Federal Lands Highway

Road Inventory Program

Road Inventory and Condition Assessment

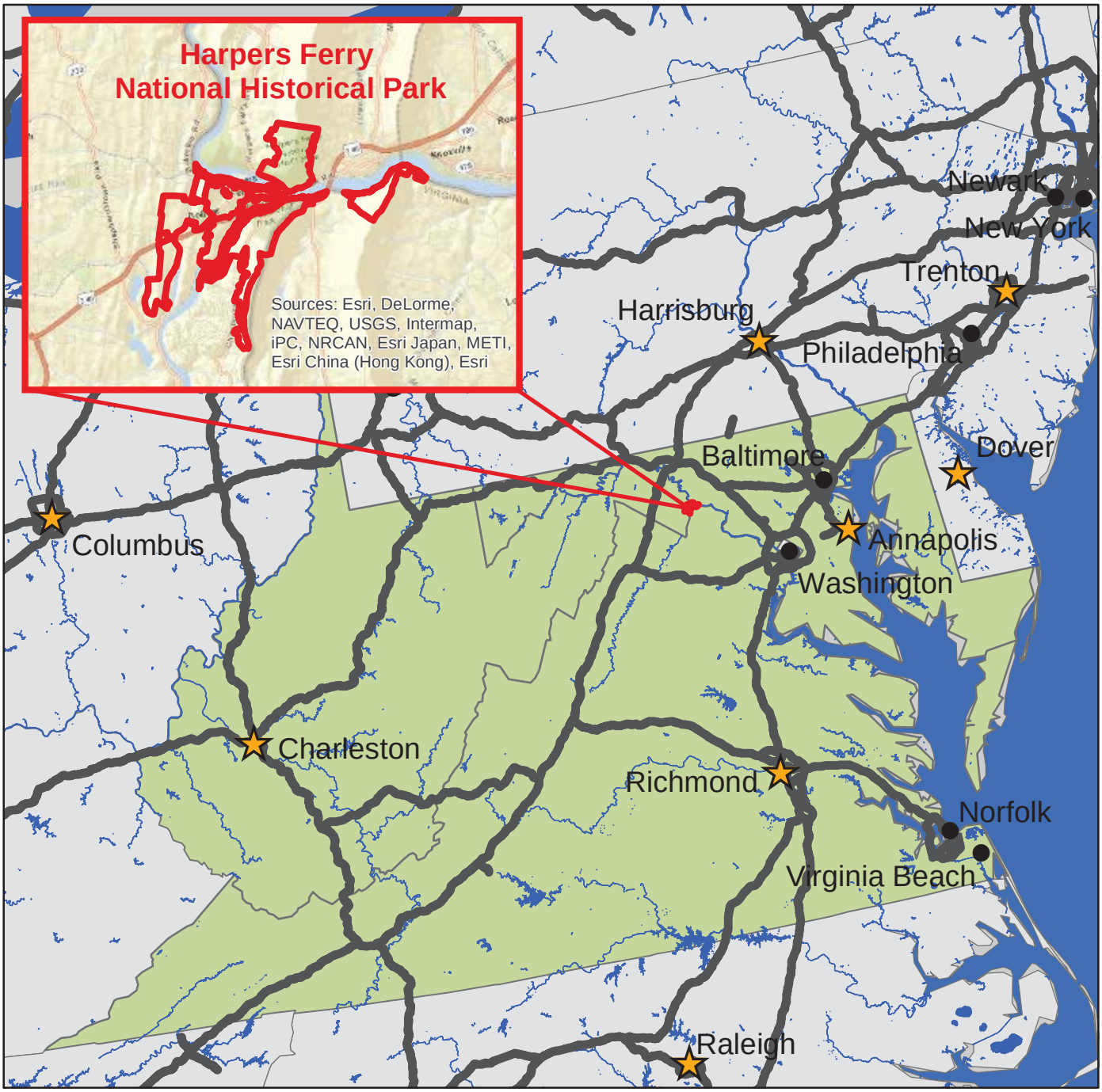
Harpers Ferry National Historical Park

HAFE

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 02/2013
Report Date: 10/2013

Harpers Ferry National Historical Park
in
West Virginia, Maryland, and Virginia



DCV = Data Collection Vehicle

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Section 1
Introduction

Harpers Ferry 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

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Section 2
Park Route Inventory

Harpers Ferry 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
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= Concession Route Flag ON

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

** DCV - Data Collection Vehicle NC - Not Collected

HAFE

HARPERS FERRY 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	48199		HARTZOG DRIVE	FROM ROUTE 5004 (FILLMORE STREET)	TO END AT SIDE WALK	CAMP HILL	0.12	0.00	0.12	5		AS	2
0011	5	36069		HIGH STREET	FROM END OF ROUTE 5000 (HIGH / WASHINGTON STREET) AT INTERSECTION WITH ROUTE 0016 (HOG ALLEY)	TO ROUTE 0012 (SHENANDOAH STREET)	LOWER TOWN	0.04	0.00	0.04	7		CO	3
0012	5	35860		SHENANDOAH STREET	FROM US HIGHWAY 340	TO END	LOWER TOWN	0.81	0.00	0.81	8		AS	2,3
0014	5	3825		SHORELINE DRIVE	FROM US HIGHWAY 340	TO ROUTE 0012 (SHENANDOAH STREET)	CAVALIER HEIGHTS	1.45	0.00	1.45	1		AS	1,2
0015	5	36072		PUBLIC WAY	FROM ROUTE 5000 (HIGH STREET)	TO END OF ROUTE 5003 (CHURCH STREET) AND ROUTE 0925 (CHURCH STREET PARKING)	LOWER TOWN	0.12	0.00	0.12	8	7,894	AS	3
0016	5	36392		HOG ALLEY	FROM INTERSECTION OF ROUTE 5000 (HIGH STREET) ON LEFT AND ROUTE 0011 (HIGH STREET) ON RIGHT	TO INTERSECTION OF ROUTE 5002 (POTOMAC STREET (NON NPS)) ON LEFT AND ROUTE 0600 (POTOMAC STREET) ON RIGHT	LOWER TOWN	0.02	0.00	0.02	8		CO	3
0203	NC	28543		TATTERSOLL PROPERTY ROAD	FROM ROUTE 5005 (UNION STREET)	TO END	CAMP HILL	0.00	0.07	0.07	6		GR	
0204	NC	111175		SCHOOL HOUSE RIDGE SOUTH ENTRANCE ROAD	FROM MILLVILLE ROAD	TO END	SCHOOL HOUSE RIDGE SOUTH	0.00	0.03	0.03	3		GR	
0205	NC	114584		SCHOOL HOUSE RIDGE NORTH ROAD	FROM STATE ROUTE 27 (BAKERTON ROAD)	TO END	SCHOOL HOUSE RIDGE NORTH	0.00	0.02	0.02	3		GR	
0206	NC	114585		NASH PROPERTY ACCESS ROAD	FROM WILLIAMS STREET	TO END	BOLIVAR HEIGHTS	0.00	0.02	0.02	3		GR	
0300	5	1025		WHITMAN / PROSPECT AVENUE	FROM BEGINNING OF ROUTE 5000 (HIGH / WASHINGTON STREET)	TO PARK BOUNDARY AND BEGINNING OF ROUTE 5013 (PROSPECT AVENUE)	BOLIVAR HEIGHTS	0.44	0.00	0.44	3		AS	1
0401	5	1032		RANGER RESIDENCE ACCESS ROAD	FROM STATE ROUTE 27 (BAKERTON ROAD)	TO END	SCHOOL HOUSE RIDGE NORTH	0.07	0.00	0.07	6		AS	1
0402	NC	56518		RAILROAD STORAGE ROAD	FROM ROUTE 0600 (POTOMAC STREET)	TO END	LOWER TOWN	0.00	0.05	0.05	6		GR	

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0403	NC	36042		LOVETTSVILLE SHORT HILL ACCESS ROAD	FROM STATE ROUTE 674	TO END	LOUDOUN HEIGHTS	0.00	1.10	1.10	6		GR	
0404	NC	103071		SHORT HILL ACCESS ROAD	FROM STATE ROUTE 683	TO END	LOUDOUN HEIGHTS	0.00	1.10	1.10	6		GR	
0405	NC	36051		VIRGINIUS ISLAND ROAD	FROM ROUTE 0014 (SHORELINE DRIVE)	TO END	LOWER TOWN	0.00	0.25	0.25	6		GR	
0406	NC	36266		MILITARY ROAD	FROM HARPERS FERRY ROAD	TO END	MARYLAND HEIGHTS	0.00	2.40	2.40	6		GR	
0407	NC	37272		BROWN ROAD	FROM ROUTE 0406 (MILITARY ROAD)	TO MILLER DRIVE	MARYLAND HEIGHTS	0.00	2.10	2.10	6		GR	
0408	**5**	**3756**		**MAINTENANCE LOT A ACCESS**	**FROM INTERSECTION OF ROUTE 5004 (FILLMORE STREET) AND END OF ROUTE 5001 (ZACHARY TAYLOR STREET)**	**TO ROUTE 0902A (FACILITY MAINTENANCE PUBLIC PARKING)**	**CAMP HILL**	**0.04**	**0.00**	**0.04**	**5**		**AS**	**2**
0409	NC	114588		OTT PROPERTY ACCESS ROAD	FROM STATE ROUTE 27 (BAKERTON ROAD)	TO END	SCHOOL HOUSE RIDGE NORTH	0.00	0.01	0.01	5		GR	
0410	NC	98973		MURPHY FARM ROAD	FROM ROUTE 5001 (ZACHARY TAYLOR STREET)	TO END	CAVALIER HEIGHTS	0.00	0.05	0.05	3		GR	
0411	NC	36317		HISTORIC BRIDGE STREET	FROM ROUTE 0012 (SHENANDOAH STREET)	TO ROUTE 0413 (HISTORIC HAMILTON STREET)	LOWER TOWN	0.00	0.00	0.00	6		GR	
0412	NC	36319		HISTORIC HAMILTON ALLEY	FROM ROUTE 0411 (HISTORIC BRIDGE STREET)	TO ROUTE 0414 (HISTORIC MARKET STREET)	LOWER TOWN	0.00	0.05	0.05	6		GR	
0413	NC	36318		HISTORIC HAMILTON STREET	FROM VIRGINIUS ISLAND BRIDGE	TO HAMILTON ALLEY	LOWER TOWN	0.00	0.10	0.10	6		GR	
0414	NC	36280		HISTORIC MARKET STREET	FROM ROUTE 0012 (SHENANDOAH STREET)	TO HAMILTON ALLEY	LOWER TOWN	0.00	0.04	0.04	6		GR	
0600	**5**	**35863**		**POTOMAC STREET**	**FROM ROUTE 0012 (SHENANDOAH STREET)**	**TO INTERSECTION OF ROUTE 0016 (HOG ALLEY) AND BEGINNING OF ROUTE 5002 (POTOMAC STREET (NON NPS))**	**LOWER TOWN**	**0.04**	**0.00**	**0.04**	**8**		**CO**	**3**
0900	**5**	**3760**		**MATHER TRAINING CENTER PARKING**	**FROM ROUTE 0010 (HARTZOG DRIVE)**	**TO PARKING**	**CAMP HILL**	**0.00**	**0.00**	**0.00**		**14,178**	**AS**	**2**

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0901A	5	3806		MARYLAND HEIGHTS PARKING A	ADJACENT TO HARPERS FERRY ROAD		MARYLAND HEIGHTS	0.00	0.00	0.00		1,705	AS	3
0901B	5	3823		MARYLAND HEIGHTS PARKING B	ADJACENT TO HARPERS FERRY ROAD		MARYLAND HEIGHTS	0.00	0.00	0.00		1,769	AS	3
0901C	5	43148		MARYLAND HEIGHTS PARKING C	ADJACENT TO HARPERS FERRY ROAD		MARYLAND HEIGHTS	0.00	0.00	0.00		1,256	AS	3
0902A	5	43176		FACILITY MAINTENANCE PUBLIC PARKING	FROM END OF ROUTE 0408 (MAINTENANCE LOT A ACCESS)	TO ROUTE 0902B (FACILITY MAINTENANCE COMPLEX)	CAMP HILL	0.00	0.00	0.00		26,694	AS	2
0902B	5	94892		FACILITY MAINTENANCE COMPLEX	FROM ROUTE 0902A (FACILITY MAINTENANCE PUBLIC PARKING)	TO MAINTENANCE AREA	CAMP HILL	0.00	0.00	0.00		24,676	AS	2
0903	5	56332		HAFC- LEWIS ANTHONY PARKING	FROM ROUTE 0010 (HARTZOG DRIVE)	TO PARKING	CAMP HILL	0.00	0.00	0.00		4,140	AS	2
0904	5	3753		COOK HALL PARKING	FROM END OF ROUTE 5009 (MCDOWELL STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		7,598	AS	2
0906	5	56334		IDC PARKING	FROM ROUTE 5009 (MCDOWELL STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		5,761	AS	2
0907	NC	45501		LOWER SHIPLEY SCHOOL PARKING	FROM ROUTE 5004 (FILLMORE STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		7,500	GR	
0908	5	56335		SHIPLEY SCHOOL PARKING	FROM ROUTE 5004 (FILLMORE STREET)	TO ROUTE 5004 (FILLMORE STREET)	CAMP HILL	0.00	0.00	0.00		17,360	AS	2
0909A	5	56336		MORRELL HOUSE FILLMORE STREET PARKING A	ADJACENT TO ROUTE 5004 (FILLMORE STREET)		CAMP HILL	0.00	0.00	0.00		2,036	AS	3
0909B	NC	56337		MORRELL HOUSE FILLMORE STREET PARKING B	FROM ROUTE 5004 (FILLMORE STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		4,000	GR	
0910	5	3758		MORRELL HOUSE PARKING	ADJACENT TO ROUTE 5004 (FILLMORE STREET)		CAMP HILL	0.00	0.00	0.00		2,181	AS	3
0911	5	3750		BRACKETT HOUSE PARKING	FROM ROUTE 5010 (LANCASTER STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		2,465	AS	3
0912	NC	3761		POTOMAC EDISON PARKING	FROM POTOMAC STREET EXTENDED	TO PARKING	LOWER TOWN	0.00	0.00	0.00		250,000	GR	

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0913	5	56338		TRAIN STATION PARKING	FROM ROUTE 5002 (POTOMAC STREET (NON NPS))	TO PARKING	LOWER TOWN	0.00	0.00	0.00		31,303	AS	3
0914	5	42886		LOWER TOWN PARKING	FROM ROUTE 0012 (SHENANDOAH STREET)	TO ROUTE 0012 (SHENANDOAH STREET)	LOWER TOWN	0.00	0.00	0.00		11,829	AS	3
0915	5	56339		CANAL OVERLOOK PARKING	ADJACENT TO ROUTE 0012 (SHENANDOAH STREET)		LOWER TOWN	0.00	0.00	0.00		1,053	AS	2
0916	5	3813		RIVER ACCESS PARKING	FROM ROUTE 0012 (SHENANDOAH STREET)	TO PARKING	LOWER TOWN	0.00	0.00	0.00		13,964	AS	2
0917	5	42990		POTOMAC WAYSIDE PARKING	FROM US HIGHWAY 340	TO PARKING	LOUDOUN HEIGHTS	0.00	0.00	0.00		47,114	AS	3
0918	5	3752		CAVALIER HEIGHTS PARKING	FROM ROUTE 0014 (SHORELINE DRIVE)	TO ROUTE 0926 (BUS MAINTENANCE PARKING)	CAVALIER HEIGHTS	0.00	0.00	0.00		216,398	AS	1
0919	5	56349		CAVALIER HEIGHTS BUS LOOP	FROM ROUTE 0014 (SHORELINE DRIVE)	TO END OF LOOP	CAVALIER HEIGHTS	0.00	0.00	0.00		20,001	AS	1
0920	NC	56350		LOWER BOLIVAR PARKING	FROM STATE ROUTE 27 (BAKERTON ROAD)	TO PARKING	SCHOOL HOUSE RIDGE NORTH	0.00	0.00	0.00		22,000	GR	
0921ZZ	5	42982		BOLIVAR HEIGHTS BUS LOOP AND PARKING	FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE) ON RIGHT AND LEFT	TO PARKING	BOLIVAR HEIGHTS	0.00	0.00	0.00		6,957	AS	1
0923	5	56356		GRANDVILLE SCHOOL PARKING	FROM ROUTE 5012 (PUTNAM STREET)	TO PARKING	CAMP HILL	0.00	0.00	0.00		5,079	AS	2
0925	5	56361		CHURCH STREET PARKING	FROM INTERSECTION OF ROUTE 5003 (CHURCH STREET) AND ROUTE 0015 (PUBLIC WAY)	TO PARKING	LOWER TOWN	0.00	0.00	0.00		4,154	AS	3
0926	5	56363		BUS MAINTENANCE PARKING	FROM ROUTE 0918 (CAVALIER HEIGHTS PARKING)	TO PARKING	CAVALIER HEIGHTS	0.00	0.00	0.00		14,409	AS	1
0927	NC	114590		MURPHY FARM PARKING LOT	FROM ROUTE 5001 (ZACHARY TAYLOR STREET)	TO PARKING	CAVALIER HEIGHTS	0.00	0.00	0.00		7,056	GR	
0928	NC	114582		SCHOOL HOUSE RIDGE NORTH PARKING LOT	FROM STATE ROUTE 27 (BAKERTON ROAD)	TO PARKING	SCHOOL HOUSE RIDGE NORTH	0.00	0.00	0.00		6,120	GR	

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0929	NC	111173		SCHOOL HOUSE RIDGE SOUTH PARKING LOT	FROM MILLVILLE ROAD	TO END	SCHOOL HOUSE RIDGE SOUTH	0.00	0.00	0.00		5,100	GR	
0930ZZ	NC	114586		NASH PROPERTY PARKING LOTS	FROM WILLIAMS STREET	TO PARKING	BOLIVAR HEIGHTS	0.00	0.00	0.00		2,040	GR	
0932	5	241241		HAFC-HARTZOG DRIVE PARKING	ADJACENT TO ROUTE 0010 (HARTZOG DRIVE)		CAMP HILL	0.00	0.00	0.00		952	AS	2
0933	5	241245		HAFC-BIRD BRADY PARKING	FROM ROUTE 0010 (HARTZOG DRIVE)	TO PARKING	CAMP HILL	0.00	0.00	0.00		2,795	AS	2
5000	5			HIGH / WASHINGTON STREET	FROM BEGINNING OF ROUTE 0300 (WHITMAN / PROSPECT AVENUE)	TO BEGINNING OF ROUTE 0011 (HIGH STREET) / PARK BOUNDARY AT INTERSECTION WITH ROUTE 0016 (HOG ALLEY)	BOLIVAR HEIGHTS	1.62	0.00	1.62			AS	1,2,3
5001	5			ZACHARY TAYLOR STREET	FROM ROUTE 5000 (HIGH / WASHINGTON STREET)	TO INTERSECTION OF ROUTE 5004 (FILLMORE STREET) AND BEGINNING OF ROUTE 0408 (MAINTENANCE LOT A ACCESS)	CAMP HILL	0.07	0.00	0.07			AS	2
5002	5			POTOMAC STREET (NON NPS)	FROM END OF ROUTE 0600 (POTOMAC STREET) AND ROUTE 0016 (HOG ALLEY)	TO ROUTE 0913 (TRAIN STATION PARKING) ON RIGHT	LOWER TOWN	0.07	0.00	0.07			AS	3
5003	5			CHURCH STREET	FROM ROUTE 5000 (HIGH / WASHINGTON STREET)	TO END OF ROUTE 0015 (PUBLIC WAY)	LOWER TOWN	0.15	0.00	0.15			AS	3
5004	5			FILLMORE STREET	FROM INTERSECTION OF ROUTE 5001 (ZACHARY TAYLOR STREET) AND ROUTE 0408 (MAINTENANCE LOT A ACCESS)	TO BEGINNING OF ROUTE 5010 (LANCASTER STREET)	CAMP HILL	0.34	0.00	0.34			AS	2,3
5005	5			UNION STREET	FROM US HIGHWAY 340	TO BEGINNING OF ROUTE 5011 (FRANKLIN STREET) AND ROUTE 5000 (HIGH / WASHINGTON STREET)	BOLIVAR HEIGHTS	0.34	0.00	0.34			AS	2
5006	5			STORER COLLEGE PLACE	FROM ROUTE 5004 (FILLMORE STREET)	TO ROUTE 5000 (HIGH / WASHINGTON STREET)	CAMP HILL	0.06	0.00	0.06			AS	2

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

HAFE

HARPERS FERRY 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
5007	5			GILMORE STREET	FROM ROUTE 5004 (FILLMORE STREET)	TO ROUTE 5000 (HIGH / WASHINGTON STREET)	CAMP HILL	0.06	0.00	0.06			AS	2
5008	5			COLUMBIA STREET	FROM ROUTE 5004 (FILLMORE STREET)	TO EAST RIDGE STREET	CAMP HILL	0.12	0.00	0.12			AS	3
5009	5			MCDOWELL STREET	FROM ROUTE 5004 (FILLMORE STREET)	TO ROUTE 0904 (COOK HALL PARKING)	CAMP HILL	0.07	0.00	0.07			AS	2
5010	5			LANCASTER STREET	FROM END OF ROUTE 5004 (FILLMORE STREET)	TO DEAD END	CAMP HILL	0.04	0.00	0.04			AS	3
5011	5			FRANKLIN STREET	FROM INTERSECTION OF ROUTE 5000 (HIGH / WASHINGTON STREET) AND ROUTE 5005 (UNION STREET)	TO BEGINNING OF ROUTE 5012 (PUTNAM STREET)	CAMP HILL	0.11	0.00	0.11			AS	2
5012	5			PUTNAM STREET	FROM END OF ROUTE 5011 (FRANKLIN STREET)	TO MARION STREET	CAMP HILL	0.12	0.00	0.12			AS	2
5013	5			PROSPECT AVENUE	FROM END OF ROUTE 0300 (WHITMAN / PROSPECT AVENUE) AT PARK BOUNDARY	TO BEGINNING OF ROUTE 5014 (OLD FURNACE ROAD)	BOLIVAR HEIGHTS	0.68	0.00	0.68			AS	1
5014	5			OLD FURNACE ROAD	FROM END OF ROUTE 5013 (PROSPECT AVENUE) AND CHENEY AVENUE	TO ROUTE 5000 (HIGH / WASHINGTON STREET)	BOLIVAR HEIGHTS	0.36	0.00	0.36			AS	1
5015	5			CAMPGROUND ROAD	FROM ROUTE 0014 (SHORELINE DRIVE)	TO BEGINNING OF ROUTE 5016 (MURPHY FARM ROAD (NON NPS)) ON LEFT	CAVALIER HEIGHTS	0.24	0.00	0.24			AS	1
5016	5			MURPHY FARM ROAD (NON NPS)	FROM END OF ROUTE 5015 (CAMPGROUND ROAD)	TO MURPHY FARM LANE AT END OF PAVEMENT	CAVALIER HEIGHTS	0.11	0.00	0.11			AS	1

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 HARPERS FERRY NATIONAL HISTORICAL PARK

CYCLE 5 ROUTE TOTALS

DCV Driven Route Miles	3.03
Manually Rated Route Miles	0.12
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	3.15
Manually Rated Routes (SQFT)	0.00
TOTAL UNPAVED PARK ROUTE MILES	7.39

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)	487,827
Unpaved Parking (SQFT)	303,816
TOTAL PARKING (SQFT)	791,643

CYCLE 5 WEIGHTED AVERAGE PARK VALUES

DCV Driven PCR	79
**Manually Rated Routes PCR	73
**Parking PCR	73
***Total Equivalent Lane Miles	14.68

* - 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 HAFE

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).

