Federal Lands Highway

Road Inventory Program

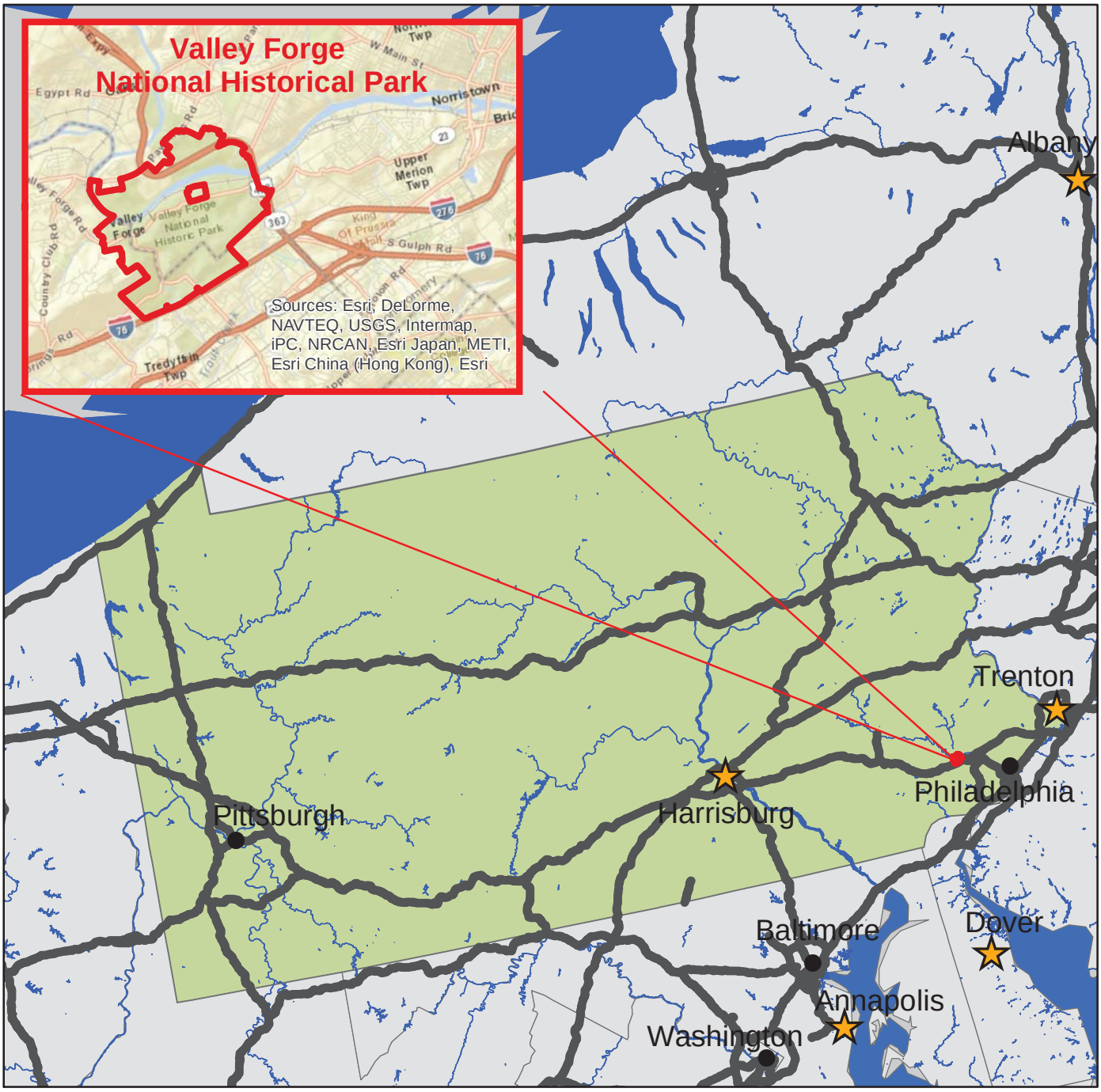
Road Inventory and Condition Assessment

Valley Forge National Historical Park
VAFO

Cycle 5 Report

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

Valley Forge National Historical Park
in
Pennsylvania



DCV = Data Collection Vehicle

TABLE OF CONTENTS

Section 1
Introduction

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

INTRODUCTION

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

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

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

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

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

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

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

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

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

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

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

Respectfully,

FHWA RIP Team

FHWA/Eastern Federal Lands
21400 Ridgetop Circle
Sterling, VA 20166
(703) 404-6371

FHWA/Central Federal Lands
12300 West Dakota Ave
Lakewood, CO 80228
(720) 963-3556

Section 2
Park Route Inventory

Valley Forge 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

VAFO

VALLEY FORGE 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
0010	5	39455		VISITOR CENTER ACCESS ROAD	FROM ROUTE 5000 (STATE ROUTE 23)	TO ROUTE 5000 (STATE ROUTE 23)	N/A	0.51	0.00	0.51	1		AS	3
0102ZZ	5	39500		LIBRARY LANE ROADS	FROM ROUTE 5004 (YELLOW SPRINGS ROAD)	TO ROUTE 5005 (WILSON ROAD)	N/A	0.33	0.00	0.33	2		AS	1
0103	5	39486		KNOX'S QUARTERS ACCESS ROAD	FROM ROUTE 5001 (STATE ROUTE 252)	TO ROUTE 5001 (STATE ROUTE 252)	N/A	0.16	0.00	0.16	5	8,395	AS	2
0106	5	39496		ORCHARD LANE	FROM ROUTE 5000 (STATE ROUTE 23)	TO END AT MP 0.11	N/A	0.05	0.06	0.11	5		AS	1
0201	5	104513		BETZWOOD PICNIC AREA ROAD	FROM INTERSECTION OF S TROOPER ROAD AND W COUNTY LINE ROAD	TO END	N/A	0.34	0.00	0.34	3		AS	3
0203	NC	39502		PAWLINGS ACCESS ROAD	FROM PAWLINGS ROAD	TO END	N/A	0.00	0.60	0.60	3		GR	
0212	NC	104514		SPRINGHOUSE ROAD	FROM ROUTE 0203 (PAWLINGS ACCESS ROAD)	TO PAWLINGS ROAD	N/A	0.00	0.40	0.40	3		GR	
0213	5	39460		INNER LINE SPUR	FROM ROUTE 5000 (STATE ROUTE 23)	TO ROUTE 0501 (INNER LINE DRIVE)	N/A	0.12	0.00	0.12	2		AS	2
0404	5	104647		SUPERINTENDENTS RESIDENCE ACCESS ROAD	FROM ROUTE 0103 (KNOX'S QUARTERS ACCESS ROAD)	TO END OF LOOP	N/A	0.21	0.00	0.21	6	15,449	AS	2
0409	NC	104628		LCS 115 ACCESS ROAD	FROM CATFISH LANE	TO END	N/A	0.00	0.21	0.21	6		GR	
0410	NC	104675		STOCKPILE ROAD	FROM ROUTE 5003 (COUNTY LINE ROAD)	TO END	N/A	0.00	0.10	0.10	6		GR	
0411	NC	104676		CINDER ROAD	FROM ROUTE 5003 (COUNTY LINE ROAD)	TO END	N/A	0.00	0.12	0.12	6		GR	
0412	NC	39494		CINDER LANE	FROM ROUTE 0934 (PORT KENNEDY TRAIN STATION PARKING)	TO END OF LOOP	N/A	0.00	0.11	0.11	5		GR	
0413	5	39476		QUARRY ROAD	FROM ROUTE 5003 (COUNTY LINE ROAD)	TO ROUTE 0931 (HUNTINGTON'S QUARTERS PARKING) AT MP 0.50	N/A	0.20	0.30	0.50	6		AS	2
0414	NC	104677		OWEN DRIVE	FROM ROUTE 5000 (STATE ROUTE 23)	TO END	N/A	0.00	0.10	0.10	5		GR	

Cycle 5 NPS/RIP Route ID Report

Shading Color Key: White = Paved Routes, DCV Driven | Yellow = Unpaved Routes, DCV not Driven | Blue = All Paved Parking Areas | Green = All Unpaved Parking Areas
Red text denotes approx. mileage
Grey = Paved Routes, DCV not Driven | Black = State, Local or Private non-NPS Routes | = Concession Route Flag ON

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

** DCV - Data Collection Vehicle NC - Not Collected

VAFO

VALLEY FORGE 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
0415	5	39498		BRITTAIN LANE	FROM ROUTE 0106 (ORCHARD LANE)	TO END OF PAVEMENT	N/A	0.08	0.00	0.08	5		AS	1
0417	NC	91844		WAGONSELLER ROAD	FROM AUDUBON ROAD	TO END	N/A	0.00	0.30	0.30	6		GR	
0500	5	39456		OUTER LINE DRIVE	FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)	TO ROUTE 5001 (STATE ROUTE 252)	N/A	2.71	0.00	2.71	3		AS	2,3
0501	5	39458		INNER LINE DRIVE	FROM ROUTE 5000 (STATE ROUTE 23)	TO ROUTE 5000 (STATE ROUTE 23)	N/A	2.85	0.00	2.85	3		AS	1,2
0502	5	39465		RIVER ROAD	FROM ROUTE 5000 (STATE ROUTE 23)	TO END OF LOOP	N/A	0.34	0.00	0.34	3		AS	1
0900	5	231530		VISITOR CENTER DROP OFF LOOP	FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)	TO ROUTE 0010 (VISITOR CENTER ACCESS ROAD)	N/A	0.00	0.00	0.00		9,877	AS	3
0901	5	39877		VISITOR CENTER PARKING	FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)	TO ROUTE 5003 (COUNTY LINE ROAD)	N/A	0.00	0.00	0.00		203,634	AS	3
0902	NC	39882		VISITOR CENTER OVERFLOW PARKING	FROM ROUTE 0901 (VISITOR CENTER PARKING)	TO PARKING	N/A	0.00	0.00	0.00		36,920	GR	
0903	5	39878		ADMINISTRATIVE PARKING	FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)	TO PARKING	N/A	0.00	0.00	0.00		58,800	AS	3
0904	5	39866		MUHLENBERG'S BRIGADE PARKING	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO ROUTE 0500 (OUTER LINE DRIVE)	N/A	0.00	0.00	0.00		26,547	AS	3
0907ZZ	5	39874		NATIONAL MEMORIAL ARCH PARKING AREAS	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO PARKING	N/A	0.00	0.00	0.00		27,003	AS	2
0908	5	39852		WAYNE'S WOODS PARKING	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO ROUTE 0500 (OUTER LINE DRIVE)	N/A	0.00	0.00	0.00		39,059	AS	2
0909	5	39470		WAYNE'S STATUE PARKING	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO ROUTE 0500 (OUTER LINE DRIVE)	N/A	0.00	0.00	0.00		7,196	AS	2
0910	5	39860		KNOX'S QUARTERS PARKING	FROM ROUTE 5001 (STATE ROUTE 252)	TO PARKING	N/A	0.00	0.00	0.00		45,642	AS	2
0913	5	231533		LIBRARY LANE PARKING	ADJACENT TO ROUTE 0102ZZ (LIBRARY LANE ROADS)		N/A	0.00	0.00	0.00		907	AS	1
0914	5	104714		LORD STIRLING'S QUARTERS PARKING	FROM ROUTE 5004 (YELLOW SPRINGS ROAD)	TO PARKING	N/A	0.00	0.00	0.00		3,935	AS	1

Cycle 5 NPS/RIP Route ID Report

Shading Color Key: White = Paved Routes, DCV Driven | Yellow = Unpaved Routes, DCV not Driven | Blue = All Paved Parking Areas | Green = All Unpaved Parking Areas
Red text denotes approx. mileage
Grey = Paved Routes, DCV not Driven | Black = State, Local or Private non-NPS Routes | = Concession Route Flag ON

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

** DCV - Data Collection Vehicle NC - Not Collected

VAFO

VALLEY FORGE 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
0915	NC	104715		LAFAYETTE'S QUARTERS PARKING	FROM ROUTE 5005 (WILSON ROAD)	TO PARKING	N/A	0.00	0.00	0.00		2,855	GR	
0916	**5**	**97348**		**WHITTLE HOUSE AND DRIVEWAY PARKING**	**FROM ROUTE 5005 (WILSON ROAD)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**5,673**	**AS**	**1**
0917	**5**	**39863**		**STEUBEN MEMORIAL INFORMATION CENTER PARKING**	**FROM ROUTE 5000 (STATE ROUTE 23)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**28,483**	**AS**	**1**
0918ZZ	**5**	**95775**		**WASHINGTON'S HEADQUARTERS PARKING AREAS**	**FROM ROUTE 0502 (RIVER ROAD)**	**TO ROUTE 0502 (RIVER ROAD)**	**N/A**	**0.00**	**0.00**	**0.00**		**30,073**	**AS**	**1**
0922	NC	39884		RIVER TRAIL PARKING	FROM PAWLINGS ROAD	TO PARKING	N/A	0.00	0.00	0.00		17,446	GR	
0923	NC	104717		NATURAL RESOURCES CENTER PARKING	FROM ROUTE 0106 (ORCHARD LANE)	TO PARKING	N/A	0.00	0.00	0.00		7,920	GR	
0926	**5**	**39872**		**REDOUBT 3 PARKING**	**ADJACENT TO ROUTE 0501 (INNER LINE DRIVE)**		**N/A**	**0.00**	**0.00**	**0.00**		**4,093**	**AS**	**2**
0927	**5**	**39847**		**ARTILLERY PARK PARKING**	**FROM ROUTE 0501 (INNER LINE DRIVE)**	**TO ROUTE 0501 (INNER LINE DRIVE)**	**N/A**	**0.00**	**0.00**	**0.00**		**39,261**	**AS**	**2**
0929	**5**	**39864**		**VARNUM'S HEADQUARTERS PARKING**	**FROM ROUTE 0501 (INNER LINE DRIVE)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**26,083**	**AS**	**2**
0930	**5**	**39858**		**VARNUM'S PICNIC AREA PARKING**	**FROM ROUTE 5000 (STATE ROUTE 23)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**37,508**	**AS**	**2**
0931	**5**	**39862**		**HUNTINGTON'S QUARTERS PARKING**	**FROM ROUTE 5000 (STATE ROUTE 23)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**32,522**	**AS**	**2**
0932	**5**	**39876**		**MAINTENANCE AREA**	**FROM ROUTE 0413 (QUARRY ROAD)**	**TO ROUTE 0413 (QUARRY ROAD)**	**N/A**	**0.00**	**0.00**	**0.00**		**71,271**	**AS**	**2**
0933	**5**	**104716**		**KENNEDY MANSION PARKING**	**FROM ROUTE 5000 (STATE ROUTE 23)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**50,213**	**AS**	**3**
0934	**5**	**39870**		**PORT KENNEDY TRAIN STATION PARKING**	**FROM OLD TROOPER ROAD**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**20,019**	**AS**	**3**
0935	**5**	**39855**		**BETZWOOD BOAT RAMP PARKING**	**FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)**	**TO PARKING**	**N/A**	**0.00**	**0.00**	**0.00**		**16,132**	**AS**	**3**
0937	**5**	**104718**		**BETZWOOD BIKE PATH PARKING**	**FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)**	**TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)**	**N/A**	**0.00**	**0.00**	**0.00**		**9,645**	**AS**	**3**

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

VAFO

VALLEY FORGE 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
0938ZZ	5	104719		BETZWOOD PICNIC AREA PARKING AREAS	FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)	TO PARKING	N/A	0.00	0.00	0.00		15,246	AS	3
0939	5	97349		LOUGHLIN HOUSE PARKING	FROM TROOPER ROAD	TO PARKING	N/A	0.00	0.00	0.00		3,204	AS	3
0940	5	104721		RANGER STATION PARKING	FROM NORTH GULPH ROAD	TO PARKING	N/A	0.00	0.00	0.00		15,479	AS	3
0947	5	39873		CHAPEL PARKING AREA	FROM ROUTE 5000 (STATE ROUTE 23)	TO PARKING	N/A	0.00	0.00	0.00		48,275	AS	2
0948	5	39868		POSA PARKING AREA	FROM OWEN DRIVE	TO PARKING	N/A	0.00	0.00	0.00		4,269	AS	1
5000	5			STATE ROUTE 23	FROM WEST VALLEY FORGE ROAD	TO VALLEY PARK ROAD ON LEFT	N/A	3.11	0.00	3.11			AS	1,2,3
5001	5			STATE ROUTE 252	FROM ROUTE 5000 (STATE ROUTE 23)	TO US HIGHWAY 76 (PENNSYLVANIA TURNPIKE)	N/A	1.83	0.00	1.83			AS	1,2
5002	5			NORTH GULPH ROAD	FROM ROUTE 5000 (STATE ROUTE 23)	TO THOMAS ROAD	N/A	1.52	0.00	1.52			AS	1,2,3
5003	5			COUNTY LINE ROAD	FROM ROUTE 5002 (NORTH GULPH ROAD)	TO ROUTE 5000 (STATE ROUTE 23)	N/A	1.30	0.00	1.30			AS	2,3
5004	5			YELLOW SPRINGS ROAD	FROM ROUTE 5001 (STATE ROUTE 252)	TO ROUTE 0914 (LORD STIRLING'S QUARTERS PARKING)	N/A	0.47	0.00	0.47			AS	1
5005	NC			WILSON ROAD	FROM ROUTE 5004 (YELLOW SPRINGS ROAD)	TO US HIGHWAY 76 (PENNSYLVANIA TURNPIKE)	N/A	0.00	0.38	0.38			GR	

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

CYCLE 5 SUMMARY TOTALS FOR VALLEY FORGE NATIONAL HISTORICAL PARK

CYCLE 5 ROUTE TOTALS

DCV Driven Route Miles	7.50
Manually Rated Route Miles	0.39
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	7.89
Manually Rated Routes (SQFT)	0.00
TOTAL UNPAVED PARK ROUTE MILES	2.30

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)	880,049
Unpaved Parking (SQFT)	65,141
TOTAL PARKING (SQFT)	945,190

CYCLE 5 WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	75
**Manually Rated Routes PCR	45
**Parking PCR	78
***Total Equivalent Lane Miles	27.45

* - 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

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

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 VAFO

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).

VAFO

VALLEY FORGE 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
0102ZZ	39500	5	LIBRARY LANE ROADS	FROM ROUTE 5004 (YELLOW SPRINGS ROAD)	TO ROUTE 5005 (WILSON ROAD)		2	0.33	0.00	0.33	
0907ZZ	39874	5	NATIONAL MEMORIAL ARCH PARKING AREAS	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO PARKING			0.00	0.00	0.00	27,003
0918ZZ	95775	5	WASHINGTON'S HEADQUARTERS PARKING AREAS	FROM ROUTE 0502 (RIVER ROAD)	TO ROUTE 0502 (RIVER ROAD)			0.00	0.00	0.00	30,073
0938ZZ	104719	5	BETZWOOD PICNIC AREA PARKING AREAS	FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)	TO PARKING			0.00	0.00	0.00	15,246

VAFO-0102ZZ 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
0102AZ	39500	5	LIBRARY LANE	FROM ROUTE 5004 (YELLOW SPRINGS ROAD)	TO ROUTE 5005 (WILSON ROAD)		2	0.30	0.00	0.30	
0102BZ	39500	5	LIBRARY LANE SPUR	FROM ROUTE 0102AZ (LIBRARY LANE)	TO ROUTE 0102AZ (LIBRARY LANE)		2	0.03	0.00	0.03	1,620

VAFO-0907ZZ 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
0907AZ	39874	5	NATIONAL MEMORIAL ARCH PARKING A	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO ROUTE 0500 (OUTER LINE DRIVE)			0.00	0.00	0.00	16,926
0907BZ	39874	5	NATIONAL MEMORIAL ARCH PARKING B	FROM ROUTE 0500 (OUTER LINE DRIVE)	TO PARKING			0.00	0.00	0.00	10,077

NPS/RIP Subcomponent Details for VAFO

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).

VAFO

VALLEY FORGE NATIONAL HISTORICAL PARK

VAFO-0918ZZ 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
0918BZ	95775	5	WASHINGTON'S HEADQUARTERS UPPER PARKING B	FROM ROUTE 0502 (RIVER ROAD)	TO ROUTE 0502 (RIVER ROAD)			0.00	0.00	0.00	28,856
0918CZ	95775	5	WASHINGTON'S HEADQUARTERS HANDICAP	ADJACENT TO ROUTE 0502 (RIVER ROAD)				0.00	0.00	0.00	1,217

VAFO-0938ZZ 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
0938AZ	104719	5	BETZWOOD PICNIC AREA PARKING A	FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)	TO PARKING			0.00	0.00	0.00	3,618
0938BZ	104719	5	BETZWOOD PICNIC AREA PARKING B	ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)				0.00	0.00	0.00	4,943
0938CZ	104719	5	BETZWOOD PICNIC AREA PARKING C	ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)				0.00	0.00	0.00	3,995
0938DZ	104719	5	BETZWOOD PICNIC AREA PARKING D	ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)				0.00	0.00	0.00	2,690

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Addition**	**Comments**
0106	ORCHARD LANE	OTHER	PAVED ROUTE ADDED DURING ALIGNMENT IN BETWEEN CYCLES. DATA CONFIRMED IN CYCLE 5.
0947	CHAPEL PARKING AREA	OTHER	PAVED PARKING AREA ADDED IN CYCLE 5.
0948	POSA PARKING AREA	OTHER	PAVED PARKING AREA ADDED IN CYCLE 5.
5000	STATE ROUTE 23	OTHER	5000 ROUTE ADDED IN CYCLE 5.
5001	STATE ROUTE 252	OTHER	5000 ROUTE ADDED IN CYCLE 5.
5002	NORTH GULPH ROAD	OTHER	5000 ROUTE ADDED IN CYCLE 5.
5003	COUNTY LINE ROAD	OTHER	5000 ROUTE ADDED IN CYCLE 5.
5004	YELLOW SPRINGS ROAD	OTHER	5000 ROUTE ADDED IN CYCLE 5.
5005	WILSON ROAD	OTHER	5000 ROUTE ADDED IN CYCLE 5. NOT COLLECTED BY DATA COLLECTION VEHICLE (DCV) BECAUSE IT IS UNPAVED.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

ROUTES MODIFIED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Modification**	**Comments**
0910	KNOX'S QUARTERS PARKING	SQ FEET CHANGE	EAST ENTRANCE REMOVED THEREFORE ROUTE AREA HAS DECREASED IN CYCLE 5. GPS RECOLLECTED IN CYCLE 5 TO SHOW PARKING LOT SHAPE ACCURATELY.
0916	WHITTLE HOUSE AND DRIVEWAY PARKING	SQ FEET CHANGE	GPS RECOLLECTED TO SHOW PARKING LOT SHAPE ACCURATELY.
0927	ARTILLERY PARK PARKING	RECONSTRUCTED	ROUTE 0927 WAS RECONSTRUCTED SINCE CYCLE 3.
0929	VARNUM'S HEADQUARTERS PARKING	RECONSTRUCTED	ROUTE 0929 WAS RECONSTRUCTED SINCE CYCLE 3.
0932	MAINTENANCE AREA	SQ FEET CHANGE	GPS RECOLLECTED TO SHOW PARKING LOT SHAPE ACCURATELY.
0935	BETZWOOD BOAT RAMP PARKING	SQ FEET CHANGE	RECONSTRUCTED, SHAPE MODIFIED IN CYCLE 5 TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0937	BETZWOOD BIKE PATH PARKING	RECONSTRUCTED	RECONSTRUCTED, SHAPE MODIFIED IN CYCLE 5 TO REFLECT PARKING LOT GEOMETRY ACCURATELY.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0102ZZ	LIBRARY LANE ROADS	OTHER	NAME CHANGED FROM "MAXWELLS DRIVE" TO "LIBRARY LANE". LONGER LENGTH IN CYCLE 5 BECAUSE THE SECTION OF ROAD FOR THE OPPOSITE SIDE OF THE TRAFFIC CIRCLE NEAR THE LIBRARY WAS ADDED.
0103	KNOX'S QUARTERS ACCESS ROAD	COLLECTION METHOD CHANGE	CHANGED FROM A DATA COLLECTION VEHICLE (DCV) ROUTE TO A MANUALLY RATED ROUTE BECAUSE IT IS NARROW AND POOR CONDITION.
0213	INNER LINE SPUR	ROUTE NAME	NAME CHANGED FROM "REDOUBT 4 ROAD" TO "INNER LINE SPUR".
0404	SUPERINTENDENTS RESIDENCE ACCESS ROAD	COLLECTION METHOD CHANGE	CHANGED FROM A DATA COLLECTION VEHICLE (DCV) ROUTE TO A MANUALLY RATED ROUTE BECAUSE IT IS NARROW AND POOR CONDITION.
0502	RIVER ROAD	REALIGNED	ROUTE WAS REALIGNED IN SEVERAL LOCATIONS. AS A RESULT, THE ROUTE LENGTH DECREASED IN CYCLE 5. ROUTE WAS DRIVEN IN THE OPPOSITE DIRECTION OF CYCLE 3 BECAUSE OF THE REALIGNMENT.
0903	ADMINISTRATIVE PARKING	ROUTE NAME	NAME CHANGED FROM "ADMINISTRATIVE AND HANDICAPPED VISITOR CENTER PARKING" TO "ADMINISTRATIVE PARKING" IN CYCLE 5.
0907ZZ	NATIONAL MEMORIAL ARCH PARKING AREAS	ROUTES COMBINED	CYCLE 3 ROUTES 0907A-0907B WERE COMBINED INTO 0907ZZ IN CYCLE 5.
0913	LIBRARY LANE PARKING	ROUTE NAME	NAME CHANGED FROM "MAXWELL'S QUARTERS PARKING" TO "LIBRARY LANE PARKING".
0914	LORD STIRLING'S QUARTERS PARKING	OTHER	GPS RECOLLECTED TO SHOW PARKING LOT SHAPE ACCURATELY. ROAD LEADING TO THE PARKING AREA IS UNPAVED AND WAS REMOVED FROM THE SHAPE.
0918ZZ	WASHINGTON'S HEADQUARTERS PARKING AREAS	RECONSTRUCTED	AREA RECONSTRUCTED. CYCLE 3 ROUTE 0918A IS NO LONGER THERE. ROUTE 0918B WAS COMPLETELY RECONSTRUCTED AND A NEW PARKING AREA WAS ADDED AND INCLUDED AS WELL.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0931	HUNTINGTON'S QUARTERS PARKING	SQ FEET CHANGE	GPS RECOLLECTED TO SHOW PARKING LOT SHAPE ACCURATELY.
0938ZZ	BETZWOOD PICNIC AREA PARKING AREAS	ROUTES COMBINED	CYCLE 3 ROUTES 0938A-0938D WERE COMBINED IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

ROUTES REMOVED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Removal**	**Comments**
0104	OBSERVATION TOWER ROAD	CLOSED/ABANDONED	DEMOLISHED BECAUSE IT IS NO LONGER USED FOR PARK OPERATIONS OR VISITORS.
0205	AMPHITHEATER ACCESS ROAD	CLOSED/ABANDONED	DEMOLISHED BECAUSE IT IS NO LONGER USED FOR PARK OPERATIONS OR VISITORS.
0905A	MUHLENBERG'S BRIGADE PULLOUT PARKING A	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0905B	MUHLENBERG'S BRIGADE PULLOUT PARKING B	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0905C	MUHLENBERG'S BRIGADE PULLOUT PARKING C	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0905D	MUHLENBERG'S BRIGADE PULLOUT PARKING D	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0905E	MUHLENBERG'S BRIGADE PULLOUT PARKING E	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0905F	MUHLENBERG'S BRIGADE PULLOUT PARKING F	OTHER	REMOVED BECAUSE IT IS MANAGED AS PART OF THE ROAD (ROUTE 0500) INSTEAD OF AS A SEPARATE PARKING AREA.
0906	NATIONAL MEMORIAL ARCH ACCESS AREA	OTHER	NOT AN OFFICIAL PARKING AREA IN FMSS DATABASE; REMOVED IN CYCLE 5.
0911	KNOX'S QUARTERS STABLE PARKING	OTHER	NOT AN OFFICIAL PARKING AREA IN FMSS DATABASE; REMOVED IN CYCLE 5.
0912	MOUNT MISERY PARKING	OTHER	NOT AN OFFICIAL PARKING AREA IN FMSS DATABASE; REMOVED IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - VAFO

ROUTES REMOVED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Removal**	**Comments**
0919	VALLEY FORGE TRAIN STATION PARKING	CLOSED/ABANDONED	AREA RECONSTRUCTED. ROUTE 0502 ENDS AT THIS LOCATION IN CYCLE 5.
0920	WASHINGTON'S HEADQUARTERS BUS PARKING	CLOSED/ABANDONED	AREA RECONSTRUCTED. ROUTE 0920 WAS DEMOLISHED BY THE PARK IN 2008 BECAUSE IT WAS NO LONGER NECESSARY FOR PARK OPERATIONS OR VISITORS.
0921	WASHINGTON'S HEADQUARTERS PARKING	CLOSED/ABANDONED	AREA RECONSTRUCTED. ROUTE 0921 WAS DEMOLISHED BY THE PARK IN 2008 BECAUSE IT WAS NO LONGER NECESSARY FOR PARK OPERATIONS OR VISITORS.
0924	REDOUBT 4 PARKING	CLOSED/ABANDONED	DEMOLISHED BY THE PARK IN 2007, BECAUSE IT WAS DISTURBING THE HISTORIC VIEW OF THE AREA.
0925A	OBSERVATION TOWER PARKING A	CLOSED/ABANDONED	DEMOLISHED BY THE PARK IN 2007, BECAUSE THE TOWER AND RESTROOMS THAT JUSTIFIED THIS ROUTES EXISTENCE WERE REMOVED A FEW YEARS EARLIER.
0925B	OBSERVATION TOWER PARKING B	CLOSED/ABANDONED	DEMOLISHED BY THE PARK IN 2007, BECAUSE THE TOWER AND RESTROOMS THAT JUSTIFIED THIS ROUTES EXISTENCE WERE REMOVED A FEW YEARS EARLIER.
0928	EVANS HOUSE PARKING	OTHER	REMOVED IN CYCLE 5, PARKING AREA IS NOT OWNED BY THE NPS.
0941	SNYDER HOUSE PARKING	CLOSED/ABANDONED	ROUTE DEMOLISHED BY THE PARK IN 2009, BECAUSE THE AREA IS NOW LEASED TO MONTESSORI CHILDREN'S SCHOOL AND THE PARK DETERMINED THAT THE PARKING WAS NOT NECESSARY.
0942	EVANS HOUSE PARKING	CLOSED/ABANDONED	ROUTE DEMOLISHED BY THE PARK IN 2009, BECAUSE THE AREA IS NOW LEASED TO MONTESSORI CHILDREN'S SCHOOL AND THE PARK DETERMINED THAT THE PARKING WAS NOT NECESSARY.
0944	PINE PARKING	CLOSED/ABANDONED	ROUTE DEMOLISHED BY THE PARK IN 2007, BECAUSE IT WAS DISTURBING THE HISTORIC VIEW OF THE AREA.

