



Federal Lands Highway Road Inventory Program

Road Inventory and Condition Assessment

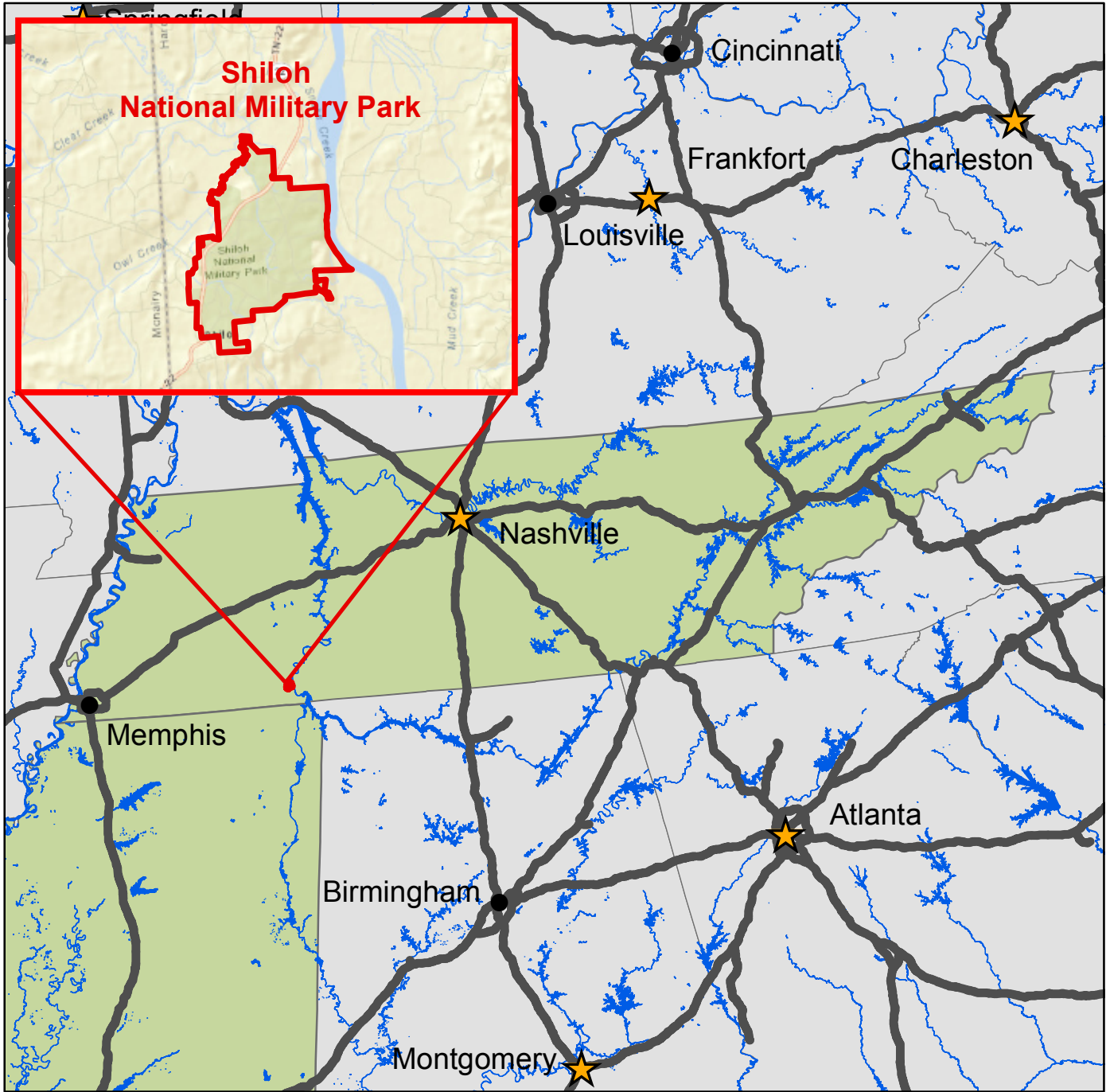


Shiloh National Military Park
SHIL - 5580

Cycle 5 Report

Prepared By: Federal Highway Administration
Road Inventory Program (RIP)
Data Collected: 02/2012
Report Date: 10/2012

Shiloh National Military Park in Tennessee and Mississippi





DCV = Data Collection Vehicle

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Section 1 Introduction



Shiloh National Military 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 168 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



Shiloh National Military Park



Federal Lands Highway
Road Inventory Program

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 10/09/2012

(Numerical By Route #)

Page 1 of 5

Shading Color Key:

White = Paved Routes, DCV Driven

Yellow = Unpaved Routes, DCV not Driven

Blue = All Paved Parking Areas

Green = All Unpaved Parking Areas

Red text denotes approx. mileage

Grey = Paved Routes, DCV not Driven

Black = State, Local or Private non-NPS Routes

■ = Concession Route Flag ON

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

** DCV - Data Collection Vehicle

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

SHIL

SHILOH NATIONAL MILITARY PARK

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0010	5	94649		PITTSBURG LANDING ROAD	FROM ROUTE 5000 (STATE HIGHWAY 22) AT MP 0.21 TO END OF LOOP	SHILOH DISTRICT	1.21	0.00	1.21	1		AS	1
0011	5	76216		CORINTH - PITTSBURG LANDING ROAD	FROM END OF ROUTE 0021 (HAGY ROAD) (PAVEMENT CHANGE) TO ROUTE 0012 (RECONNOITERING ROAD)	SHILOH DISTRICT	2.97	0.46	3.43	1		CO	1
0012	5	94658		RECONNOITERING ROAD	FROM ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) TO ROUTE 0013 (PEABODY ROAD) AT MP 0.63	SHILOH DISTRICT	0.77	0.00	0.77	1		AS	1
0013	5	94659		PEABODY ROAD	FROM ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) AT MP 2.32 TO ROUTE 0014 (EASTERN CORINTH ROAD) AT MP 0.15	SHILOH DISTRICT	1.00	0.00	1.00	1		AS	1
0014	5	94724		EASTERN CORINTH ROAD	FROM SOUTH PARK BOUNDARY ON GLADDEN ROAD TO ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) AT MP 0.81	SHILOH DISTRICT	1.30	0.00	1.30	1		AS	1
0016	5	69127		SHERMAN ROAD	FROM END OF ROUTE 0023 (CAVALRY ROAD) AT SIGN TO ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) AT MP 1.71	SHILOH DISTRICT	0.67	0.00	0.67	1		AS	1
0017	5	94728		CONFEDERATE TRENCH ROAD	FROM ROUTE 0016 (SHERMAN ROAD) AT MP 0.09 TO ROUTE 0016 (SHERMAN ROAD) AT MP 0.19	SHILOH DISTRICT	0.21	0.00	0.21	1		AS	1
0018	5	94729		HAMBURG-PURDY ROAD	FROM ROUTE 5000 (STATE HIGHWAY 22) AT MP 1.99 TO EAST PARK BOUNDARY ON FEDERAL ROAD	SHILOH DISTRICT	2.28	0.00	2.28	1		CO	1
0019	5	69128		HAMBURG - SAVANNAH ROAD	FROM ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.04 TO PARK BOUNDARY (OWL CREEK)	SHILOH DISTRICT	1.26	1.67	2.93	1		AS	1
0020	5	94731		TENT HOSPITAL LOOP	FROM ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.27 TO ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.10	SHILOH DISTRICT	0.23	0.00	0.23	1		AS	1
0021	5	94732		HAGY ROAD	FROM ROUTE 0010 (PITTSBURG LANDING ROAD) AT MP 0.60 TO BEGINNING OF ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) AT PAVEMENT CHANGE	SHILOH DISTRICT	0.16	0.00	0.16	1		AS	1
0023	5	69854		CAVALRY ROAD	FROM ROUTE 0019 (HAMBURG - SAVANNAH ROAD) TO BEGINNING OF ROUTE 0016 (SHERMAN ROAD)	SHILOH DISTRICT	0.89	0.00	0.89	1		AS	1

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 10/09/2012

(Numerical By Route #)

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SHIL

SHILOH NATIONAL MILITARY PARK

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0030	5	105815		CORINTH INTERPRETIVE CENTER DRIVE	FROM WEST LINDEN STREET TO END OF LOOP	CORINTH DISTRICT	0.18	0.00	0.18	1		AS	2
0100	5	94733		BROWN'S LANDING ROAD	FROM ROUTE 0019 (HAMBURG - SAVANNAH ROAD) AT MP 0.89 ON RIGHT TO BEGINNING OF ROUTE 0101 (DILL BRANCH ROAD)	SHILOH DISTRICT	0.61	0.00	0.61	1		AS	1
0101	5	231768		DILL BRANCH ROAD	FROM END OF ROUTE 0100 (BROWN'S LANDING ROAD) TO ROUTE 0010 (PITTSBURG LANDING ROAD) AT MP 1.00 ON RIGHT	SHILOH DISTRICT	0.74	0.00	0.74	1		AS	1
0200	4	94734		PICNIC AREA LOOP	FROM ROUTE 5000 (STATE HIGHWAY 22) AT MP 1.07 TO END OF LOOP	SHILOH DISTRICT	0.43	0.00	0.43	3		AS	1
0201	NC	69840		HORNET'S NEST ROAD	FROM ROUTE 0014 (EASTERN CORINTH ROAD) TO ROUTE 0014 (EASTERN CORINTH ROAD)	SHILOH DISTRICT	0.00	0.26	0.26	3		GR	
0400	4	94735		WELKER ROAD	FROM ROUTE 0010 (PITTSBURG LANDING ROAD) AT MP 0.86 TO END OF LOOP	SHILOH DISTRICT	0.33	0.00	0.33	5		AS	1
0401	NC	69112		ROBERSON TRACT ROAD	FROM STATE HIGHWAY 22 TO ENTRANCE GATE	SHILOH DISTRICT	0.00	0.05	0.05	6		GR	
0402	NC	69838		REA SPRINGS ROAD	FROM ROUTE 0013 (PEABODY ROAD) TO ROUTE 0013 (PEABODY ROAD)	SHILOH DISTRICT	0.00	0.09	0.09	6		GR	
0403	5	69852		WOOLF FIELD ROAD	FROM ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) TO ROUTE 0018 (HAMBURG-PURDY ROAD)	SHILOH DISTRICT	0.11	0.00	0.11	1		AS	1
0405	NC	69284		BEAUREGARD ROAD	FROM ROUTE 5000 (STATE HIGHWAY 22) TO ROUTE 0011 (CORINTH-PITTSBURG LANDING ROAD)	SHILOH DISTRICT	0.00	0.48	0.48	6		GR	
0900	4	94736		VISITOR CENTER PARKING	FROM ROUTE 0010 (PITTSBURG LANDING ROAD) TO PARKING	SHILOH DISTRICT	0.00	0.00	0.00		51,029	AS	1
0901	NC	69831		ADMINISTRATIVE PARKING	FROM ROUTE 0900 (VISITOR CENTER PARKING) TO PARKING	SHILOH DISTRICT	0.00	0.00	0.00		3,989	GR	
0903	4	94739		NATIONAL CEMETERY PARKING	ADJACENT TO ROUTE 0010 (PITTSBURG LANDING ROAD)	SHILOH DISTRICT	0.00	0.00	0.00		2,389	AS	1
0904	4	94740		MAINTENANCE AREA	FROM ROUTE 0400 (WELKER ROAD) TO MAINTENANCE AREA	SHILOH DISTRICT	0.00	0.00	0.00		36,874	AS	1
0905	4	94741		WAR CABIN LOOP PARKING	FROM ROUTE 0019 (HAMBURG - SAVANNAH ROAD) TO PARKING	SHILOH DISTRICT	0.00	0.00	0.00		9,328	AS	1

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 10/09/2012

(Numerical By Route #)

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SHIL

SHILOH NATIONAL MILITARY PARK

Rte. No.	Cycle Collected	FMSS No.	Concess Route	Route Name	Route Description From To	Maint. District	Paved Miles	Un-Paved Miles	Total Route Length	Func. Class	Manual Rated SQ/FT	Surf. Type	Area Maps
0906	4	94742		JOHNSTON MONUMENT ACCESS PARKING	FROM ROUTE 0019 (HAMBURG - SAVANNAH ROAD) TO ROUTE 0019 (HAMBURG - SAVANNAH ROAD)	SHILOH DISTRICT	0.00	0.00	0.00		10,576	AS	1
0907	4	94743		PICNIC AREA PAVILLION PARKING	ADJACENT TO ROUTE 0200 (PICNIC AREA LOOP) AT MP 0.10	SHILOH DISTRICT	0.00	0.00	0.00		6,833	AS	1
0908A	4	94744		PICNIC AREA PARKING A	ADJACENT TO ROUTE 0200 (PICNIC AREA LOOP) AT MP 0.27	SHILOH DISTRICT	0.00	0.00	0.00		2,510	AS	1
0908B	4	94745		PICNIC AREA PARKING B	ADJACENT TO ROUTE 0200 (PICNIC AREA LOOP) AT MP 0.33	SHILOH DISTRICT	0.00	0.00	0.00		3,403	AS	1
0909	NC	69837		REA SPRINGS PARKING	FROM ROUTE 0013 (PEABODY ROAD) TO PARKING	SHILOH DISTRICT	0.00	0.00	0.00		6,110	GR	
0910	4	69851		INDIAN MOUND PARKING	FROM ROUTE 0100 (BROWN'S LANDING ROAD) TO ROUTE 0100 (BROWN'S LANDING ROAD)	SHILOH DISTRICT	0.00	0.00	0.00		11,099	AS	1
0912	4	105816		CORINTH INTERPRETIVE CENTER PARKING	FROM ROUTE 0030 (CORINTH INTERPRETIVE CENTER DRIVE) AT MP 0.05 ON LEFT TO PARKING	CORINTH DISTRICT	0.00	0.00	0.00		22,097	AS	2
0917	4	231770		CORINTH INTERPRETIVE CENTER SERVICE PARKING	FROM ROUTE 0030 (CORINTH INTERPRETIVE CENTER DRIVE) AT MP 0.12 ON RIGHT TO PARKING	CORINTH DISTRICT	0.00	0.00	0.00		10,017	AS	2
5000	4			STATE HIGHWAY 22	FROM NORTH PARK BOUNDARY TO SOUTH PARK BOUNDARY	N/A	3.52	0.00	3.52			AS	1
5001	4			SHILOH ROAD	FROM ROUTE 5000 (STATE HIGHWAY 22) TO WEST PARK BOUNDARY	N/A	0.46	0.00	0.46			AS	1
5002	4			PRATT LANE	FROM ROUTE 5000 (STATE HIGHWAY 22) TO WEST PARK BOUNDARY	N/A	0.08	0.00	0.08			AS	1