HAFE

HARPERS FERRY 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
0921ZZ	42982	5	BOLIVAR HEIGHTS BUS LOOP AND PARKING	FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE) ON RIGHT AND LEFT	TO PARKING			0.00	0.00	0.00	6,957
0930ZZ	114586	NC	NASH PROPERTY PARKING LOTS	FROM WILLIAMS STREET	TO PARKING			0.00	0.00	0.00	2,040

HAFE-0921ZZ 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
0921Z	42982	5	BOLIVAR HEIGHTS PARKING	FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE)	TO PARKING			0.00	0.00	0.00	4,610
0922Z	42982	5	BOLIVAR HEIGHTS BUS LOOP	FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE)	TO ROUTE 0300 (WHITMAN / PROSPECT AVENUE)			0.00	0.00	0.00	2,347

HAFE-0930ZZ 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
0930Z	114586	NC	NASH PROPERTY PARKING LOT 1	FROM WILLIAMS STREET	TO PARKING			0.00	0.00	0.00	540
0931Z	114586	NC	NASH PROPERTY PARKING LOT 2	FROM WILLIAMS STREET	TO PARKING			0.00	0.00	0.00	1,500

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HAFE

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Addition**	**Comments**
0015	PUBLIC WAY	OTHER	PAVED ROUTE ADDED IN CYCLE 5.
0016	HOG ALLEY	OTHER	ADDED DURING THE ALIGNMENT OF 2010 AND VERIFIED IN CYCLE 5.
0932	HAFC-HARTZOG DRIVE PARKING	OTHER	PAVED PARKING AREA ADDED IN CYCLE 5.
0933	HAFC-BIRD BRADY PARKING	OTHER	PAVED PARKING AREA ADDED IN CYCLE 5.
5000	HIGH / WASHINGTON STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5002	POTOMAC STREET (NON NPS)	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5004	FILLMORE STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5005	UNION STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5006	STORER COLLEGE PLACE	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5007	GILMORE STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5008	COLUMBIA STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HAFE

ROUTES ADDED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Addition**	**Comments**
5009	MCDOWELL STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5010	LANCASTER STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5011	FRANKLIN STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5012	PUTNAM STREET	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5013	PROSPECT AVENUE	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5014	OLD FURNACE ROAD	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5015	CAMPGROUND ROAD	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.
5016	MURPHY FARM ROAD (NON NPS)	OTHER	PAVED 5000 ROUTE ADDED IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HAFE

ROUTES MODIFIED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Modification**	**Comments**
0903	HAFC- LEWIS ANTHONY PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY. NAME CHANGED FROM "BIRD BRADY MAILROOM PARKING" TO "HAFC- LEWIS ANTHONY PARKING".
0914	LOWER TOWN PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0915	CANAL OVERLOOK PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.
0926	BUS MAINTENANCE PARKING	SQ FEET CHANGE	MINOR ADJUSTMENT MADE TO SHAPE TO REFLECT PARKING LOT GEOMETRY ACCURATELY.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HAFE

OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Type of Change**	**Comments**
0011	HIGH STREET	SURFACE TYPE CHANGE	CONCRETE SURFACE TYPE IN CYCLE 5, IT WAS PREVIOUSLY ASPHALT.
0300	WHITMAN / PROSPECT AVENUE	ROUTE NAME	NAME CHANGED FROM “BOLIVAR HEIGHTS ACCESS ROAD”.
0408	MAINTENANCE LOT A ACCESS	ROUTE SPLIT	CYCLE 3 ROUTE 0408 WAS SPLIT INTO ROUTES 0408 AND 5001 IN CYCLE 5. FUNCTIONAL CLASS CHANGED FROM 6 TO 5 IN CYCLE 5.
0902A	FACILITY MAINTENANCE PUBLIC PARKING	ROUTE SPLIT	CYCLE 3 ROUTE 0902 WAS SPLIT INTO 0902A (PUBLIC) & 0902B (NON-PUBLIC) IN CYCLE 5.
0902B	FACILITY MAINTENANCE COMPLEX	ROUTE SPLIT	CYCLE 3 ROUTE 0902 WAS SPLIT INTO 0902A (PUBLIC) & 0902B (NON-PUBLIC) IN CYCLE 5.
0909A	MORRELL HOUSE FILLMORE STREET PARKING A	SURFACE TYPE CHANGE	PARKING AREA WAS UNPAVED IN CYCLE 3. ASPHALT SURFACE IN CYCLE 5.
0921ZZ	BOLIVAR HEIGHTS BUS LOOP AND PARKING	ROUTES COMBINED	CYCLE 3 ROUTES 0921 AND 0922 WERE COMBINED INTO ROUTE 0921ZZ IN CYCLE 5.
0923	GRANDVILLE SCHOOL PARKING	ROUTES COMBINED	CYCLE 3 UNPAVED ROUTE 0923 AND PAVED ROUTE 0924 WERE COMBINED INTO ROUTE 0923 IN CYCLE 5 SINCE BOTH ARE PAVED NOW.
0925	CHURCH STREET PARKING	ROUTE SPLIT	CYCLE 3 ROUTE 0925 WAS SPLIT INTO ROUTES 5003 AND 0925 IN CYCLE 5.
5001	ZACHARY TAYLOR STREET	ROUTE SPLIT	CYCLE 3 ROUTE 0408 WAS SPLIT INTO ROUTES 0408 AND 5001 IN CYCLE 5.
5003	CHURCH STREET	ROUTE SPLIT	CYCLE 3 ROUTE 0925 WAS SPLIT INTO ROUTES 5003 AND 0925 IN CYCLE 5.

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - HAFE

ROUTES REMOVED FROM PREVIOUS INVENTORY:			
Route #	**Route Name**	**Reason for Removal**	**Comments**
0905	LINCOLN AVENUE PARKING	OTHER	PARKING AREA WAS REMOVED IN CYCLE 5. IT NO LONGER EXISTS.

Section 3
Park Summary Information

Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

HAFE: 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	0.08	2.64%	0.29	9.57%	0.52	17.16%	0.56	18.48%	**1.45**
2									
3	0.12	3.96%	0.18	5.94%	0.10	3.30%	0.04	1.32%	**0.44**
4									
5			0.02	0.66%	0.00	0.00%	0.14	4.62%	**0.16**
6	0.06	1.98%	0.01	0.33%					**0.07**
7	0.04	1.32%							**0.04**
8	0.35	11.55%	0.32	10.56%	0.18	5.94%	0.02	0.66%	**0.87**
Totals	**0.65**	**21.45%**	**0.82**	**27.06%**	**0.80**	**26.40%**	**0.76**	**25.08%**	**3.03**

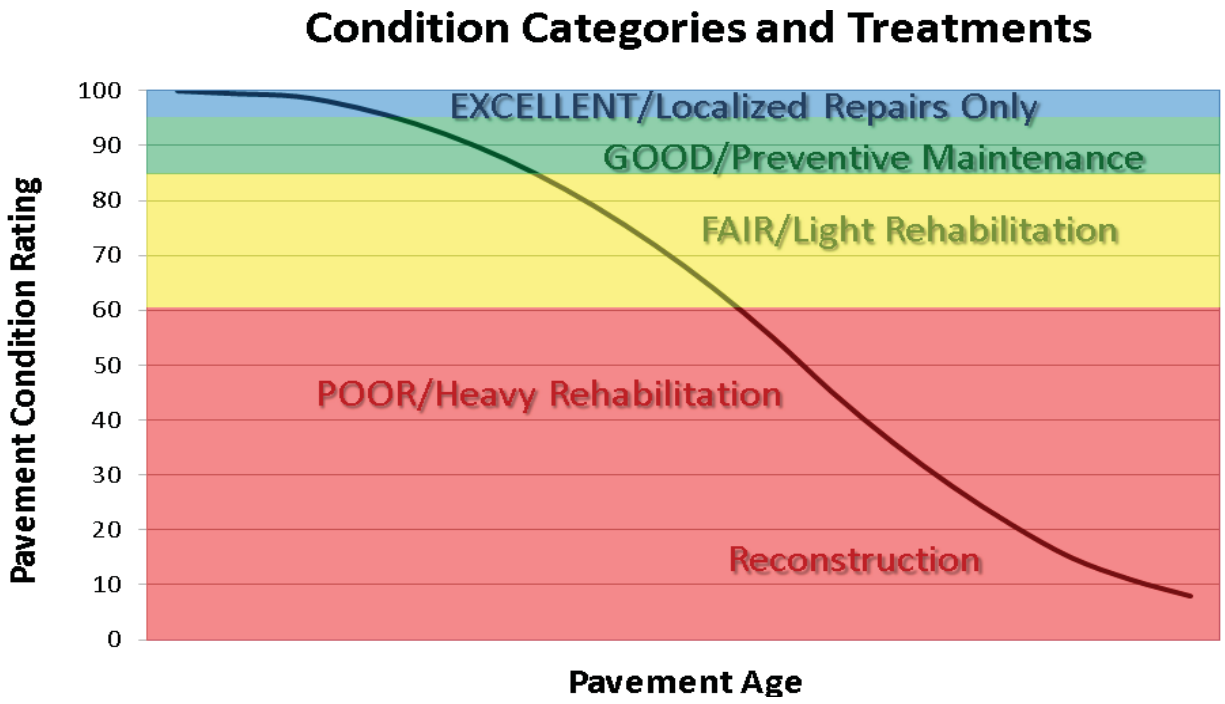
Note: **The information in this table is derived from the PMS_20 table in the Park database, which only contains processed data from routes collected with the Data Collection Vehicle (DCV). Information for Manually Rated Routes (MRR) and Parking Areas is not reported in this table. Only Functional Class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

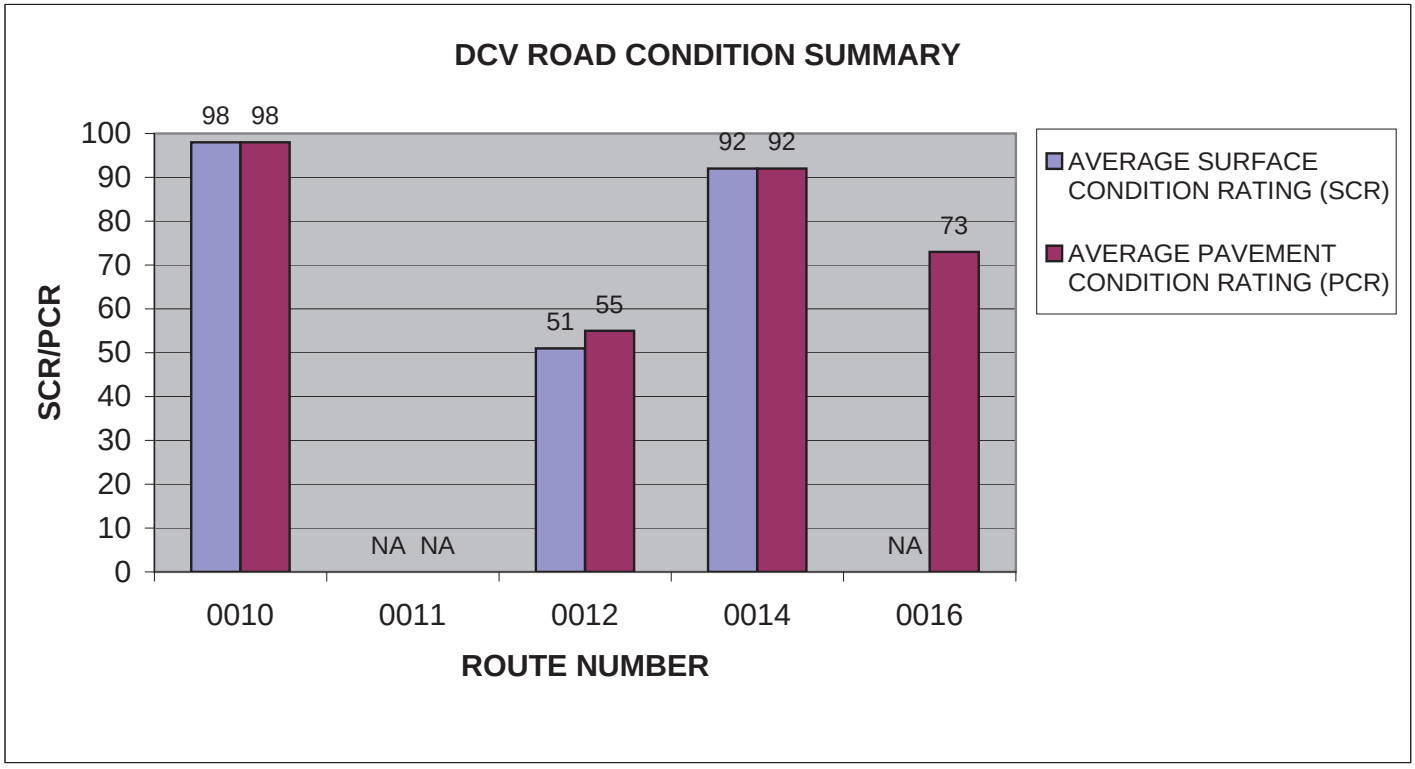
At this time, specific Maintenance and Rehabilitation activities should be evaluated and recommended at the project level. Site-specific conditions that influence treatment type should be determined based on performing a subsurface investigation and/or pavement condition survey, and not be based solely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



HAFE: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

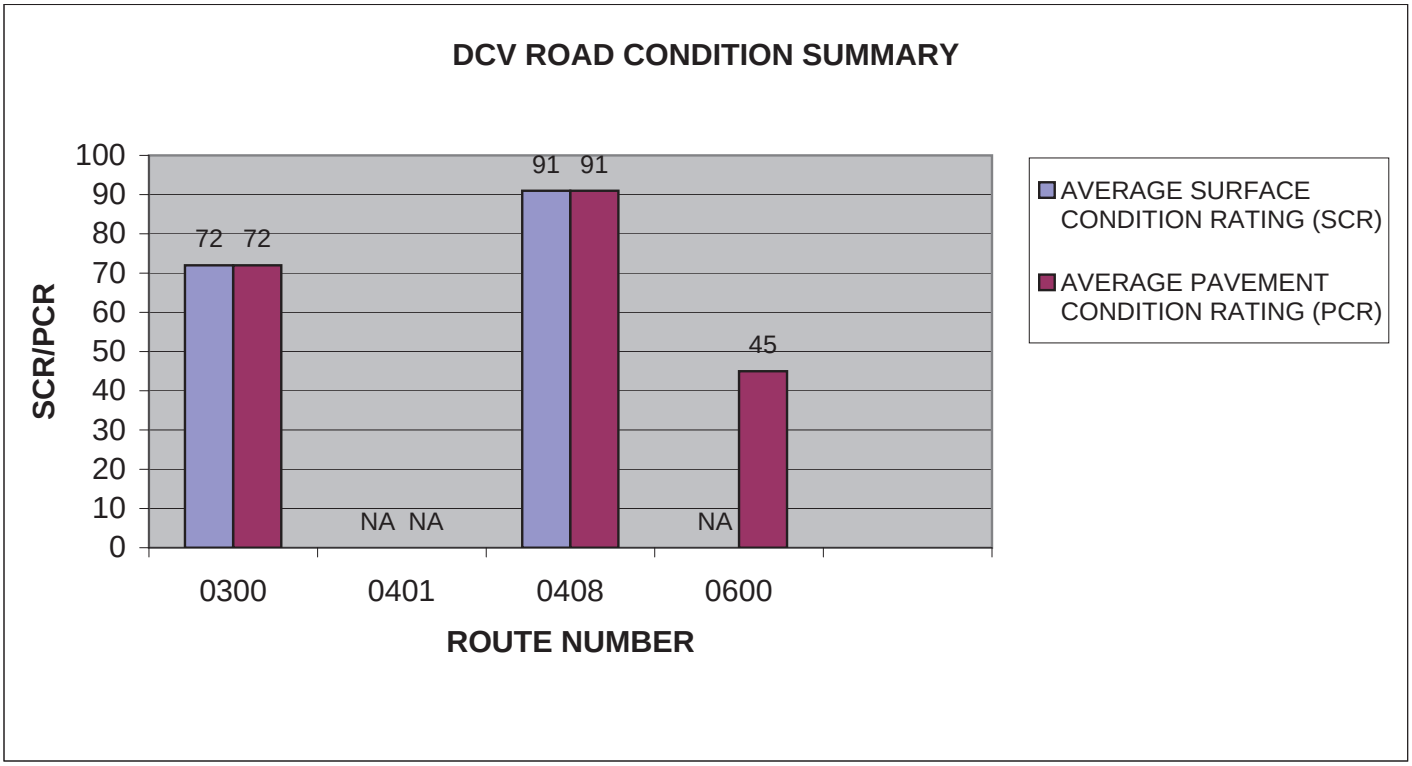
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	HARTZOG DRIVE	5	0.12	ASPHALT	98	98
0011	HIGH STREET	7	0.04	CONCRETE	NA	NA
0012	SHENANDOAH STREET	8	0.81	ASPHALT	51	55
0014	SHORELINE DRIVE	1	1.45	ASPHALT	92	92
0016	HOG ALLEY	8	0.02	CONCRETE	NA	73



HAFE: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

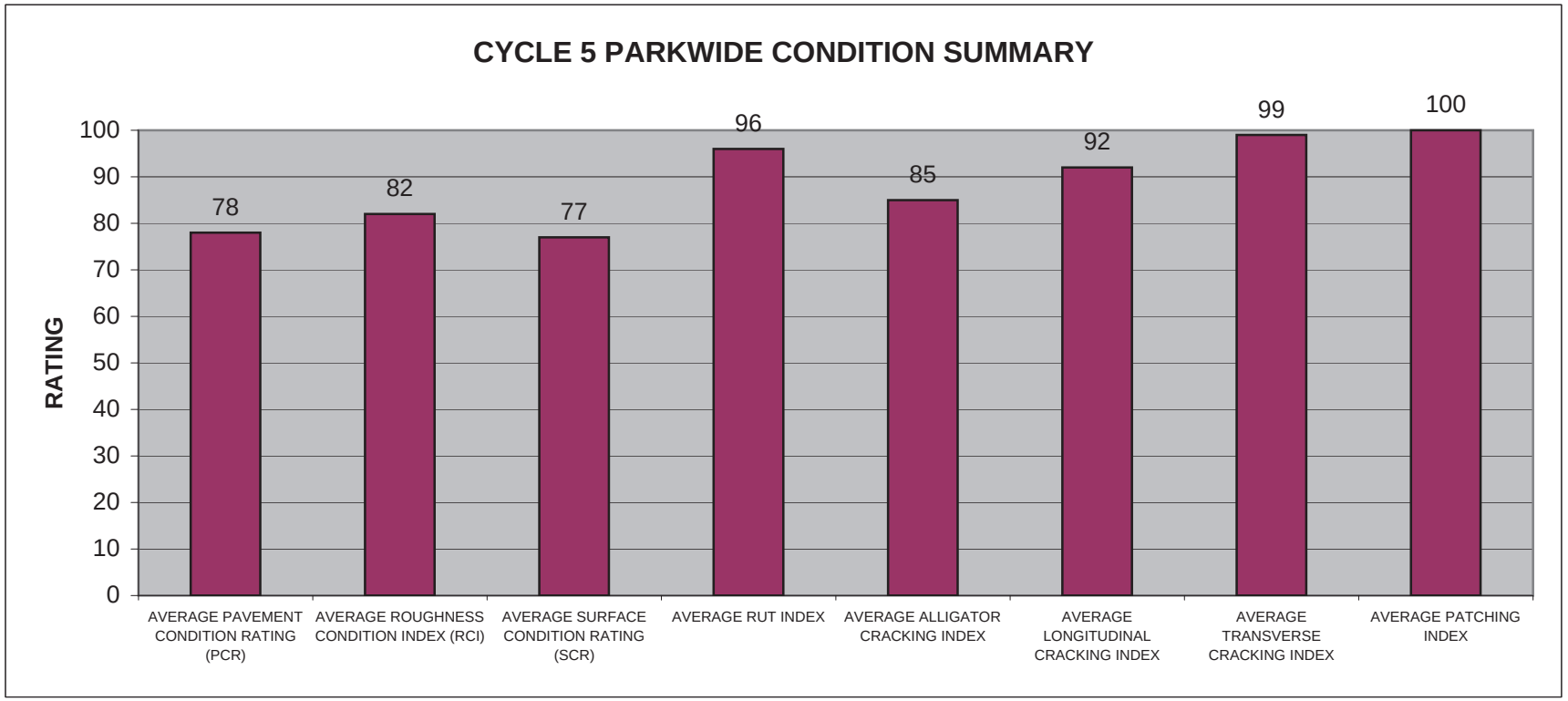
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0300	WHITMAN / PROSPECT AVENUE	3	0.44	ASPHALT	72	72
0401	RANGER RESIDENCE ACCESS ROAD	6	0.07	ASPHALT	NA	NA
0408	MAINTENANCE LOT A ACCESS	5	0.04	ASPHALT	91	91
0600	POTOMAC STREET	8	0.04	CONCRETE	NA	45



