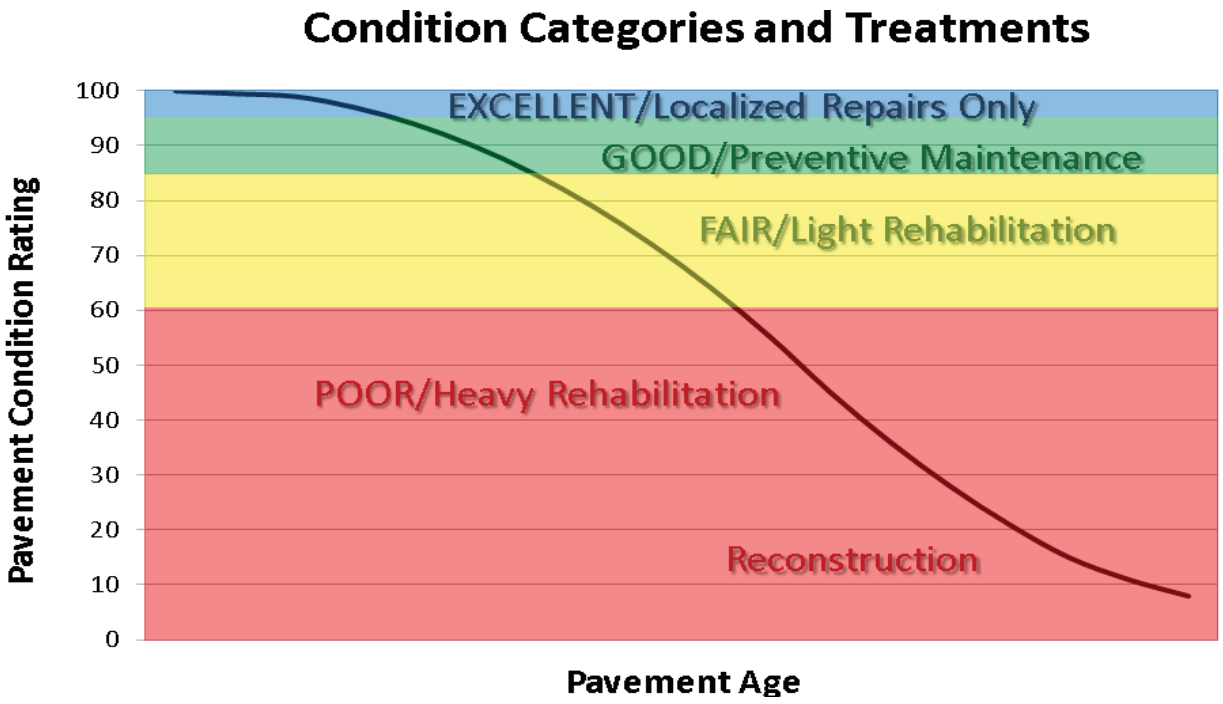
Note: **The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class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

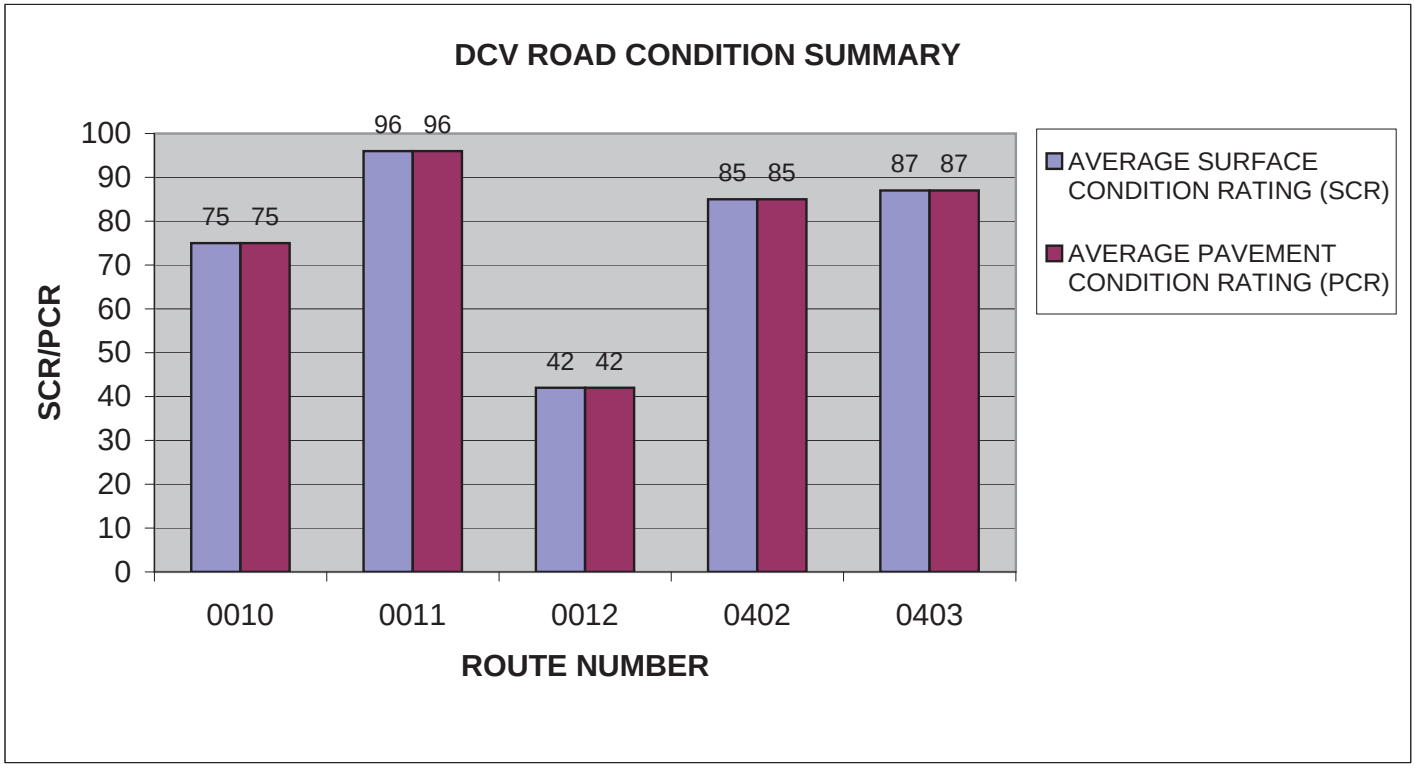
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely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



HOFR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

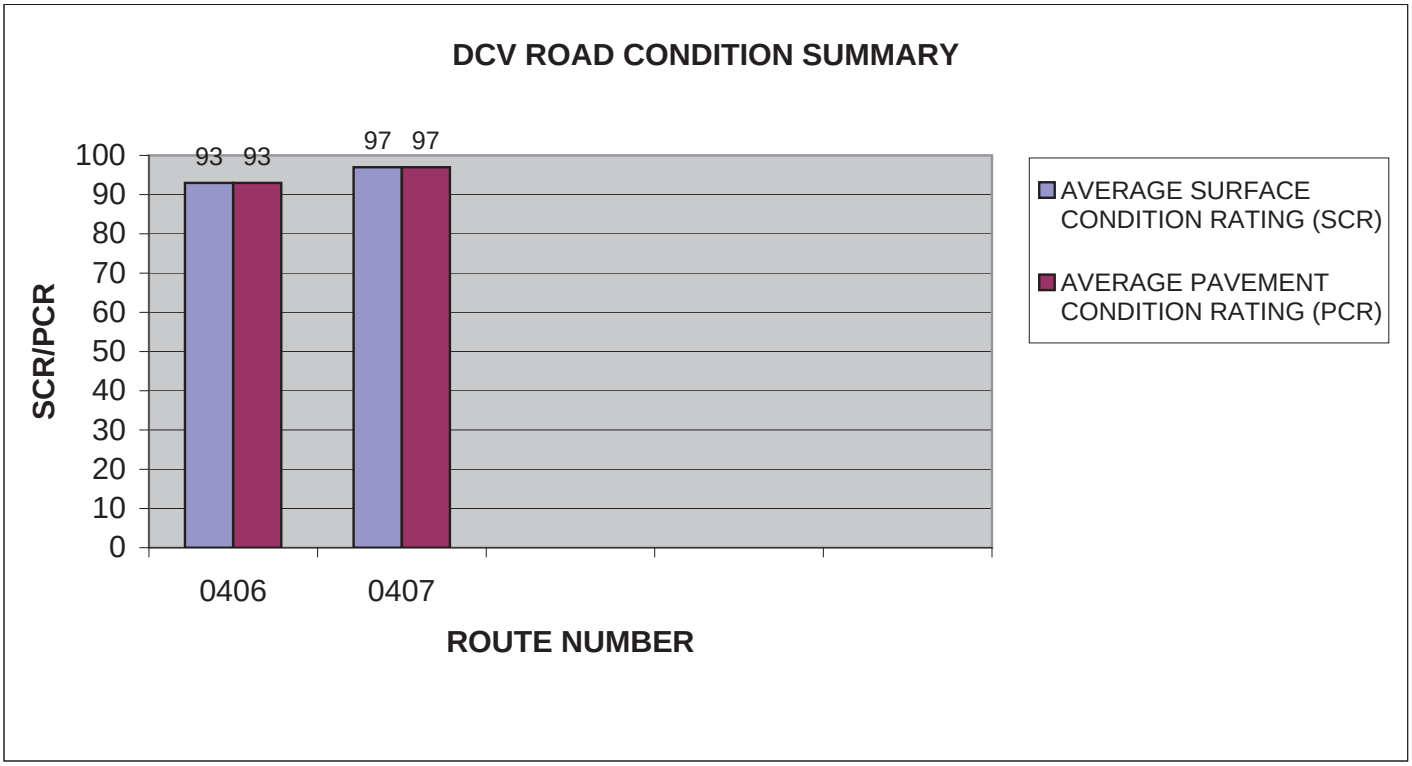
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	OLD ORCHARD ROAD	1	0.20	ASPHALT	75	75
0011	WALLACE CENTER ENTRY/EXIT ROAD	1	0.30	ASPHALT	96	96
0012	TOP COTTAGE ENTRANCE DRIVE	1	0.15	ASPHALT	42	42
0402	SERVICE ROAD	6	0.22	ASPHALT	85	85
0403	DUPLEX ROAD	6	0.14	ASPHALT	87	87



HOFR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

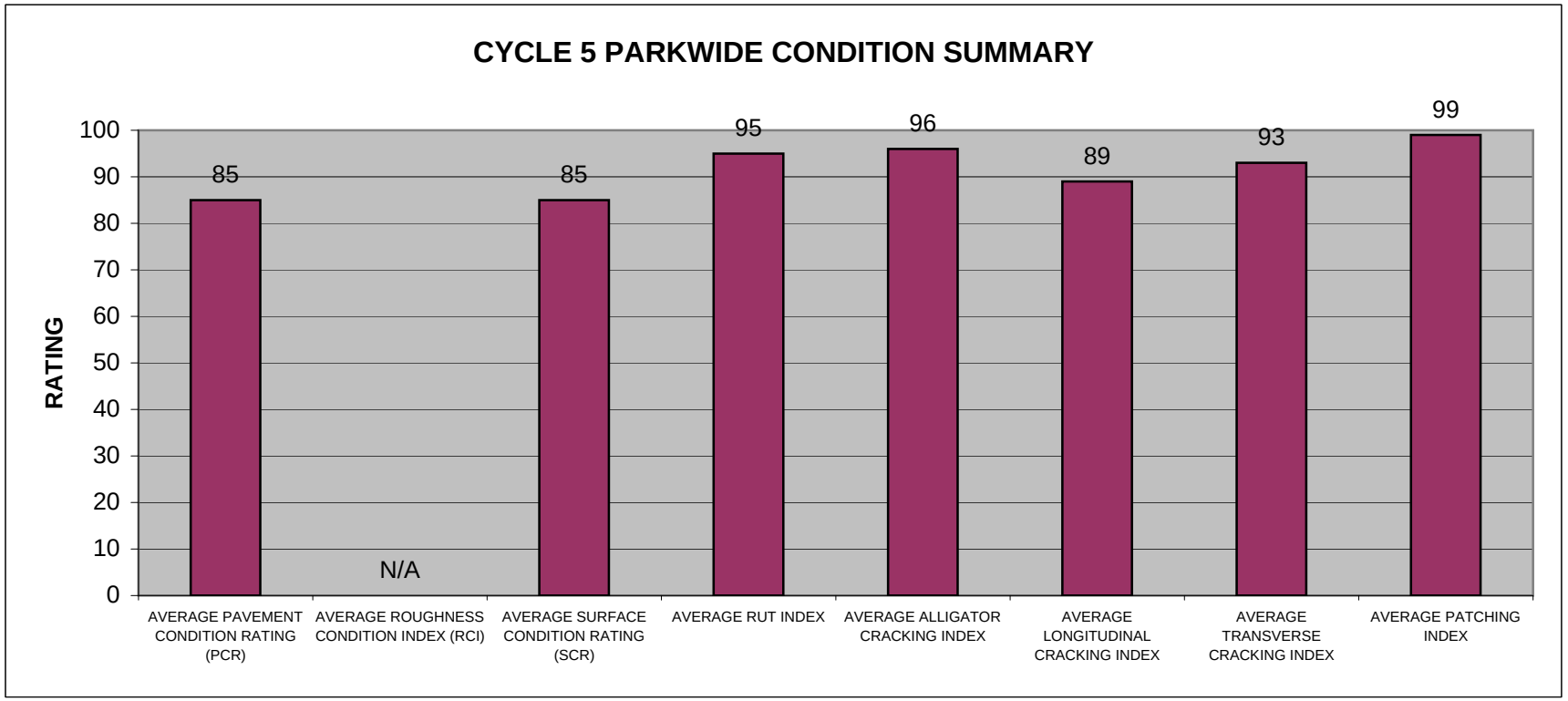
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0406	BELLEFIELD MANSION REAR SERVICE DRIVE	3	0.15	ASPHALT	93	93
0407	BELLEFIELD MANSION LOOP	1	0.23	ASPHALT	97	97



HOFR: PARKWIDE DCV CONDITION SUMMARY

AVERAGE PAVEMENT CONDITION RATING (PCR)	AVERAGE ROUGHNESS CONDITION INDEX (RCI)	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE RUT INDEX	AVERAGE ALLIGATOR CRACKING INDEX	AVERAGE LONGITUDINAL CRACKING INDEX	AVERAGE TRANSVERSE CRACKING INDEX	AVERAGE PATCHING INDEX
85	N/A	85	95	96	89	93	99

