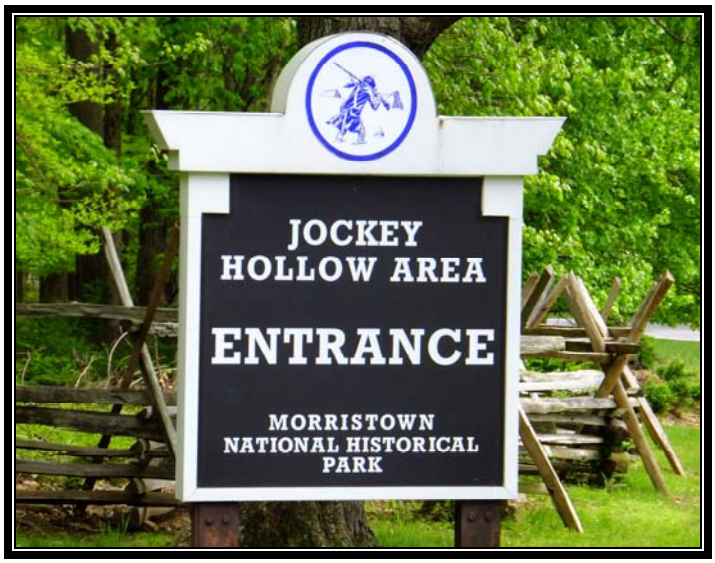
Federal Lands Highway

Road Inventory Program

Road Inventory and Condition Assessment



Morristown National Historical Park
MORR

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 04/2013
Report Date: 12/2013

Morristown National Historical Park
in
New Jersey

DCV = Data Collection Vehicle

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Introduction

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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

Morristown National Historical Park

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

MORR

MORRISTOWN NATIONAL HISTORICAL PARK

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
0011	5	69597		PARK ENTRANCE ROAD	FROM TEMPE WICK ROAD	TO END OF LOOP	N/A	0.52	0.00	0.52	1		AS	3
0012	5	69599		CEMETERY ROAD	FROM ROUTE 0011 (PARK ENTRANCE ROAD)	TO ROUTE 0013 (SUGARLOAF ROAD) AND ROUTE 0017 (GRAND PARADE ROAD)	N/A	1.18	0.00	1.18	1		AS	2,3
0013	5	69600		SUGARLOAF ROAD	FROM ROUTE 0012 (CEMETERY ROAD) AND ROUTE 0017 (GRAND PARADE ROAD)	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	N/A	1.30	0.00	1.30	1		AS	2
0014ZZ	5	69601		JOCKEY HOLLOW ROADS	FROM END OF ROUTE 0013 (SUGARLOAF ROAD)	TO ROUTE 0011 (PARK ENTRANCE ROAD) AND ROUTE 0012 (CEMETERY ROAD)	N/A	1.44	0.00	1.44	1		AS	2,3
0015	5	69603		FORT NONSENSE ACCESS ROAD	FROM CHESTNUT STREET	TO END OF LOOP	N/A	0.49	0.00	0.49	2		AS	1
0017	5	69605		GRAND PARADE ROAD	FROM ROUTE 0012 (CEMETERY ROAD) AND ROUTE 0013 (SUGARLOAF ROAD)	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	N/A	0.55	0.00	0.55	1		AS	2
0018	5	69607		ACCESS TO LEWIS MORRIS COUNTY PARK	FROM ROUTE 0013 (SUGARLOAF ROAD)	TO LEWIS MORRIS COUNTY PARK	N/A	0.60	0.00	0.60	1		AS	2
0400	5	69610		SERVICE ROAD	FROM ROUTE 0012 (CEMETERY ROAD)	TO TEMPE WICK ROAD	N/A	0.12	0.00	0.12	6		AS	3
0402	NC	69614		RESIDENCE ACCESS ROAD TO QUARTERS 8	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO END	N/A	0.00	0.07	0.07	5		GR	
0403	NC	69617		RESIDENCE ACCESS ROAD TO QUARTERS 65	FROM US HIGHWAY 202	TO END	N/A	0.00	0.05	0.05	6		GR	
0405ZZ	5	69620		CROSS ESTATE ROADS	FROM JOCKEY HOLLOW ROAD	TO ROUTE 0914 (CROSS ESTATE PARKING)	N/A	0.32	0.00	0.32	5		AS	4
0406	5	69621		RESIDENCE ACCESS ROAD	FROM ROUTE 0405ZZ (CROSS ESTATE ROADS)	TO OLD JOCKEY HOLLOW ROAD	N/A	0.08	0.00	0.08	5		AS	4
0407	NC	69622		CHALET RESIDENCE	FROM OLD JOCKEY HOLLOW ROAD	TO END	N/A	0.00	0.05	0.05	5		GR	
0409	NC	103519		MANSION ACCESS ROAD	FROM ROUTE 0405ZZ (CROSS ESTATE ROADS)	TO END OF LOOP	N/A	0.00	0.30	0.30	5		GR	

Cycle 5 NPS/RIP Route ID Report

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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

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MORR

MORRISTOWN NATIONAL HISTORICAL PARK

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
0410	NC	62853		OLD CAMP ROAD-JHU	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO ROUTE 0012 (CEMETERY ROAD)	N/A	0.00	0.71	0.71	6		GR	
0411	NC	62855		MENDHAM ELIZABETH ROAD-JHU	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	N/A	0.00	0.76	0.76	6		GR	
0412	NC	69618		MAIN ENTRANCE TO CROSS ESTATE	FROM HARD SCRUBBLE	TO END OF LOOP	N/A	0.00	0.00	0.00	6		GR	
0413	5	69624		ACCESS TO STAFF PARKING	FROM ROUTE 0405ZZ (CROSS ESTATE ROADS)	TO ROUTE 0912 (RANGER STATION PARKING)	N/A	0.00	0.00	0.00	6	1,188	AS	4
0414	5	69611		ACCESS TO MAINTENANCE AREA	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO ROUTE 0910 (MAINTENANCE AREA)	N/A	0.11	0.00	0.11	5		AS	3
0900	5	103525		WASHINGTONS HEADQUARTERS PARKING	FROM WASHINGTON PLACE	TO PARKING	N/A	0.00	0.00	0.00		25,298	AS	1
0901	5	103656		WASHINGTONS HEADQUARTERS EMPLOYEE PARKING	FROM WASHINGTON PLACE	TO PARKING	N/A	0.00	0.00	0.00		4,455	AS	1
0902	5			QUARTERS 3 PARKING	FROM WASHINGTON PLACE	TO WASHINGTON PLACE	N/A	0.00	0.00	0.00		12,073	AS	1
0903	5	103669		FORT NONSENSE PARKING	ADJACENT TO ROUTE 0015 (FORT NONSENSE ACCESS ROAD) ON RIGHT		N/A	0.00	0.00	0.00		3,233	AS	1
0904A	5	104022		VISITOR CENTER PARKING A	FROM ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT	TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT	N/A	0.00	0.00	0.00		16,703	AS	3
0904B	5	104024		VISITOR CENTER PARKING B	FROM ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT	TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT	N/A	0.00	0.00	0.00		18,905	AS	3
0904C	5	104026		VISITOR CENTER PARKING C	ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT		N/A	0.00	0.00	0.00		714	AS	3
0904D	5	104029		VISITOR CENTER PARKING D	ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON RIGHT		N/A	0.00	0.00	0.00		4,697	AS	3
0904E	5	104030		VISITOR CENTER PARKING E	ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT		N/A	0.00	0.00	0.00		1,433	AS	3

Cycle 5 NPS/RIP Route ID Report

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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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MORRISTOWN NATIONAL HISTORICAL PARK

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
0905	5	103816		RANGER PARKING	ADJACENT TO ROUTE 0012 (CEMETERY ROAD)		N/A	0.00	0.00	0.00		2,354	AS	3
0906	5	103813		WICK FARM PARKING	FROM ROUTE 0012 (CEMETERY ROAD)	TO ROUTE 0012 (CEMETERY ROAD)	N/A	0.00	0.00	0.00		16,295	AS	3
0907	5	103812		SOLDIER HUT PARKING	FROM ROUTE 0012 (CEMETERY ROAD)	TO ROUTE 0013 (SUGARLOAF ROAD)	N/A	0.00	0.00	0.00		12,369	AS	2
0908	5	103674		COMFORT STATION PARKING	ADJACENT TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)		N/A	0.00	0.00	0.00		289	AS	2
0909	5	104031		NEW YORK BRIGADE PARKING	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO PARKING	N/A	0.00	0.00	0.00		20,799	AS	2
0910	5	104033		MAINTENANCE AREA	FROM ROUTE 0414 (ACCESS TO MAINTENANCE AREA)	TO PARKING	N/A	0.00	0.00	0.00		13,814	AS	3
0911	5	104035		TRAIL CENTER PARKING	FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)	N/A	0.00	0.00	0.00		10,152	AS	3
0912	5	104036		RANGER STATION PARKING	FROM END OF ROUTE 0413 (ACCESS TO STAFF PARKING)	TO PARKING	N/A	0.00	0.00	0.00		2,543	AS	4
0913	NC	104039		NEW JERSEY BRIGADE PARKING	FROM ROUTE 0405ZZ (CROSS ESTATE ROADS)	TO PARKING	N/A	0.00	0.00	0.00		5,000	GR	
0914	5	104040		CROSS ESTATE PARKING	FROM END OF ROUTE 0405ZZ (CROSS ESTATE ROADS)	TO PARKING	N/A	0.00	0.00	0.00		2,756	AS	4

Cycle 5 NPS/RIP Route ID Report

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Blue = All Paved Parking Areas
Green = All Unpaved Parking Areas
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CYCLE 5 SUMMARY TOTALS FOR MORRISTOWN NATIONAL HISTORICAL PARK

CYCLE 5 ROUTE TOTALS

DCV Driven Route Miles	6.64
Manually Rated Route Miles	0.06
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	6.70
Manually Rated Routes (SQFT)	1,188
TOTAL UNPAVED PARK ROUTE MILES	1.94

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)	168,882
Unpaved Parking (SQFT)	5,000
TOTAL PARKING (SQFT)	173,882

CYCLE 5 WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	80
**Manually Rated Routes PCR	80
**Parking PCR	82
***Total Equivalent Lane Miles	13.86

* - 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 MORR

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MORR

MORRISTOWN NATIONAL HISTORICAL PARK

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
0014ZZ	69601	5	JOCKEY HOLLOW ROADS	FROM END OF ROUTE 0013 (SUGARLOAF ROAD)	TO ROUTE 0011 (PARK ENTRANCE ROAD) AND ROUTE 0012 (CEMETERY ROAD)		1	1.44	0.00	1.44	
0405ZZ	69620	5	CROSS ESTATE ROADS	FROM JOCKEY HOLLOW ROAD	TO ROUTE 0914 (CROSS ESTATE PARKING)		5	0.32	0.00	0.32	

MORR-0014ZZ 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
0014AZ	69601	5	JOCKEY HOLLOW ROAD	FROM END OF ROUTE 0013 (SUGARLOAF ROAD)	TO ROUTE 0011 (PARK ENTRANCE ROAD)		1	1.38	0.00	1.38	
0014BZ	69601	5	JOCKEY HOLLOW SPUR	FROM ROUTE 0014AZ (JOCKEY HOLLOW ROAD)	TO ROUTE 0012		1	0.06	0.00	0.06	4,140

MORR-0405ZZ 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
0405AZ	69620	5	CROSS ESTATE ROAD	FROM JOCKEY HOLLOW ROAD	TO ROUTE 0914 (CROSS ESTATE PARKING)		5	0.27	0.00	0.27	
0405BZ	69620	5	CROSS ESTATE ROAD SPUR	FROM ROUTE 0405AZ (CROSS ESTATE ROAD)	TO JOCKEY HOLLOW ROAD		5	0.05	0.00	0.05	

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - MORR

ROUTES ADDED FROM PREVIOUS INVENTORY:

Route #	Route Name	Reason for Addition	Comments
0018	ACCESS TO LEWIS MORRIS COUNTY PARK	OTHER	PAVED ROUTE ADDED IN CYCLE 5.

OTHER CHANGES FROM PREVIOUS INVENTORY:

Route #	Route Name	Type of Change	Comments
0014ZZ	JOCKEY HOLLOW ROADS	OTHER	THE SPUR TO CEMETERY ROAD WAS ADDED AND COMBINED INTO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS) IN CYCLE 5.
0405ZZ	CROSS ESTATE ROADS	OTHER	THE SPUR FROM JOCKEY HOLLOW ROAD (NON NPS) WAS ADDED AND COMBINED INTO ROUTE 0405ZZ (CROSS ESTATE ROADS) IN CYCLE 5.
0413	ACCESS TO STAFF PARKING	ROUTE SPLIT	CYCLE 3 ROUTE 0912 WAS SPLIT INTO ROUTE 0413 (ROAD SECTION) AND 0912 (PARKING SECTION) IN CYCLE 5.
0414	ACCESS TO MAINTENANCE AREA	ROUTE SPLIT	CYCLE 3 ROUTE 0910 WAS SPLIT INTO ROUTE 0414 (ROAD SECTION) AND 0910 (PARKING SECTION) IN CYCLE 5.
0901	WASHINGTONS HEADQUARTERS EMPLOYEE PARKING	SQ FEET CHANGE	A SECTION OF PARKING WAS REMOVED IN CYCLE 5. THEREFORE THE SQUARE FEET AREA HAS DECREASED.
0902	QUARTERS 3 PARKING	RECONSTRUCTED	PARKING AREA RECONSTRUCTED.
0905	RANGER PARKING	RECONSTRUCTED	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0907	SOLDIER HUT PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0908	COMFORT STATION PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - MORR

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0909	NEW YORK BRIGADE PARKING	RECONSTRUCTED	PARKING AREA RECONSTRUCTED.
0914	CROSS ESTATE PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.

Section 3
Park Summary Information

Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

MORR: 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	0.54	8.13%	1.40	21.08%	1.14	17.17%	2.45	36.90%	**5.53**
2	0.35	5.27%	0.14	2.11%					**0.49**
3									
4									
5	0.35	5.27%	0.07	1.05%	0.06	0.90%	0.02	0.30%	**0.50**
6	0.02	0.30%	0.06	0.90%			0.04	0.60%	**0.12**
7									
8									
Totals	**1.26**	**18.98%**	**1.67**	**25.15%**	**1.20**	**18.07%**	**2.51**	**37.80%**	**6.64**

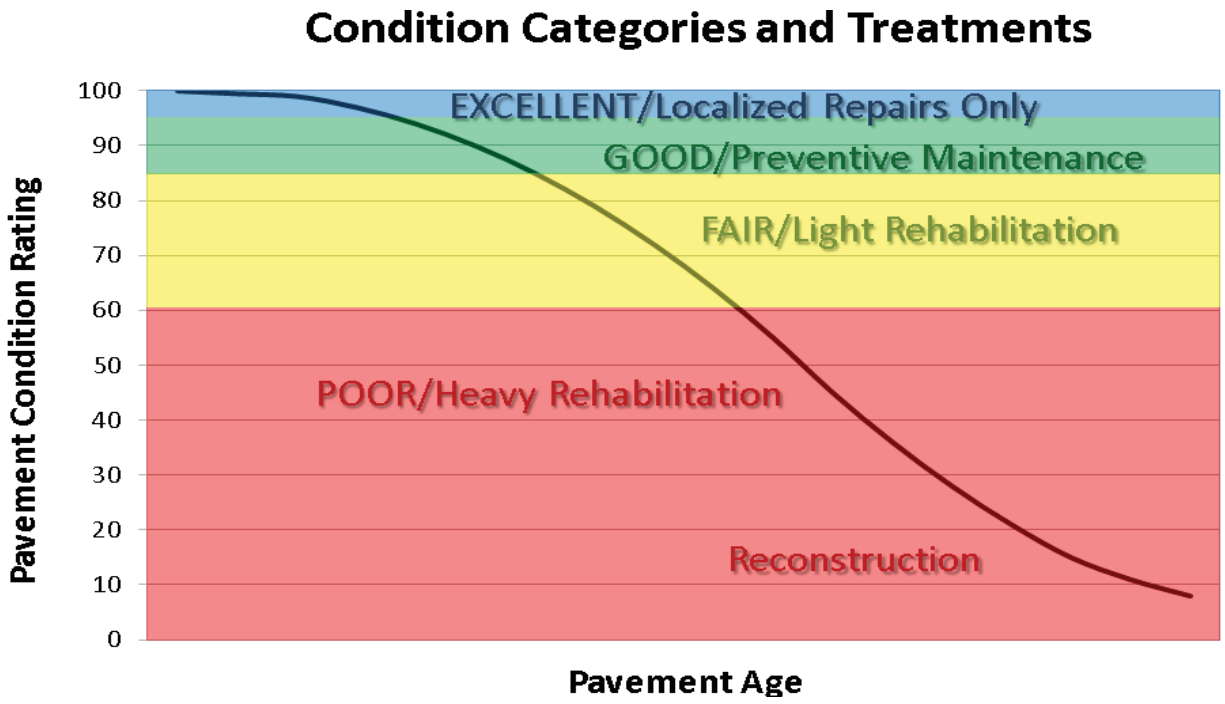
Note: **The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class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

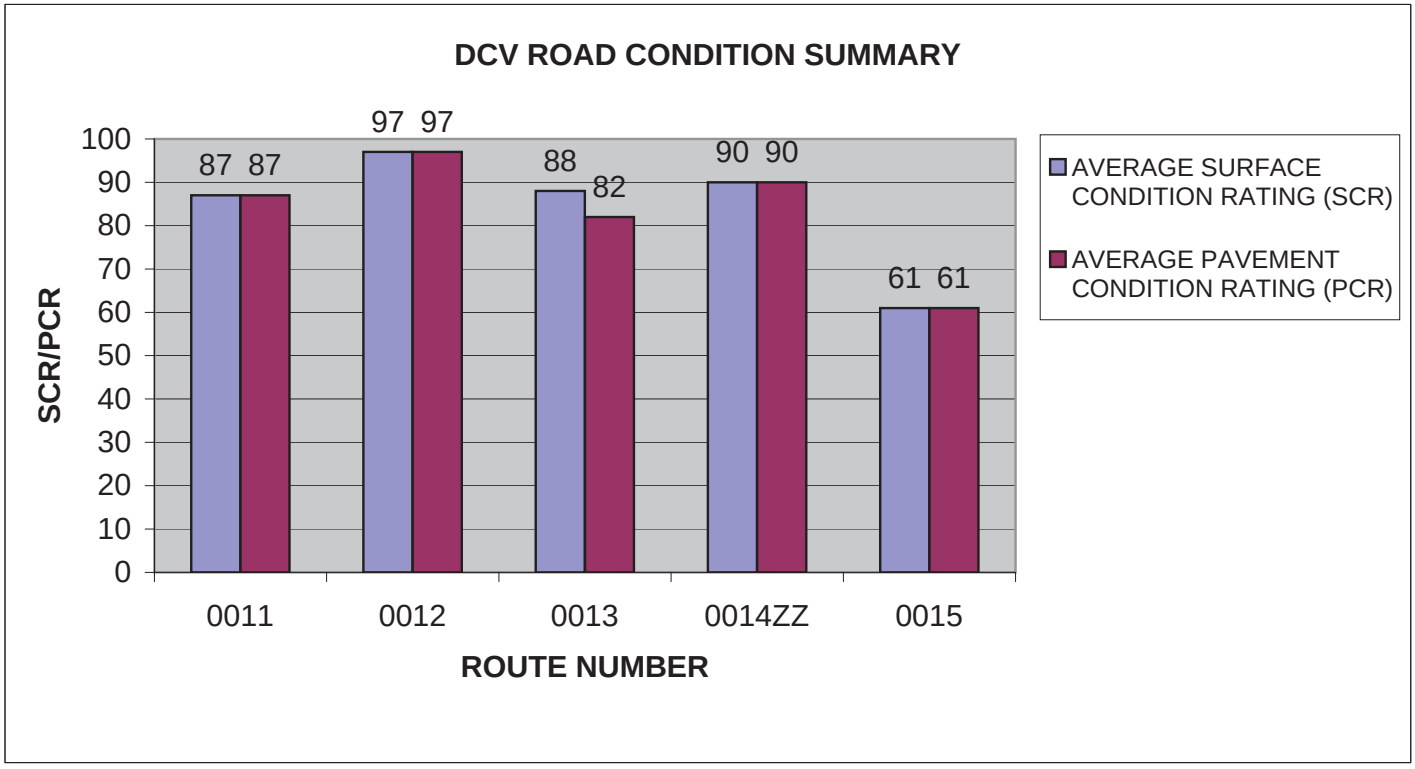
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely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