Section 3
Park Summary Information

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

VAFO: 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	0.02	0.27%	0.23	3.07%	0.24	3.20%	0.02	0.27%	**0.51**
2	0.28	3.73%	0.12	1.60%	0.02	0.27%			**0.42**
3	0.78	10.40%	2.43	32.40%	2.11	28.13%	0.92	12.27%	**6.24**
4									
5			0.10	1.33%	0.03	0.40%			**0.13**
6			0.12	1.60%	0.08	1.07%			**0.20**
7									
8									
Totals	**1.08**	**14.40%**	**3.00**	**40.00%**	**2.48**	**33.07%**	**0.94**	**12.53%**	**7.50**

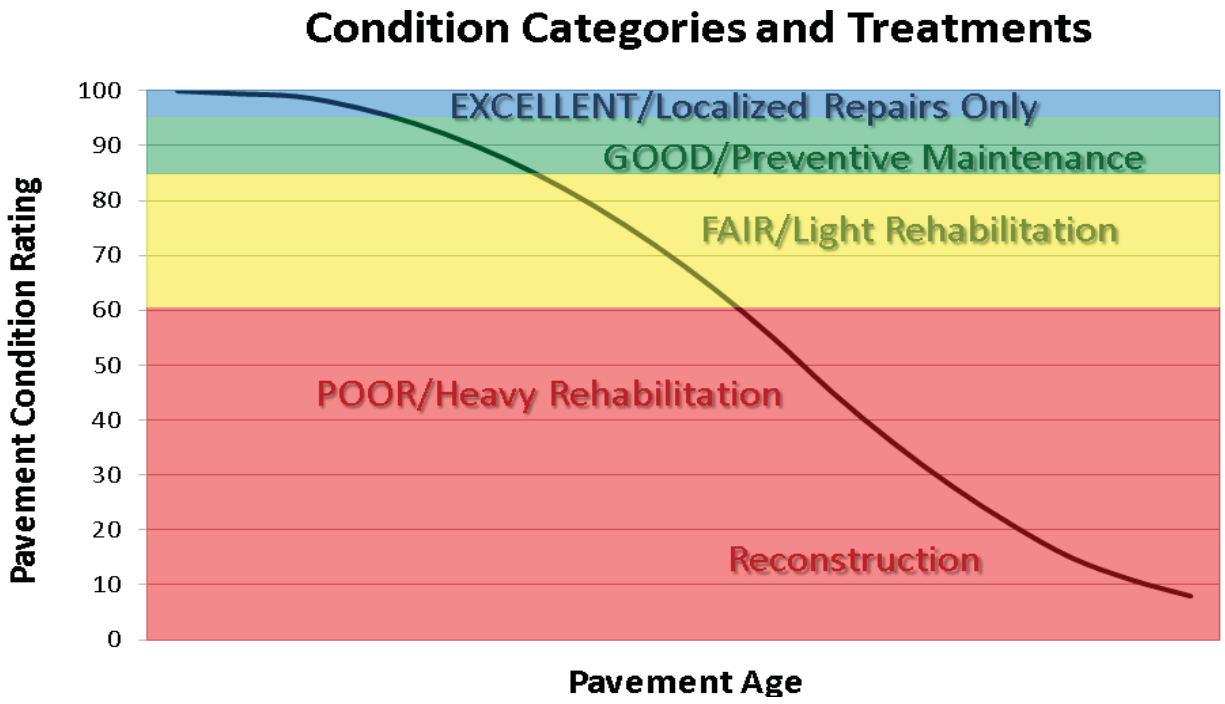
Note: **The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class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

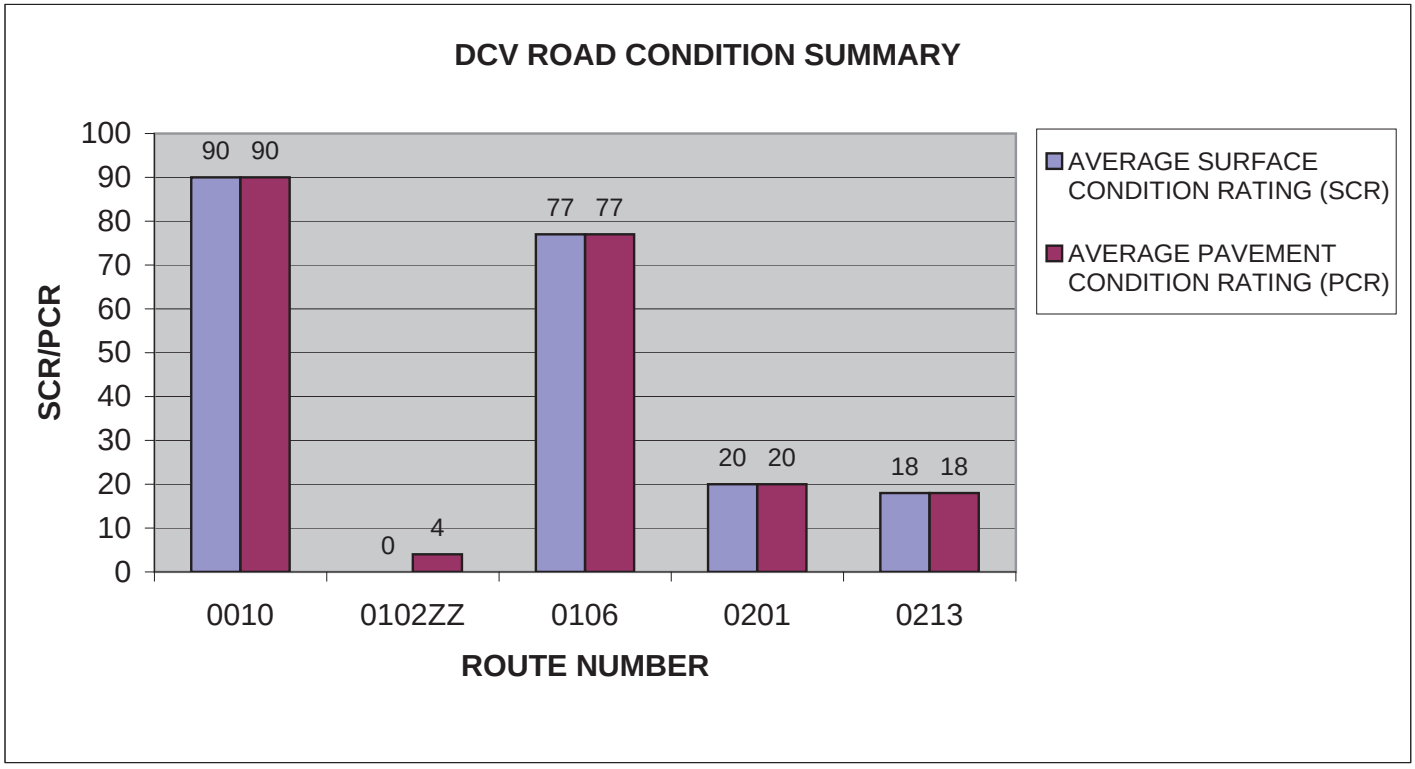
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely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



VAFO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

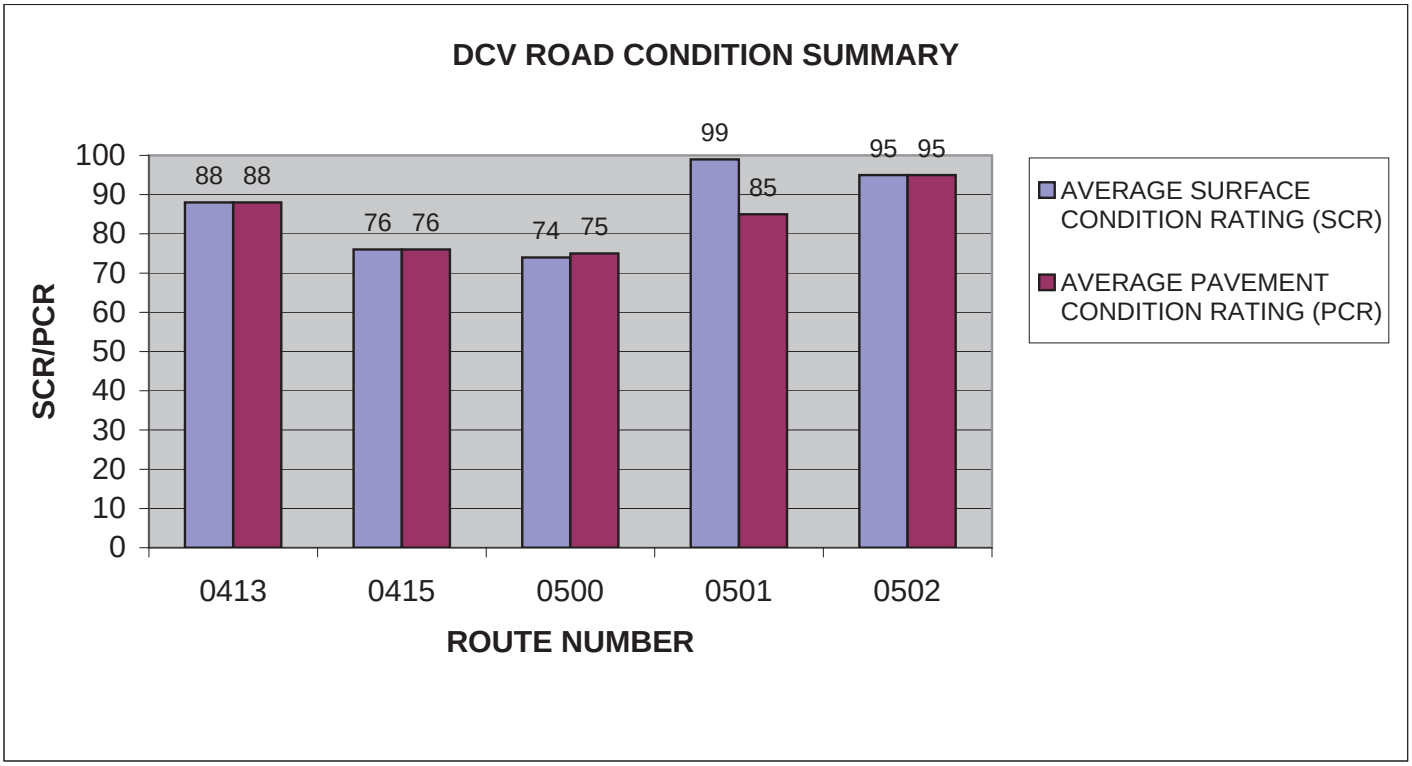
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	VISITOR CENTER ACCESS ROAD	1	0.51	ASPHALT	90	90
0102ZZ	LIBRARY LANE ROADS	2	0.33	ASPHALT	0	4
0106	ORCHARD LANE	5	0.05	ASPHALT	77	77
0201	BETZWOOD PICNIC AREA ROAD	3	0.34	ASPHALT	20	20
0213	INNER LINE SPUR	2	0.12	ASPHALT	18	18



VAFO: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

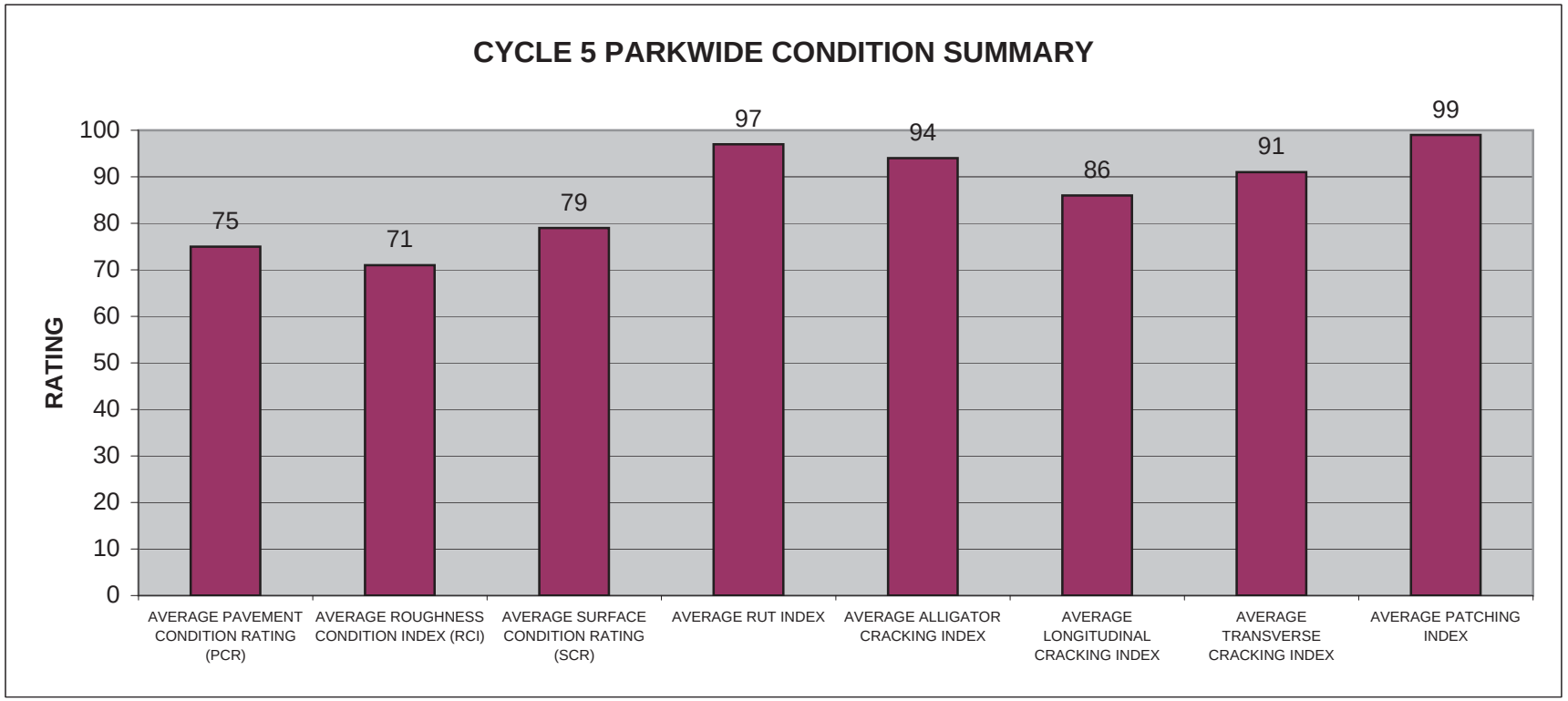
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0413	QUARRY ROAD	6	0.20	ASPHALT	88	88
0415	BRITTAIN LANE	5	0.08	ASPHALT	76	76
0500	OUTER LINE DRIVE	3	2.71	ASPHALT	74	75
0501	INNER LINE DRIVE	3	2.85	ASPHALT	99	85
0502	RIVER ROAD	3	0.34	ASPHALT	95	95



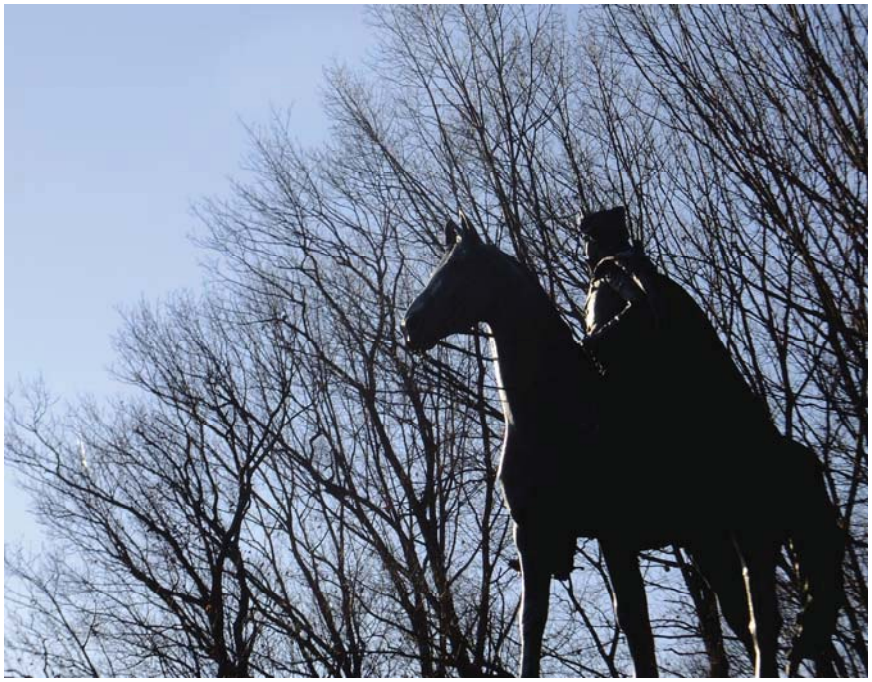
VAFO: PARKWIDE DCV CONDITION SUMMARY

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
75	71	79	97	94	86	91	99

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



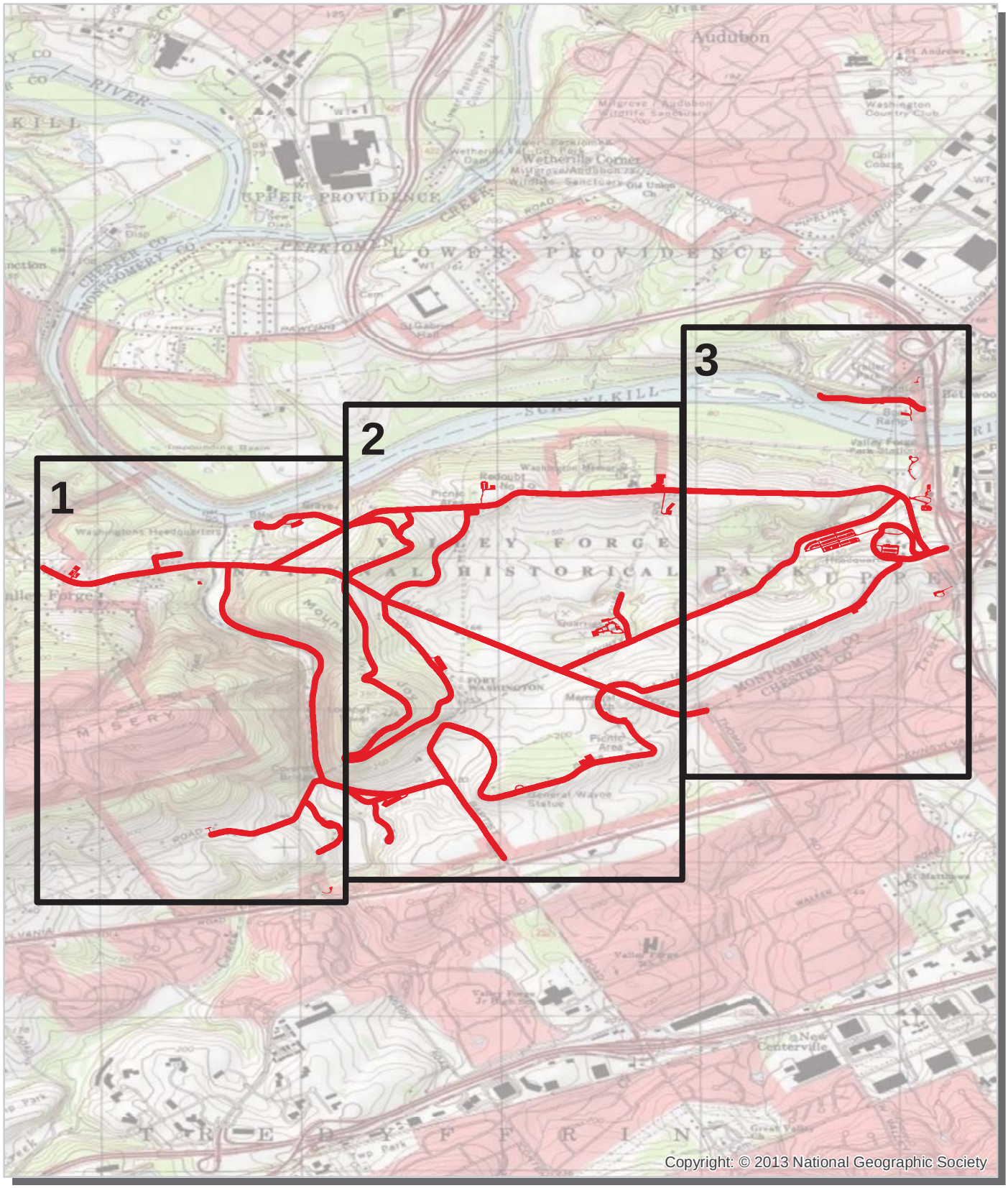
Section 4
Park Route Location Maps



Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

Valley Forge National Historical Park
Route Location Map
Key Map

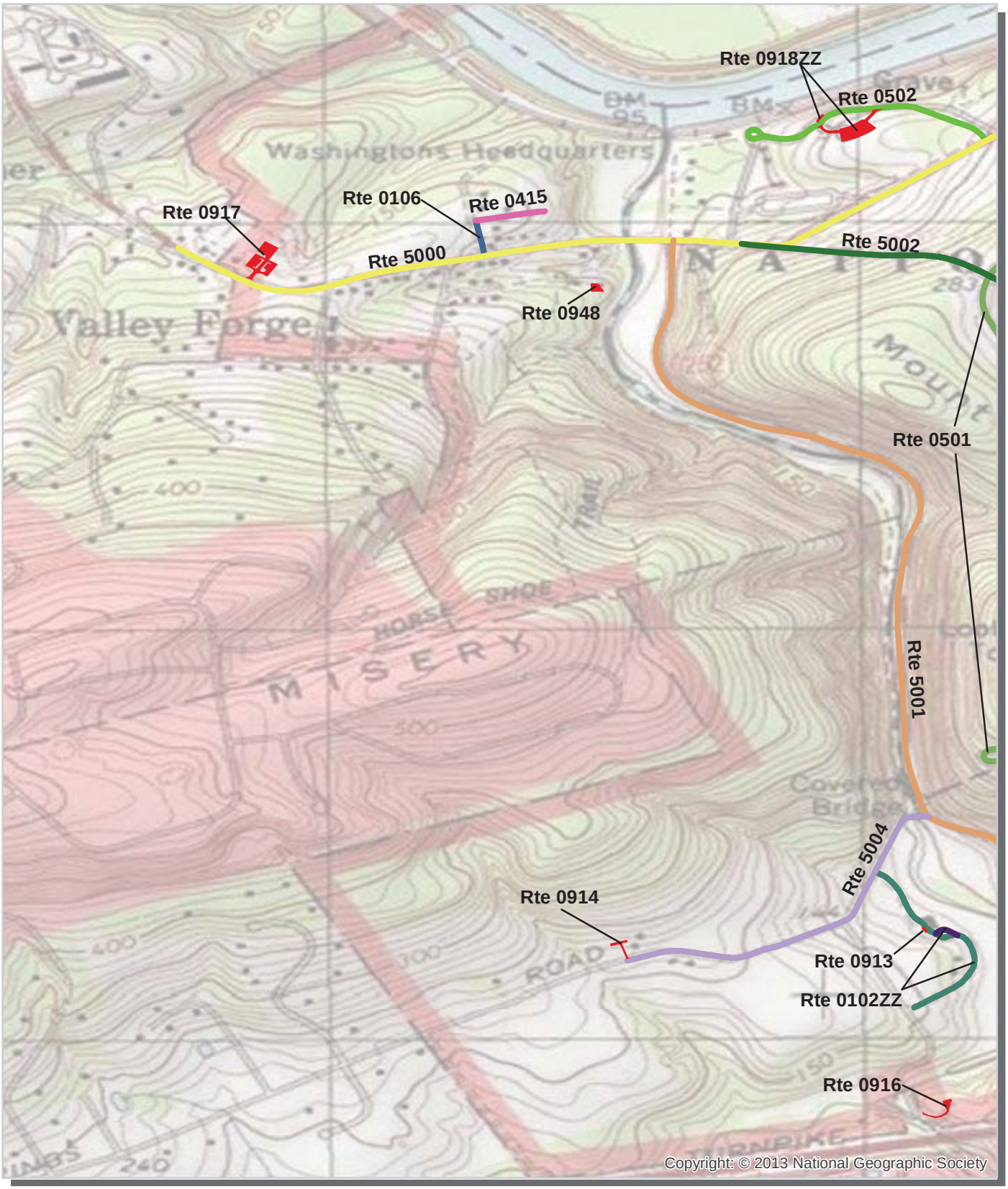


Cycle 5 Collected Routes

0.5 0.25 0 0.5 Miles

N

Valley Forge National Historical Park
Route Location Map
Area 1

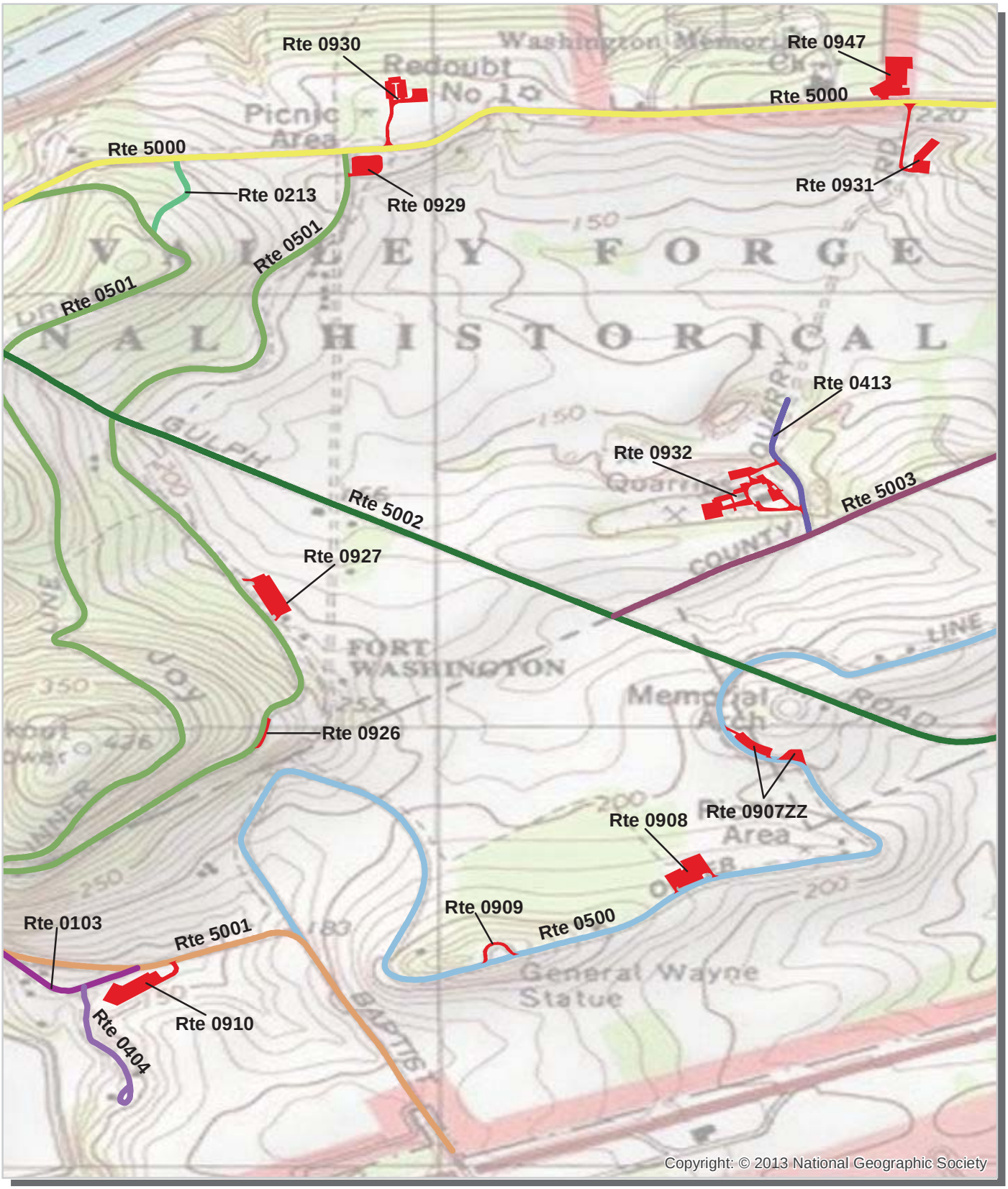


Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Valley Forge National Historical Park
Route Location Map
Area 2

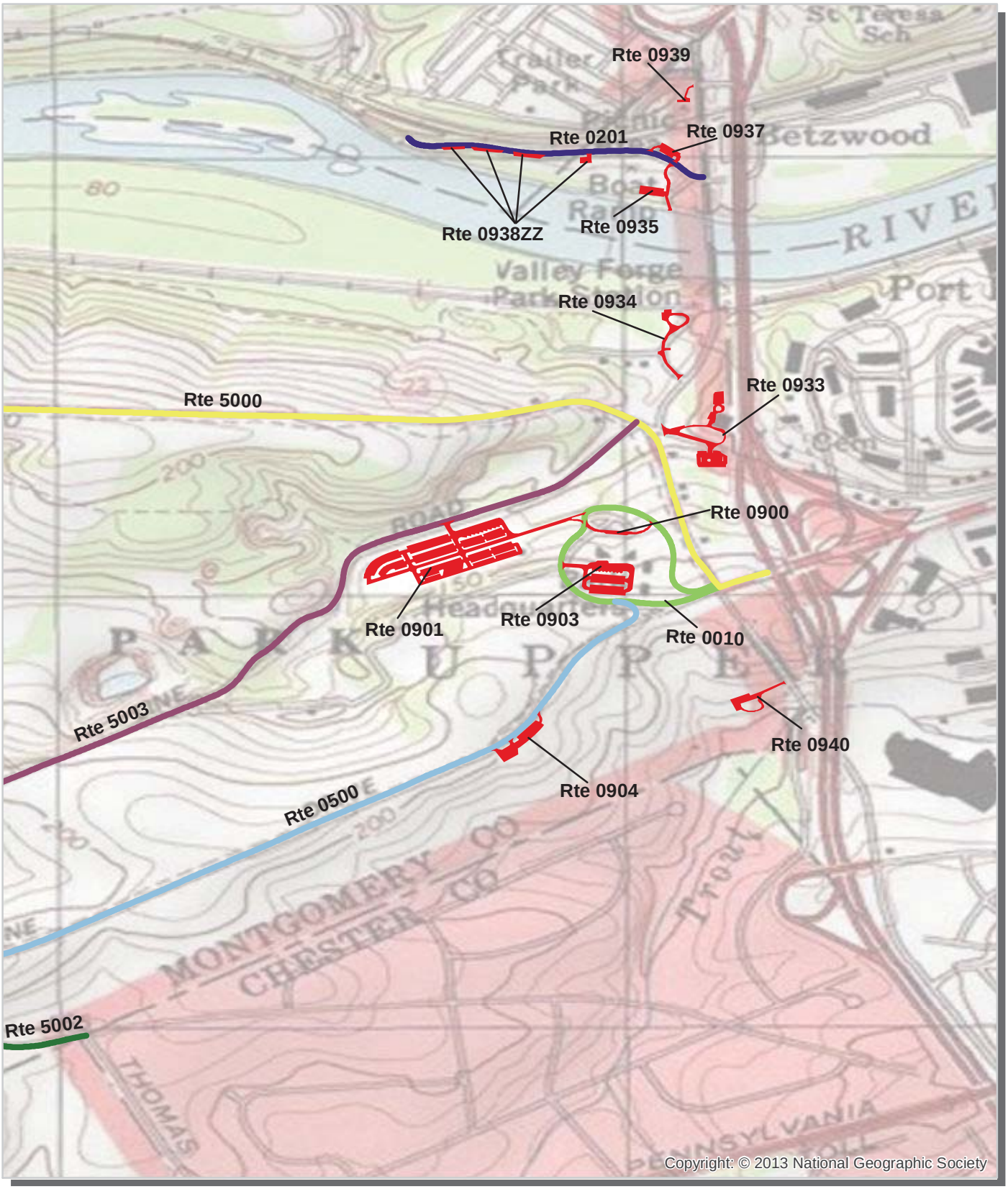


Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Valley Forge National Historical Park
Route Location Map
Area 3