Cycle 5 NPS/RIP Route ID Report

Road Inventory Program 10/09/2012

(Numerical By Route #)

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CYCLE 5 COLLECTED SUMMARY TOTALS FOR SHILOH NATIONAL MILITARY PARK

CYCLE 5 COLLECTED ROUTE TOTALS	
DCV Driven Route Miles	14.59
Manually Rated Route Miles	0.00
TOTAL PARK ROUTE MILES COLLECTED IN CYCLE 5	14.59
Manually Rated Routes (SQFT)	0
* CYCLE 5 COLLECTED PARKING AREA TOTALS	
Paved Parking (SQFT)	0

CYCLE 5 COLLECTED CONCESSION TOTALS	
Concession Paved Route Miles	0.00
Concession Paved Parking Area SQFT	0
Concession Manually Rated Rotes SQFT	0

CYCLE 5 COLLECTED WEIGHTED AVERAGE PARK VALUES	
DCV Driven PCR	79
**Manually Rated Routes PCR	N/A
**Parking PCR	N/A
***Total Equivalent Lane Miles	23.38

TOTAL PARK SUMMARY FOR SHILOH NATIONAL MILITARY PARK

ROUTE TOTALS	
TOTAL PAVED PARK ROUTE MILES	15.35
TOTAL PAVED PARKING (SQFT)	166,155

* - 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

Road Inventory Program 10/09/2012

(Numerical By Route #)

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General Park Road Functional Classification Table

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

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

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

5000 route numbers are assigned to Non-NPS Routes that are State, County or City owned which border, traverse, or provide access to Park Facilities or Assets. 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**

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - SHIL

ROUTES MODIFIED FROM PREVIOUS INVENTORY:			
Route #	Route Name	Type of Modification	Comments
0010	PITTSBURG LANDING ROAD	LENGTH CHANGE	ROUTE 0010 NOW ENDS IN A LOOP. IN CYCLE 4 IT ENDED AT PARKING LOT 0902 (NOW REMOVED).
0016	SHERMAN ROAD	LENGTH CHANGE	IN CYCLE 4 ROUTE 0016 HAD AN UNPAVED SECTION, BUT THE ROUTE IS ALL PAVED IN CYCLE 5.
0019	HAMBURG - SAVANNAH ROAD	LENGTH CHANGE	A SEGMENT OF ROUTE 0019 THAT WAS UNPAVED IN CYCLE 4 WAS PAVED UP TO THE INTERSECTION WITH ROUTE 0023 (CAVALRY ROAD).
0020	TENT HOSPITAL LOOP	RECONSTRUCTED	ROUTE WAS RECONSTRUCTED AND LENGTHENED.
OTHER CHANGES FROM PREVIOUS INVENTORY:			
Route #	Route Name	Type of Change	Comments
0023	CAVALRY ROAD	SURFACE TYPE CHANGE	ROUTE WAS GRAVEL IN CYCLE 4, BUT IS PAVED IN CYCLE 5.
0100	BROWN'S LANDING ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 2 TO 1 BECAUSE THIS ROAD IS NOW PART OF THE PRIMARY TOUR ROUTE.
0101	DILL BRANCH ROAD	FUNCTIONAL CLASS CHANGE	FUNCTIONAL CLASS CHANGED FROM 2 TO 1 BECAUSE THIS ROAD IS NOW PART OF THE PRIMARY TOUR ROUTE.
0403	WOOLF FIELD ROAD	SURFACE TYPE CHANGE	ROUTE WAS GRAVEL IN CYCLE 4, BUT IS PAVED IN CYCLE 5. FUNCTIONAL CLASS CHANGED FROM 6 TO 1 BECAUSE THIS ROAD IS NOW PART OF THE PRIMARY TOUR ROUTE. ROUTE NAME CHANGED FROM "ILLINOIS MONUMENT ACCESS ROAD" TO "WOOLF FIELD ROAD".
0912	CORINTH INTERPRETIVE CENTER PARKING	OTHER	NAME CHANGED FROM "CORINTH VISITOR CENTER PARKING" TO "CORINTH INTERPRETIVE CENTER PARKING".

ROUTE IDENTIFICATION CHANGES TO PAVED ROUTES FROM PREVIOUS CYCLE - SHIL

ROUTES REMOVED FROM PREVIOUS INVENTORY:			
Route #	Route Name	Reason for Removal	Comments
0015	MCCLERNAND ROAD	OTHER	"MCCLERNAND ROAD" WAS TURNED INTO A WALKING TRAIL AND IS NO LONGER A ROAD.
0902	TOUR STOP #1 PARKING	RECONSTRUCTED	ROUTE 0902 (TOUR STOP #1 PARKING) WAS REMOVED WHEN THE LOOP AT THE END OF ROUTE 0010 WAS CONSTRUCTED.
0913	INDIAN MOUND HANDICAP PARKING	OTHER	"INDIAN MOUND HANDICAP PARKING" WAS REMOVED BECAUSE IT IS CONSIDERED A PULLOUT, NOT A PARKING LOT.
0914	TENNESSEE RIVER OVERLOOK PARKING	OTHER	"TENNESSEE RIVER OVERLOOK PARKING" WAS REMOVED BECAUSE IT IS CONSIDERED A PULLOUT, NOT A PARKING LOT.
0915	MUNCH'S BATTERY PARKING	OTHER	"MUNCH'S BATTERY PARKING" WAS REMOVED BECAUSE IT IS CONSIDERED A PULLOUT, NOT A PARKING LOT.
0916	PITTSBURG LANDING OVERLOOK PARKING	OTHER	"PITTSBURG LANDING OVERLOOK PARKING" WAS REMOVED BECAUSE IT IS CONSIDERED A PULLOUT, NOT A PARKING LOT.
0918	CORINTH INTERPRETIVE CENTER HANDICAPPED PARKING	OTHER	"CORINTH INTERPRETIVE CENTER HANDICAPPED PARKING" WAS REMOVED BECAUSE IT IS CONSIDERED A PULLOUT, NOT A PARKING LOT.

Section 3

Park Summary Information



Shiloh National Military Park



Federal Lands Highway
Road Inventory Program

SHIL: 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	2.84	19.47%	3.63	24.88%	1.82	12.47%	6.30	43.18%	14.59
2									
3									
4									
5									
6									
7									
8									
Totals	2.84	19.47%	3.63	24.88%	1.82	12.47%	6.30	43.18%	14.59

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

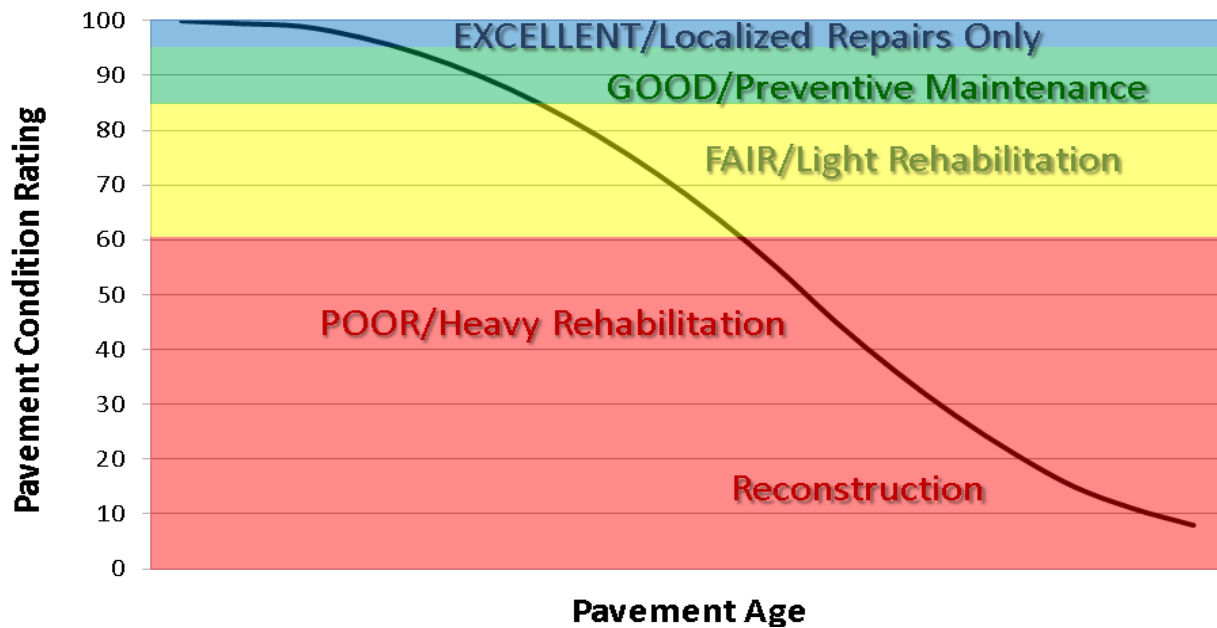
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

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

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

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

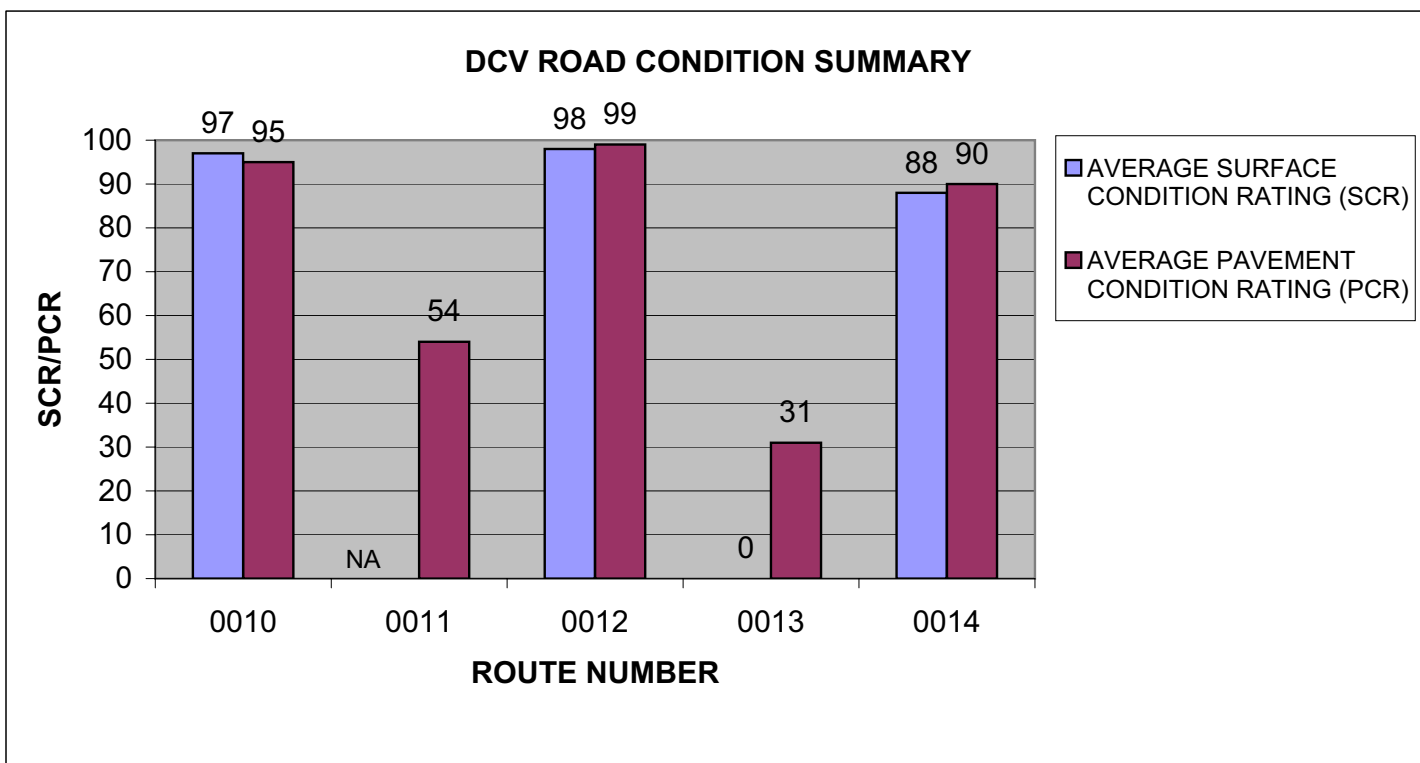
Condition Categories and Treatments



SHIL: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

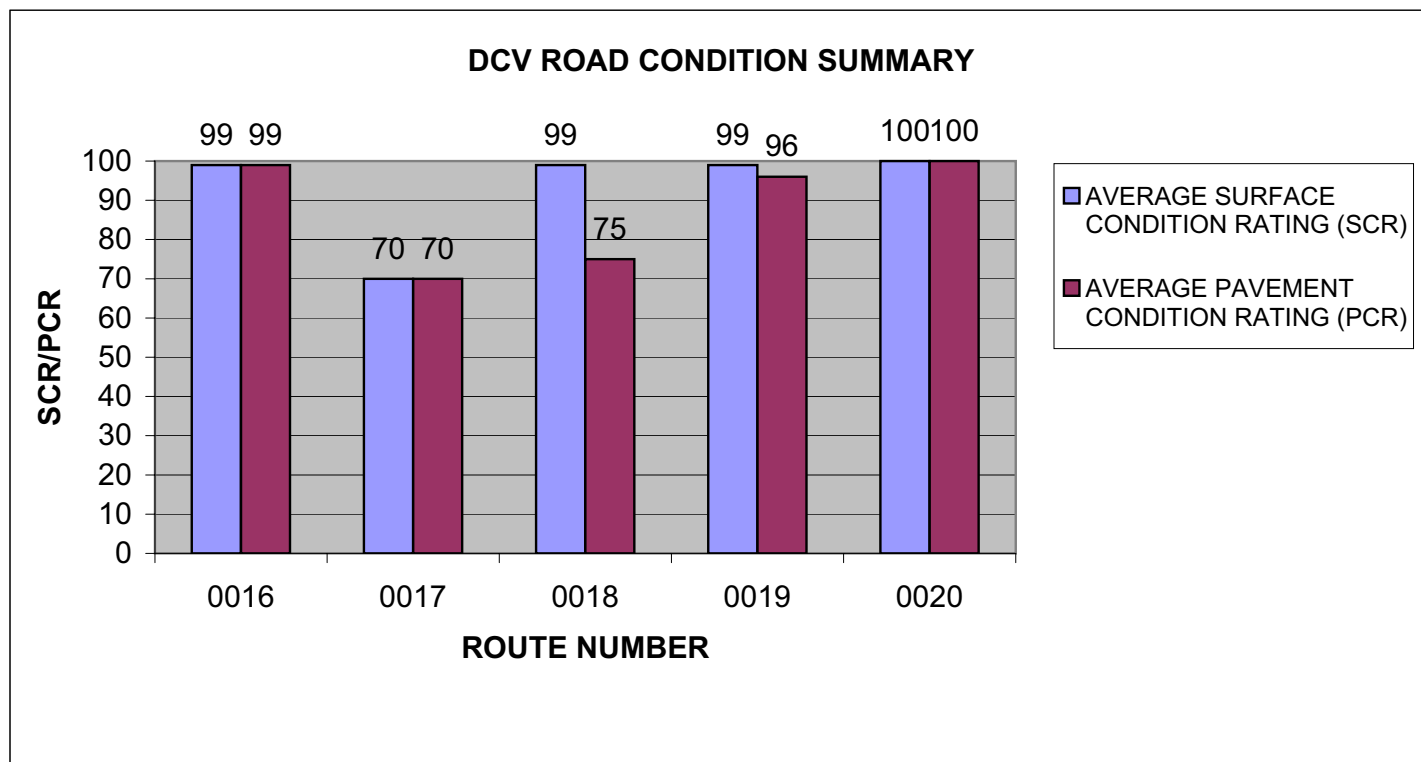
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0010	PITTSBURG LANDING ROAD	1	1.21	ASPHALT	97	95
0011	CORINTH - PITTSBURG LANDING ROAD	1	2.97	CONCRETE	NA	54
0012	RECONNOITERING ROAD	1	0.77	ASPHALT	98	99
0013	PEABODY ROAD	1	1.00	ASPHALT	0	31
0014	EASTERN CORINTH ROAD	1	1.30	ASPHALT	88	90