MORR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

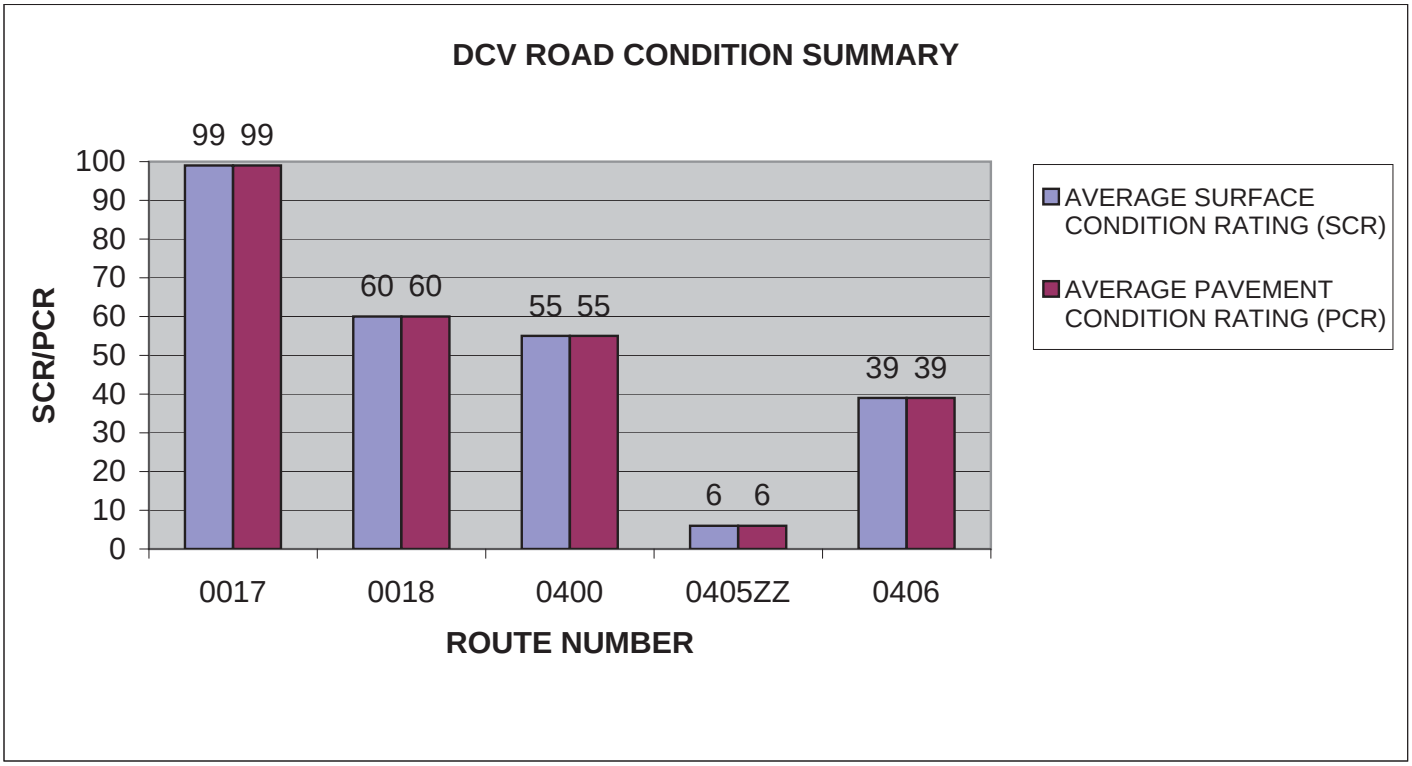
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0011	PARK ENTRANCE ROAD	1	0.52	ASPHALT	87	87
0012	CEMETERY ROAD	1	1.18	ASPHALT	97	97
0013	SUGARLOAF ROAD	1	1.30	ASPHALT	88	82
0014ZZ	JOCKEY HOLLOW ROADS	1	1.44	ASPHALT	90	90
0015	FORT NONSENSE ACCESS ROAD	2	0.49	ASPHALT	61	61



MORR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

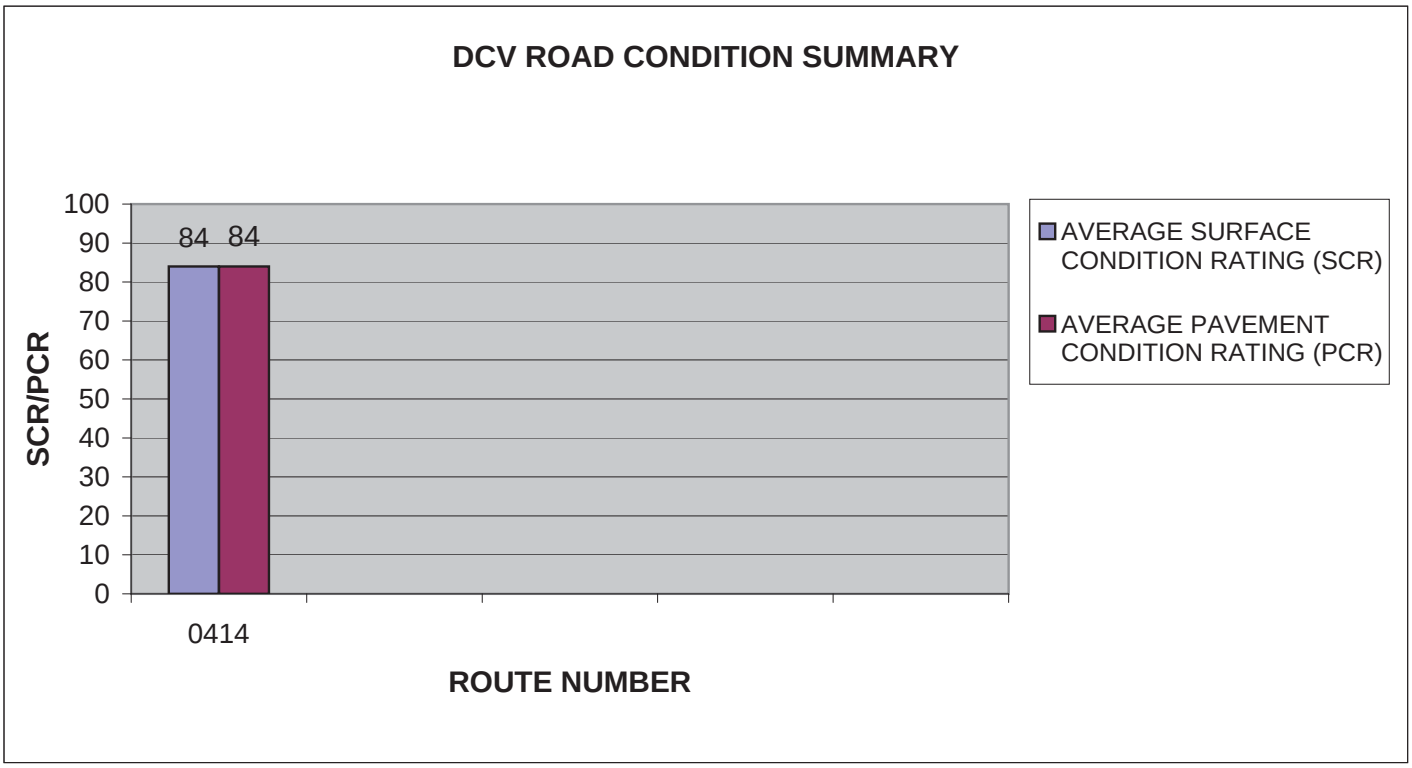
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0017	GRAND PARADE ROAD	1	0.55	ASPHALT	99	99
0018	ACCESS TO LEWIS MORRIS COUNTY PARK	1	0.60	ASPHALT	60	60
0400	SERVICE ROAD	6	0.12	ASPHALT	55	55
0405ZZ	CROSS ESTATE ROADS	5	0.32	ASPHALT	6	6
0406	RESIDENCE ACCESS ROAD	5	0.08	ASPHALT	39	39



MORR: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

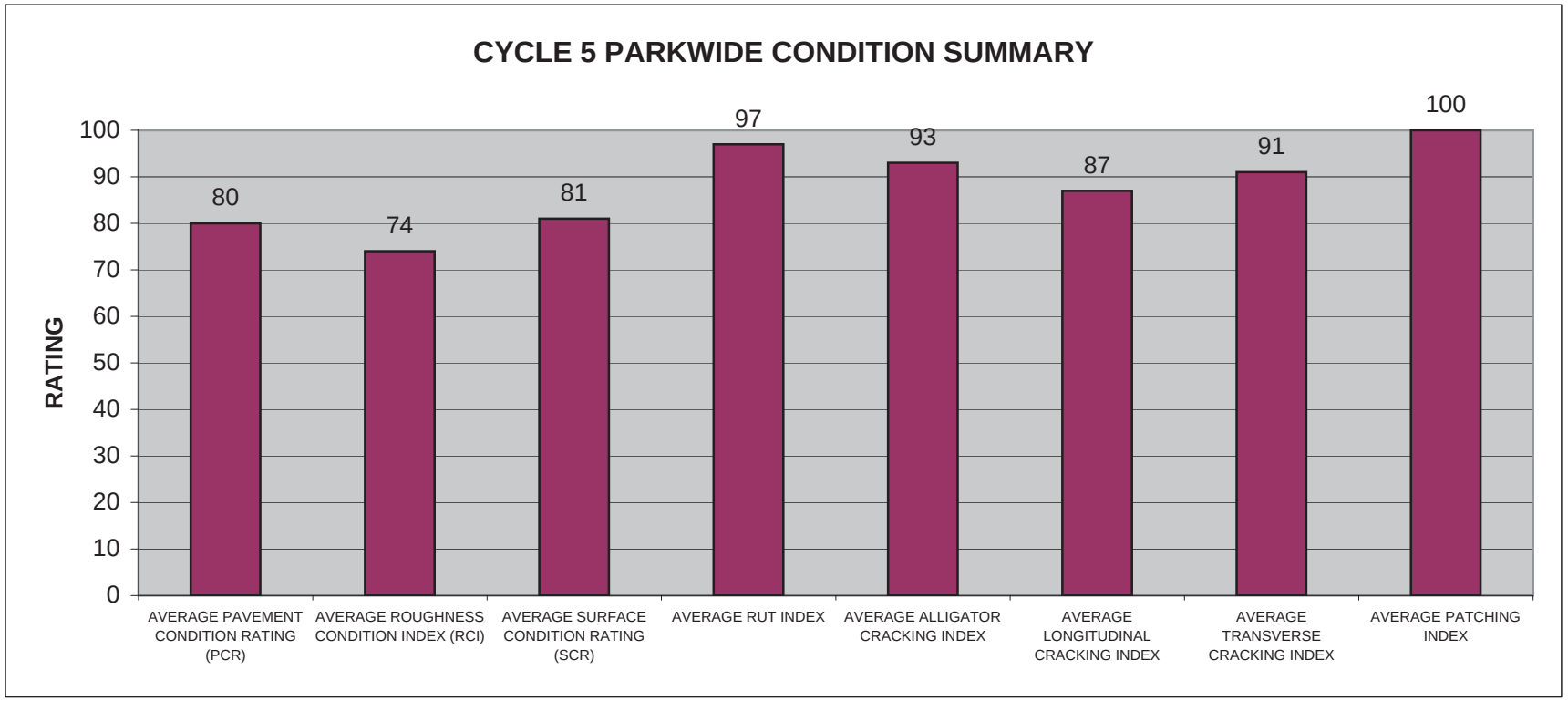
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0414	ACCESS TO MAINTENANCE AREA	5	0.11	ASPHALT	84	84



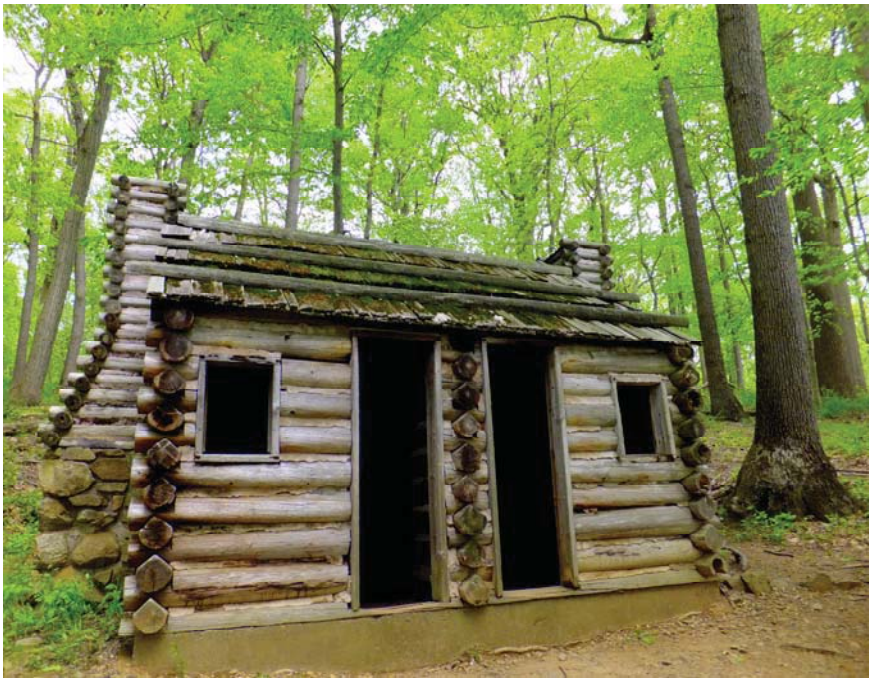
MORR: PARKWIDE DCV CONDITION SUMMARY

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
80	74	81	97	93	87	91	100

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.



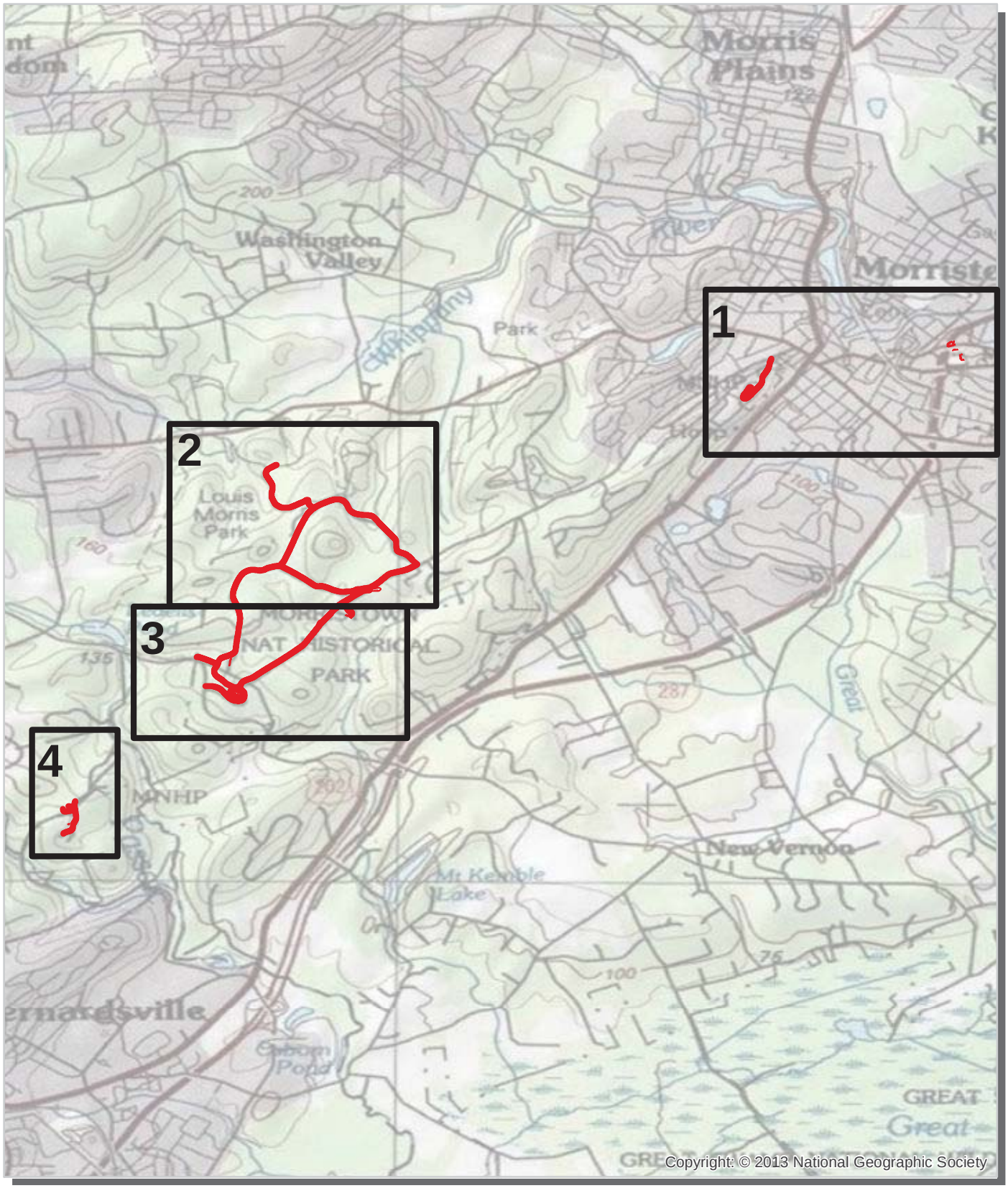
Section 4
Park Route Location Maps



Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

Morristown National Historical Park
Route Location Map
Key Map

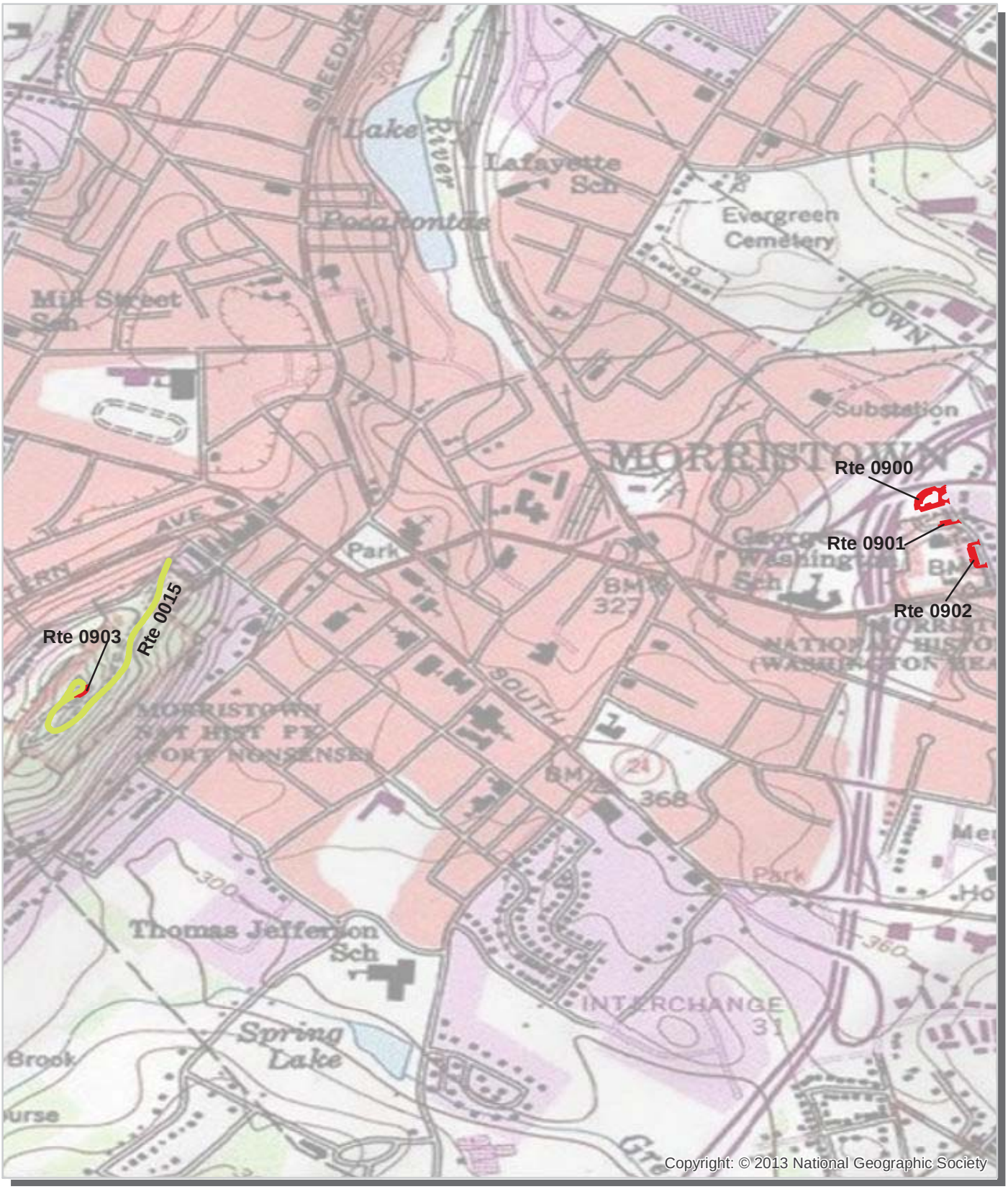


Cycle 5 Collected Routes

1 0.5 0 1 Miles

N

Morristown National Historical Park
Route Location Map
Area 1



Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Morristown National Historical Park
Route Location Map
Area 2