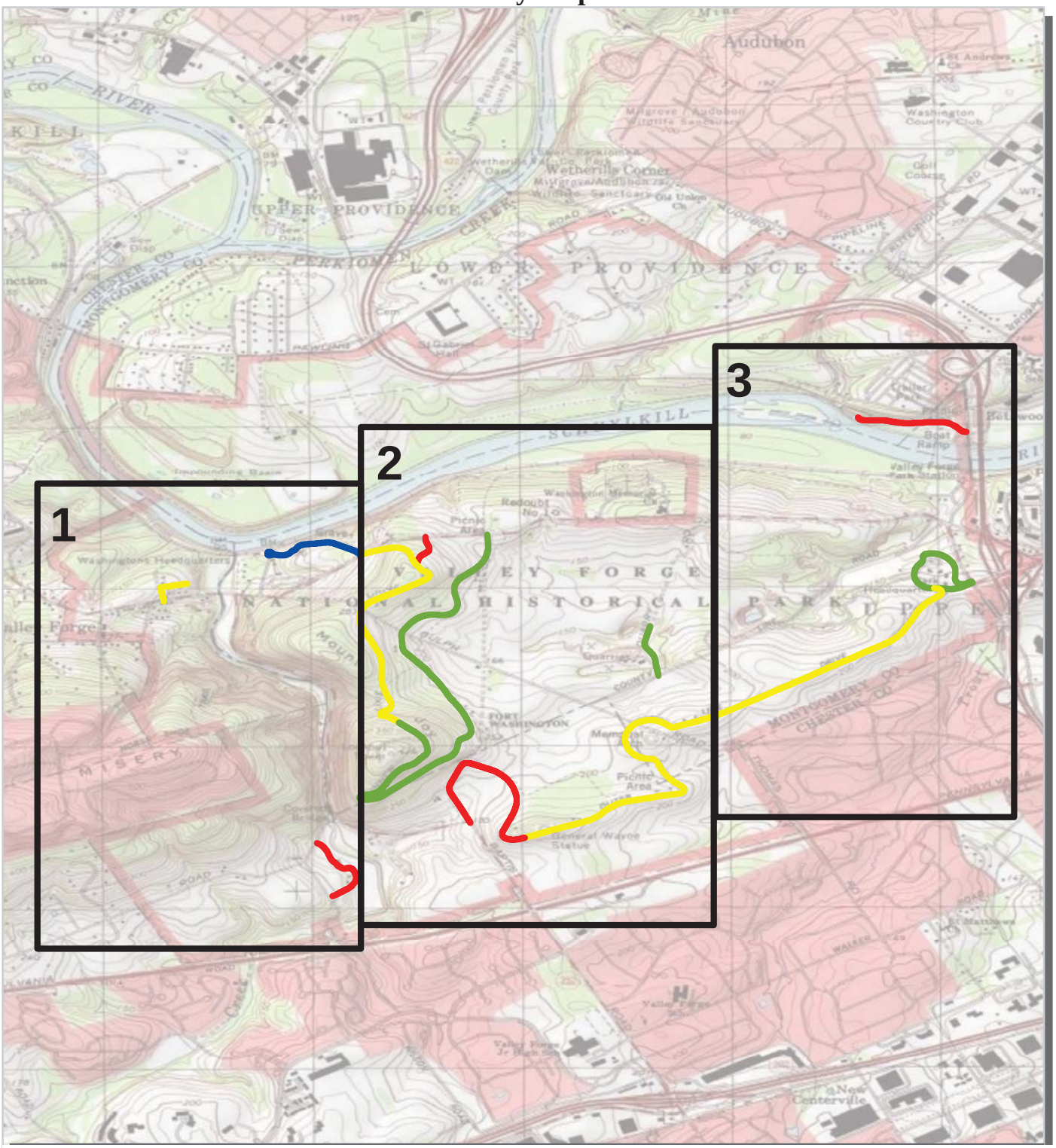


Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Valley Forge National Historical Park
Route Condition Map
PCR - Mile by Mile
Key Map



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

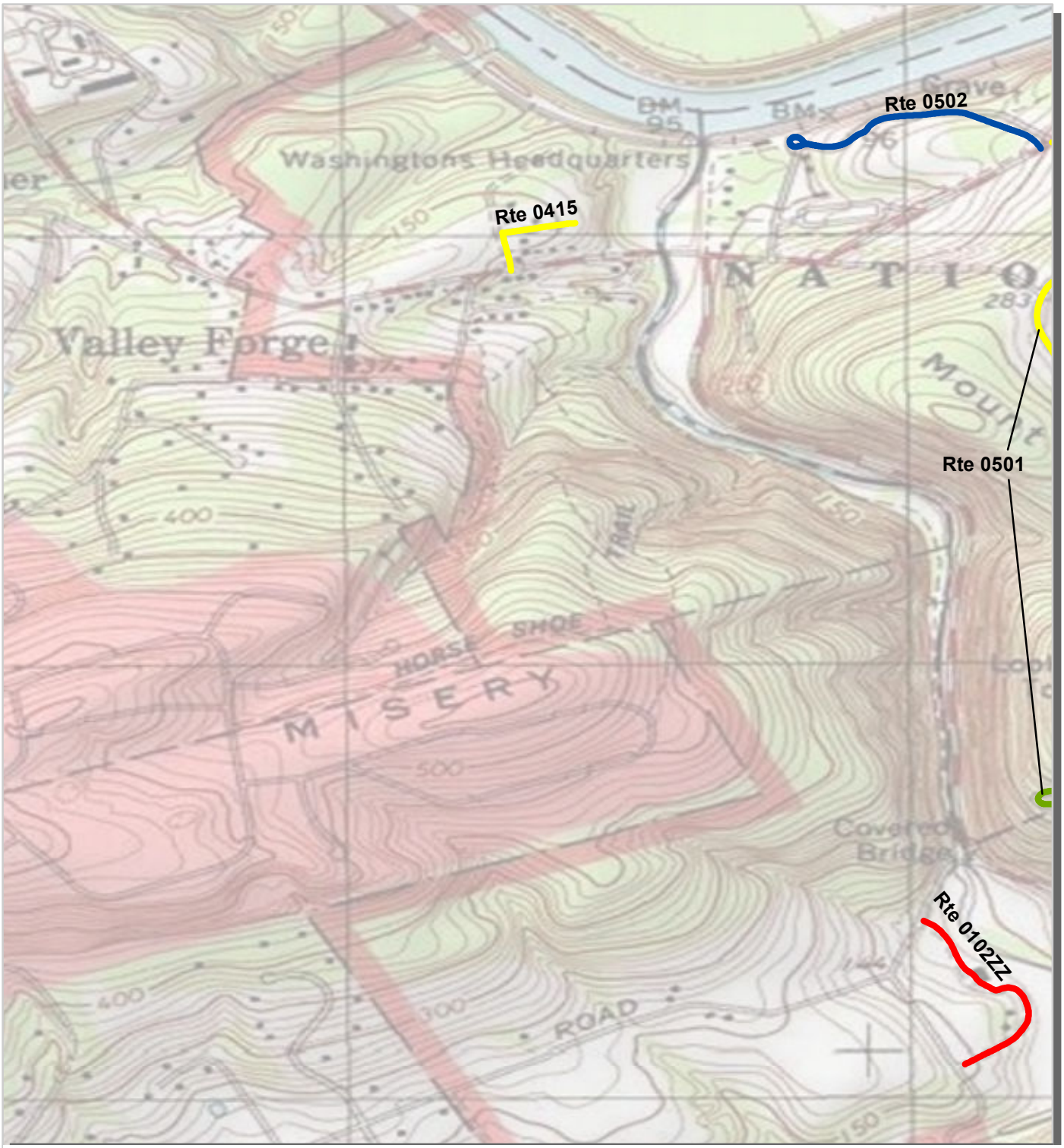
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

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

0.5 0.25 0 0.5 Miles

N

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



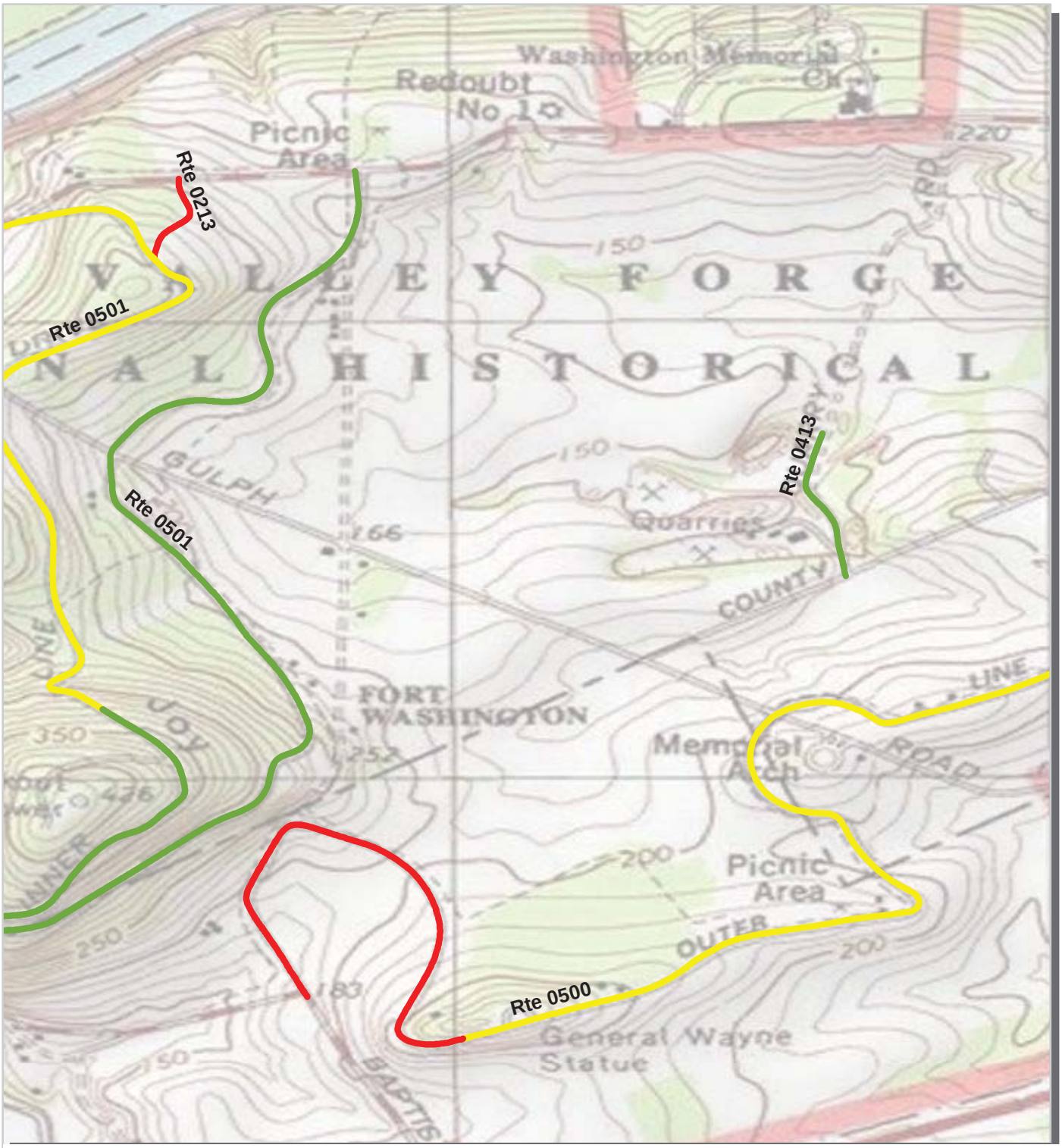
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.2 0.1 0 0.2 Miles

N

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



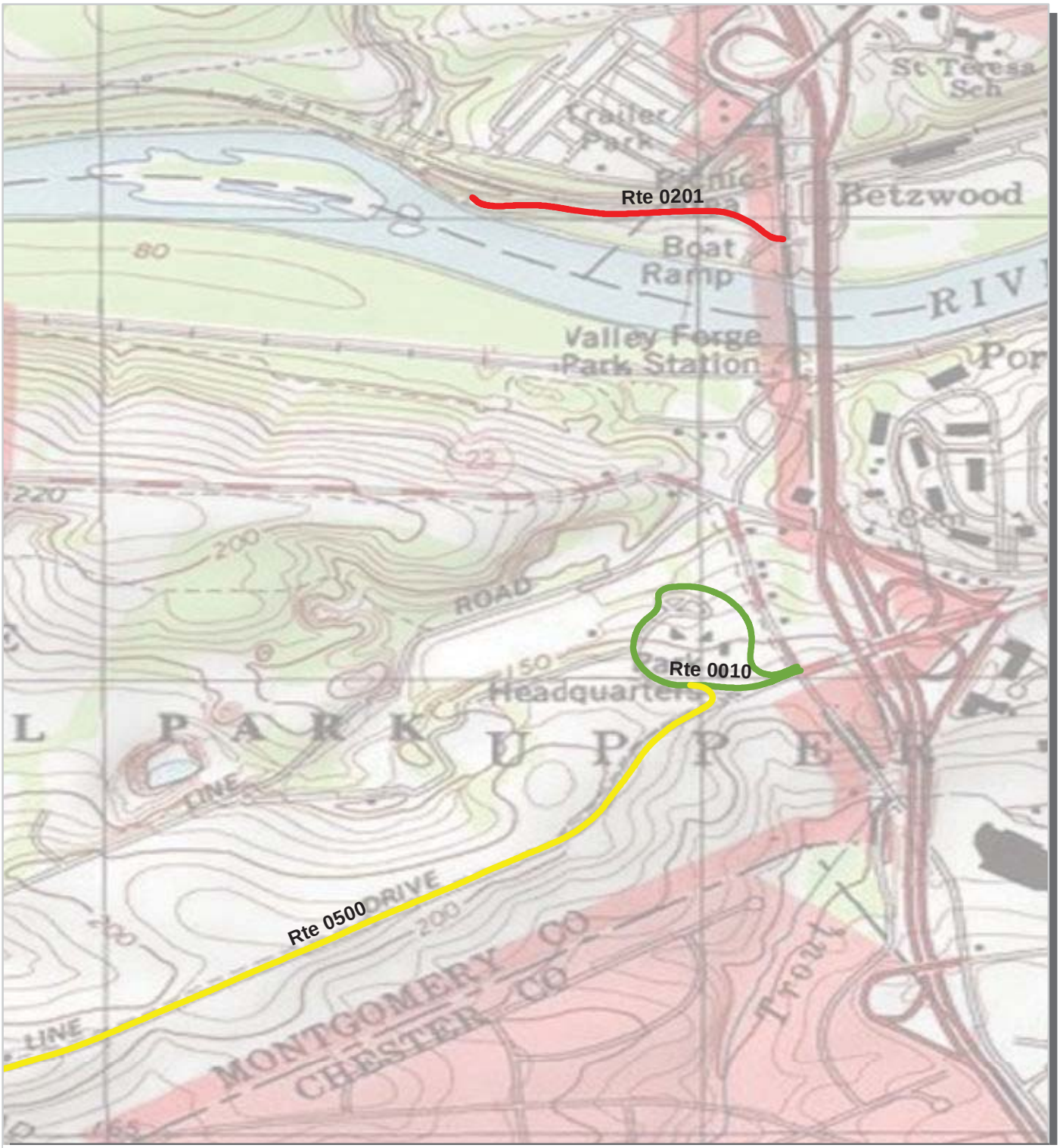
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* 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

Valley Forge 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.

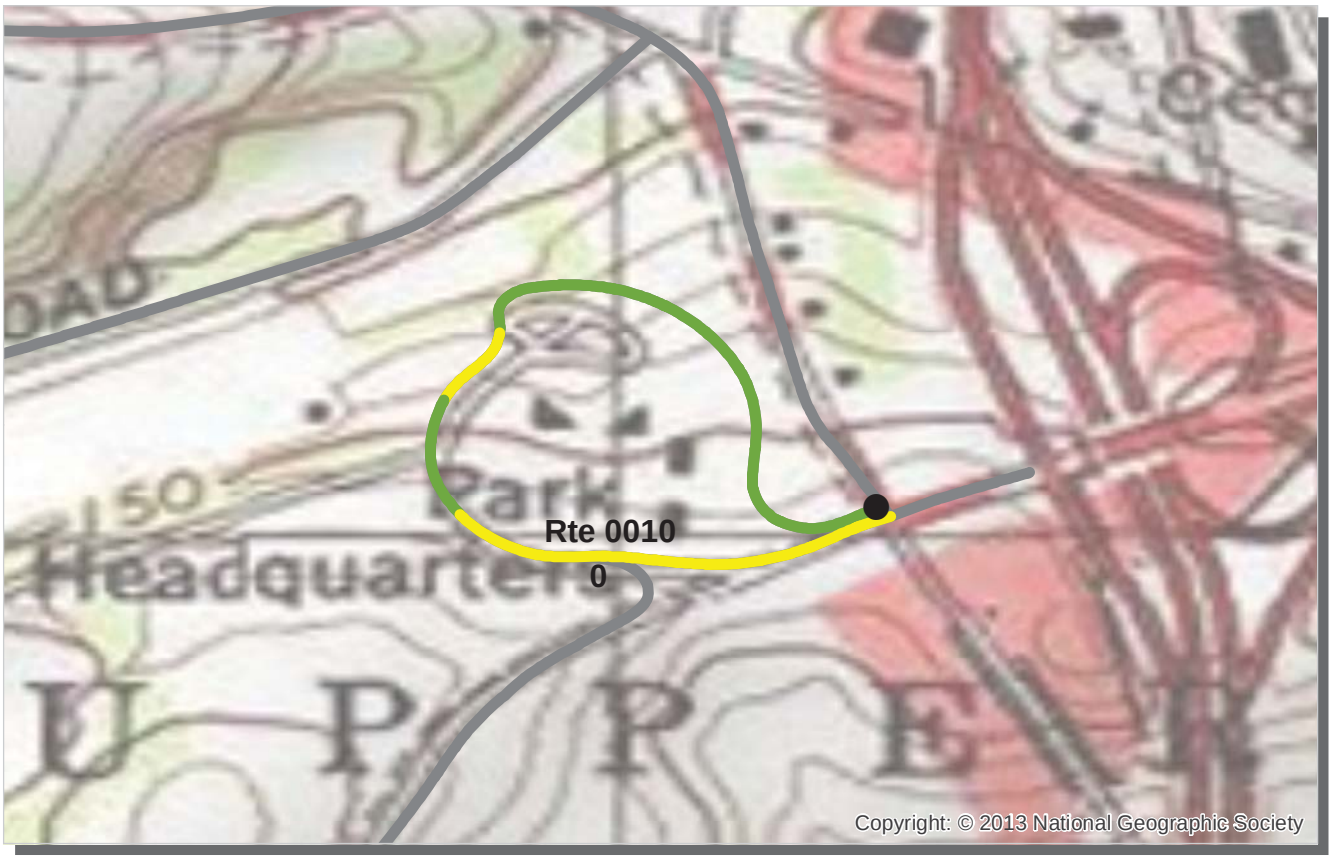
0.2 0.1 0 0.2 Miles

N

Section 5
Paved Route
Condition Rating Sheets

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program



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

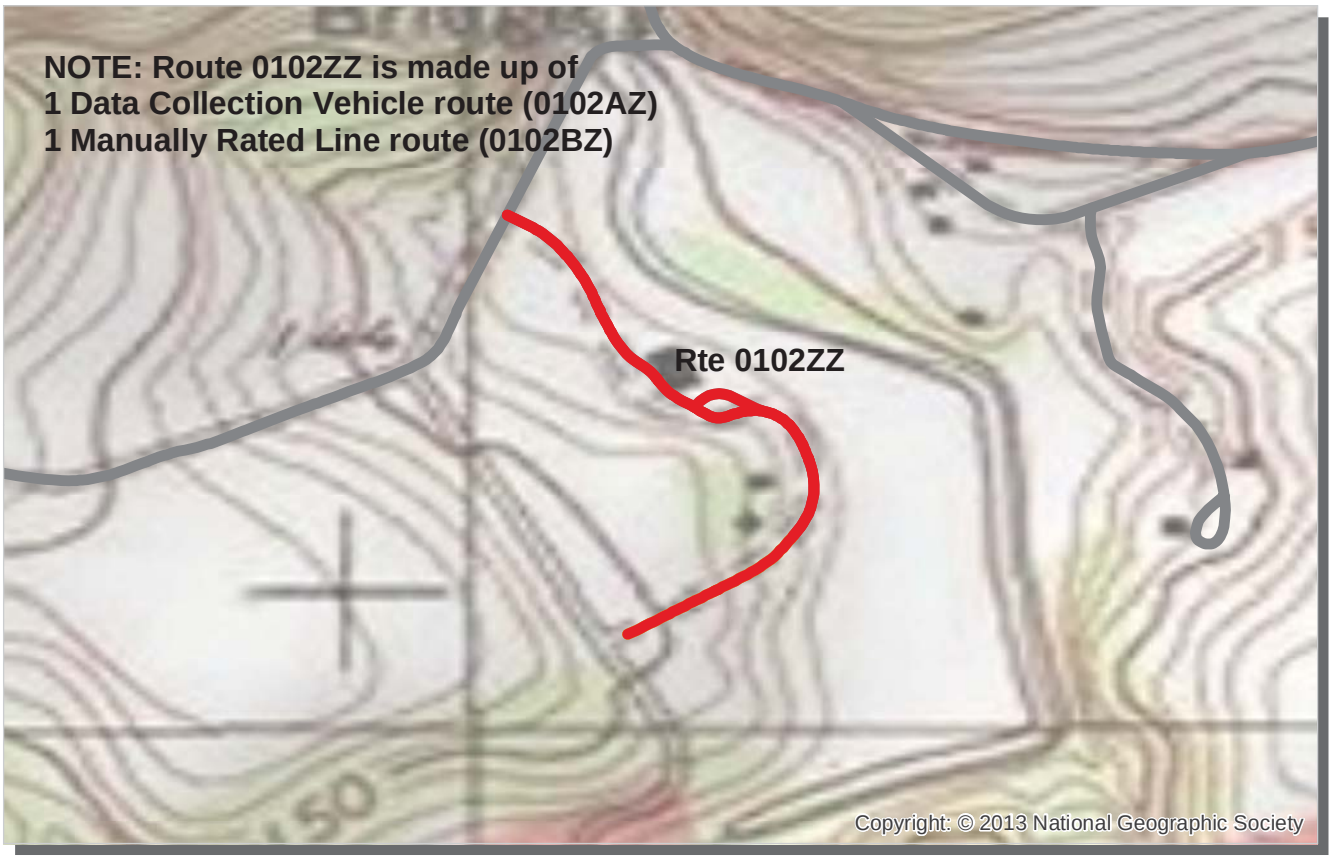
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0010 VISITOR CENTER ACCESS ROAD
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013
NORTHEAST REGION **TOTAL LENGTH: 0.51 Miles**

Section Number	0				
Section Length (mi)	0.51				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	15				
Lane Width (ft)	15				
Roadway Condition Information					
SCR (Surface Condition Rating)	90				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	90				
Transverse Cracking Index	90				
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

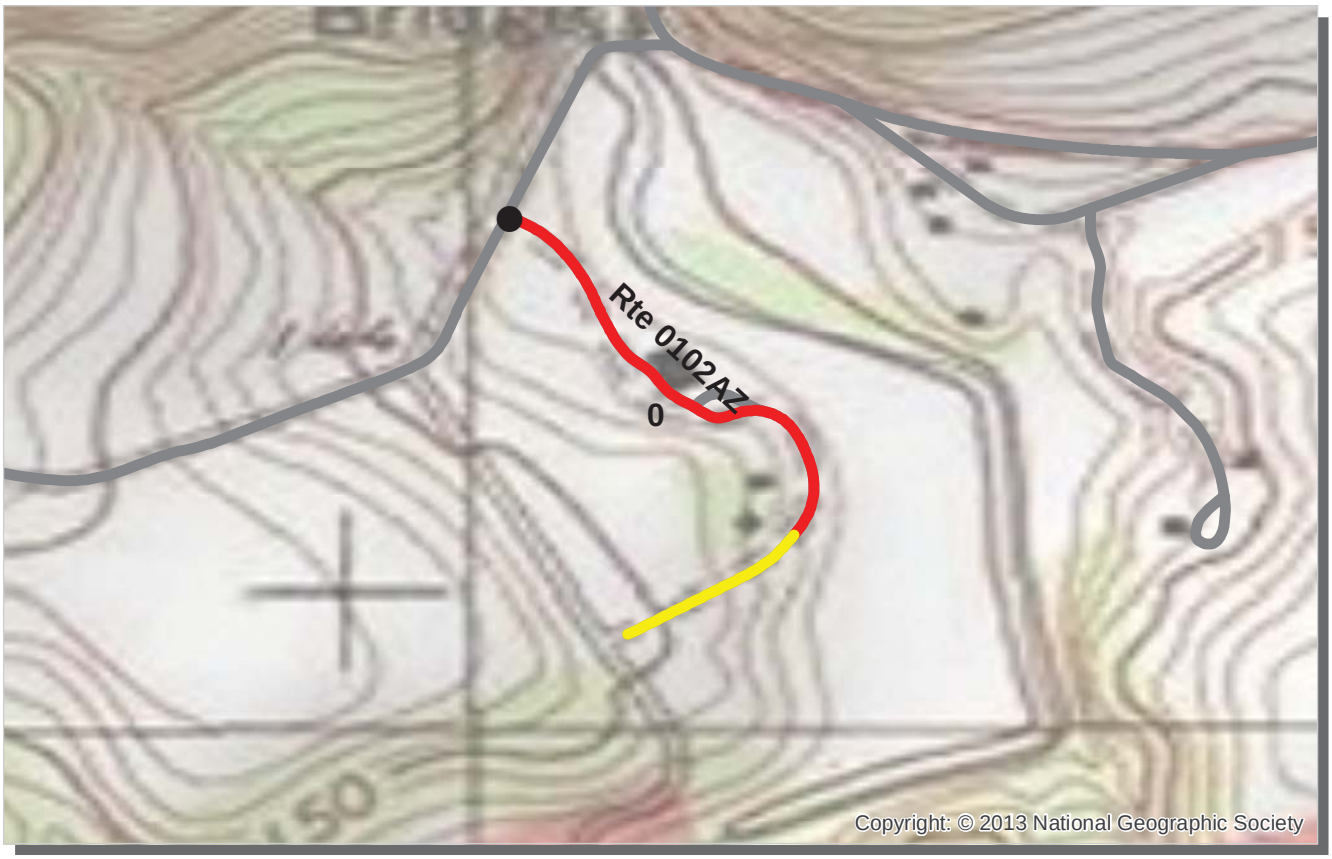
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0102ZZ LIBRARY LANE ROADS
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

Summary Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.33 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)	0				
PCR (Pavement Condition Rating)	4				
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: 0102AZ LIBRARY LANE
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

Subcomponent Record **COLLECTED: 4/4/2013**
NORTHEAST REGION **TOTAL LENGTH: 0.30 Miles**

Section Number	0				
Section Length (mi)	0.30				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	0				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	69				
Patching Index	100				
Rutting Index	85				
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

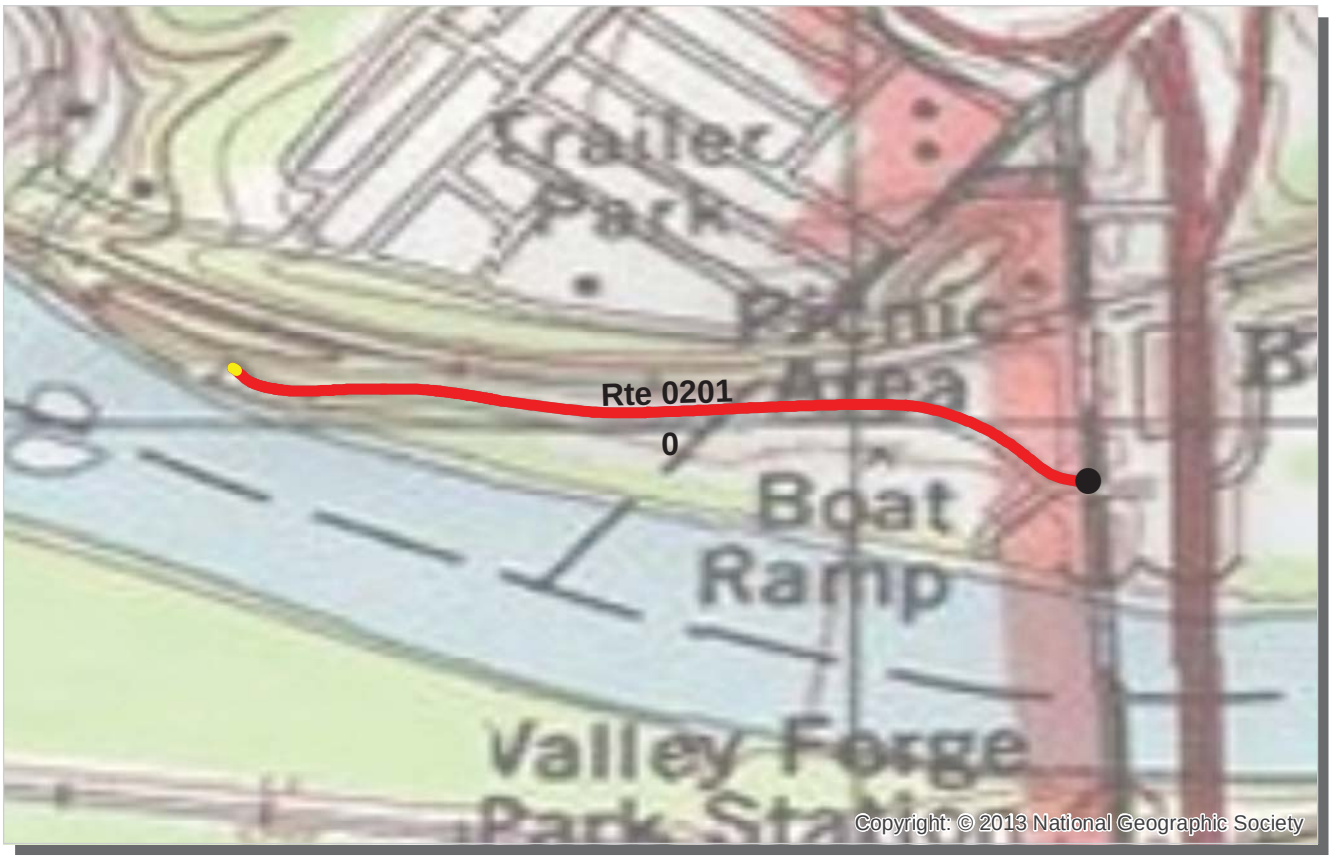
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0106 ORCHARD LANE
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

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)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	77				
PCR (Pavement Condition Rating)	77				
Distress Index Values					
Structural Crack Index	97				
Transverse Cracking Index	95				
Patching Index	100				
Rutting Index	77				
Roughness Condition Index (RCI)	NC				

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



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: 0201 BETZWOOD PICNIC AREA ROAD
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.34 Miles**

Section Number	0				
Section Length (mi)	0.34				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	26				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	20				
PCR (Pavement Condition Rating)	20				
Distress Index Values					
Structural Crack Index	20				
Transverse Cracking Index	43				
Patching Index	95				
Rutting Index	91				
Roughness Condition Index (RCI)	NC				

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

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: 0213 INNER LINE SPUR
VAFO : VALLEY FORGE 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	2				
Paved Width (ft)	21				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	18				
PCR (Pavement Condition Rating)	18				
Distress Index Values					
Structural Crack Index	18				
Transverse Cracking Index	85				
Patching Index	95				
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.