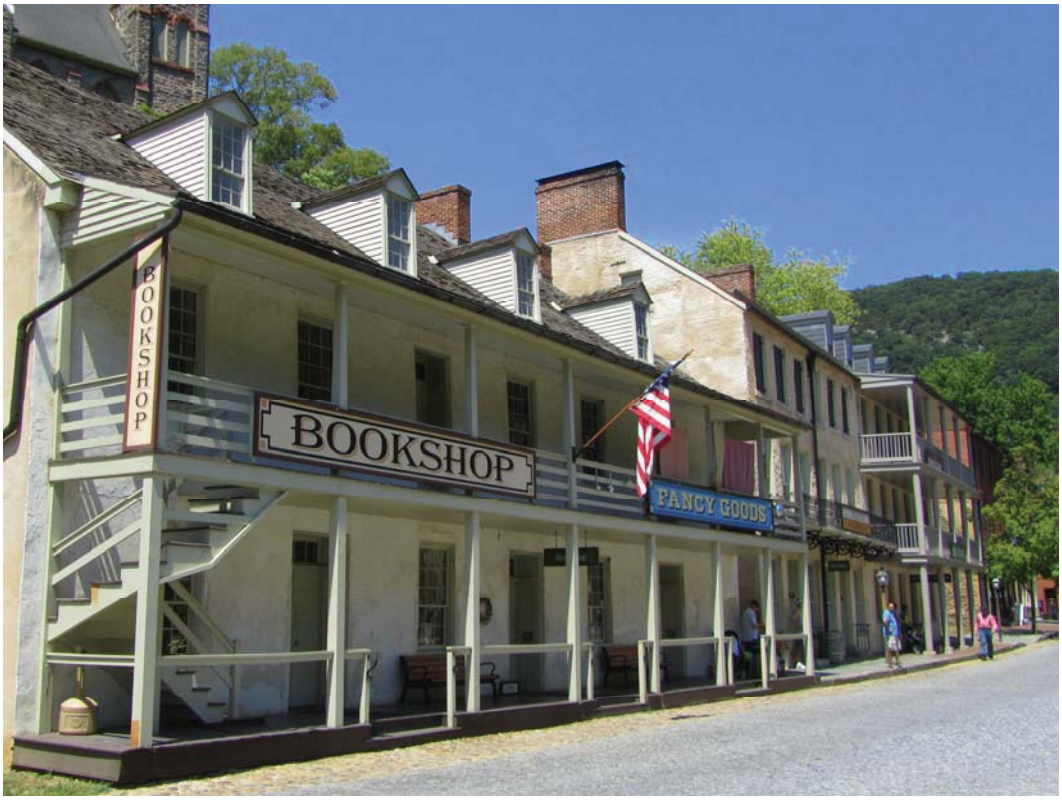
HAFE: PARKWIDE DCV CONDITION SUMMARY

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
78	82	77	96	85	92	99	100

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



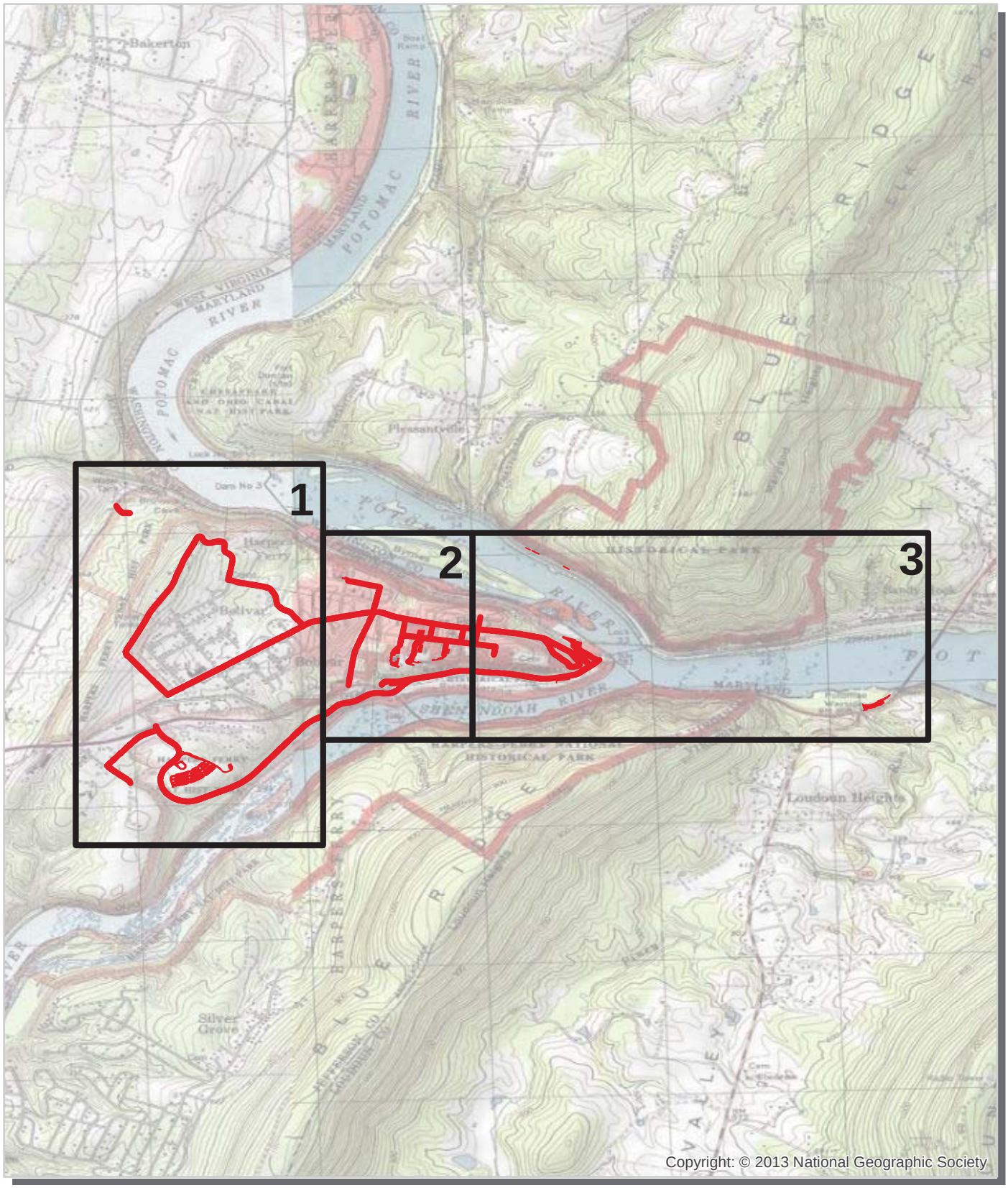
Section 4
Park Route Location Maps



Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

Harpers Ferry National Historical Park
Route Location Map
Key Map

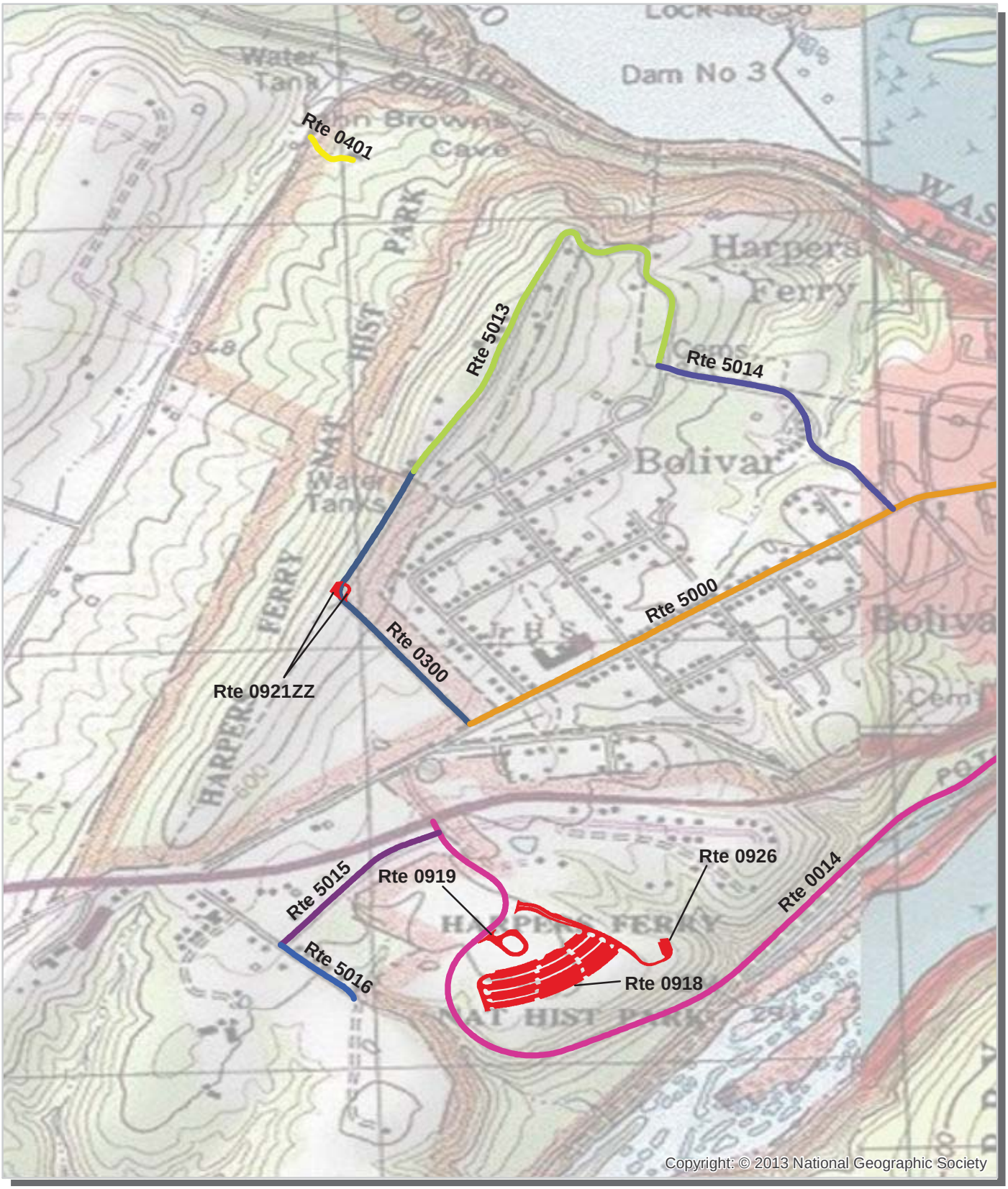


Cycle 5 Collected Routes

1 0.5 0 1 Miles

N

Harpers Ferry National Historical Park
Route Location Map
Area 1

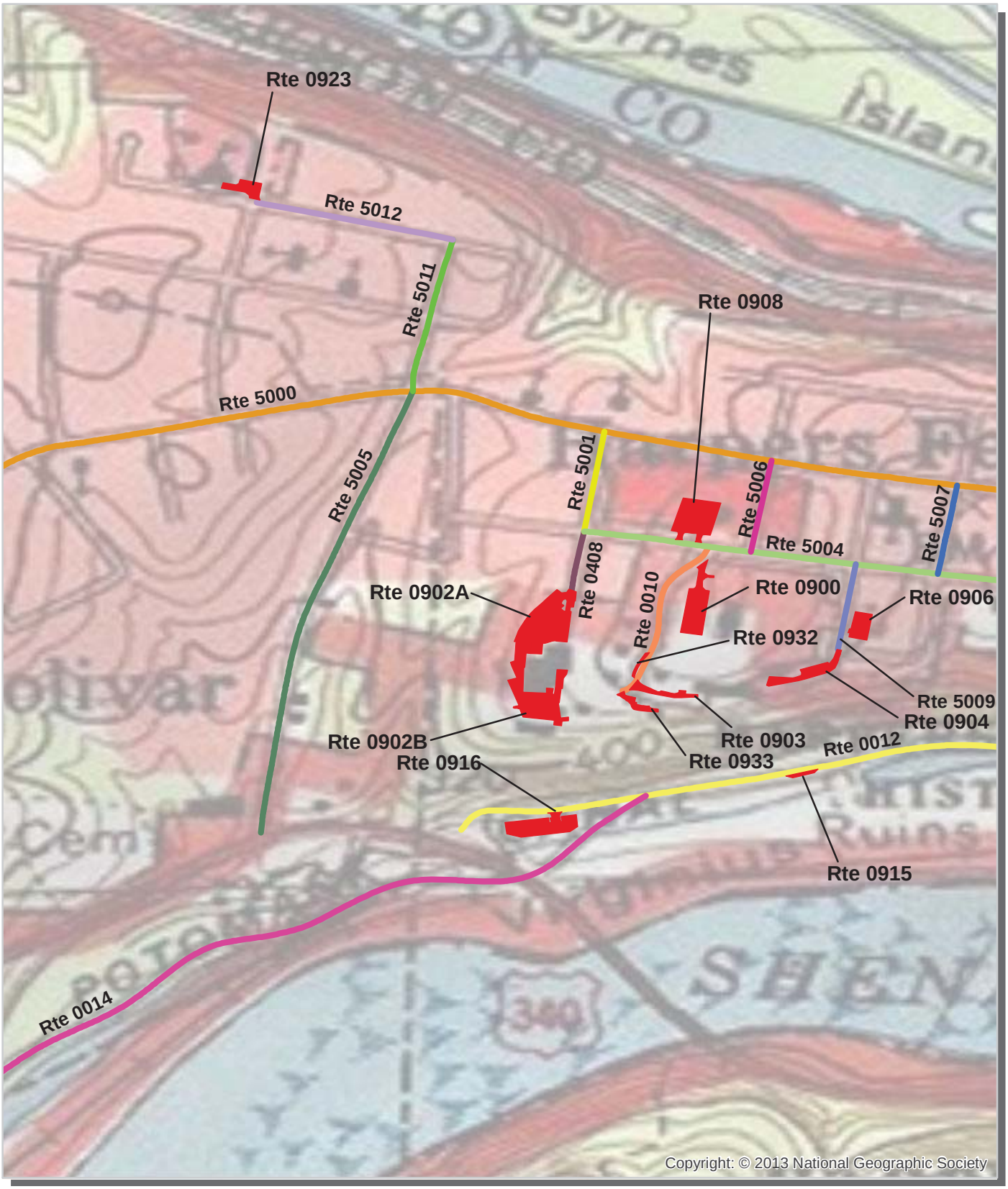


Unique colors used to differentiate routes

0.4 0.2 0 0.4 Miles

N

Harpers Ferry National Historical Park
Route Location Map
Area 2

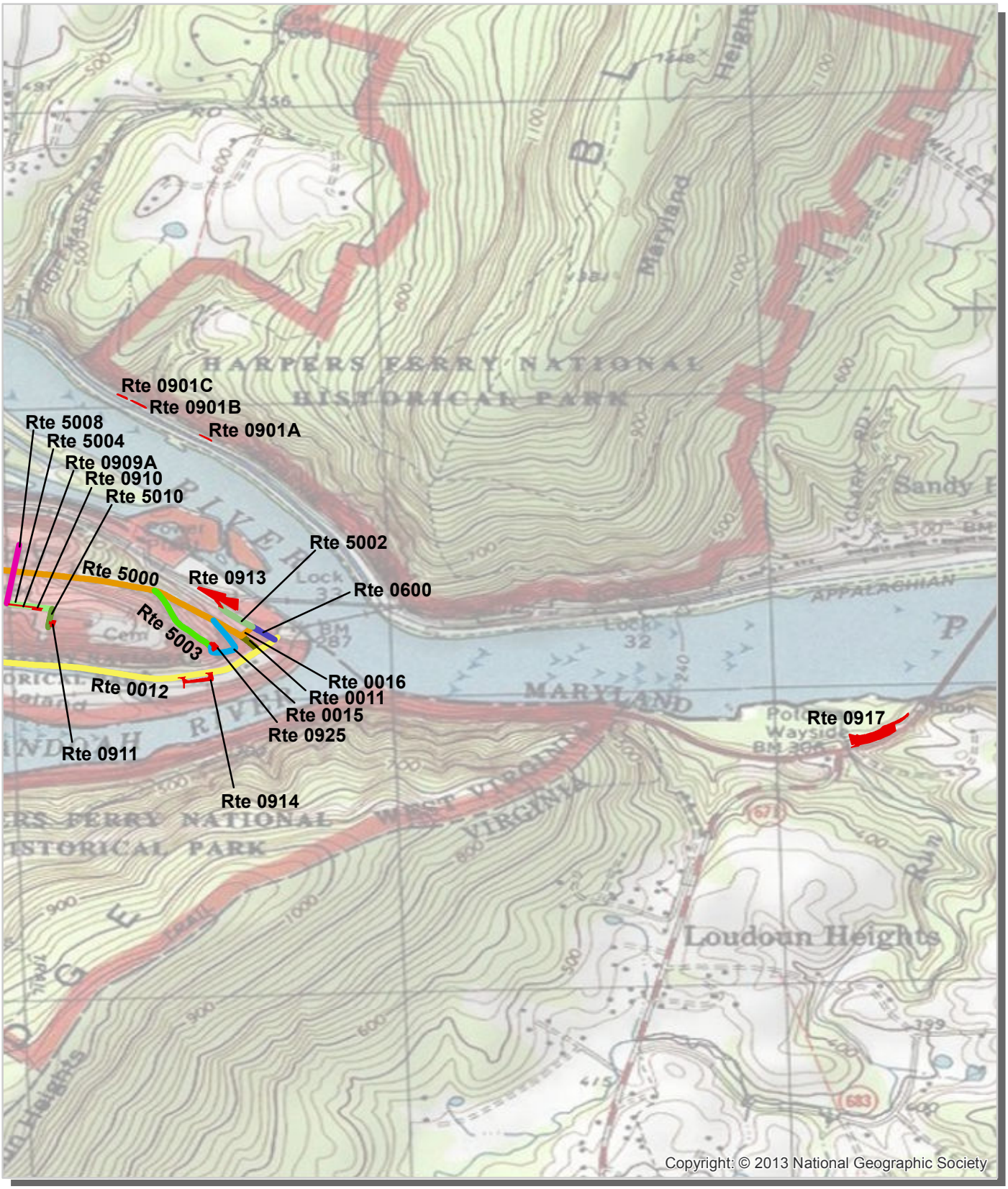


Unique colors used to differentiate routes

0.2 0.1 0 0.2 Miles

N

Harpers Ferry National Historical Park
Route Location Map
Area 3

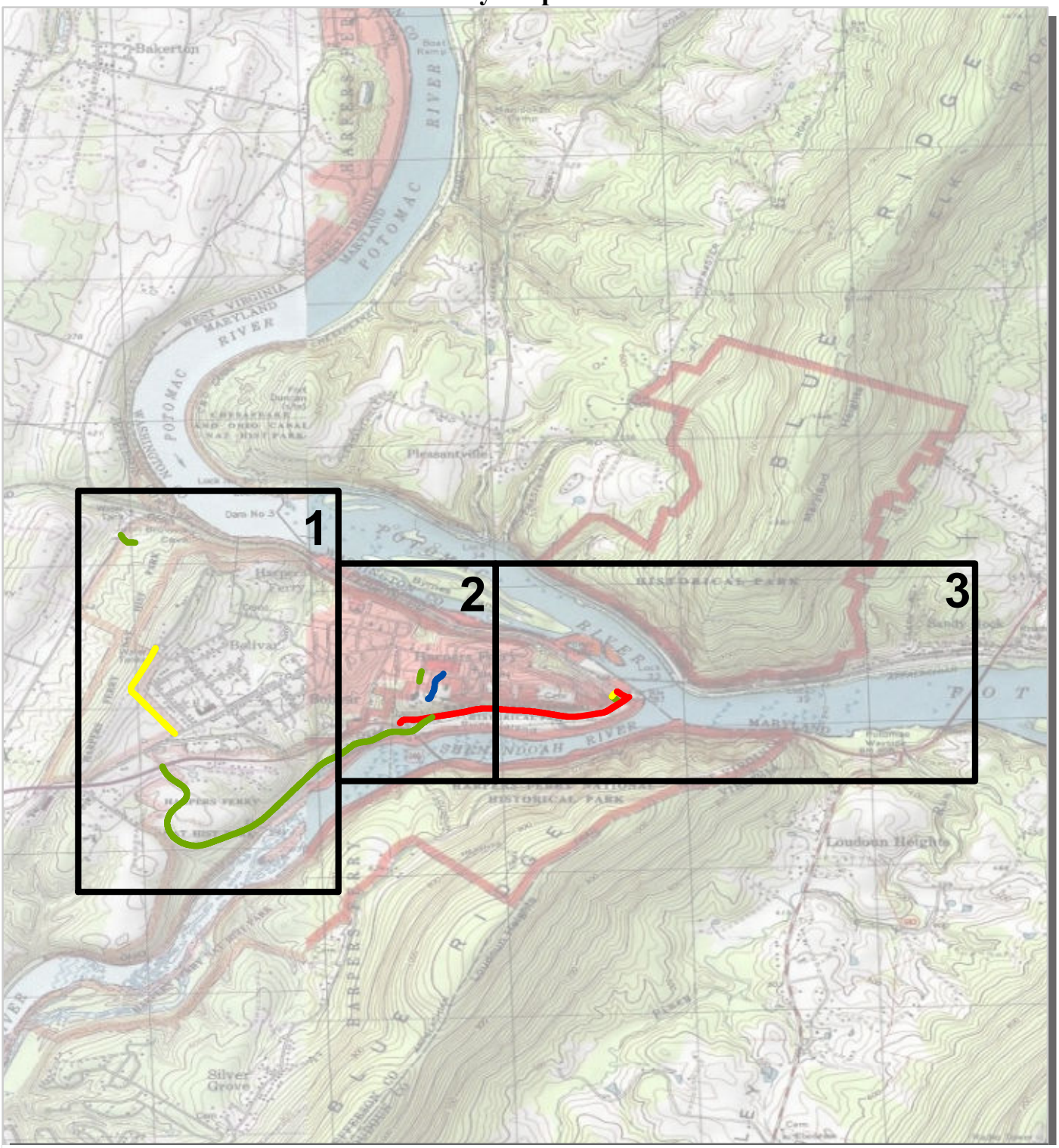


Unique colors used to differentiate routes

0.5 0.25 0 0.5 Miles

N

Harpers Ferry 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)	