Unique colors used to differentiate routes

0.2 0.1 0 0.2
Miles

N

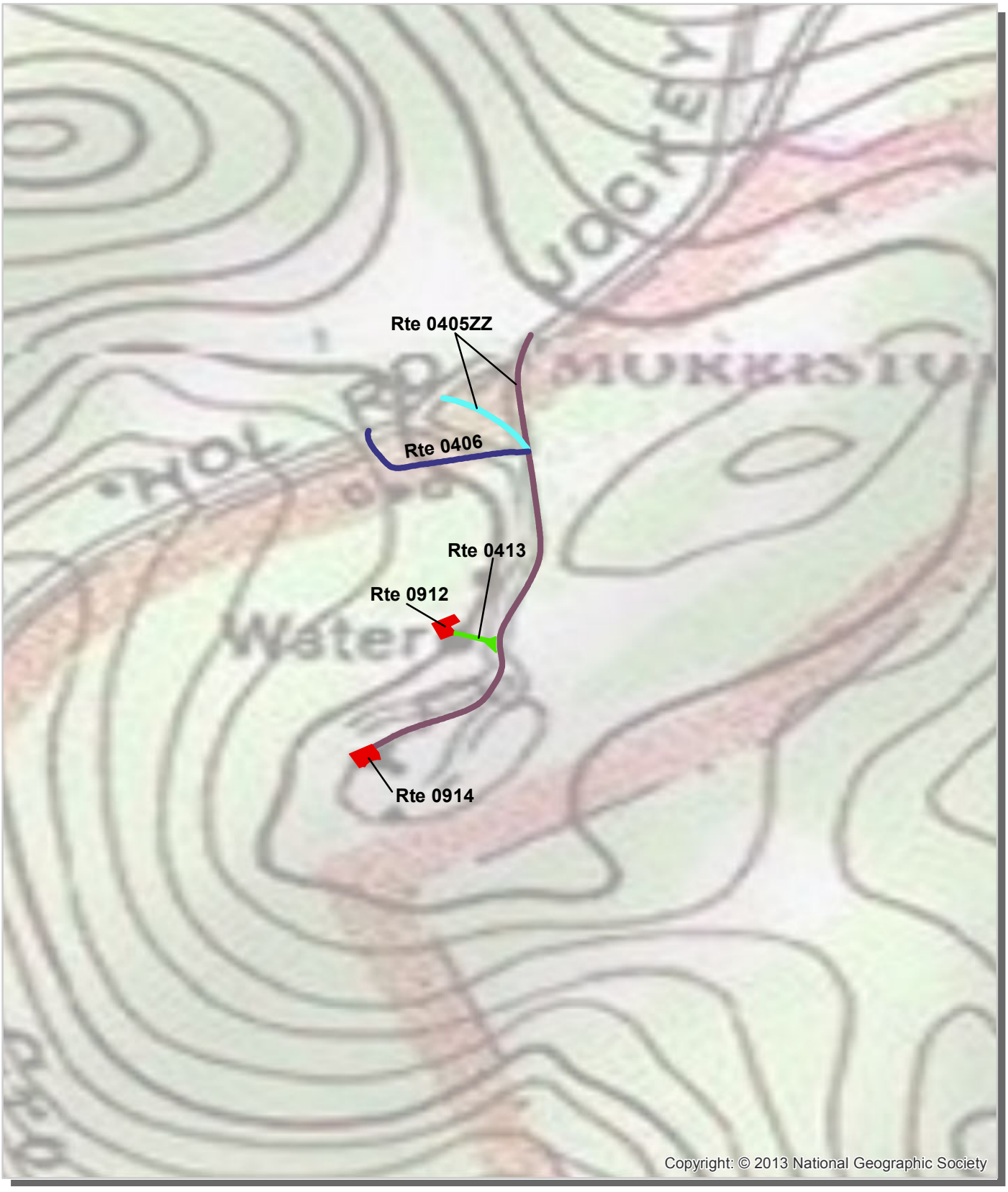
Morristown National Historical Park
Route Location Map
Area 3

Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Morristown National Historical Park
Route Location Map
Area 4

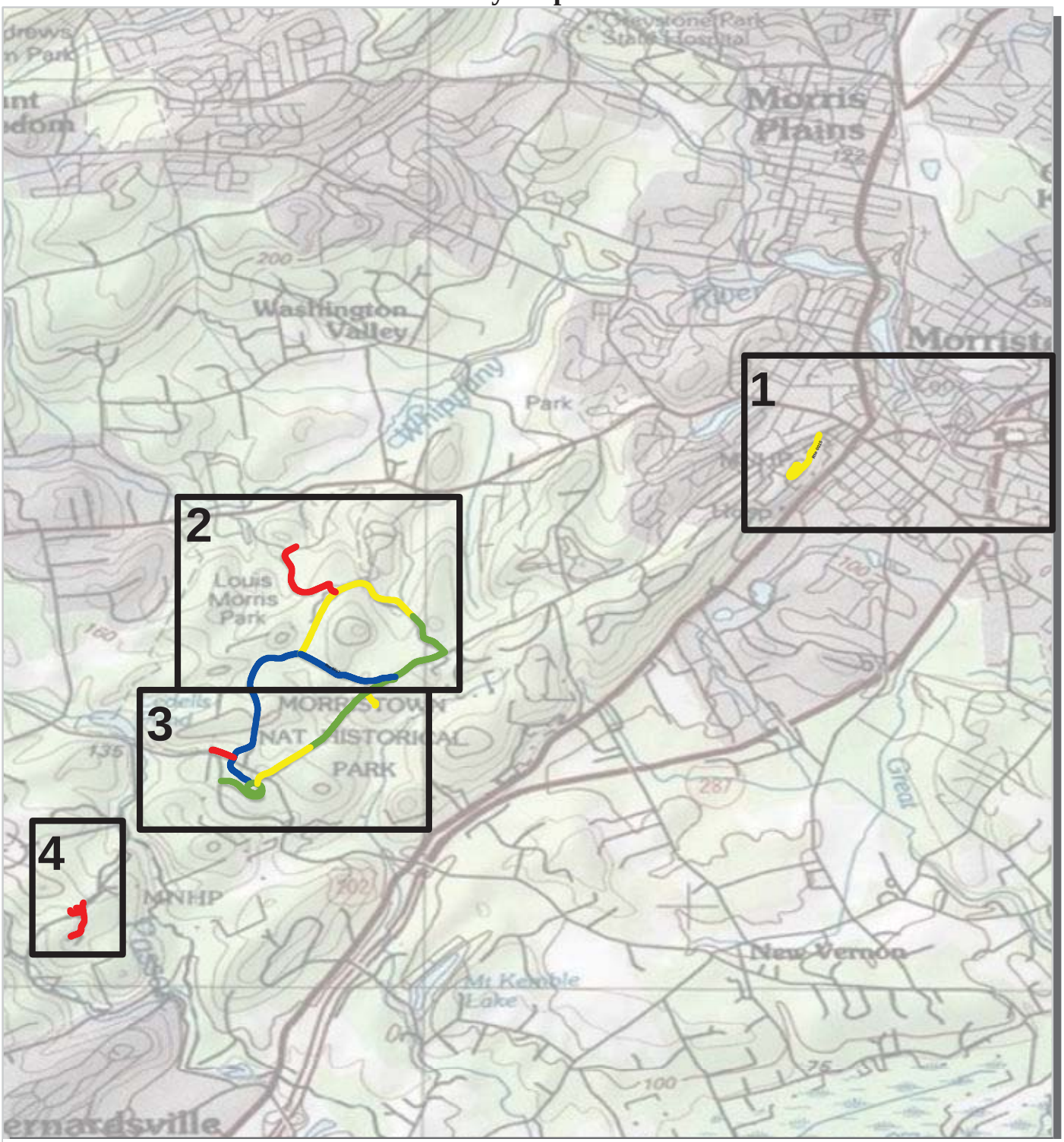


Unique colors used to differentiate routes

0.08 0.04 0 0.08
Miles

N

Morristown National Historical Park
Route Condition Map
PCR - Mile by Mile
Key Map



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

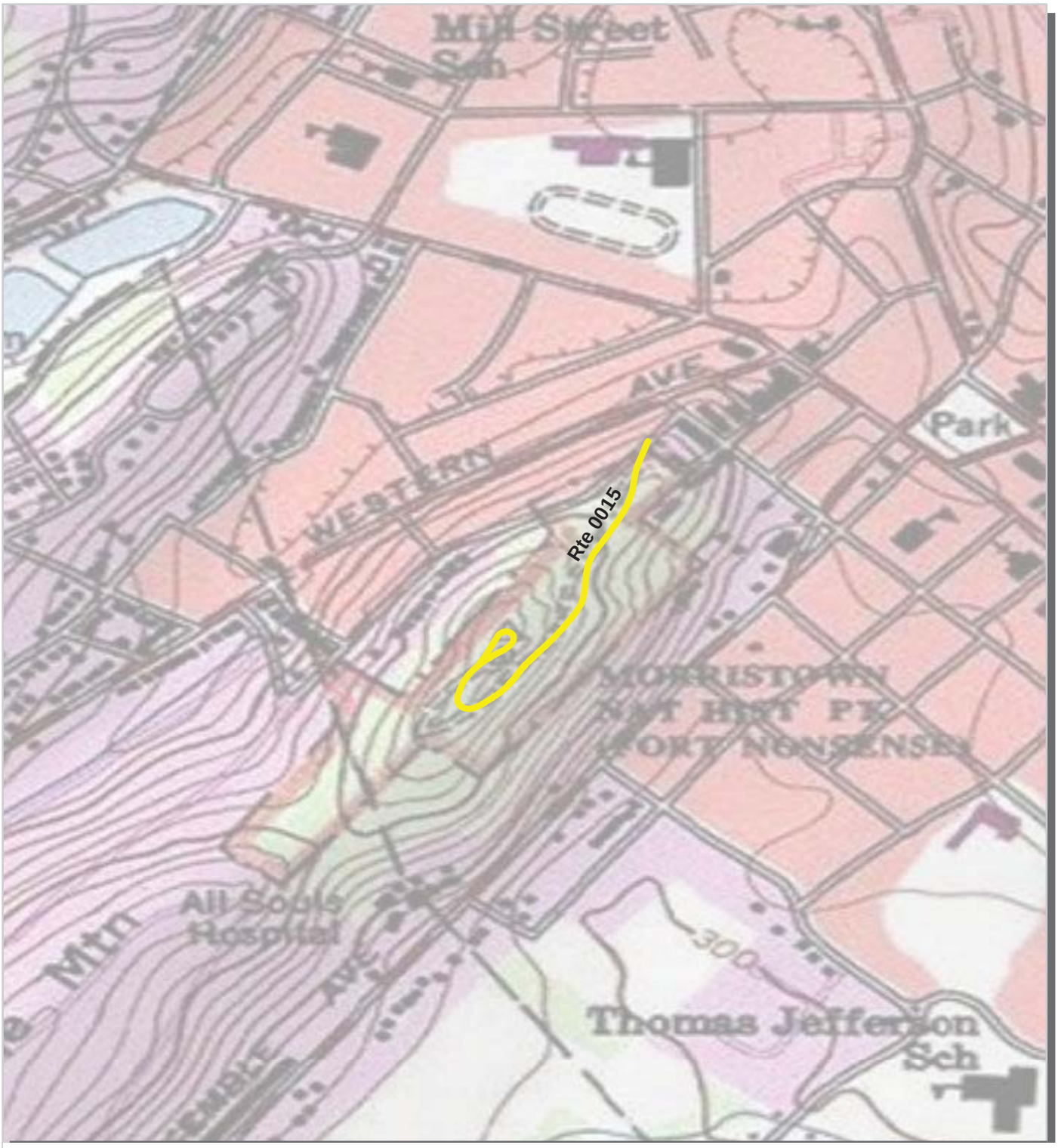
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

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

1 0.5 0 1 Miles

N

Morristown National Historical Park
Route Condition Map
PCR - Mile by Mile
Area 1



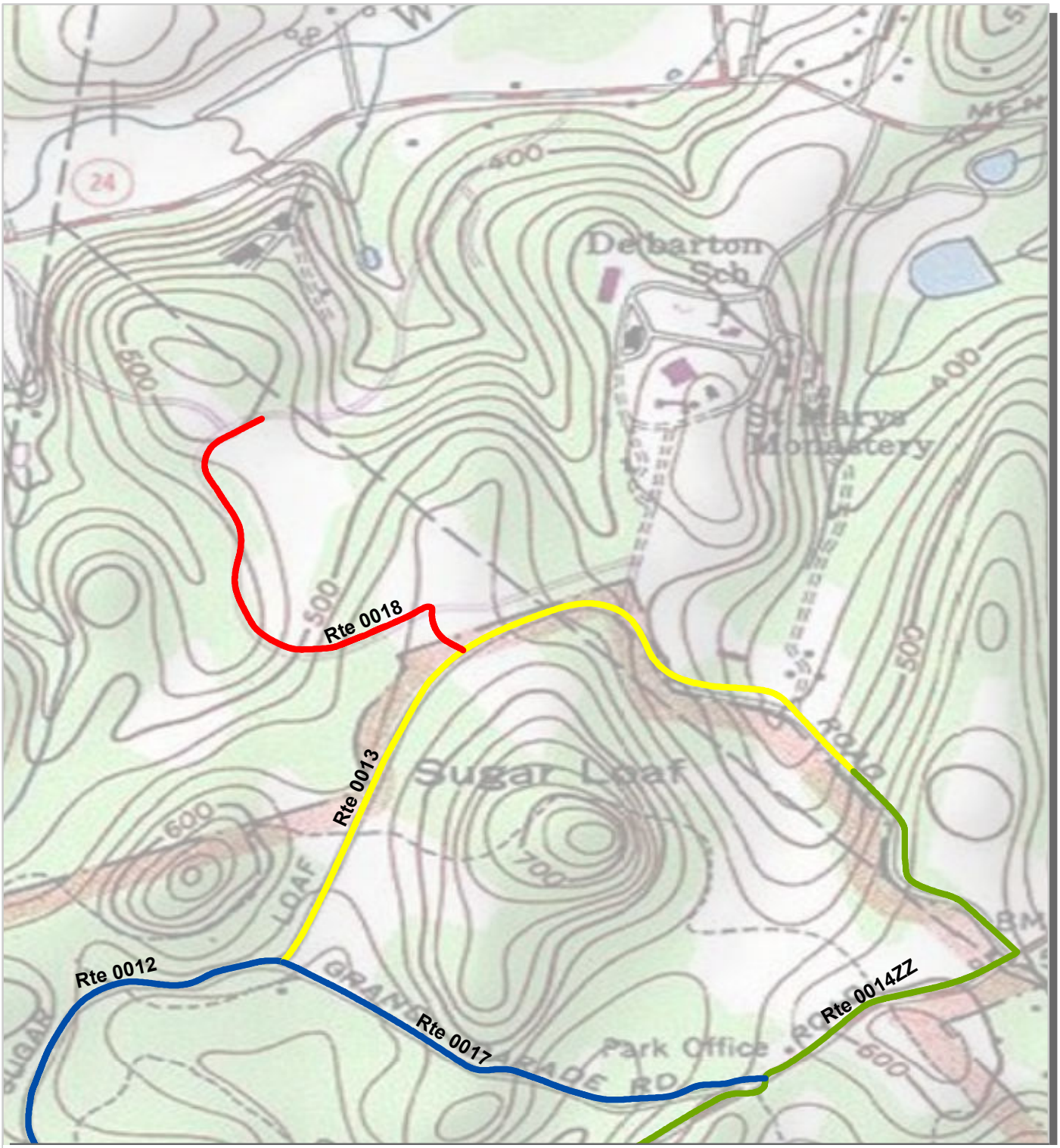
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.15 0.075 0 0.15 Miles

N

Morristown National Historical Park
Route Condition Map
PCR - Mile by Mile
Area 2



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

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

0.2 0.1 0 0.2 Miles

N

Morristown National Historical Park
Route Condition Map
PCR - Mile by Mile
Area 3

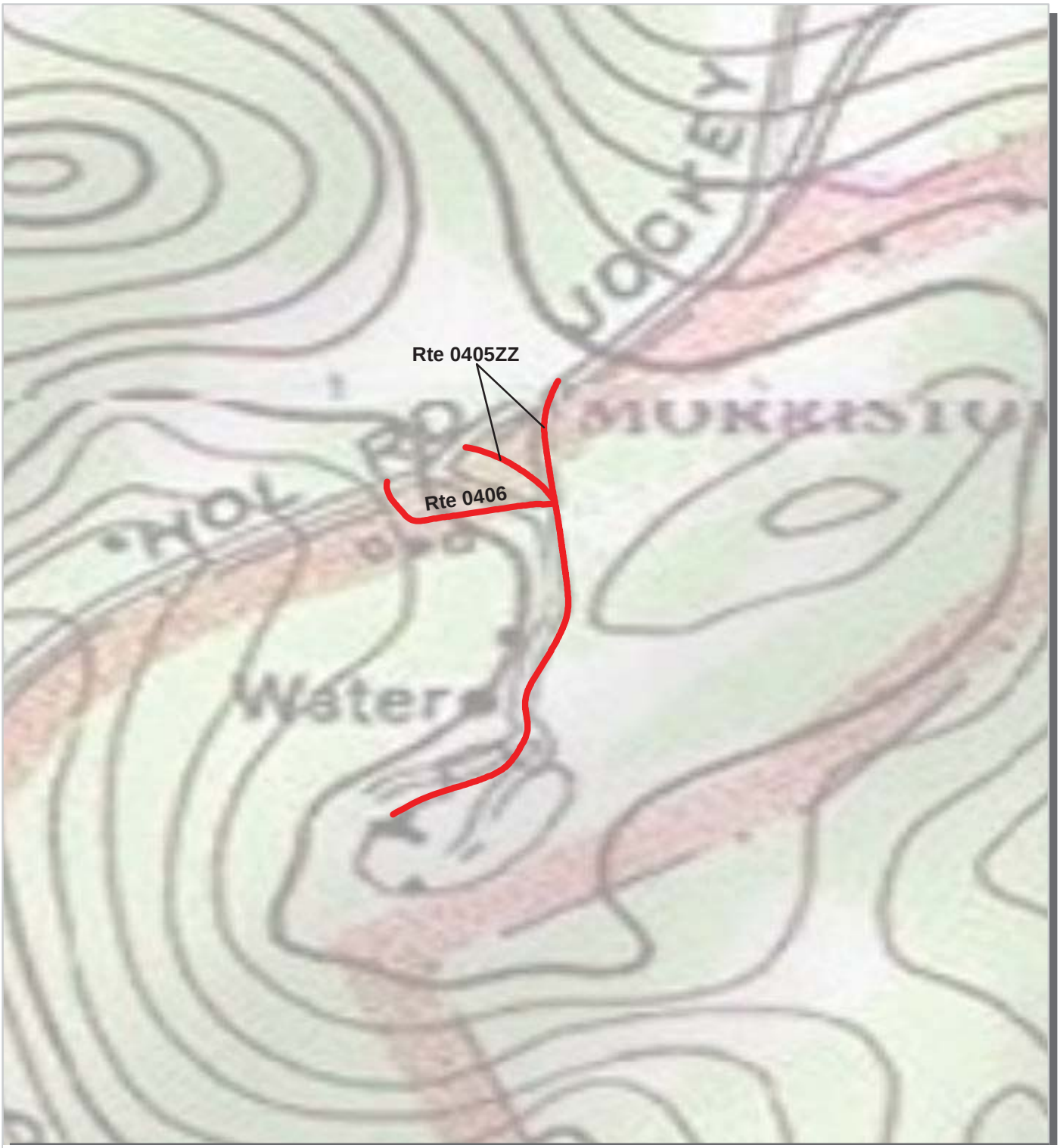
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.2 0.1 0 0.2 Miles

N

Morristown National Historical Park
Route Condition Map
PCR - Mile by Mile
Area 4



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.