SHIL: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

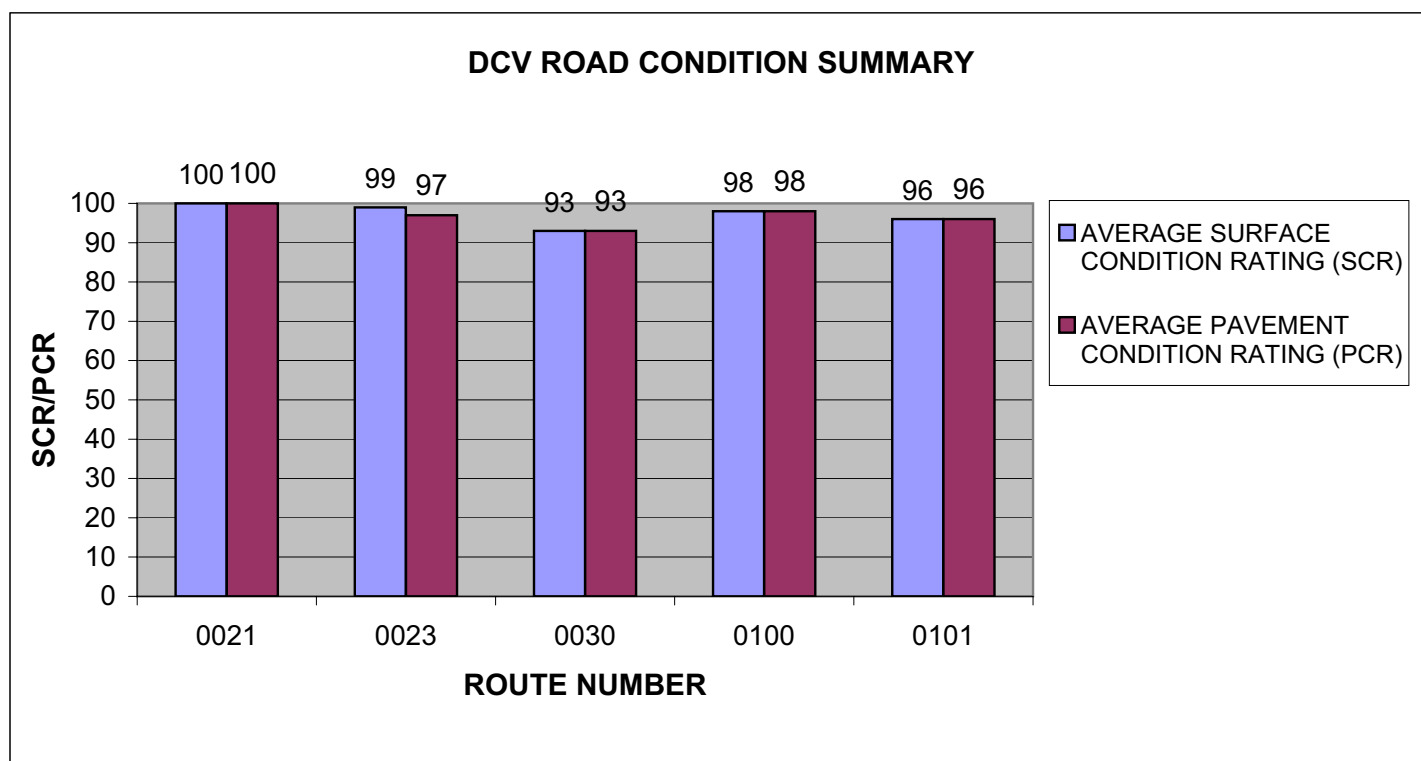
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0016	SHERMAN ROAD	1	0.67	ASPHALT	99	99
0017	CONFEDERATE TRENCH ROAD	1	0.21	ASPHALT	70	70
0018	HAMBURG-PURDY ROAD	1	2.28	CONCRETE	99	75
0019	HAMBURG - SAVANNAH ROAD	1	1.26	ASPHALT	99	96
0020	TENT HOSPITAL LOOP	1	0.23	ASPHALT	100	100



SHIL: DCV ROAD CONDITION SUMMARY

DCV - Data Collection Vehicle

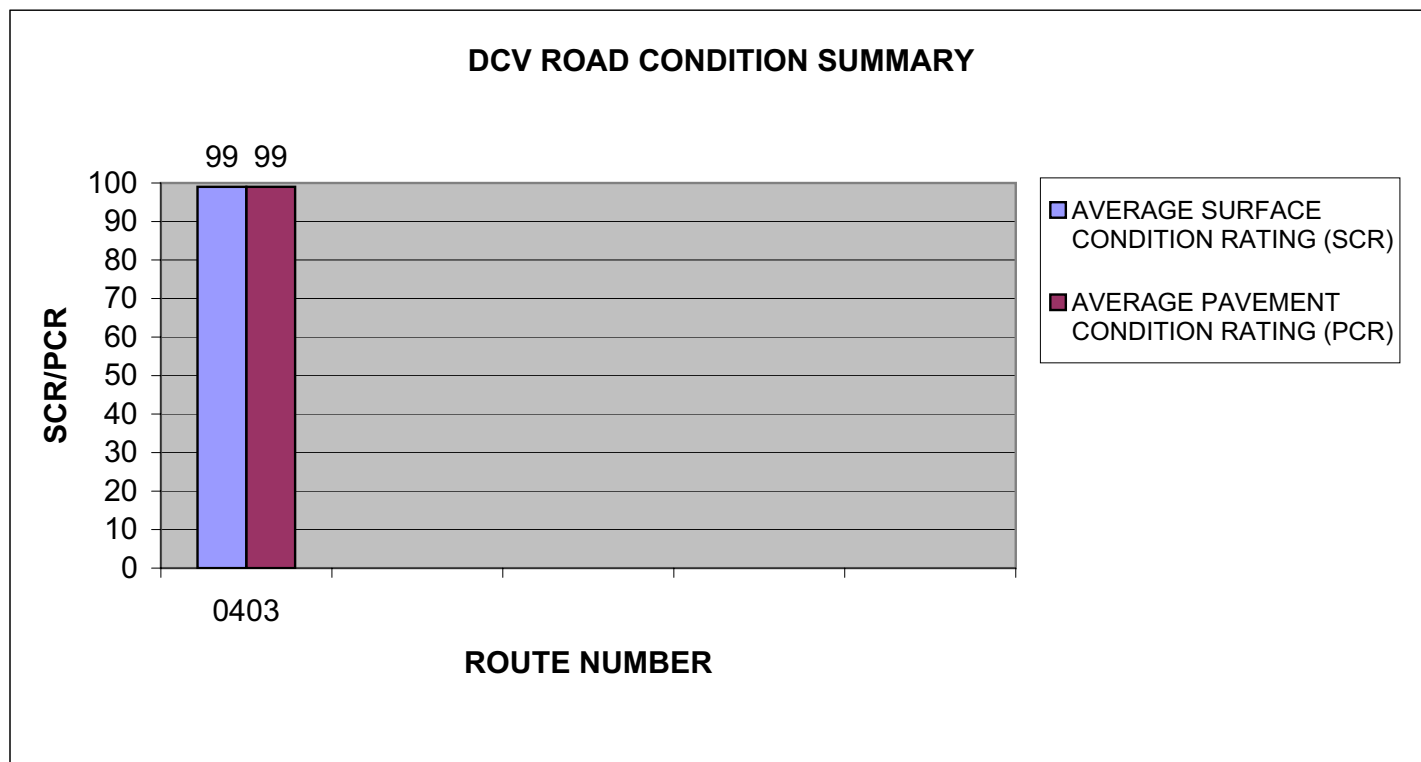
ROUTE NUMBER	ROUTE NAME	FUNCT CLASS	PAVED LENGTH	SURFACE TYPE	AVERAGE SURFACE CONDITION RATING (SCR)	AVERAGE PAVEMENT CONDITION RATING (PCR)
0021	HAGY ROAD	1	0.16	ASPHALT	100	100
0023	CAVALRY ROAD	1	0.89	ASPHALT	99	97
0030	CORINTH INTERPRETIVE CENTER DRIVE	1	0.18	ASPHALT	93	93
0100	BROWN'S LANDING ROAD	1	0.61	ASPHALT	98	98
0101	DILL BRANCH ROAD	1	0.74	ASPHALT	96	96



SHIL: 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)
0403	WOOLF FIELD ROAD	1	0.11	ASPHALT	99	99