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

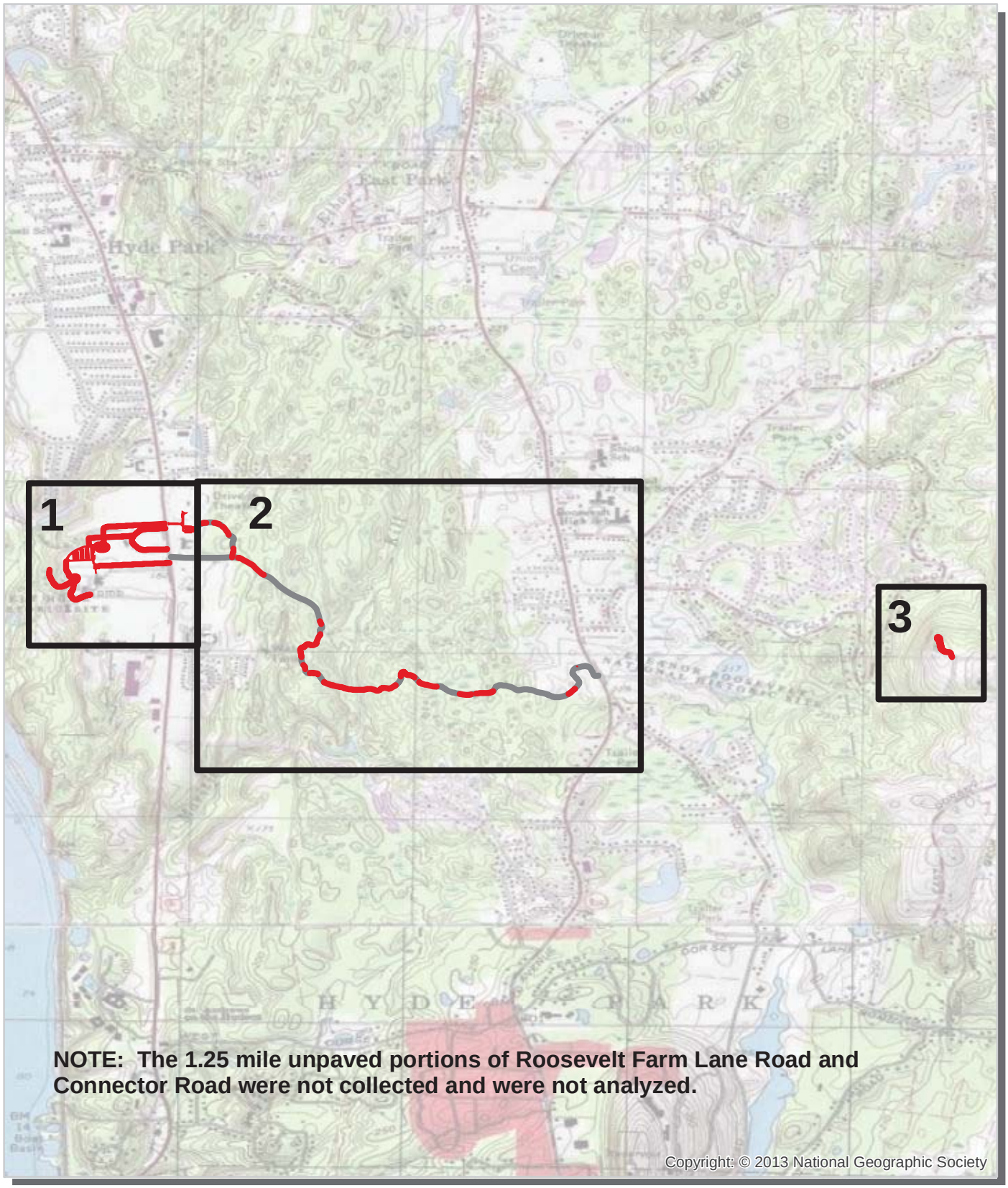


Section 4
Park Route Location Maps

Home of Franklin D. Roosevelt National Historic Site

Federal Lands Highway
Road Inventory Program

Home of Franklin D. Roosevelt National Historic Site
Route Location Map
Key Map

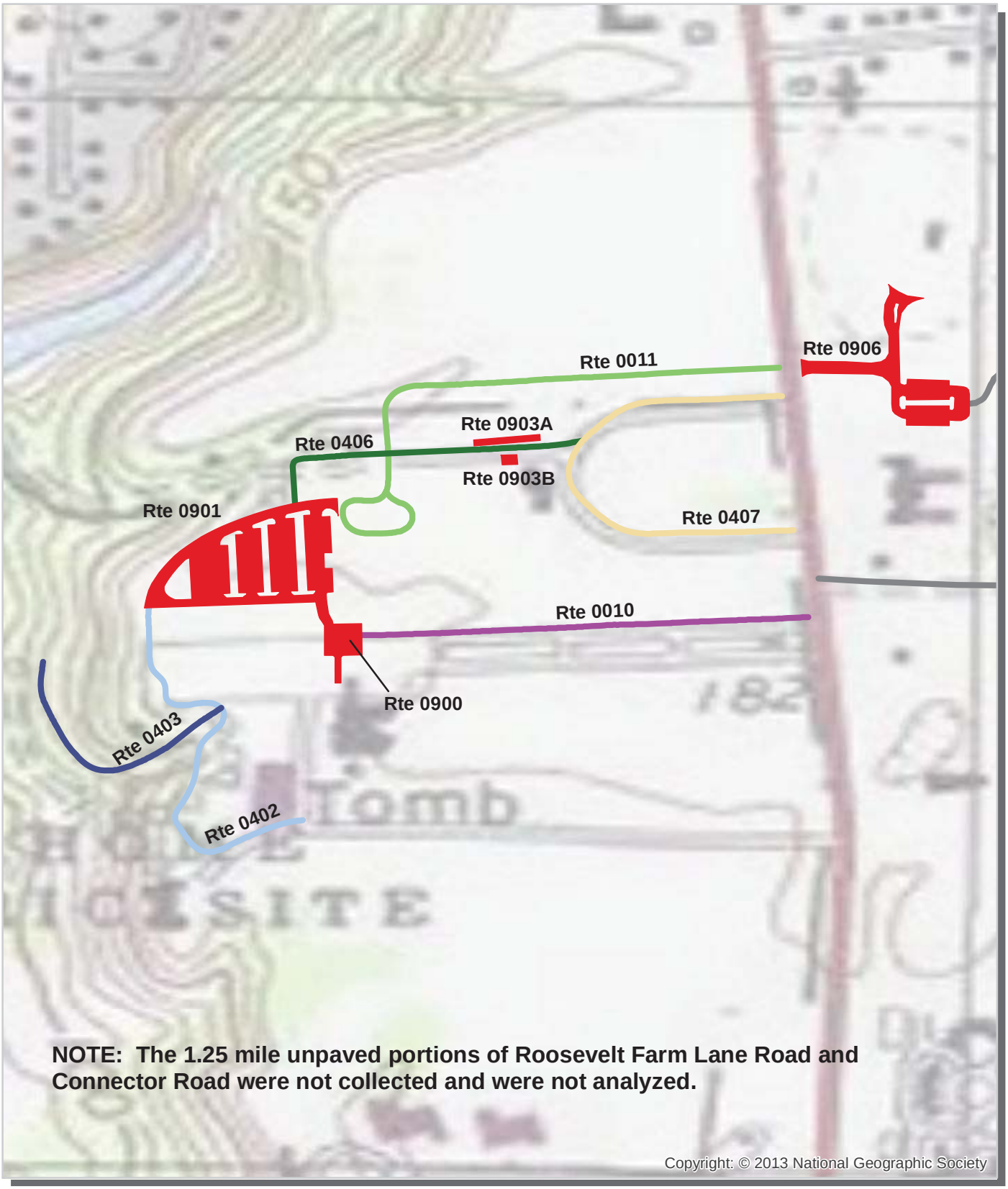


Cycle 5 Collected Routes

0.5 0.25 0 0.5
Miles

N

Home of Franklin D. Roosevelt National Historic Site
Route Location Map
Area 1

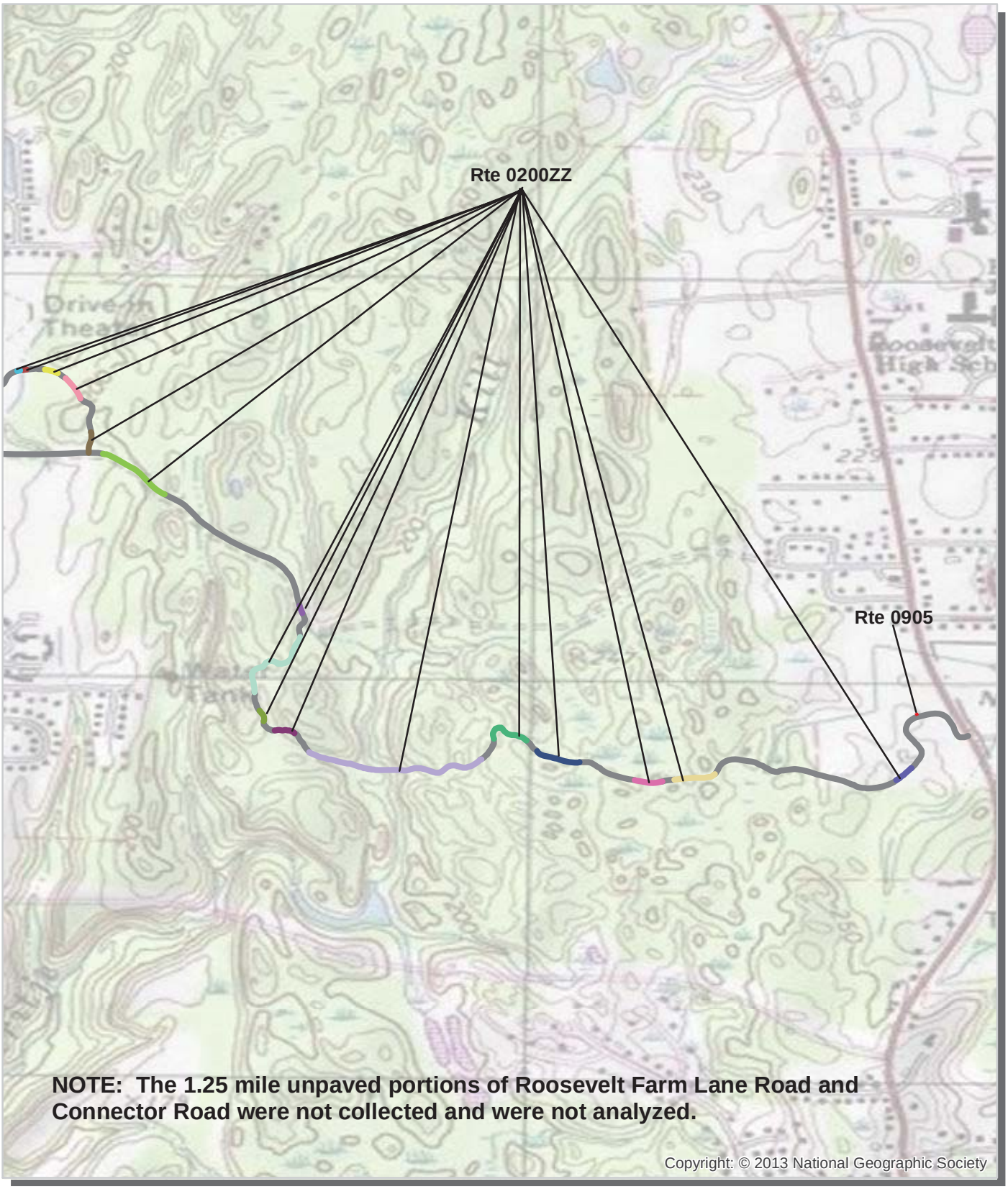


Unique colors used to differentiate routes

0.08 0.04 0 0.08
Miles

N

Home of Franklin D. Roosevelt National Historic Site
Route Location Map
Area 2

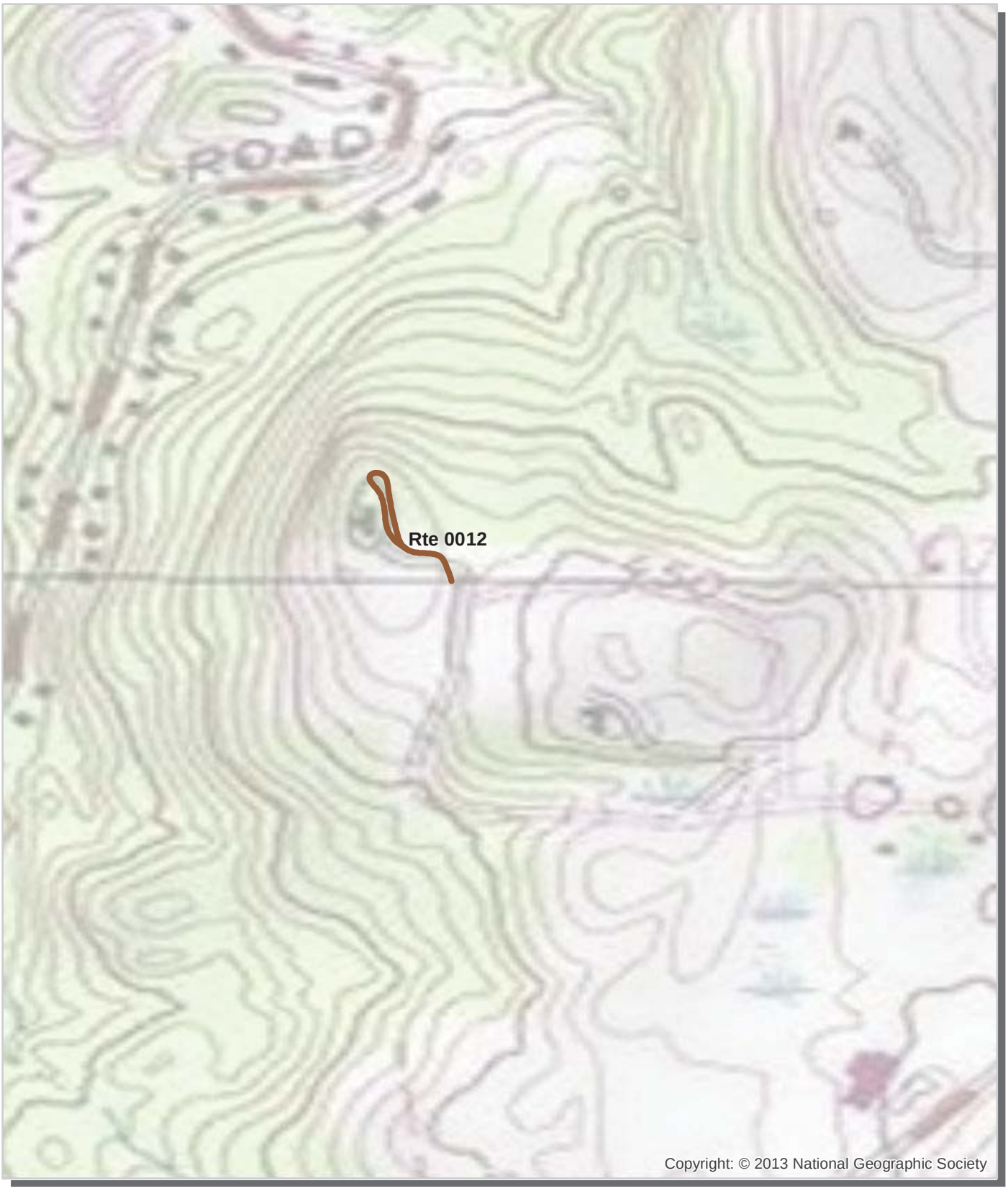


Unique colors used to differentiate routes

0.2 0.1 0 0.2
Miles

N

Home of Franklin D. Roosevelt National Historic Site
Route Location Map
Area 3

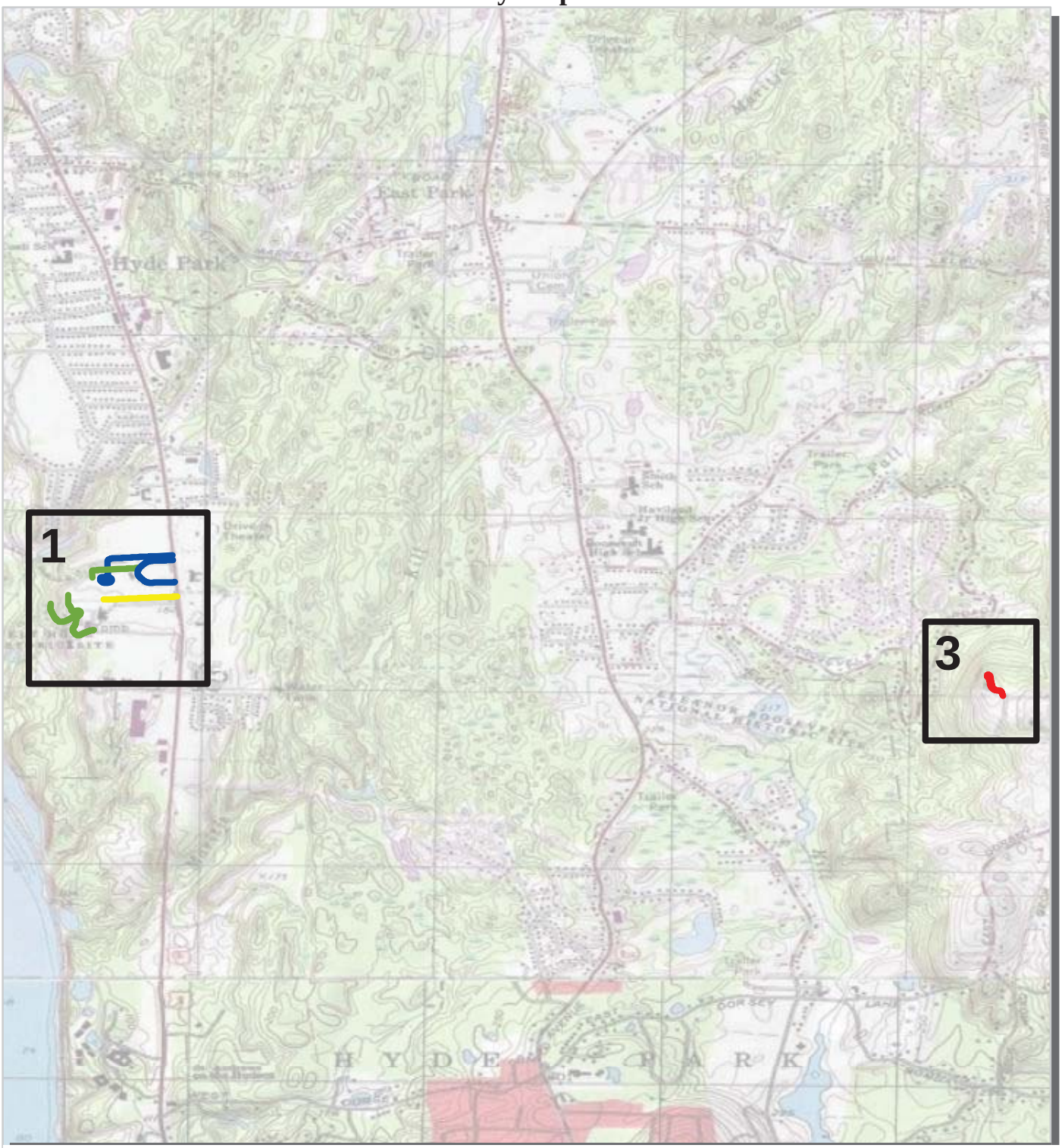


Unique colors used to differentiate routes

700 350 0 700
Feet

N

Home of Franklin D. Roosevelt National Historic Site
Route Condition Map