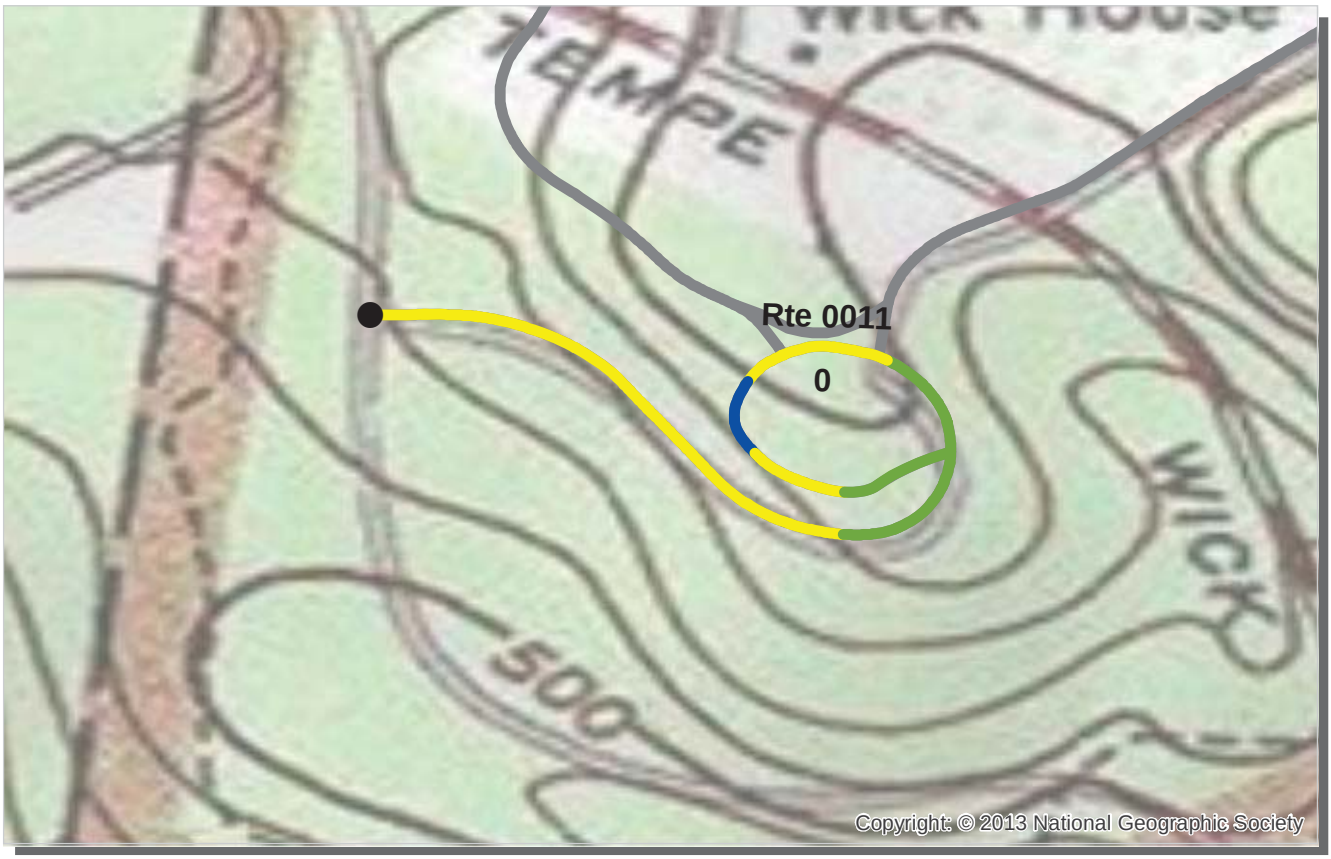
0.08 0.04 0 0.08 Miles

N

Section 5
Paved Route
Condition Rating Sheets

Morristown National Historical Park

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: 0011 PARK ENTRANCE ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.52 Miles**

Section Number	0				
Section Length (mi)	0.52				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	23				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	87				
PCR (Pavement Condition Rating)	87				
Distress Index Values					
Structural Crack Index	88				
Transverse Cracking Index	87				
Patching Index	100				
Rutting Index	100				
Roughness Condition Index (RCI)	NC				

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

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

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

ROUTE: 0012 CEMETERY ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 1.18 Miles**

Section Number	0	1			
Section Length (mi)	1.00	0.18			
Cross Section Information					
Number of Lanes	1	1			
Paved Width (ft)	17	15			
Lane Width (ft)	15	15			
Roadway Condition Information					
SCR (Surface Condition Rating)	97	99			
PCR (Pavement Condition Rating)	97	99			
Distress Index Values					
Structural Crack Index	97	99			
Transverse Cracking Index	97	99			
Patching Index	100	100			
Rutting Index	98	100			
Roughness Condition Index (RCI)	NC	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.

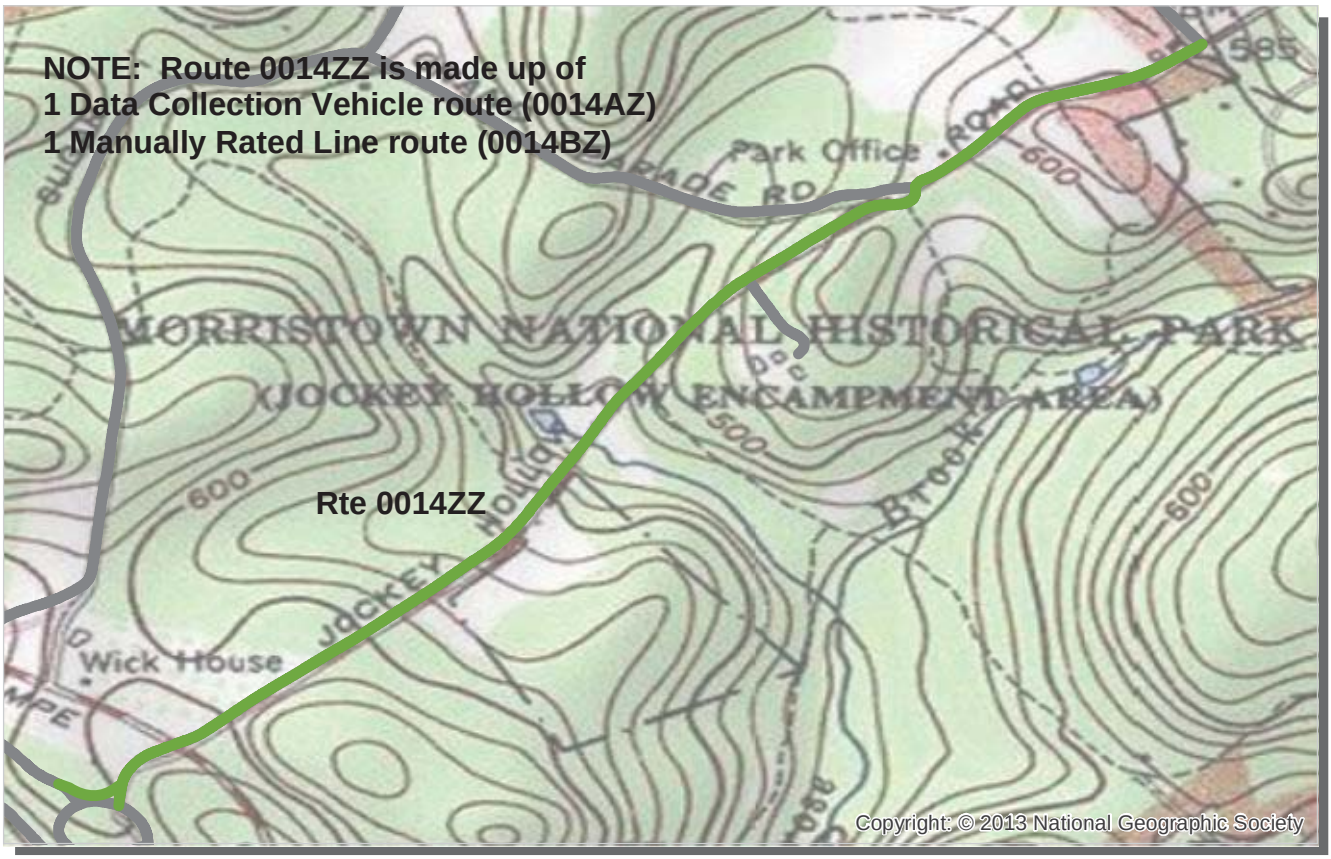
ROUTE: 0013 SUGARLOAF ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 1.30 Miles**

Section Number	0	1			
Section Length (mi)	1.00	0.30			
Cross Section Information					
Number of Lanes	1	2			
Paved Width (ft)	20	18			
Lane Width (ft)	16	9			
Roadway Condition Information					
SCR (Surface Condition Rating)	86	94			
PCR (Pavement Condition Rating)	81	87			
Distress Index Values					
Structural Crack Index	86	94			
Transverse Cracking Index	99	100			
Patching Index	100	100			
Rutting Index	98	98			
Roughness Condition Index (RCI)	73	77			

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

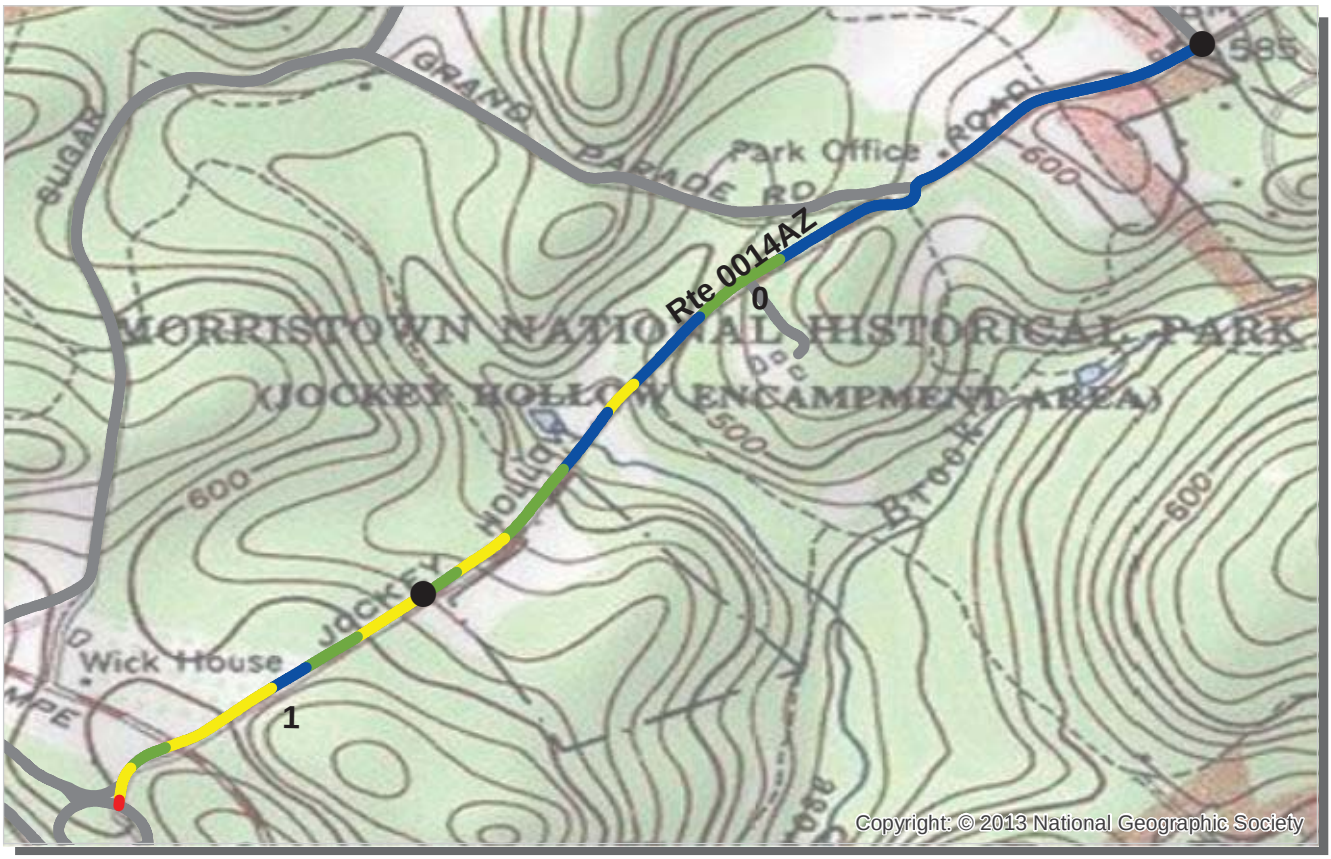
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0014ZZ JOCKEY HOLLOW ROADS
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

Summary Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 1.44 Miles**

Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	90				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

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



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

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

ROUTE: 0014AZ JOCKEY HOLLOW ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

Subcomponent Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 1.38 Miles**

Section Number	0	1			
Section Length (mi)	1.00	0.38			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	19	17			
Lane Width (ft)	9	8			
Roadway Condition Information					
SCR (Surface Condition Rating)	93	82			
PCR (Pavement Condition Rating)	93	82			
Distress Index Values					
Structural Crack Index	93	82			
Transverse Cracking Index	98	93			
Patching Index	100	100			
Rutting Index	100	100			
Roughness Condition Index (RCI)	NC	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: 0015 FORT NONSENSE ACCESS ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.49 Miles**

Section Number	0				
Section Length (mi)	0.49				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	20				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	61				
PCR (Pavement Condition Rating)	61				
Distress Index Values					
Structural Crack Index	64				
Transverse Cracking Index	61				
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.

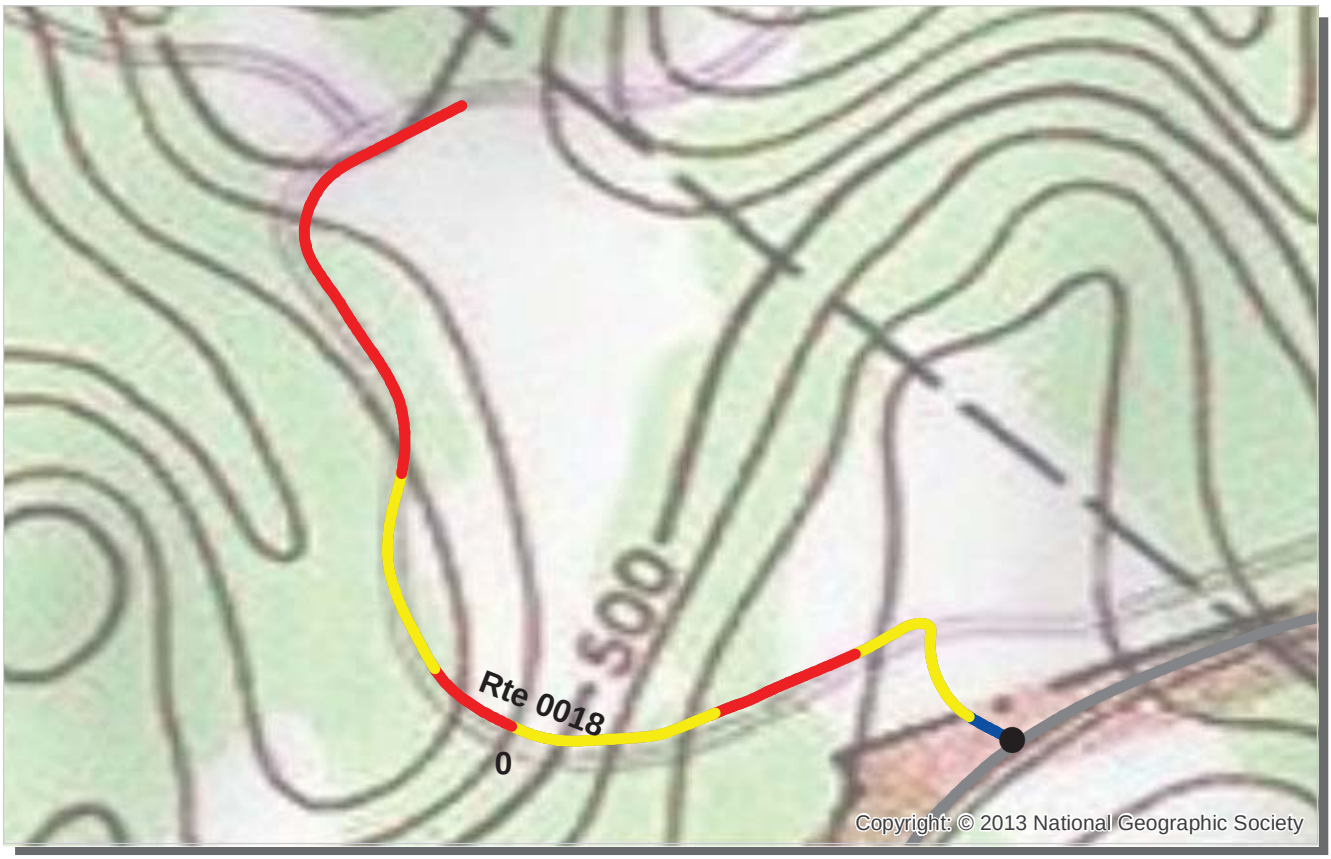
ROUTE: 0017 GRAND PARADE ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.55 Miles**

Section Number	0				
Section Length (mi)	0.55				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	100				
Roughness Condition Index (RCI)	NC				

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



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

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

ROUTE: 0018 ACCESS TO LEWIS MORRIS COUNTY PARK
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.60 Miles**

Section Number	0				
Section Length (mi)	0.60				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	22				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	60				
PCR (Pavement Condition Rating)	60				
Distress Index Values					
Structural Crack Index	60				
Transverse Cracking Index	76				
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

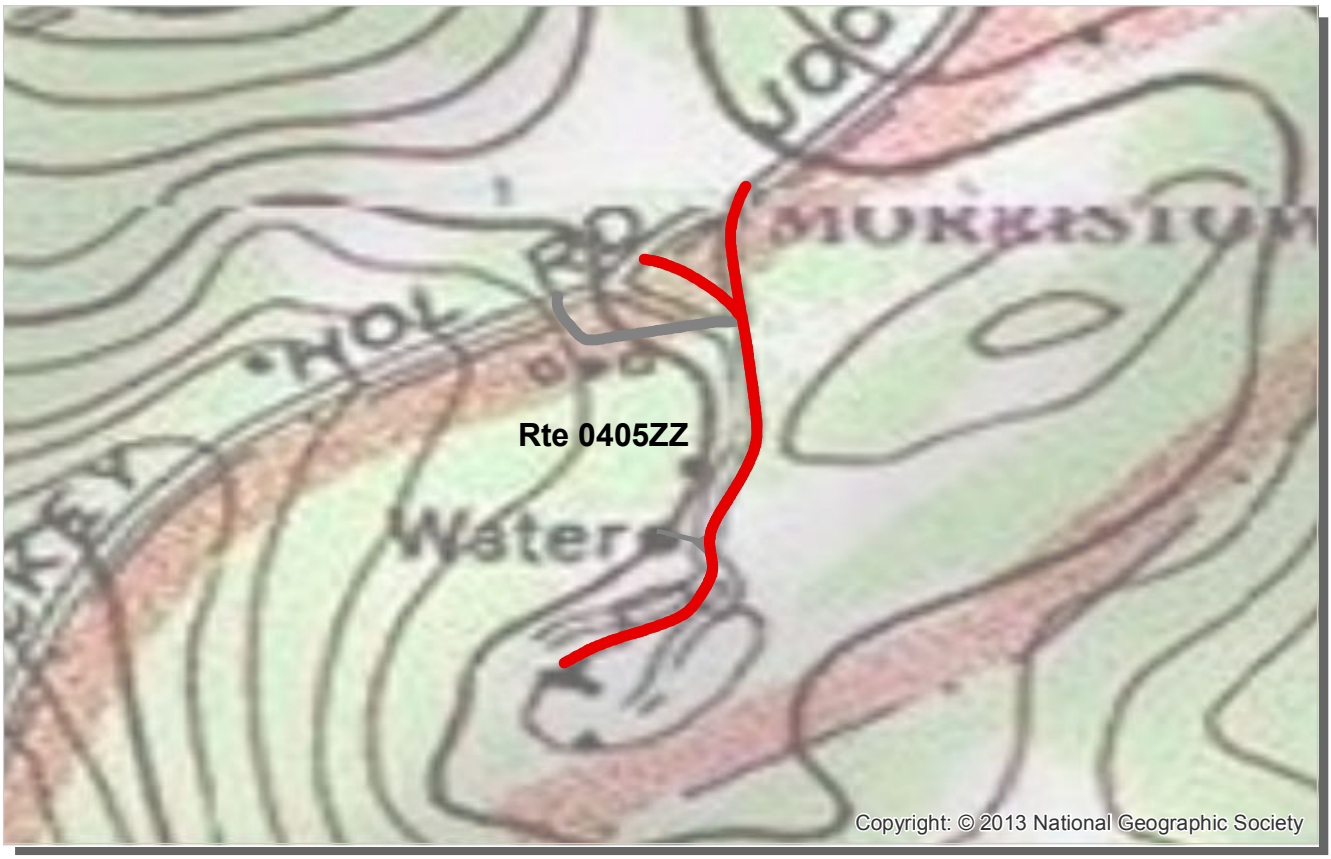
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0400 SERVICE ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013
NORTHEAST REGION **TOTAL LENGTH: 0.12 Miles**