Section 4

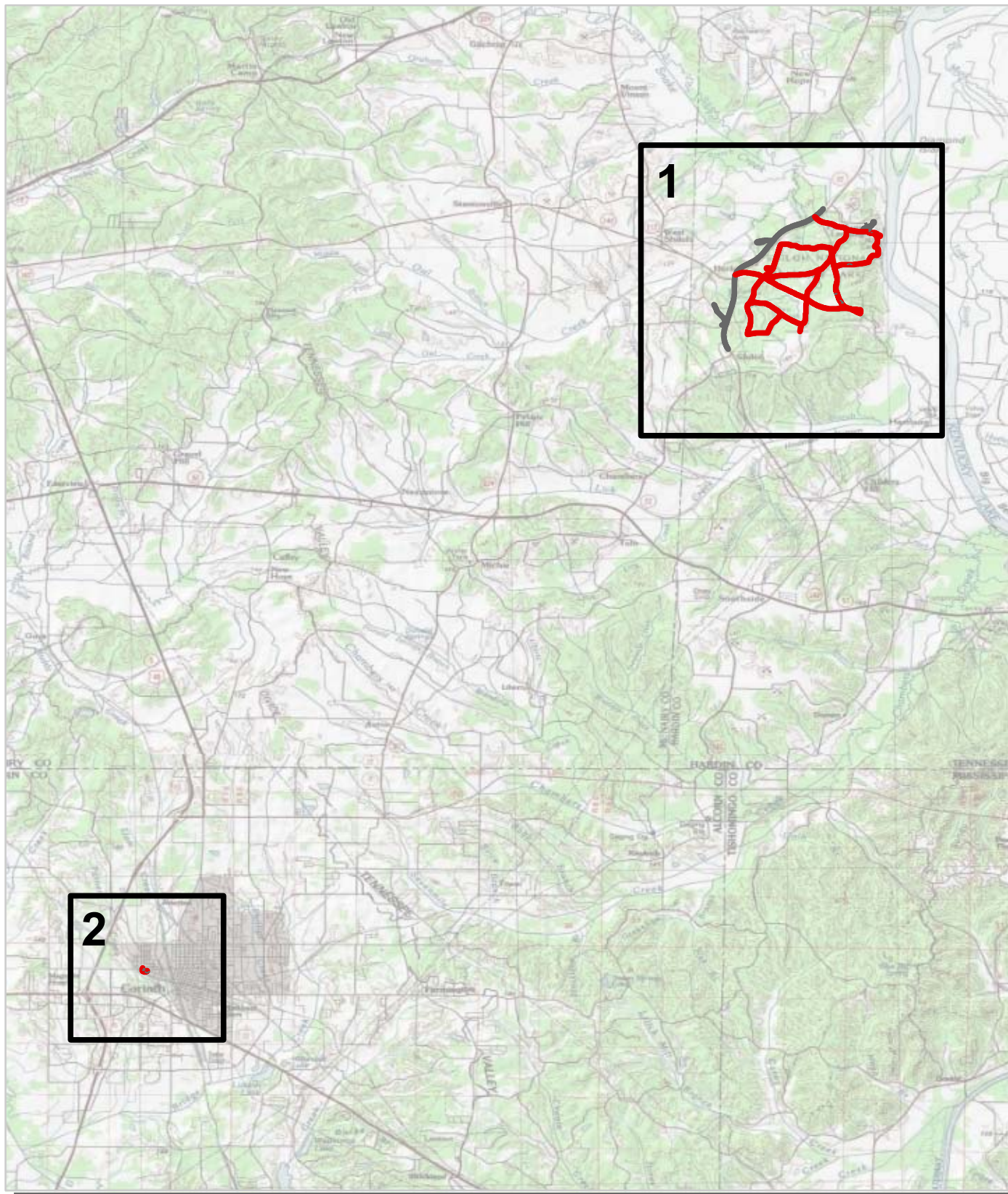
Park Route Location Maps





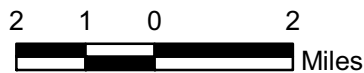
Shiloh National Military Park



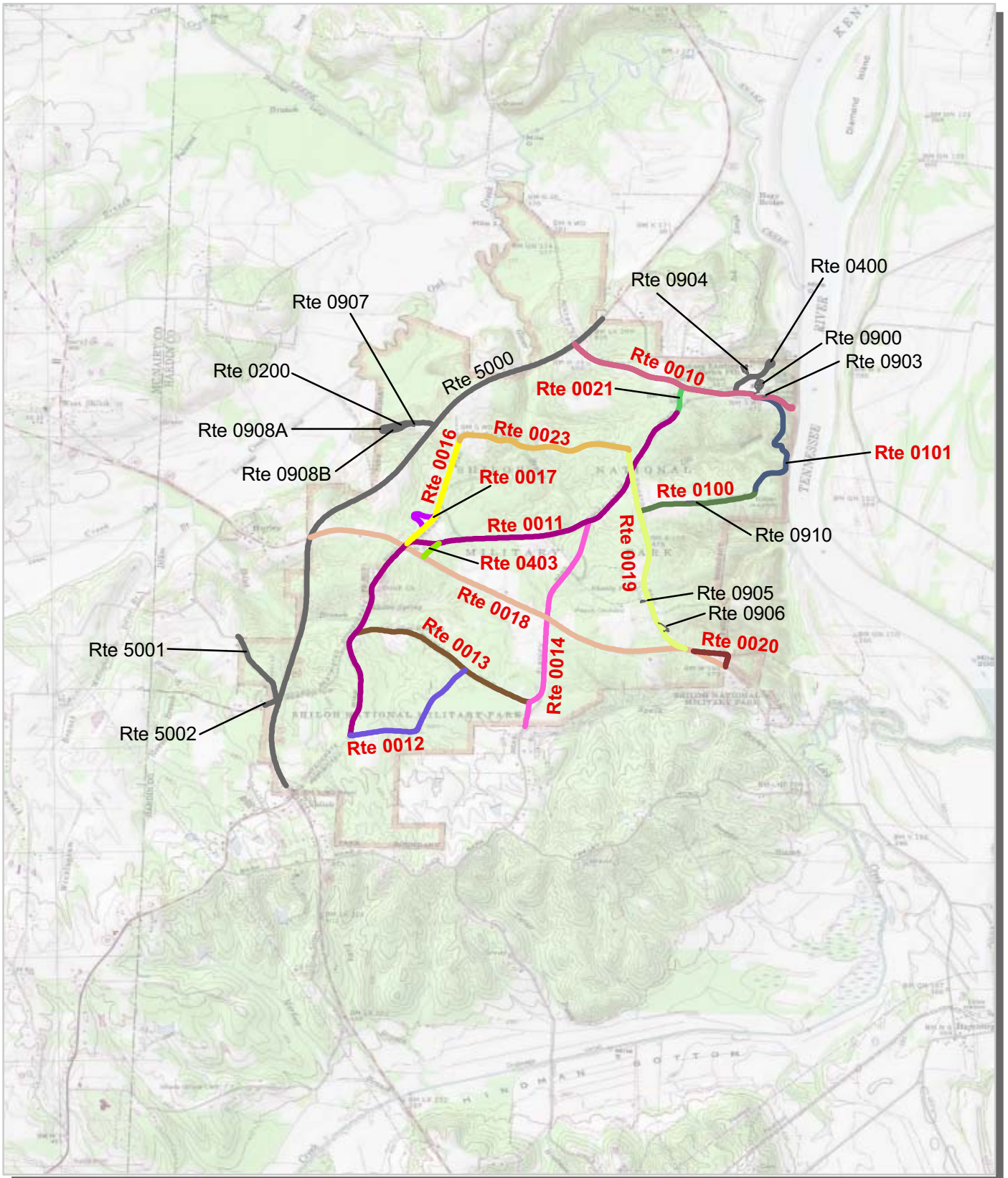
Shiloh National Military Park Route Location Map Key Map



-  Cycle 5 Collected Routes
-  Routes Collected in Previous Cycle

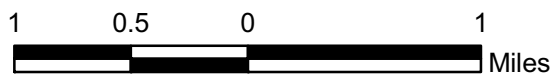


Shiloh National Military Park Route Location Map Area 1

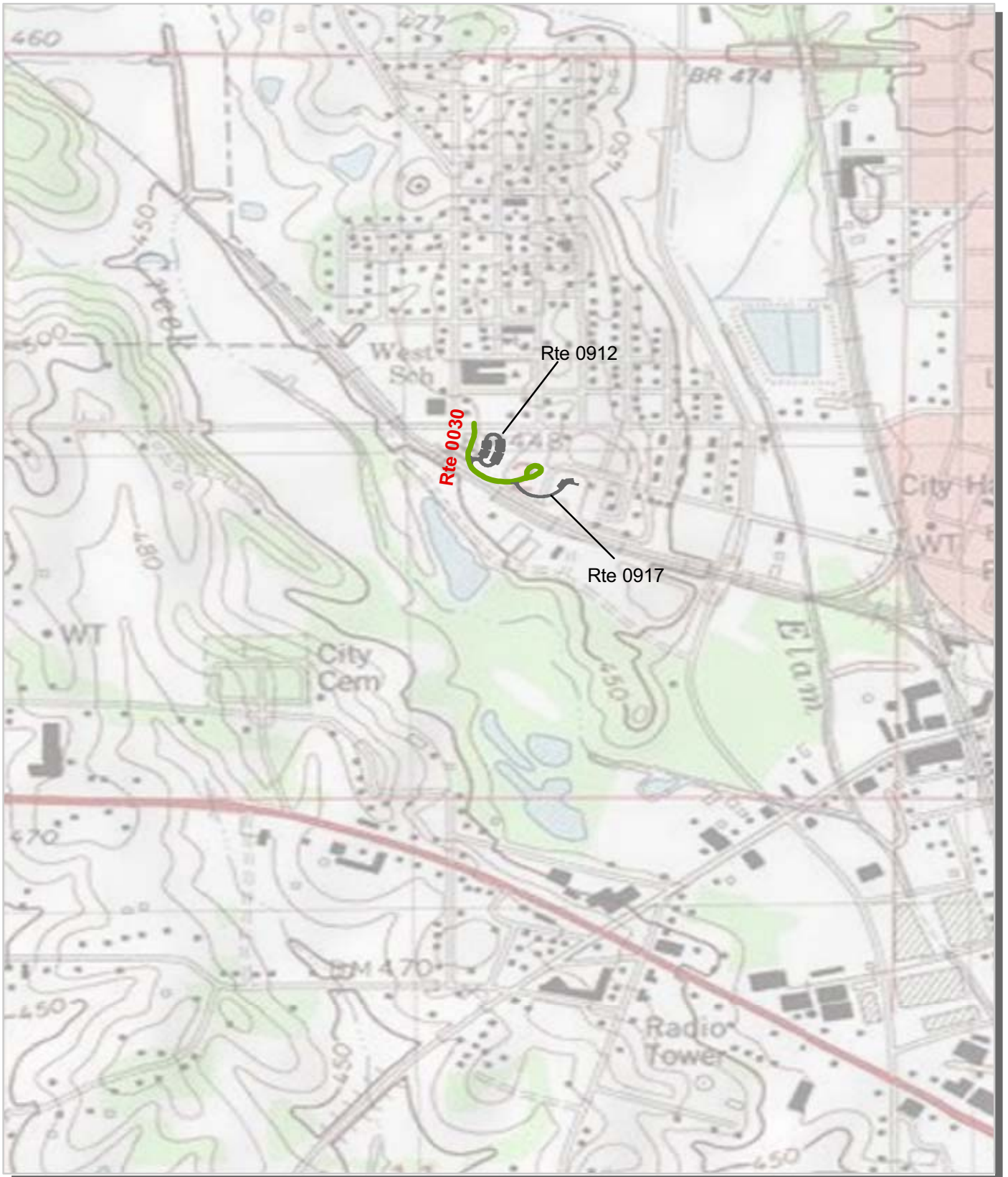


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



Shiloh National Military Park Route Location Map Area 2

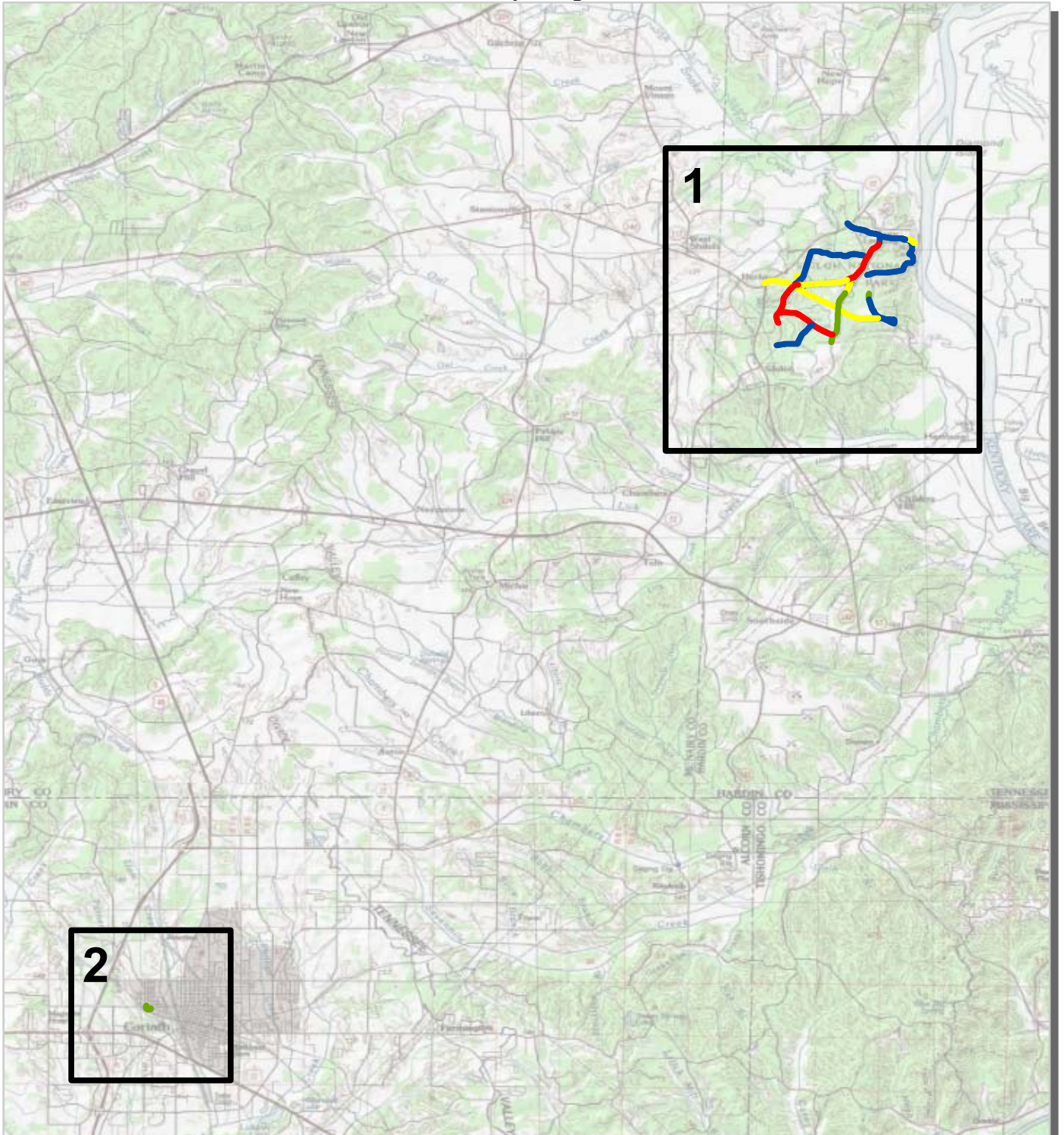


Unique colors used to differentiate routes

— Routes Collected in Previous Cycle



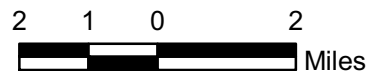
Shiloh National Military Park Route Condition Map PCR - Mile by Mile Key Map



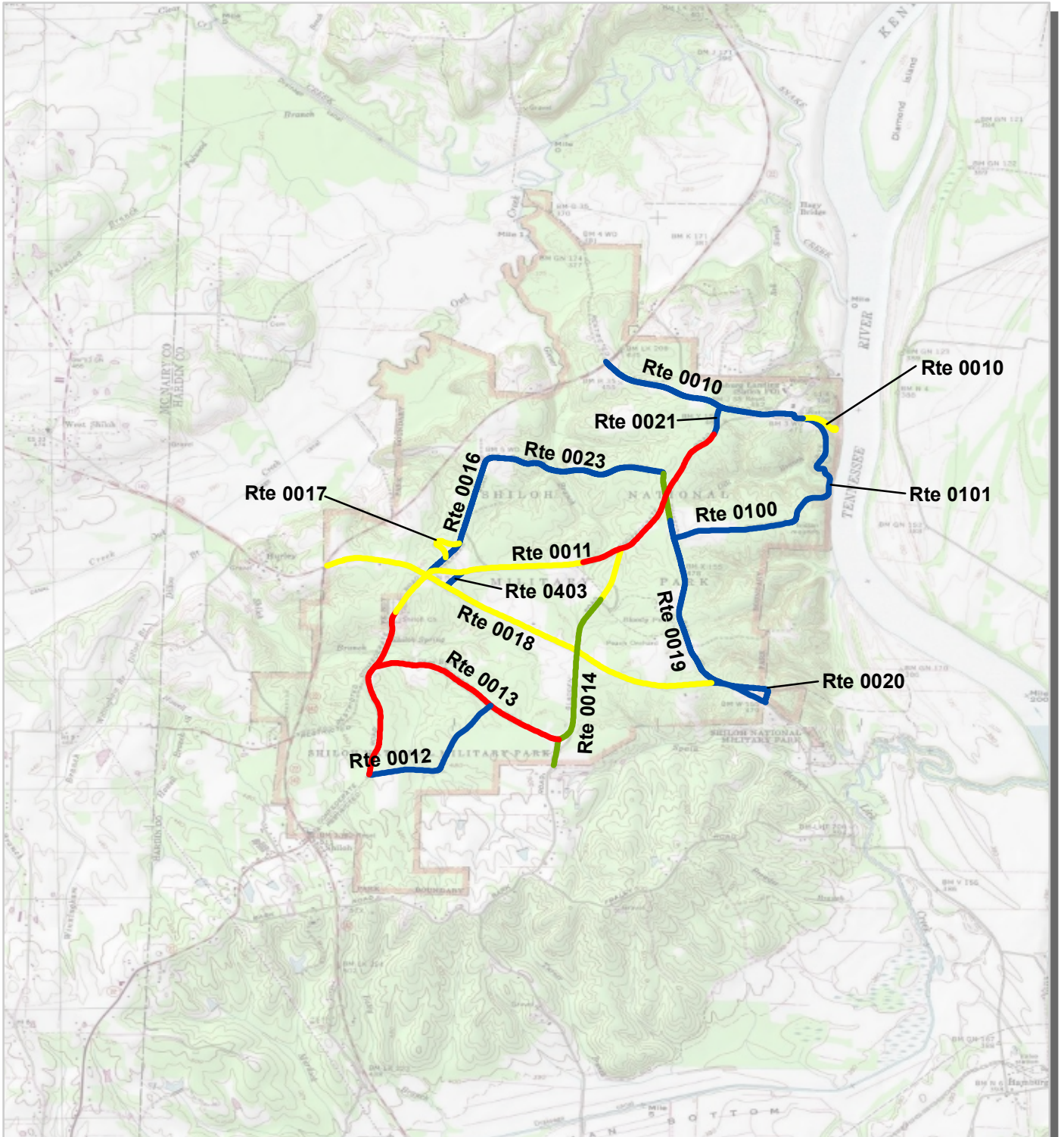
PCR	Poor		Fair		Good		Excellent		No Data	
	(0 - 60)		(61 - 84)	(85 - 94)		(95 - 100)				

* 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.