PCR - Mile by Mile
Key Map



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

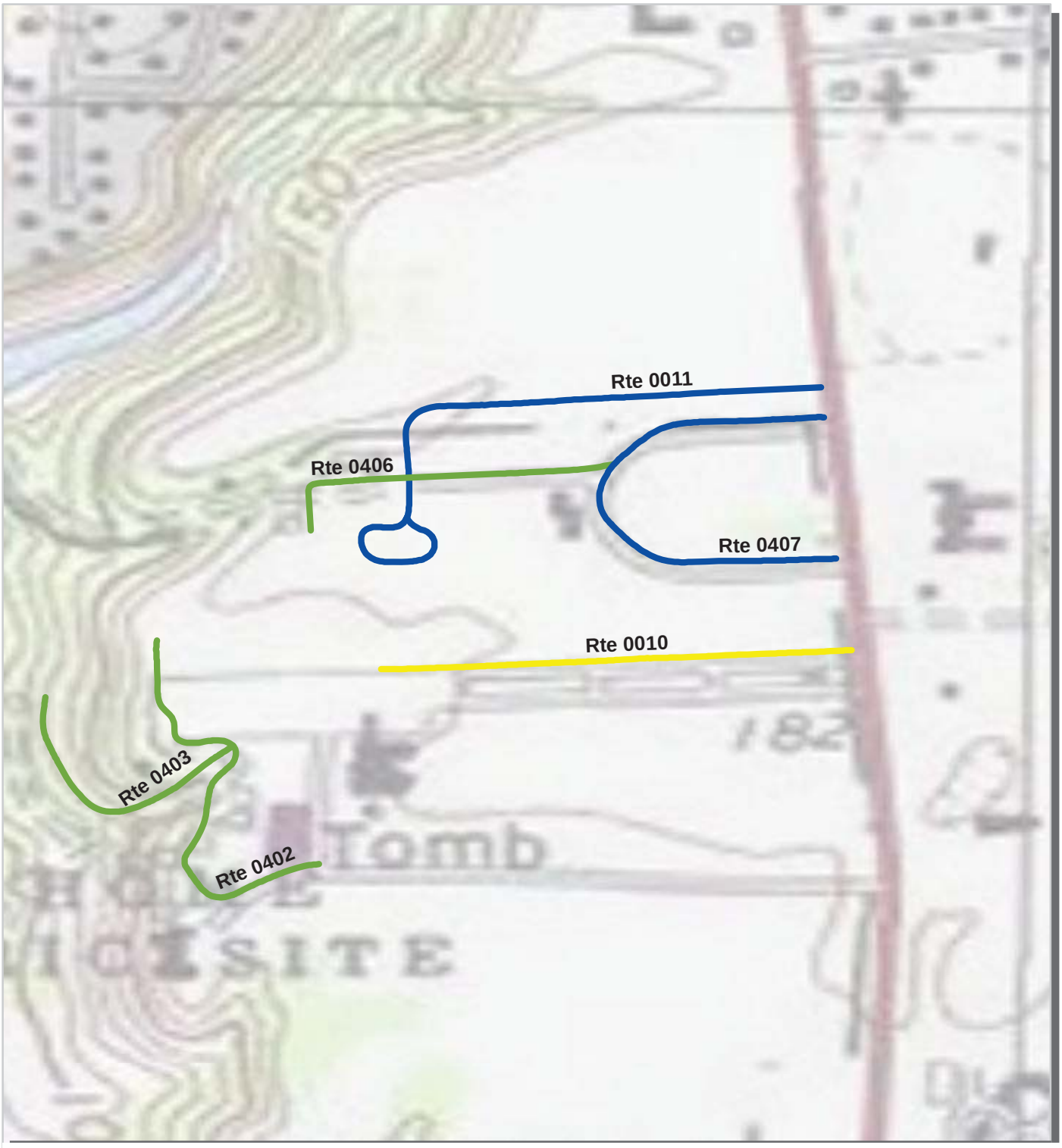
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

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

0.5 0.25 0 0.5 Miles

N

Home of Franklin D. Roosevelt National Historic Site
Route Condition Map
PCR - Mile by Mile
Area 1



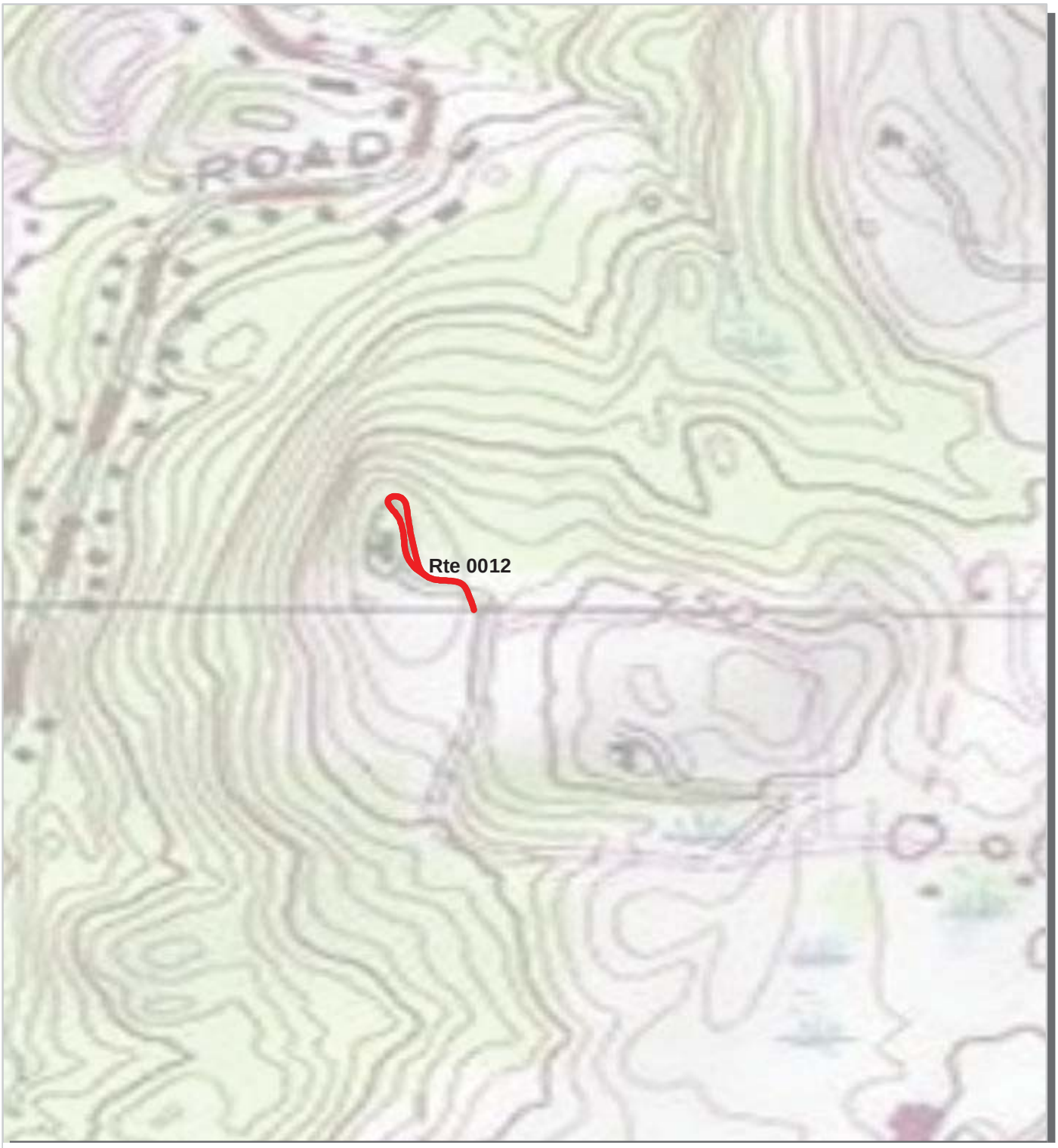
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.08 0.04 0 0.08 Miles

N

Home of Franklin D. Roosevelt National Historic Site
Route Condition Map
PCR - Mile by Mile
Area 3



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.

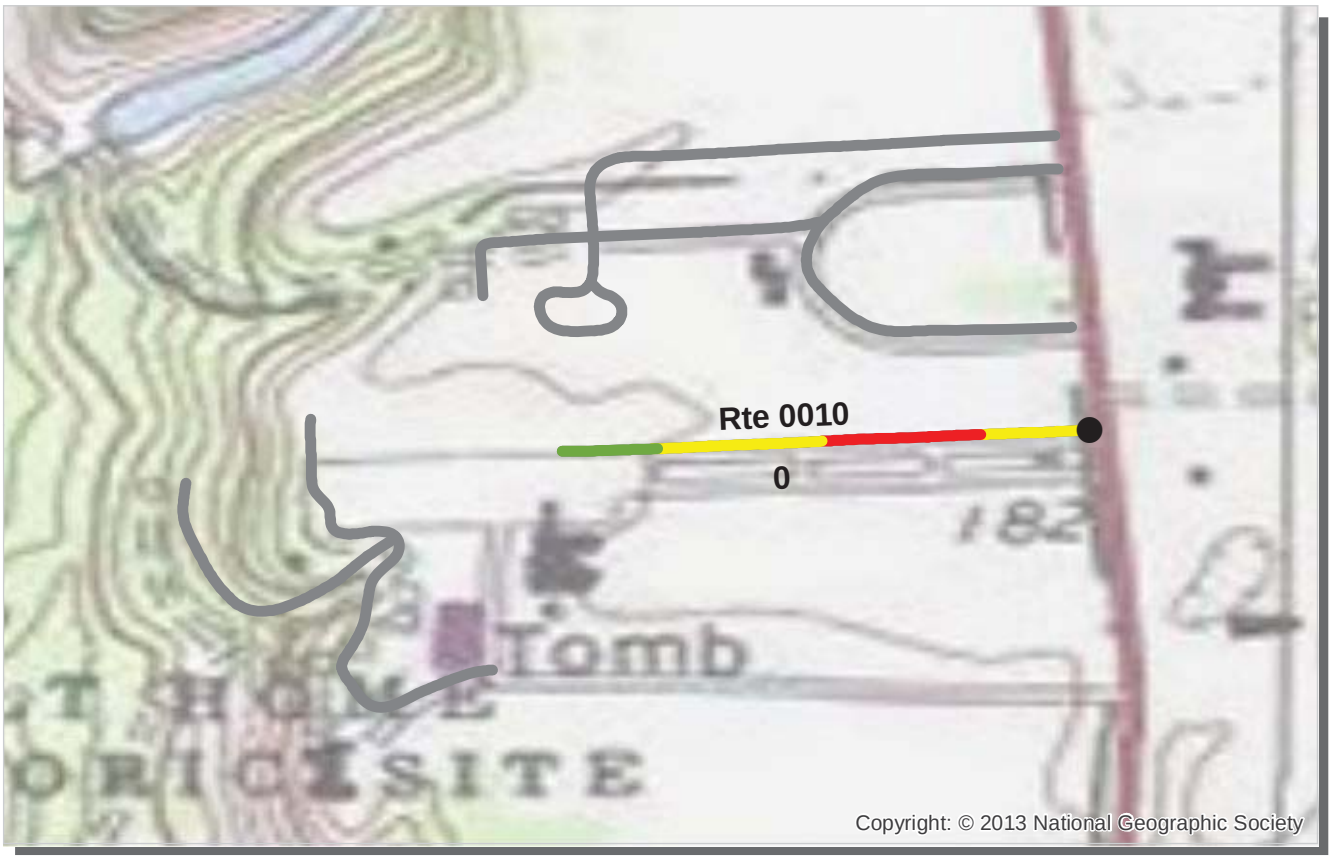
700 350 0 700 Feet

N

Section 5
Paved Route
Condition Rating Sheets

Home of Franklin D. Roosevelt
National Historic Site

Federal Lands Highway
Road Inventory Program



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

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

ROUTE: 0010 OLD ORCHARD ROAD
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.20 Miles**