Section Number	0				
Section Length (mi)	0.12				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	14				
Lane Width (ft)	14				
Roadway Condition Information					
SCR (Surface Condition Rating)	55				
PCR (Pavement Condition Rating)	55				
Distress Index Values					
Structural Crack Index	55				
Transverse Cracking Index	96				
Patching Index	99				
Rutting Index	89				
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

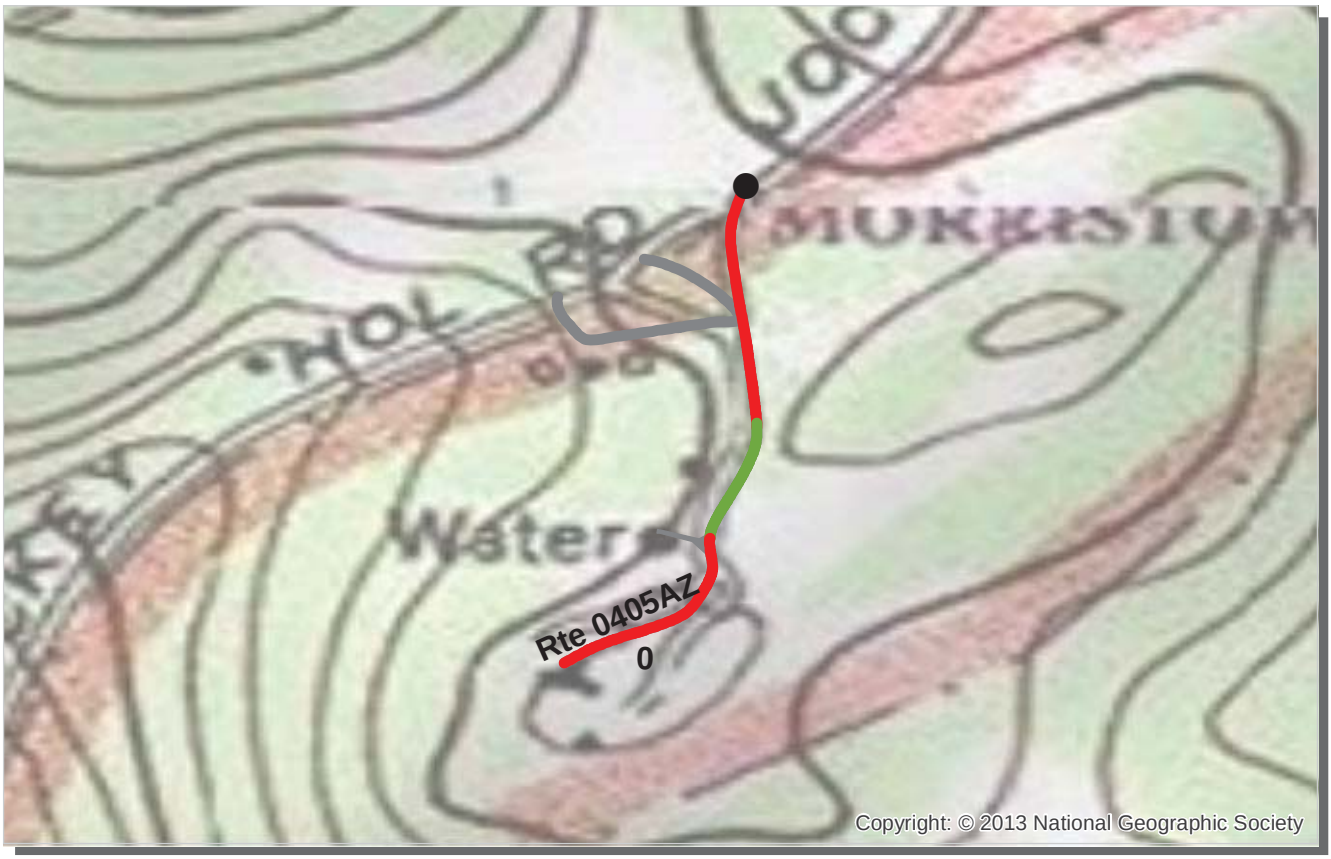
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0405ZZ CROSS ESTATE ROADS
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

Summary Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.32 Miles**

Section Number					
Section Length (mi)					
Cross Section Information					
Number of Lanes	N/A				
Paved Width (ft)	N/A				
Lane Width (ft)	N/A				
Roadway Condition Information					
SCR (Surface Condition Rating)	6				
PCR (Pavement Condition Rating)	6				
Distress Index Values					
Structural Crack Index	N/A				
Transverse Cracking Index	N/A				
Patching Index	N/A				
Rutting Index	N/A				
Roughness Condition Index (RCI)	N/A				

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



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

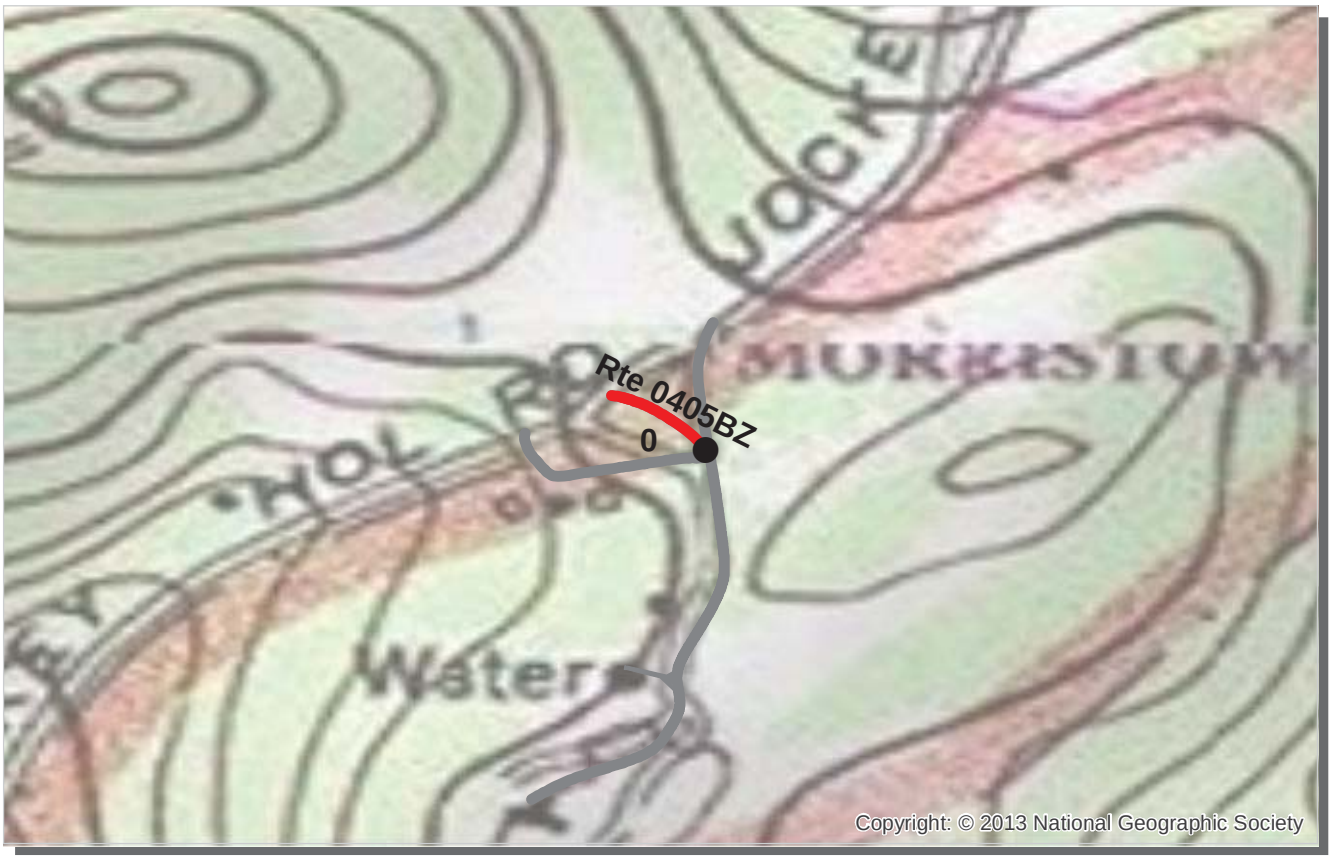
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0405AZ CROSS ESTATE ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

Subcomponent Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.27 Miles**

Section Number	0				
Section Length (mi)	0.27				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	0				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	78				
Patching Index	98				
Rutting Index	78				
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

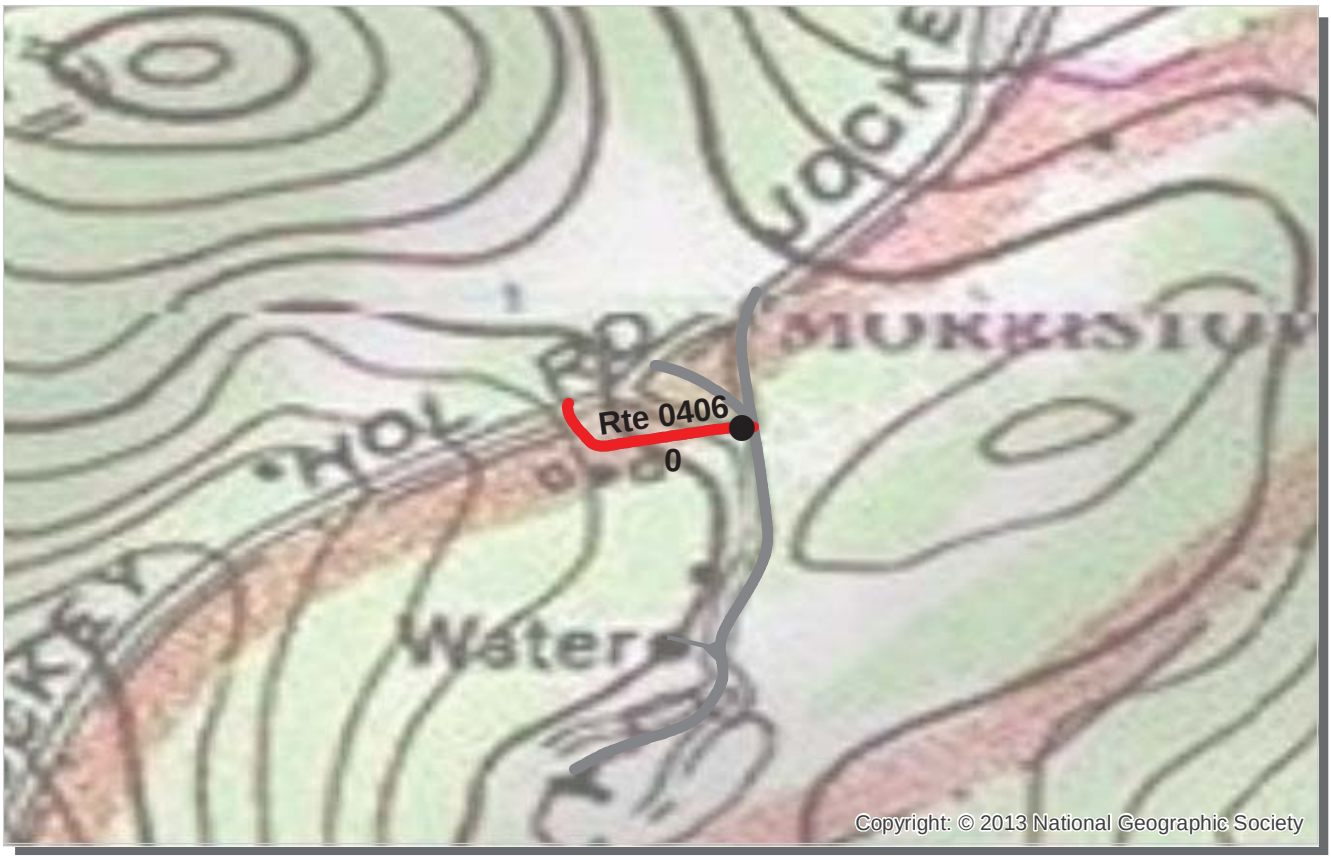
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0405BZ CROSS ESTATE ROAD SPUR
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

Subcomponent Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.05 Miles**

Section Number	0				
Section Length (mi)	0.05				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	11				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	47				
PCR (Pavement Condition Rating)	47				
Distress Index Values					
Structural Crack Index	47				
Transverse Cracking Index	62				
Patching Index	100				
Rutting Index	93				
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.

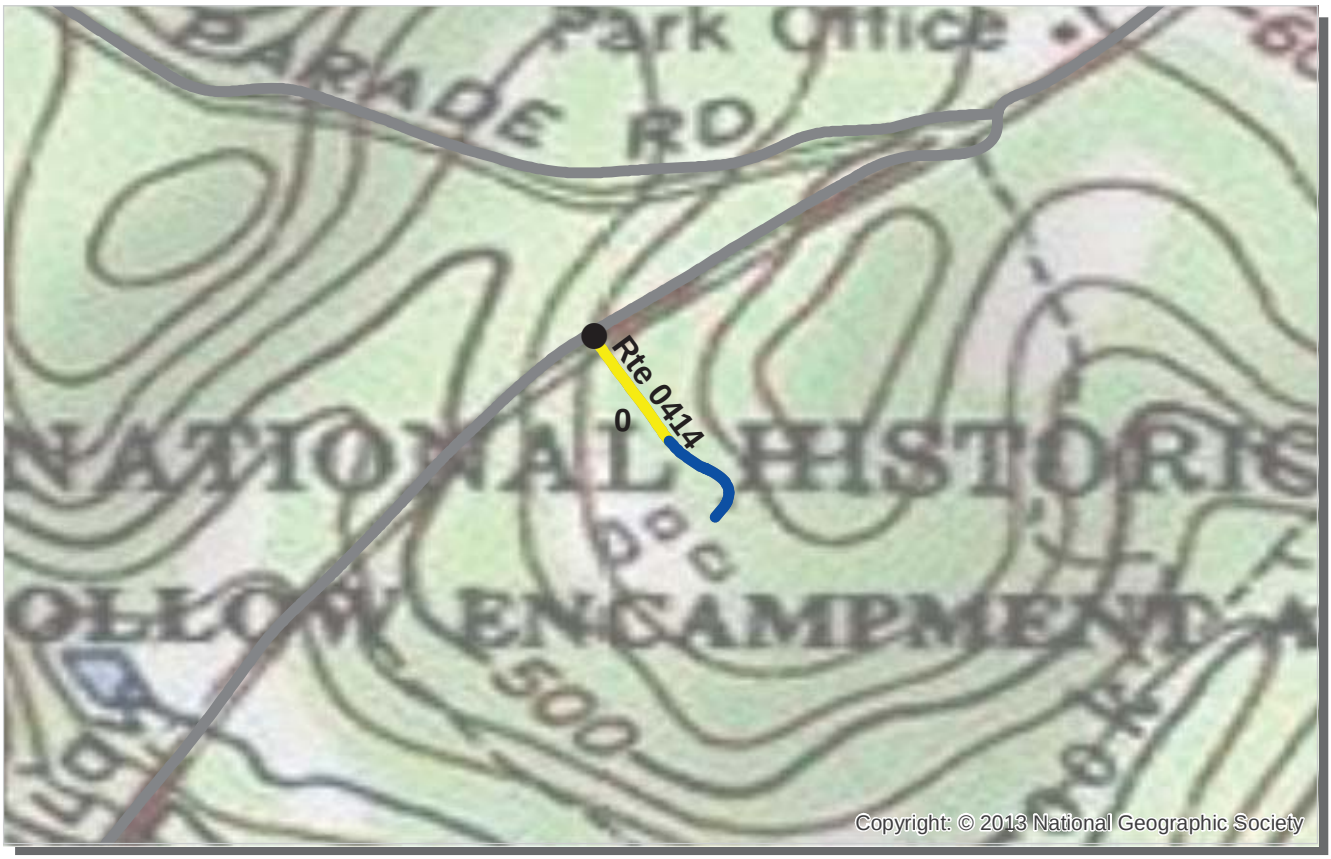
ROUTE: 0406 RESIDENCE ACCESS ROAD
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.08 Miles**

Section Number	0				
Section Length (mi)	0.08				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	10				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	39				
PCR (Pavement Condition Rating)	39				
Distress Index Values					
Structural Crack Index	39				
Transverse Cracking Index	53				
Patching Index	100				
Rutting Index	82				
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: 0414 ACCESS TO MAINTENANCE AREA
MORR : MORRISTOWN NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.11 Miles**

Section Number	0				
Section Length (mi)	0.11				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	84				
PCR (Pavement Condition Rating)	84				
Distress Index Values					
Structural Crack Index	84				
Transverse Cracking Index	96				
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

Section 6
Manually Rated Paved Route Condition Rating Sheets

Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0014ZZ

JOCKEY HOLLOW ROADS

FROM END OF ROUTE 0013 (SUGARLOAF ROAD)

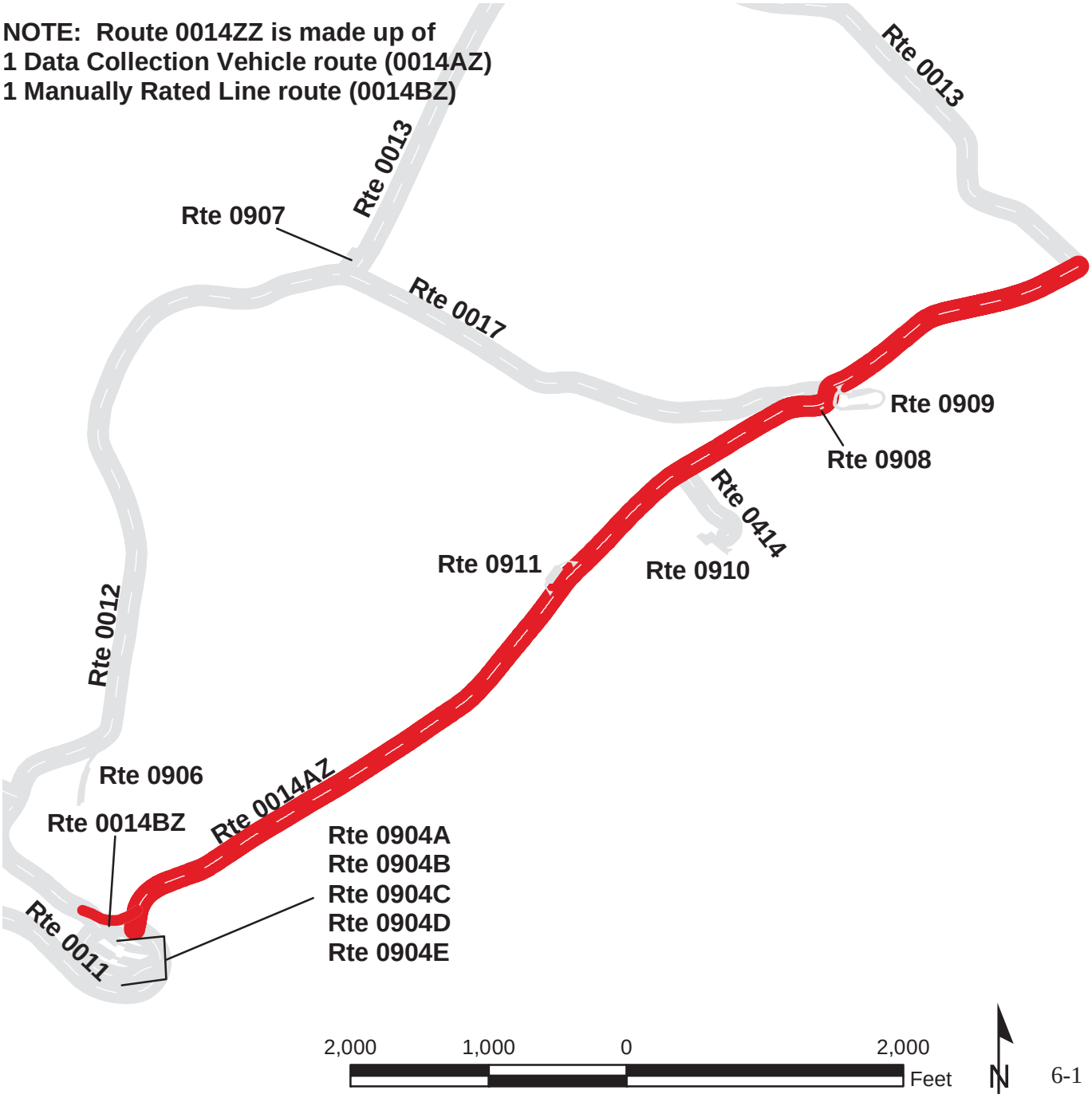
TO ROUTE 0011 (PARK ENTRANCE ROAD) AND ROUTE 0012 (CEMETERY ROAD)