Shiloh National Military Park Route Condition Map PCR - Mile by Mile Area 1

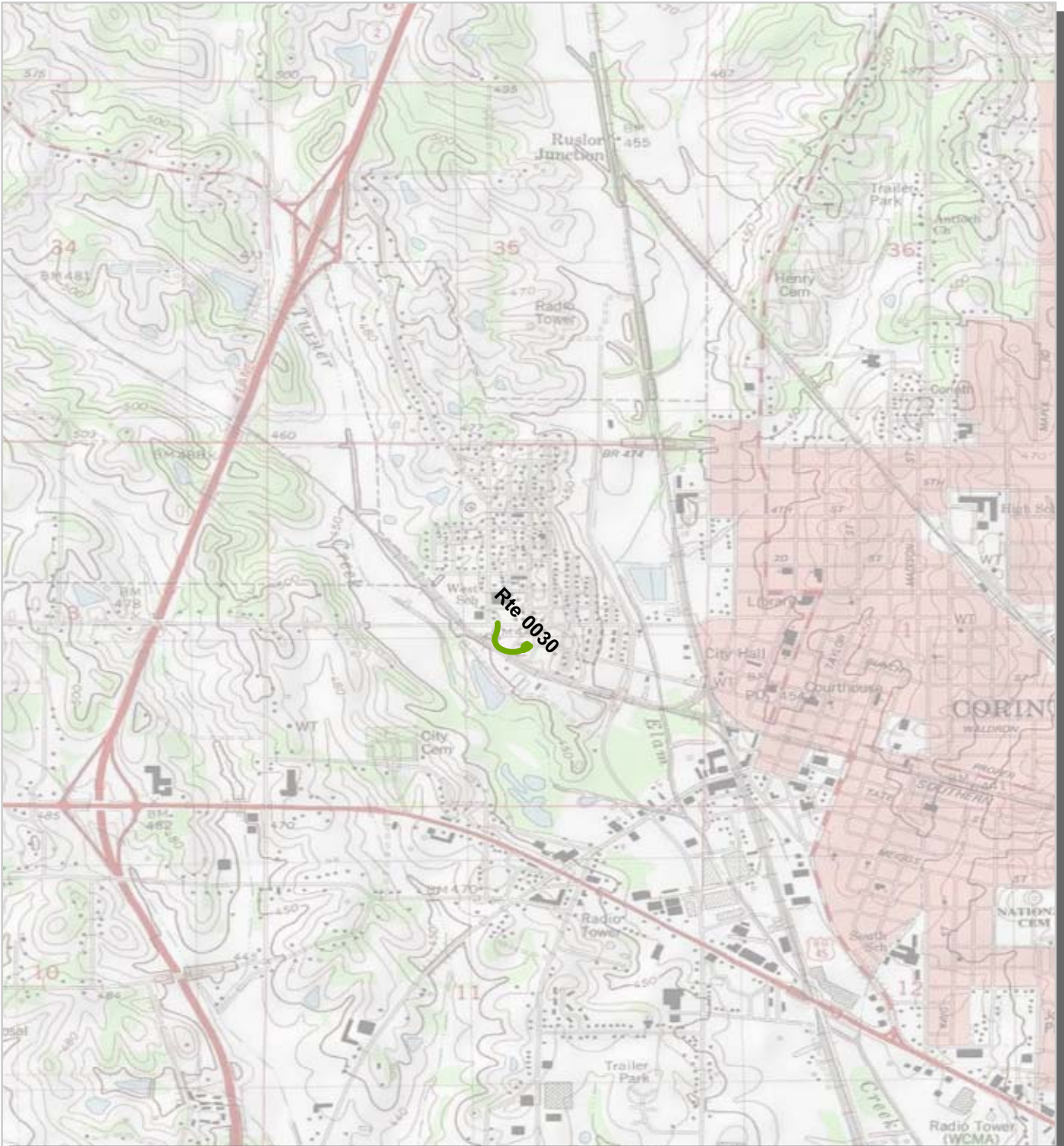


PCR	Poor		Fair		Good		Excellent		No Data	
	(0 - 60)		(61 - 84)	(85 - 94)		(95 - 100)				

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



Shiloh National Military 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.



Section 5 Paved Route Condition Rating Sheets



Shiloh National Military Park



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

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

ROUTE: 0010 PITTSBURG LANDING ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 1.21 Miles

SOUTHEAST REGION

<i>Section Number</i>	0	1			
<i>Section Length (mi)</i>	1.00	0.21			
<i>Cross Section Information</i>					
Number of Lanes	2	2			
Paved Width (ft)	22	20			
Lane Width (ft)	11	10			
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	97	96			
PCR (Pavement Condition Rating)	98	81			
<i>Distress Index Values</i>					
Structural Crack Index	97	100			
Transverse Cracking Index	97	100			
Patching Index	100	100			
Rutting Index	99	96			
Roughness Condition Index (RCI)	100	58			

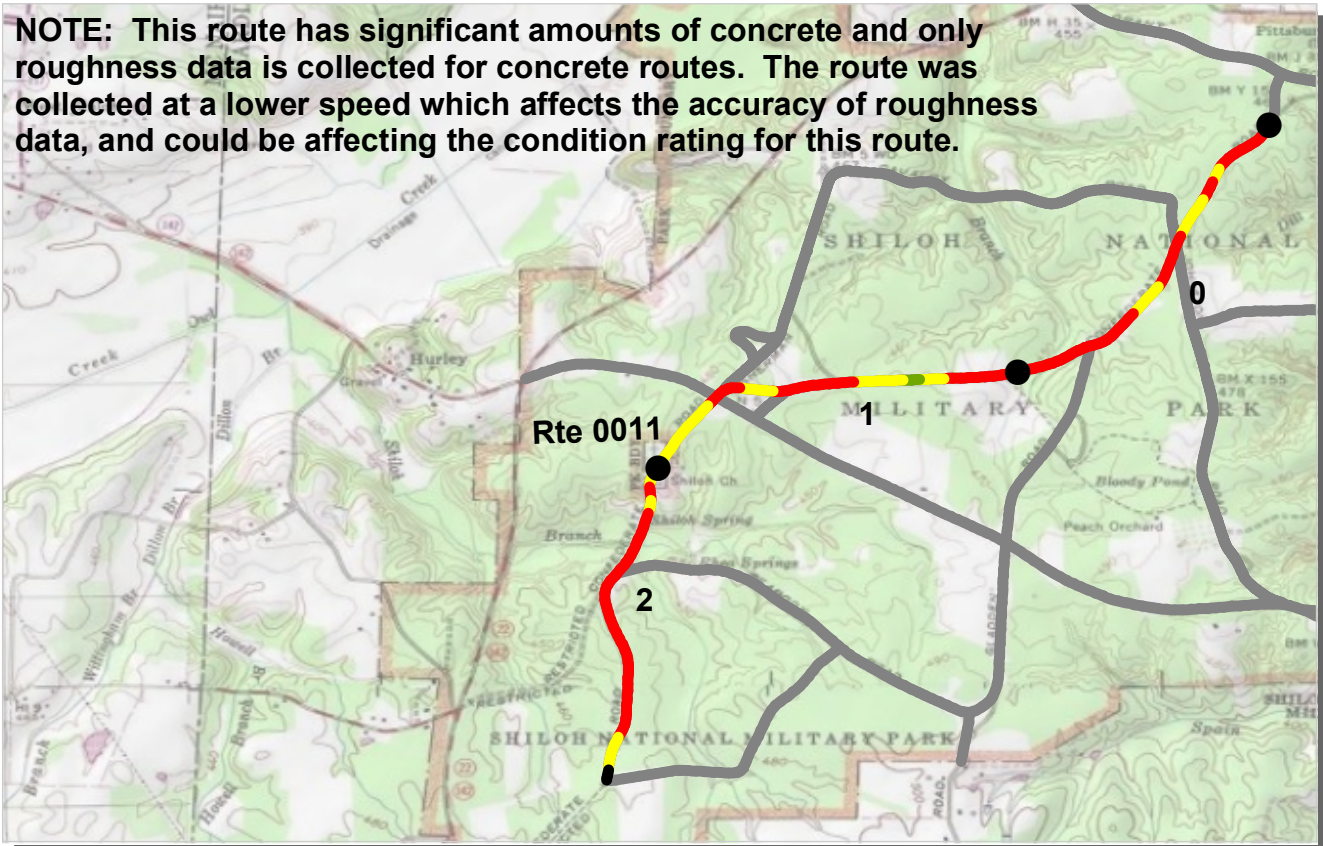
NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0010 PITTSBURG LANDING ROAD

NOTE: This route has significant amounts of concrete and only roughness data is collected for concrete routes. The route was collected at a lower speed which affects the accuracy of roughness data, and could be affecting the condition rating for this route.



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

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

**ROUTE: 0011 CORINTH - PITTSBURG LANDING ROAD
SHIL : SHILOH NATIONAL MILITARY PARK**

**COLLECTED: 2/12/2012
TOTAL LENGTH: 2.97 Miles**

SOUTHEAST REGION

<i>Section Number</i>	0	1	2		
<i>Section Length (mi)</i>	1.00	1.00	0.97		
<i>Cross Section Information</i>					
Number of Lanes	2	2	2		
Paved Width (ft)	21	20	21		
Lane Width (ft)	11	10	10		
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	NC	NC	NC		
PCR (Pavement Condition Rating)	47	62	54		
<i>Distress Index Values</i>					
Structural Crack Index	NC	NC	NC		
Transverse Cracking Index	NC	NC	NC		
Patching Index	NC	NC	NC		
Rutting Index	NC	NC	NC		
Roughness Condition Index (RCI)	47	62	54		

NOTES:

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

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0011 CORINTH - PITTSBURG LANDING ROAD



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

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

ROUTE: 0012 RECONNOITERING ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.77 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.77				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	98				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	98				
Transverse Cracking Index	99				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	100				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0012 RECONNOITERING ROAD



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

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

ROUTE: 0013 PEABODY ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 1.00 Miles

SOUTHEAST REGION

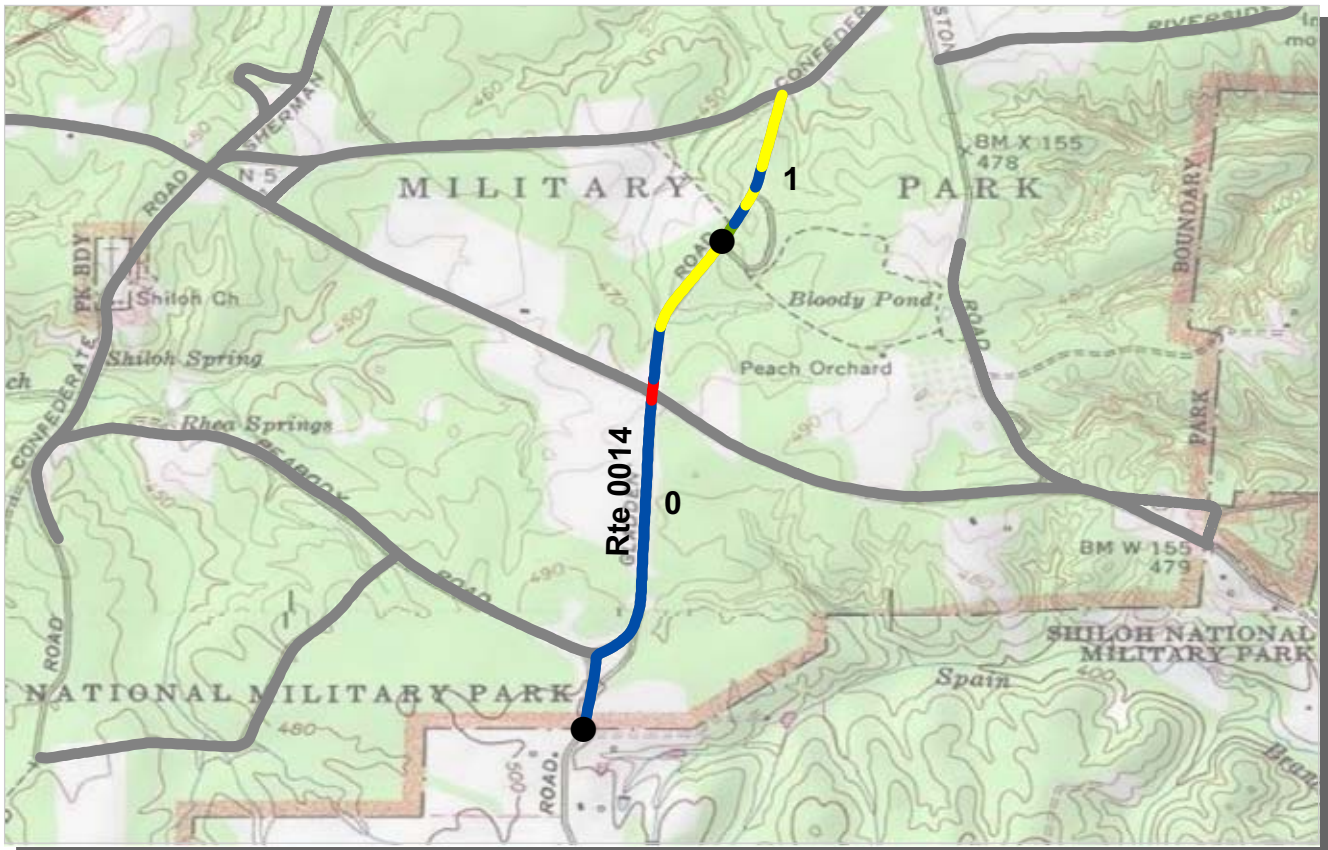
Section Number	0				
Section Length (mi)	1.00				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	0				
PCR (Pavement Condition Rating)	31				
Distress Index Values					
Structural Crack Index	0				
Transverse Cracking Index	98				
Patching Index	97				
Rutting Index	97				
Roughness Condition Index (RCI)	78				