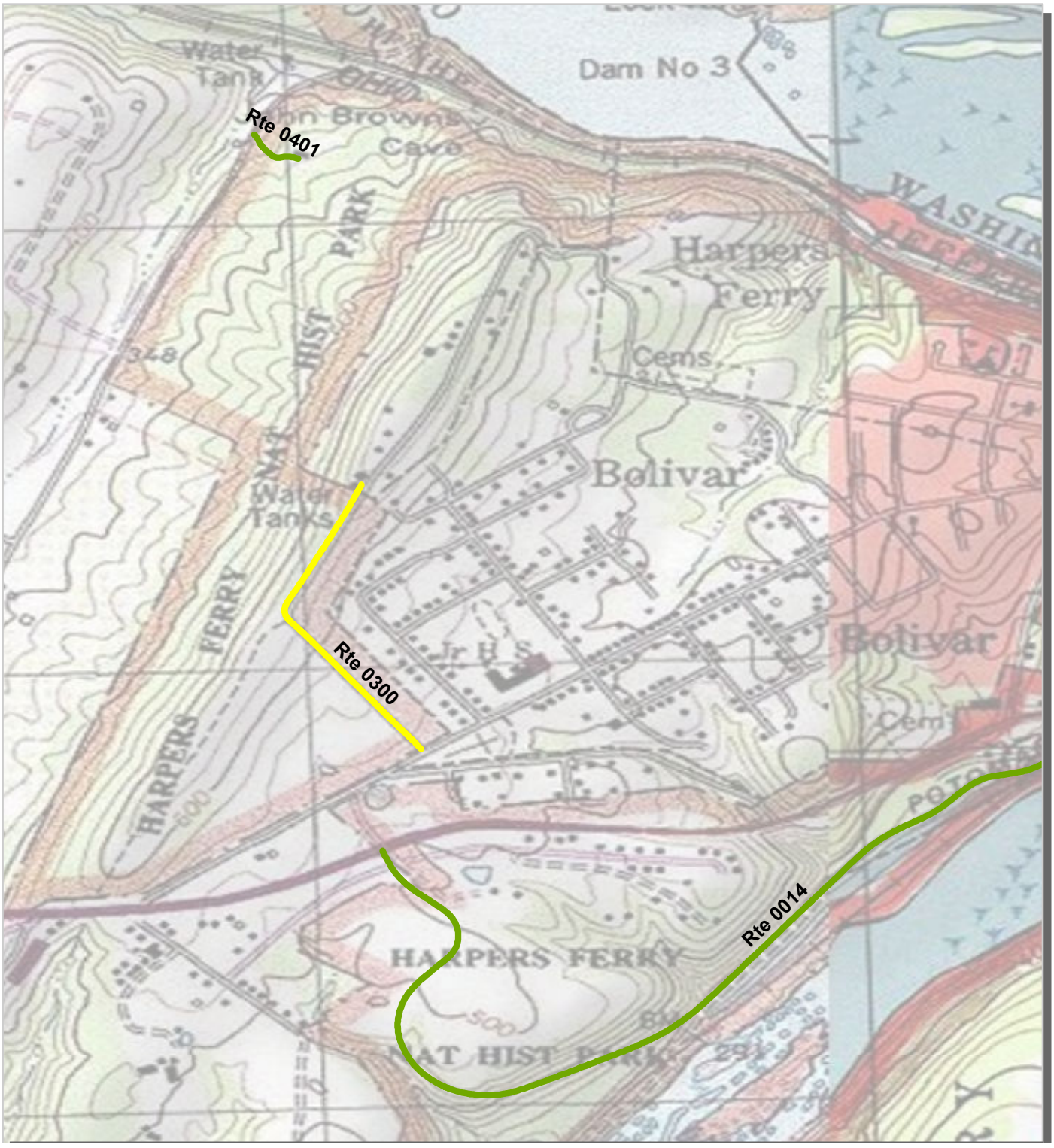
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

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

1 0.5 0 1 Miles

N

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



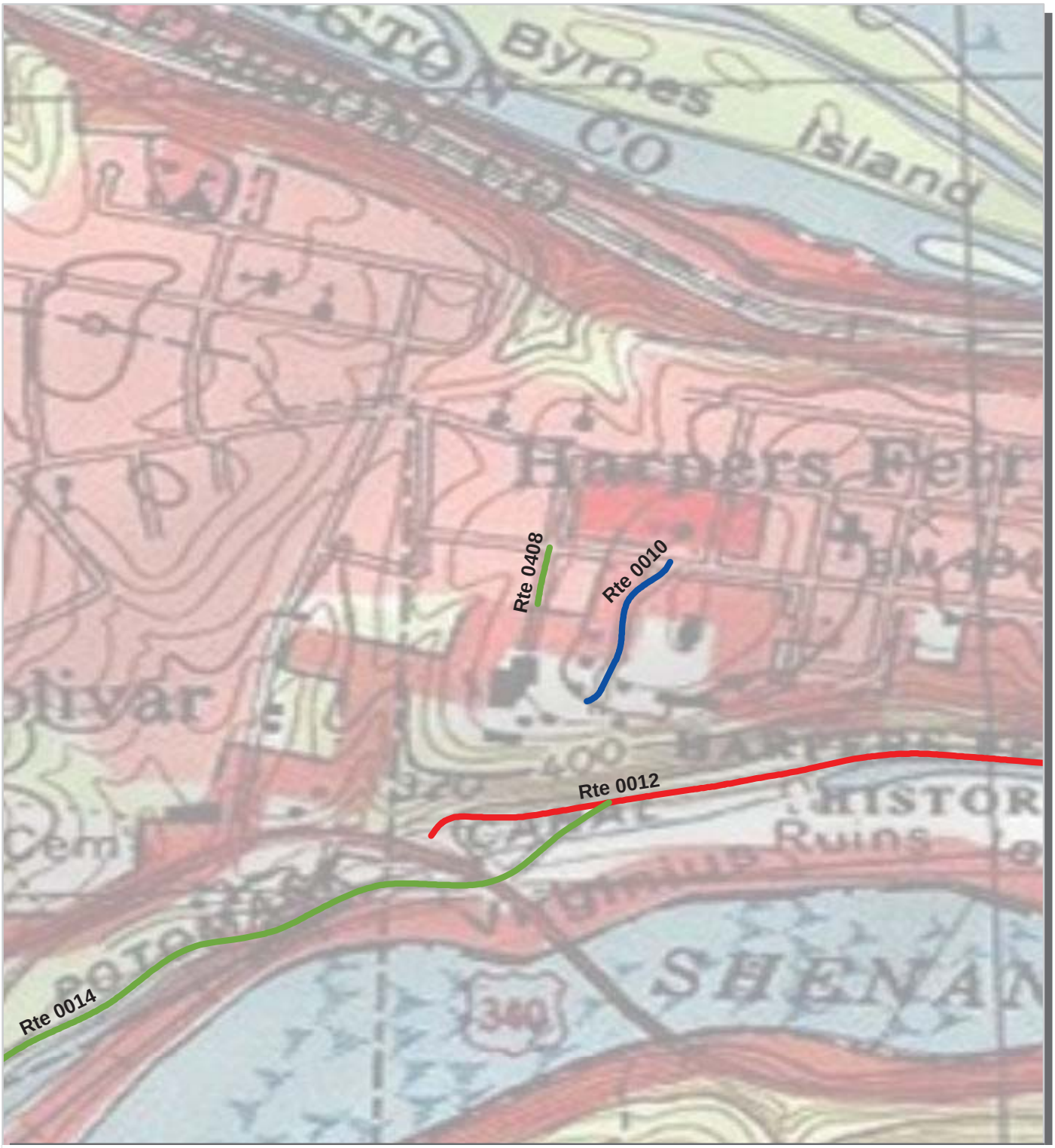
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

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

0.4 0.2 0 0.4 Miles

N

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



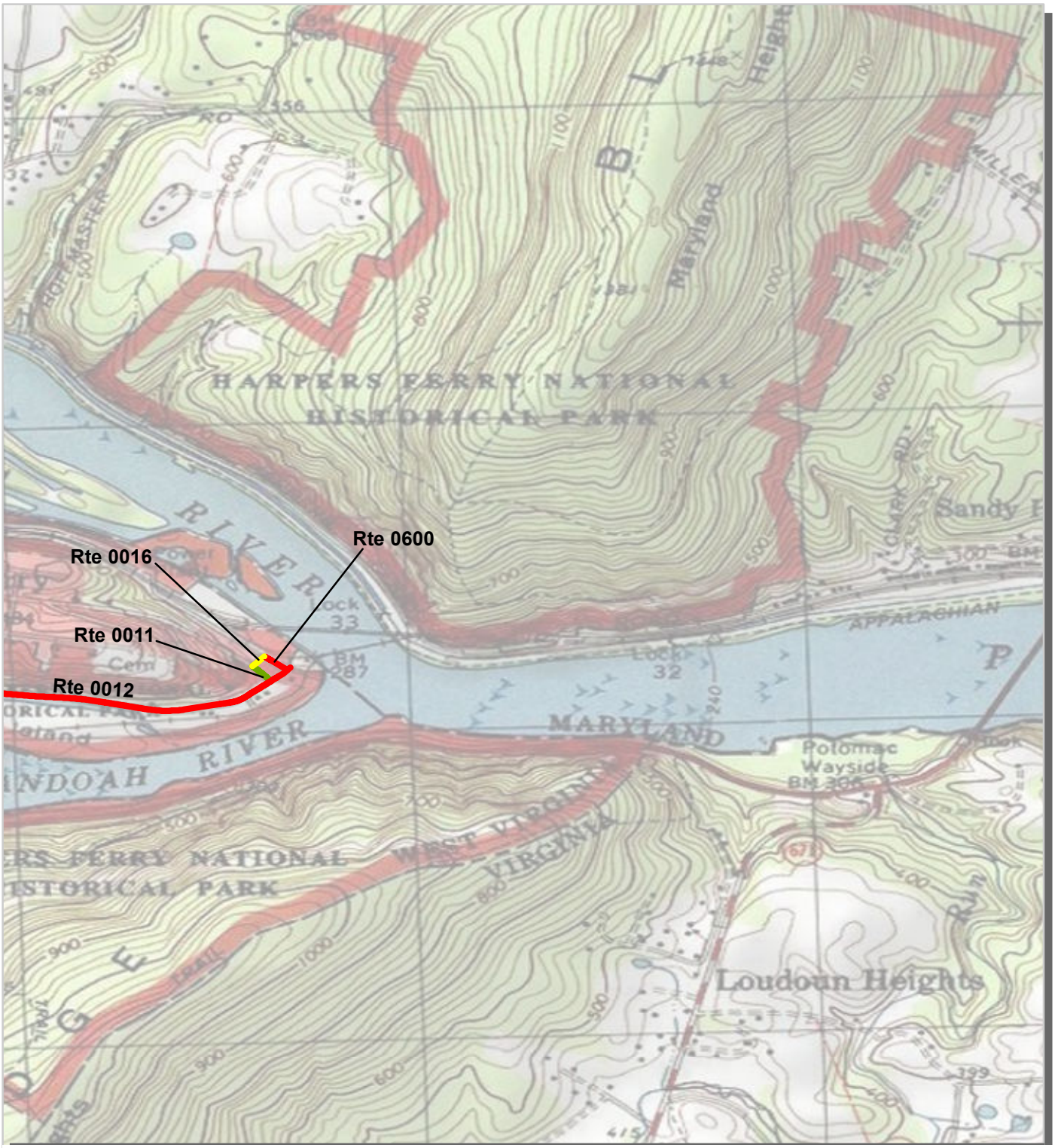
PCR	Poor	Fair	Good	Excellent	No Data
	(0 - 60)	(61 - 84)	(85 - 94)	(95 - 100)	

* 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

Harpers Ferry 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.

0.5 0.25 0 0.5 Miles

N

Section 5
Paved Route
Condition Rating Sheets

Harpers Ferry 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 HARTZOG DRIVE
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.12 Miles**

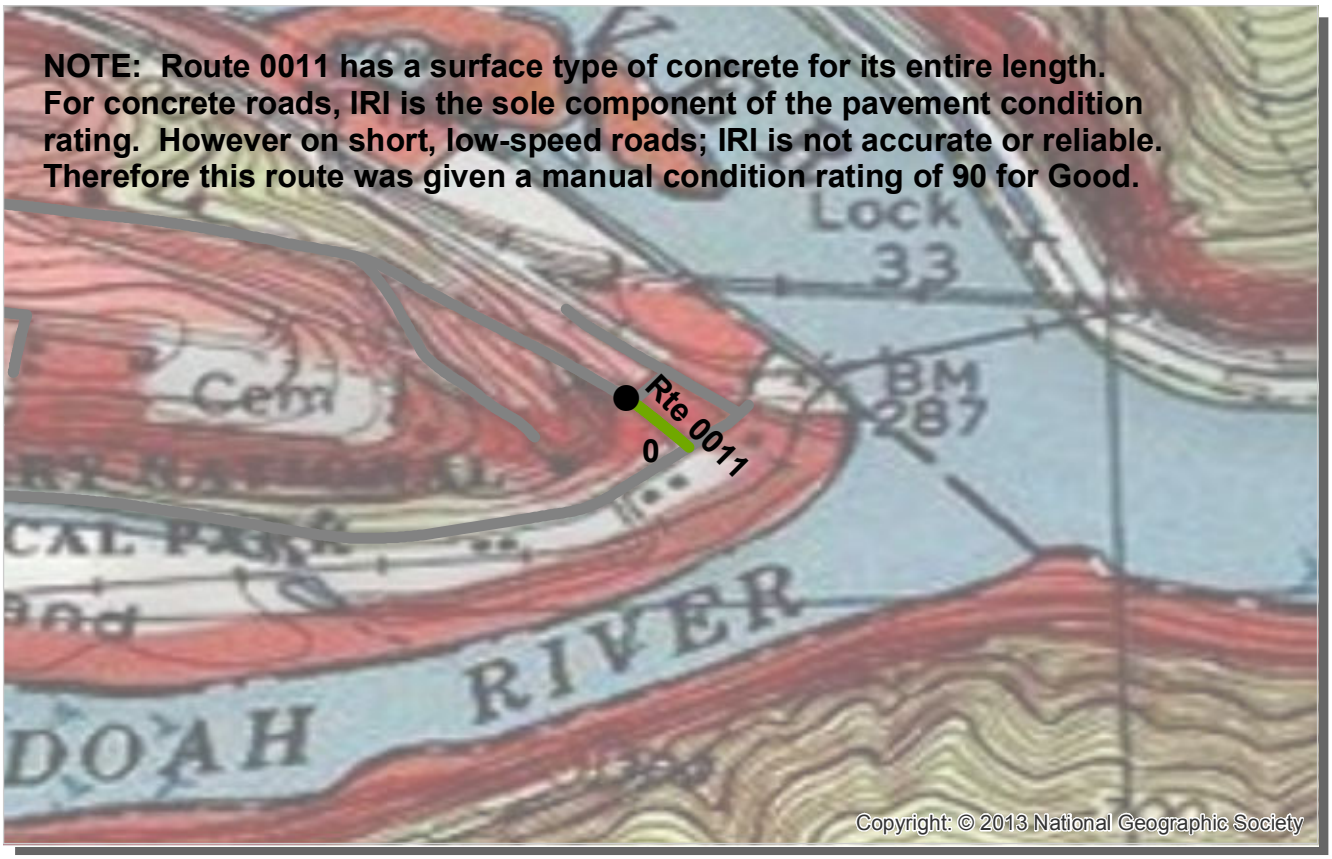
Section Number	0				
Section Length (mi)	0.12				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	15				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	98				
PCR (Pavement Condition Rating)	98				
Distress Index Values					
Structural Crack Index	100				
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



N

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

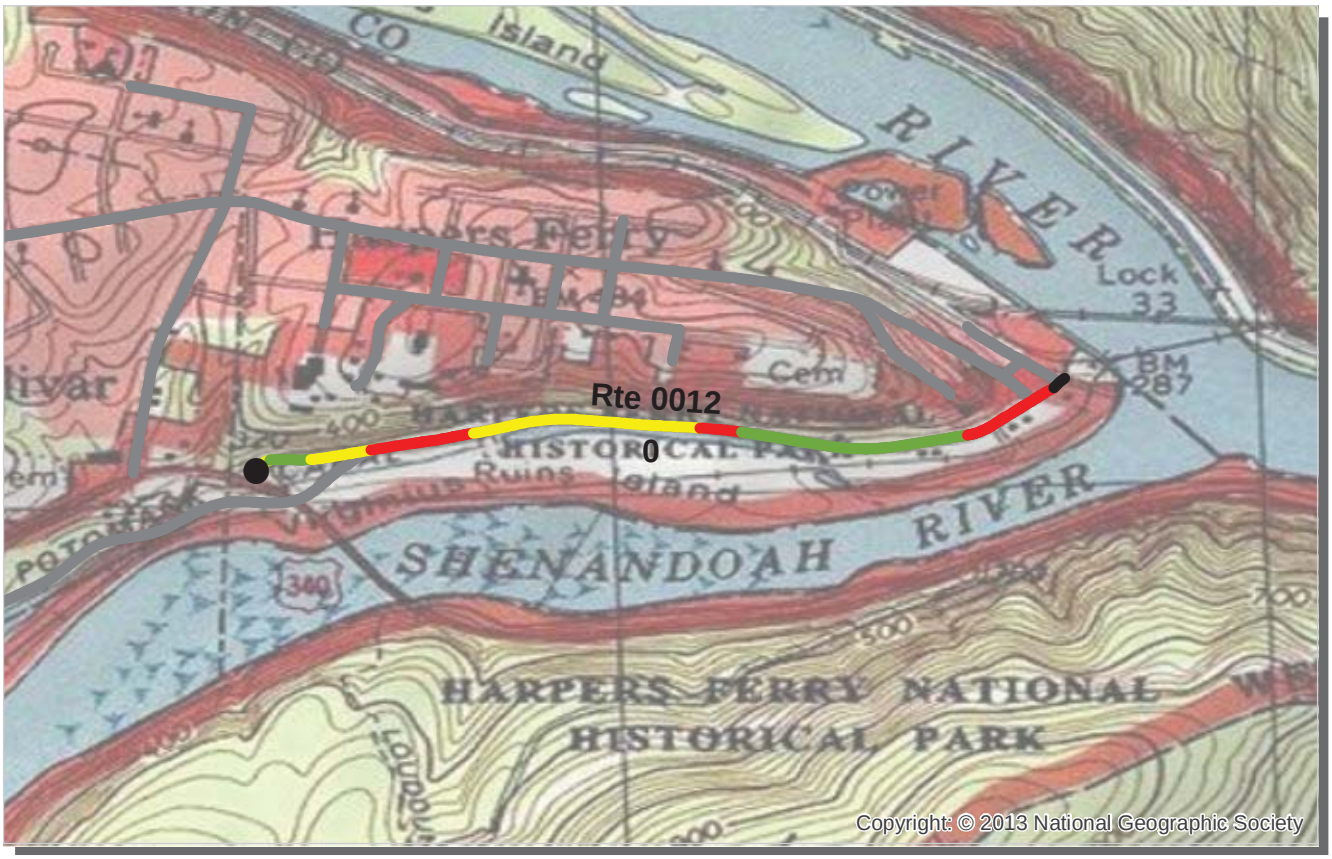
* If the PCR rating is not available for a section, the SCR rating will be displayed. See appendix for definitions and formulas.

ROUTE: 0011 HIGH STREET
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013
NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.04 Miles**

Section Number	0				
Section Length (mi)	0.04				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	19				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	90				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
Roughness Condition Index (RCI)	NC				

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



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

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

ROUTE: 0012 SHENANDOAH STREET
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/26/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.81 Miles**

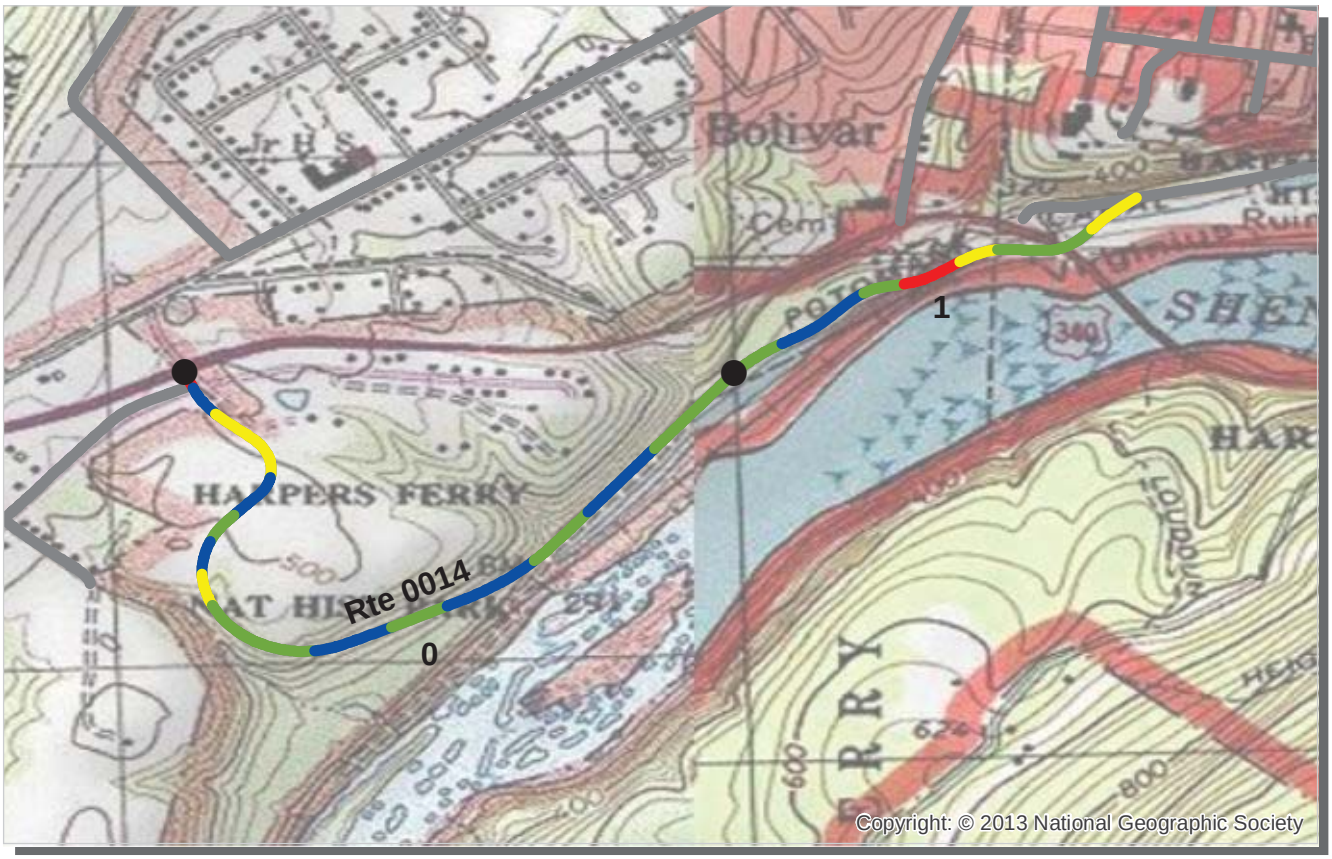
Section Number	0				
Section Length (mi)	0.81				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	51				
PCR (Pavement Condition Rating)	55				
Distress Index Values					
Structural Crack Index	51				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	98				
Roughness Condition Index (RCI)	62				

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.