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0014ZZ	PUBLIC	4/4/2013	N/A	2.36	1.44	18
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
1	15	1	N/A	N/A	SUMMARY/90	AS

* Lane miles are based on 11' lane widths

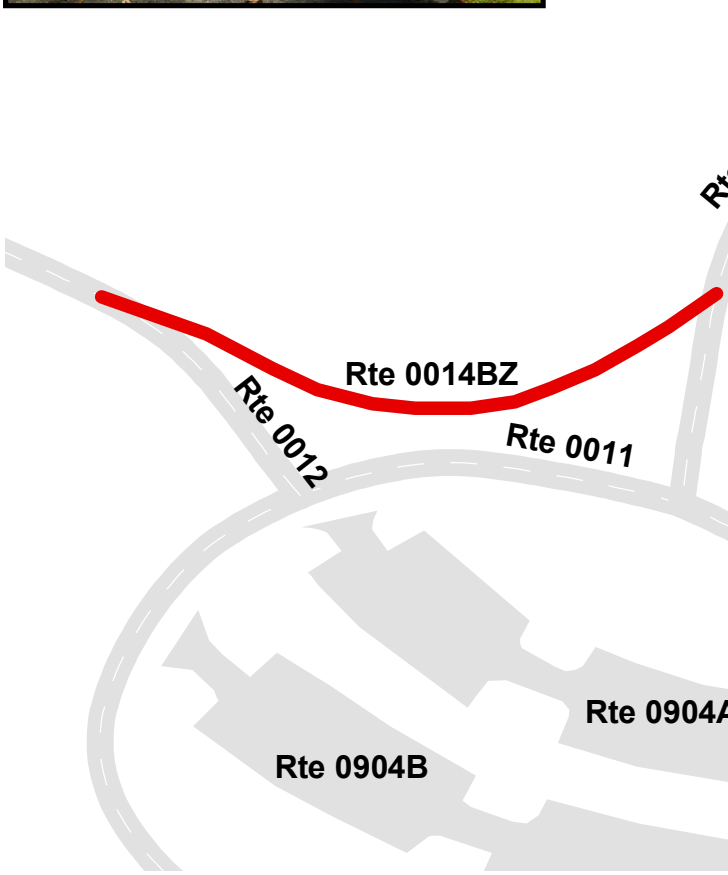
NOTE: Route 0014ZZ is made up of
1 Data Collection Vehicle route (0014AZ)
1 Manually Rated Line route (0014BZ)



MORRISTOWN NATIONAL HISTORICAL PARK
Route 0014BZ
JOCKEY HOLLOW SPUR
FROM ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
TO ROUTE 0012
Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0014BZ	PUBLIC	10/5/2012	4,140	0.07	0.06	14
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90	AS

* Lane miles are based on 11' lane widths



MORRISTOWN NATIONAL HISTORICAL PARK
Route 0413
ACCESS TO STAFF PARKING
FROM ROUTE 0405ZZ (CROSS ESTATE ROADS)
TO ROUTE 0912 (RANGER STATION PARKING)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0413	NONPUBLIC	10/5/2012	1,188	0.02	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths

Section 7
Parking Area
Condition Rating Sheets

Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0900

WASHINGTONS HEADQUARTERS PARKING

FROM WASHINGTON PLACE

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0900	PUBLIC	10/5/2012	25,298	0.44	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	4	0	CONCRETE CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0901

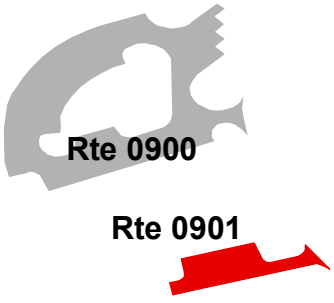
WASHINGTONS HEADQUARTERS EMPLOYEE PARKING

FROM WASHINGTON PLACE

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901	NONPUBLIC	10/5/2012	4,455	0.08	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	2	0	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



MORRISTOWN NATIONAL HISTORICAL PARK

Route 0902

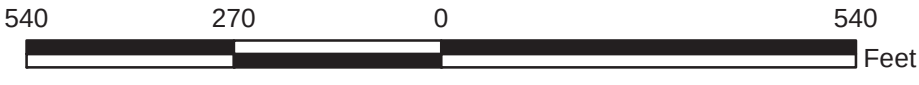
QUARTERS 3 PARKING

FROM WASHINGTON PLACE

TO WASHINGTON PLACE

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0902	NONPUBLIC	10/5/2012	12,073	0.21	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	3	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

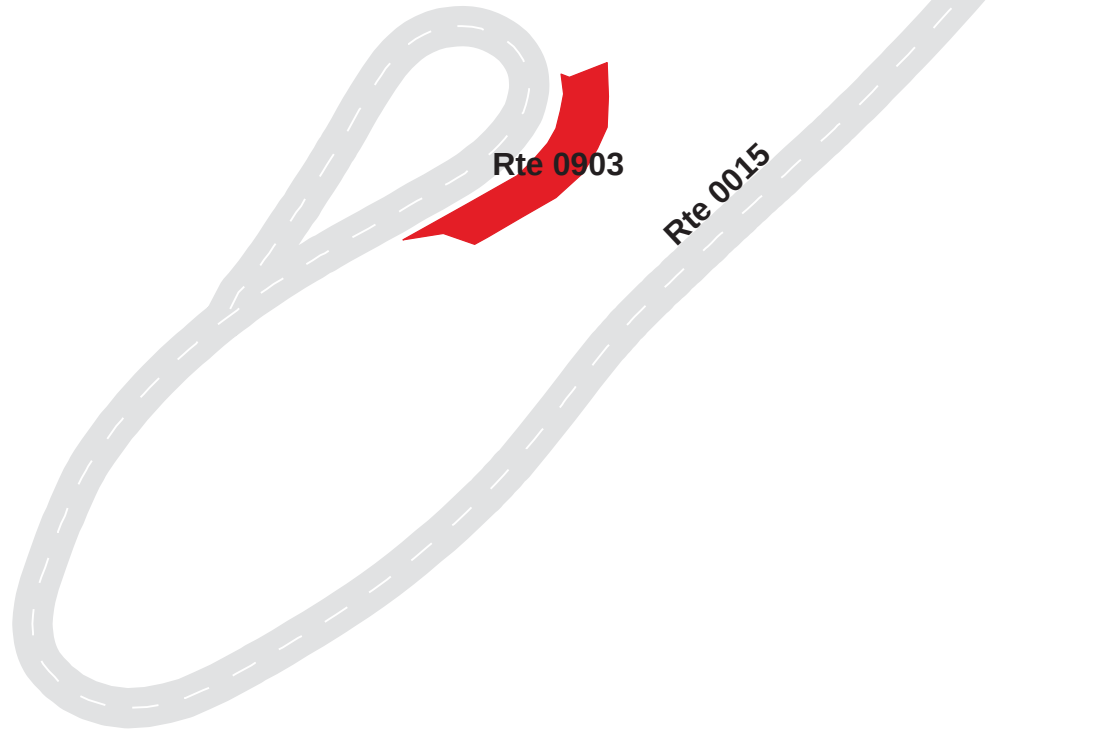
* Lane miles are based on 11' lane widths



MORRISTOWN NATIONAL HISTORICAL PARK
Route 0903
FORT NONSENSE PARKING
ADJACENT TO ROUTE 0015 (FORT NONSENSE ACCESS ROAD) ON RIGHT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903	PUBLIC	10/5/2012	3,233	0.06	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



270 135 0 270
Feet

N

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0904A
VISITOR CENTER PARKING A
FROM ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT
TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904A	PUBLIC	10/5/2012	16,703	0.29	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

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0904B

VISITOR CENTER PARKING B

FROM ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT
TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904B	PUBLIC	10/5/2012	18,905	0.33	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

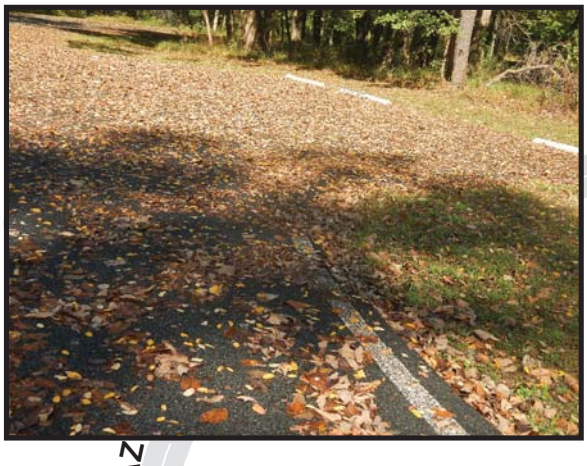
360 180 0 360 Feet

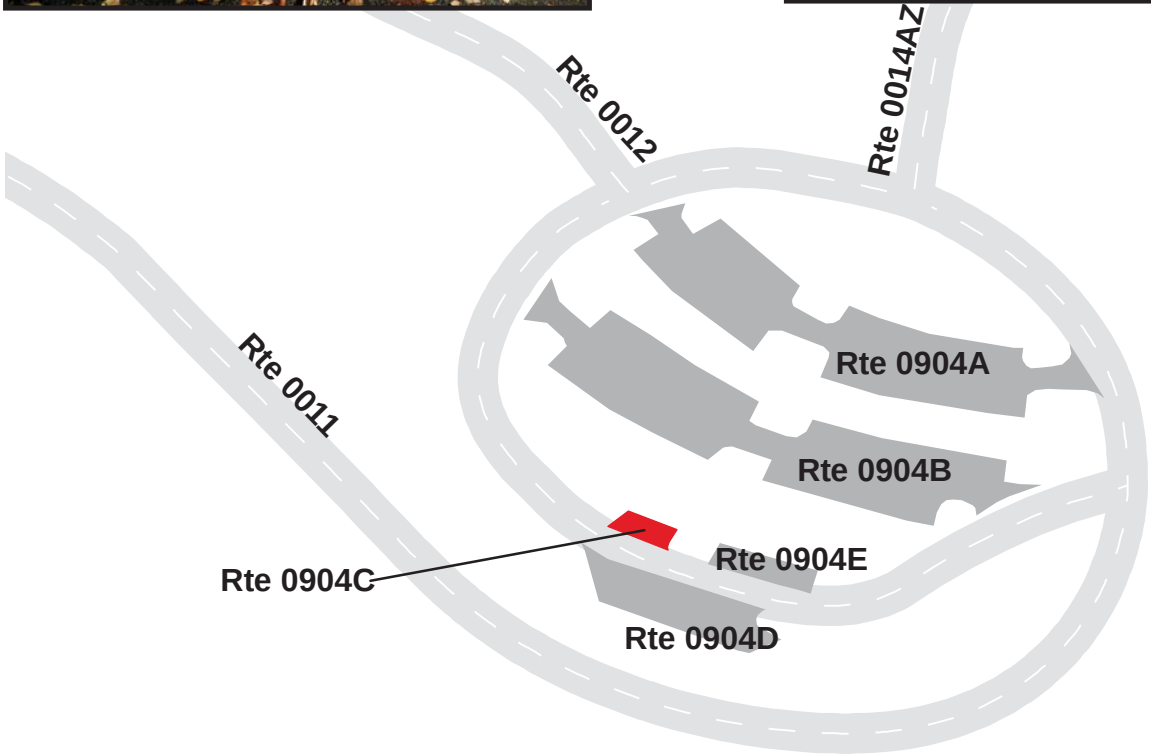
N

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0904C
VISITOR CENTER PARKING C
ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904C	PUBLIC	10/5/2012	714	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





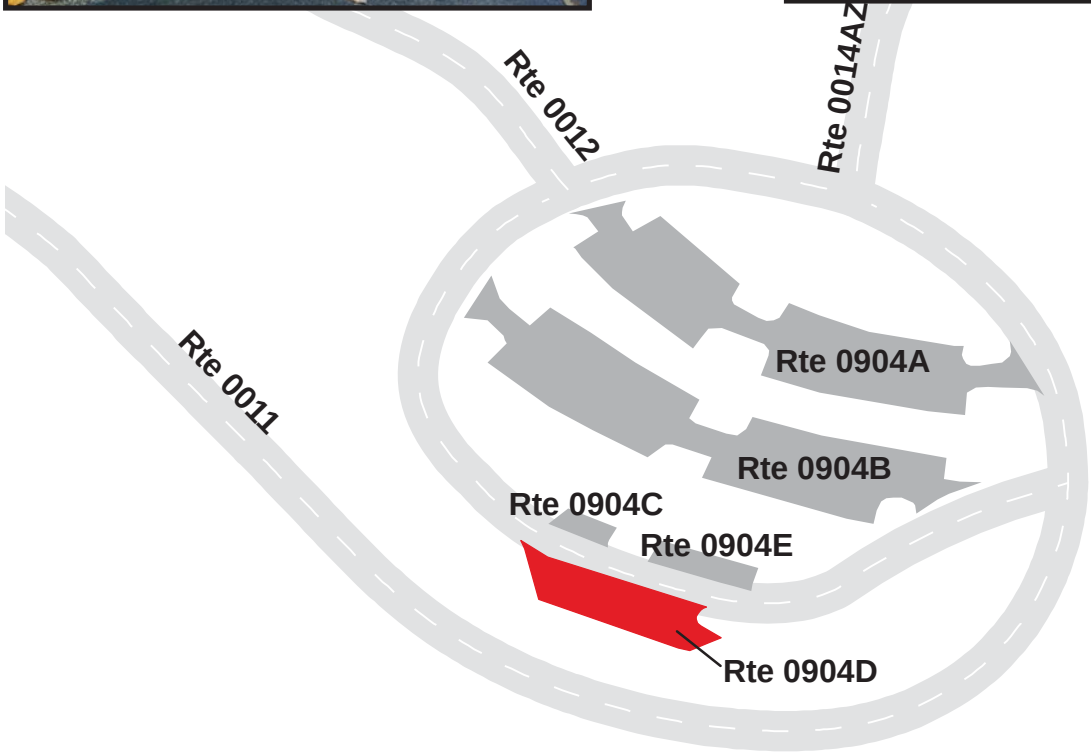
360 180 0 360
Feet

N

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0904D
VISITOR CENTER PARKING D
ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON RIGHT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904D	PUBLIC	10/5/2012	4,697	0.08	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



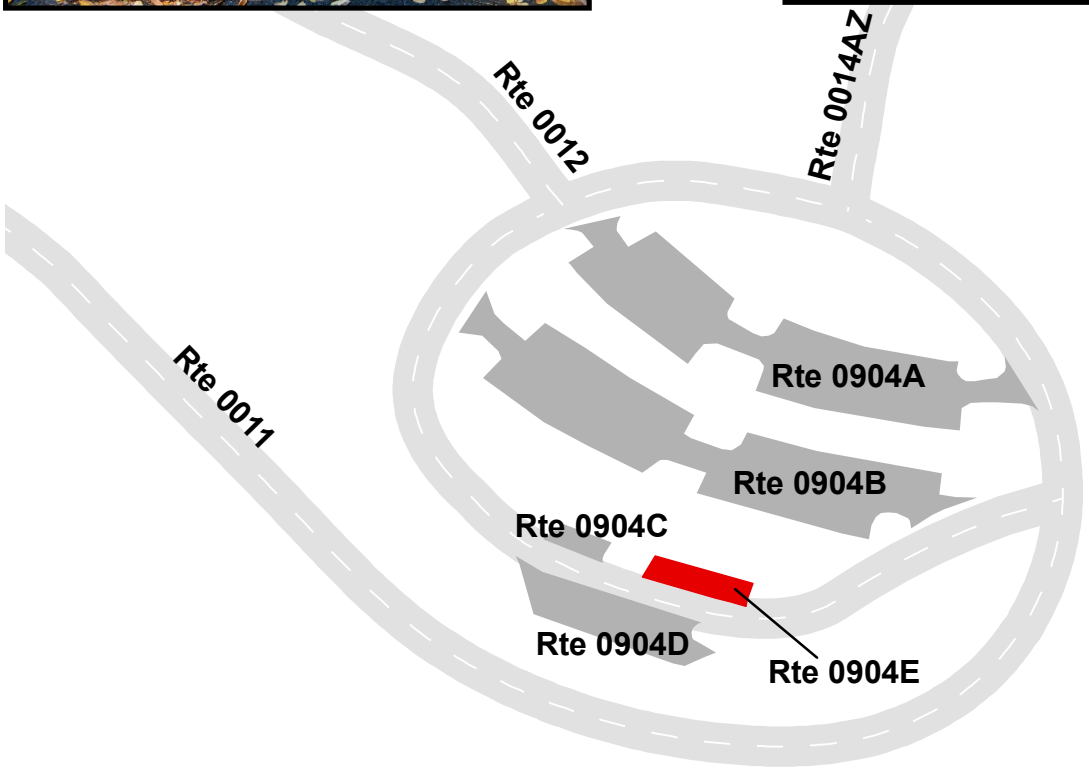
360 180 0 360 Feet

N

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0904E
VISITOR CENTER PARKING E
ADJACENT TO ROUTE 0011 (PARK ENTRANCE ROAD) ON LEFT

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904E	PUBLIC	10/5/2012	1,433	0.03	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



360 180 0 360
Feet

N

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0905
RANGER PARKING
ADJACENT TO ROUTE 0012 (CEMETERY ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0905	PUBLIC	10/5/2012	2,354	0.04	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0906

WICK FARM PARKING

FROM ROUTE 0012 (CEMETERY ROAD)

TO ROUTE 0012 (CEMETERY ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0906	PUBLIC	10/5/2012	16,295	0.28	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	1	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths

450 225 0 450 Feet

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0907

SOLDIER HUT PARKING

FROM ROUTE 0012 (CEMETERY ROAD)

TO ROUTE 0013 (SUGARLOAF ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0907	PUBLIC	10/5/2012	12,369	0.21	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	3	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

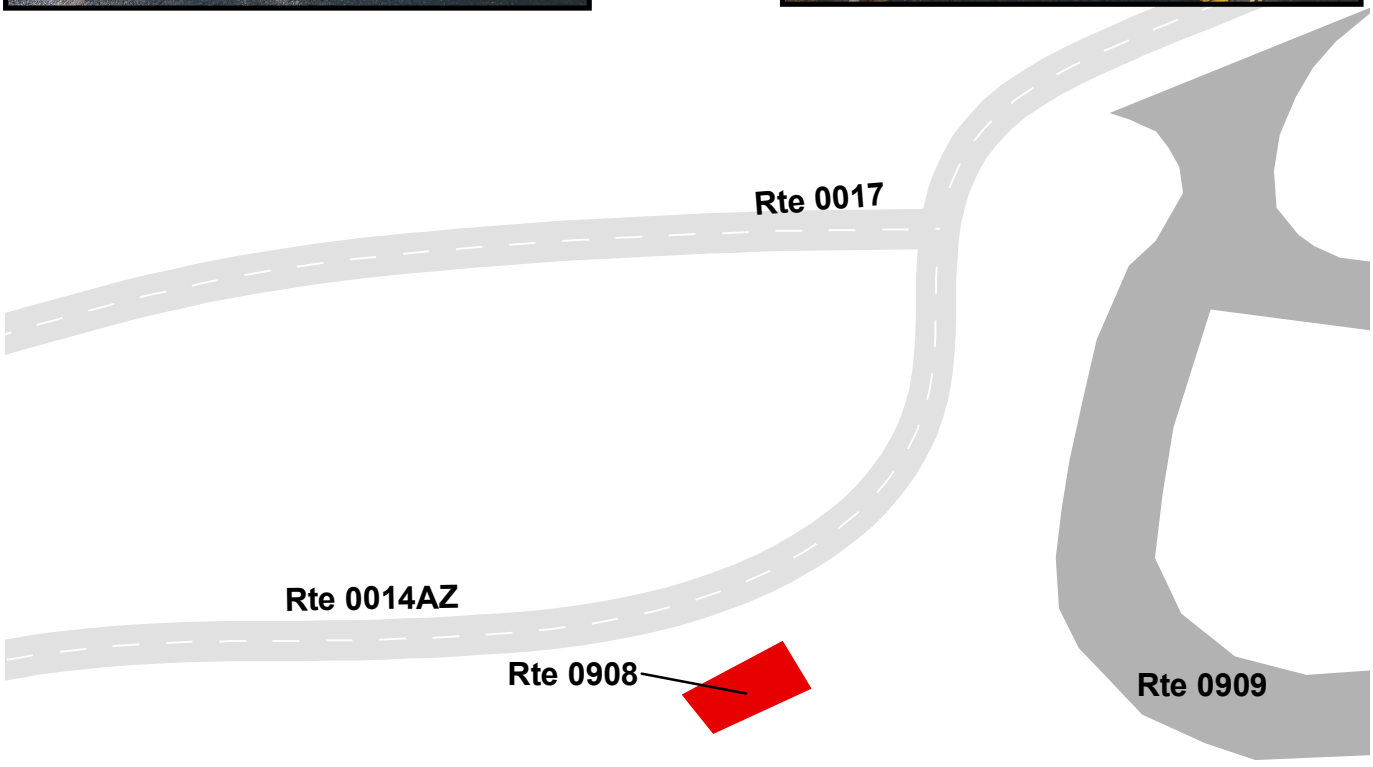
* Lane miles are based on 11' lane widths