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0013 PEABODY ROAD



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

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

ROUTE: 0014 EASTERN CORINTH ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 1.30 Miles

SOUTHEAST REGION

<i>Section Number</i>	0	1			
<i>Section Length (mi)</i>	1.00	0.30			
<i>Cross Section Information</i>					
Number of Lanes	2	2			
Paved Width (ft)	17	16			
Lane Width (ft)	9	8			
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	90	82			
PCR (Pavement Condition Rating)	92	83			
<i>Distress Index Values</i>					
Structural Crack Index	90	82			
Transverse Cracking Index	97	88			
Patching Index	100	100			
Rutting Index	99	99			
Roughness Condition Index (RCI)	94	85			

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0014 EASTERN CORINTH ROAD



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

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

ROUTE: 0016 SHERMAN ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.67 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.67				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	99				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	98				

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0016 SHERMAN ROAD



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

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

ROUTE: 0017 CONFEDERATE TRENCH ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.21 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.21				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	70				
PCR (Pavement Condition Rating)	70				
Distress Index Values					
Structural Crack Index	70				
Transverse Cracking Index	90				
Patching Index	100				
Rutting Index	83				
Roughness Condition Index (RCI)	NC				

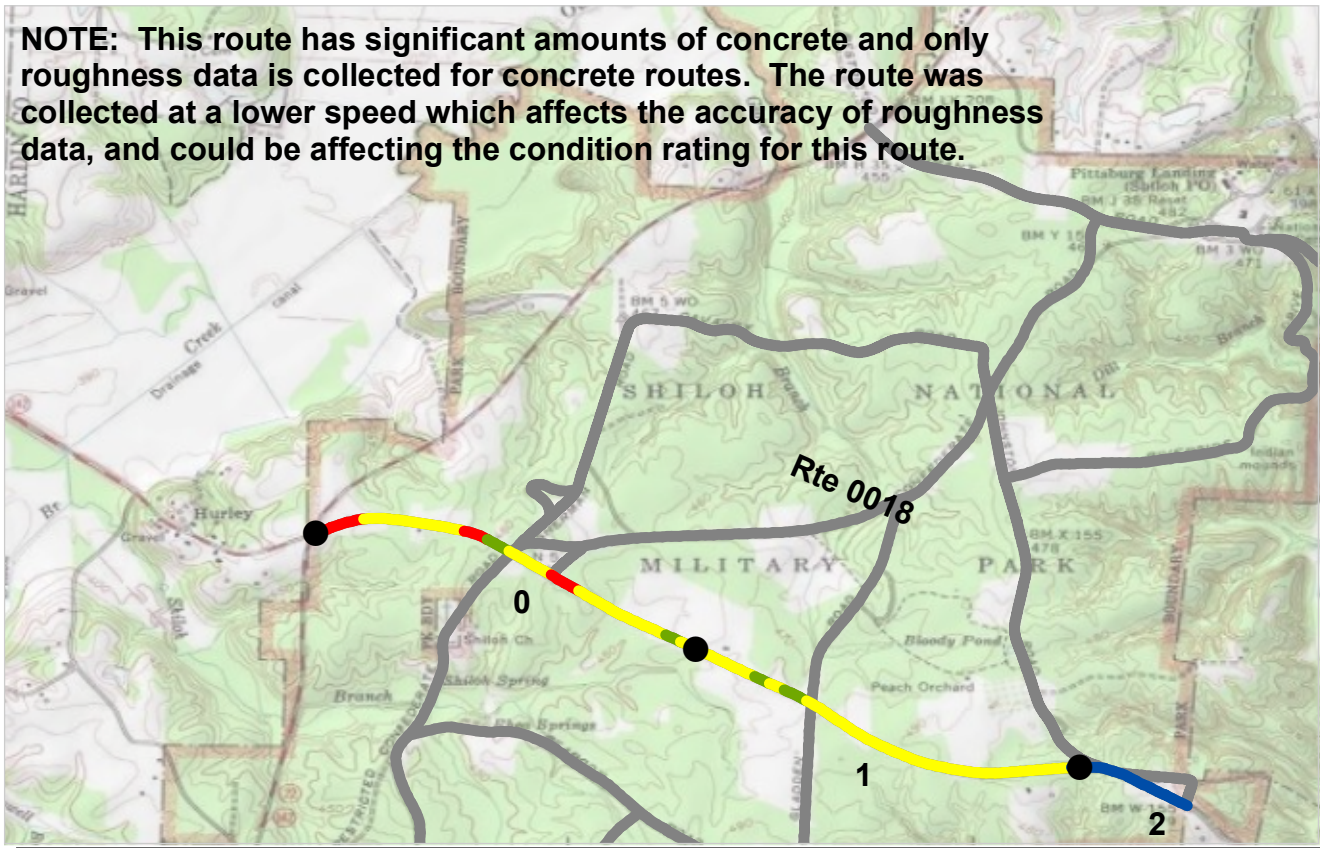
NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0017 CONFEDERATE TRENCH ROAD

NOTE: This route has significant amounts of concrete and only roughness data is collected for concrete routes. The route was collected at a lower speed which affects the accuracy of roughness data, and could be affecting the condition rating for this route.



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: 0018 HAMBURG-PURDY ROAD
SHIL : SHILOH NATIONAL MILITARY PARK**

**COLLECTED: 2/12/2012
TOTAL LENGTH: 2.28 Miles**

SOUTHEAST REGION

<i>Section Number</i>	0	1	2		
<i>Section Length (mi)</i>	1.00	1.00	0.28		
<i>Cross Section Information</i>					
Number of Lanes	2	2	2		
Paved Width (ft)	21	20	20		
Lane Width (ft)	10	10	10		
<i>Roadway Condition Information</i>					
SCR (Surface Condition Rating)	NC	NC	99		
PCR (Pavement Condition Rating)	68	76	99		
<i>Distress Index Values</i>					
Structural Crack Index	NC	NC	100		
Transverse Cracking Index	NC	NC	99		
Patching Index	NC	NC	100		
Rutting Index	NC	NC	99		
Roughness Condition Index (RCI)	68	76	100		

NOTES:

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

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0018 HAMBURG-PURDY ROAD



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

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

ROUTE: 0019 HAMBURG - SAVANNAH ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 1.26 Miles

SOUTHEAST REGION

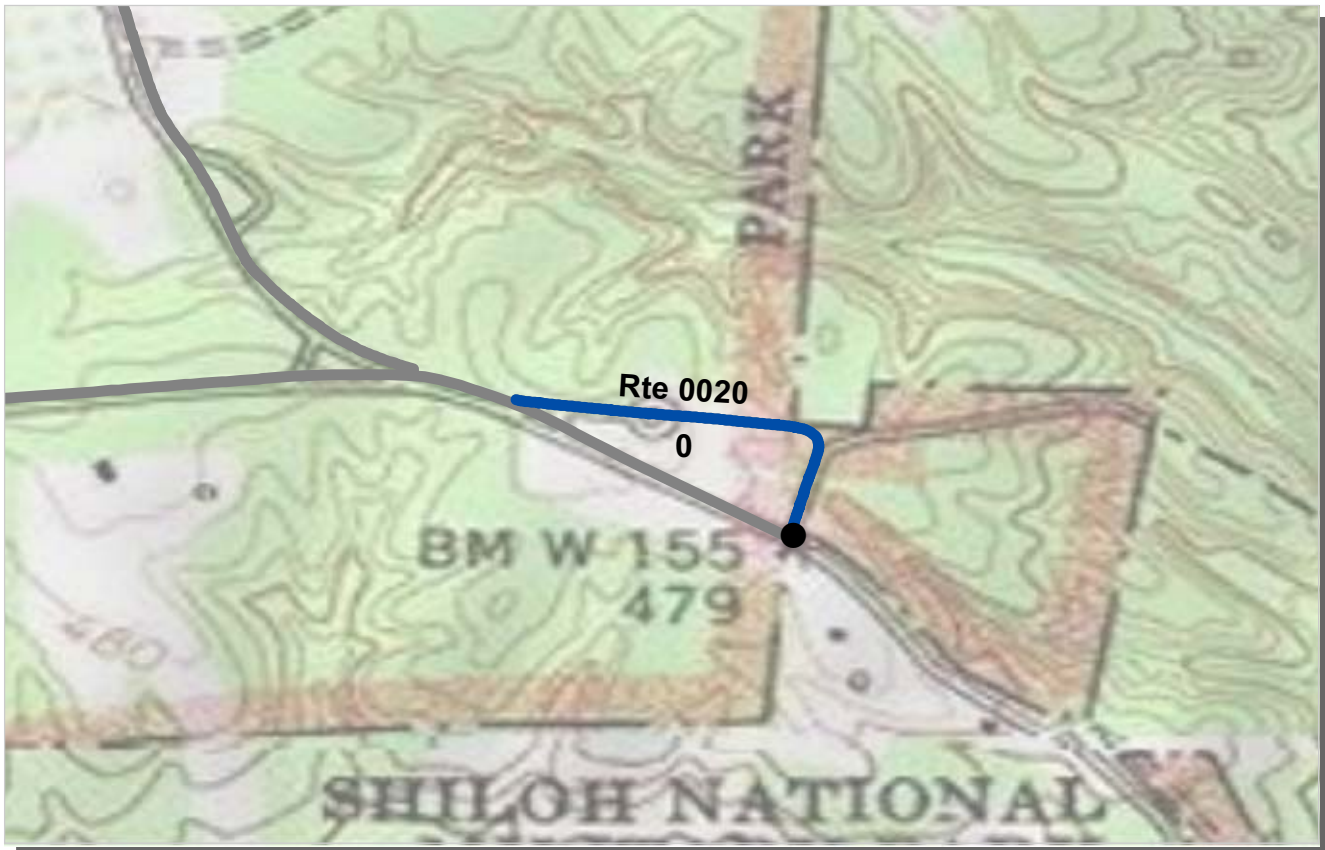
Section Number	0	1			
Section Length (mi)	1.00	0.26			
Cross Section Information					
Number of Lanes	2	2			
Paved Width (ft)	21	20			
Lane Width (ft)	10	10			
Roadway Condition Information					
SCR (Surface Condition Rating)	100	96			
PCR (Pavement Condition Rating)	98	88			
Distress Index Values					
Structural Crack Index	100	100			
Transverse Cracking Index	100	99			
Patching Index	100	100			
Rutting Index	100	96			
Roughness Condition Index (RCI)	94	77			

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0019 HAMBURG - SAVANNAH ROAD



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

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

ROUTE: 0020 TENT HOSPITAL LOOP
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.23 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.23				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	14				
Lane Width (ft)	14				
Roadway Condition Information					
SCR (Surface Condition Rating)	100				
PCR (Pavement Condition Rating)	100				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	100				
Roughness Condition Index (RCI)	NC				

NOTES:

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

ROUTE: 0020 TENT HOSPITAL LOOP



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: 0021 HAGY ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.16 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.16				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	22				
Lane Width (ft)	11				
Roadway Condition Information					
SCR (Surface Condition Rating)	100				
PCR (Pavement Condition Rating)	100				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	100				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0021 HAGY ROAD



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

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

ROUTE: 0023 CAVALRY ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.89 Miles

SOUTHEAST REGION

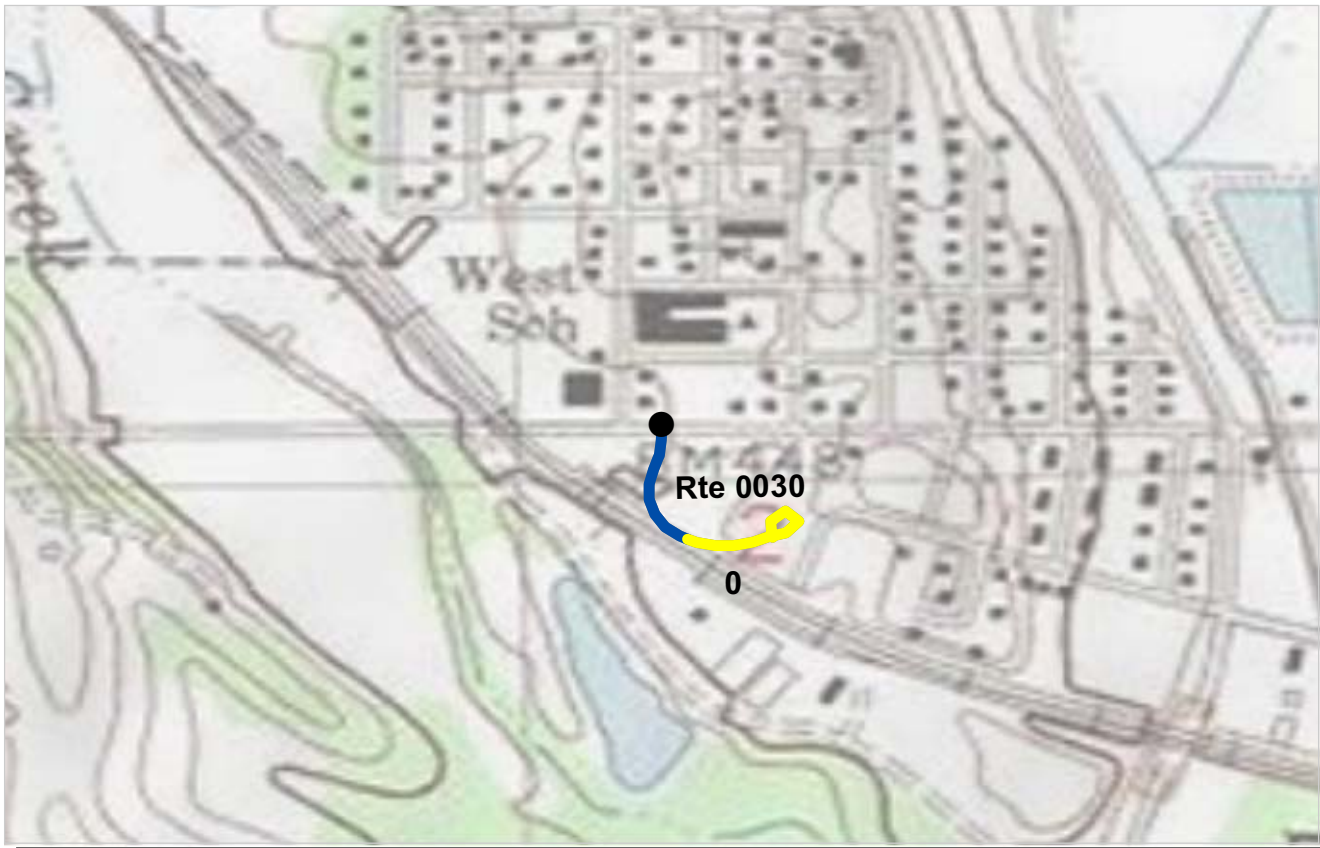
Section Number	0				
Section Length (mi)	0.89				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	13				
Lane Width (ft)	13				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	97				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	93				