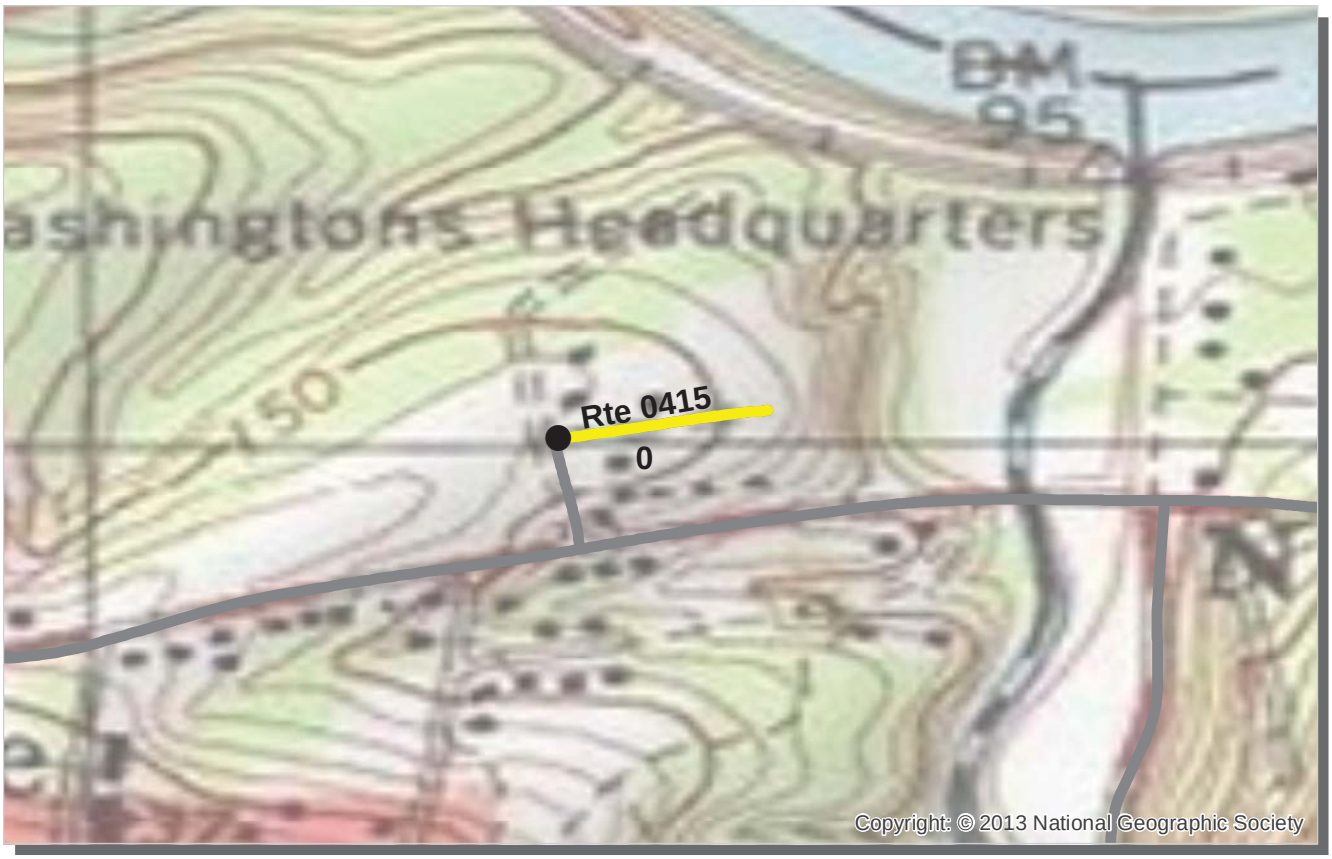
ROUTE: 0413 QUARRY ROAD
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013

NORTHEAST REGION **TOTAL LENGTH: 0.20 Miles**

Section Number	0				
Section Length (mi)	0.20				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	17				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	88				
PCR (Pavement Condition Rating)	88				
Distress Index Values					
Structural Crack Index	94				
Transverse Cracking Index	99				
Patching Index	91				
Rutting Index	88				
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

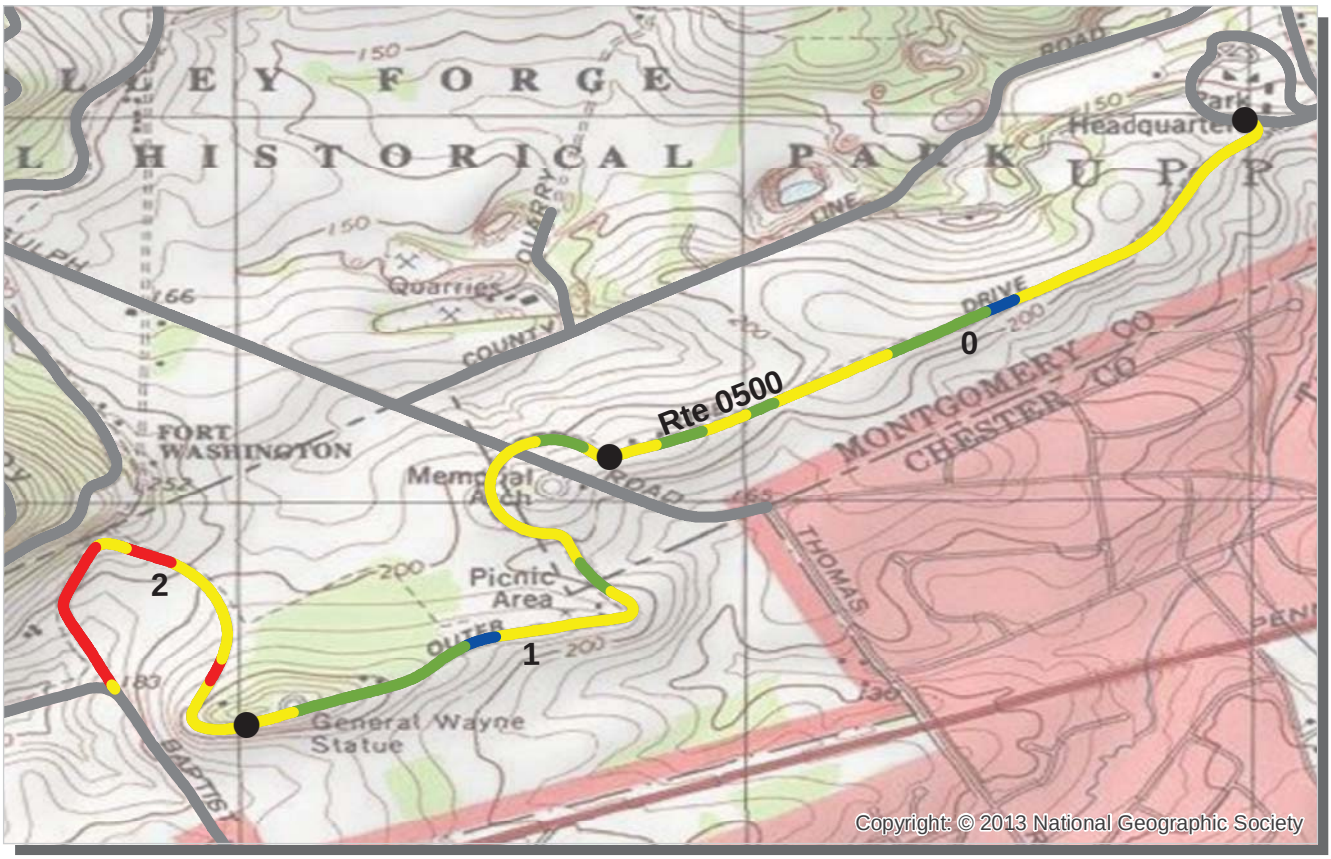
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0415 BRITTAIN LANE
VAFO : VALLEY FORGE 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)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	76				
PCR (Pavement Condition Rating)	76				
Distress Index Values					
Structural Crack Index	92				
Transverse Cracking Index	95				
Patching Index	100				
Rutting Index	76				
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

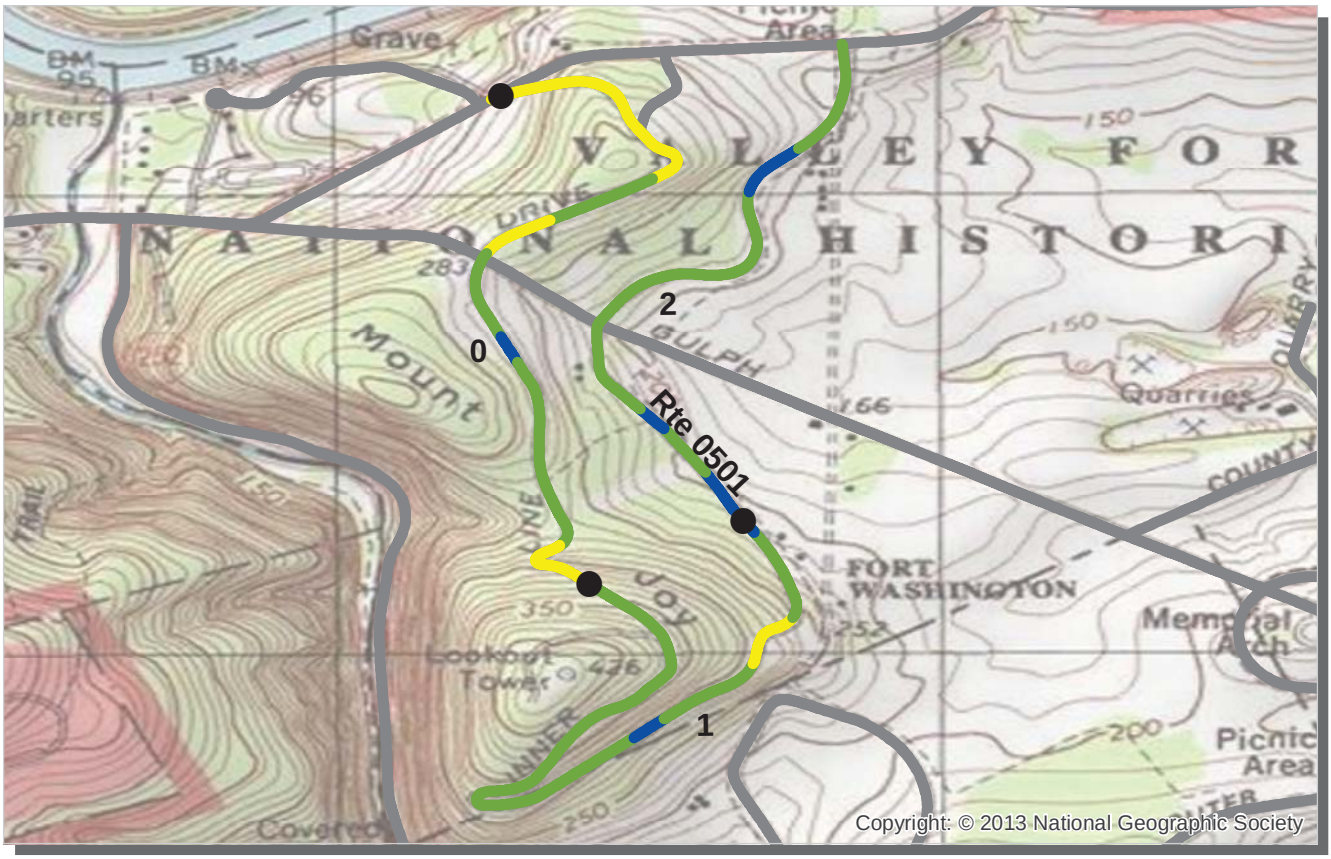
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0500 OUTER LINE DRIVE
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013
NORTHEAST REGION **TOTAL LENGTH: 2.71 Miles**

Section Number	0	1	2		
Section Length (mi)	1.00	1.00	0.71		
Cross Section Information					
Number of Lanes	1	2	2		
Paved Width (ft)	14	18	22		
Lane Width (ft)	14	9	11		
Roadway Condition Information					
SCR (Surface Condition Rating)	73	88	54		
PCR (Pavement Condition Rating)	79	84	58		
Distress Index Values					
Structural Crack Index	73	89	54		
Transverse Cracking Index	88	88	89		
Patching Index	100	100	100		
Rutting Index	99	100	97		
Roughness Condition Index (RCI)	89	78	65		

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

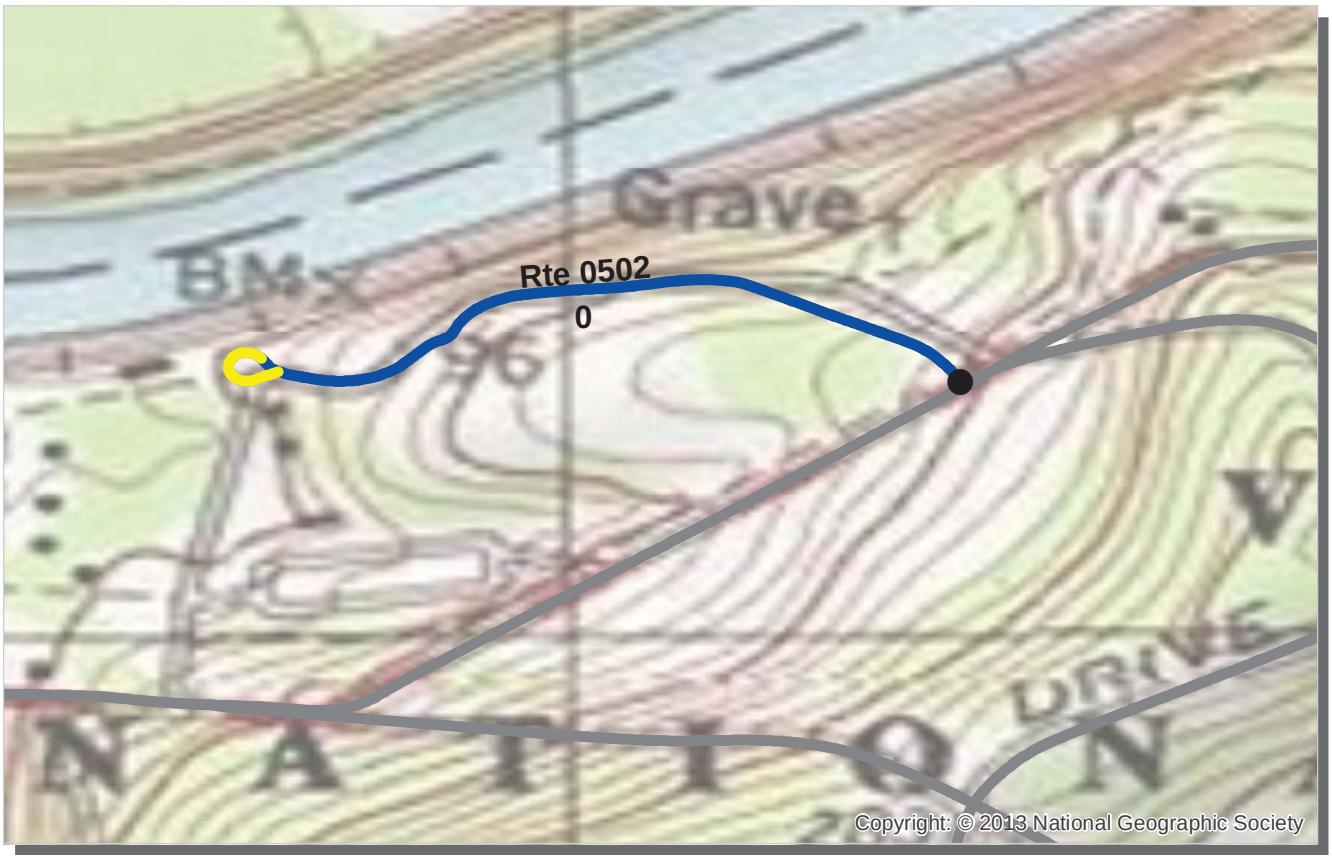
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0501 INNER LINE DRIVE
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013
NORTHEAST REGION **TOTAL LENGTH: 2.85 Miles**

Section Number	0	1	2		
Section Length (mi)	1.00	1.00	0.85		
Cross Section Information					
Number of Lanes	2	2	2		
Paved Width (ft)	18	17	17		
Lane Width (ft)	9	8	9		
Roadway Condition Information					
SCR (Surface Condition Rating)	98	100	98		
PCR (Pavement Condition Rating)	83	86	86		
Distress Index Values					
Structural Crack Index	100	100	99		
Transverse Cracking Index	100	100	99		
Patching Index	100	100	100		
Rutting Index	98	100	98		
Roughness Condition Index (RCI)	61	64	69		

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: 0502 RIVER ROAD
VAFO : VALLEY FORGE NATIONAL HISTORICAL PARK

COLLECTED: 4/4/2013
NORTHEAST REGION **TOTAL LENGTH: 0.34 Miles**

Section Number	0				
Section Length (mi)	0.34				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	18				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	95				
PCR (Pavement Condition Rating)	95				
Distress Index Values					
Structural Crack Index	95				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	98				
Roughness Condition Index (RCI)	NC				

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

Section 6
Manually Rated Paved Route Condition Rating Sheets

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0102ZZ

LIBRARY LANE ROADS

FROM ROUTE 5004 (YELLOW SPRINGS ROAD)

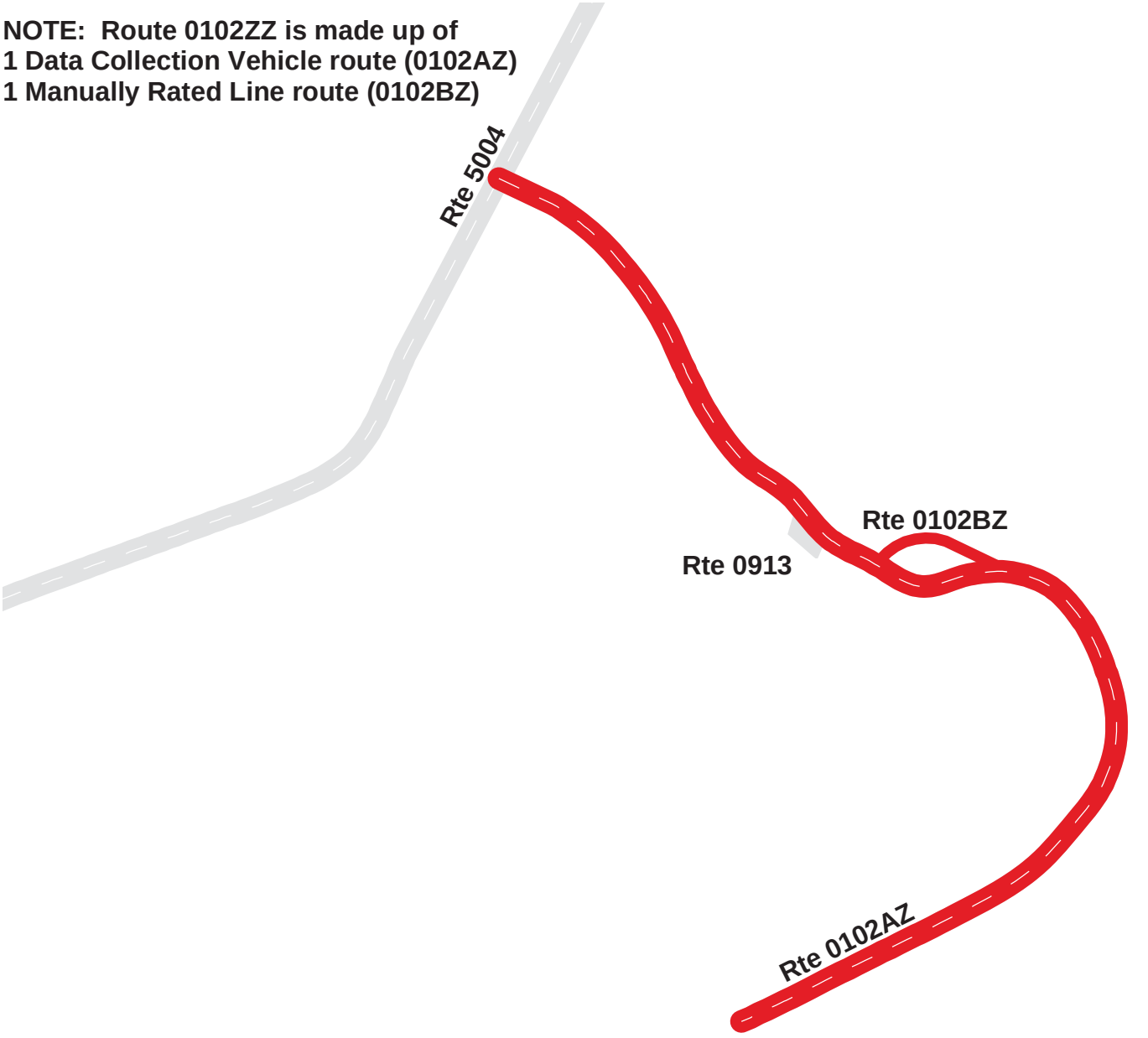
TO ROUTE 5005 (WILSON ROAD)

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0102ZZ	PUBLIC	4/4/2013	N/A	0.35	0.33	11.7
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
1	3	0	N/A	N/A	SUMMARY/4	AS

* Lane miles are based on 11' lane widths

NOTE: Route 0102ZZ is made up of
1 Data Collection Vehicle route (0102AZ)
1 Manually Rated Line route (0102BZ)



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0102BZ

LIBRARY LANE SPUR

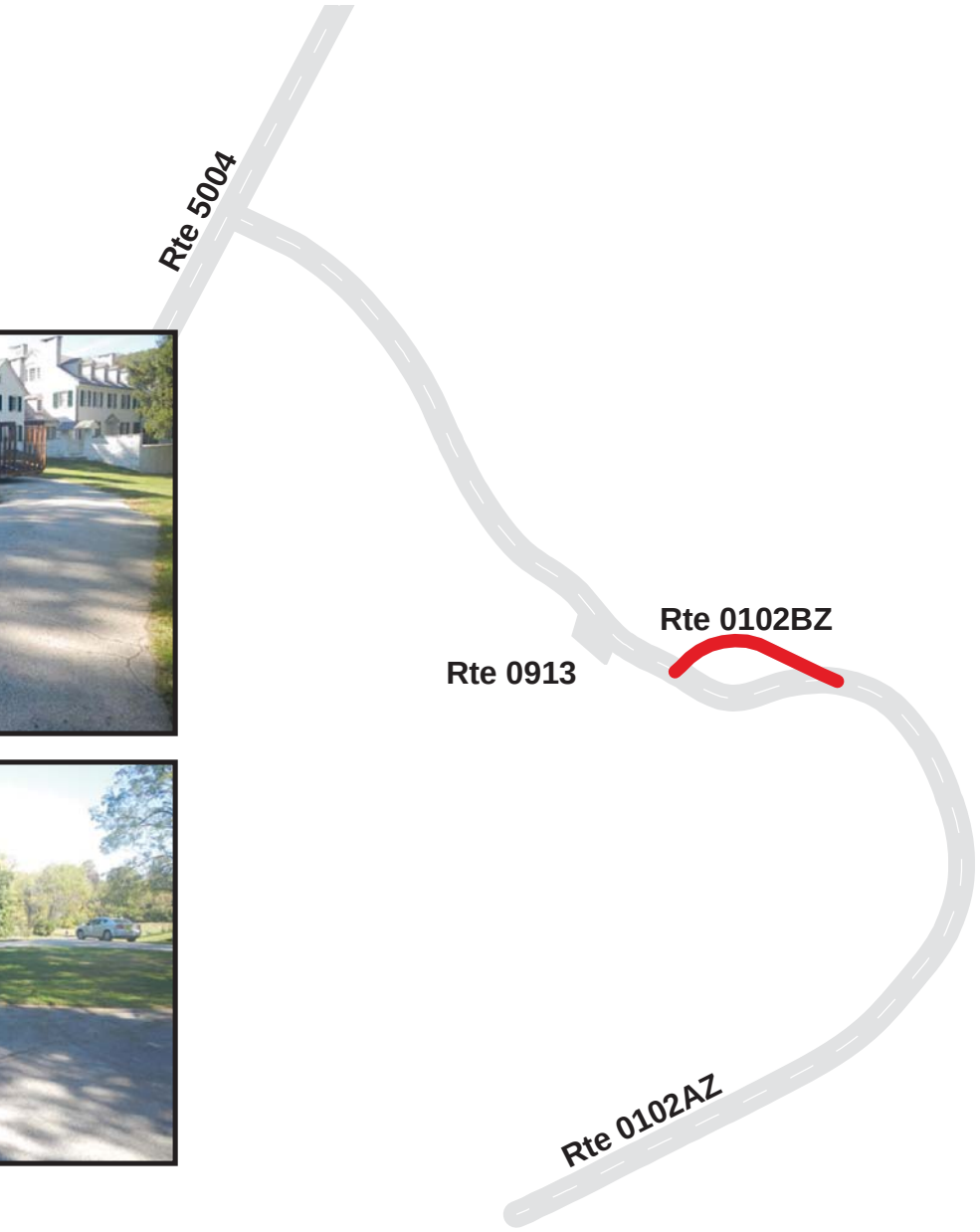
FROM ROUTE 0102AZ (LIBRARY LANE)

TO ROUTE 0102AZ (LIBRARY LANE)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0102BZ	PUBLIC	10/1/2012	1,620	0.03	0.03	11.8
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	1	0	NO CURB AND GUTTER	NO CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



400 200 0 400 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0103

KNOX'S QUARTERS ACCESS ROAD

FROM ROUTE 5001 (STATE ROUTE 252)

TO ROUTE 5001 (STATE ROUTE 252)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0103	PUBLIC	10/1/2012	8,395	0.15	0.16	10
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45	AS

* Lane miles are based on 11' lane widths

1,000 500 0 1,000 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0404

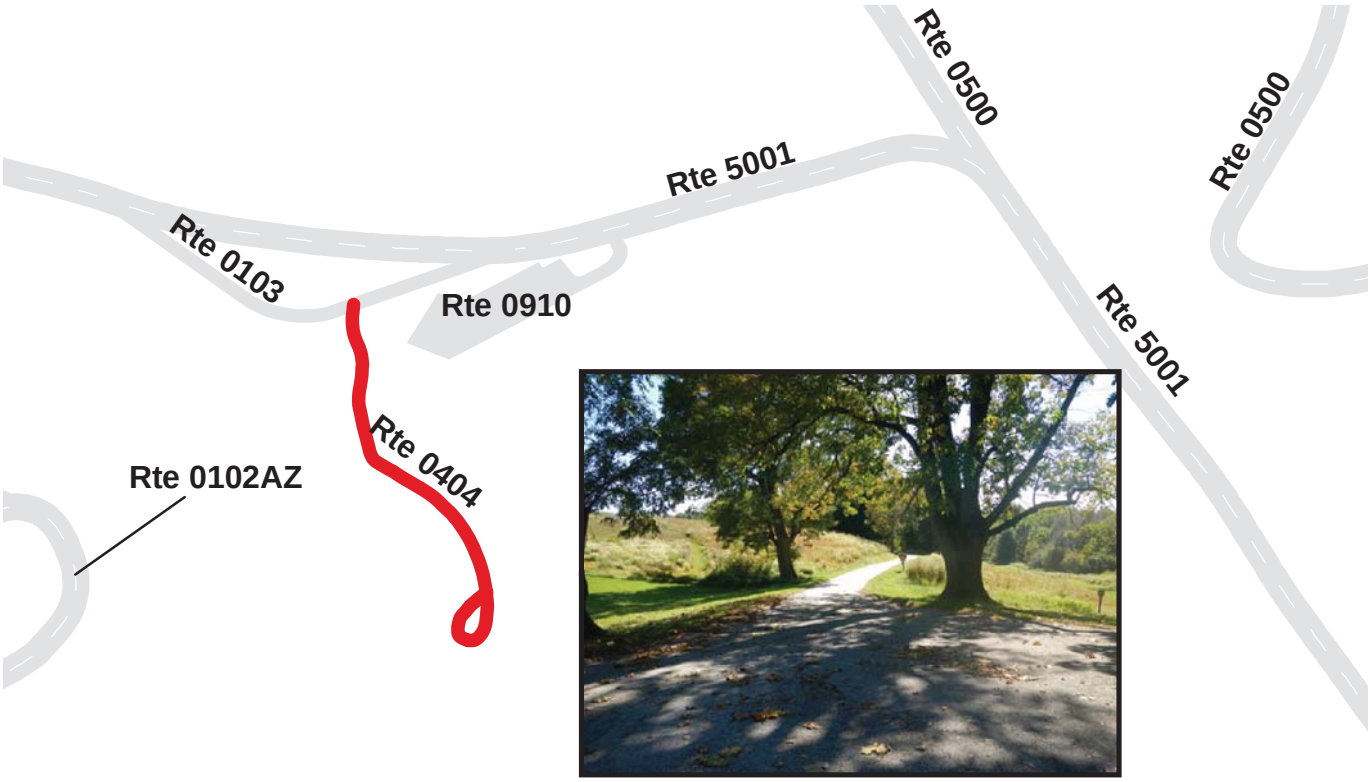
SUPERINTENDENTS RESIDENCE ACCESS ROAD

FROM ROUTE 0103 (KNOX'S QUARTERS ACCESS ROAD)