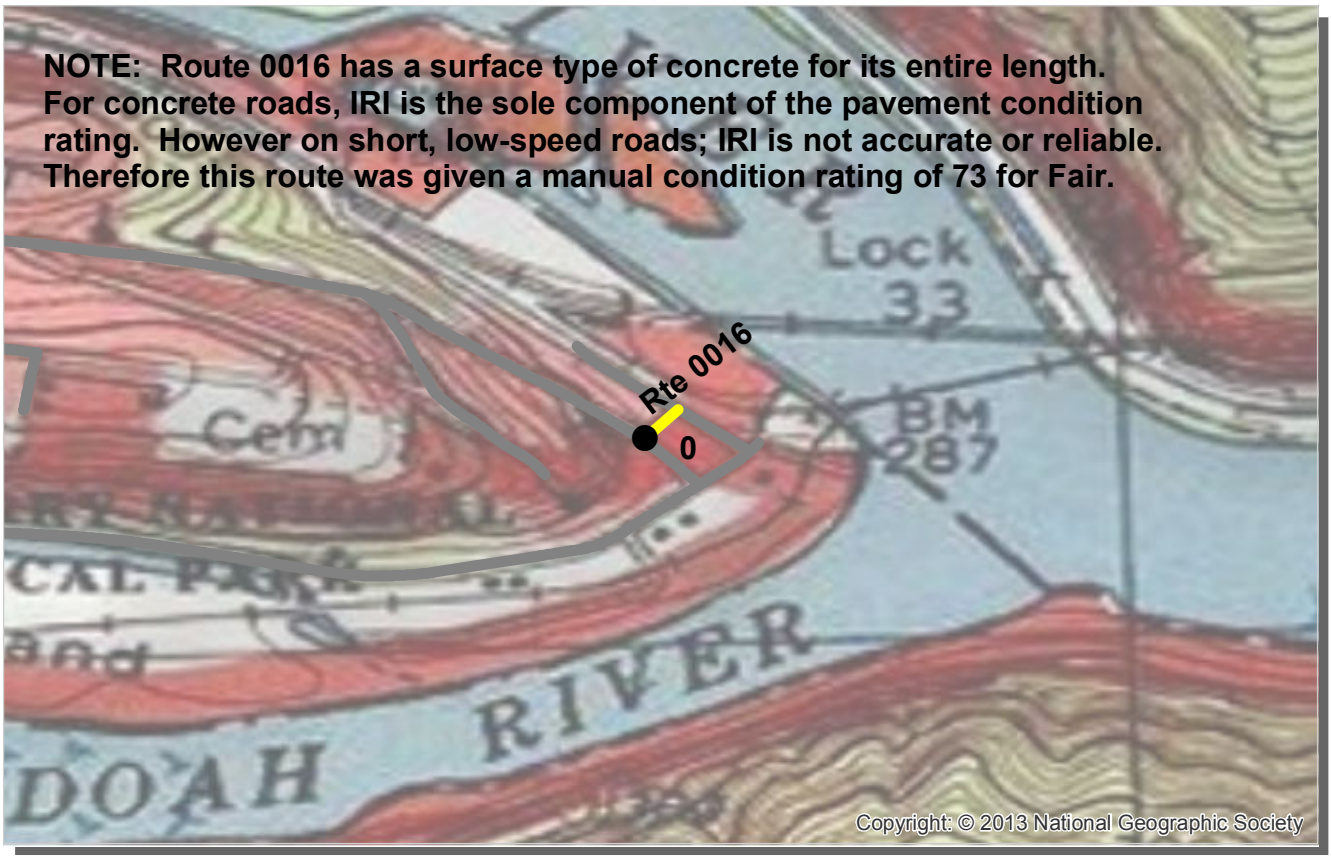
ROUTE: 0014 SHORELINE DRIVE
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 1.45 Miles**

Section Number	0	1			
Section Length (mi)	1.00	0.45			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	28	23			
Lane Width (ft)	11	10			
Roadway Condition Information					
SCR (Surface Condition Rating)	93	89			
PCR (Pavement Condition Rating)	94	89			
Distress Index Values					
Structural Crack Index	93	89			
Transverse Cracking Index	99	100			
Patching Index	100	100			
Rutting Index	94	93			
Roughness Condition Index (RCI)	96	88			

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



N

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.

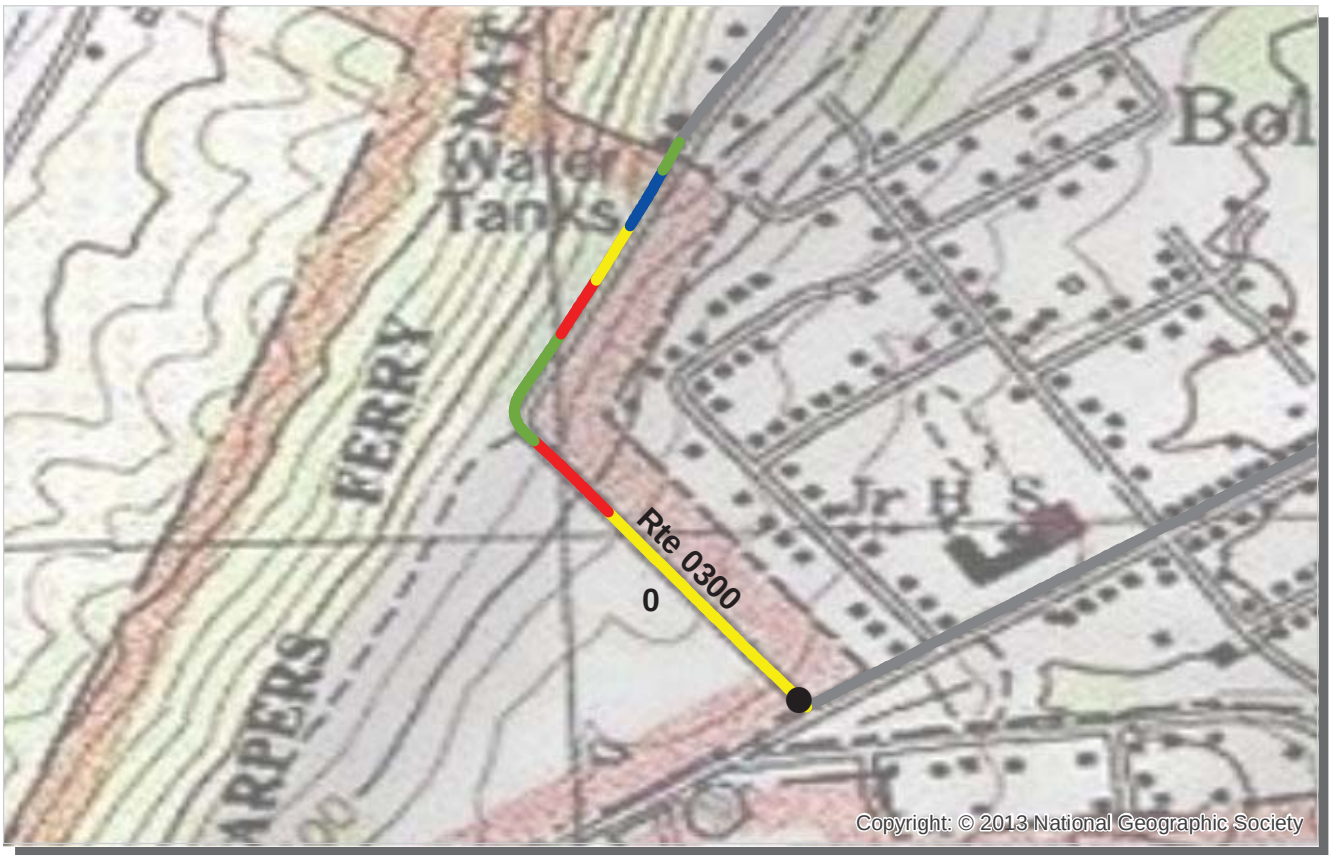
ROUTE: 0016 HOG ALLEY
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/26/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.02 Miles**

Section Number	0				
Section Length (mi)	0.02				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	23				
Lane Width (ft)	23				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	73				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
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: 0300 WHITMAN / PROSPECT AVENUE
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.44 Miles**

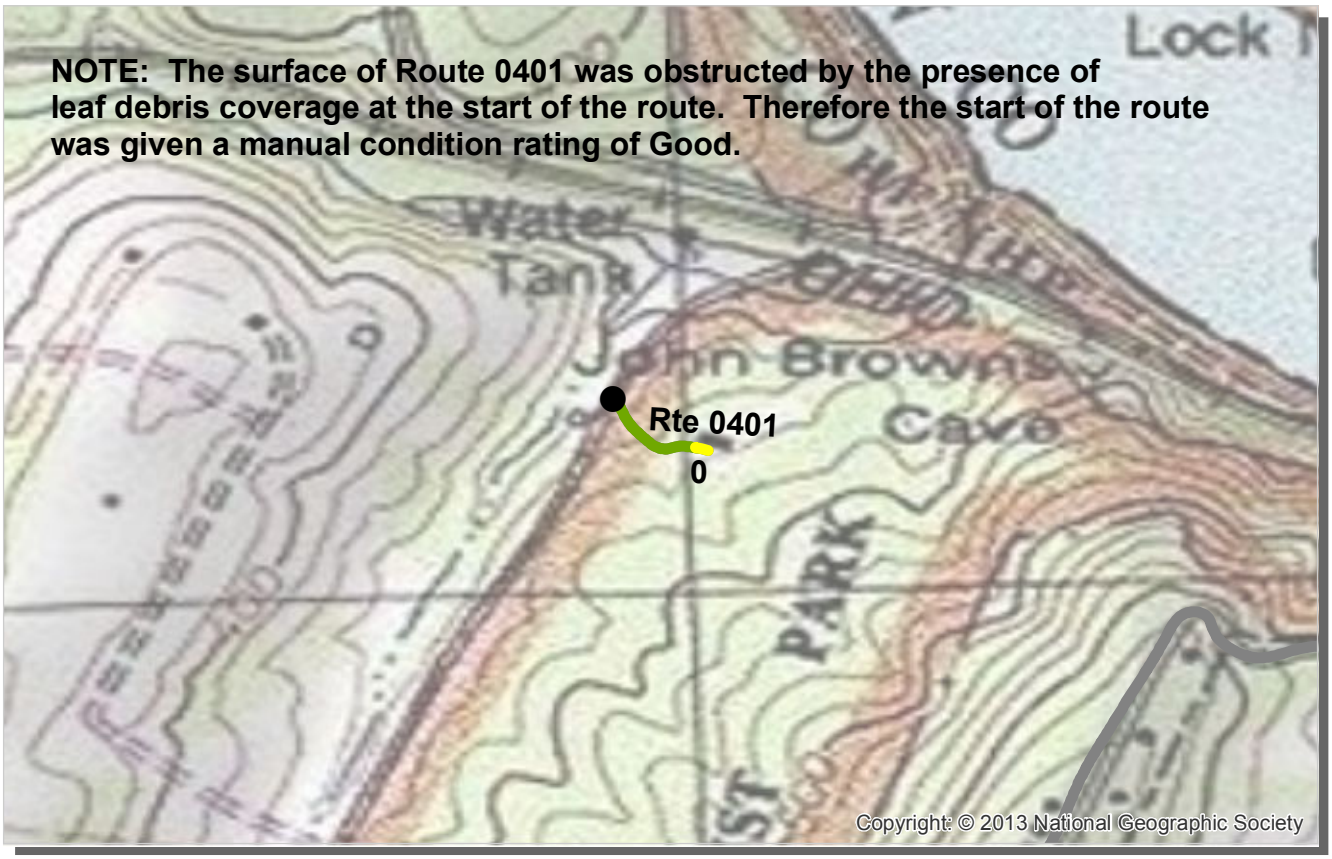
Section Number	0				
Section Length (mi)	0.44				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	72				
PCR (Pavement Condition Rating)	72				
Distress Index Values					
Structural Crack Index	72				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	96				
Roughness Condition Index (RCI)	NC				

NOTES:

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

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

NC - Not Collected N/A - Not Applicable



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.

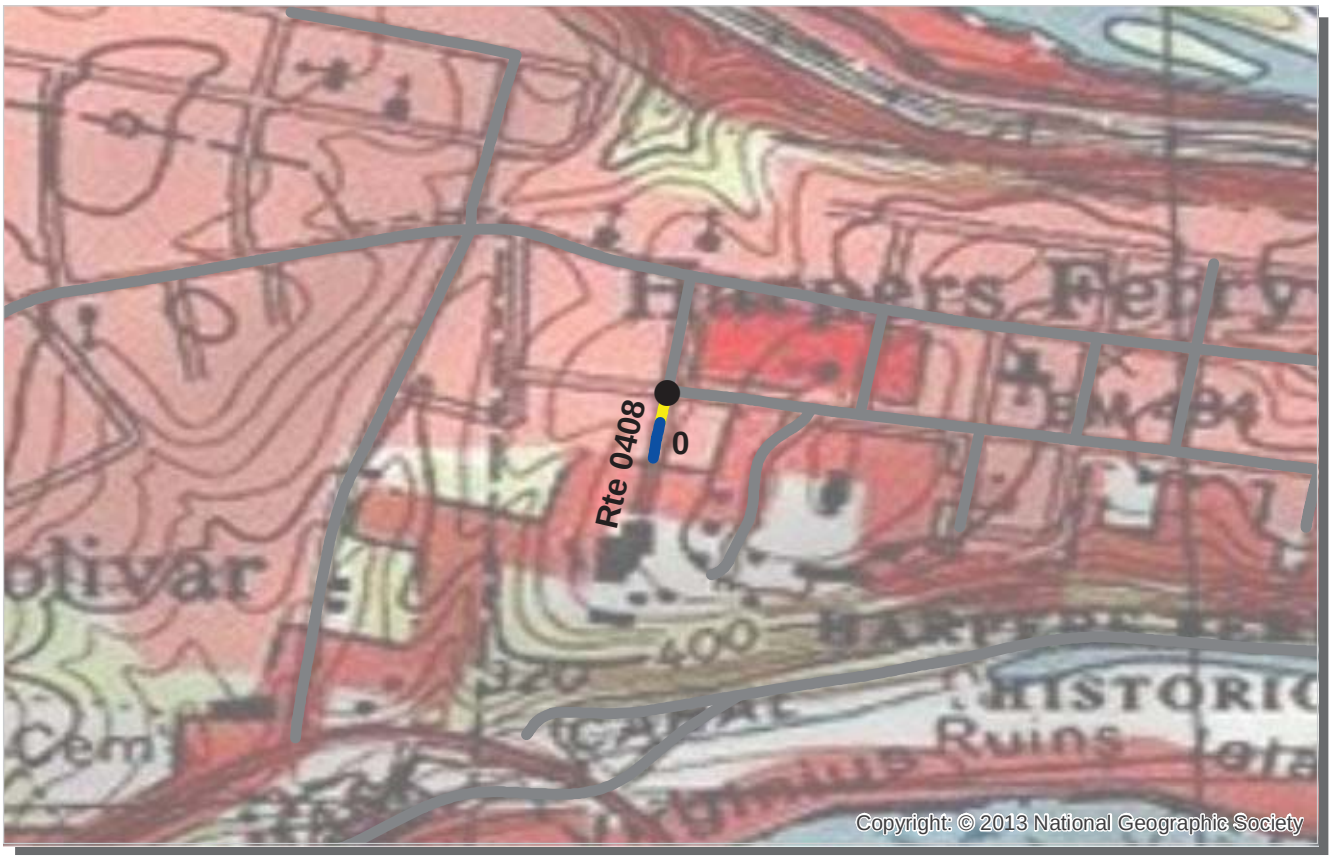
ROUTE: 0401 RANGER RESIDENCE ACCESS ROAD
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/26/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.07 Miles**

Section Number	0				
Section Length (mi)	0.07				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	9				
Lane Width (ft)	9				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	87				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
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: 0408 MAINTENANCE LOT A ACCESS
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.04 Miles**

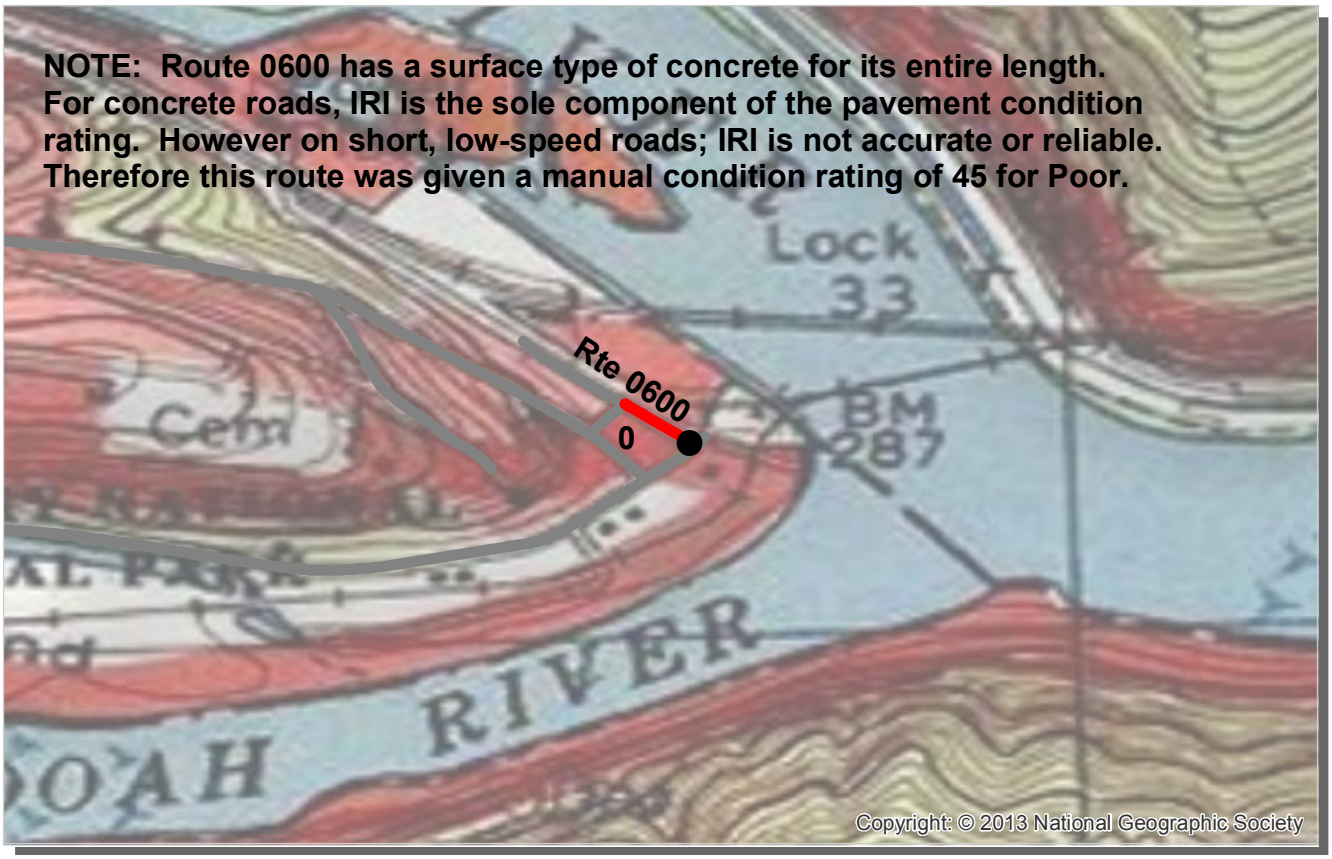
Section Number	0				
Section Length (mi)	0.04				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	17				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	91				
PCR (Pavement Condition Rating)	91				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	91				
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



N

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: 0600 POTOMAC STREET
HAFE : HARPERS FERRY NATIONAL HISTORICAL PARK

COLLECTED: 2/25/2013

NATIONAL CAPITAL REGION **TOTAL LENGTH: 0.04 Miles**

Section Number	0				
Section Length (mi)	0.04				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	22				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	NC				
PCR (Pavement Condition Rating)	45				
Distress Index Values					
Structural Crack Index	NC				
Transverse Cracking Index	NC				
Patching Index	NC				
Rutting Index	NC				
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

Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0015

PUBLIC WAY

FROM ROUTE 5000 (HIGH STREET)

TO END OF ROUTE 5003 (CHURCH STREET) AND ROUTE 0925 (CHURCH STREET PARKING)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Paved Length (mi)	Paved Width (ft)
0015	PUBLIC	4/11/2012	7,894	0.14	0.12	13
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**	**Surface Type**
0	3	0	NO CURB AND GUTTER	STONE CURB	FAIR/73	AS

* Lane miles are based on 11' lane widths

Section 7
Parking Area
Condition Rating Sheets

Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0900

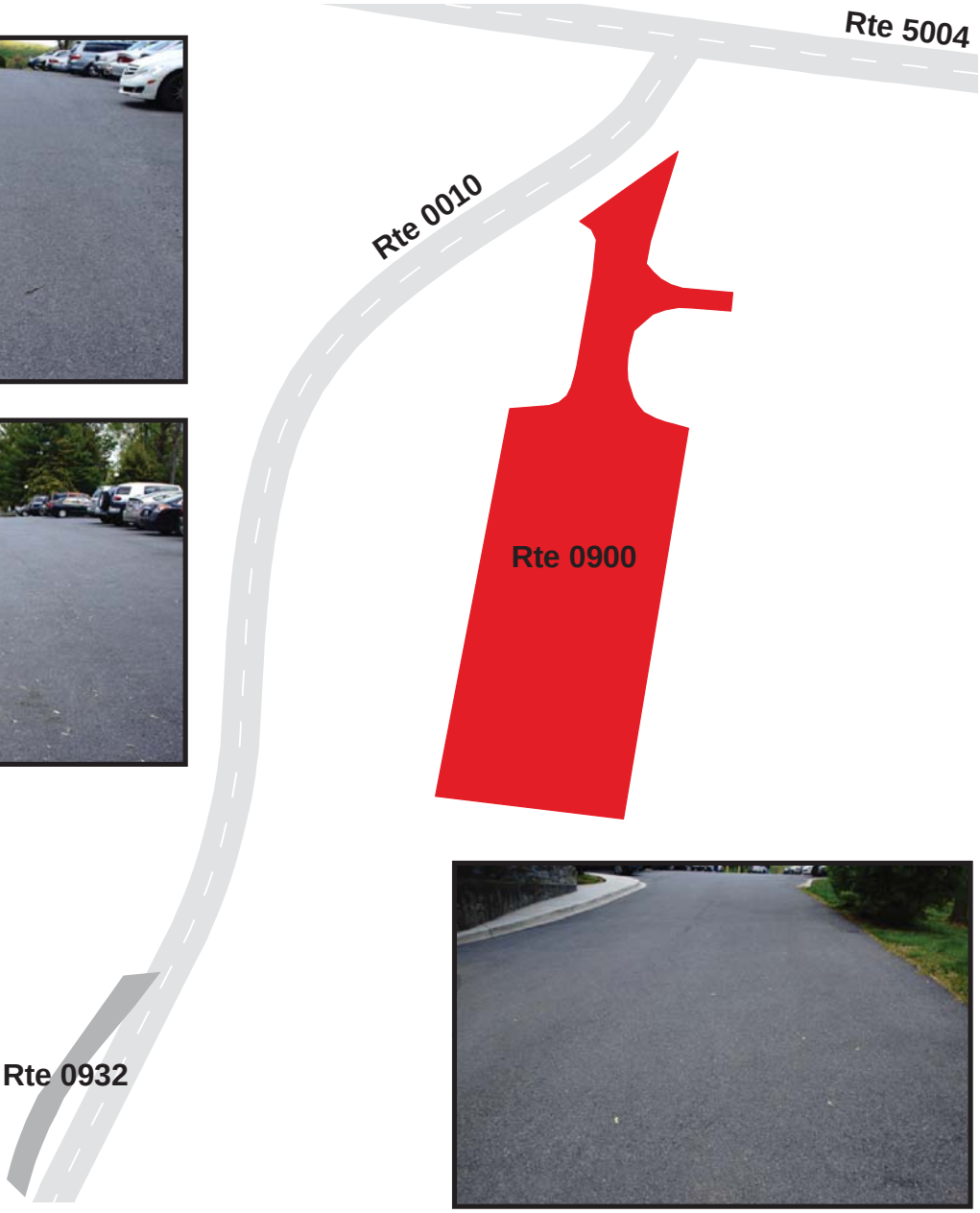
MATHER TRAINING CENTER PARKING

FROM ROUTE 0010 (HARTZOG DRIVE)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0900	PUBLIC	4/10/2012	14,178	0.24	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	CONCRETE CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths



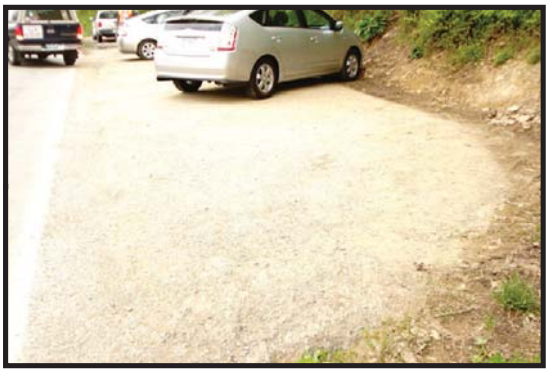
200 100 0 200 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0901A
MARYLAND HEIGHTS PARKING A
ADJACENT TO HARPERS FERRY ROAD

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901A	PUBLIC	4/11/2012	1,705	0.03	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

* Lane miles are based on 11' lane widths



100 50 0 100
Feet

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0901B
MARYLAND HEIGHTS PARKING B
ADJACENT TO HARPERS FERRY ROAD

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901B	PUBLIC	4/11/2012	1,769	0.03	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

100 50 0 100
Feet

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0901C
MARYLAND HEIGHTS PARKING C
ADJACENT TO HARPERS FERRY ROAD

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0901C	PUBLIC	4/11/2012	1,256	0.02	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

50 25 0 50
Feet

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0902A
FACILITY MAINTENANCE PUBLIC PARKING
FROM END OF ROUTE 0408 (MAINTENANCE LOT A ACCESS)
TO ROUTE 0902B (FACILITY MAINTENANCE COMPLEX)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0902A	PUBLIC	4/11/2012	26,694	0.46	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	2	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths

200 100 0 200
Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

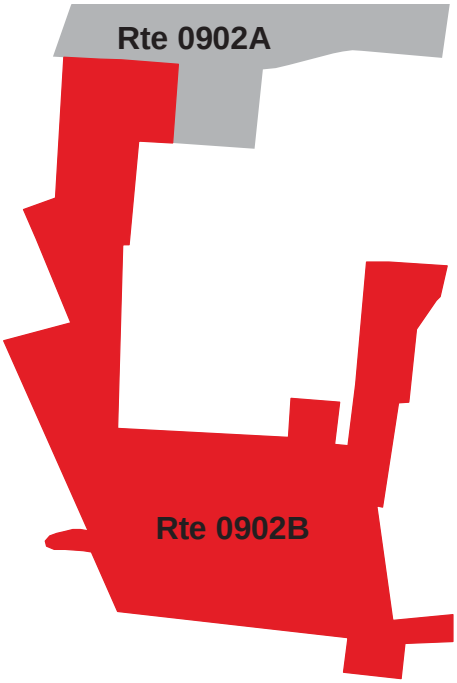
Route 0902B

FACILITY MAINTENANCE COMPLEX

FROM ROUTE 0902A (FACILITY MAINTENANCE PUBLIC PARKING)
TO MAINTENANCE AREA

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0902B	NONPUBLIC	4/11/2012	24,676	0.43	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
2	2	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



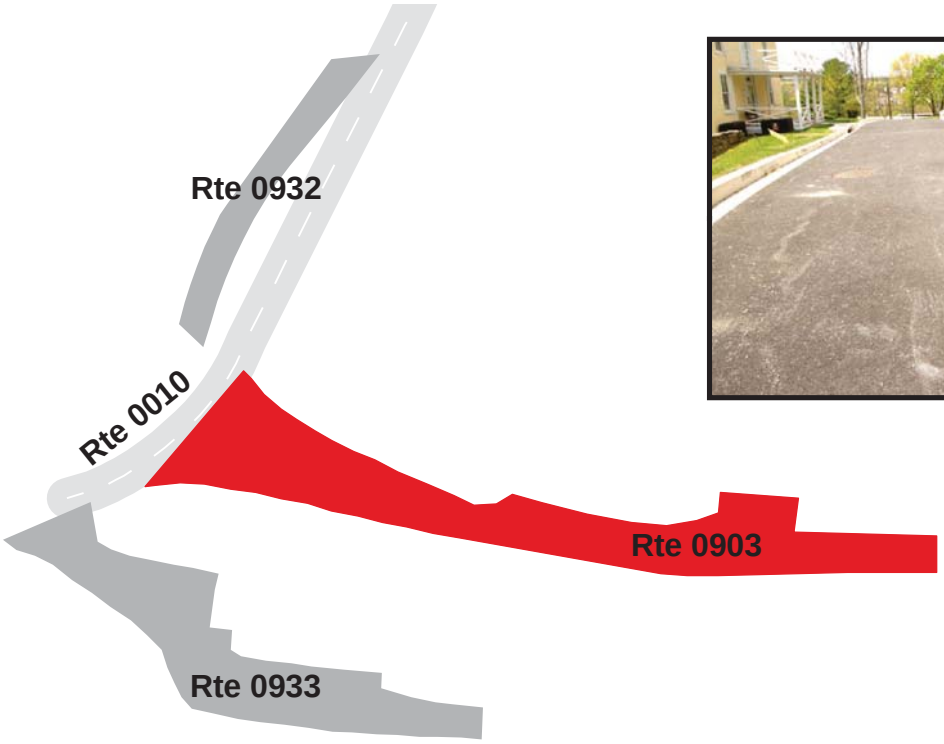
200 100 0 200
Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0903
HAFC- LEWIS ANTHONY PARKING
FROM ROUTE 0010 (HARTZOG DRIVE)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0903	PUBLIC	4/10/2012	4,140	0.07	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	2	0	CONCRETE CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths



150 75 0 150
Feet

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0904

COOK HALL PARKING

FROM END OF ROUTE 5009 (MCDOWELL STREET)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0904	PUBLIC	4/11/2012	7,598	0.13	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	0	NO CURB AND GUTTER	CONCRETE CURB	POOR/45

* Lane miles are based on 11' lane widths

300 150 0 300 Feet

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0906

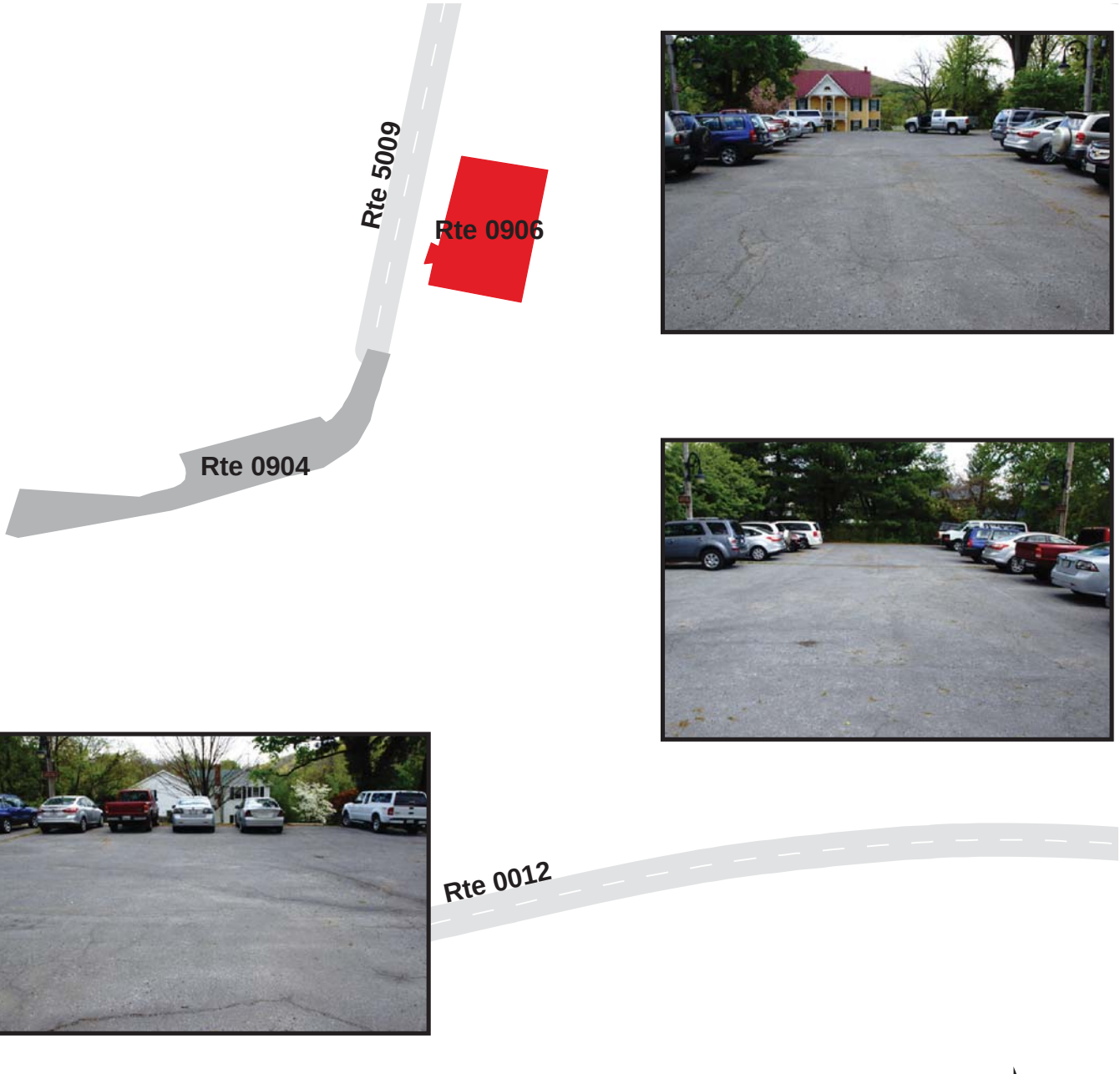
IDC PARKING

FROM ROUTE 5009 (MCDOWELL STREET)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0906	NONPUBLIC	4/10/2012	5,761	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



HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0908

SHIPLEY SCHOOL PARKING

FROM ROUTE 5004 (FILLMORE STREET)

TO ROUTE 5004 (FILLMORE STREET)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0908	PUBLIC	4/11/2012	17,360	0.30	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	POOR/45

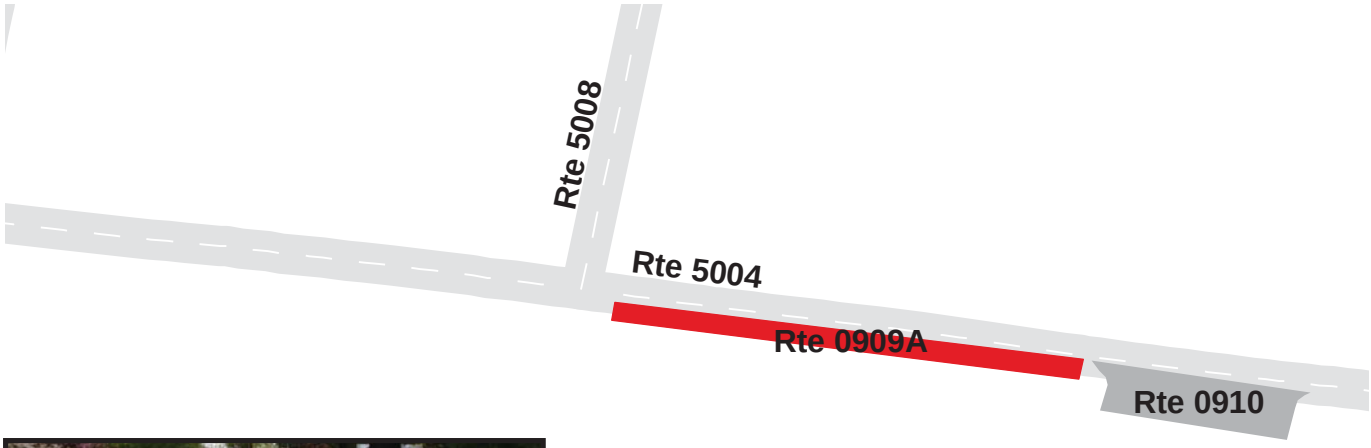
* Lane miles are based on 11' lane widths

200 100 0 200 Feet

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0909A
MORRELL HOUSE FILLMORE STREET PARKING A
ADJACENT TO ROUTE 5004 (FILLMORE STREET)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0909A	PUBLIC	4/11/2012	2,036	0.04	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths



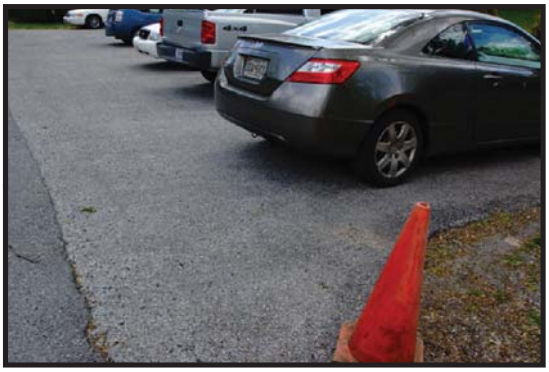
200 100 0 200
Feet

7-11

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0910
MORRELL HOUSE PARKING
ADJACENT TO ROUTE 5004 (FILLMORE STREET)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0910	PUBLIC	4/10/2012	2,181	0.04	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	FAIR/73

* Lane miles are based on 11' lane widths



200 100 0 200
Feet

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0911

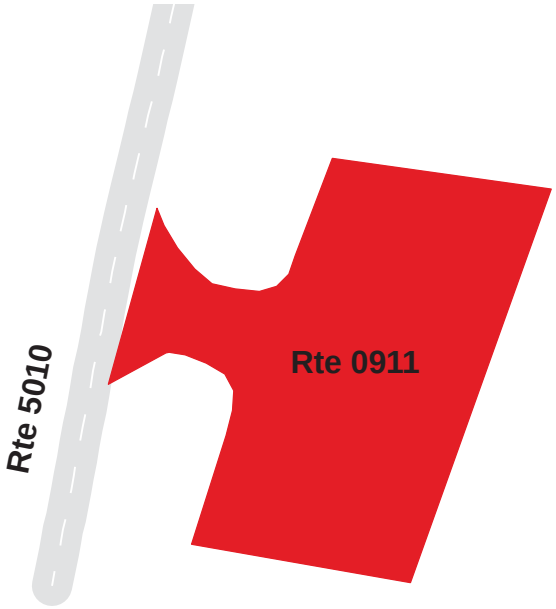
BRACKETT HOUSE PARKING

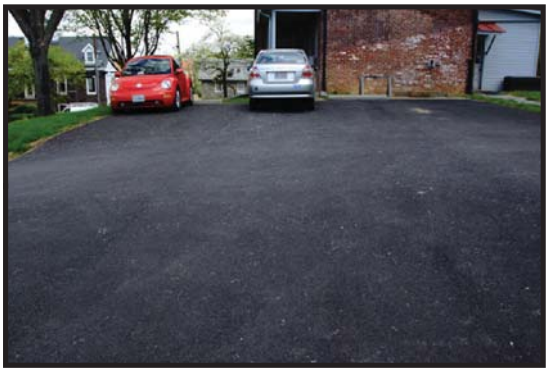
FROM ROUTE 5010 (LANCASTER STREET)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0911	PUBLIC	4/10/2012	2,465	0.04	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths





50 25 0 50 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0913

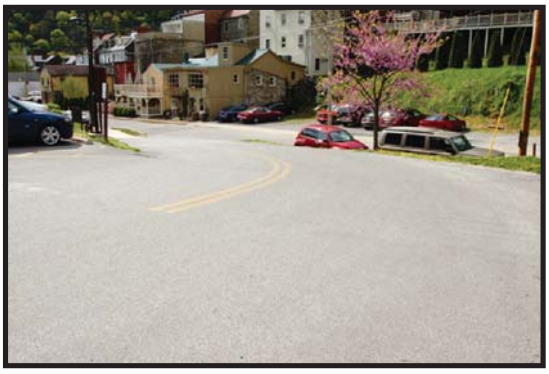
TRAIN STATION PARKING

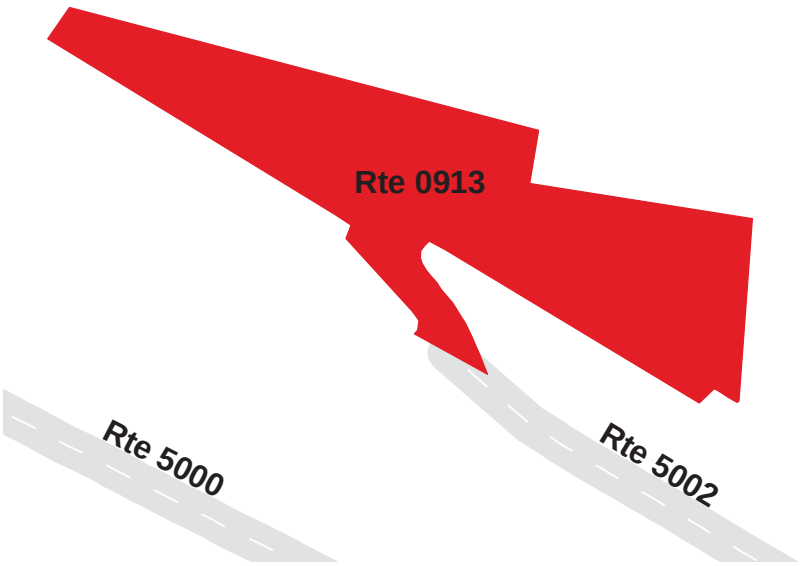
FROM ROUTE 5002 (POTOMAC STREET (NON NPS))

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0913	PUBLIC	4/10/2012	31,303	0.54	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE & STONE CURB	GOOD/90

* Lane miles are based on 11' lane widths





200 100 0 200 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0914

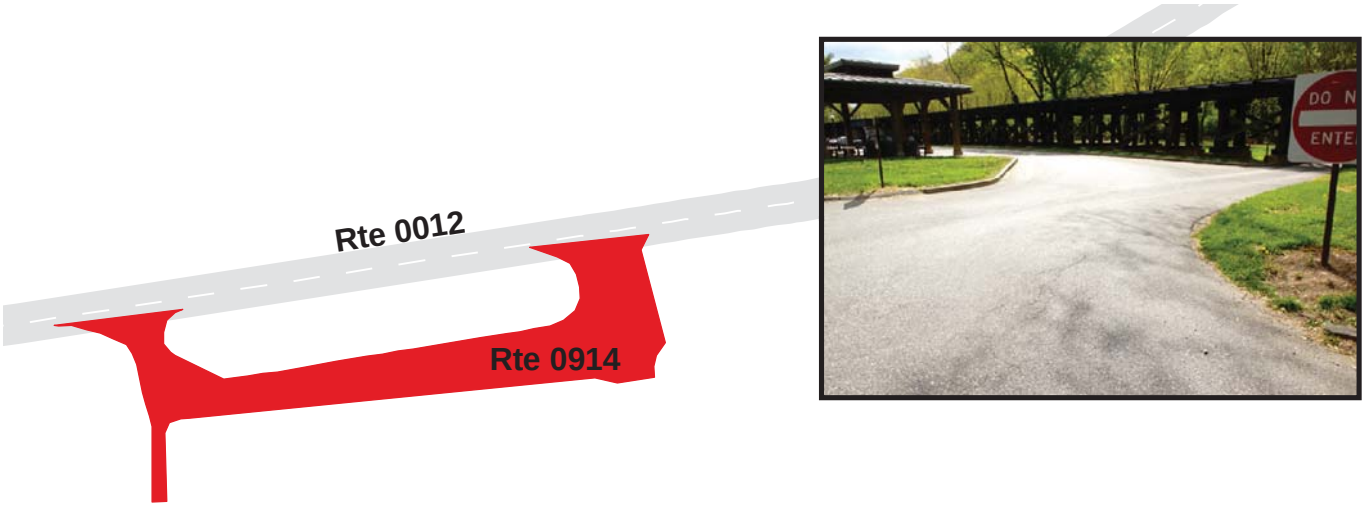
LOWER TOWN PARKING

FROM ROUTE 0012 (SHENANDOAH STREET)

TO ROUTE 0012 (SHENANDOAH STREET)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0914	NONPUBLIC	4/11/2012	11,829	0.20	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	1	NO CURB AND GUTTER	CONCRETE & STONE CURB	FAIR/73

* Lane miles are based on 11' lane widths



200 100 0 200

Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0915
CANAL OVERLOOK PARKING
ADJACENT TO ROUTE 0012 (SHENANDOAH STREET)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0915	PUBLIC	4/10/2012	1,053	0.02	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

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0916

RIVER ACCESS PARKING

FROM ROUTE 0012 (SHENANDOAH STREET)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0916	PUBLIC	4/10/2012	13,964	0.24	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	1	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths

200 100 0 200 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0917

POTOMAC WAYSIDE PARKING

FROM US HIGHWAY 340

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0917	PUBLIC	4/11/2012	47,114	0.81	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	2	NO CURB AND GUTTER	WOOD CURB	POOR/45