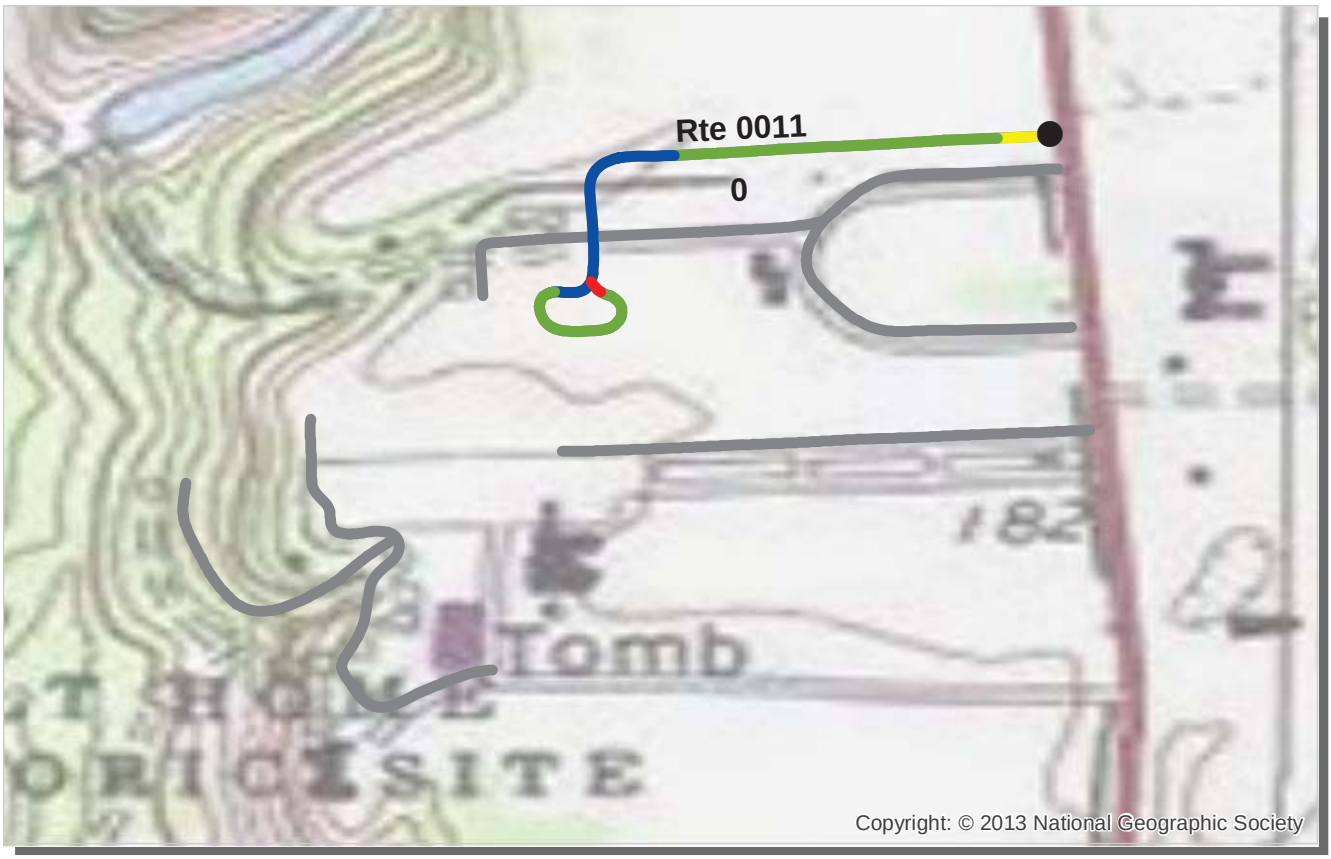
Section Number	0				
Section Length (mi)	0.20				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	19				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	75				
PCR (Pavement Condition Rating)	75				
Distress Index Values					
Structural Crack Index	75				
Transverse Cracking Index	77				
Patching Index	98				
Rutting Index	97				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable



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

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

ROUTE: 0011 WALLACE CENTER ENTRY/EXIT ROAD
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.30 Miles**

Section Number	0				
Section Length (mi)	0.30				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	22				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	96				
PCR (Pavement Condition Rating)	96				
Distress Index Values					
Structural Crack Index	98				
Transverse Cracking Index	96				
Patching Index	100				
Rutting Index	97				
Roughness Condition Index (RCI)	NC				

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

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

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

ROUTE: 0012 TOP COTTAGE ENTRANCE DRIVE
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/8/2013

NORTHEAST REGION **TOTAL LENGTH: 0.15 Miles**

Section Number	0				
Section Length (mi)	0.15				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	14				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	42				
PCR (Pavement Condition Rating)	42				
Distress Index Values					
Structural Crack Index	42				
Transverse Cracking Index	88				
Patching Index	99				
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

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

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

ROUTE: 0402 SERVICE ROAD
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.22 Miles**

Section Number	0				
Section Length (mi)	0.22				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	17				
Lane Width (ft)	17				
Roadway Condition Information					
SCR (Surface Condition Rating)	85				
PCR (Pavement Condition Rating)	85				
Distress Index Values					
Structural Crack Index	85				
Transverse Cracking Index	98				
Patching Index	99				
Rutting Index	98				
Roughness Condition Index (RCI)	NC				

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

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

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

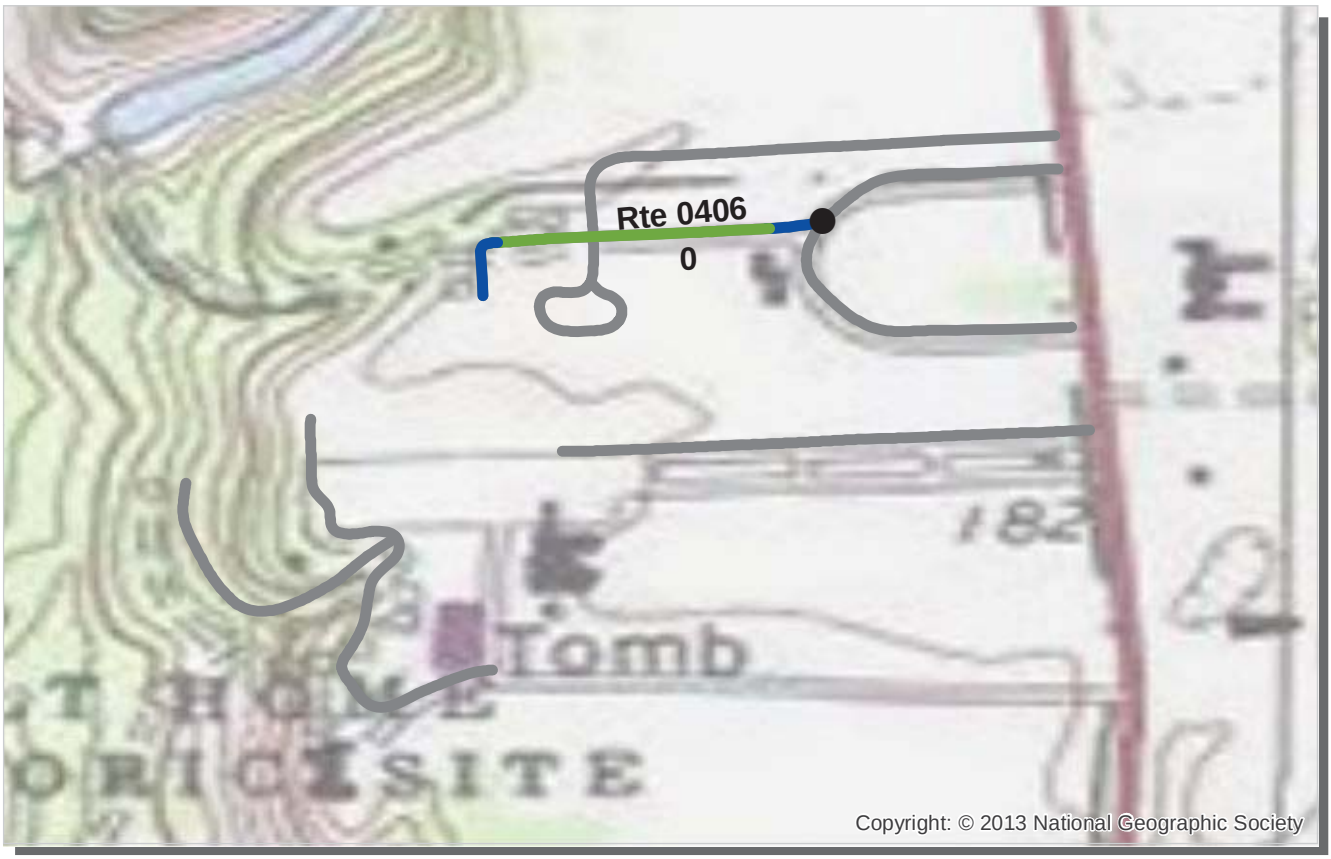
ROUTE: 0403 DUPLEX ROAD
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.14 Miles**

Section Number	0				
Section Length (mi)	0.14				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	87				
PCR (Pavement Condition Rating)	87				
Distress Index Values					
Structural Crack Index	87				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	94				
Roughness Condition Index (RCI)	NC				

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



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: 0406 BELLEFIELD MANSION REAR SERVICE DRIVE
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.15 Miles**

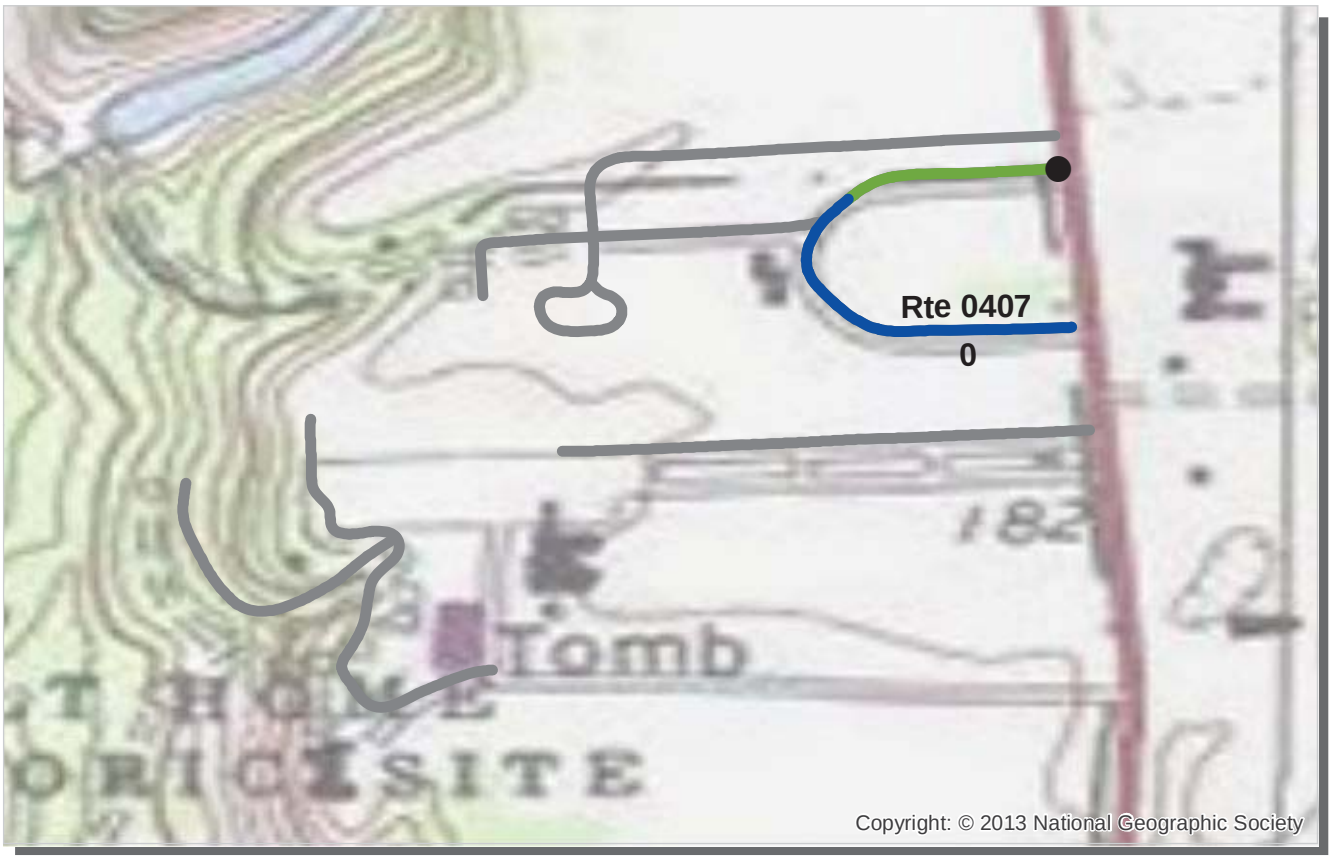
Section Number	0				
Section Length (mi)	0.15				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	93				
PCR (Pavement Condition Rating)	93				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	93				
Patching Index	100				
Rutting Index	98				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable



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

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

ROUTE: 0407 BELLEFIELD MANSION LOOP
HOFR : HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

COLLECTED: 4/9/2013

NORTHEAST REGION **TOTAL LENGTH: 0.23 Miles**

Section Number	0				
Section Length (mi)	0.23				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	97				
PCR (Pavement Condition Rating)	97				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	98				
Patching Index	100				
Rutting Index	97				
Roughness Condition Index (RCI)	NC				