TO END OF LOOP

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0404	NONPUBLIC	10/1/2012	15,449	0.27	0.21	14
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	POOR/45	AS

* Lane miles are based on 11' lane widths



1,000 500 0 1,000 Feet

N

Section 7
Parking Area
Condition Rating Sheets

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0900

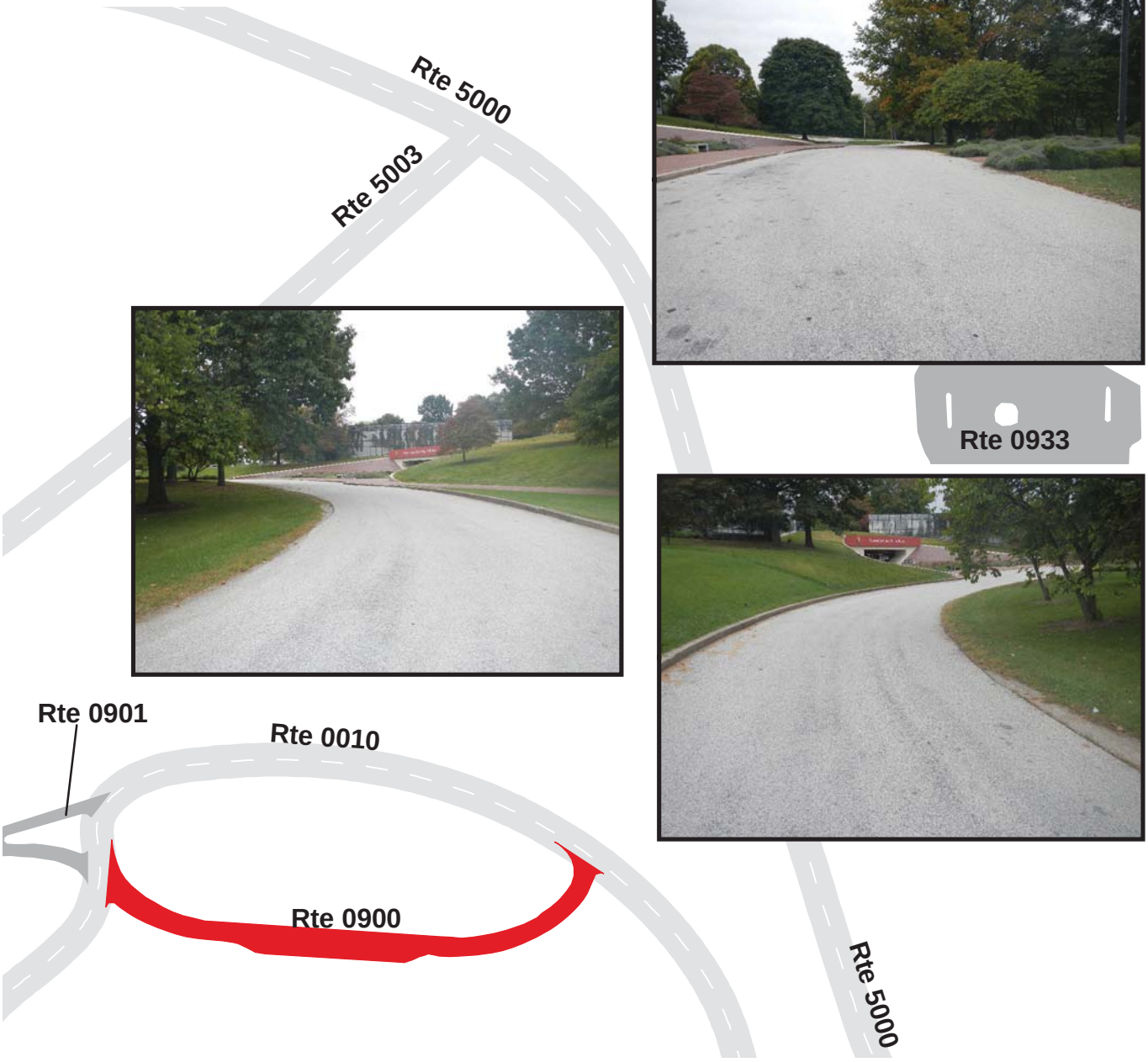
VISITOR CENTER DROP OFF LOOP

FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)

TO ROUTE 0010 (VISITOR CENTER ACCESS ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0900	PUBLIC	10/2/2012	9,877	0.17	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	2	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0901

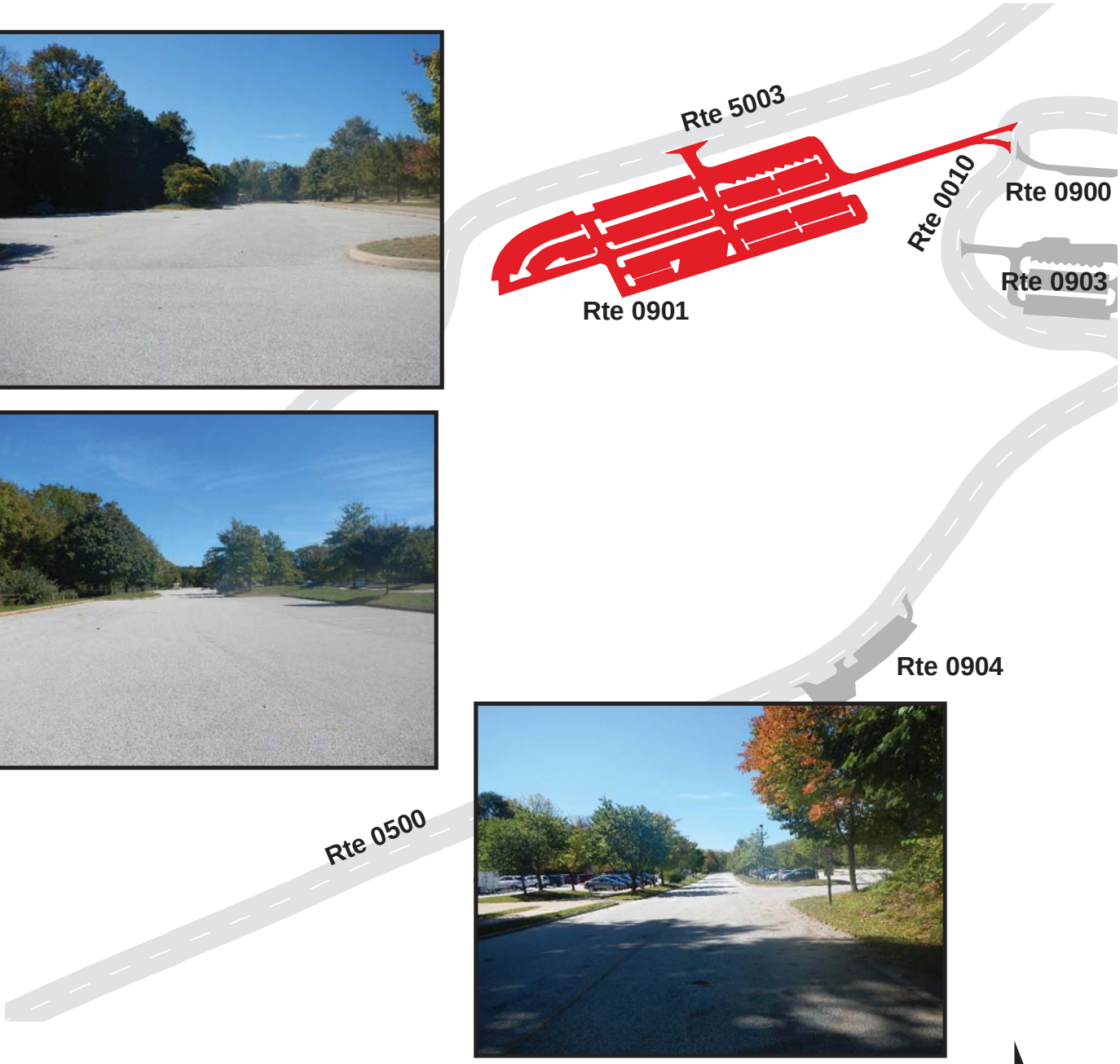
VISITOR CENTER PARKING

FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)

TO ROUTE 5003 (COUNTY LINE ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901	PUBLIC	10/1/2012	203,634	3.51	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	24	1	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0903

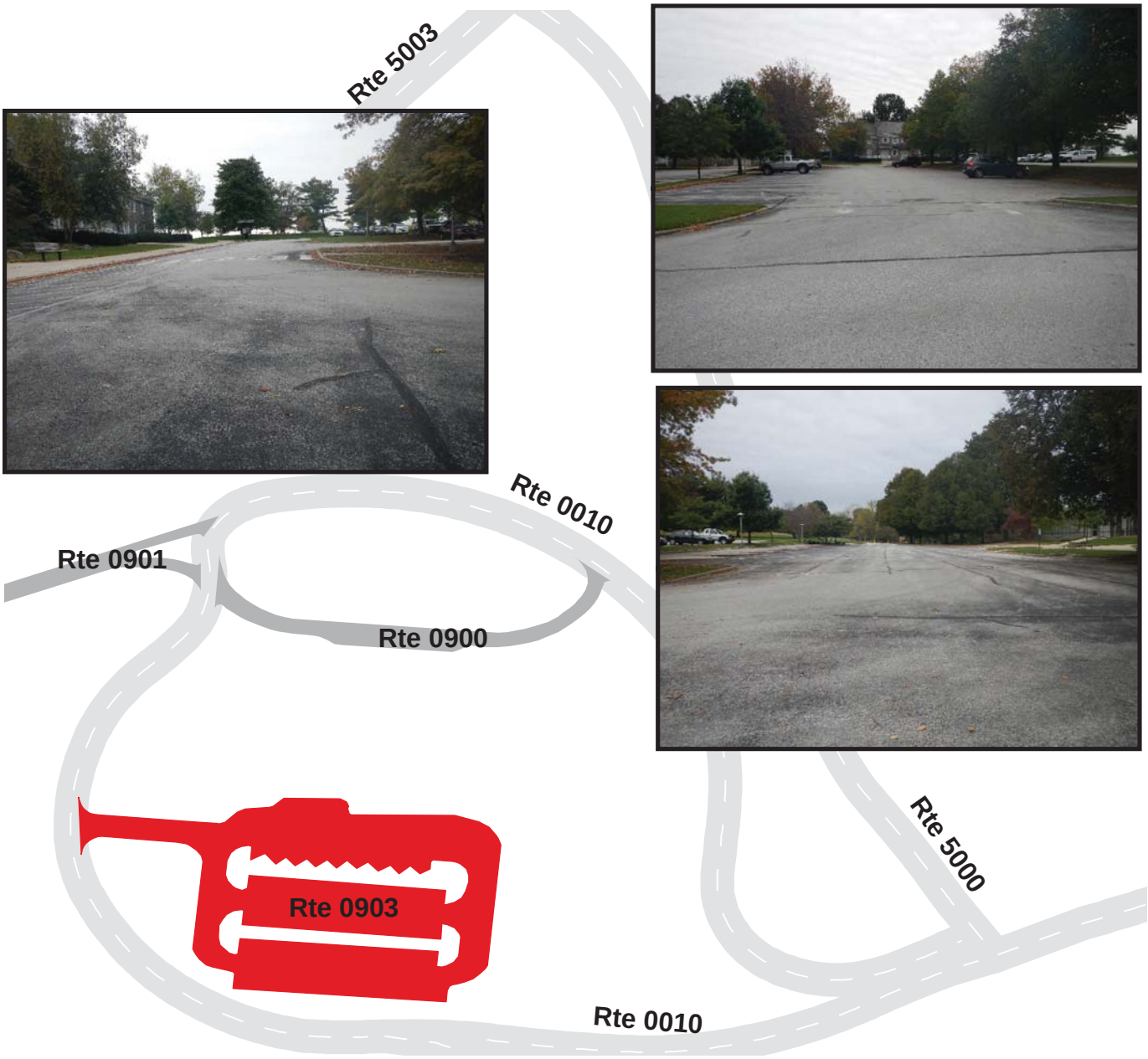
ADMINISTRATIVE PARKING

FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903	PUBLIC	10/2/2012	58,800	1.01	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



450 225 0 450 Feet

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0904

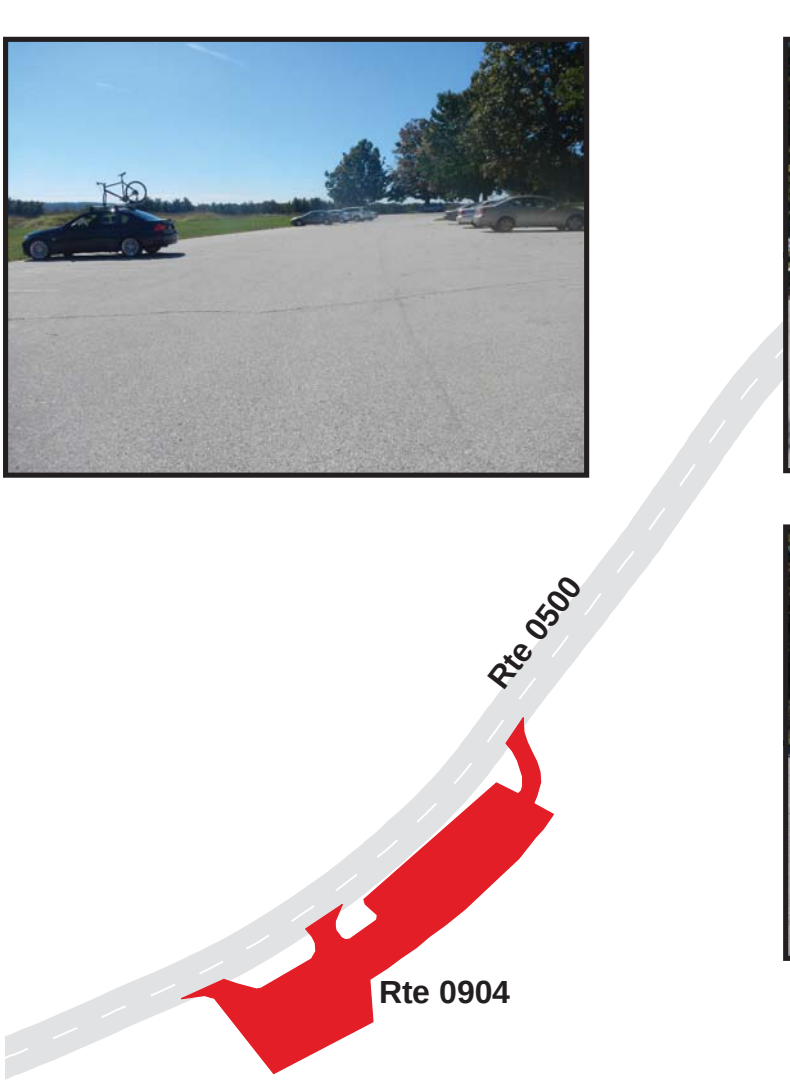
MUHLENBERG'S BRIGADE PARKING

FROM ROUTE 0500 (OUTER LINE DRIVE)

TO ROUTE 0500 (OUTER LINE DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904	PUBLIC	10/1/2012	26,547	0.46	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



450 225 0 450 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0907ZZ

NATIONAL MEMORIAL ARCH PARKING AREAS

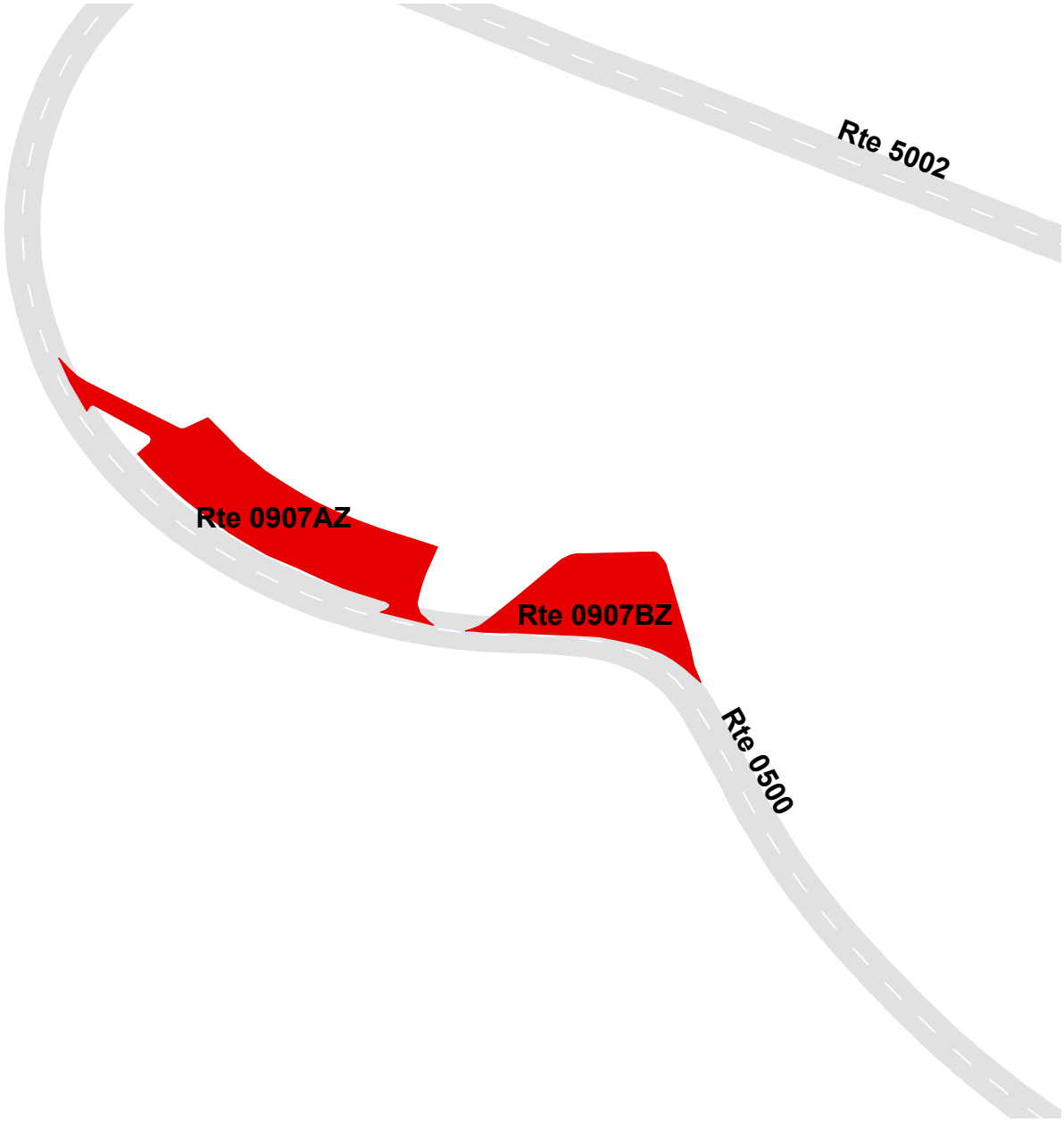
FROM ROUTE 0500 (OUTER LINE DRIVE)

TO PARKING

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0907ZZ	PUBLIC	10/1/2012	27,003	0.47	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	NO CURB	SUMMARY/84

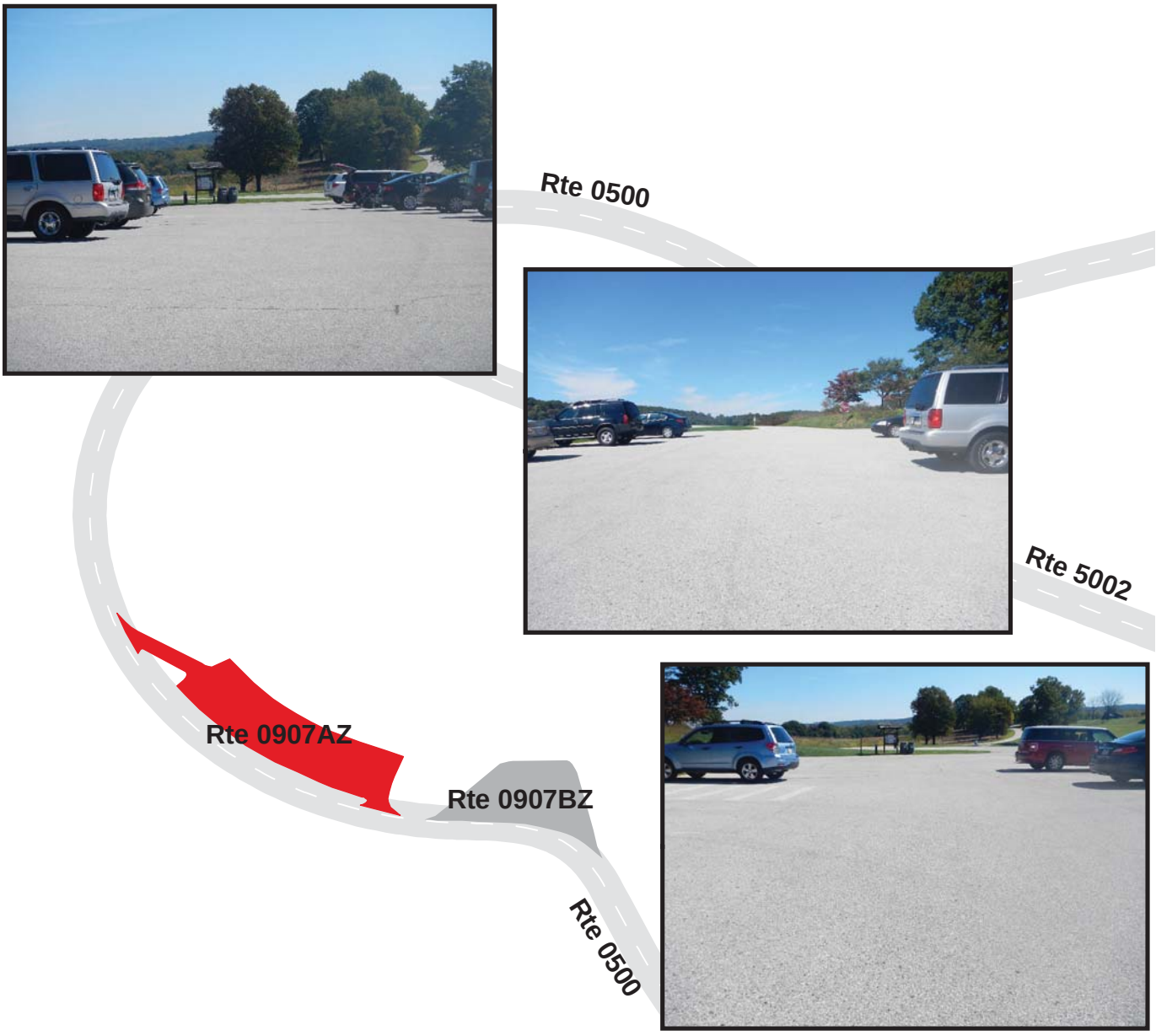
* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0907AZ
NATIONAL MEMORIAL ARCH PARKING A
FROM ROUTE 0500 (OUTER LINE DRIVE)
TO ROUTE 0500 (OUTER LINE DRIVE)
Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0907AZ	PUBLIC	10/1/2012	16,926	0.29	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0907BZ

NATIONAL MEMORIAL ARCH PARKING B

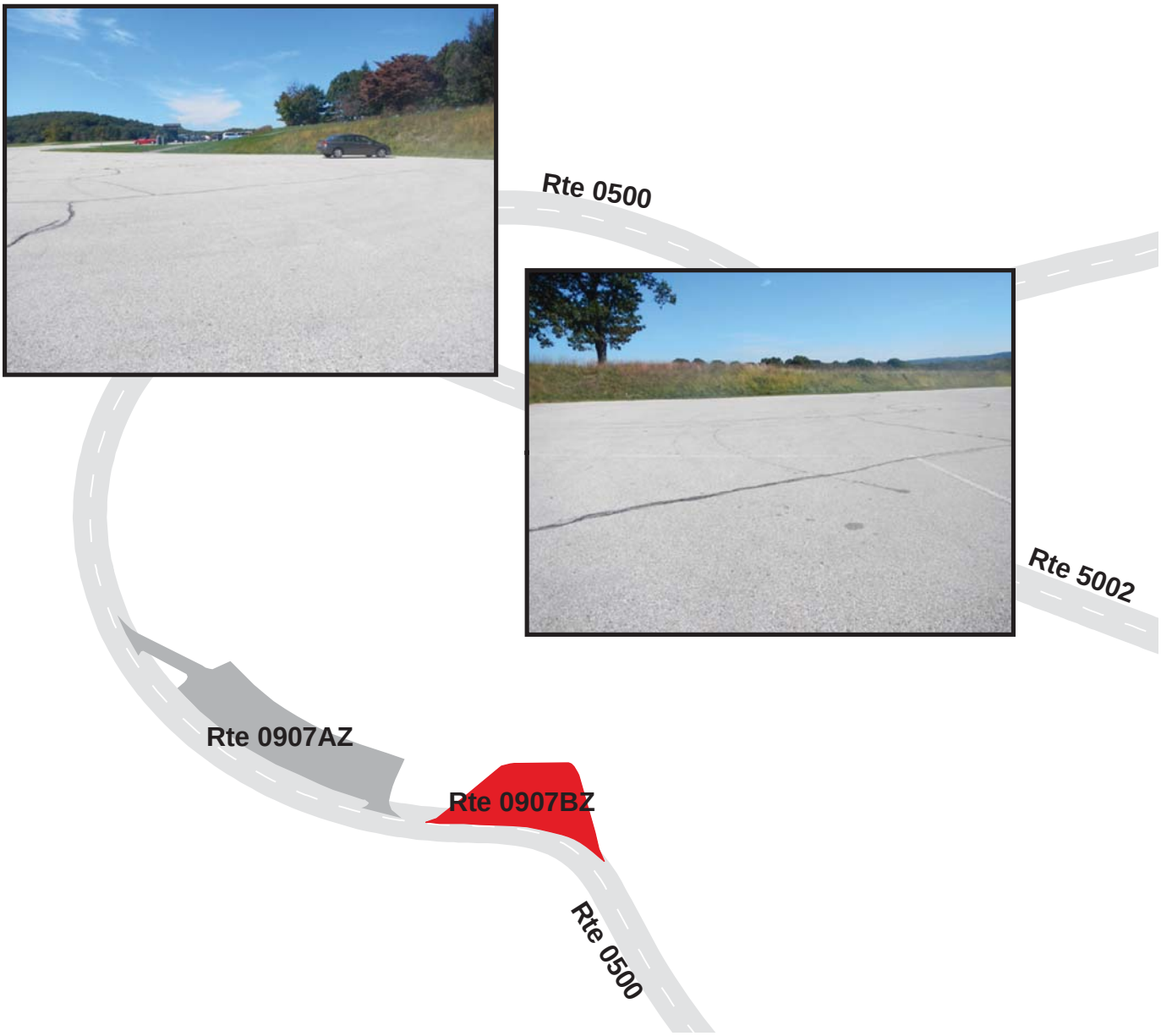
FROM ROUTE 0500 (OUTER LINE DRIVE)

TO PARKING

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0907BZ	PUBLIC	10/1/2012	10,077	0.17	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



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0908

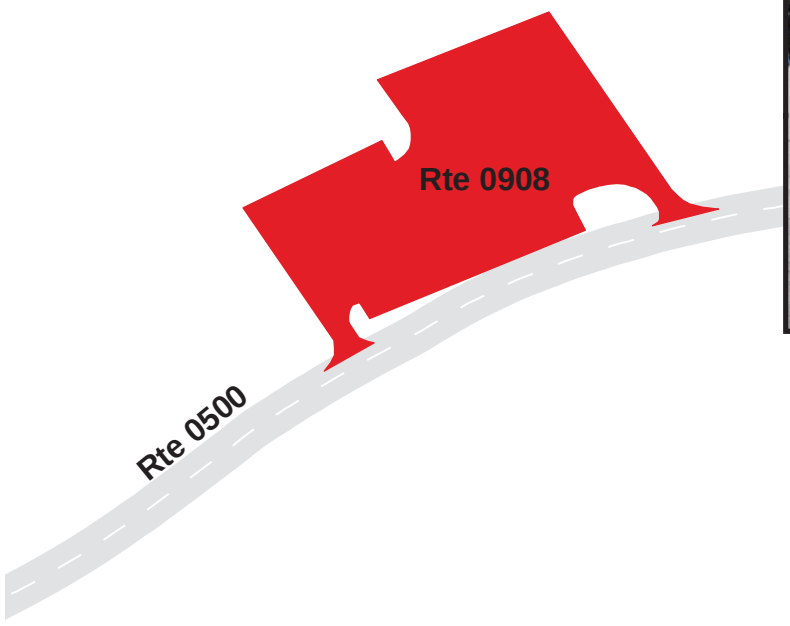
WAYNE'S WOODS PARKING

FROM ROUTE 0500 (OUTER LINE DRIVE)

TO ROUTE 0500 (OUTER LINE DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908	PUBLIC	10/1/2012	39,059	0.67	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