225 112.5 0 225 Feet

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0908
COMFORT STATION PARKING
ADJACENT TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908	PUBLIC	10/5/2012	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



MORRISTOWN NATIONAL HISTORICAL PARK
Route 0909
NEW YORK BRIGADE PARKING
FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0909	PUBLIC	10/5/2012	20,799	0.36	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0910

MAINTENANCE AREA

FROM ROUTE 0414 (ACCESS TO MAINTENANCE AREA)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0910	NONPUBLIC	10/5/2012	13,814	0.24	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	2	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths

360 180 0 360
Feet

N

MORRISTOWN NATIONAL HISTORICAL PARK

Route 0911

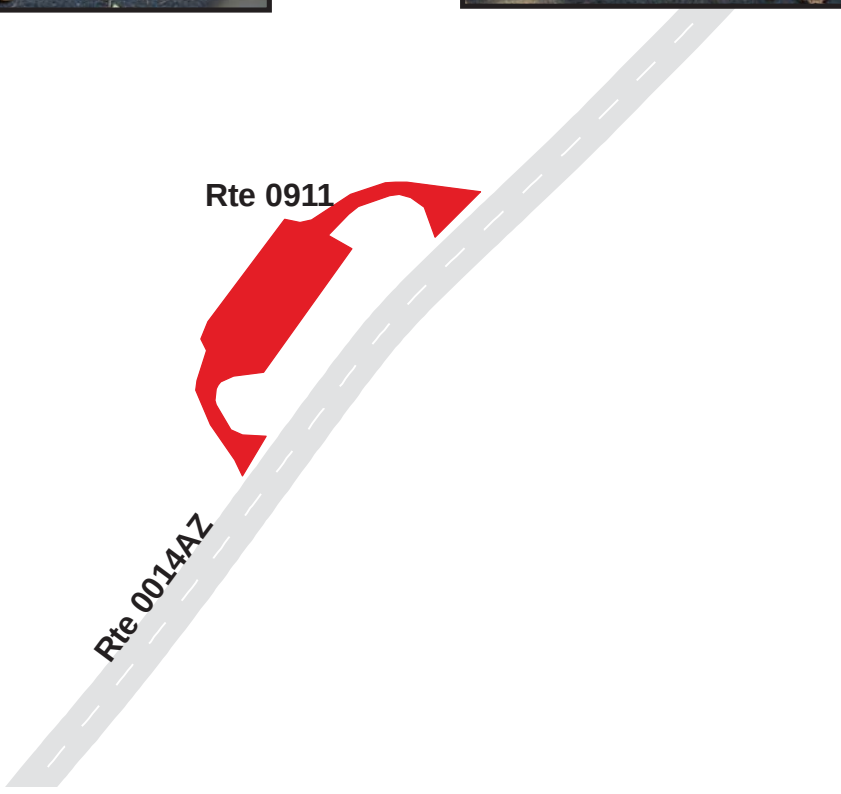
TRAIL CENTER PARKING

FROM ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)

TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0911	PUBLIC	10/5/2012	10,152	0.18	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
2	0	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths



MORRISTOWN NATIONAL HISTORICAL PARK
Route 0912
RANGER STATION PARKING
FROM END OF ROUTE 0413 (ACCESS TO STAFF PARKING)
TO PARKING

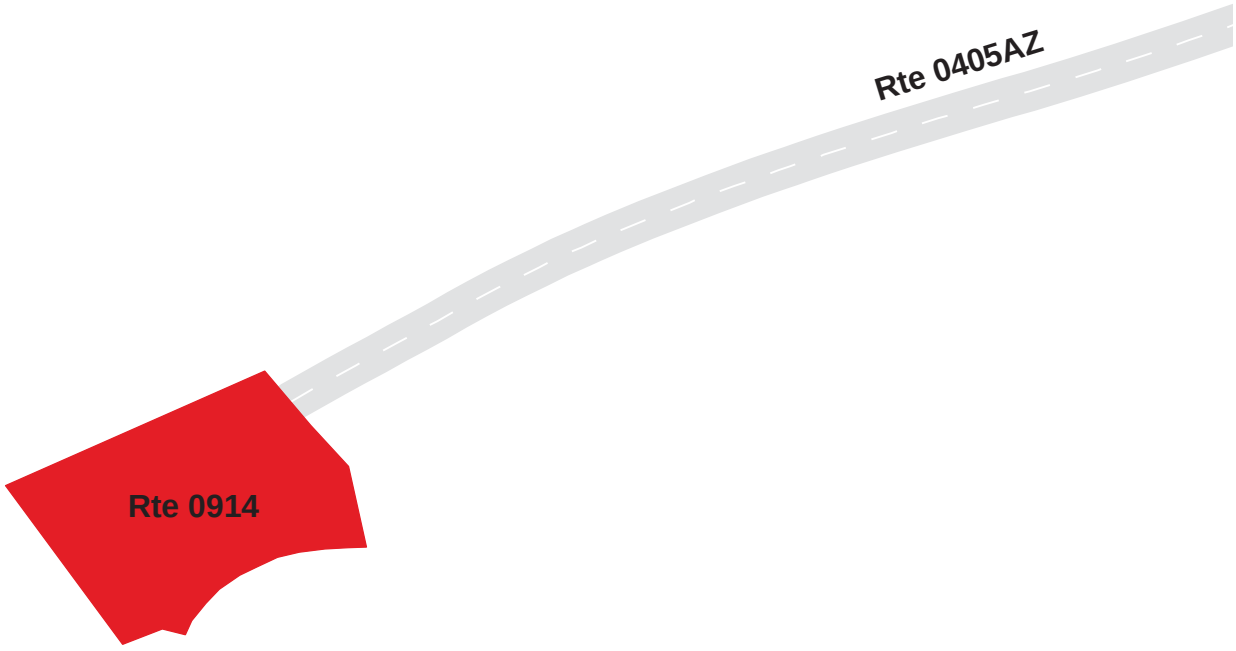
Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0912	NONPUBLIC	10/5/2012	2,543	0.04	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths

MORRISTOWN NATIONAL HISTORICAL PARK
Route 0914
CROSS ESTATE PARKING
FROM END OF ROUTE 0405ZZ (CROSS ESTATE ROADS)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0914	NONPUBLIC	10/5/2012	2,756	0.05	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



100 50 0 100
Feet

N

Section 8
Parkwide/Route
Maintenance Features Summaries

Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

MORR: 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	--	5
CURB	787	--
DROP INLET	--	60
GATE	--	11
GUARD/GUIDE RAIL	2,777	--
CABLE	0	--
NON-CABLE	2,777	--
GUARD/GUIDE WALL	0	--
BOLLARD	0	--
TEMPORARY BARRIER	0	--
NON TEMP/BOLLARD	0	--
INTERSECTION	--	91
LOW WATER CROSSING	0	0
MILE MARKER	--	0
OVERPASS	--	0
PARK BOUNDARY	--	1
PAVED DITCH	4,504	--
PULLOUT	95	1
RAILROAD CROSSING	--	0
RETAINING WALL	227	3
SIGN	--	153
STATE BOUNDARY	--	0
TRAFFIC LIGHT	--	0
TUNNEL	0	0

MORR: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0011 PARK ENTRANCE ROAD	ROUTE 0012 CEMETERY ROAD	ROUTE 0013 SUGARLOAF ROAD	ROUTE 0014ZZ JOCKEY HOLLOW ROADS	ROUTE 0015 FORT NONSENSE ACCESS ROAD	ROUTE 0017 GRAND PARADE ROAD	UNIT
BRIDGE	0	0	0	0	0	0	EACH
CATTLE GUARD	0	0	0	0	0	0	EACH
CULVERT	0	1	0	1	0	0	EACH
CURB	95	0	32	42	528	90	LINEAR FEET
DROP INLET	1	11	9	15	1	2	EACH
GATE	1	1	1	1	1	0	EACH
GUARD/GUIDE RAIL	0	0	0	0	1,879	0	LINEAR FEET
CABLE	0	0	0	0	0	0	LINEAR FEET
NON-CABLE	0	0	0	0	1,879	0	LINEAR FEET
GUARD/GUIDE WALL	0	0	0	0	0	0	LINEAR FEET
BOLLARD	0	0	0	0	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	0	0	0	0	0	0	LINEAR FEET
INTERSECTION	15	11	9	12	6	4	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	385	0	1,780	0	1,241	0	LINEAR FEET
PULLOUT	0	0	0	0	0	1	EACH
PULLOUT	0	0	0	0	0	95	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	0	0	0	0	0	0	EACH
RETAINING WALL	0	0	0	0	0	0	LINEAR FEET
SIGN	19	10	42	23	11	4	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

MORR: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0018 ACCESS TO LEWIS MORRIS COUNTY PARK	ROUTE 0400 SERVICE ROAD	ROUTE 0405ZZ CROSS ESTATE ROADS	ROUTE 0406 RESIDENCE ACCESS ROAD	ROUTE 0414 ACCESS TO MAINTENANCE AREA		UNIT
BRIDGE	0	0	0	0	0		EACH
CATTLE GUARD	0	0	0	0	0		EACH
CULVERT	0	0	0	0	0		EACH
CURB	0	0	0	0	0		LINEAR FEET
DROP INLET	6	0	1	0	0		EACH
GATE	1	1	1	0	1		EACH
GUARD/GUIDE RAIL	898	0	0	0	0		LINEAR FEET
CABLE	0	0	0	0	0		LINEAR FEET
NON-CABLE	898	0	0	0	0		LINEAR FEET
GUARD/GUIDE WALL	0	0	0	0	0		LINEAR FEET
BOLLARD	0	0	0	0	0		LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0		LINEAR FEET
NON TEMP/BOLLARD	0	0	0	0	0		LINEAR FEET
INTERSECTION	8	4	13	5	4		EACH
LOW WATER CROSSING	0	0	0	0	0		EACH
LOW WATER CROSSING	0	0	0	0	0		LINEAR FEET
MILE MARKER	0	0	0	0	0		EACH
OVERPASS	0	0	0	0	0		EACH
PARK BOUNDARY	1	0	0	0	0		EACH
PAVED DITCH	0	1,098	0	0	0		LINEAR FEET
PULLOUT	0	0	0	0	0		EACH
PULLOUT	0	0	0	0	0		LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0		EACH
RETAINING WALL	0	0	0	3	0		EACH
RETAINING WALL	0	0	0	227	0		LINEAR FEET
SIGN	21	6	15	1	1		EACH
STATE BOUNDARY	0	0	0	0	0		EACH
TRAFFIC LIGHT	0	0	0	0	0		EACH
TUNNEL	0	0	0	0	0		EACH
TUNNEL	0	0	0	0	0		LINEAR FEET

STRUCTURE LIST

No data available for this section.

Section 9
Route Maintenance Features
Road Logs

Morristown National Historical Park

Federal Lands Highway
Road Inventory Program

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: PARK ENTRANCE ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM TEMPE WICK ROAD
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (STATE ROUTE 646 (TEMPE WICK ROAD)) / NON NPS
0.000	0.000	SIGN	N/A	GUIDE, UNABLE TO READ FROM VIDEO
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (STATE ROUTE 646 (TEMPE WICK ROAD)) / NON NPS
0.010	0.010	SIGN	LEFT	REGULATORY, STOP
0.010	0.010	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.011	0.011	GATE	N/A	N/A
0.011	0.011	SIGN	RIGHT	REGULATORY, NO COMMERCIAL VEHICLES
0.038	0.038	SIGN	RIGHT	GUIDE, PARK OPEN 8 AM TO 7 PM
0.062	0.062	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.084	0.084	SIGN	LEFT	GUIDE, NATIONAL PARK SERVICE
0.105	0.178	PAVED DITCH	LEFT	N/A
0.108	0.108	DROP INLET	LEFT	N/A
0.150	0.150	SIGN	LEFT	REGULATORY, SPEED LIMIT 20
0.158	0.158	SIGN	RIGHT	WARNING, 15 M.P.H.
0.158	0.158	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.263	0.263	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.285	0.285	INTERSECTION	LEFT	ROUTE 0011 (PARK ENTRANCE ROAD)
0.306	0.306	INTERSECTION	LEFT	ROUTE 0904A (VISITOR CENTER PARKING A)
0.332	0.332	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.347	0.347	INTERSECTION	RIGHT	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
0.348	0.360	CURB-AND-GUTTER	RIGHT	N/A
0.351	0.351	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.352	0.352	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.352	0.352	SIGN	RIGHT	GUIDE, NO BICYCLES
0.367	0.367	INTERSECTION	RIGHT	PAVED PARKING
0.370	0.370	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.370	0.376	CURB-AND-GUTTER	RIGHT	N/A
0.377	0.377	INTERSECTION	LEFT	ROUTE 0904A (VISITOR CENTER PARKING A)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: PARK ENTRANCE ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.382	0.382	INTERSECTION	RIGHT	ROUTE 0012 (CEMETERY ROAD)
0.383	0.383	SIGN	RIGHT	GUIDE, PARKING FOR VISITOR CENTER WICK HOUSE TOUR ROAD
0.385	0.385	SIGN	RIGHT	GUIDE, BUS PARKING
0.401	0.401	INTERSECTION	LEFT	ROUTE 0904B (VISITOR CENTER PARKING B)
0.455	0.455	INTERSECTION	LEFT	ROUTE 0904C (VISITOR CENTER PARKING C)
0.463	0.463	INTERSECTION	RIGHT	ROUTE 0904D (VISITOR CENTER PARKING D)
0.472	0.472	INTERSECTION	LEFT	ROUTE 0904E (VISITOR CENTER PARKING E)
0.511	0.511	SIGN	RIGHT	REGULATORY, STOP
0.513	0.513	INTERSECTION	LEFT	ROUTE 0904B (VISITOR CENTER PARKING B)
0.522	0.522	INTERSECTION	LEFT	ROUTE 0011 (PARK ENTRANCE ROAD)
0.522	0.522	INTERSECTION	RIGHT	ROUTE 0011 (PARK ENTRANCE ROAD)
0.522	0.522	ROUTE END	N/A	TO END OF LOOP

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: CEMETERY ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0011 (PARK ENTRANCE ROAD)
0.000	0.227	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	N/A	ROUTE 0904A (VISITOR CENTER PARKING A)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0011 (PARK ENTRANCE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0011 (PARK ENTRANCE ROAD)
0.004	0.004	GATE	N/A	N/A
0.021	0.021	INTERSECTION	RIGHT	ROUTE 0014BZ (JOCKEY HOLLOW SPUR)
0.024	0.024	SIGN	RIGHT	REGULATORY, ONE WAY
0.080	0.080	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.163	0.163	DROP INLET	RIGHT	N/A
0.219	0.219	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.220	0.220	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.221	0.221	CULVERT	N/A	N/A
0.227	0.227	INTERSECTION	LEFT	ROUTE 0400 (SERVICE ROAD)
0.227	0.227	SIGN	LEFT	GUIDE, SERVICE ROAD ONLY
0.265	0.265	INTERSECTION	LEFT	ROUTE 0905 (RANGER PARKING)
0.296	0.296	DROP INLET	RIGHT	N/A
0.328	0.328	INTERSECTION	RIGHT	ROUTE 0906 (WICK FARM PARKING)
0.328	1.178	ONE-WAY	N/A	N/A
0.332	0.332	DROP INLET	RIGHT	N/A
0.335	0.335	SIGN	RIGHT	GUIDE, TOUR ROAD SOLDIER HUTS PARKING FOR WICK HOUSE
0.362	0.362	INTERSECTION	RIGHT	ROUTE 0906 (WICK FARM PARKING)
0.589	0.589	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.722	0.722	DROP INLET	LEFT	N/A
0.799	0.799	DROP INLET	LEFT	N/A
0.855	0.855	DROP INLET	LEFT	N/A
0.912	0.912	DROP INLET	LEFT	N/A
1.002	1.002	DROP INLET	LEFT	N/A
1.027	1.027	DROP INLET	LEFT	N/A

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: CEMETERY ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.154	1.154	SIGN	RIGHT	GUIDE, LEWIS MORRIS PARK MORRISTOWN TOUR ROAD
1.154	1.154	SIGN	RIGHT	REGULATORY, DO NOT ENTER
1.158	1.158	DROP INLET	LEFT	N/A
1.158	1.158	DROP INLET	RIGHT	N/A
1.167	1.167	INTERSECTION	LEFT	ROUTE 0907 (SOLDIER HUT PARKING)
1.171	1.171	SIGN	N/A	GUIDE, SOLDIER HUT PARKING
1.178	1.178	INTERSECTION	N/A	ROUTE 0017 (GRAND PARADE ROAD)
1.178	1.178	INTERSECTION	LEFT	ROUTE 0013 (SUGARLOAF ROAD)
1.178	1.178	ROUTE END	N/A	TO ROUTE 0013 (SUGARLOAF ROAD) AND ROUTE 0017 (GRAND PARADE ROAD)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0013: SUGARLOAF 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 0012 (CEMETERY ROAD) AND ROUTE 0017 (GRAND PARADE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0012 (CEMETERY ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0017 (GRAND PARADE ROAD)
0.000	0.000	DROP INLET	LEFT	N/A
0.022	0.036	PAVED DITCH	LEFT	N/A
0.043	0.043	INTERSECTION	LEFT	ROUTE 0907 (SOLDIER HUT PARKING)
0.043	0.465	ONE-WAY	N/A	N/A
0.051	0.159	PAVED DITCH	LEFT	N/A
0.137	0.179	PAVED DITCH	RIGHT	N/A
0.249	0.249	DROP INLET	RIGHT	N/A
0.372	0.407	PAVED DITCH	RIGHT	N/A
0.410	0.410	SIGN	RIGHT	REGULATORY, TWO WAY TRAFFIC AHEAD
0.410	0.410	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.436	0.451	PAVED DITCH	RIGHT	N/A
0.449	0.449	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.450	0.450	GATE	N/A	N/A
0.450	0.450	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.457	0.502	PAVED DITCH	RIGHT	N/A
0.465	0.465	INTERSECTION	LEFT	ROUTE 0018 (ACCESS TO LEWIS MORRIS COUNTY PARK)
0.558	0.587	PAVED DITCH	RIGHT	N/A
0.575	0.575	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.592	0.592	DROP INLET	RIGHT	N/A
0.617	0.638	PAVED DITCH	RIGHT	N/A
0.680	0.680	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.681	0.681	DROP INLET	RIGHT	N/A
0.716	0.716	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.734	0.734	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.761	0.761	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.787	0.787	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0013: SUGARLOAF 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
0.818	0.818	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.829	0.829	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.845	0.845	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.869	0.869	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.877	0.877	SIGN	LEFT	GUIDE, ST. MARY'S ABBEY DELBARTON DELBARTON SCHOOL
0.878	0.878	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.882	0.882	INTERSECTION	LEFT	PAVED ROUTE / NON NPS
0.891	0.891	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.913	0.913	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.944	0.944	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.976	0.976	DROP INLET	RIGHT	N/A
0.976	0.976	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.977	0.977	DROP INLET	LEFT	N/A
1.004	1.004	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.035	1.035	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.045	1.045	DROP INLET	RIGHT	N/A
1.046	1.046	DROP INLET	LEFT	N/A
1.054	1.054	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
1.054	1.054	SIGN	RIGHT	WARNING, NARROW ROAD
1.060	1.060	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.083	1.083	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
1.090	1.090	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.117	1.117	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.128	1.128	DROP INLET	LEFT	N/A
1.157	1.157	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.175	1.203	PAVED DITCH	LEFT	N/A
1.177	1.177	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.193	1.193	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.203	1.206	CURB	LEFT	N/A