NOTES:

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

NC - Not Collected N/A - Not Applicable

ROUTE: 0023 CAVALRY ROAD



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

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

ROUTE: 0030 CORINTH INTERPRETIVE CENTER DRIVE
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.18 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.18				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	21				
Lane Width (ft)	10				
Roadway Condition Information					
SCR (Surface Condition Rating)	93				
PCR (Pavement Condition Rating)	93				
Distress Index Values					
Structural Crack Index	94				
Transverse Cracking Index	93				
Patching Index	99				
Rutting Index	99				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0030 CORINTH INTERPRETIVE CENTER DRIVE



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: 0100 BROWN'S LANDING ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.61 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.61				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	98				
PCR (Pavement Condition Rating)	98				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	98				
Patching Index	100				
Rutting Index	98				
Roughness Condition Index (RCI)	98				

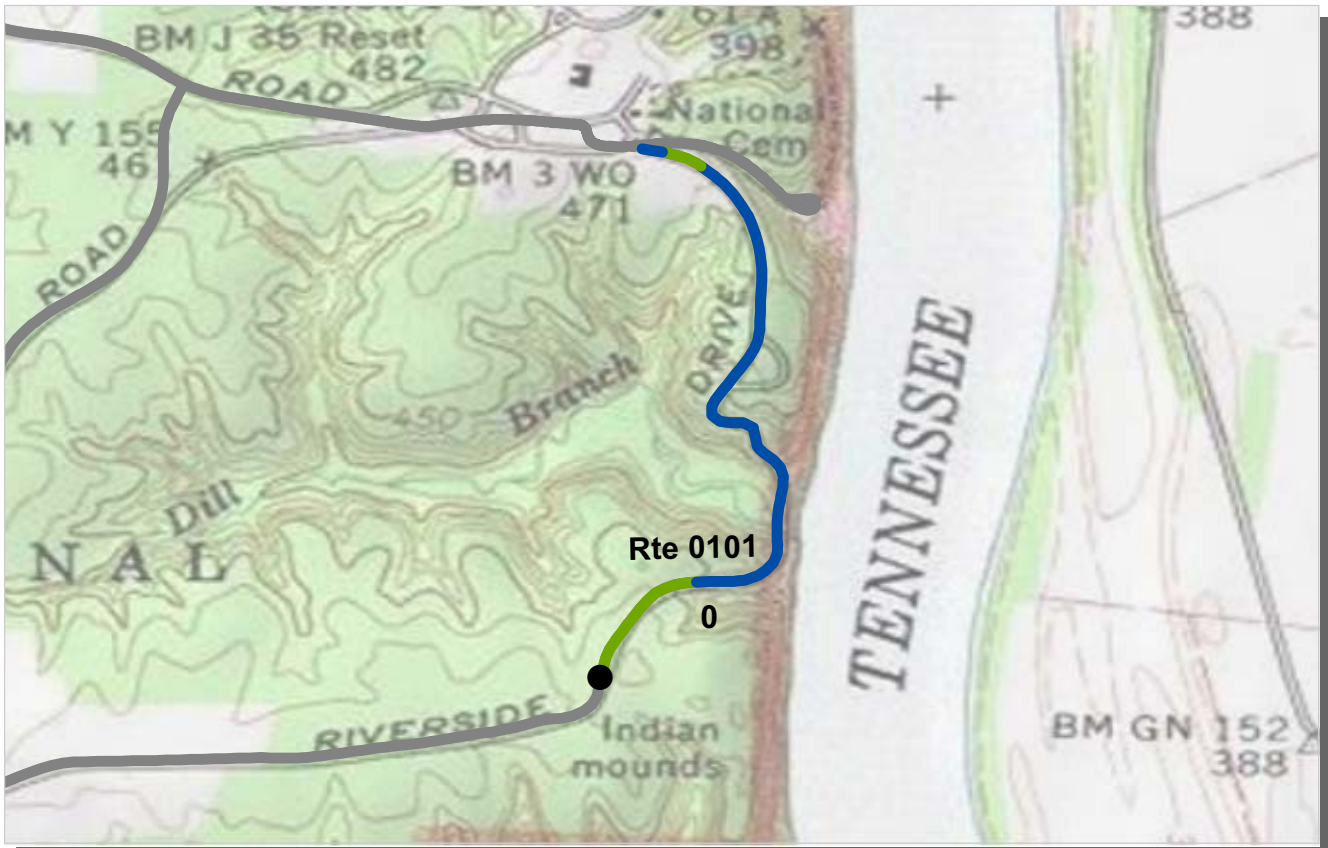
NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0100 BROWN'S LANDING ROAD



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

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

ROUTE: 0101 DILL BRANCH ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.74 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.74				
Cross Section Information					
Number of Lanes	1				
Paved Width (ft)	12				
Lane Width (ft)	12				
Roadway Condition Information					
SCR (Surface Condition Rating)	96				
PCR (Pavement Condition Rating)	96				
Distress Index Values					
Structural Crack Index	98				
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



ROUTE: 0101 DILL BRANCH ROAD



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

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

ROUTE: 0403 WOOLF FIELD ROAD
SHIL : SHILOH NATIONAL MILITARY PARK

COLLECTED: 2/12/2012
TOTAL LENGTH: 0.11 Miles

SOUTHEAST REGION

Section Number	0				
Section Length (mi)	0.11				
Cross Section Information					
Number of Lanes	2				
Paved Width (ft)	16				
Lane Width (ft)	8				
Roadway Condition Information					
SCR (Surface Condition Rating)	99				
PCR (Pavement Condition Rating)	99				
Distress Index Values					
Structural Crack Index	100				
Transverse Cracking Index	100				
Patching Index	100				
Rutting Index	99				
Roughness Condition Index (RCI)	NC				

NOTES:

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

NC - Not Collected N/A - Not Applicable



ROUTE: 0403 WOOLF FIELD ROAD

Section 6
Manually Rated Paved Route
Condition Rating Sheets



Shiloh National Military Park



MANUALLY RATED ROUTE CONDITION RATING SHEETS

This park is classified as a Large Park. Therefore, in Cycle 5, no manually rated routes were collected unless the route was modified or previously uncollected by RIP.

Section 7
Parking Area
Condition Rating Sheets



Shiloh National Military Park



Federal Lands Highway
Road Inventory Program

PARKING AREA CONDITION RATING SHEETS

This park is classified as a Large Park. Therefore, in Cycle 5, no parking area routes were collected unless the route was modified or previously uncollected by RIP.

Section 8

Route Maintenance Features Summaries



Shiloh National Military Park



Federal Lands Highway
Road Inventory Program

SHIL: DCV ROUTE MAINTENANCE FEATURES SUMMARY

Notice: Culverts and drop inlets were NOT marked by NPS in Cycle 5 along new or re-aligned DCV driven routes.

FEATURE	ROUTE 0010 PITTSBURG LANDING ROAD	ROUTE 0016 SHERMAN ROAD	ROUTE 0019 HAMBURG - SAVANNAH ROAD	ROUTE 0020 TENT HOSPITAL LOOP	ROUTE 0023 CAVALRY ROAD	ROUTE 0403 WOOLF FIELD ROAD	UNIT
BRIDGE	0	0	0	0	1	0	EACH
CATTLE GUARD	0	0	0	0	0	0	EACH
CULVERT	4	3	2	1	3	0	EACH
CURB	628	0	0	0	0	0	LINEAR FEET
DROP INLET	5	1	1	1	0	0	EACH
GATE	0	0	0	0	0	0	EACH
GUARD/GUIDE RAIL	0	0	0	0	163	0	LINEAR FEET
CABLE	0	0	0	0	0	0	LINEAR FEET
NON-CABLE	0	0	0	0	163	0	LINEAR FEET
GUARD/GUIDE WALL	0	0	0	0	0	0	LINEAR FEET
BOLLARD	0	0	0	0	0	0	LINEAR FEET
TEMPORARY BARRIER	0	0	0	0	0	0	LINEAR FEET
NON TEMP/BOLLARD	0	0	0	0	0	0	LINEAR FEET
INTERSECTION	12	5	13	4	3	4	EACH
LOW WATER CROSSING	0	0	0	0	0	0	EACH
LOW WATER CROSSING	0	0	0	0	0	0	LINEAR FEET
MILE MARKER	0	0	0	0	0	0	EACH
OVERPASS	0	0	0	0	0	0	EACH
PARK BOUNDARY	0	0	0	0	0	0	EACH
PAVED DITCH	713	0	238	0	111	0	LINEAR FEET
PULLOUT	7	2	3	1	2	0	EACH
PULLOUT	918	513	776	232	470	0	LINEAR FEET
RAILROAD CROSSING	0	0	0	0	0	0	EACH
RETAINING WALL	2	0	0	0	0	0	EACH
RETAINING WALL	465	0	0	0	0	0	LINEAR FEET
SIGN	15	7	12	3	4	5	EACH
STATE BOUNDARY	0	0	0	0	0	0	EACH
TRAFFIC LIGHT	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	EACH
TUNNEL	0	0	0	0	0	0	LINEAR FEET

SHIL: STRUCTURE LIST

ROUTE NUMBER	FUNCTIONAL CLASS	MILEPOST START	MILEPOST END	FEATURE	STRUCTURE NUMBER
0023	1	0.495	0.512	BRIDGE	5580-001

Section 9
Route Maintenance Features
Road Logs



Shiloh National Military Park



SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: PITTSBURG LANDING ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 5000 (STATE HIGHWAY 22) AT MP 0.21
0.000	0.000	INTERSECTION	RIGHT	ROUTE 5000 (STATE HIGHWAY 22)
0.000	0.000	SIGN	N/A	GUIDE, CORINTH CIVIL WAR INTERPRETIVE CENTER
0.000	0.000	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.000	0.000	INTERSECTION	LEFT	ROUTE 5000 (STATE HIGHWAY 22)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.006	0.006	SIGN	LEFT	GUIDE, PICKWICK DAM CORINTH MISS ADAMSVILLE
0.010	0.010	SIGN	RIGHT	GUIDE, SHILOH BATTLEFIELD
0.020	0.020	INTERSECTION	RIGHT	ROUTE 5000 (STATE HIGHWAY 22) SPUR
0.021	0.021	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.051	0.079	PULLOUT	RIGHT	N/A
0.086	0.086	CULVERT	N/A	N/A
0.086	0.086	SIGN	RIGHT	GUIDE, PITTSBURG LANDING ROAD
0.124	0.124	SIGN	RIGHT	REGULATORY, PARK CLOSED AFTER DARK
0.124	0.124	SIGN	RIGHT	REGULATORY, SPEED LIMIT 25
0.174	0.199	PULLOUT	RIGHT	N/A
0.311	0.336	PULLOUT	RIGHT	N/A
0.478	0.478	CULVERT	N/A	N/A
0.514	0.537	PULLOUT	LEFT	N/A
0.600	0.600	INTERSECTION	RIGHT	ROUTE 0021 (HAGY ROAD)
0.609	0.609	SIGN	LEFT	GUIDE, BATTLEFIELD TOUR
0.690	0.712	PULLOUT	RIGHT	N/A
0.774	0.774	DROP INLET	RIGHT	N/A
0.795	0.795	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.813	0.838	PULLOUT	LEFT	N/A
0.817	0.843	PULLOUT	RIGHT	N/A
0.843	0.843	SIGN	LEFT	GUIDE, TOUR STOP #1
0.852	0.852	DROP INLET	LEFT	N/A
0.862	0.862	INTERSECTION	LEFT	ROUTE 0400 (WELKER ROAD)
0.882	0.882	DROP INLET	LEFT	N/A

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0010: PITTSBURG LANDING ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.948	0.948	INTERSECTION	LEFT	ROUTE 0900 (VISITOR CENTER PARKING)
0.950	0.950	SIGN	LEFT	REGULATORY, STOP
0.966	0.966	DROP INLET	LEFT	N/A
0.997	1.004	CURB-AND-GUTTER	LEFT	N/A
1.002	1.002	INTERSECTION	RIGHT	ROUTE 0101 (DILL BRANCH ROAD)
1.005	1.005	SIGN	RIGHT	REGULATORY, KEEP LEFT
1.005	1.005	SIGN	RIGHT	REGULATORY, DO NOT ENTER
1.016	1.016	INTERSECTION	LEFT	ROUTE 0903 (NATIONAL CEMETERY PARKING)
1.028	1.135	PAVED DITCH	LEFT	N/A
1.030	1.030	INTERSECTION	RIGHT	ROUTE 0101 (DILL BRANCH ROAD) SPUR
1.044	1.072	PAVED DITCH	RIGHT	N/A
1.075	1.146	RETAINING WALL	LEFT	N/A
1.121	1.121	CULVERT	N/A	N/A
1.129	1.146	RETAINING WALL	LEFT	N/A
1.135	1.135	CULVERT	N/A	N/A
1.148	1.210	CURB	RIGHT	N/A
1.152	1.152	INTERSECTION	LEFT	ROUTE 0010 (PITTSBURG LANDING ROAD)
1.155	1.205	CURB	LEFT	N/A
1.182	1.182	DROP INLET	RIGHT	N/A
1.210	1.210	INTERSECTION	LEFT	ROUTE 0010 (PITTSBURG LANDING ROAD)
1.210	1.210	INTERSECTION	RIGHT	ROUTE 0010 (PITTSBURG LANDING ROAD)
1.210	1.210	ROUTE END	N/A	TO END OF LOOP