* Lane miles are based on 11' lane widths

400 200 0 400

Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0918

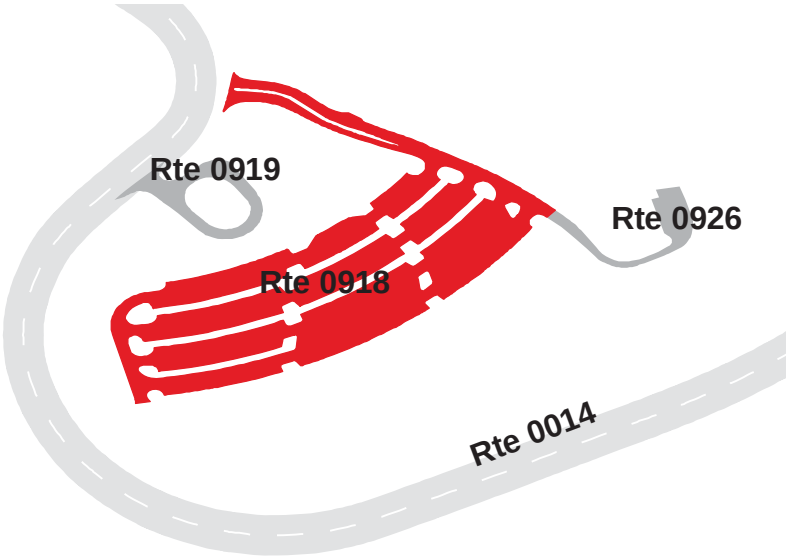
CAVALIER HEIGHTS PARKING

FROM ROUTE 0014 (SHORELINE DRIVE)

TO ROUTE 0926 (BUS MAINTENANCE PARKING)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0918	PUBLIC	4/10/2012	216,398	3.73	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	16	2	NO CURB AND GUTTER	CONCRETE CURB	FAIR/73

* Lane miles are based on 11' lane widths



1,000 500 0 1,000 Feet

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0919

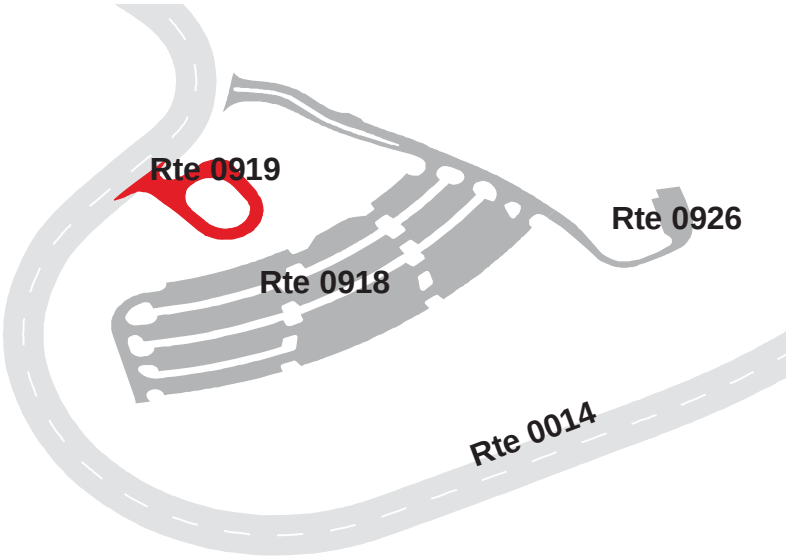
CAVALIER HEIGHTS BUS LOOP

FROM ROUTE 0014 (SHORELINE DRIVE)

TO END OF LOOP

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0919	NONPUBLIC	4/10/2012	20,001	0.34	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	1	1	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



1,000 500 0 1,000 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0921ZZ

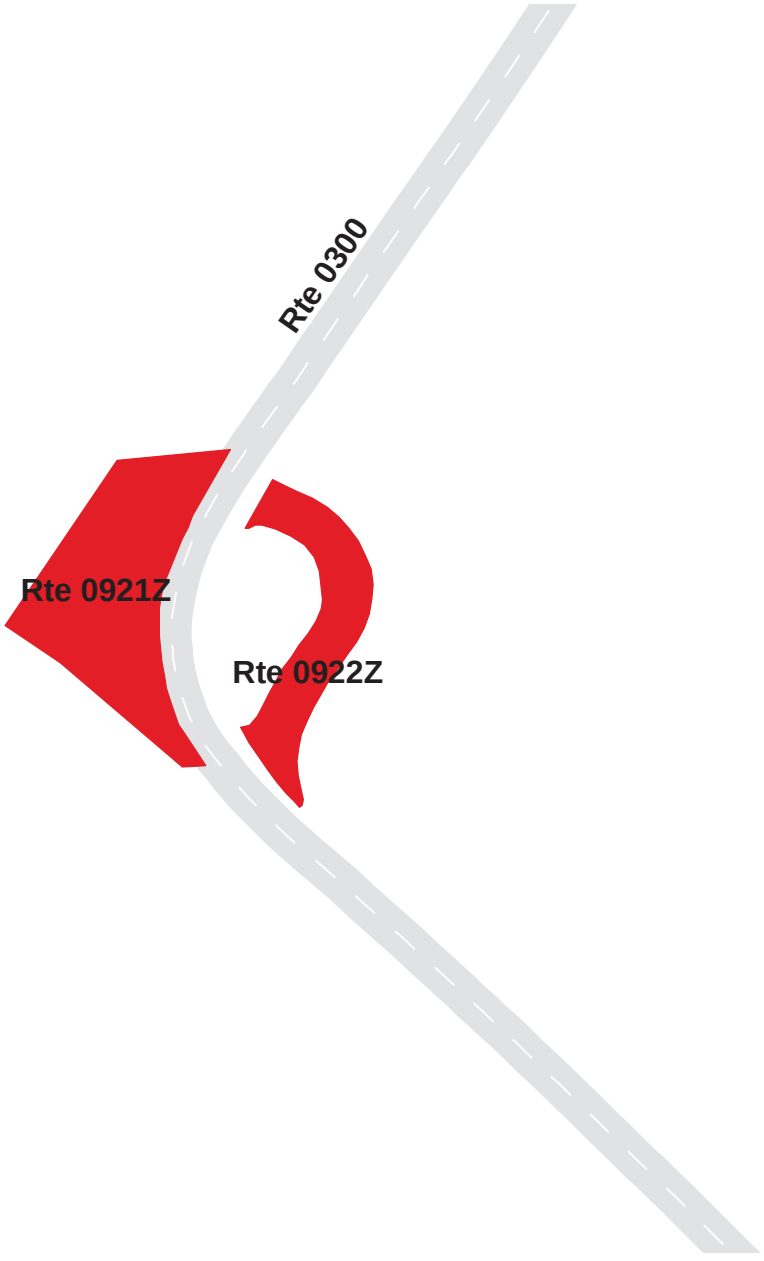
BOLIVAR HEIGHTS BUS LOOP AND PARKING

FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE) ON RIGHT AND LEFT TO PARKING

Summary Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0921ZZ	PUBLIC	4/11/2012	6,957	0.12	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	SUMMARY/90

* Lane miles are based on 11' lane widths



200 100 0 200 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0921Z

BOLIVAR HEIGHTS PARKING

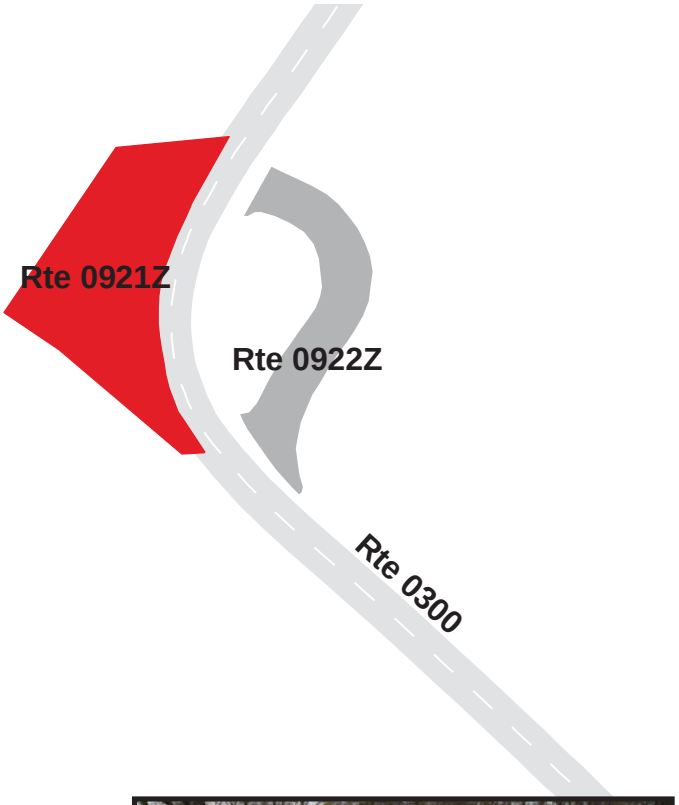
FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE)

TO PARKING

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0921Z	PUBLIC	4/11/2012	4,610	0.08	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	CONCRETE CURB	GOOD/90

* Lane miles are based on 11' lane widths



200 100 0 200 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0922Z

BOLIVAR HEIGHTS BUS LOOP

FROM ROUTE 0300 (WHITMAN / PROSPECT AVENUE)

TO ROUTE 0300 (WHITMAN / PROSPECT AVENUE)

Subcomponent Record

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0922Z	PUBLIC	4/11/2012	2,347	0.04	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

200 100 0 200 Feet

7-23

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0923

GRANDVILLE SCHOOL PARKING

FROM ROUTE 5012 (PUTNAM STREET)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0923	PUBLIC	4/11/2012	5,079	0.09	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths

150 75 0 150

Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0925

CHURCH STREET PARKING

FROM INTERSECTION OF ROUTE 5003 (CHURCH STREET) AND ROUTE 0015 (PUBLIC WAY)
TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0925	PUBLIC	4/10/2012	4,154	0.07	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	STONE CURB	POOR/45

* Lane miles are based on 11' lane widths

100 50 0 100 Feet

N

7-25

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0926

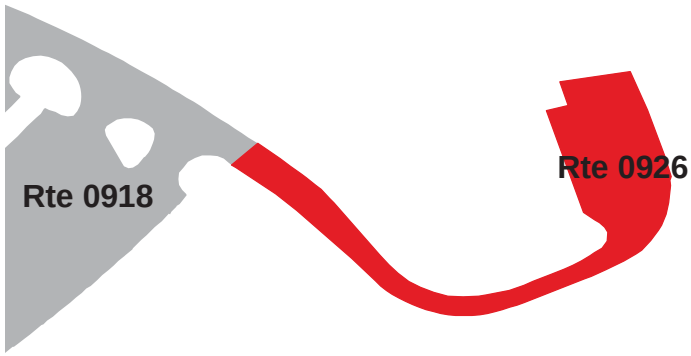
BUS MAINTENANCE PARKING

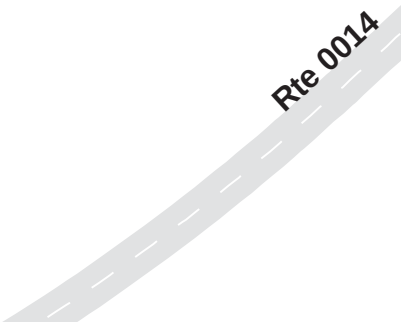
FROM ROUTE 0918 (CAVALIER HEIGHTS PARKING)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0926	NONPUBLIC	4/11/2012	14,409	0.25	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	1	NO CURB AND GUTTER	NO CURB	GOOD/90

* Lane miles are based on 11' lane widths





300 150 0 300

Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK
Route 0932
HAFC-HARTZOG DRIVE PARKING
ADJACENT TO ROUTE 0010 (HARTZOG DRIVE)

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0932	PUBLIC	4/11/2012	952	0.02	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths

100 50 0 100 Feet

N

HARPERS FERRY NATIONAL HISTORICAL PARK

Route 0933

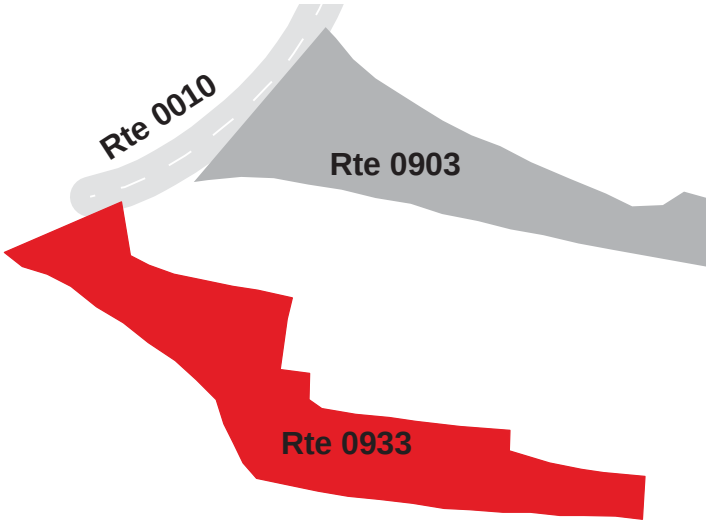
HAFC-BIRD BRADY PARKING

FROM ROUTE 0010 (HARTZOG DRIVE)

TO PARKING

Route Number	Public / NonPublic	Date Visited	Area (sq ft)	Lane Miles *	Surface Type
0933	PUBLIC	4/11/2012	2,795	0.05	AS
Culverts	**Drop Inlets**	**Gates**	**Curb & Gutter**	**Curb**	**PCR**
0	0	0	NO CURB AND GUTTER	NO CURB	EXCELLENT/97

* Lane miles are based on 11' lane widths



100 50 0 100 Feet

Section 8
Parkwide/Route
Maintenance Features Summaries

Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

HAFE: 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	--	1
CATTLE GUARD	--	0
CULVERT	--	12
CURB	2,931	--
DROP INLET	--	53
GATE	--	13
GUARD/GUIDE RAIL	7,403	--
CABLE	2,504	--
NON-CABLE	4,899	--
GUARD/GUIDE WALL	275	--
BOLLARD	0	--
TEMPORARY BARRIER	0	--
NON TEMP/BOLLARD	275	--
INTERSECTION	--	58
LOW WATER CROSSING	0	0
MILE MARKER	--	0
OVERPASS	--	1
PARK BOUNDARY	--	2
PAVED DITCH	4,172	--
PULLOUT	0	0
RAILROAD CROSSING	--	0
RETAINING WALL	95	1
SIGN	--	167
STATE BOUNDARY	--	0
TRAFFIC LIGHT	--	4
TUNNEL	0	0

HAFE: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0010 HARTZOG DRIVE	ROUTE 0011 HIGH STREET	ROUTE 0012 SHENANDOAH STREET	ROUTE 0014 SHORELINE DRIVE	ROUTE 0016 HOG ALLEY	ROUTE 0300 WHITMAN / PROSPECT AVENUE	UNIT
BRIDGE	0	0	0	1	0	0	EACH
CATTLE GUARD	0	0	0	0	0	0	EACH
CULVERT	0	0	6	3	0	0	EACH
CURB	26	402	1,304	977	69	0	LINEAR FEET
DROP INLET	1	2	7	16	0	0	EACH
GATE	0	0	0	2	0	0	EACH
GUARD/GUIDE RAIL	0	0	2,626	4,777	0	0	LINEAR FEET
CABLE	0	0	2,504	0	0	0	LINEAR FEET
NON-CABLE	0	0	122	4,777	0	0	LINEAR FEET
GUARD/GUIDE WALL	0	0	201	0	74	0	LINEAR FEET
BOLLARD	0	0	0	0	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	0	0	201	0	74	0	LINEAR FEET
INTERSECTION	7	4	11	13	4	7	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	1	0	0	EACH
PARK BOUNDARY	0	1	0	0	0	1	EACH
PAVED DITCH	0	0	993	2,820	74	0	LINEAR FEET
PULLOUT	0	0	0	0	0	0	EACH
PULLOUT	0	0	0	0	0	0	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	0	0	0	0	0	0	EACH
RETAINING WALL	0	0	0	0	0	0	LINEAR FEET
SIGN	3	2	58	69	6	14	EACH
STATE BOUNDARY	0	0	0	0	0	0	EACH
TRAFFIC LIGHT	0	0	0	4	0	0	EACH
TUNNEL	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	LINEAR FEET

HAFE: DCV ROUTE MAINTENANCE FEATURES SUMMARY

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

FEATURE	ROUTE 0401 RANGER RESIDENCE ACCESS ROAD	ROUTE 0408 MAINTENANCE LOT A ACCESS	ROUTE 0600 POTOMAC STREET		UNIT
BRIDGE	0	0	0		EACH
CATTLE GUARD	0	0	0		EACH
CULVERT	0	0	0		EACH
CURB	0	5	148		LINEAR FEET
DROP INLET	0	0	0		EACH
GATE	1	0	0		EACH
GUARD/GUIDE RAIL	0	0	0		LINEAR FEET
CABLE	0	0	0		LINEAR FEET
NON-CABLE	0	0	0		LINEAR FEET
GUARD/GUIDE WALL	0	0	0		LINEAR FEET
BOLLARD	0	0	0		LINEAR FEET
TEMPORARY BARRIER	0	0	0		LINEAR FEET
NON TEMP/BOLLARD	0	0	0		LINEAR FEET
INTERSECTION	3	4	5		EACH
LOW WATER CROSSING	0	0	0		EACH
LOW WATER CROSSING	0	0	0		LINEAR FEET
MILE MARKER	0	0	0		EACH
OVERPASS	0	0	0		EACH
PARK BOUNDARY	0	0	0		EACH
PAVED DITCH	0	0	285		LINEAR FEET
PULLOUT	0	0	0		EACH
PULLOUT	0	0	0		LINEAR FEET
RAILROAD CROSSING	0	0	0		EACH
RETAINING WALL	0	0	1		EACH
RETAINING WALL	0	0	95		LINEAR FEET
SIGN	0	5	10		EACH
STATE BOUNDARY	0	0	0		EACH
TRAFFIC LIGHT	0	0	0		EACH
TUNNEL	0	0	0		EACH
TUNNEL	0	0	0		LINEAR FEET

HAFE: STRUCTURE LIST

ROUTE NUMBER	FUNCTIONAL CLASS	MILEPOST START	MILEPOST END	FEATURE	STRUCTURE NUMBER
0014	1	1.203	1.257	BRIDGE	3850-002

Section 9
Route Maintenance Features
Road Logs

Harpers Ferry National Historical Park

Federal Lands Highway
Road Inventory Program

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: HARTZOG 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 5004 (FILLMORE STREET)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5004 (FILLMORE STREET)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5004 (FILLMORE STREET)
0.003	0.003	SIGN	LEFT	REGULATORY, STOP
0.005	0.010	CURB	LEFT	N/A
0.010	0.010	INTERSECTION	LEFT	ROUTE 0900 (MATHER TRAINING CENTER PARKING)
0.014	0.014	SIGN	LEFT	GUIDE, PARKING HARTZOG DRIVE AUTHORIZED VEHICLES ONLY
0.016	0.016	SIGN	RIGHT	WARNING, DEAD END
0.095	0.095	INTERSECTION	RIGHT	ROUTE 0932 (HAFC-HARTZOG DRIVE PARKING)
0.098	0.098	DROP INLET	LEFT	N/A
0.112	0.112	INTERSECTION	LEFT	ROUTE 0903 (HAFC- LEWIS ANTHONY PARKING)
0.121	0.121	INTERSECTION	LEFT	ROUTE 0933 (HAFC-BIRD BRADY PARKING)
0.123	0.123	INTERSECTION	N/A	DEAD END
0.123	0.123	ROUTE END	N/A	TO END AT SIDE WALK

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0011: HIGH STREET

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM END OF ROUTE 5000 (HIGH / WASHINGTON STREET) AT INTERSECTION WITH ROUTE 0016 (HOG ALLEY)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0016 (HOG ALLEY)
0.000	0.000	INTERSECTION	N/A	ROUTE 5000 (HIGH / WASHINGTON STREET)
0.000	0.000	PARK BOUNDARY	N/A	N/A
0.000	0.038	CURB	LEFT	N/A
0.000	0.038	CURB	RIGHT	N/A
0.018	0.018	DROP INLET	LEFT	N/A
0.019	0.019	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.035	0.035	SIGN	RIGHT	REGULATORY, STOP
0.037	0.037	DROP INLET	LEFT	N/A
0.038	0.038	INTERSECTION	LEFT	ROUTE 0012 (SHENANDOAH STREET)
0.038	0.038	INTERSECTION	RIGHT	ROUTE 0012 (SHENANDOAH STREET)
0.038	0.038	ROUTE END	N/A	TO ROUTE 0012 (SHENANDOAH STREET)

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: SHENANDOAH STREET

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 US HIGHWAY 340
0.000	0.059	GUARD/GUIDE RAIL	RIGHT	N/A
0.000	0.060	CURB	RIGHT	N/A
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (US HIGHWAY 340 / NON NPS)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (US HIGHWAY 340 / NON NPS)
0.004	0.004	SIGN	LEFT	REGULATORY, STOP
0.005	0.011	GUARD/GUIDE RAIL	RIGHT	N/A
0.010	0.010	SIGN	LEFT	GUIDE, APPALACHAN TRAIL
0.012	0.072	GUARD/GUIDE RAIL	LEFT	N/A
0.021	0.021	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.027	0.027	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.027	0.027	SIGN	RIGHT	REGULATORY, ON SIDEWALKS
0.039	0.039	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.060	0.060	SIGN	RIGHT	REGULATORY, PARKING IN PERMITTED SPACES ONLY
0.060	0.060	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.064	0.064	INTERSECTION	RIGHT	ROUTE 0916 (RIVER ACCESS PARKING)
0.067	0.067	DROP INLET	LEFT	N/A
0.069	0.091	CURB	RIGHT	N/A
0.071	0.071	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.071	0.071	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.075	0.075	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.079	0.079	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.091	0.091	SIGN	RIGHT	REGULATORY, ALL PARKING & SHUTTLE SERVICE
0.097	0.097	INTERSECTION	RIGHT	ROUTE 0014 (SHORELINE DRIVE) SPUR
0.098	0.104	CURB	N/A	N/A
0.108	0.108	INTERSECTION	RIGHT	ROUTE 0014 (SHORELINE DRIVE)
0.109	0.126	GUARD/GUIDE RAIL	RIGHT	N/A
0.126	0.126	CULVERT	N/A	N/A
0.126	0.126	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.127	0.194	GUARD/GUIDE RAIL	RIGHT	N/A