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

Section 6
Manually Rated Paved Route Condition Rating Sheets

Home of Franklin D. Roosevelt National Historic Site

Federal Lands Highway
Road Inventory Program

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200ZZ

ROOSEVELT FARM LANE ROAD AND CONNECTOR ROAD

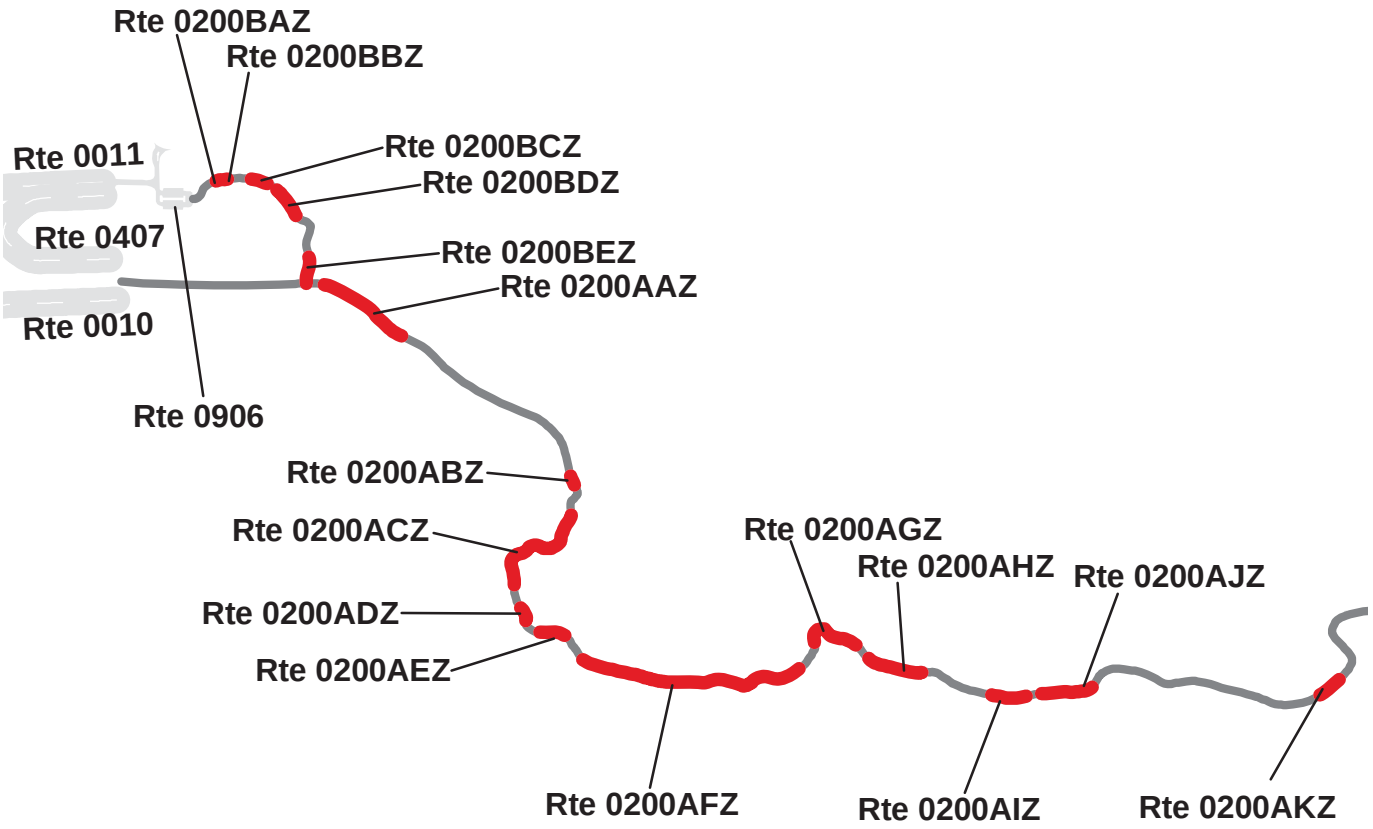
FROM U.S. ROUTE 9 (ALBANY POST ROAD) AND ROUTE 0906 (FARM LANE WEST PARKING)
TO NEW YORK STATE ROUTE 9G (VIOLET AVENUE)

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200ZZ	PUBLIC	4/9/2013	37,843	0.65	0.80	9
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
4	0	0	NO CURB AND GUTTER	NO CURB	SUMMARY/75	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.



2,400 1,200 0 2,400
Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AAZ

ROOSEVELT FARM LANE ROAD SECTION 01

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.21

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.31

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AAZ	PUBLIC	7/1/2012	5,122	0.09	0.10	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

500 250 0 500 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Route 0200ABZ

ROOSEVELT FARM LANE ROAD SECTION 02

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.53

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.54

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200ABZ	PUBLIC	7/1/2012	581	0.01	0.01	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

330 165 0 330

Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Route 0200ACZ

ROOSEVELT FARM LANE ROAD SECTION 03

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.58

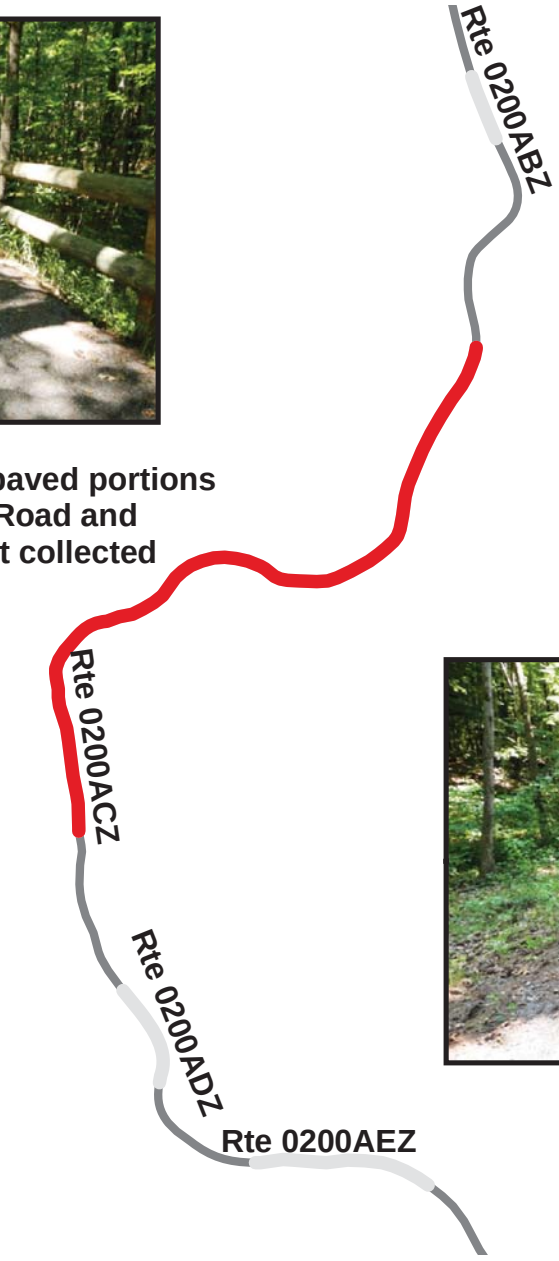
TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.70

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200ACZ	PUBLIC	7/1/2012	5,845	0.10	0.12	9
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.



330 165 0 330

Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200ADZ

ROOSEVELT FARM LANE ROAD SECTION 04

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.71

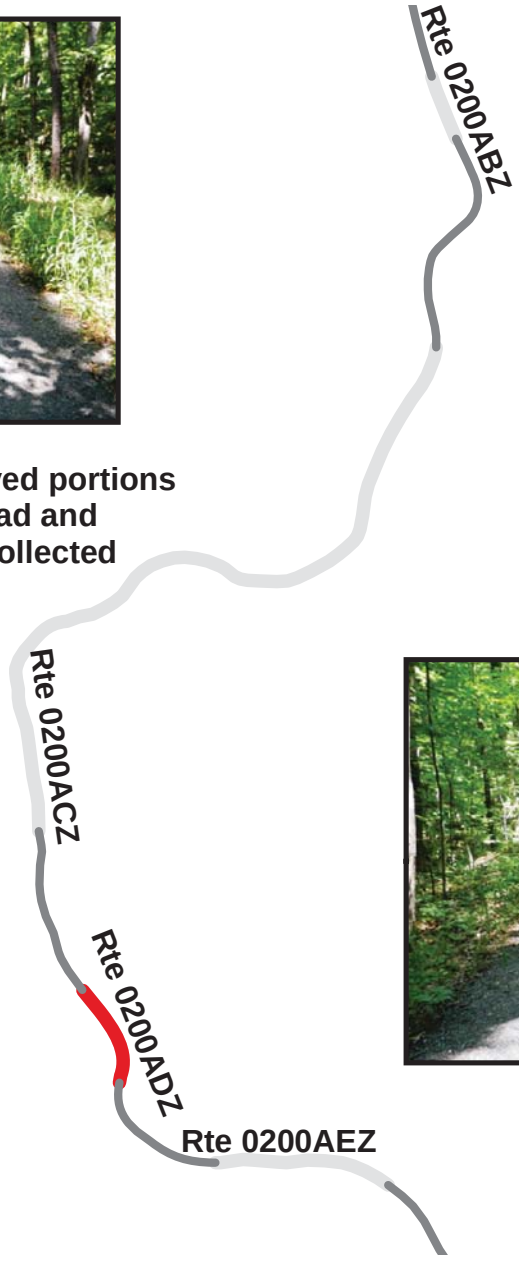
TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.73

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200ADZ	PUBLIC	7/1/2012	760	0.01	0.02	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.



330 165 0 330

Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AEZ

ROOSEVELT FARM LANE ROAD SECTION 05

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.75

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.77

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AEZ	PUBLIC	7/1/2012	1,267	0.02	0.02	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
1	0	0	NO CURB AND GUTTER	NO CURB	POOR/45	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AFZ

ROOSEVELT FARM LANE ROAD SECTION 06

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.81

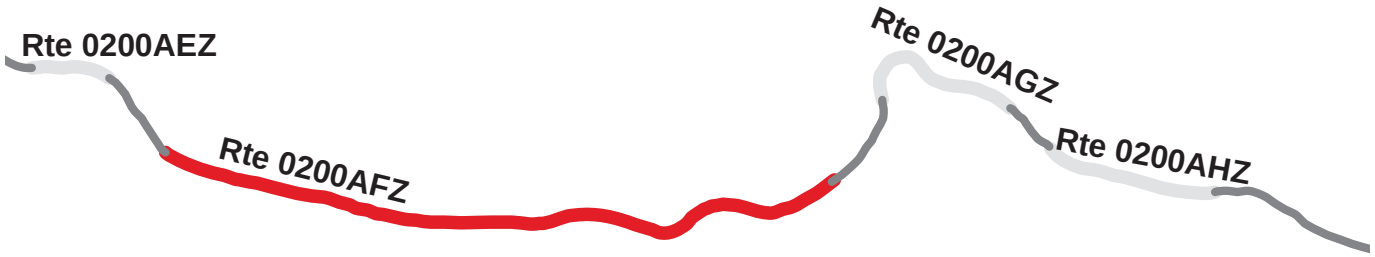
TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.03

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AFZ	PUBLIC	7/1/2012	9,124	0.16	0.22	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
2	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.



750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AGZ

ROOSEVELT FARM LANE ROAD SECTION 07

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.07

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.13

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AGZ	PUBLIC	7/1/2012	3,485	0.06	0.06	11
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AHZ

ROOSEVELT FARM LANE ROAD SECTION 08

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.15

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.20

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AHZ	PUBLIC	7/1/2012	2,281	0.04	0.05	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AIZ

ROOSEVELT FARM LANE ROAD SECTION 09

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.28

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.31

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AIZ	PUBLIC	7/1/2012	1,352	0.02	0.03	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AJZ

ROOSEVELT FARM LANE ROAD SECTION 10

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.33

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.38

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AJZ	PUBLIC	7/1/2012	2,070	0.04	0.05	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200AKZ

ROOSEVELT FARM LANE ROAD SECTION 11

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.63

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 1.66

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200AKZ	PUBLIC	7/1/2012	1,098	0.02	0.03	8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

750 375 0 750 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200BAZ

ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 01

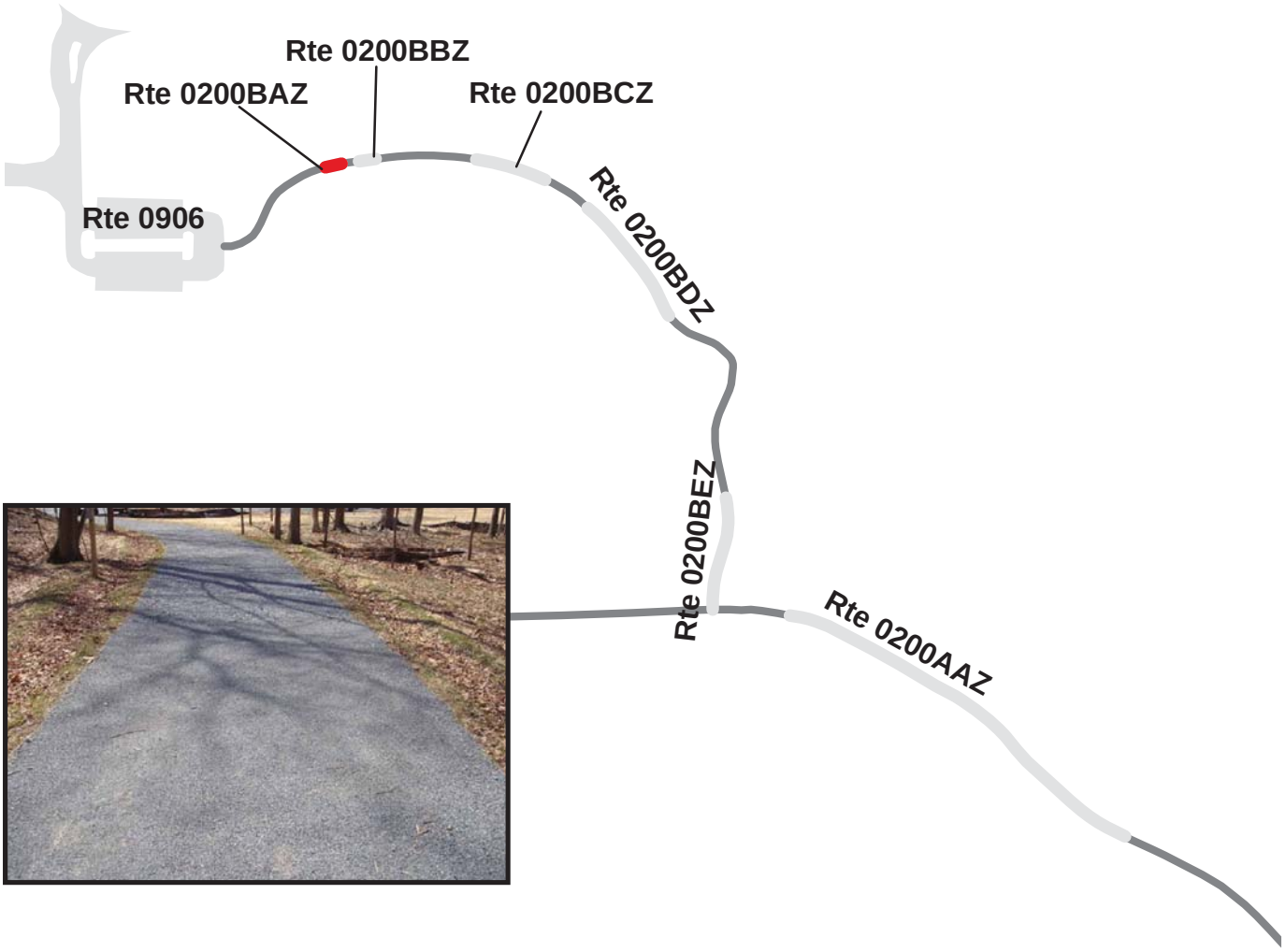
FROM ROUTE 0906 (FARM LANE WEST PARKING)

TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.004

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200BAZ	PUBLIC	4/9/2013	211	0.00	0.00	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97	AS