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0016: SHERMAN ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM END OF ROUTE 0023 (CAVALRY ROAD) AT SIGN
0.000	0.000	INTERSECTION	N/A	ROUTE 0023 (CAVALRY ROAD)
0.000	0.671	ONE-WAY	N/A	N/A
0.018	0.018	CULVERT	N/A	N/A
0.046	0.046	CULVERT	N/A	N/A
0.132	0.132	CULVERT	N/A	N/A
0.377	0.429	PULLOUT	RIGHT	N/A
0.461	0.461	SIGN	RIGHT	REGULATORY, GRAPHIC SIGN NO TEXT
0.467	0.467	INTERSECTION	RIGHT	ROUTE 0017 (CONFEDERATE TRENCH ROAD)
0.497	0.497	SIGN	RIGHT	GUIDE, GRAPHIC SIGN NO TEXT
0.561	0.561	SIGN	RIGHT	REGULATORY, DO NOT ENTER
0.568	0.568	INTERSECTION	RIGHT	ROUTE 0017 (CONFEDERATE TRENCH ROAD)
0.570	0.570	DROP INLET	RIGHT	N/A
0.571	0.616	PULLOUT	LEFT	N/A
0.577	0.577	SIGN	LEFT	GUIDE, TOUR STOP # 13
0.656	0.656	SIGN	LEFT	REGULATORY, DO NOT ENTER
0.663	0.663	SIGN	RIGHT	REGULATORY, STOP
0.670	0.670	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.671	0.671	INTERSECTION	LEFT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
0.671	0.671	INTERSECTION	N/A	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
0.671	0.671	ROUTE END	N/A	TO ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) AT MP 1.71

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0019: HAMBURG - SAVANNAH ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.04
0.000	0.000	INTERSECTION	LEFT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.000	0.000	INTERSECTION	N/A	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.008	0.008	SIGN	LEFT	REGULATORY, STOP
0.056	0.056	INTERSECTION	LEFT	ROUTE 0018 (HAMBURG-PURDY ROAD) SPUR
0.068	0.113	PAVED DITCH	LEFT	N/A
0.070	0.070	SIGN	RIGHT	GUIDE, HAMBURG-SAVANNAH ROAD
0.115	0.115	CULVERT	N/A	N/A
0.128	0.128	SIGN	RIGHT	GUIDE, TOUR
0.142	0.142	INTERSECTION	RIGHT	ROUTE 0906 (JOHNSTON MONUMENT ACCESS PARKING)
0.195	0.195	INTERSECTION	RIGHT	ROUTE 0906 (JOHNSTON MONUMENT ACCESS PARKING)
0.205	0.205	CULVERT	N/A	N/A
0.292	0.292	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.335	0.335	SIGN	RIGHT	GUIDE, TOUR
0.344	0.344	INTERSECTION	LEFT	ROUTE 0905 (WAR CABIN LOOP PARKING)
0.353	0.417	PULLOUT	RIGHT	N/A
0.359	0.359	SIGN	RIGHT	GUIDE, TOUR STOP # 17
0.381	0.427	PULLOUT	LEFT	N/A
0.418	0.418	SIGN	RIGHT	GUIDE, UNABLE TO READ FROM VIDEO
0.605	0.642	PULLOUT	RIGHT	N/A
0.873	0.873	SIGN	RIGHT	GUIDE, TOUR
0.890	0.890	INTERSECTION	RIGHT	ROUTE 0100 (BROWN'S LANDING ROAD)
1.008	1.008	DROP INLET	RIGHT	N/A
1.071	1.071	SIGN	LEFT	GUIDE, HAMBURG-SAVANNAH ROAD
1.082	1.082	INTERSECTION	LEFT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) SPUR
1.123	1.123	SIGN	RIGHT	REGULATORY, STOP
1.132	1.132	INTERSECTION	LEFT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
1.132	1.132	INTERSECTION	RIGHT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
1.180	1.262	ONE-WAY	N/A	N/A
1.180	1.180	INTERSECTION	RIGHT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD) SPUR

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0019: HAMBURG - SAVANNAH ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
1.194	1.194	SIGN	RIGHT	GUIDE, HAMBURG-SAVANNAH ROAD
1.208	1.208	SIGN	RIGHT	REGULATORY, ONE WAY
1.262	1.262	INTERSECTION	LEFT	ROUTE 0023 (CAVALRY ROAD)
1.262	1.262	INTERSECTION	N/A	ROUTE 0019 (HAMBURG - SAVANNAH ROAD) UNPAVED SECTION
1.262	1.262	ROUTE END	N/A	TO PARK BOUNDARY (OWL CREEK) AT MP 2.93

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0020: TENT HOSPITAL LOOP

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.27
0.000	0.000	INTERSECTION	LEFT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.000	0.232	ONE-WAY	N/A	N/A
0.035	0.035	CULVERT	N/A	N/A
0.114	0.158	PULLOUT	RIGHT	N/A
0.122	0.122	SIGN	RIGHT	GUIDE, TOUR STOP # 14
0.190	0.190	DROP INLET	LEFT	N/A
0.217	0.217	SIGN	LEFT	GUIDE, UNABLE TO READ FROM VIDEO
0.230	0.230	SIGN	RIGHT	REGULATORY, YIELD
0.232	0.232	INTERSECTION	LEFT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.232	0.232	INTERSECTION	RIGHT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.232	0.232	ROUTE END	N/A	TO ROUTE 0018 (HAMBURG-PURDY ROAD) AT MP 2.10

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0023: CAVALRY ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0019 (HAMBURG - SAVANNAH ROAD)
0.000	0.885	ONE-WAY	N/A	N/A
0.000	0.000	INTERSECTION	LEFT	ROUTE 0019 (HAMBURG - SAVANNAH ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0019 (HAMBURG - SAVANNAH ROAD) UNPAVED SECTION
0.018	0.018	SIGN	RIGHT	GUIDE, CAVALRY ROAD
0.058	0.058	CULVERT	N/A	N/A
0.083	0.083	SIGN	RIGHT	GUIDE, TOUR STOP # 11
0.084	0.115	PULLOUT	LEFT	N/A
0.343	0.343	CULVERT	N/A	N/A
0.456	0.477	PAVED DITCH	RIGHT	N/A
0.494	0.510	GUARD/GUIDE RAIL	RIGHT	N/A
0.495	0.512	BRIDGE	N/A	5580-001 (CAVALRY ROAD BRIDGE)
0.495	0.510	GUARD/GUIDE RAIL	LEFT	N/A
0.717	0.717	CULVERT	N/A	N/A
0.774	0.774	SIGN	RIGHT	GUIDE, TOUR STOP # 12
0.775	0.833	PULLOUT	RIGHT	N/A
0.885	0.885	INTERSECTION	N/A	ROUTE 0016 (SHERMAN ROAD)
0.885	0.885	SIGN	RIGHT	GUIDE, SHERMAN ROAD
0.885	0.885	ROUTE END	N/A	TO BEGINNING OF ROUTE 0016 (SHERMAN ROAD)

SHIL: ROUTE MAINTENANCE FEATURES ROAD LOG

ROUTE 0403: WOOLF FIELD ROAD

Notice: Culverts and drop inlets were NOT marked by NPS nor inventoried by RIP in Cycle 5 on any new or re-aligned DCV driven routes. Therefore no culverts or drop inlets are reported in Section 9, unless a culvert has a BIP structure number attached to it.

FROM MILEPOST	TO MILEPOST	FEATURE	SIDE	COMMENT
0.000	0.000	ROUTE BEGIN	N/A	FROM ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
0.000	0.000	INTERSECTION	LEFT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
0.000	0.000	INTERSECTION	RIGHT	ROUTE 0011 (CORINTH - PITTSBURG LANDING ROAD)
0.005	0.005	SIGN	LEFT	REGULATORY, STOP
0.021	0.021	SIGN	RIGHT	WARNING, SOFT SHOULDER
0.083	0.083	SIGN	LEFT	WARNING, SOFT SHOULDER
0.094	0.094	SIGN	RIGHT	GUIDE, TOUR
0.100	0.100	SIGN	RIGHT	REGULATORY, STOP
0.105	0.105	INTERSECTION	LEFT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.105	0.105	INTERSECTION	RIGHT	ROUTE 0018 (HAMBURG-PURDY ROAD)
0.105	0.105	ROUTE END	N/A	TO ROUTE 0018 (HAMBURG-PURDY ROAD)

Section 10 Appendix



Shiloh National Military 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 vis a vis the distresses and indexes that comprise the Pavement Condition Rating (PCR), an extensive study was completed throughout 2010 that has 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. The 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.

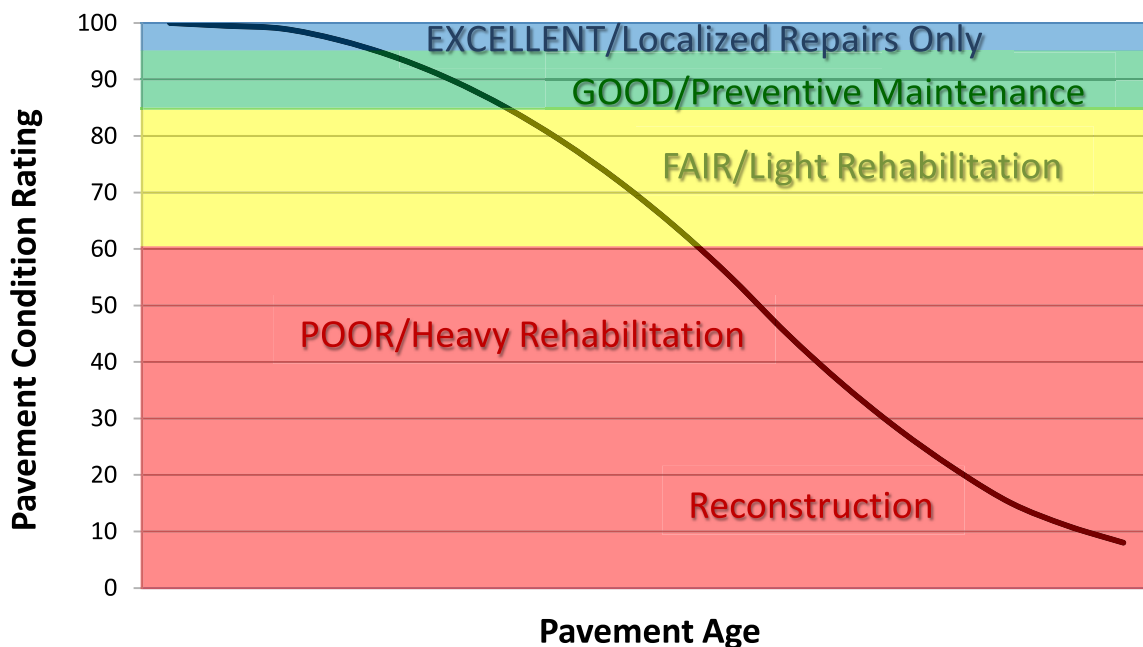
Explanation of the Excellent, Good, Fair and Poor Condition Descriptions

In addition to the RIP Index changes that will be implemented in Cycle 5, we will also aim to 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.

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

Condition Categories and Treatments



DESCRIPTION OF RATING SYSTEM

The Federal Highway Administration (FHWA), Road Inventory Program (RIP) for the National Park Service (NPS), collects roadway condition data on paved surfaces (asphalt, concrete, brick, and cobblestone) on roads, parkways, and parking areas in national parks nationwide. The road surface condition data is collected using an automated Data Collection Vehicle (DCV). Roads having brick or cobblestone surfacing are not normally surveyed with the DCV, but are manually rated for condition rating.

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 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. In truth, the FHWA RIP distress types are similar to those described in the LTPP manual with some modifications. This 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 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, 168 small parks will be collected comprising approximately 529 paved route miles and associated paved parking areas. The data is used to support the National Park Service road maintenance program and Pavement Management System (PMS) developed and maintained by FHWA.

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

SURFACE DISTRESSES

Surface Condition Rating - SCR

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

Surface distresses determined from digital images

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

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

- Rutting

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

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

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

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

Roughness Condition Index - RCI

Additional condition data measured by DCV (lasers and accelerometers)

- Roughness (IRI)

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

Pavement Condition Rating - PCR

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

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

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

A detailed description of each distress index formula, roughness index formula, SCR and PCR is provided in this document beginning on page 23.

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

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

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

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

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

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

TABLE 1: Distress Summary

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

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

ALLIGATOR CRACKING

Description

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

Severity Levels

LOW

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

MEDIUM

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

HIGH

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

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

TABLE 2: Alligator Crack Severity Levels

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

LONGITUDINAL CRACKING

Description

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

Severity Levels

LOW

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

MED

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

HIGH

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

TRANSVERSE CRACKING

Description

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

Severity Levels

LOW

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

MED

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

HIGH

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

PATCHING AND POTHOLES

Description

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

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

Severity Levels

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

RUTTING

Description

Rutting is a longitudinal surface depression in the wheelpath.

Severity Levels

LOW

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

MED

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

HIGH

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

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

ROUGHNESS

Description

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

Severity Levels

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

TABLE 3: IRI

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

INDEX FORMULAS

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

Alligator Crack Index

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

Where:

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

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

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

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

Percent of total area is computed as:

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

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

Longitudinal Crack Index

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

Where:

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

These values are ≥ 0 and can exceed 100.

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

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

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

Percent of interval length is computed as:

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

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

Structural Crack Index

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

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

Transverse Crack Index

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

Where:

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

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

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

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

Number of cracks is computed as:

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

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

Patching Index

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

Where:

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

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

Percent of total area is computed as:

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

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

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

Rutting Index

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

Where:

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

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

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

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

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

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

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

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

Roughness Condition Index (Asphalt)

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

Where:

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

Average IRI is computed as:

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

There is no applicable threshold for failure for this index.

Roughness Condition Index (Concrete)

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

For concrete, PCR = RCI

Surface Condition Rating Index

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

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

Where:

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

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

Data Collection Vehicle Subsystems

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

CAMERAS

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

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

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

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

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

DMI (Distance Measuring Instrument)

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

ROUGHNESS (IRI)

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

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

RUTTING

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

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

GPS & INERTIAL SYSTEMS

GPS is collected by an onboard system employing Omnistar real time correction and a gyroscope Inertial Measuring Unit (IMU) to provide accurate positioning data 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	+ - 0.1 degrees
Grade	+ - 0.1 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.

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 tables 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.

GLOSSARY OF TERMS AND ABBREVIATIONS

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