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: SHENANDOAH STREET

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
0.128	0.128	SIGN	LEFT	GUIDE, TO 340 VISITOR CENTER PARKING & EXIT
0.133	0.133	SIGN	RIGHT	REGULATORY, EXCESSIVE VEHICLE NOISE PROHIBITED
0.133	0.133	SIGN	RIGHT	REGULATORY, RADAR ENFORCED
0.133	0.133	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.173	0.173	SIGN	LEFT	GUIDE, VISITOR CENTER PARKING & EXIT NEXT LEFT
0.182	0.182	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.200	0.200	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.212	0.212	INTERSECTION	RIGHT	ROUTE 0915 (CANAL OVERLOOK PARKING)
0.219	0.219	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.219	0.507	GUARD/GUIDE RAIL	RIGHT	N/A
0.236	0.236	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.254	0.254	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.277	0.277	CULVERT	N/A	N/A
0.311	0.311	CULVERT	N/A	N/A
0.317	0.317	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.337	0.337	CULVERT	N/A	N/A
0.369	0.369	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.375	0.375	CULVERT	N/A	N/A
0.427	0.427	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.427	0.427	SIGN	RIGHT	GUIDE, VIRGINIUS ISLAND LOWER TOWN 2 MI.
0.468	0.468	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.470	0.470	CULVERT	N/A	N/A
0.500	0.500	DROP INLET	LEFT	N/A
0.513	0.513	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.539	0.539	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.598	0.598	SIGN	RIGHT	WARNING, 15 MPH
0.608	0.608	DROP INLET	RIGHT	N/A
0.608	0.608	DROP INLET	LEFT	N/A
0.611	0.611	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.628	0.628	SIGN	LEFT	REGULATORY, SPEED LIMIT 25

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: SHENANDOAH STREET

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
0.628	0.628	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.632	0.632	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.635	0.635	INTERSECTION	RIGHT	ROUTE 0914 (LOWER TOWN PARKING)
0.638	0.638	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.647	0.647	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.647	0.647	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.668	0.668	SIGN	LEFT	GUIDE, VISITOR PARKING
0.677	0.677	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.682	0.682	INTERSECTION	RIGHT	ROUTE 0914 (LOWER TOWN PARKING)
0.683	0.812	PAVED DITCH	RIGHT	N/A
0.684	0.774	CURB	RIGHT	N/A
0.686	0.686	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.709	0.768	PAVED DITCH	LEFT	N/A
0.710	0.710	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.712	0.712	DROP INLET	LEFT	N/A
0.712	0.712	DROP INLET	RIGHT	N/A
0.723	0.769	CURB	LEFT	N/A
0.728	0.728	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.736	0.736	DROP INLET	RIGHT	N/A
0.741	0.741	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.744	0.744	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.754	0.754	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.761	0.761	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.766	0.766	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.767	0.767	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.774	0.774	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.774	0.812	GUARD/GUIDE WALL	RIGHT	N/A
0.776	0.776	INTERSECTION	LEFT	ROUTE 0011 (HIGH STREET)
0.776	0.776	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.776	0.799	CURB	LEFT	N/A

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0012: SHENANDOAH STREET

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
0.783	0.783	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.790	0.790	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.796	0.796	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.796	0.796	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.807	0.807	INTERSECTION	LEFT	ROUTE 0600 (POTOMAC STREET)
0.812	0.812	INTERSECTION	N/A	DEAD END
0.812	0.812	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.812	0.812	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.812	0.812	ROUTE END	N/A	TO END

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014: SHORELINE 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 US HIGHWAY 340
0.000	0.000	TRAFFIC LIGHT	N/A	X3
0.000	0.000	TRAFFIC LIGHT	N/A	X3
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (US HIGHWAY 340 / NON NPS)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (US HIGHWAY 340 / NON NPS)
0.006	0.006	SIGN	LEFT	REGULATORY, SOUTH
0.006	0.006	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.006	0.006	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.006	0.006	SIGN	LEFT	REGULATORY, 340
0.006	0.006	SIGN	LEFT	GUIDE, CHARLES TOWN FREDERICK MD
0.006	0.006	SIGN	LEFT	REGULATORY, 340
0.006	0.006	SIGN	LEFT	REGULATORY, NORTH
0.007	0.007	TRAFFIC LIGHT	N/A	X3
0.007	0.007	TRAFFIC LIGHT	N/A	X3
0.009	0.009	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.009	0.009	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.018	0.018	INTERSECTION	LEFT	PAVED ROUTE (POINT FIELD ROAD / NON NPS)
0.018	0.018	INTERSECTION	RIGHT	ROUTE 5015 (CAMPGROUND ROAD)
0.020	0.020	SIGN	RIGHT	GUIDE, CAMPGROUND ROAD
0.020	0.020	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.020	0.020	SIGN	RIGHT	WARNING, UNABLE TO READ FROM VIDEO
0.022	0.022	SIGN	RIGHT	GUIDE, CAMPGROUND RD
0.022	0.022	SIGN	RIGHT	GUIDE, SHORELINE DR
0.032	0.032	SIGN	LEFT	GUIDE, DO NOT BLOCK INTERSECTION
0.035	0.035	SIGN	RIGHT	GUIDE, HARPERS FERRY NATIONAL HISTORICAL PARK
0.045	0.045	SIGN	LEFT	GUIDE, BOLIVAR HEIGHTS STOP SCHOOL HOUSE RIDGE MURPHY FARM
0.094	0.094	SIGN	LEFT	GUIDE, VA AND FREDERICK MD RIGHT LANE CHARLES TOWN WV LEFT LANE
0.101	0.101	SIGN	RIGHT	GUIDE, ENTRANCE FEES PER VEHICLE $10.00 PER PERSON: WALK-IN, CYCLIST, BUS PASSENGER. $5.00 PASS VALID

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014: SHORELINE 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
0.101	0.122	GUARD/GUIDE RAIL	LEFT	N/A
0.122	0.176	ONE-WAY	N/A	N/A
0.123	0.123	INTERSECTION	LEFT	ROUTE 0014 (SHORELINE DRIVE) OPPOSITE LANE
0.125	0.153	CURB	N/A	N/A
0.126	0.126	INTERSECTION	RIGHT	UNPAVED ROUTE
0.130	0.130	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.146	0.151	CURB	N/A	N/A
0.147	0.147	SIGN	N/A	REGULATORY, DO NOT ENTER
0.150	0.150	SIGN	N/A	GUIDE, VISITOR PARKING
0.152	0.152	SIGN	N/A	GUIDE, DO NOT BLOCK INTERSECTION
0.152	0.152	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.154	0.154	INTERSECTION	LEFT	ROUTE 0918 (CAVALIER HEIGHTS PARKING)
0.155	0.155	INTERSECTION	LEFT	PAVED CUT-THRU
0.159	0.177	CURB	N/A	N/A
0.161	0.161	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.162	0.162	SIGN	RIGHT	REGULATORY, ROAD CLOSED 7 AM - 7 PM
0.162	0.162	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.162	0.162	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.163	0.163	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.163	0.163	SIGN	N/A	REGULATORY, ROAD CLOSED 7 AM - 7 PM
0.163	0.163	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.163	0.163	SIGN	N/A	REGULATORY, DO NOT ENTER
0.163	0.163	SIGN	N/A	REGULATORY, DO NOT ENTER
0.164	0.164	GATE	N/A	N/A
0.167	0.167	SIGN	N/A	GUIDE, ROAD CLOSED
0.168	0.168	SIGN	LEFT	REGULATORY, STOP
0.169	0.169	GATE	N/A	N/A
0.174	0.174	SIGN	LEFT	GUIDE, VISITOR CENTER PARKING
0.176	0.176	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
0.185	0.185	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014: SHORELINE 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
0.187	0.187	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.187	0.187	SIGN	LEFT	REGULATORY, 340
0.188	0.195	CURB	LEFT	N/A
0.196	0.196	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.197	0.197	SIGN	RIGHT	REGULATORY, NO STOPPING ALONG ROAD NEXT 1 5 MI
0.204	0.204	INTERSECTION	LEFT	ROUTE 0919 (CAVALIER HEIGHTS BUS LOOP)
0.205	0.209	CURB	LEFT	N/A
0.206	0.740	PAVED DITCH	LEFT	N/A
0.208	0.208	DROP INLET	LEFT	N/A
0.208	0.208	DROP INLET	RIGHT	N/A
0.214	0.214	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.235	0.235	SIGN	LEFT	WARNING, BUS CROSSING 100 FT
0.235	0.235	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
0.256	0.256	DROP INLET	LEFT	N/A
0.256	0.256	DROP INLET	RIGHT	N/A
0.295	0.295	SIGN	LEFT	WARNING, BUS CROSSING 400 FT
0.308	0.308	DROP INLET	LEFT	N/A
0.308	0.308	DROP INLET	RIGHT	N/A
0.311	0.383	GUARD/GUIDE RAIL	RIGHT	N/A
0.407	0.407	DROP INLET	LEFT	N/A
0.407	0.407	DROP INLET	RIGHT	N/A
0.434	0.540	GUARD/GUIDE RAIL	RIGHT	N/A
0.453	0.453	DROP INLET	LEFT	N/A
0.480	0.480	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.525	0.525	DROP INLET	LEFT	N/A
0.582	0.582	DROP INLET	LEFT	N/A
0.582	0.582	DROP INLET	RIGHT	N/A
0.622	0.752	GUARD/GUIDE RAIL	RIGHT	N/A
0.638	0.638	DROP INLET	LEFT	N/A
0.685	0.685	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014: SHORELINE 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
0.697	0.697	DROP INLET	LEFT	N/A
0.744	0.744	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
0.746	0.746	CULVERT	N/A	N/A
0.748	0.748	CULVERT	N/A	N/A
0.752	0.752	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.752	0.752	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.763	0.763	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
0.792	0.792	DROP INLET	LEFT	N/A
0.828	0.828	DROP INLET	LEFT	N/A
0.858	0.976	GUARD/GUIDE RAIL	RIGHT	N/A
0.952	0.952	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.952	0.952	SIGN	LEFT	REGULATORY, YOUR SPEED
0.962	0.983	GUARD/GUIDE RAIL	LEFT	N/A
0.972	0.972	CULVERT	N/A	N/A
1.035	1.138	GUARD/GUIDE RAIL	RIGHT	N/A
1.181	1.204	GUARD/GUIDE RAIL	RIGHT	N/A
1.198	1.266	GUARD/GUIDE RAIL	LEFT	N/A
1.203	1.265	GUARD/GUIDE RAIL	RIGHT	N/A
1.203	1.257	BRIDGE	N/A	3850-002 (SHORELINE ROAD BRIDGE)
1.205	1.257	CURB	RIGHT	N/A
1.206	1.257	CURB	LEFT	N/A
1.308	1.399	GUARD/GUIDE RAIL	RIGHT	N/A
1.309	1.309	SIGN	RIGHT	WARNING, CAUTION WATCH FOR STOPPED TRAFFIC 500 FEET AHEAD
1.319	1.319	SIGN	LEFT	REGULATORY, GRAPHIC SIGN NO TEXT
1.319	1.319	SIGN	LEFT	REGULATORY, NO STOPPING ALONG ROAD NEXT 1.5 MI
1.329	1.329	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
1.380	1.429	GUARD/GUIDE RAIL	LEFT	N/A
1.381	1.381	OVERPASS	N/A	PAVED ROUTE (US HIGHWAY 340 / NON NPS)
1.382	1.382	SIGN	RIGHT	WARNING, CAUTION WATCH FOR STOPPED TRAFFIC 100 FEET AHEAD

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0014: SHORELINE 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
1.394	1.394	SIGN	RIGHT	WARNING, GRAPHIC SIGN NO TEXT
1.399	1.399	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
1.404	1.404	INTERSECTION	RIGHT	ROUTE 0405 (VIRGINIUS ISLAND ROAD)
1.407	1.448	GUARD/GUIDE RAIL	RIGHT	N/A
1.411	1.411	SIGN	LEFT	GUIDE, PARKING SHUTTLE BUS VISITOR CENTER 1 1/2 MILES
1.414	1.414	SIGN	RIGHT	WARNING, YIELD AHEAD
1.418	1.418	SIGN	LEFT	WARNING, GRAPHIC SIGN NO TEXT
1.426	1.426	SIGN	LEFT	WARNING, CAUTION WATCH FOR STOPPED TRAFFIC 100 FEET AHEAD
1.426	1.432	CURB	LEFT	N/A
1.432	1.446	CURB	N/A	N/A
1.433	1.433	SIGN	LEFT	REGULATORY, ALL PARKING & SHUTTLE SERVICE
1.433	1.433	INTERSECTION	LEFT	ROUTE 0014 (SHORELINE DRIVE) SPUR
1.434	1.434	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
1.445	1.445	SIGN	N/A	REGULATORY, GRAPHIC SIGN NO TEXT
1.445	1.445	SIGN	RIGHT	REGULATORY, YIELD
1.448	1.448	INTERSECTION	LEFT	ROUTE 0012 (SHENANDOAH STREET)
1.448	1.448	INTERSECTION	N/A	ROUTE 0012 (SHENANDOAH STREET)
1.448	1.448	ROUTE END	N/A	TO ROUTE 0012 (SHENANDOAH STREET)

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0016: HOG ALLEY

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 ROUTE 5000 (HIGH STREET) ON LEFT AND ROUTE 0011 (HIGH STREET) ON RIGHT
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (HIGH / WASHINGTON STREET)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0011 (HIGH STREET)
0.004	0.018	PAVED DITCH	RIGHT	N/A
0.005	0.018	CURB	LEFT	N/A
0.005	0.019	GUARD/GUIDE WALL	RIGHT	N/A
0.019	0.019	SIGN	RIGHT	REGULATORY, STOP
0.019	0.019	INTERSECTION	RIGHT	ROUTE 0600 (POTOMAC STREET)
0.019	0.019	SIGN	N/A	GUIDE, POTOMAC ST.
0.019	0.019	SIGN	N/A	GUIDE, ALL VISITOR PARKING
0.019	0.019	SIGN	N/A	GUIDE, UNABLE TO READ FROM VIDEO
0.019	0.019	SIGN	N/A	GUIDE, GRAPHIC SIGN NO TEXT
0.019	0.019	SIGN	RIGHT	REGULATORY, ONE WAY
0.019	0.019	INTERSECTION	LEFT	ROUTE 5002 (POTOMAC STREET (NON NPS))
0.019	0.019	ROUTE END	N/A	TO INTERSECTION OF ROUTE 5002 (POTOMAC STREET (NON NPS)) ON LEFT AND ROUTE 0600 (POTOMAC STREET) ON RIGHT

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0300: WHITMAN / PROSPECT AVENUE

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 BEGINNING OF ROUTE 5000 (HIGH / WASHINGTON STREET)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (HIGH / WASHINGTON STREET)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (WASHINGTON STREET/ NON NPS)
0.004	0.004	SIGN	LEFT	GUIDE, WHITMAN
0.004	0.004	SIGN	LEFT	GUIDE, W WASHINGTON
0.005	0.005	SIGN	RIGHT	GUIDE, HARPERS FERRY NATIONAL HISTORICAL PARK
0.006	0.006	SIGN	LEFT	REGULATORY, STOP
0.021	0.021	SIGN	RIGHT	GUIDE, PARK CLOSED AT DARK PARK CLOSED TO ALCOHOLIC BEVERAGES
0.040	0.040	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.229	0.229	INTERSECTION	RIGHT	ROUTE 0922Z (BOLIVAR HEIGHTS BUS LOOP)
0.242	0.242	SIGN	RIGHT	GUIDE, WHITMAN AVE
0.242	0.242	SIGN	RIGHT	GUIDE, PROSPECT AVE
0.244	0.244	INTERSECTION	LEFT	ROUTE 0921Z (BOLIVAR HEIGHTS PARKING)
0.255	0.255	INTERSECTION	RIGHT	ROUTE 0922Z (BOLIVAR HEIGHTS BUS LOOP)
0.266	0.266	SIGN	RIGHT	GUIDE, NO TURN-AROUNDS AHEAD
0.280	0.280	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.321	0.321	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.333	0.333	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.419	0.419	SIGN	LEFT	REGULATORY, SPEED LIMIT 25
0.434	0.434	INTERSECTION	LEFT	UNPAVED ROUTE
0.438	0.438	SIGN	RIGHT	REGULATORY, SPEED LIMIT 30
0.441	0.441	INTERSECTION	N/A	ROUTE 5013 (PROSPECT AVENUE)
0.441	0.441	PARK BOUNDARY	N/A	N/A
0.441	0.441	ROUTE END	N/A	TO PARK BOUNDARY AND BEGINNING OF ROUTE 5013 (PROSPECT AVENUE)

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0401: RANGER RESIDENCE ACCESS ROAD

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM STATE ROUTE 27 (BAKERTON ROAD)
0.000	0.000	INTERSECTION	LEFT	PAVED ROUTE (STATE ROUTE 27 / NON NPS)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (STATE ROUTE 27 / NON NPS)
0.000	0.049	DEBRIS ON ROAD	N/A	N/A
0.014	0.014	GATE	N/A	N/A
0.066	0.066	INTERSECTION	LEFT	DEAD END
0.066	0.066	ROUTE END	N/A	TO END

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0408: MAINTENANCE LOT A ACCESS

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 ROUTE 5004 (FILLMORE STREET) AND END OF ROUTE 5001 (ZACHARY TAYLOR STREET)
0.000	0.000	INTERSECTION	N/A	ROUTE 5001 (ZACHARY TAYLOR STREET)
0.000	0.000	INTERSECTION	LEFT	ROUTE 5004 (FILLMORE STREET)
0.000	0.000	INTERSECTION	RIGHT	PAVED ROUTE (FILLMORE STREET /NON NPS)
0.003	0.003	SIGN	RIGHT	GUIDE, FILLMORE ST
0.006	0.006	SIGN	LEFT	REGULATORY, STOP
0.006	0.006	SIGN	RIGHT	GUIDE, ZACHARY TAYLOR ST
0.041	0.041	SIGN	RIGHT	REGULATORY, UNABLE TO READ FROM VIDEO
0.042	0.043	CURB	RIGHT	N/A
0.043	0.043	SIGN	N/A	GUIDE, PARK
0.043	0.043	INTERSECTION	N/A	ROUTE 0902A (FACILITY MAINTENANCE PUBLIC PARKING)
0.043	0.043	ROUTE END	N/A	TO ROUTE 0902A (FACILITY MAINTENANCE PUBLIC PARKING)

HAFE: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0600: POTOMAC STREET

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

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0012 (SHENANDOAH STREET)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0012 (SHENANDOAH STREET)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0012 (SHENANDOAH STREET)
0.006	0.029	PAVED DITCH	RIGHT	N/A
0.007	0.029	CURB	LEFT	N/A
0.007	0.038	PAVED DITCH	LEFT	N/A
0.008	0.008	SIGN	LEFT	REGULATORY, STOP
0.010	0.028	RETAINING WALL	RIGHT	N/A
0.013	0.013	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.018	0.018	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.024	0.024	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.032	0.038	CURB	LEFT	N/A
0.033	0.033	INTERSECTION	RIGHT	ROUTE 0402 (RAILROAD STORAGE ROAD)
0.037	0.037	SIGN	LEFT	GUIDE, GRAPHIC SIGN NO TEXT
0.040	0.040	SIGN	RIGHT	GUIDE, LEAVING HARPERS FERRY NATIONAL HISTORICAL PARK
0.040	0.040	SIGN	RIGHT	REGULATORY, NO LEFT TURN
0.040	0.040	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.040	0.040	SIGN	RIGHT	GUIDE, HOG ALLEY
0.040	0.040	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.041	0.041	INTERSECTION	LEFT	ROUTE 0016 (HOG ALLEY)
0.041	0.041	INTERSECTION	N/A	ROUTE 5002 (POTOMAC STREET (NON NPS))
0.041	0.041	ROUTE END	N/A	TO INTERSECTION OF ROUTE 0016 (HOG ALLEY) AND BEGINNING OF ROUTE 5002 (POTOMAC STREET (NON NPS))

Section 10
Appendix

Harpers Ferry 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.

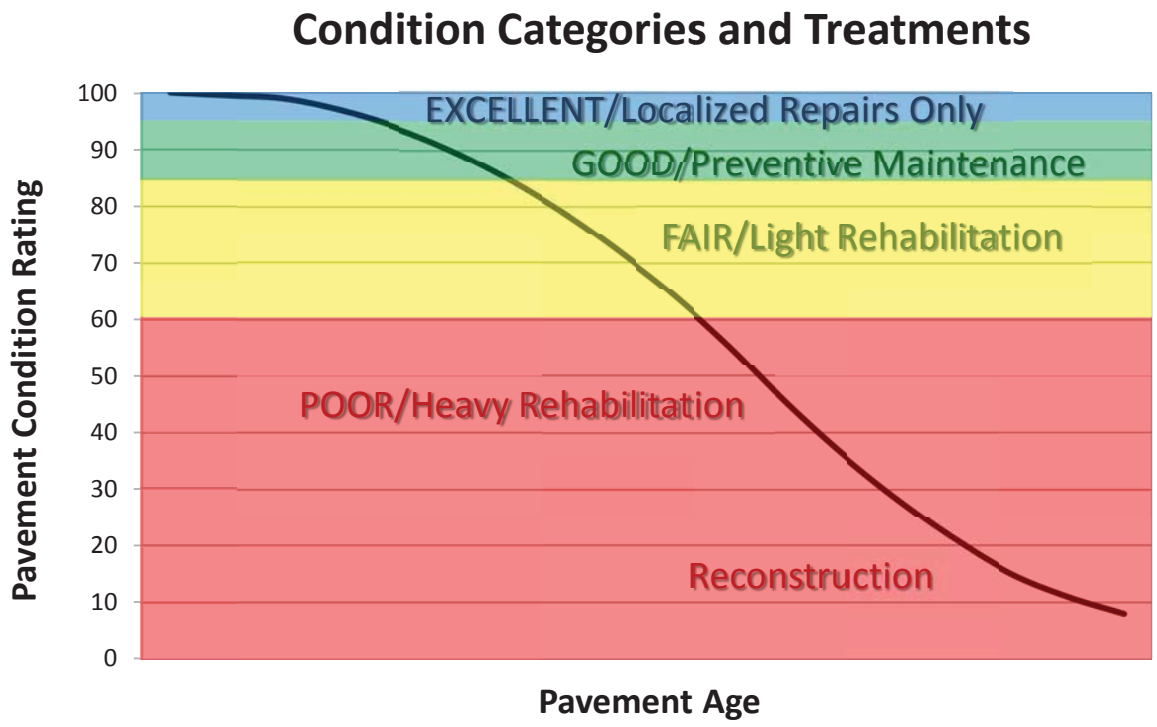
The changes that were implemented were endorsed by management at both the FHWA and NPS. In order to show the effectiveness of these changes, several sites were ground truth tested to ensure that an improvement was achieved between the relationship of PCR and the actual Maintenance and Rehabilitation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