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0013: SUGARLOAF ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.206	1.206	SIGN	LEFT	GUIDE, DELBARTON SCHOOL 40 ACRES BRIAN F. FLENRY FIELD RYAN FAMILY FIELD
1.213	1.213	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.215	1.215	INTERSECTION	LEFT	PAVED ROUTE / NON NPS
1.216	1.219	CURB	LEFT	N/A
1.254	1.254	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.275	1.275	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.281	1.281	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
1.294	1.294	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.298	1.298	SIGN	RIGHT	WARNING, NARROW ROAD
1.299	1.299	INTERSECTION	RIGHT	ROUTE 0013 (SUGARLOAF ROAD) SPUR
1.300	1.300	SIGN	N/A	REGULATORY, STOP
1.302	1.302	INTERSECTION	LEFT	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
1.302	1.302	INTERSECTION	RIGHT	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
1.302	1.302	SIGN	N/A	GUIDE, MORRISTOWN TOUR ROAD VISITOR CENTER
1.302	1.302	SIGN	N/A	GUIDE, JOCKEY HOLLOW
1.302	1.302	SIGN	RIGHT	REGULATORY, STOP
1.302	1.302	ROUTE END	N/A	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014AZ: JOCKEY HOLLOW 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 END OF ROUTE 0013 (SUGARLOAF ROAD)
0.000	0.000	SIGN	LEFT	REGULATORY, SPEED LIMIT 35
0.000	0.000	INTERSECTION	N/A	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0013 (SUGARLOAF ROAD)
0.014	0.014	INTERSECTION	RIGHT	ROUTE 0013 (SUGARLOAF ROAD) SPUR
0.015	0.015	GATE	N/A	N/A
0.015	0.015	SIGN	RIGHT	GUIDE, ROAD CLOSED
0.016	0.016	SIGN	LEFT	REGULATORY, STOP
0.016	0.016	SIGN	LEFT	GUIDE, NATIONAL PARK SERVICE
0.016	0.016	SIGN	RIGHT	GUIDE, JOCKEY HOLLOW AREA ENTRANCE MORRISTOWN NATIONAL HISTORICAL PARK
0.027	0.027	SIGN	LEFT	REGULATORY, COMMERCIAL VEHICLES EXCLUDED
0.046	0.046	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.056	0.056	DROP INLET	RIGHT	N/A
0.117	0.117	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.155	0.155	SIGN	RIGHT	GUIDE, PARK OPEN 8 AM TO 7 PM
0.253	0.253	DROP INLET	RIGHT	N/A
0.304	0.304	INTERSECTION	LEFT	ROUTE 0909 (NEW YORK BRIGADE PARKING)
0.311	0.311	SIGN	N/A	GUIDE, NEW YORK BRIGADE AREA VISITOR CENTER WICK HOUSE
0.331	0.331	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.331	0.331	SIGN	RIGHT	GUIDE, NO BICYCLES
0.332	0.332	INTERSECTION	RIGHT	ROUTE 0017 (GRAND PARADE ROAD)
0.332	0.340	CURB-AND-GUTTER	LEFT	N/A
0.333	0.333	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.343	0.343	SIGN	RIGHT	WARNING, WATCH FOR OPPOSING EMERGENCY VEHICLES
0.344	0.344	INTERSECTION	LEFT	ROUTE 0908 (COMFORT STATION PARKING)
0.351	1.382	ONE-WAY	N/A	N/A
0.446	0.446	DROP INLET	RIGHT	N/A
0.446	0.446	DROP INLET	LEFT	N/A
0.512	0.512	DROP INLET	LEFT	N/A

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014AZ: JOCKEY HOLLOW 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
0.513	0.513	DROP INLET	RIGHT	N/A
0.515	0.515	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.517	0.517	INTERSECTION	LEFT	ROUTE 0414 (ACCESS TO MAINTENANCE AREA)
0.521	0.521	SIGN	LEFT	GUIDE, PARK MAINTENANCE AREA
0.554	0.554	DROP INLET	LEFT	N/A
0.629	0.629	SIGN	RIGHT	GUIDE, TRAIL CENTER PARKING
0.683	0.683	SIGN	LEFT	REGULATORY, ONE WAY
0.687	0.687	INTERSECTION	RIGHT	ROUTE 0911 (TRAIL CENTER PARKING)
0.731	0.731	INTERSECTION	RIGHT	ROUTE 0911 (TRAIL CENTER PARKING)
0.731	0.731	SIGN	LEFT	REGULATORY, ONE WAY
0.756	0.756	CULVERT	N/A	N/A
0.872	0.872	DROP INLET	RIGHT	N/A
0.873	0.873	DROP INLET	LEFT	N/A
0.889	0.889	DROP INLET	RIGHT	N/A
0.890	0.890	DROP INLET	LEFT	N/A
1.098	1.098	DROP INLET	RIGHT	N/A
1.101	1.101	DROP INLET	LEFT	N/A
1.267	1.267	DROP INLET	RIGHT	N/A
1.270	1.270	DROP INLET	LEFT	N/A
1.362	1.362	INTERSECTION	RIGHT	ROUTE 0014BZ (JOCKEY HOLLOW SPUR)
1.368	1.368	SIGN	RIGHT	REGULATORY, DO NOT ENTER
1.376	1.376	SIGN	LEFT	REGULATORY, STOP
1.376	1.376	SIGN	RIGHT	REGULATORY, STOP
1.382	1.382	INTERSECTION	LEFT	ROUTE 0011 (PARK ENTRANCE ROAD)
1.382	1.382	INTERSECTION	RIGHT	ROUTE 0011 (PARK ENTRANCE ROAD)
1.382	1.382	SIGN	N/A	GUIDE, PARK EXIT TEMPE WICK ROAD VISITOR PARKING TOUR ROAD
1.382	1.382	ROUTE END	N/A	TO ROUTE 0011 (PARK ENTRANCE ROAD)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0015: FORT NONSENSE ACCESS 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 CHESTNUT STREET
0.000	0.000	INTERSECTION	N/A	PAVED ROUTE (CHESTNUT STREET) / NON NPS
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (CHESTNUT STREET) / NON NPS
0.004	0.004	SIGN	LEFT	REGULATORY, STOP
0.008	0.008	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.014	0.138	PAVED DITCH	RIGHT	N/A
0.023	0.023	SIGN	RIGHT	REGULATORY, NO PARKING
0.027	0.027	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.031	0.031	SIGN	RIGHT	GUIDE, NATIONAL PARK SERVICE
0.039	0.039	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.052	0.052	SIGN	RIGHT	GUIDE, FORT NONSENSE
0.055	0.061	GUARD/GUIDE RAIL	LEFT	N/A
0.068	0.340	GUARD/GUIDE RAIL	LEFT	N/A
0.073	0.073	GATE	N/A	N/A
0.073	0.073	SIGN	RIGHT	GUIDE, ROAD CLOSED
0.080	0.080	SIGN	RIGHT	GUIDE, PARK OPEN: 8 AM - 7 PM
0.284	0.284	DROP INLET	RIGHT	N/A
0.297	0.408	PAVED DITCH	RIGHT	N/A
0.340	0.340	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.343	0.398	GUARD/GUIDE RAIL	LEFT	N/A
0.344	0.344	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.399	0.399	INTERSECTION	LEFT	ROUTE 0015 (FORT NONSENSE ACCESS ROAD)
0.409	0.482	CURB	LEFT	N/A
0.434	0.434	INTERSECTION	RIGHT	ROUTE 0903 (FORT NONSENSE PARKING)
0.442	0.469	CURB	RIGHT	N/A
0.468	0.491	GUARD/GUIDE RAIL	RIGHT	N/A
0.491	0.491	INTERSECTION	LEFT	ROUTE 0015 (FORT NONSENSE ACCESS ROAD)
0.491	0.491	INTERSECTION	N/A	ROUTE 0015 (FORT NONSENSE ACCESS ROAD)
0.491	0.491	ROUTE END	N/A	TO END OF LOOP

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0017: GRAND PARADE 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 0012 (CEMETERY ROAD) AND ROUTE 0013 (SUGARLOAF ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0013 (SUGARLOAF ROAD)
0.000	0.000	INTERSECTION	N/A	ROUTE 0012 (CEMETERY ROAD)
0.000	0.549	ONE-WAY	N/A	N/A
0.030	0.030	SIGN	RIGHT	REGULATORY, SPEED LIMIT 20
0.035	0.035	DROP INLET	LEFT	N/A
0.200	0.200	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.342	0.342	DROP INLET	LEFT	N/A
0.349	0.367	PULLOUT	LEFT	N/A
0.349	0.366	CURB	LEFT	N/A
0.544	0.544	SIGN	RIGHT	REGULATORY, STOP
0.549	0.549	INTERSECTION	N/A	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
0.549	0.549	INTERSECTION	RIGHT	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
0.549	0.549	SIGN	N/A	GUIDE, MORRISTOWN TOUR ROAD VISITOR CENTER
0.549	0.549	ROUTE END	N/A	TO ROUTE 0014ZZ (JOCKEY HOLLOW ROADS)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0018: ACCESS TO LEWIS MORRIS COUNTY PARK

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 0013 (SUGARLOAF ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0013 (SUGARLOAF ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0013 (SUGARLOAF ROAD)
0.000	0.000	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.003	0.003	SIGN	LEFT	REGULATORY, STOP
0.005	0.005	GATE	N/A	N/A
0.006	0.006	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.008	0.008	SIGN	RIGHT	GUIDE, LEWIS MORRIS COUNTY PARK SATURN PLAYGROUND
0.008	0.008	SIGN	RIGHT	GUIDE, .NO SWIMMING.
0.024	0.024	SIGN	RIGHT	GUIDE, MORRIS COUNTY PARK COMMISSION WELCOME TO LEWIS MORRIS COUNTY PARK ALCOHOL BY PERMIT ONLY PARK CLOSE
0.024	0.024	SIGN	RIGHT	REGULATORY, PARKING IN DESIGNATED SPACES ONLY
0.024	0.024	SIGN	RIGHT	GUIDE, DRUG FREE PARK ZONE
0.060	0.060	SIGN	RIGHT	REGULATORY, YIELD
0.072	0.072	INTERSECTION	RIGHT	PAVED PARKING / NON NPS
0.074	0.074	INTERSECTION	RIGHT	PAVED ROUTE / NON NPS
0.087	0.087	SIGN	LEFT	REGULATORY, EXIT
0.087	0.087	SIGN	LEFT	REGULATORY, NO PARKING
0.092	0.092	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.092	0.092	SIGN	RIGHT	REGULATORY, GREEN ACRES
0.143	0.218	GUARD/GUIDE RAIL	LEFT	N/A
0.151	0.151	DROP INLET	RIGHT	N/A
0.192	0.192	SIGN	RIGHT	GUIDE, SUGARLOAF AREA A PARKING
0.205	0.205	INTERSECTION	RIGHT	PAVED PARKING / NON NPS
0.209	0.209	SIGN	LEFT	GUIDE, SUGARLOAF AREA A PARKING
0.220	0.220	INTERSECTION	LEFT	UNPAVED PARKING /NON NPS
0.228	0.228	SIGN	LEFT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.228	0.323	GUARD/GUIDE RAIL	LEFT	N/A
0.255	0.255	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.255	0.255	SIGN	LEFT	REGULATORY, NO PARKING

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0018: ACCESS TO LEWIS MORRIS COUNTY PARK

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
0.292	0.292	DROP INLET	RIGHT	N/A
0.385	0.385	DROP INLET	LEFT	N/A
0.385	0.385	DROP INLET	RIGHT	N/A
0.474	0.474	DROP INLET	LEFT	N/A
0.474	0.474	DROP INLET	RIGHT	N/A
0.563	0.563	INTERSECTION	LEFT	PAVED ROUTE / NON NPS
0.569	0.569	SIGN	RIGHT	GUIDE, SUNRISE LAKE BOATING SWIMMING FISHING REGULATIONS POSTED IN THE DIRECTORY BUSSES BY PERMIT ONLY
0.596	0.596	SIGN	LEFT	GUIDE, DOE MEADOW AREA
0.596	0.596	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.596	0.596	PARK BOUNDARY	N/A	N/A
0.596	0.596	INTERSECTION	RIGHT	PAVED PARKING / NON NPS
0.596	0.596	ROUTE END	N/A	TO LEWIS MORRIS COUNTY PARK

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0400: 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 0012 (CEMETERY ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0012 (CEMETERY ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0012 (CEMETERY ROAD)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.006	0.106	PAVED DITCH	RIGHT	N/A
0.006	0.114	PAVED DITCH	LEFT	N/A
0.092	0.092	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.092	0.092	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.113	0.113	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.113	0.113	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.114	0.114	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.115	0.115	GATE	N/A	N/A
0.120	0.120	INTERSECTION	LEFT	PAVED ROUTE (STATE ROUTE 646 (TEMPE WICK ROAD)) / NON NPS
0.120	0.120	INTERSECTION	RIGHT	PAVED ROUTE (STATE ROUTE 646 (TEMPE WICK ROAD)) / NON NPS
0.120	0.120	ROUTE END	N/A	TO TEMPE WICK ROAD

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0405AZ: CROSS ESTATE 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 JOCKEY HOLLOW ROAD
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
0.005	0.005	SIGN	RIGHT	GUIDE, NEW JERSEY BRIGADE AREA
0.005	0.005	SIGN	RIGHT	GUIDE, CROSS ESTATE GARDENS
0.061	0.061	INTERSECTION	RIGHT	ROUTE 0405BZ (CROSS ESTATE ROAD SPUR)
0.063	0.063	INTERSECTION	RIGHT	ROUTE 0406 (RESIDENCE ACCESS ROAD) SPUR
0.072	0.072	INTERSECTION	RIGHT	ROUTE 0406 (RESIDENCE ACCESS ROAD)
0.078	0.078	SIGN	RIGHT	GUIDE, PARK OPEN: 8 AM - 7 PM
0.079	0.079	GATE	N/A	N/A
0.079	0.079	SIGN	LEFT	REGULATORY, STOP
0.080	0.080	DROP INLET	LEFT	N/A
0.083	0.083	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
0.095	0.095	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.095	0.095	SIGN	RIGHT	WARNING, SPEED BUMP AHEAD
0.112	0.112	SIGN	LEFT	WARNING, SPEED BUMP AHEAD
0.137	0.137	INTERSECTION	LEFT	UNPAVED PARKING / NON NPS
0.153	0.153	SIGN	LEFT	REGULATORY, SPEED LIMIT 15
0.182	0.182	INTERSECTION	RIGHT	ROUTE 0413 (ACCESS TO STAFF PARKING)
0.194	0.194	INTERSECTION	LEFT	ROUTE 0409 (MANSION ACCESS ROAD)
0.199	0.199	SIGN	LEFT	GUIDE, CROSS ESTATE GARDENS
0.199	0.199	SIGN	LEFT	GUIDE, MANSION PRIVATE AREA
0.207	0.207	SIGN	RIGHT	GUIDE, RESIDENT PARKING ONLY 6 C
0.207	0.207	SIGN	RIGHT	GUIDE, PRIVATE DRIVE
0.272	0.272	INTERSECTION	N/A	ROUTE 0914 (CROSS ESTATE PARKING)
0.272	0.272	ROUTE END	N/A	TO ROUTE 0914 (CROSS ESTATE PARKING)

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0405BZ: CROSS ESTATE ROAD SPUR

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 0405AZ (CROSS ESTATE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0405AZ (CROSS ESTATE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0405AZ (CROSS ESTATE ROAD)
0.045	0.045	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.045	0.045	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.046	0.046	INTERSECTION	LEFT	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
0.046	0.046	INTERSECTION	RIGHT	PAVED ROUTE (JOCKEY HOLLOW ROAD) / NON NPS
0.046	0.046	ROUTE END	N/A	TO JOCKEY HOLLOW ROAD

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0406: RESIDENCE ACCESS 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 0405ZZ (CROSS ESTATE ROADS)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0405ZZ (CROSS ESTATE ROADS)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0405ZZ (CROSS ESTATE ROADS)
0.011	0.011	INTERSECTION	RIGHT	ROUTE 0406 (RESIDENCE ACCESS ROAD) SPUR
0.037	0.037	SIGN	RIGHT	GUIDE, PRIVATE RESIDENCE
0.037	0.041	RETAINING WALL	RIGHT	N/A
0.039	0.046	RETAINING WALL	LEFT	N/A
0.046	0.078	RETAINING WALL	RIGHT	N/A
0.080	0.080	INTERSECTION	RIGHT	PAVED ROUTE (OLD JOCKEY HOLLOW ROAD) / NON NPS
0.080	0.080	INTERSECTION	LEFT	PAVED ROUTE (OLD JOCKEY HOLLOW ROAD) / NON NPS
0.080	0.080	ROUTE END	N/A	TO OLD JOCKEY HOLLOW ROAD

MORR: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0414: ACCESS TO MAINTENANCE AREA

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 0014ZZ (JOCKEY HOLLOW ROADS)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0014AZ (JOCKEY HOLLOW ROAD)
0.000	0.000	SIGN	N/A	REGULATORY, ONE WAY
0.006	0.006	GATE	N/A	N/A
0.064	0.064	INTERSECTION	RIGHT	UNPAVED ROUTE
0.105	0.105	INTERSECTION	N/A	ROUTE 0910 (MAINTENANCE AREA)
0.105	0.105	ROUTE END	N/A	TO ROUTE 0910 (MAINTENANCE AREA)

Section 10
Appendix

Morristown National Historical Park

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.

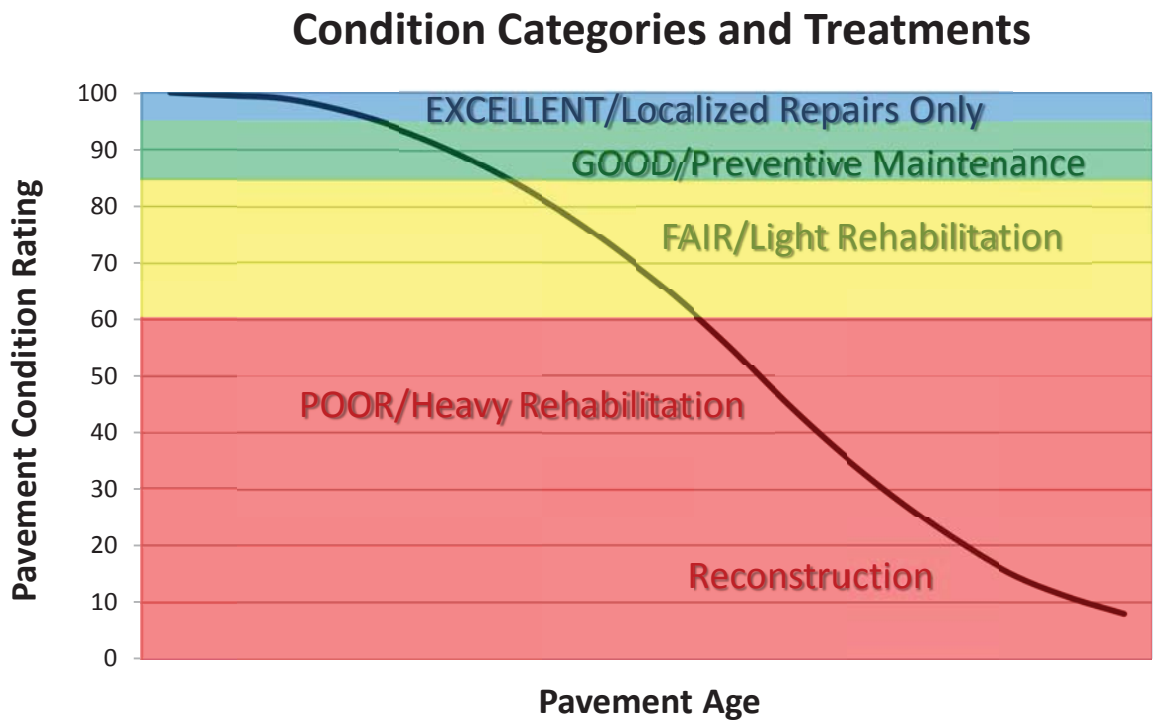
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation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