* Lane miles are based on 11' lane widths



NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

500 250 0 500 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200BBZ

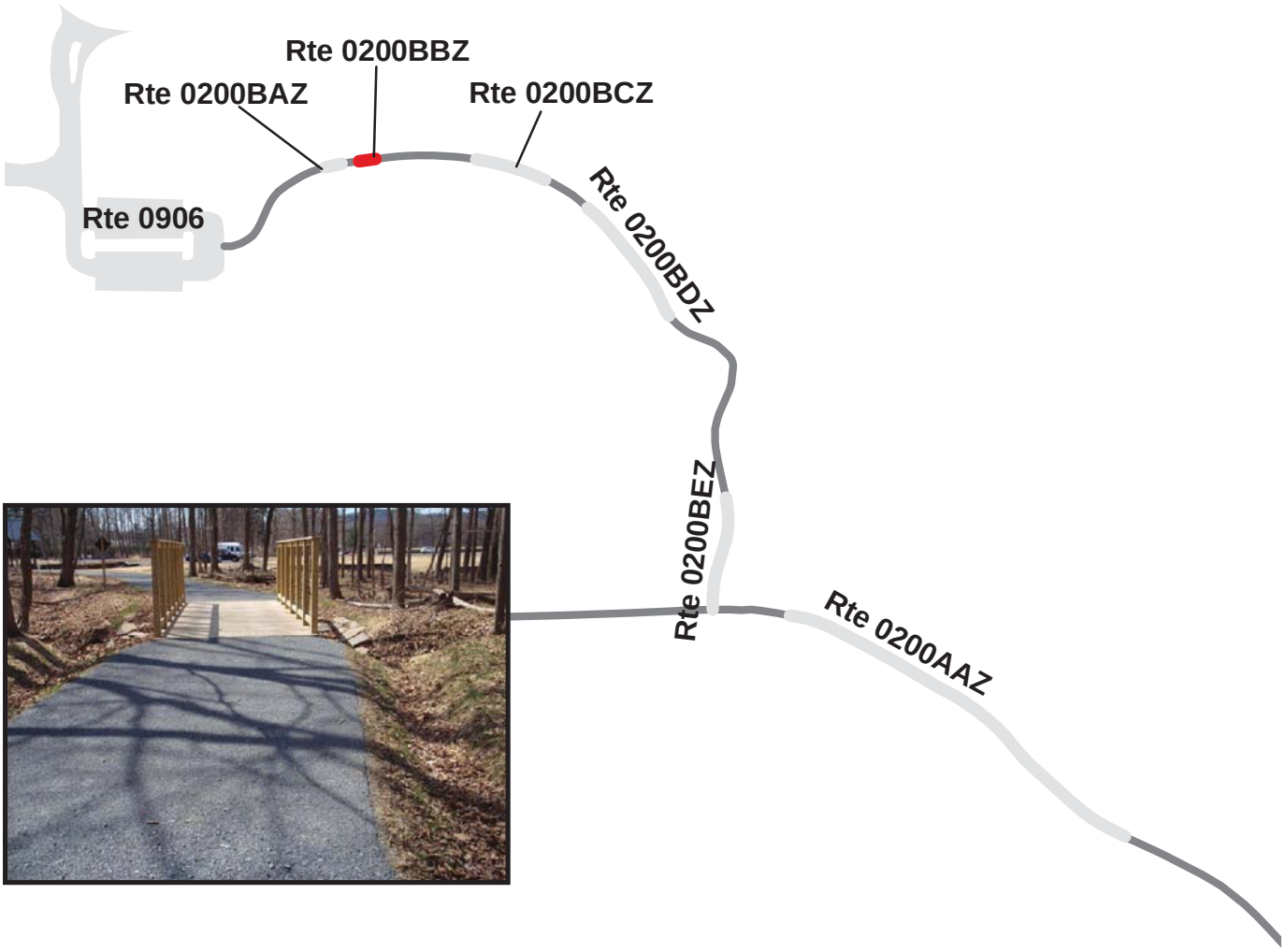
ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 02

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.008
TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.012

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200BBZ	PUBLIC	4/9/2013	211	0.00	0.00	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97	AS

* Lane miles are based on 11' lane widths



NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

500 250 0 500 Feet

N

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200BCZ

ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 03

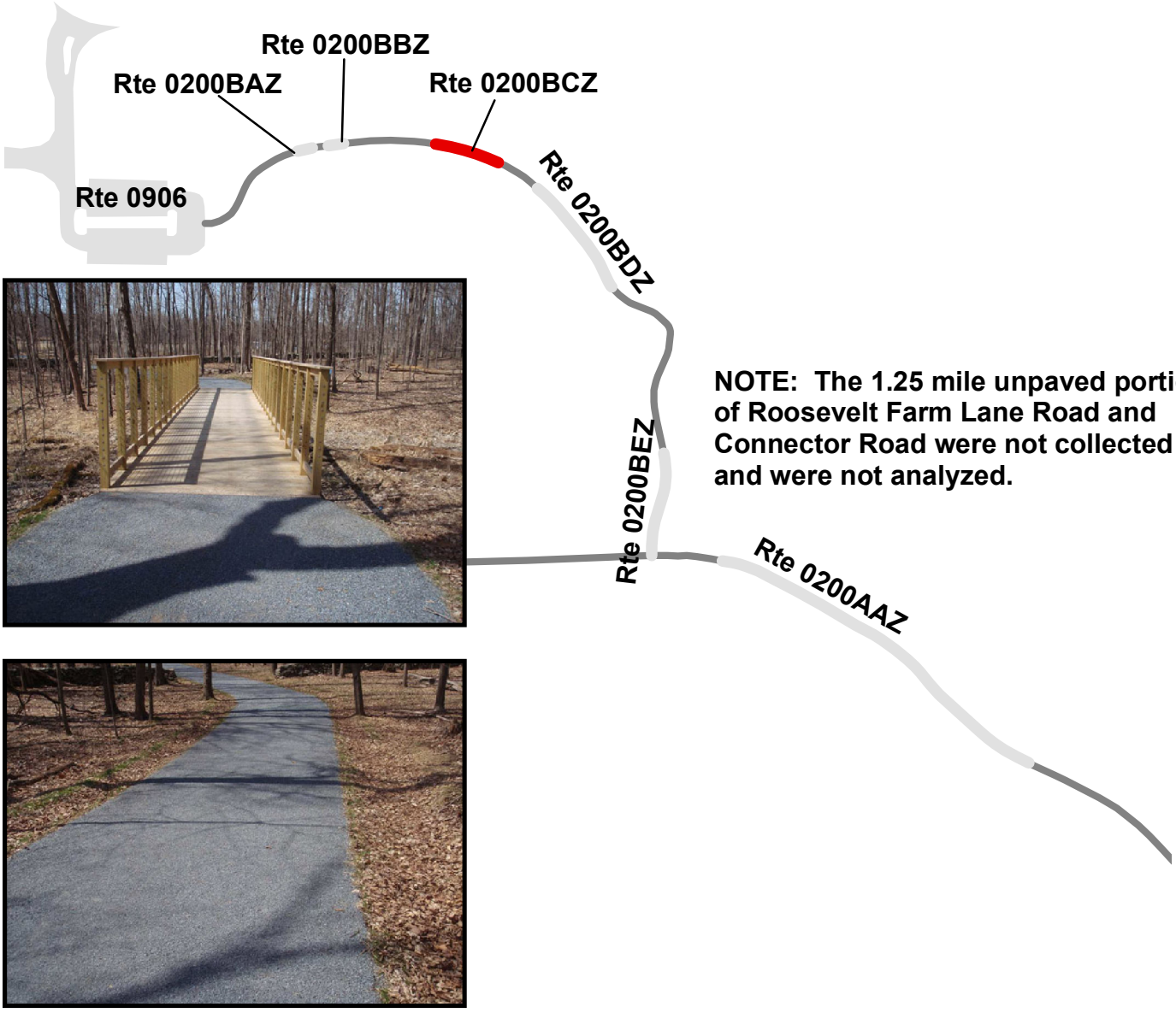
FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.028

TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.044

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200BCZ	PUBLIC	4/9/2013	845	0.02	0.02	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97	AS

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200BDZ

ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 04

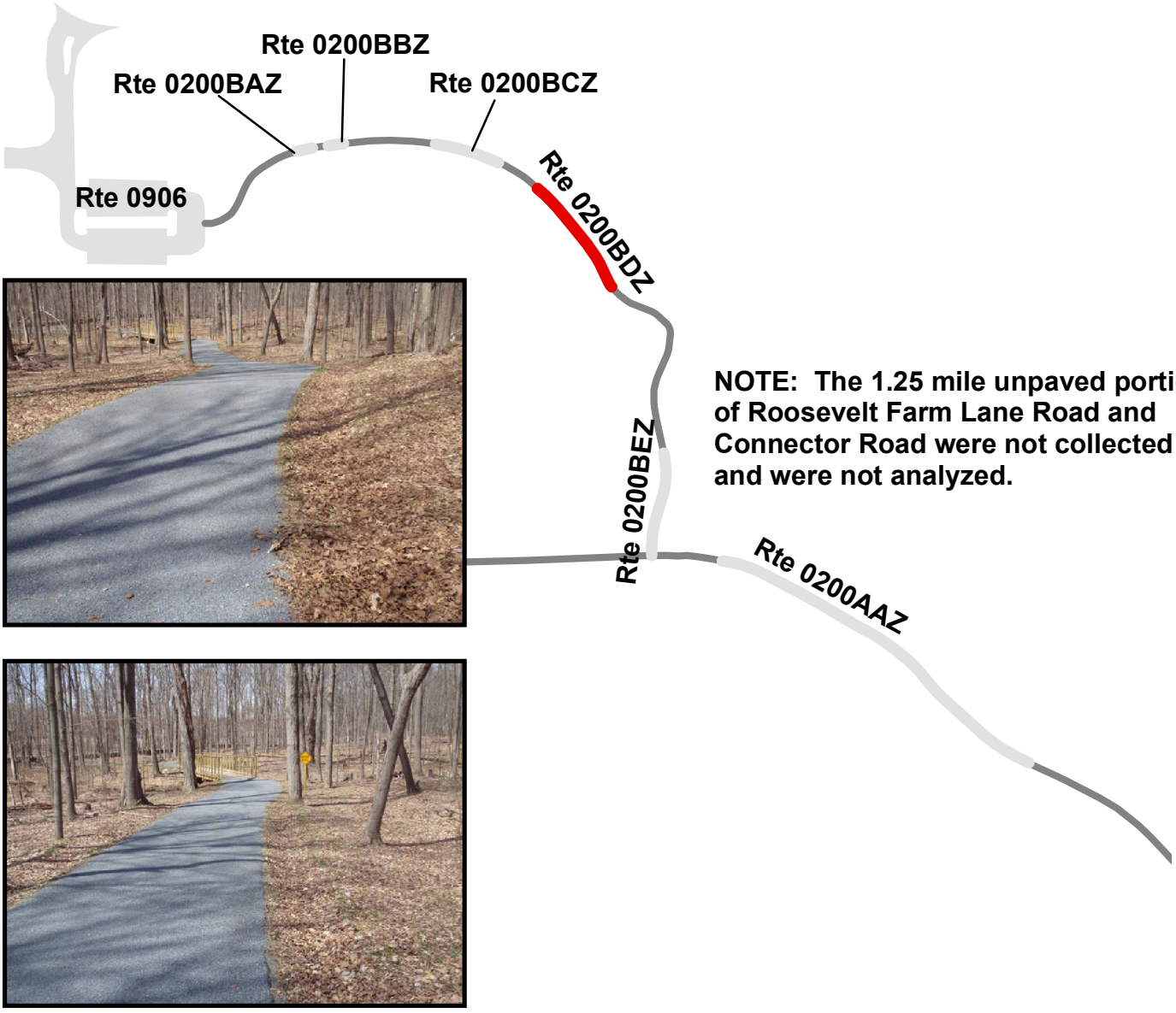
FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.080

TO UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.116

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200BDZ	PUBLIC	4/9/2013	1,901	0.03	0.04	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97	AS

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE
Route 0200BEZ

ROOSEVELT FARM LANE CONNECTOR ROAD SECTION 05

FROM UNPAVED SECTION OF ROOSEVELT FARM LANE CONNECTOR ROAD AT MP 0.148

TO UNPAVED SECTION OF ROOSEVELT FARM LANE ROAD AT MP 0.19

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0200BEZ	PUBLIC	4/9/2013	1,690	0.03	0.03	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
1	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97	AS

* Lane miles are based on 11' lane widths

NOTE: The 1.25 mile unpaved portions of Roosevelt Farm Lane Road and Connector Road were not collected and were not analyzed.

500 250 0 500 Feet

N

Section 7
Parking Area
Condition Rating Sheets

Home of Franklin D. Roosevelt
National Historic Site

Federal Lands Highway
Road Inventory Program

HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

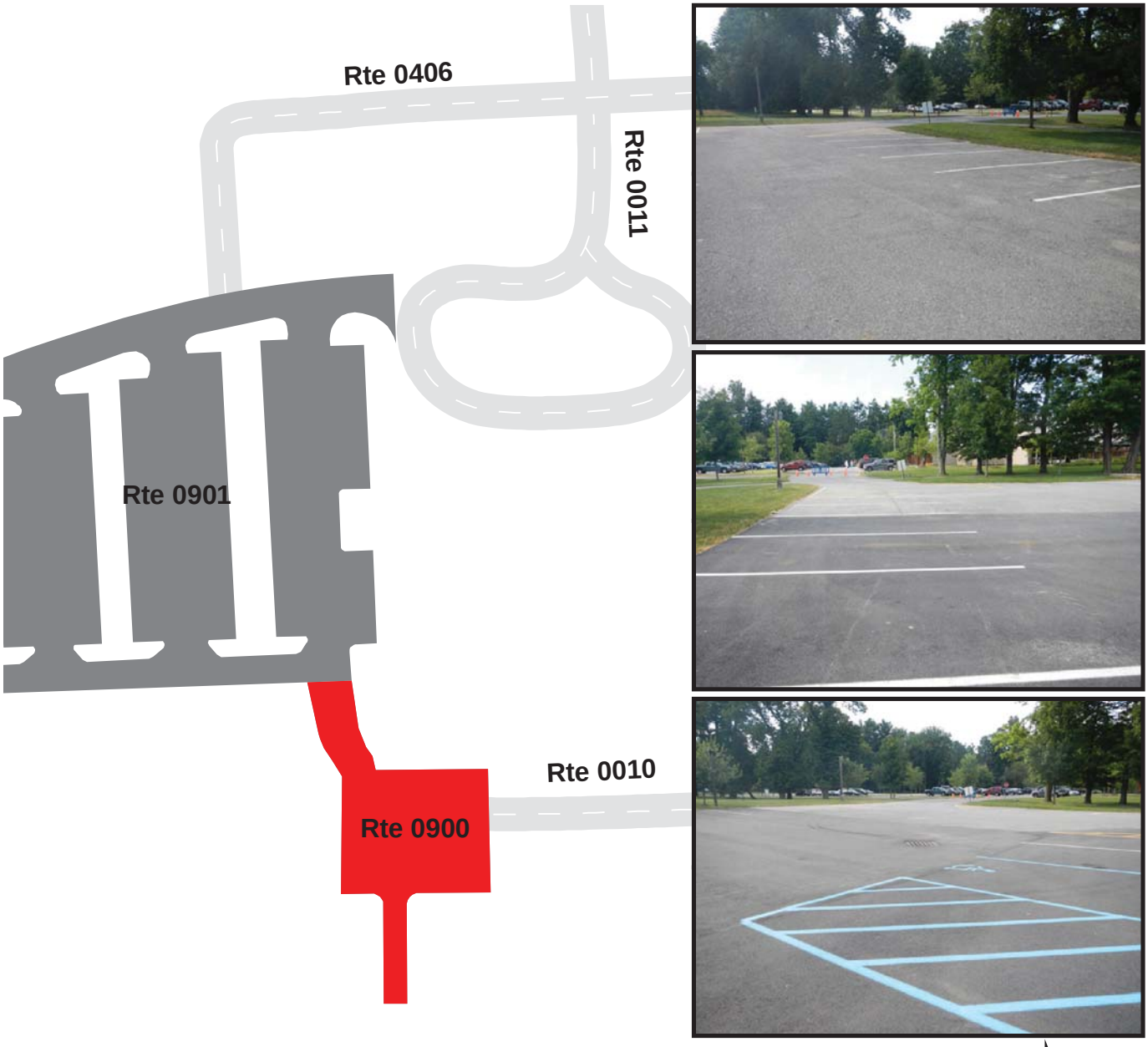
Route 0900

FDR LIBRARY PARKING

FROM END OF ROUTE 0010 (OLD ORCHARD ROAD)
TO ROUTE 0901 (WALLACE CENTER PARKING LOT)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0900	PUBLIC	7/1/2012	11,180	0.19	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Route 0901