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0909

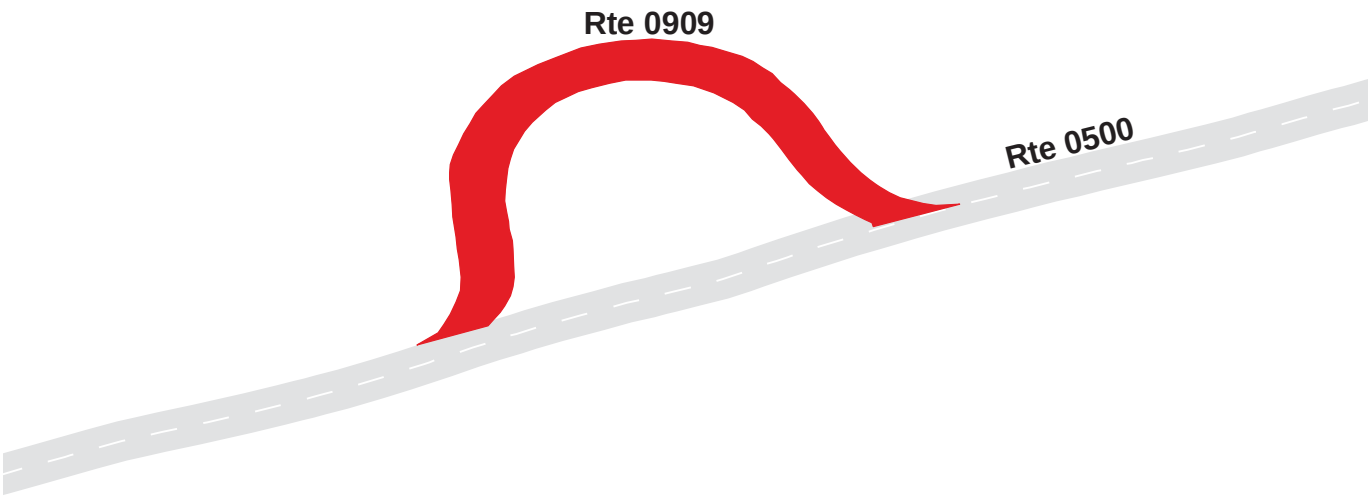
WAYNE'S STATUE PARKING

FROM ROUTE 0500 (OUTER LINE DRIVE)

TO ROUTE 0500 (OUTER LINE DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0909	PUBLIC	10/1/2012	7,196	0.12	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



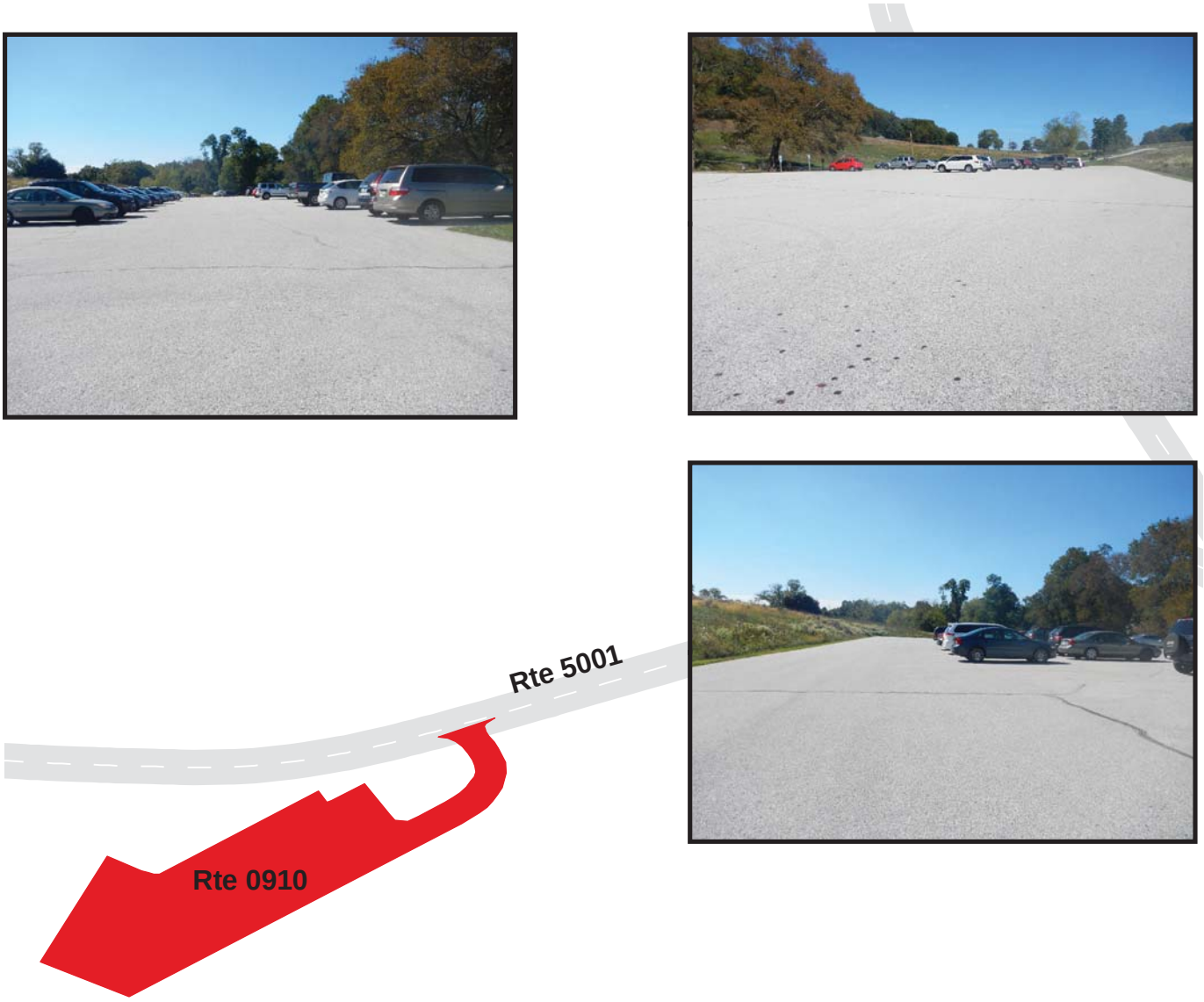
225 112.5 0 225

Feet

VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0910
KNOX'S QUARTERS PARKING
FROM ROUTE 5001 (STATE ROUTE 252)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0910	PUBLIC	10/1/2012	45,642	0.79	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	1	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



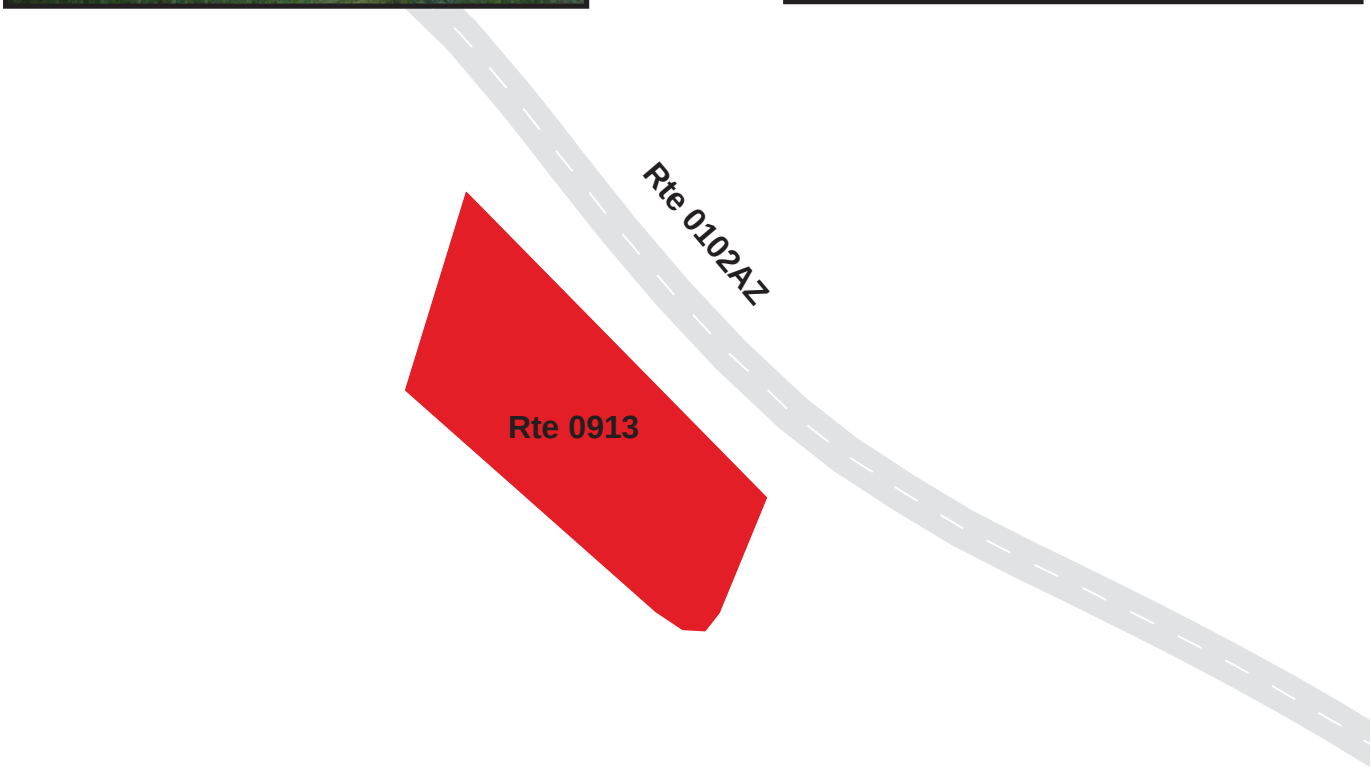
450 225 0 450
Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0913
LIBRARY LANE PARKING
ADJACENT TO ROUTE 0102ZZ (LIBRARY LANE ROADS)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0913	PUBLIC	10/1/2012	907	0.02	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0914

LORD STIRLING'S QUARTERS PARKING

FROM ROUTE 5004 (YELLOW SPRINGS ROAD)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0914	NONPUBLIC	10/1/2012	3,935	0.07	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

140 70 0 140 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0916

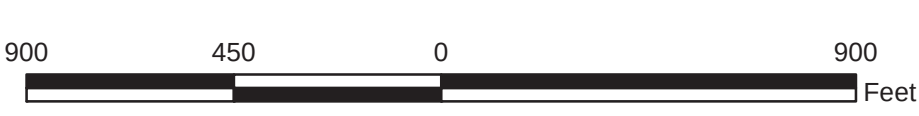
WHITTLE HOUSE AND DRIVEWAY PARKING

FROM ROUTE 5005 (WILSON ROAD)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0916	NONPUBLIC	10/1/2012	5,673	0.10	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



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0917

STEUBEN MEMORIAL INFORMATION CENTER PARKING

FROM ROUTE 5000 (STATE ROUTE 23)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0917	PUBLIC	10/1/2012	28,483	0.49	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
1	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths

360 180 0 360

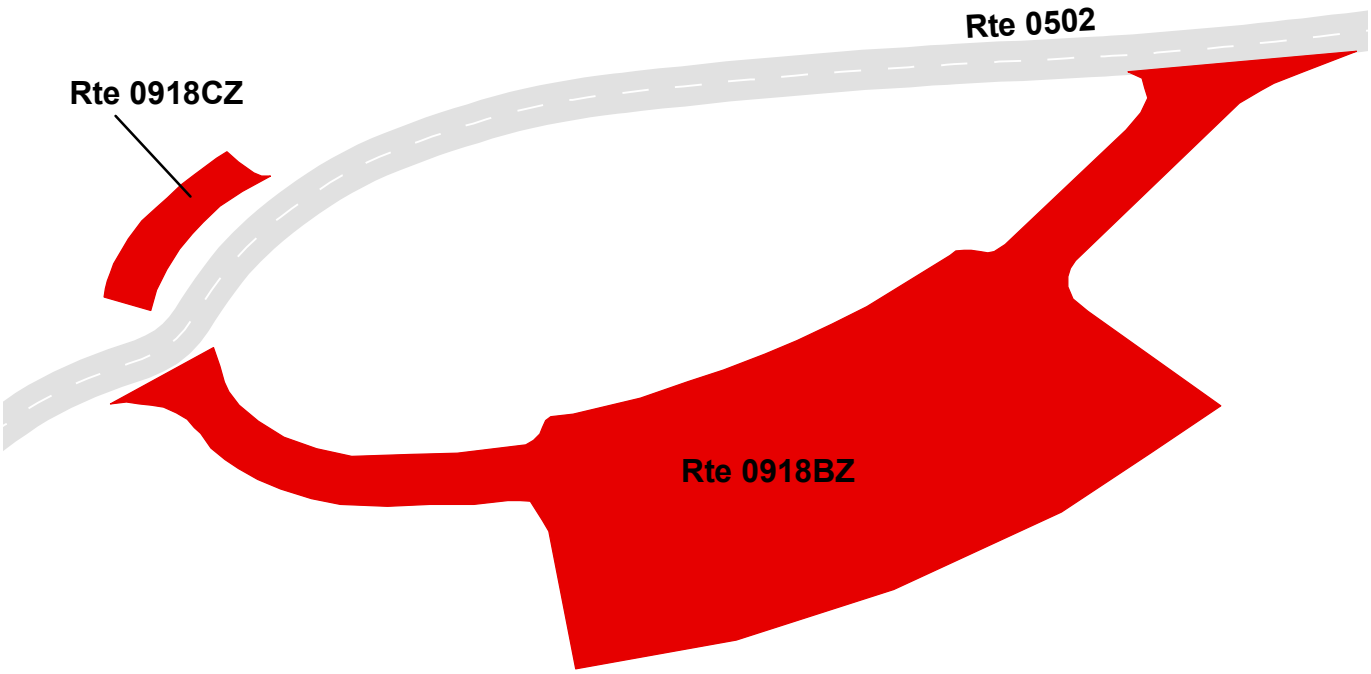
Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0918ZZ
WASHINGTON'S HEADQUARTERS PARKING AREAS
FROM ROUTE 0502 (RIVER ROAD)
TO ROUTE 0502 (RIVER ROAD)
Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0918ZZ	PUBLIC	10/1/2012	30,073	0.52	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	2	0	NO CURB AND GUTTER	CONCRETE CURB	SUMMARY/90

* Lane miles are based on 11' lane widths



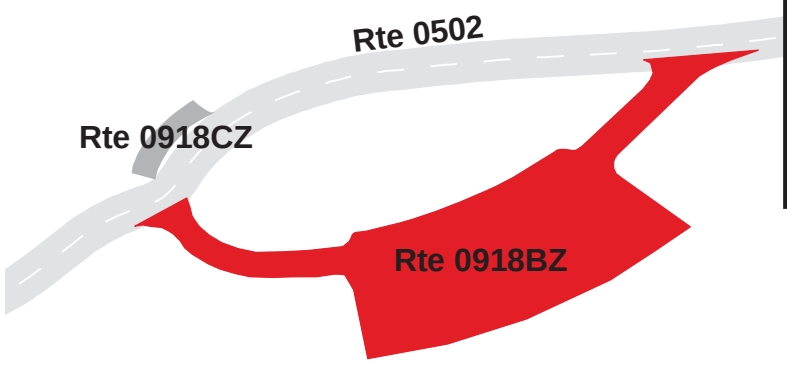
180 90 0 180 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0918BZ
WASHINGTON'S HEADQUARTERS UPPER PARKING B
FROM ROUTE 0502 (RIVER ROAD)
TO ROUTE 0502 (RIVER ROAD)
Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0918BZ	PUBLIC	10/1/2012	28,856	0.50	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



360 180 0 360
Feet

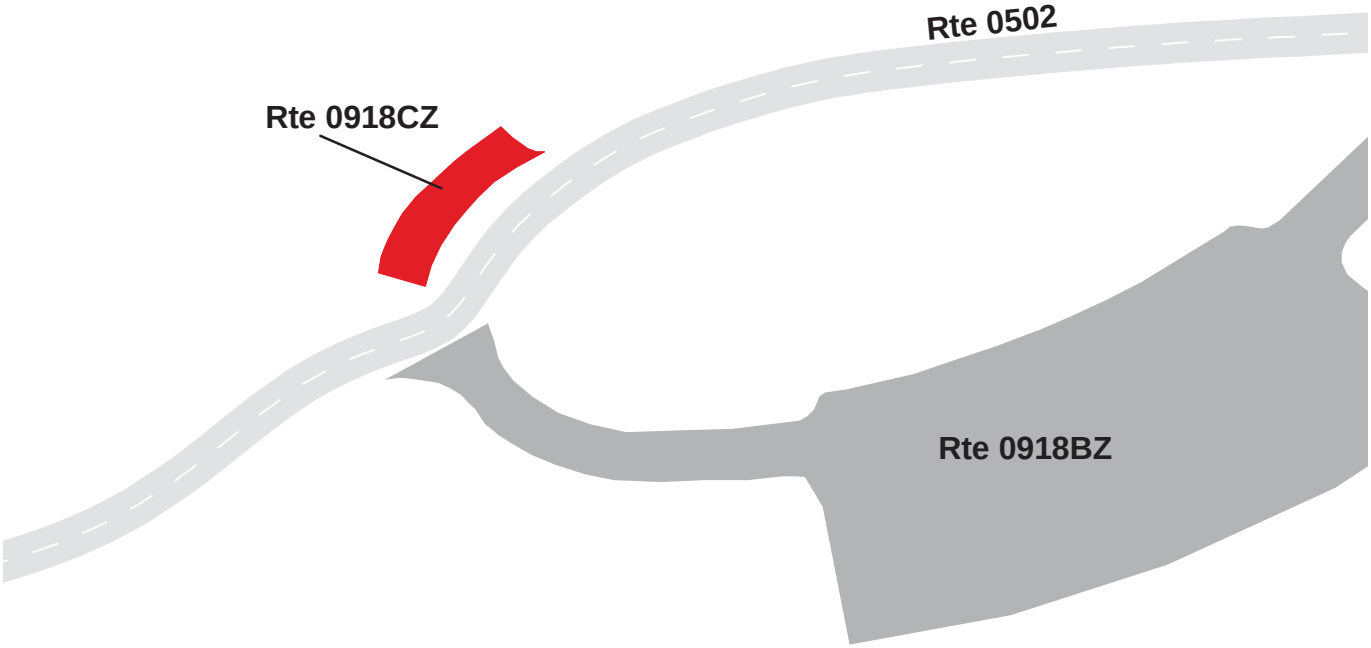
N

VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0918CZ
WASHINGTON'S HEADQUARTERS HANDICAP
ADJACENT TO ROUTE 0502 (RIVER ROAD)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0918CZ	PUBLIC	10/1/2012	1,217	0.02	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0926
REDOUBT 3 PARKING
ADJACENT TO ROUTE 0501 (INNER LINE DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0926	PUBLIC	10/2/2012	4,093	0.07	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

140 70 0 140 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0927

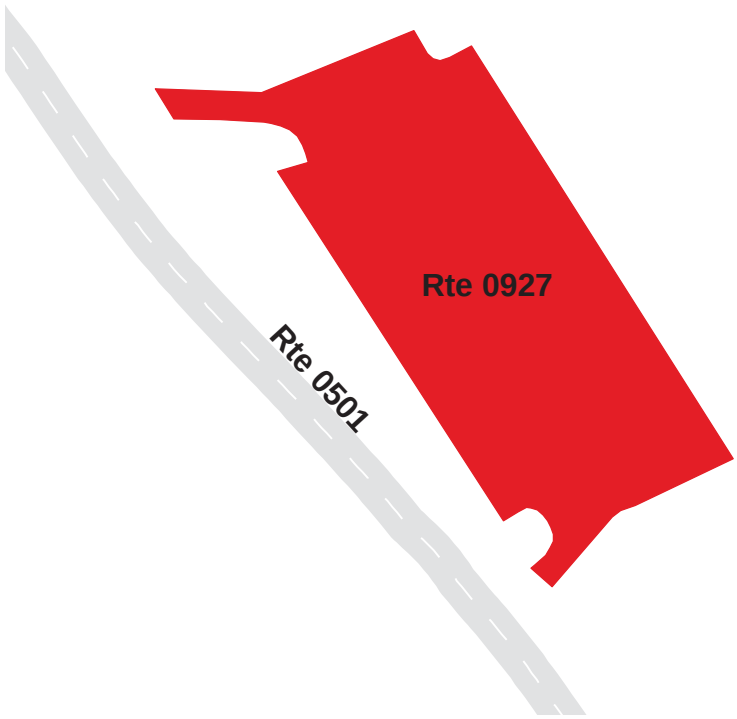
ARTILLERY PARK PARKING

FROM ROUTE 0501 (INNER LINE DRIVE)

TO ROUTE 0501 (INNER LINE DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0927	PUBLIC	10/2/2012	39,261	0.68	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



270 135 0 270

Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0929

VARNUM'S HEADQUARTERS PARKING

FROM ROUTE 0501 (INNER LINE DRIVE)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0929	PUBLIC	10/2/2012	26,083	0.45	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

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0930

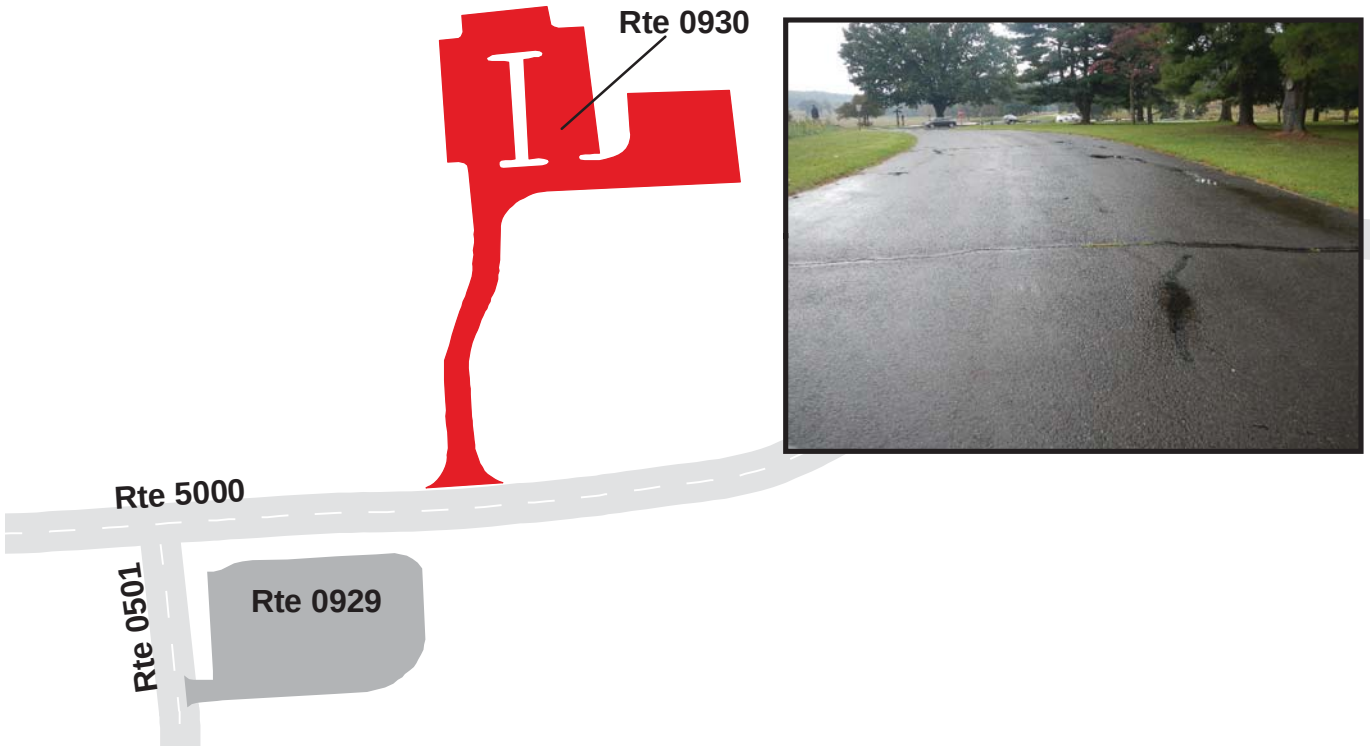
VARNUM'S PICNIC AREA PARKING

FROM ROUTE 5000 (STATE ROUTE 23)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0930	PUBLIC	10/2/2012	37,508	0.65	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



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0931

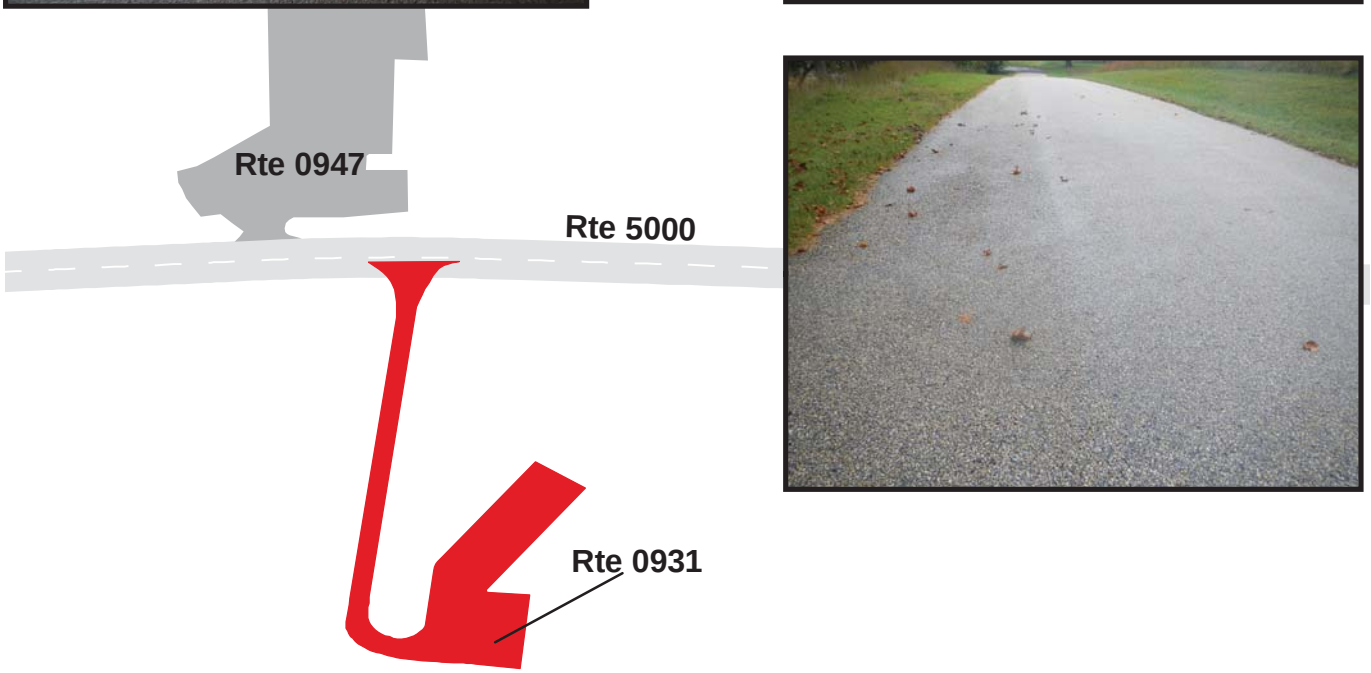
HUNTINGTON'S QUARTERS PARKING

FROM ROUTE 5000 (STATE ROUTE 23)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0931	PUBLIC	10/2/2012	32,522	0.56	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	1	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



540 270 0 540 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0932

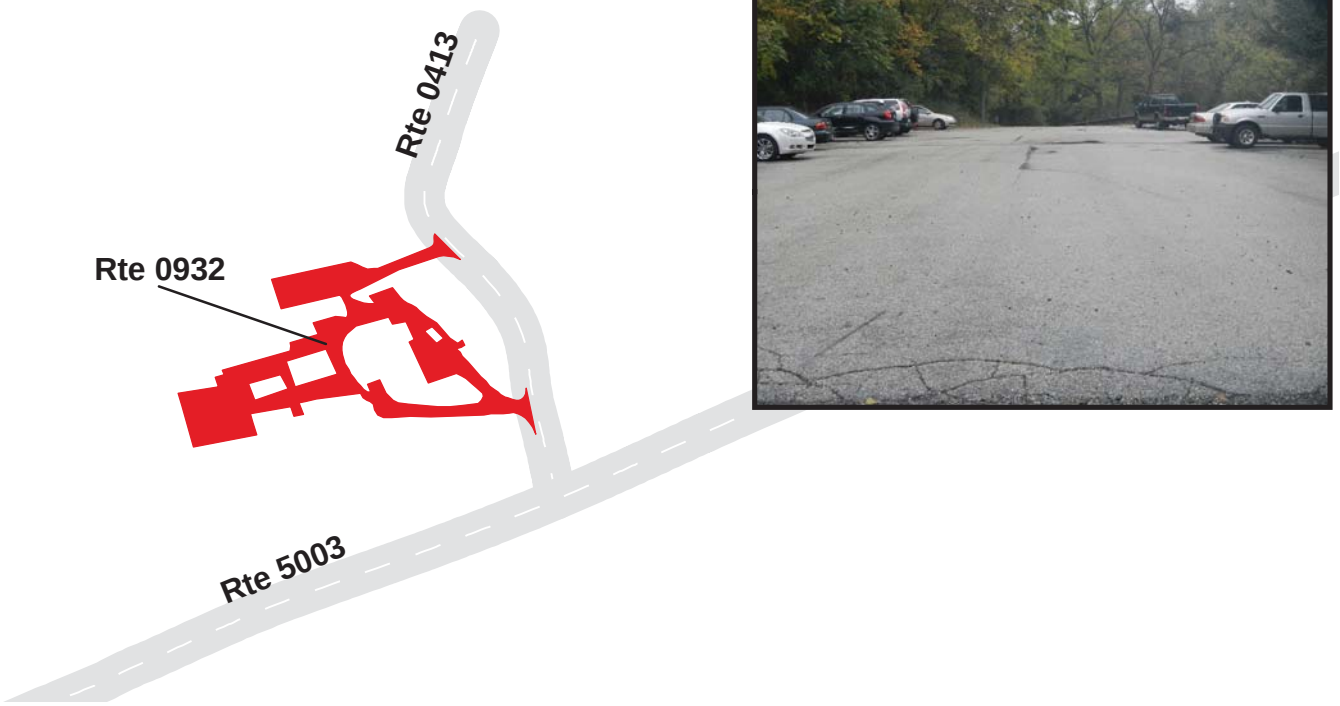
MAINTENANCE AREA

FROM ROUTE 0413 (QUARRY ROAD)

TO ROUTE 0413 (QUARRY ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0932	NONPUBLIC	10/2/2012	71,271	1.23	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	3	NO CURB AND GUTTER	CONCRETE & WOOD CURB	FAIR/73