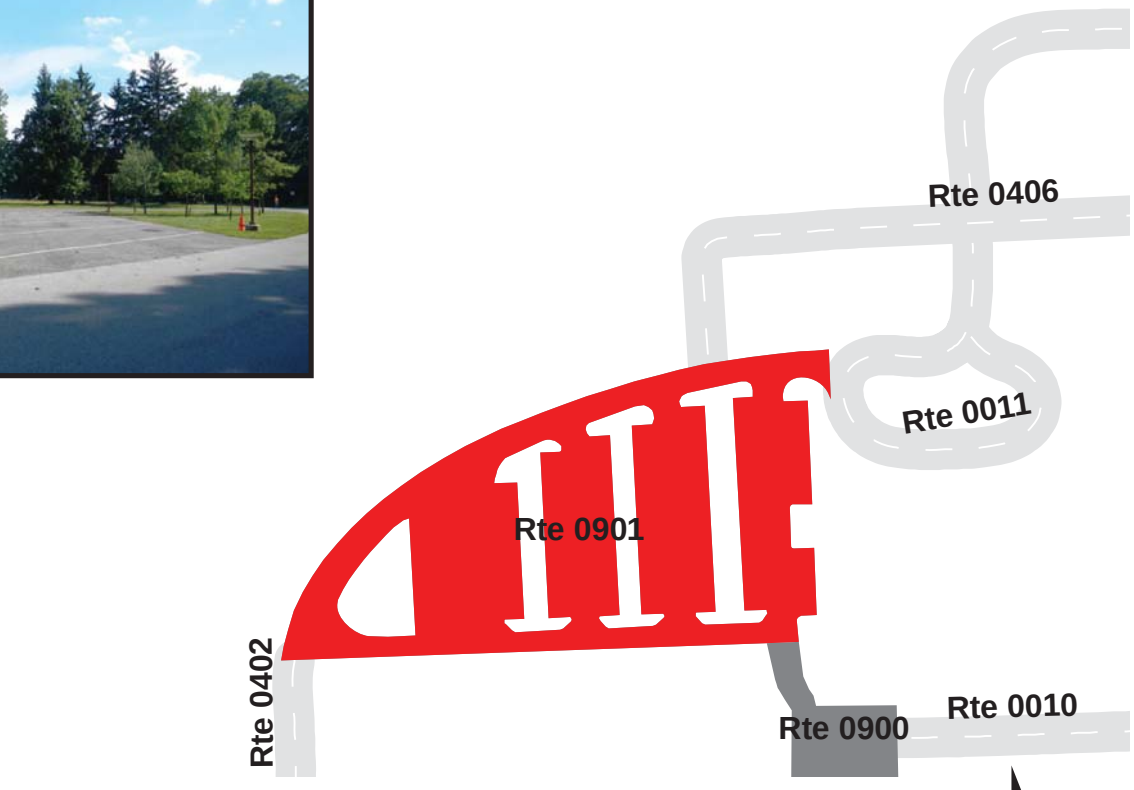
WALLACE CENTER PARKING LOT

FROM ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)

TO ROUTE 0402 (SERVICE ROAD) AND ROUTE 0900 (FDR LIBRARY PARKING)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901	PUBLIC	7/1/2012	78,269	1.35	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	10	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

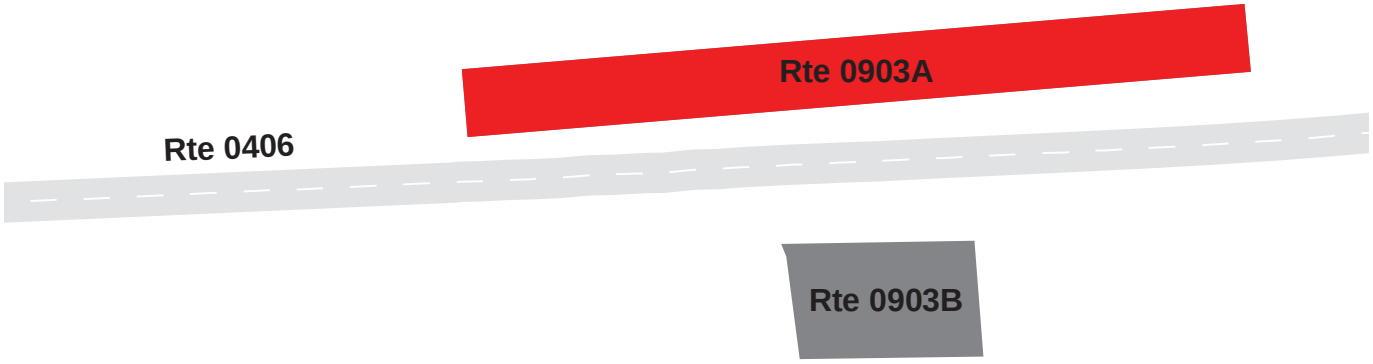
Route 0903A

BELLEFIELD PARKING A

ADJACENT TO ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) ON RIGHT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903A	PUBLIC	7/1/2012	2,715	0.05	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

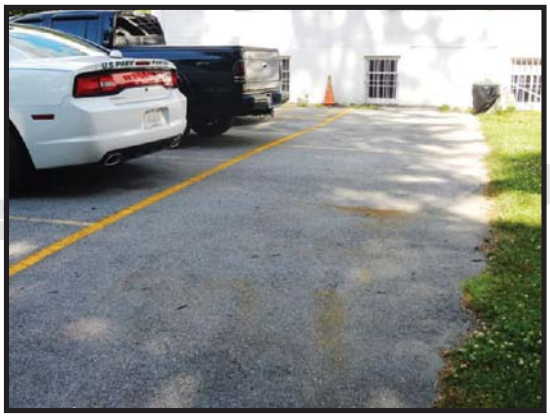
Route 0903B

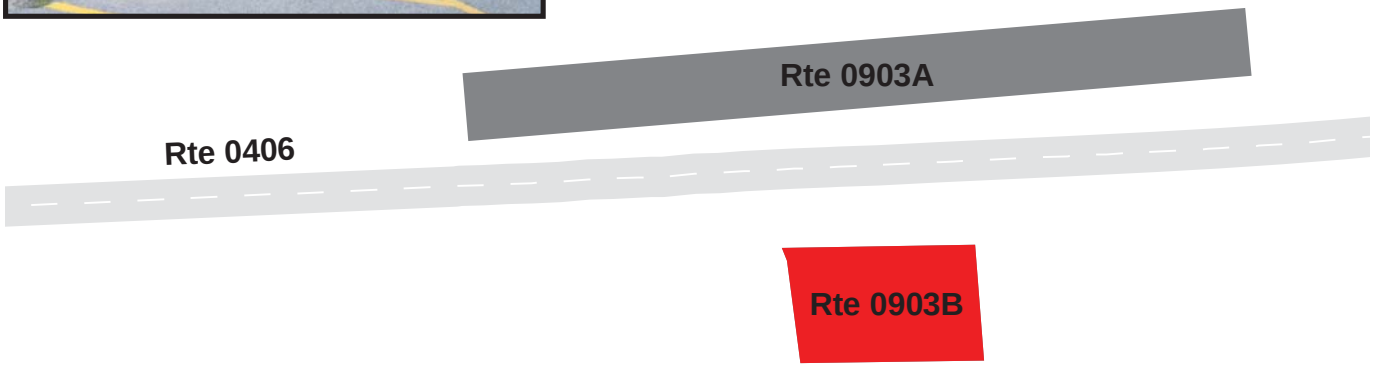
BELLEFIELD PARKING B

ADJACENT TO ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) ON LEFT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903B	PUBLIC	7/1/2012	1,095	0.02	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths





HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

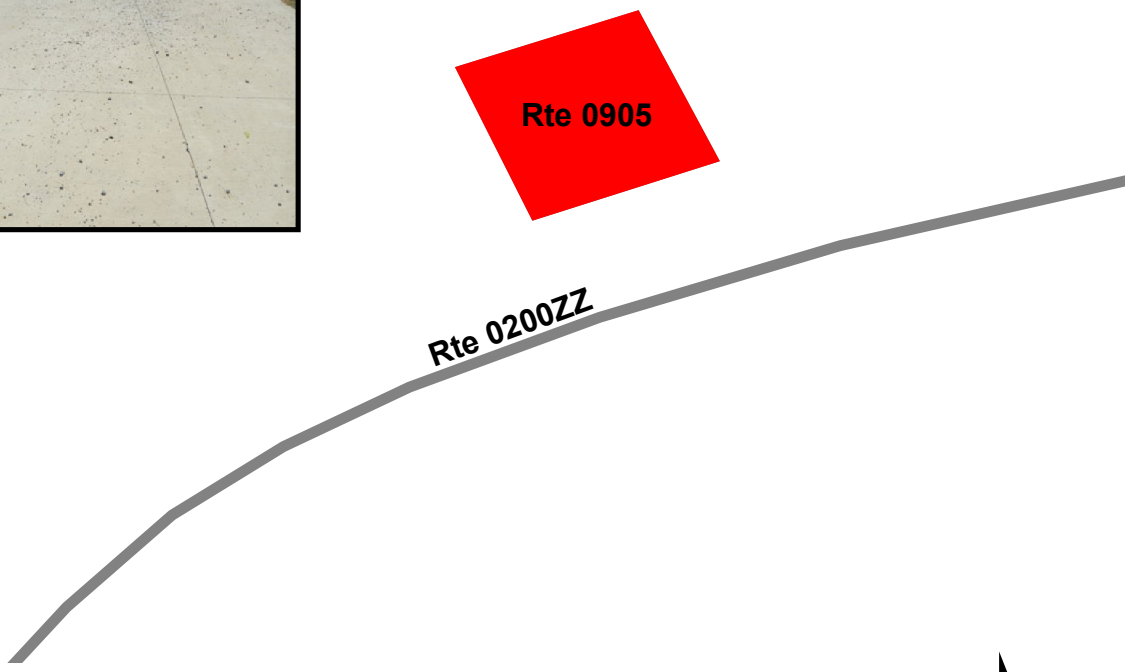
Route 0905

FARM LANE EAST HANDICAP PARKING

ADJACENT TO UNPAVED PORTION OF ROUTE 0200ZZ (ROOSEVELT FARM LANE ROADS), NEAR NEW YORK STATE ROUTE 9G (VIOLET AVENUE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0905	PUBLIC	7/1/2012	289	0.01	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



HOME OF FRANKLIN D. ROOSEVELT NATIONAL HISTORIC SITE

Route 0906

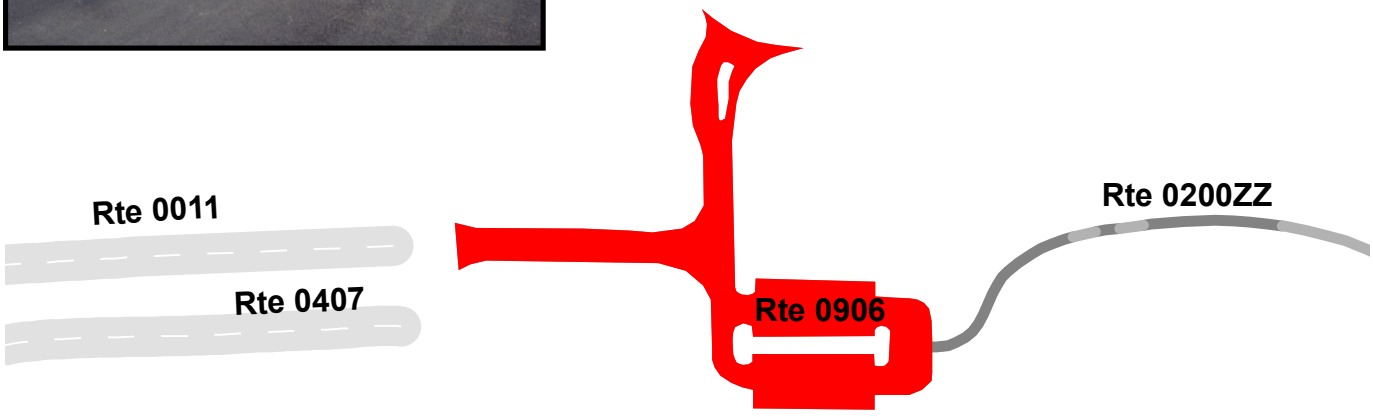
FARM LANE WEST PARKING

FROM U.S. ROUTE 9 (ALBANY POST ROAD)

TO UNPAVED PORTION OF ROUTE 0200ZZ (ROOSEVELT FARM LANE ROADS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0906	PUBLIC	4/9/2013	35,240	0.61	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	1	NO CURB AND GUTTER	CONCRETE CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths



Section 8
Parkwide/Route
Maintenance Features Summaries

Home of Franklin D. Roosevelt
National Historic Site

Federal Lands Highway
Road Inventory Program

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

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

FEATURE	LINEAR FEET	COUNT
BRIDGE	--	0
CATTLE GUARD	--	0
CULVERT	--	4
CURB	717	--
DROP INLET	--	22
GATE	--	5
GUARD/GUIDE RAIL	0	--
CABLE	0	--
NON-CABLE	0	--
GUARD/GUIDE WALL	258	--
BOLLARD	0	--
TEMPORARY BARRIER	0	--
NON TEMP/BOLLARD	258	--
INTERSECTION	--	42
LOW WATER CROSSING	0	0
MILE MARKER	--	0
OVERPASS	--	0
PARK BOUNDARY	--	0
PAVED DITCH	0	--
PULLOUT	0	0
RAILROAD CROSSING	--	0
RETAINING WALL	539	2
SIGN	--	45
STATE BOUNDARY	--	0
TRAFFIC LIGHT	--	0
TUNNEL	0	0

HOFR: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0010 OLD ORCHARD ROAD	ROUTE 0011 WALLACE CENTER ENTRY/EXIT ROAD	ROUTE 0012 TOP COTTAGE ENTRANCE DRIVE	ROUTE 0402 SERVICE ROAD	ROUTE 0403 DUPLEX ROAD	ROUTE 0406 BELLEFIELD MANSION REAR SERVICE DRIVE	UNIT
BRIDGE	0	0	0	0	0	0	EACH
CATTLE GUARD	0	0	0	0	0	0	EACH
CULVERT	0	0	0	0	0	0	EACH
CURB	0	211	0	506	0	0	LINEAR FEET
DROP INLET	0	1	0	2	8	0	EACH
GATE	1	0	1	0	0	0	EACH
GUARD/GUIDE RAIL	0	0	0	0	0	0	LINEAR FEET
CABLE	0	0	0	0	0	0	LINEAR FEET
NON-CABLE	0	0	0	0	0	0	LINEAR FEET
GUARD/GUIDE WALL	126	84	48	0	0	0	LINEAR FEET
BOLLARD	0	0	0	0	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	126	84	48	0	0	0	LINEAR FEET
INTERSECTION	6	8	5	4	4	9	EACH
LOW WATER CROSSING	0	0	0	0	0	0	EACH
LOW WATER CROSSING	0	0	0	0	0	0	LINEAR FEET
MILE MARKER	0	0	0	0	0	0	EACH
OVERPASS	0	0	0	0	0	0	EACH
PARK BOUNDARY	0	0	0	0	0	0	EACH
PAVED DITCH	0	0	0	0	0	0	LINEAR FEET
PULLOUT	0	0	0	0	0	0	EACH
PULLOUT	0	0	0	0	0	0	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	0	0	0	0	2	0	EACH
RETAINING WALL	0	0	0	0	539	0	LINEAR FEET
SIGN	7	17	4	5	3	6	EACH
STATE BOUNDARY	0	0	0	0	0	0	EACH
TRAFFIC LIGHT	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	LINEAR FEET

HOFR: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0407 BELLEFIELD MANSION LOOP	UNIT
BRIDGE	0	EACH
CATTLE GUARD	0	EACH
CULVERT	0	EACH
CURB	0	LINEAR FEET
DROP INLET	0	EACH
GATE	2	EACH
GUARD/GUIDE RAIL	0	LINEAR FEET
CABLE	0	LINEAR FEET
NON-CABLE	0	LINEAR FEET
GUARD/GUIDE WALL	0	LINEAR FEET
BOLLARD	0	LINEAR FEET
TEMPORARY BARRIER	0	LINEAR FEET
NON TEMP/BOLLARD	0	LINEAR FEET
INTERSECTION	6	EACH
LOW WATER CROSSING	0	EACH
LOW WATER CROSSING	0	LINEAR FEET
MILE MARKER	0	EACH
OVERPASS	0	EACH
PARK BOUNDARY	0	EACH
PAVED DITCH	0	LINEAR FEET
PULLOUT	0	EACH
PULLOUT	0	LINEAR FEET
RAILROAD CROSSING	0	EACH
RETAINING WALL	0	EACH
RETAINING WALL	0	LINEAR FEET
SIGN	3	EACH
STATE BOUNDARY	0	EACH
TRAFFIC LIGHT	0	EACH
TUNNEL	0	EACH
TUNNEL	0	LINEAR FEET

STRUCTURE LIST

No data available for this section.