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0933

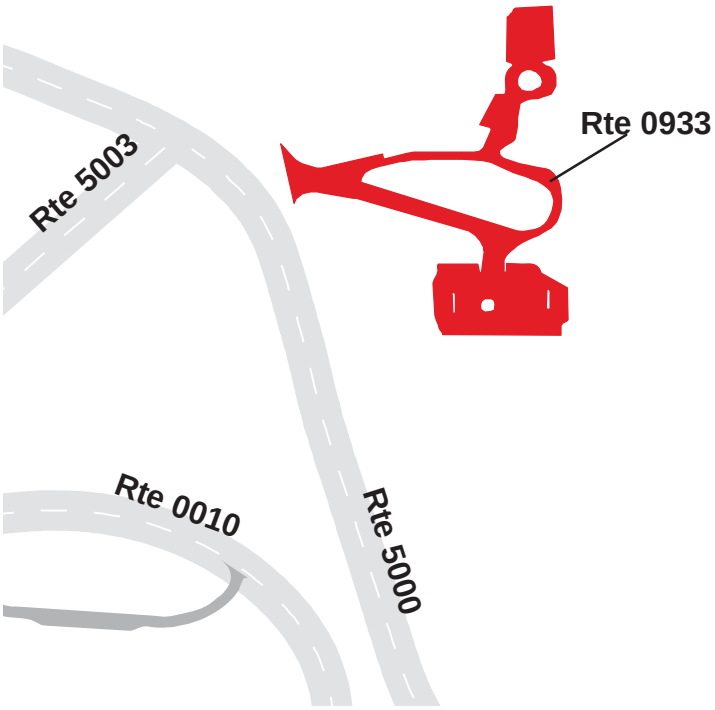
KENNEDY MANSION PARKING

FROM ROUTE 5000 (STATE ROUTE 23)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0933	PUBLIC	10/2/2012	50,213	0.87	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



720 360 0 720

Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0934

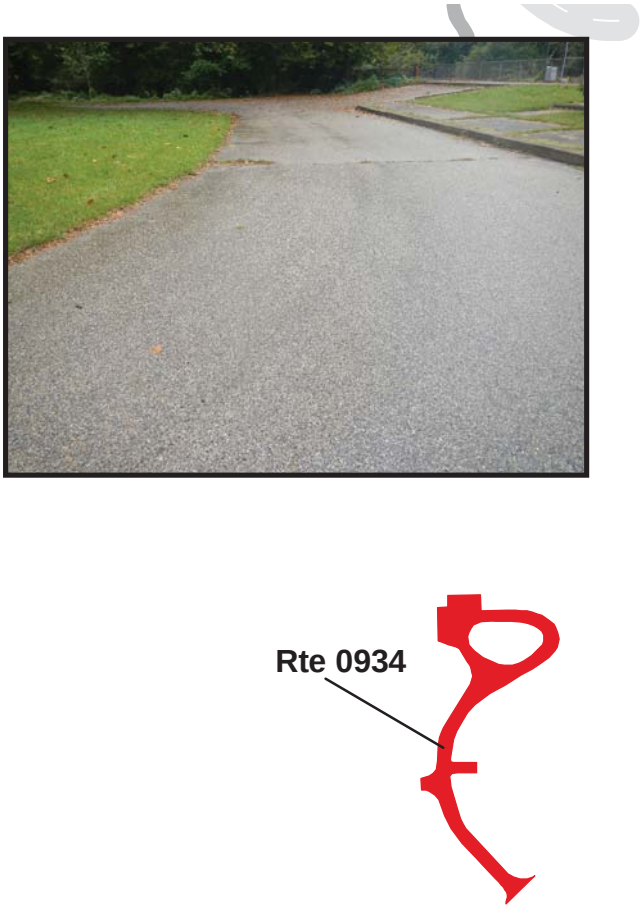
PORT KENNEDY TRAIN STATION PARKING

FROM OLD TROOPER ROAD

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0934	PUBLIC	10/2/2012	20,019	0.35	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE & WOOD CURB	POOR/45

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0935

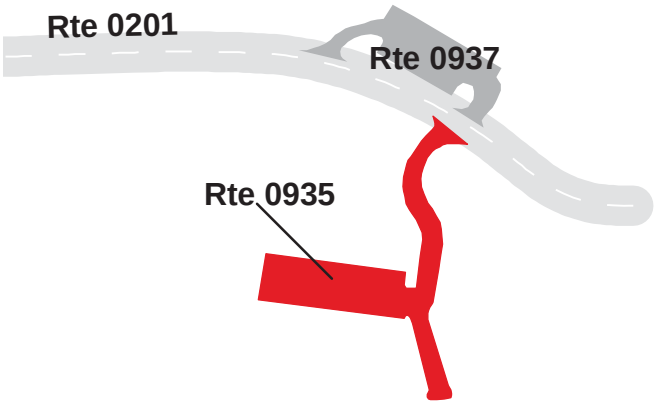
BETZWOOD BOAT RAMP PARKING

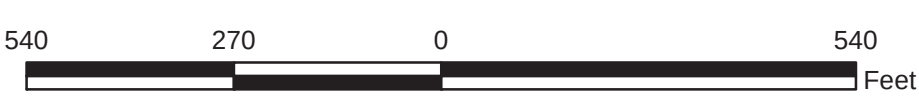
FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0935	PUBLIC	10/2/2012	16,132	0.28	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





VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0937

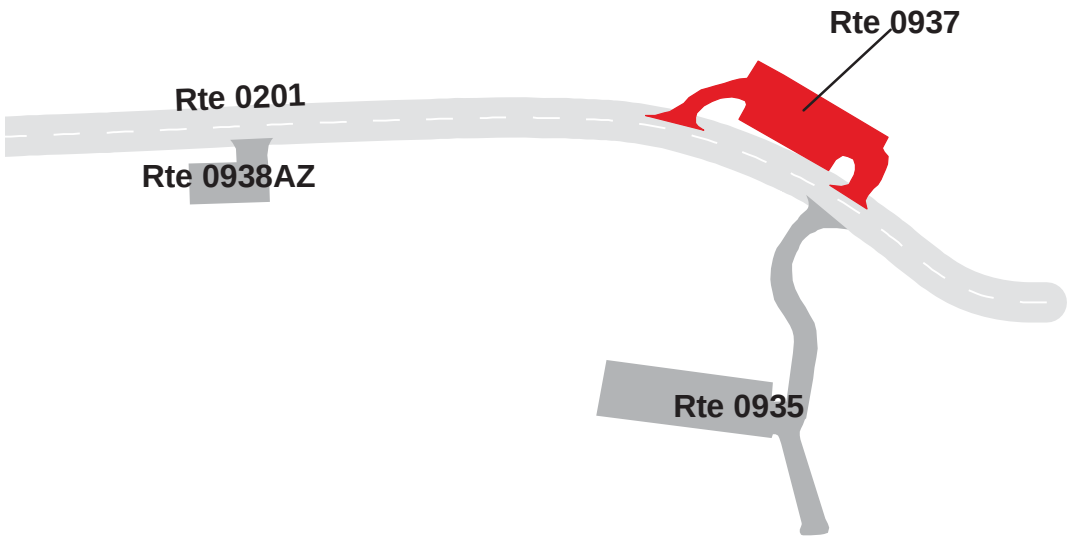
BETZWOOD BIKE PATH PARKING

FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0937	PUBLIC	10/2/2012	9,645	0.17	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



450 225 0 450 Feet

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0938ZZ

BETZWOOD PICNIC AREA PARKING AREAS

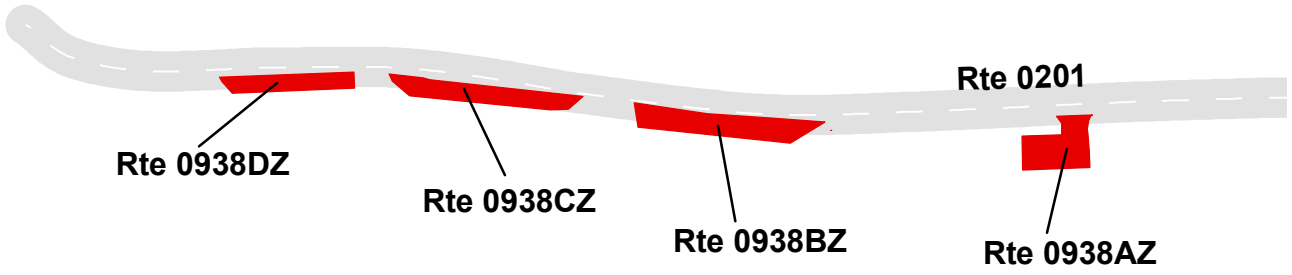
FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

TO PARKING

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0938ZZ	PUBLIC	10/2/2012	15,246	0.26	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	SUMMARY/73

* Lane miles are based on 11' lane widths



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0938AZ

BETZWOOD PICNIC AREA PARKING A

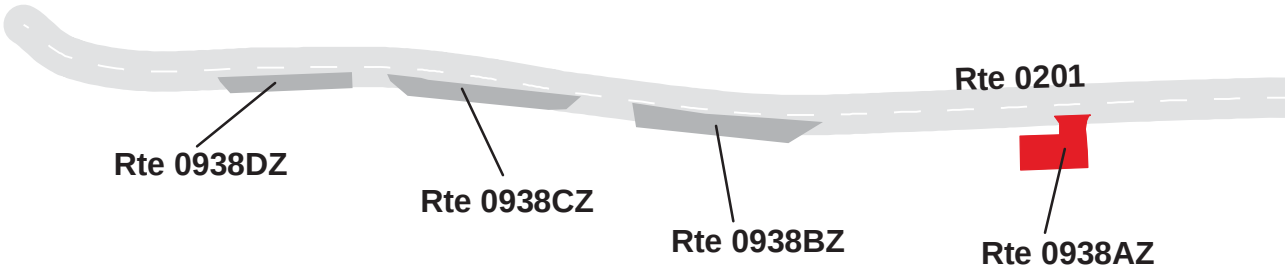
FROM ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

TO PARKING

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0938AZ	PUBLIC	10/2/2012	3,618	0.06	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

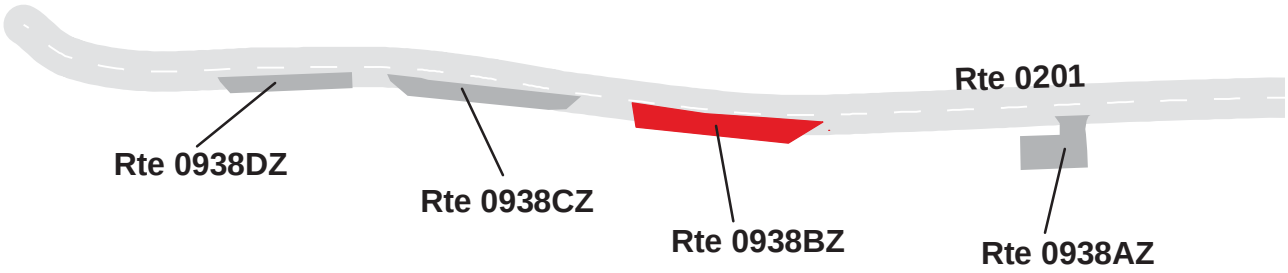


VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0938BZ
BETZWOOD PICNIC AREA PARKING B
ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0938BZ	PUBLIC	10/2/2012	4,943	0.09	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

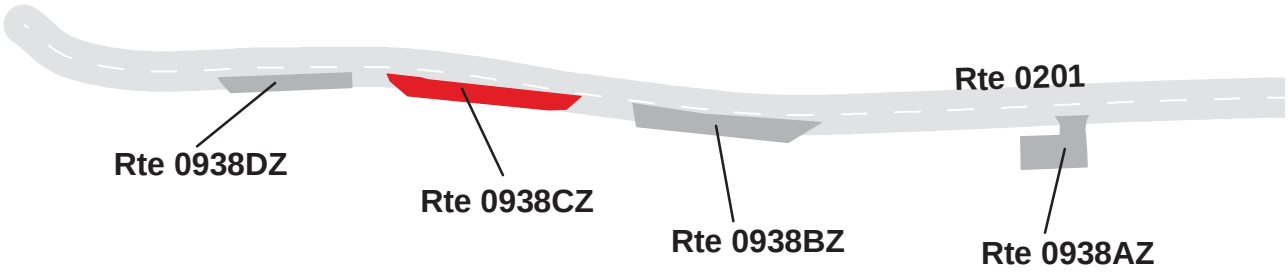


VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0938CZ
BETZWOOD PICNIC AREA PARKING C
ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0938CZ	PUBLIC	10/2/2012	3,995	0.07	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

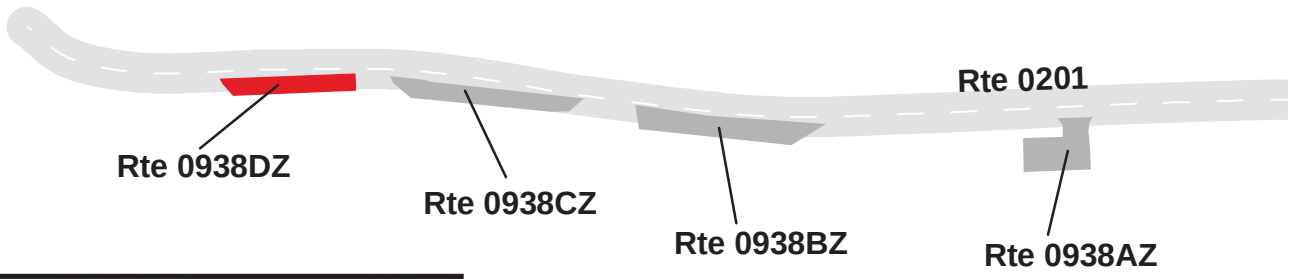


VALLEY FORGE NATIONAL HISTORICAL PARK
Route 0938DZ
BETZWOOD PICNIC AREA PARKING D
ADJACENT TO ROUTE 0201 (BETZWOOD PICNIC AREA ROAD)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0938DZ	PUBLIC	10/2/2012	2,690	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



VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0939

LOUGHLIN HOUSE PARKING

FROM TROOPER ROAD

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0939	NONPUBLIC	10/2/2012	3,204	0.06	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

450 225 0 450 Feet

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0940

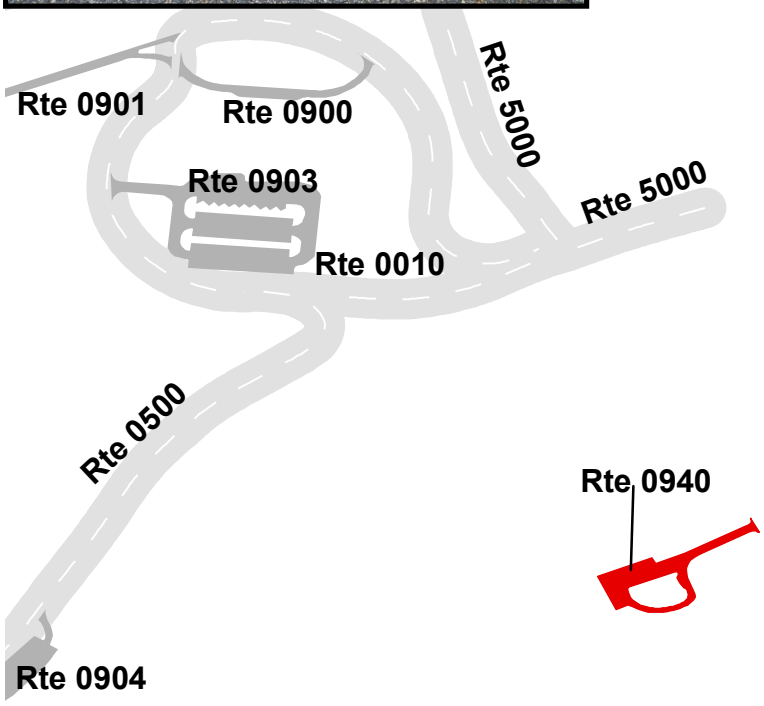
RANGER STATION PARKING

FROM NORTH GULPH ROAD

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0940	PUBLIC	10/2/2012	15,479	0.27	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



1,000 500 0 1,000 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0947

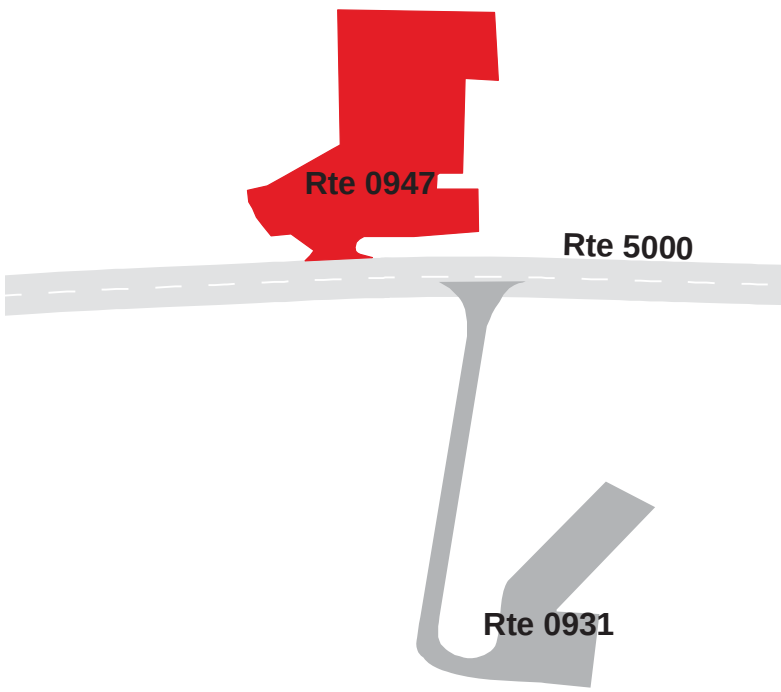
CHAPEL PARKING AREA

FROM ROUTE 5000 (STATE ROUTE 23)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0947	PUBLIC	10/2/2012	48,275	0.83	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



540 270 0 540 Feet

N

VALLEY FORGE NATIONAL HISTORICAL PARK

Route 0948

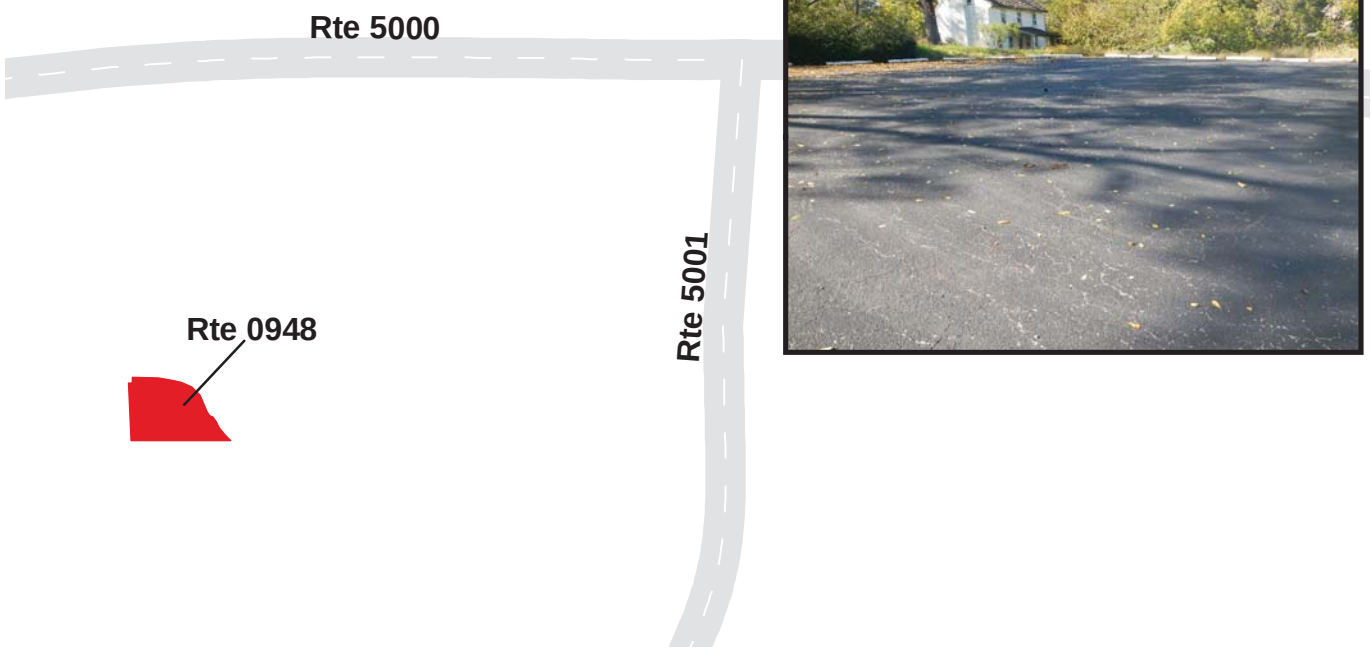
POSA PARKING AREA

FROM OWEN DRIVE

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0948	PUBLIC	10/1/2012	4,269	0.07	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



Section 8
Parkwide/Route
Maintenance Features Summaries

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

VAFO: 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	--	35
CURB	16,786	--
DROP INLET	--	71
GATE	--	20
GUARD/GUIDE RAIL	1,447	--
CABLE	0	--
NON-CABLE	1,447	--
GUARD/GUIDE WALL	32	--
BOLLARD	32	--
TEMPORARY BARRIER	0	--
NON TEMP/BOLLARD	0	--
INTERSECTION	--	91
LOW WATER CROSSING	0	0
MILE MARKER	--	0
OVERPASS	--	0
PARK BOUNDARY	--	0
PAVED DITCH	0	--
PULLOUT	2,001	6
RAILROAD CROSSING	--	0
RETAINING WALL	195	2
SIGN	--	240
STATE BOUNDARY	--	0
TRAFFIC LIGHT	--	5
TUNNEL	0	0

VAFO: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0010 VISITOR CENTER ACCESS ROAD	ROUTE 0102ZZ LIBRARY LANE ROADS	ROUTE 0106 ORCHARD LANE	ROUTE 0201 BETZWOOD PICNIC AREA ROAD	ROUTE 0213 INNER LINE SPUR	ROUTE 0413 QUARRY ROAD	UNIT
BRIDGE	0	0	0	0	0	0	EACH
CATTLE GUARD	0	0	0	0	0	0	EACH
CULVERT	0	1	0	5	0	0	EACH
CURB	1,473	0	27	0	0	0	LINEAR FEET
DROP INLET	6	3	0	0	0	0	EACH
GATE	2	0	1	1	1	1	EACH
GUARD/GUIDE RAIL	0	0	0	53	0	0	LINEAR FEET
CABLE	0	0	0	0	0	0	LINEAR FEET
NON-CABLE	0	0	0	53	0	0	LINEAR FEET
GUARD/GUIDE WALL	32	0	0	0	0	0	LINEAR FEET
BOLLARD	32	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	8	4	10	4	6	EACH
LOW WATER CROSSING	0	0	0	0	0	0	EACH
LOW WATER CROSSING	0	0	0	0	0	0	LINEAR FEET
MILE MARKER	0	0	0	0	0	0	EACH
OVERPASS	0	0	0	0	0	0	EACH
PARK BOUNDARY	0	0	0	0	0	0	EACH
PAVED DITCH	0	0	0	0	0	0	LINEAR FEET
PULLOUT	0	0	0	0	0	0	EACH
PULLOUT	0	0	0	0	0	0	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	0	1	0	0	0	0	EACH
RETAINING WALL	0	153	0	0	0	0	LINEAR FEET
SIGN	42	10	4	9	7	5	EACH
STATE BOUNDARY	0	0	0	0	0	0	EACH
TRAFFIC LIGHT	5	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	LINEAR FEET

VAFO: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0415 BRITTAIN LANE	ROUTE 0500 OUTER LINE DRIVE	ROUTE 0501 INNER LINE DRIVE	ROUTE 0502 RIVER ROAD			UNIT
BRIDGE	0	0	0	0			EACH
CATTLE GUARD	0	0	0	0			EACH
CULVERT	0	15	12	0			EACH
CURB	0	100	14,642	544			LINEAR FEET
DROP INLET	0	4	18	7			EACH
GATE	0	2	5	1			EACH
GUARD/GUIDE RAIL	0	523	871	0			LINEAR FEET
CABLE	0	0	0	0			LINEAR FEET
NON-CABLE	0	523	871	0			LINEAR FEET
GUARD/GUIDE WALL	0	0	0	0			LINEAR FEET
BOLLARD	0	0	0	0			LINEAR FEET
TEMPORARY BARRIER	0	0	0	0			LINEAR FEET
NON TEMP/BOLLARD	0	0	0	0			LINEAR FEET
INTERSECTION	3	18	14	9			EACH
LOW WATER CROSSING	0	0	0	0			EACH
LOW WATER CROSSING	0	0	0	0			LINEAR FEET
MILE MARKER	0	0	0	0			EACH
OVERPASS	0	0	0	0			EACH
PARK BOUNDARY	0	0	0	0			EACH
PAVED DITCH	0	0	0	0			LINEAR FEET
PULLOUT	0	6	0	0			EACH
PULLOUT	0	2,001	0	0			LINEAR FEET
RAILROAD CROSSING	0	0	0	0			EACH
RETAINING WALL	0	0	0	1			EACH
RETAINING WALL	0	0	0	42			LINEAR FEET
SIGN	1	80	66	16			EACH
STATE BOUNDARY	0	0	0	0			EACH
TRAFFIC LIGHT	0	0	0	0			EACH
TUNNEL	0	0	0	0			EACH
TUNNEL	0	0	0	0			LINEAR FEET

STRUCTURE LIST

No data available for this section.

Section 9
Route Maintenance Features
Road Logs

Valley Forge National Historical Park

Federal Lands Highway
Road Inventory Program

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: VISITOR CENTER 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 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	N/A	ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (STATE ROUTE 23)
0.000	0.506	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (N GULPH ROAD / NON-NPS)
0.005	0.005	SIGN	N/A	REGULATORY, RIGHT TURN SIGNAL
0.005	0.005	SIGN	N/A	GUIDE, NORTH GULPH RD
0.005	0.005	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.005	0.005	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.005	0.005	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.005	0.005	TRAFFIC LIGHT	N/A	X4
0.005	0.005	TRAFFIC LIGHT	N/A	X3
0.005	0.005	TRAFFIC LIGHT	RIGHT	X4
0.005	0.005	TRAFFIC LIGHT	RIGHT	X5
0.008	0.008	SIGN	RIGHT	GUIDE, VALLEY FORGE NATIONAL HISTORICAL PARK
0.008	0.008	SIGN	RIGHT	GUIDE, NATIONAL PARK SERVICE
0.008	0.025	CURB	LEFT	N/A
0.014	0.014	SIGN	RIGHT	GUIDE, VISITOR CENTER
0.024	0.024	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.028	0.028	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.028	0.028	SIGN	LEFT	REGULATORY, STOP
0.032	0.032	GATE	N/A	N/A
0.032	0.032	INTERSECTION	LEFT	ROUTE 0010 (VISITOR CENTER ACCESS ROAD) CUT-THRU
0.032	0.032	SIGN	RIGHT	REGULATORY, STOP
0.032	0.032	SIGN	RIGHT	GUIDE, AREA CLOSED AT DARK
0.034	0.034	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.034	0.034	SIGN	LEFT	REGULATORY, ONE WAY
0.037	0.037	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.041	0.041	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.114	0.114	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: VISITOR CENTER 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
0.144	0.144	DROP INLET	LEFT	N/A
0.147	0.147	SIGN	RIGHT	REGULATORY, ONE WAY
0.148	0.148	INTERSECTION	LEFT	ROUTE 0900 (VISITOR CENTER DROP OFF LOOP)
0.149	0.149	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.184	0.184	DROP INLET	LEFT	N/A
0.192	0.192	SIGN	RIGHT	GUIDE, MAIN AUTO, BUS, AND RV PARKING PASSENGER UNLOADING ACCESSIBLE PARKING
0.225	0.225	INTERSECTION	RIGHT	ROUTE 0901 (VISITOR CENTER PARKING)
0.227	0.233	CURB	RIGHT	N/A
0.228	0.228	DROP INLET	LEFT	N/A
0.235	0.235	INTERSECTION	RIGHT	ROUTE 0901 (VISITOR CENTER PARKING)
0.236	0.249	CURB	RIGHT	N/A
0.242	0.242	INTERSECTION	LEFT	ROUTE 0900 (VISITOR CENTER DROP OFF LOOP)
0.243	0.246	CURB	LEFT	N/A
0.244	0.244	SIGN	LEFT	GUIDE, PASSENGER UNLOADING ACCESSIBLE PARKING ENCAMPMENT TOUR EXIT
0.246	0.246	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.248	0.249	CURB	LEFT	N/A
0.251	0.251	DROP INLET	LEFT	N/A
0.252	0.259	CURB	LEFT	N/A
0.254	0.295	CURB	RIGHT	N/A
0.267	0.267	INTERSECTION	LEFT	PAVED ROUTE (AMPHITHEATER ACCESS ROAD)
0.273	0.300	CURB	LEFT	N/A
0.284	0.284	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.295	0.295	SIGN	RIGHT	GUIDE, EDUCATION CENTER PARKING ACCESSIBLE PARKING EXIT
0.295	0.295	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
0.295	0.295	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.299	0.299	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.299	0.305	GUARD/GUIDE WALL	RIGHT	N/A
0.306	0.306	INTERSECTION	LEFT	ROUTE 0903 (ADMINISTRATIVE PARKING)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: VISITOR CENTER 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
0.306	0.400	CURB	RIGHT	N/A
0.308	0.308	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
0.308	0.308	SIGN	RIGHT	REGULATORY, ONE WAY
0.310	0.354	CURB	LEFT	N/A
0.320	0.320	DROP INLET	LEFT	N/A
0.328	0.328	SIGN	RIGHT	REGULATORY, SPEED LIMIT 15
0.401	0.401	INTERSECTION	RIGHT	ROUTE 0500 (OUTER LINE DRIVE)
0.407	0.407	SIGN	RIGHT	GUIDE, PARK EXIT ENCAMPMENT TOUR
0.408	0.408	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.415	0.415	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.421	0.421	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.425	0.425	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.425	0.425	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.465	0.465	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.465	0.465	SIGN	LEFT	GUIDE, VISITOR CENTER
0.471	0.471	GATE	N/A	N/A
0.471	0.471	SIGN	LEFT	REGULATORY, STOP
0.477	0.477	INTERSECTION	LEFT	ROUTE 0010 (VISITOR CENTER ACCESS ROAD) CUT-THRU
0.479	0.500	CURB	LEFT	N/A
0.486	0.486	SIGN	RIGHT	REGULATORY, RIGHT LANE MUST TURN RIGHT
0.500	0.505	CURB	RIGHT	N/A
0.505	0.505	DROP INLET	RIGHT	N/A
0.506	0.506	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
0.506	0.506	INTERSECTION	N/A	ROUTE 5000 (STATE ROUTE 23)
0.506	0.506	INTERSECTION	RIGHT	PAVED ROUTE (N GULPH ROAD / NON-NPS)
0.506	0.506	SIGN	N/A	GUIDE, VALLEY FORGE RD
0.506	0.506	TRAFFIC LIGHT	N/A	X3
0.506	0.506	ROUTE END	N/A	TO ROUTE 5000 (STATE ROUTE 23)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0102AZ: LIBRARY LANE

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 5004 (YELLOW SPRINGS ROAD)
0.000	0.300	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	LEFT	ROUTE 5004 (YELLOW SPRINGS ROAD)
0.000	0.000	INTERSECTION	N/A	UNPAVED PARKING
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5004 (YELLOW SPRINGS ROAD)
0.006	0.006	SIGN	LEFT	REGULATORY, STOP
0.006	0.006	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.007	0.007	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
0.007	0.007	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.007	0.007	SIGN	RIGHT	GUIDE, WILLCOX MEMORIAL LIBRARY
0.030	0.030	CULVERT	N/A	N/A
0.100	0.100	DROP INLET	RIGHT	N/A
0.100	0.100	INTERSECTION	RIGHT	ROUTE 0913 (LIBRARY LANE PARKING)
0.108	0.137	RETAINING WALL	RIGHT	N/A
0.115	0.115	INTERSECTION	LEFT	ROUTE 0102BZ (LIBRARY LANE SPUR)
0.127	0.127	SIGN	RIGHT	REGULATORY, NO PARKING
0.141	0.141	INTERSECTION	LEFT	ROUTE 0102BZ (LIBRARY LANE SPUR)
0.150	0.150	SIGN	LEFT	GUIDE, UNABLE TO READ FORM VIDEO
0.159	0.159	DROP INLET	RIGHT	N/A
0.298	0.298	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.298	0.298	SIGN	RIGHT	REGULATORY, STOP
0.300	0.300	INTERSECTION	LEFT	ROUTE 5005 (WILSON ROAD) UNPAVED SECTION
0.300	0.300	INTERSECTION	RIGHT	ROUTE 5005 (WILSON ROAD) UNPAVED SECTION
0.300	0.300	SIGN	LEFT	GUIDE, LIBRARY LN
0.300	0.300	ROUTE END	N/A	TO ROUTE 5005 (WILSON ROAD)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0106: ORCHARD LANE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (STATE ROUTE 23)
0.005	0.007	CURB	LEFT	N/A
0.005	0.008	CURB	RIGHT	N/A
0.006	0.006	SIGN	LEFT	WARNING, NO OUTLET
0.006	0.006	SIGN	LEFT	REGULATORY, STOP
0.047	0.047	INTERSECTION	RIGHT	ROUTE 0415 (BRITTAIN LANE)
0.051	0.051	GATE	N/A	N/A
0.052	0.052	INTERSECTION	N/A	TO END OF PAVEMENT
0.052	0.052	SIGN	RIGHT	GUIDE, BRITTON RD
0.052	0.052	SIGN	LEFT	REGULATORY, STOP
0.052	0.052	ROUTE END	N/A	TO END AT MP 0.11

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0201: BETZWOOD PICNIC AREA 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 INTERSECTION OF S TROOPER ROAD AND W COUNTY LINE ROAD
0.000	0.000	INTERSECTION	N/A	PAVED ROUTE (S TROOPER ROAD / NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (S TROOPER ROAD / NON NPS)
0.003	0.013	GUARD/GUIDE RAIL	LEFT	N/A
0.007	0.007	SIGN	LEFT	REGULATORY, STOP
0.008	0.008	SIGN	LEFT	GUIDE, BETZWOOD
0.008	0.008	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.009	0.009	SIGN	RIGHT	REGULATORY, NO PARKING ON SHOULDER
0.009	0.009	SIGN	RIGHT	REGULATORY, GATES CLOSED AT DARK
0.010	0.010	GATE	N/A	N/A
0.010	0.010	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.014	0.014	CULVERT	N/A	N/A
0.040	0.040	INTERSECTION	LEFT	ROUTE 0935 (BETZWOOD BOAT RAMP PARKING)
0.040	0.040	INTERSECTION	RIGHT	ROUTE 0937 (BETZWOOD BIKE PATH PARKING)
0.070	0.070	INTERSECTION	RIGHT	ROUTE 0937 (BETZWOOD BIKE PATH PARKING)
0.078	0.078	CULVERT	N/A	N/A
0.137	0.137	INTERSECTION	LEFT	ROUTE 0938AZ (BETZWOOD PICNIC AREA PARKING A)
0.164	0.164	CULVERT	N/A	N/A
0.206	0.206	INTERSECTION	LEFT	ROUTE 0938BZ (BETZWOOD PICNIC AREA PARKING B)
0.219	0.219	CULVERT	N/A	N/A
0.249	0.249	INTERSECTION	LEFT	ROUTE 0938CZ (BETZWOOD PICNIC AREA PARKING C)
0.287	0.287	INTERSECTION	LEFT	ROUTE 0938DZ (BETZWOOD PICNIC AREA PARKING D)
0.300	0.300	SIGN	LEFT	REGULATORY, NO PARKING ANY TIME
0.336	0.336	CULVERT	N/A	N/A
0.339	0.339	SIGN	N/A	REGULATORY, NO PARKING
0.341	0.341	SIGN	RIGHT	REGULATORY, NO PARKING
0.341	0.341	INTERSECTION	N/A	ROUTE 0201 (BETZWOOD PICNIC AREA ROAD) UNPAVED SECTION
0.341	0.341	ROUTE END	N/A	TO END

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0213: INNER LINE 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 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.005	0.005	SIGN	RIGHT	GUIDE, INNER LINE SPUR
0.005	0.005	SIGN	RIGHT	GUIDE, INNER LINE SPUR
0.007	0.007	GATE	N/A	N/A
0.117	0.117	SIGN	RIGHT	REGULATORY, STOP
0.117	0.117	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.118	0.118	SIGN	RIGHT	GUIDE, INNER LINE SPUR
0.122	0.122	INTERSECTION	LEFT	ROUTE 0501 (INNER LINE DRIVE)
0.122	0.122	INTERSECTION	RIGHT	ROUTE 0501 (INNER LINE DRIVE)
0.122	0.122	SIGN	N/A	REGULATORY, ONE WAY
0.122	0.122	ROUTE END	N/A	TO ROUTE 0501 (INNER LINE DRIVE)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0413: QUARRY 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 5003 (COUNTY LINE ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5003 (COUNTY LINE ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5003 (COUNTY LINE ROAD)
0.005	0.005	SIGN	LEFT	GUIDE, MAINTENANCE AREA
0.009	0.009	SIGN	RIGHT	WARNING, NO OUTLET
0.015	0.015	SIGN	LEFT	GUIDE, BUCKLE UP IT'S THE LAW
0.031	0.031	INTERSECTION	LEFT	ROUTE 0932 (MAINTENANCE AREA)
0.035	0.035	GATE	N/A	N/A
0.035	0.035	SIGN	RIGHT	REGULATORY, AUTHORIZED VEHICLES ONLY
0.036	0.036	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.108	0.108	INTERSECTION	LEFT	ROUTE 0932 (MAINTENANCE AREA)
0.138	0.138	INTERSECTION	LEFT	UNPAVED ROUTE
0.199	0.199	INTERSECTION	N/A	ROUTE 0413 (QUARRY ROAD) UNPAVED SECTION
0.199	0.199	ROUTE END	N/A	TO ROUTE 0931 (HUNTINGTON'S QUARTERS PARKING) AT MP 0.50

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0415: BRITTAIN LANE

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 0106 (ORCHARD LANE)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0106 (ORCHARD LANE)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0106 (ORCHARD LANE)
0.005	0.005	SIGN	LEFT	GUIDE, ORCHARD LN
0.080	0.080	INTERSECTION	N/A	TO END OF PAVEMENT
0.080	0.080	ROUTE END	N/A	TO END OF PAVEMENT

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0500: OUTER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0010 (VISITOR CENTER ACCESS ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0010 (VISITOR CENTER ACCESS ROAD)
0.000	0.000	INTERSECTION	N/A	ROUTE 0010 (VISITOR CENTER ACCESS ROAD)
0.000	0.019	CURB	RIGHT	N/A
0.008	0.008	SIGN	LEFT	GUIDE, NORTH OUTER LINE DR
0.008	0.008	SIGN	LEFT	GUIDE, PARK EXIT ENCAMPMENT TOUR
0.008	0.008	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.009	0.009	GATE	N/A	N/A
0.009	0.009	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.009	0.009	SIGN	RIGHT	REGULATORY, STOP
0.026	0.026	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.026	0.026	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.073	0.073	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.191	0.191	SIGN	RIGHT	GUIDE, MUHLENBERG'S BRIGADE HUTS
0.191	0.191	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 2
0.198	0.198	CULVERT	N/A	N/A
0.204	0.204	INTERSECTION	LEFT	ROUTE 0904 (MUHLENBERG'S BRIGADE PARKING)
0.253	0.253	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.254	0.254	INTERSECTION	LEFT	ROUTE 0904 (MUHLENBERG'S BRIGADE PARKING)
0.258	0.258	SIGN	LEFT	REGULATORY, BUS PARKING
0.276	0.276	INTERSECTION	LEFT	ROUTE 0904 (MUHLENBERG'S BRIGADE PARKING)
0.276	0.276	SIGN	RIGHT	REGULATORY, ONE WAY
0.345	0.404	PULLOUT	RIGHT	N/A
0.354	0.354	SIGN	RIGHT	REGULATORY, BUS PARKING ONLY
0.363	0.363	CULVERT	N/A	N/A
0.445	0.511	PULLOUT	RIGHT	N/A
0.550	0.616	PULLOUT	RIGHT	N/A
0.586	0.586	CULVERT	N/A	N/A
0.654	0.696	PULLOUT	RIGHT	N/A
0.736	0.803	PULLOUT	RIGHT	N/A

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0500: OUTER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.768	0.768	CULVERT	N/A	N/A
0.838	0.917	PULLOUT	RIGHT	N/A
0.982	0.982	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.012	1.012	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
1.107	1.107	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR CONTINUES FOR NATIONAL MEMORIAL ARCH
1.118	1.118	SIGN	LEFT	REGULATORY, STOP
1.118	1.118	SIGN	LEFT	REGULATORY, DO NOT ENTER
1.122	1.122	SIGN	RIGHT	REGULATORY, DO NOT ENTER
1.122	1.122	SIGN	RIGHT	REGULATORY, STOP
1.122	1.122	SIGN	RIGHT	GUIDE, GULPH RD
1.122	1.122	SIGN	RIGHT	GUIDE, NORTH OUTER LINE DR
1.130	1.130	INTERSECTION	RIGHT	ROUTE 5002 (NORTH GULPH ROAD)
1.130	1.130	INTERSECTION	LEFT	ROUTE 5002 (NORTH GULPH ROAD)
1.132	1.132	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
1.132	1.132	SIGN	LEFT	REGULATORY, STOP
1.132	1.132	SIGN	LEFT	GUIDE, SOUTH OUTER LINE DR
1.140	1.140	SIGN	RIGHT	REGULATORY, STOP
1.140	1.140	SIGN	RIGHT	GUIDE, AREA CLOSED AT DARK
1.141	1.141	GATE	N/A	N/A
1.142	1.142	DROP INLET	LEFT	N/A
1.162	1.162	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
1.162	1.162	SIGN	RIGHT	WARNING, TWO WAY TRAFFIC AHEAD
1.219	1.219	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 3
1.219	1.219	SIGN	RIGHT	GUIDE, NATIONAL MEMORIAL ARCH AUTOS
1.226	1.226	INTERSECTION	LEFT	ROUTE 0907AZ (NATIONAL MEMORIAL ARCH PARKING A)
1.289	1.289	INTERSECTION	LEFT	ROUTE 0907AZ (NATIONAL MEMORIAL ARCH PARKING A)
1.289	1.289	DROP INLET	LEFT	N/A
1.290	1.290	SIGN	LEFT	REGULATORY, DO NOT ENTER
1.302	1.302	DROP INLET	LEFT	N/A

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0500: OUTER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.324	1.324	INTERSECTION	LEFT	ROUTE 0907BZ (NATIONAL MEMORIAL ARCH PARKING B)
1.348	2.694	ONE-WAY	N/A	N/A
1.349	1.349	SIGN	RIGHT	REGULATORY, BEGIN ONE WAY
1.367	1.367	CULVERT	N/A	N/A
1.379	1.379	CULVERT	N/A	N/A
1.497	1.497	CULVERT	N/A	N/A
1.628	1.628	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
1.640	1.640	CULVERT	N/A	N/A
1.671	1.671	INTERSECTION	RIGHT	ROUTE 0908 (WAYNE'S WOODS PARKING)
1.675	1.675	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.676	1.676	SIGN	RIGHT	GUIDE, WAYNE'S WOODS
1.714	1.714	INTERSECTION	RIGHT	ROUTE 0908 (WAYNE'S WOODS PARKING)
1.718	1.718	SIGN	LEFT	REGULATORY, ONE WAY
1.771	1.771	CULVERT	N/A	N/A
1.868	1.868	CULVERT	N/A	N/A
1.905	1.905	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 4
1.917	1.917	INTERSECTION	RIGHT	ROUTE 0909 (WAYNE'S STATUE PARKING)
1.925	1.925	DROP INLET	RIGHT	N/A
1.955	1.955	INTERSECTION	RIGHT	ROUTE 0909 (WAYNE'S STATUE PARKING)
1.956	1.956	SIGN	LEFT	REGULATORY, ONE WAY
1.993	1.993	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
1.993	1.993	SIGN	LEFT	WARNING, 15 M.P.H.
2.021	2.085	GUARD/GUIDE RAIL	LEFT	N/A
2.028	2.028	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.038	2.038	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.049	2.049	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.057	2.057	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.069	2.069	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.075	2.075	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
2.075	2.075	CULVERT	N/A	N/A

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0500: OUTER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.085	2.085	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
2.173	2.173	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
2.173	2.173	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
2.181	2.181	CULVERT	N/A	N/A
2.329	2.329	CULVERT	N/A	N/A
2.350	2.350	CULVERT	N/A	N/A
2.427	2.427	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
2.432	2.432	INTERSECTION	RIGHT	PAVED ROUTE GATE (NON-NPS)
2.508	2.508	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
2.508	2.508	SIGN	RIGHT	WARNING, 20 M.P.H.
2.558	2.593	GUARD/GUIDE RAIL	RIGHT	N/A
2.563	2.563	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
2.563	2.563	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
2.609	2.609	SIGN	RIGHT	REGULATORY, 252
2.609	2.609	SIGN	RIGHT	REGULATORY, JCT
2.622	2.622	CULVERT	N/A	N/A
2.623	2.623	SIGN	RIGHT	REGULATORY, END ONE WAY
2.623	2.623	SIGN	RIGHT	REGULATORY, NO PARKING ANY TIME
2.623	2.623	SIGN	RIGHT	REGULATORY, WRONG WAY
2.624	2.624	SIGN	LEFT	REGULATORY, END ONE WAY
2.624	2.624	SIGN	LEFT	REGULATORY, WRONG WAY
2.666	2.666	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
2.666	2.666	SIGN	RIGHT	REGULATORY, NORTH
2.666	2.666	SIGN	RIGHT	REGULATORY, 252
2.667	2.667	SIGN	RIGHT	REGULATORY, SOUTH
2.667	2.667	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
2.667	2.667	SIGN	RIGHT	REGULATORY, 252
2.687	2.687	SIGN	LEFT	REGULATORY, STOP
2.687	2.687	SIGN	LEFT	REGULATORY, DO NOT ENTER
2.688	2.688	SIGN	RIGHT	REGULATORY, STOP

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0500: OUTER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.688	2.688	SIGN	RIGHT	REGULATORY, DO NOT ENTER
2.690	2.690	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
2.690	2.690	SIGN	RIGHT	GUIDE, WASHINGTON'S HEADQUARTERS 2MI
2.690	2.690	SIGN	RIGHT	GUIDE, VALLEY CREEK RD
2.694	2.694	INTERSECTION	RIGHT	ROUTE 5001 (STATE ROUTE 252) CUT-THRU
2.700	2.700	SIGN	LEFT	REGULATORY, NORTH
2.700	2.700	SIGN	LEFT	REGULATORY, 252
2.700	2.700	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
2.707	2.707	SIGN	RIGHT	REGULATORY, DO NOT ENTER
2.710	2.710	INTERSECTION	N/A	ROUTE 5001 (STATE ROUTE 252)
2.710	2.710	INTERSECTION	RIGHT	ROUTE 5001 (STATE ROUTE 252)
2.710	2.710	ROUTE END	N/A	TO ROUTE 5001 (STATE ROUTE 252)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0501: INNER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	N/A	ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
0.000	2.044	ONE-WAY	N/A	N/A
0.005	0.178	CURB-AND-GUTTER	LEFT	N/A
0.005	0.480	CURB-AND-GUTTER	RIGHT	N/A
0.011	0.011	SIGN	LEFT	GUIDE, VALLEY FORGE PARK
0.011	0.011	SIGN	LEFT	GUIDE, WEST INNER LINE
0.012	0.012	SIGN	LEFT	WARNING, 30 M.P.H.
0.012	0.012	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.015	0.015	GATE	N/A	N/A
0.015	0.015	SIGN	RIGHT	GUIDE, AREA CLOSED AT DARK
0.015	0.015	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
0.042	0.042	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.065	0.065	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.168	0.168	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.175	0.175	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.189	0.189	INTERSECTION	LEFT	ROUTE 0213 (INNER LINE SPUR)
0.190	0.479	CURB-AND-GUTTER	LEFT	N/A
0.252	0.252	CULVERT	N/A	N/A
0.350	0.350	CULVERT	N/A	N/A
0.422	0.422	DROP INLET	LEFT	N/A
0.422	0.422	DROP INLET	RIGHT	N/A
0.479	0.479	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.479	0.479	SIGN	LEFT	REGULATORY, STOP
0.483	0.483	SIGN	RIGHT	REGULATORY, STOP
0.484	0.484	SIGN	RIGHT	GUIDE, WEST INNER LINE DR
0.484	0.484	SIGN	RIGHT	GUIDE, GULPH RD
0.484	0.484	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.492	0.492	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0501: INNER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.494	0.494	INTERSECTION	RIGHT	ROUTE 5002 (NORTH GULPH ROAD)
0.494	0.494	INTERSECTION	LEFT	ROUTE 5002 (NORTH GULPH ROAD)
0.499	0.499	SIGN	LEFT	GUIDE, AREA CLOSED AT DARK
0.500	0.500	GATE	N/A	N/A
0.500	0.500	SIGN	RIGHT	REGULATORY, STOP
0.500	0.500	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
0.501	0.900	CURB-AND-GUTTER	RIGHT	N/A
0.501	1.458	CURB-AND-GUTTER	LEFT	N/A
0.522	0.522	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.603	0.603	DROP INLET	LEFT	N/A
0.603	0.603	DROP INLET	RIGHT	N/A
0.673	0.673	DROP INLET	RIGHT	N/A
0.673	0.673	DROP INLET	LEFT	N/A
0.824	0.824	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.847	0.847	CULVERT	N/A	N/A
0.899	0.940	GUARD/GUIDE RAIL	RIGHT	N/A
0.900	0.900	SIGN	RIGHT	WARNING, 15 M.P.H.
0.900	0.900	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.932	0.932	CULVERT	N/A	N/A
0.941	1.113	CURB-AND-GUTTER	RIGHT	N/A
0.990	0.990	CULVERT	N/A	N/A
1.162	1.162	CULVERT	N/A	N/A
1.214	1.214	CULVERT	N/A	N/A
1.311	1.335	CURB-AND-GUTTER	RIGHT	N/A
1.378	1.378	SIGN	RIGHT	WARNING, 15 M.P.H.
1.378	1.378	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.412	1.486	GUARD/GUIDE RAIL	RIGHT	N/A
1.465	1.465	CULVERT	N/A	N/A
1.487	1.771	CURB-AND-GUTTER	RIGHT	N/A
1.560	1.560	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0501: INNER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.618	1.618	DROP INLET	LEFT	N/A
1.621	1.621	DROP INLET	RIGHT	N/A
1.726	1.726	CULVERT	N/A	N/A
1.778	1.778	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 6
1.791	1.791	INTERSECTION	RIGHT	ROUTE 0926 (REDOUBT 3 PARKING)
1.801	1.801	SIGN	LEFT	REGULATORY, ONE WAY
1.805	1.805	SIGN	LEFT	REGULATORY, ONE WAY
1.842	1.852	GUARD/GUIDE RAIL	RIGHT	N/A
1.850	1.850	SIGN	LEFT	REGULATORY, DO NOT ENTER
1.852	1.852	SIGN	RIGHT	REGULATORY, DO NOT ENTER
1.852	1.852	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
1.853	1.853	INTERSECTION	RIGHT	PAVED ROUTE GATE
1.857	1.857	SIGN	LEFT	REGULATORY, ONE WAY
1.859	1.899	GUARD/GUIDE RAIL	RIGHT	N/A
1.958	1.958	CULVERT	N/A	N/A
1.959	1.959	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
1.959	1.959	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 7
1.960	1.960	SIGN	LEFT	REGULATORY, DO NOT ENTER
1.963	1.963	INTERSECTION	RIGHT	ROUTE 0927 (ARTILLERY PARK PARKING)
1.972	1.972	SIGN	LEFT	REGULATORY, ONE WAY
2.044	2.044	INTERSECTION	RIGHT	ROUTE 0927 (ARTILLERY PARK PARKING)
2.044	2.044	SIGN	LEFT	REGULATORY, DO NOT ENTER
2.044	2.044	SIGN	RIGHT	REGULATORY, DO NOT ENTER
2.044	2.044	SIGN	RIGHT	REGULATORY, STOP
2.044	2.044	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
2.048	2.048	SIGN	LEFT	REGULATORY, ONE WAY
2.294	2.294	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
2.311	2.311	GATE	N/A	N/A
2.312	2.312	SIGN	LEFT	REGULATORY, STOP
2.312	2.312	SIGN	LEFT	GUIDE, AREA CLOSED AT DARK

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0501: INNER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.314	2.314	SIGN	RIGHT	REGULATORY, STOP
2.314	2.314	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
2.315	2.315	SIGN	RIGHT	GUIDE, EAST INNER LANE RD
2.330	2.330	INTERSECTION	RIGHT	ROUTE 5002 (NORTH GULPH ROAD)
2.330	2.330	INTERSECTION	LEFT	ROUTE 5002 (NORTH GULPH ROAD)
2.335	2.335	SIGN	LEFT	GUIDE, GULPH
2.335	2.335	SIGN	LEFT	GUIDE, NORTH INNER LINE
2.335	2.823	ONE-WAY	N/A	N/A
2.344	2.344	CULVERT	N/A	N/A
2.344	2.344	GATE	N/A	N/A
2.345	2.345	SIGN	RIGHT	GUIDE, AREA CLOSED AT DARK
2.345	2.345	SIGN	RIGHT	REGULATORY, STOP
2.388	2.388	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
2.450	2.450	DROP INLET	LEFT	N/A
2.450	2.450	DROP INLET	RIGHT	N/A
2.509	2.509	DROP INLET	LEFT	N/A
2.509	2.509	DROP INLET	RIGHT	N/A
2.569	2.569	DROP INLET	RIGHT	N/A
2.569	2.569	DROP INLET	LEFT	N/A
2.671	2.671	DROP INLET	RIGHT	N/A
2.671	2.671	DROP INLET	LEFT	N/A
2.720	2.720	DROP INLET	LEFT	N/A
2.720	2.720	DROP INLET	RIGHT	N/A
2.802	2.802	CULVERT	N/A	N/A
2.804	2.804	SIGN	RIGHT	GUIDE, BUS/RV PARKING VON STEUBEN STATUE TRAIL PARKING
2.804	2.804	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR STOP 8
2.812	2.812	SIGN	LEFT	REGULATORY, STOP
2.812	2.812	SIGN	LEFT	REGULATORY, DO NOT ENTER
2.815	2.815	SIGN	RIGHT	REGULATORY, STOP

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0501: INNER LINE DRIVE

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
2.815	2.815	SIGN	RIGHT	REGULATORY, DO NOT ENTER
2.824	2.824	SIGN	LEFT	GUIDE, VON STEUBEN STATUE TRAIL PARKING PASSENGER VEHICLE ONLY
2.825	2.825	INTERSECTION	RIGHT	ROUTE 0929 (VARNUM'S HEADQUARTERS PARKING)
2.842	2.842	GATE	N/A	N/A
2.844	2.844	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
2.844	2.844	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
2.845	2.845	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
2.847	2.847	SIGN	RIGHT	REGULATORY, STOP
2.847	2.847	SIGN	RIGHT	GUIDE, ENCAMPMENT TOUR
2.852	2.852	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
2.852	2.852	INTERSECTION	RIGHT	ROUTE 5000 (STATE ROUTE 23)
2.852	2.852	ROUTE END	N/A	TO ROUTE 5000 (STATE ROUTE 23)

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0502: RIVER 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 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (STATE ROUTE 23)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (STATE ROUTE 23)
0.007	0.007	GATE	N/A	N/A
0.007	0.007	SIGN	LEFT	REGULATORY, STOP
0.007	0.007	SIGN	RIGHT	GUIDE, AREA CLOSED AT DARK
0.007	0.007	SIGN	RIGHT	REGULATORY, STOP
0.009	0.009	SIGN	LEFT	GUIDE, TOUR ROUTE CONTINUES ROUTE 23 EAST TO VISITOR CENTER ROUTE 23 WEST
0.009	0.009	SIGN	LEFT	GUIDE, ENCAMPMENT TOUR
0.107	0.107	INTERSECTION	RIGHT	UNPAVED ROUTE
0.110	0.110	DROP INLET	LEFT	N/A
0.133	0.133	SIGN	RIGHT	GUIDE, ACCESSIBLE PARKING AUTOMOBILE PARKING BUS PARKING BUS PASSENGER DROP-OFF
0.141	0.141	INTERSECTION	LEFT	ROUTE 0918BZ (WASHINGTON'S HEADQUARTERS UPPER PARKING B)
0.147	0.214	CURB	LEFT	N/A
0.172	0.202	CURB	RIGHT	N/A
0.186	0.186	DROP INLET	LEFT	N/A
0.198	0.198	SIGN	RIGHT	GUIDE, PASSENGER DROP-OFF ACCESSIBLE PARKING
0.201	0.201	DROP INLET	LEFT	N/A
0.209	0.209	INTERSECTION	RIGHT	ROUTE 0918CZ (WASHINGTON'S HEADQUARTERS HANDICAP)
0.213	0.213	DROP INLET	LEFT	N/A
0.213	0.213	DROP INLET	RIGHT	N/A
0.216	0.216	SIGN	LEFT	REGULATORY, ONE WAY
0.218	0.218	INTERSECTION	LEFT	ROUTE 0918BZ (WASHINGTON'S HEADQUARTERS UPPER PARKING B)
0.219	0.219	DROP INLET	N/A	N/A
0.221	0.221	SIGN	LEFT	REGULATORY, STOP
0.221	0.221	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO
0.221	0.221	SIGN	LEFT	REGULATORY, UNABLE TO READ FROM VIDEO

VAFO: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0502: RIVER 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
0.228	0.228	SIGN	LEFT	GUIDE, PARKING EXIT
0.289	0.289	DROP INLET	RIGHT	N/A
0.290	0.290	INTERSECTION	LEFT	ROUTE 0502 (RIVER ROAD)
0.300	0.308	RETAINING WALL	RIGHT	N/A
0.301	0.301	SIGN	RIGHT	REGULATORY, NO PARKING
0.309	0.309	SIGN	RIGHT	REGULATORY, NO PARKING
0.315	0.315	SIGN	RIGHT	REGULATORY, NO PARKING
0.318	0.324	CURB	RIGHT	N/A
0.328	0.328	SIGN	RIGHT	REGULATORY, NO PARKING
0.335	0.335	INTERSECTION	LEFT	ROUTE 0502 (RIVER ROAD)
0.335	0.335	INTERSECTION	N/A	ROUTE 0502 (RIVER ROAD)
0.335	0.335	ROUTE END	N/A	TO END OF LOOP

Section 10
Appendix

Valley Forge 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.

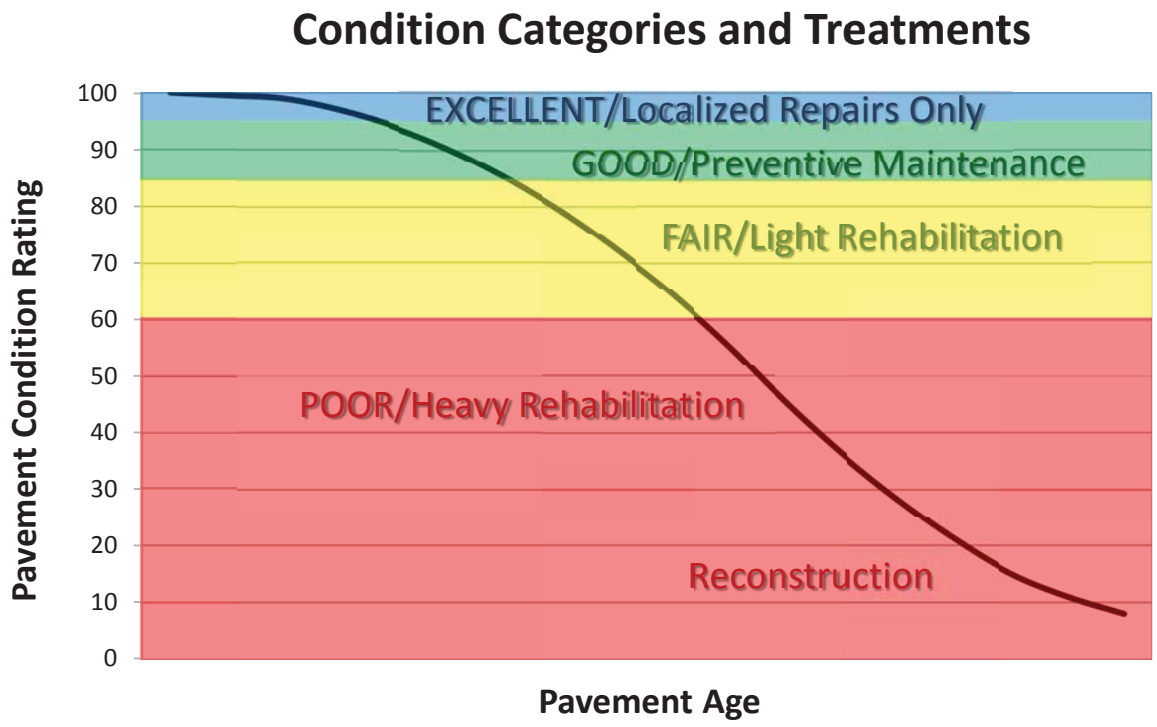
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation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