Section 9
Route Maintenance Features
Road Logs

Home of Franklin D. Roosevelt
National Historic Site

Federal Lands Highway
Road Inventory Program

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: OLD ORCHARD ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM U.S. ROUTE 9 (ALBANY POST ROAD)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.000	0.012	GUARD/GUIDE WALL	LEFT	N/A
0.000	0.012	GUARD/GUIDE WALL	RIGHT	N/A
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.011	0.011	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.012	0.012	GATE	N/A	N/A
0.032	0.032	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.032	0.032	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.090	0.090	INTERSECTION	LEFT	UNPAVED ROAD
0.102	0.102	INTERSECTION	LEFT	UNPAVED ROAD
0.140	0.140	SIGN	RIGHT	REGULATORY, SPEED LIMIT 10
0.168	0.168	INTERSECTION	RIGHT	ROUTE 0408 (BELLEFIELD ALLEE)
0.170	0.170	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.190	0.190	SIGN	RIGHT	REGULATORY, LIBRARY AND MUSEUM FDR HOME
0.190	0.190	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.195	0.195	INTERSECTION	N/A	ROUTE 0900 (FDR LIBRARY PARKING)
0.195	0.195	ROUTE END	N/A	TO ROUTE 0900 (FDR LIBRARY PARKING)

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: WALLACE CENTER ENTRY/EXIT ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM U.S. ROUTE 9 (ALBANY POST ROAD)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.000	0.008	GUARD/GUIDE WALL	LEFT	N/A
0.000	0.008	GUARD/GUIDE WALL	RIGHT	N/A
0.002	0.002	DROP INLET	RIGHT	N/A
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.005	0.005	SIGN	RIGHT	GUIDE, FRANKLIN D. ROOSEVELT
0.025	0.025	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.082	0.082	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.134	0.134	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.140	0.140	SIGN	RIGHT	GUIDE, GROUNDS OPEN UNTIL SUNSET PARK ONLY IN POSTED AREAS KEEP PETS ON LEASH
0.180	0.180	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
0.198	0.198	SIGN	RIGHT	GUIDE, BEATRIX FARRAND GARDEN
0.198	0.198	SIGN	RIGHT	GUIDE, PARKING VISITOR CENTER PRESIDENTIAL LIBRARY FDR HOME BELLEFIELD
0.206	0.206	SIGN	RIGHT	GUIDE, BELLEFIELD LN ESTATES LN
0.207	0.207	INTERSECTION	LEFT	ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE)
0.208	0.208	INTERSECTION	RIGHT	ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE)
0.210	0.210	SIGN	LEFT	GUIDE, EXIT ADDITIONAL PARKING
0.220	0.220	SIGN	RIGHT	REGULATORY, RIGHT TURN ONLY
0.231	0.304	ONE-WAY	N/A	N/A
0.231	0.231	INTERSECTION	RIGHT	ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)
0.240	0.240	SIGN	RIGHT	GUIDE, BUS DROP - OFF DELIVERIES
0.247	0.247	INTERSECTION	RIGHT	ROUTE 0901 (WALLACE CENTER PARKING LOT)
0.249	0.289	CURB	RIGHT	N/A
0.254	0.254	SIGN	LEFT	GUIDE, PARKING
0.258	0.258	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: WALLACE CENTER ENTRY/EXIT ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.284	0.284	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.288	0.288	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.304	0.304	INTERSECTION	N/A	ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)
0.304	0.304	INTERSECTION	RIGHT	ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)
0.304	0.304	ROUTE END	N/A	TO END OF LOOP

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: TOP COTTAGE ENTRANCE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM POTTERS BEND
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (POTTERS BEND/ NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (POTTERS BEND/ NON NPS)
0.011	0.011	GATE	N/A	N/A
0.012	0.012	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.012	0.012	SIGN	RIGHT	GUIDE, PARK OPEN SUNRISE TO SUNSET
0.024	0.024	SIGN	RIGHT	GUIDE, AUTHORIZED VEHICLES ONLY
0.024	0.033	GUARD/GUIDE WALL	RIGHT	N/A
0.044	0.044	INTERSECTION	LEFT	ROUTE 0012 (TOP COTTAGE ENTRANCE DRIVE)
0.044	0.147	ONE-WAY	N/A	N/A
0.095	0.095	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.147	0.147	INTERSECTION	LEFT	ROUTE 0012 (TOP COTTAGE ENTRANCE DRIVE)
0.147	0.147	INTERSECTION	N/A	ROUTE 0012 (TOP COTTAGE ENTRANCE DRIVE)
0.147	0.147	ROUTE END	N/A	TO END OF LOOP

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0402: SERVICE ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0901 (WALLACE CENTER PARKING LOT)
0.000	0.000	INTERSECTION	N/A	ROUTE 0901 (WALLACE CENTER PARKING LOT)
0.004	0.004	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.004	0.004	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.005	0.053	CURB	LEFT	N/A
0.005	0.053	CURB	RIGHT	N/A
0.014	0.014	DROP INLET	LEFT	N/A
0.046	0.046	DROP INLET	RIGHT	N/A
0.084	0.084	INTERSECTION	LEFT	UNPAVED ROAD
0.084	0.084	INTERSECTION	RIGHT	ROUTE 0403 (DUPLEX ROAD)
0.108	0.108	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.168	0.168	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.220	0.220	INTERSECTION	N/A	ROUTE 0400 (HISTORIC ENTRANCE ROAD)
0.220	0.220	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.220	0.220	ROUTE END	N/A	TO END OF PAVEMENT / END OF ROUTE 0400 (HISTORIC ENTRANCE ROAD)

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0403: DUPLEX ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0402 (SERVICE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0402 (SERVICE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0402 (SERVICE ROAD)
0.005	0.055	RETAINING WALL	RIGHT	N/A
0.005	0.057	RETAINING WALL	LEFT	N/A
0.006	0.006	DROP INLET	LEFT	N/A
0.017	0.017	DROP INLET	LEFT	N/A
0.017	0.017	DROP INLET	RIGHT	N/A
0.038	0.038	DROP INLET	LEFT	N/A
0.038	0.038	DROP INLET	RIGHT	N/A
0.054	0.054	DROP INLET	RIGHT	N/A
0.054	0.054	DROP INLET	LEFT	N/A
0.058	0.058	DROP INLET	LEFT	N/A
0.070	0.070	INTERSECTION	LEFT	UNPAVED ROAD
0.072	0.072	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.072	0.072	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.082	0.082	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.138	0.138	INTERSECTION	N/A	TO DEAD END
0.138	0.138	ROUTE END	N/A	TO END

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0406: BELLEFIELD MANSION REAR SERVICE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0407 (BELLEFIELD MANSION LOOP)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0407 (BELLEFIELD MANSION LOOP)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0407 (BELLEFIELD MANSION LOOP)
0.006	0.006	INTERSECTION	LEFT	ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) SPUR
0.032	0.032	INTERSECTION	RIGHT	ROUTE 0903A (BELLEFIELD PARKING A)
0.032	0.032	INTERSECTION	LEFT	ROUTE 0903B (BELLEFIELD PARKING B)
0.062	0.062	SIGN	LEFT	GUIDE, BEATRIX FARRAND GARDEN
0.062	0.062	SIGN	LEFT	GUIDE, BELLEFIELD
0.080	0.080	SIGN	RIGHT	REGULATORY, STOP
0.088	0.088	SIGN	LEFT	GUIDE, FDR DRIVE
0.089	0.089	SIGN	LEFT	REGULATORY, STOP
0.090	0.090	INTERSECTION	LEFT	ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)
0.090	0.090	INTERSECTION	RIGHT	ROUTE 0011 (WALLACE CENTER ENTRY/EXIT ROAD)
0.092	0.092	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.110	0.110	INTERSECTION	RIGHT	ROUTE 0902 (MAINTENANCE AREA)
0.149	0.149	INTERSECTION	N/A	ROUTE 0901 (WALLACE CENTER PARKING LOT)
0.149	0.149	ROUTE END	N/A	TO ROUTE 0901 (WALLACE CENTER PARKING LOT)

HOFR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0407: BELLEFIELD MANSION LOOP

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM U.S. ROUTE 9 (ALBANY POST ROAD)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.000	0.231	ONE-WAY	N/A	N/A
0.004	0.004	GATE	N/A	N/A
0.084	0.084	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.092	0.092	INTERSECTION	RIGHT	ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE)
0.104	0.104	INTERSECTION	RIGHT	ROUTE 0406 (BELLEFIELD MANSION REAR SERVICE DRIVE) SPUR
0.225	0.225	SIGN	RIGHT	REGULATORY, STOP
0.227	0.227	GATE	N/A	N/A
0.228	0.228	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.231	0.231	INTERSECTION	LEFT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.231	0.231	INTERSECTION	RIGHT	PAVED ROUTE (U.S. ROUTE 9 (ALBANY POST ROAD) / NON NPS)
0.231	0.231	ROUTE END	N/A	TO U.S. ROUTE 9 (ALBANY POST ROAD)

Section 10
Appendix

Home of Franklin D. Roosevelt National Historic Site

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.

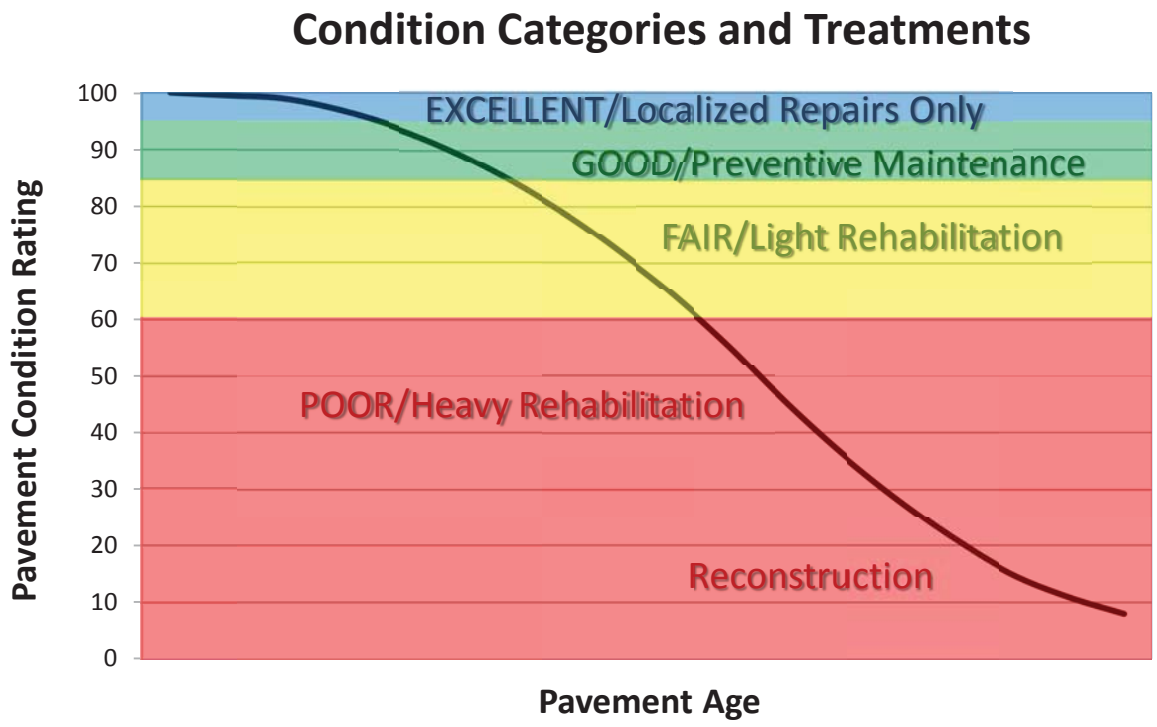
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation 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.



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:

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

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

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

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

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

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

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

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

TABLE 1: Distress Summary

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

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

ALLIGATOR CRACKING

Description

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

Severity Levels

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

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

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

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

TABLE 2: Alligator Crack Severity Levels

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

LONGITUDINAL CRACKING

Description

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

Severity Levels

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

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

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

TRANSVERSE CRACKING

Description

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

Severity Levels

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

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

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

PATCHING AND POTHOLES

Description

Patching is an area of pavement surface that has been removed and replaced with patching material or an area of pavement surface that has had additional patching material applied. Patching may encompass partial-lane or full-lane width. On full-lane width patching; the total, contiguous length of 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:

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

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

Longitudinal Crack Index

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

Where:

The values *%LOW*, *%MED*, and *%HI* report the length of longitudinal cracking within each severity as a percent of the section length (0.02 mile, primary lane).
These values are ≥ 0 and can exceed 100.

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

Percent of interval length is computed as:

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

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

Structural Crack Index

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

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

Transverse Crack Index

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

Where:

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

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

Number of cracks is computed as:

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

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

Patching Index

PATCH_INDEX = 100 – 40 * (%PATCHING / 80)

Where:

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

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

Percent of total area is computed as:

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

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

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

Rutting Index

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

Where:

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

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

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

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

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

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

Roughness Condition Index (Asphalt)

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

Where:

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

Average IRI is computed as:

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

There is no applicable threshold for failure for this index.

Roughness Condition Index (Concrete)

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

For concrete, PCR = RCI

Surface Condition Rating Index

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

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

Where:

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

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

Data Collection Vehicle Subsystems

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

CAMERAS

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

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

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

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

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

DMI (Distance Measuring Instrument)

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

ROUGHNESS (IRI)

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

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

RUTTING

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

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

GPS & INERTIAL SYSTEMS

GPS is collected by an onboard system employing OmniSTAR real-time correction and a gyroscope (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

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