

# The Road Inventory of Cahaba River National Wildlife Refuge Fort McClellan, AL



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## INTRODUCTION

The Transportation Equity Act for the 21<sup>st</sup> Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

- (a) Maintenance and improvements of refuge roads.
- (b) Maintenance and improvements of:
  - (1) Adjacent vehicle parking areas
  - (2) Provision for pedestrians and bicycles and
  - (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
- (c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

- (a) The comprehensive conservation plan for each refuge;
- (b) The need for access as identified through land use planning; and
- (c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22<sup>nd</sup> Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

# Cahaba River National Wildlife Refuge - 43665

## Summaries

### Route Miles and Percentages by Functional Class and Condition

#### Condition Rating (Based on RSL)\*

F. C.	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
I	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
II	0.00	0.0%	0.21	7.2%	2.77	92.8%	0.00	0.0%	0.00	0.0%	2.98
III	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
IV	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
V	3.02	29.6%	5.72	56.0%	1.23	12.1%	0.00	0.0%	0.24	2.3%	10.21
Totals	3.02	22.9%	5.93	45.0%	4.00	30.3%	0.00	0.0%	0.24	1.8%	13.19

\*For a description of condition ratings for the various surface types see the Appendix.

### Route Miles and Percentages by Surface Type and Condition

#### Paved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
AS	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00

#### Unpaved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
GR	2.89	28.2%	3.66	35.7%	3.45	33.7%	0.00	0.0%	0.24	2.3%	10.23
NA	0.14	11.6%	1.04	88.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.18
PR	0.00	0.0%	1.24	69.2%	0.55	30.8%	0.00	0.0%	0.00	0.0%	1.79
Totals	3.02	22.9%	5.93	45.0%	4.00	30.3%	0.00	0.0%	0.24	1.8%	13.19

### Square Footage (Parking Areas)

#### Condition Rating

Surface	Excellent		Good		Fair		Poor		Failed		Total Square Feet
	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	
AS	0	0.0%	0	0.0%	1,240	100.0%	0	0.0%	0	0.0%	1,240
CO	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
GR	0	0.0%	10,707	45.6%	12,779	54.4%	0	0.0%	0	0.0%	23,486
NA	0	0.0%	0	0.0%	0	0.0%	1,429	100.0%	0	0.0%	1,429
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Totals	0	0.0%	10,707	40.9%	14,019	53.6%	1,429	5.5%	0	0.0%	26,155

# Cahaba River National Wildlife Refuge - 43665

## Summaries

### Route Miles and Percentages by Use Type and Condition

#### Road Condition Rating: Public/Administrative Use

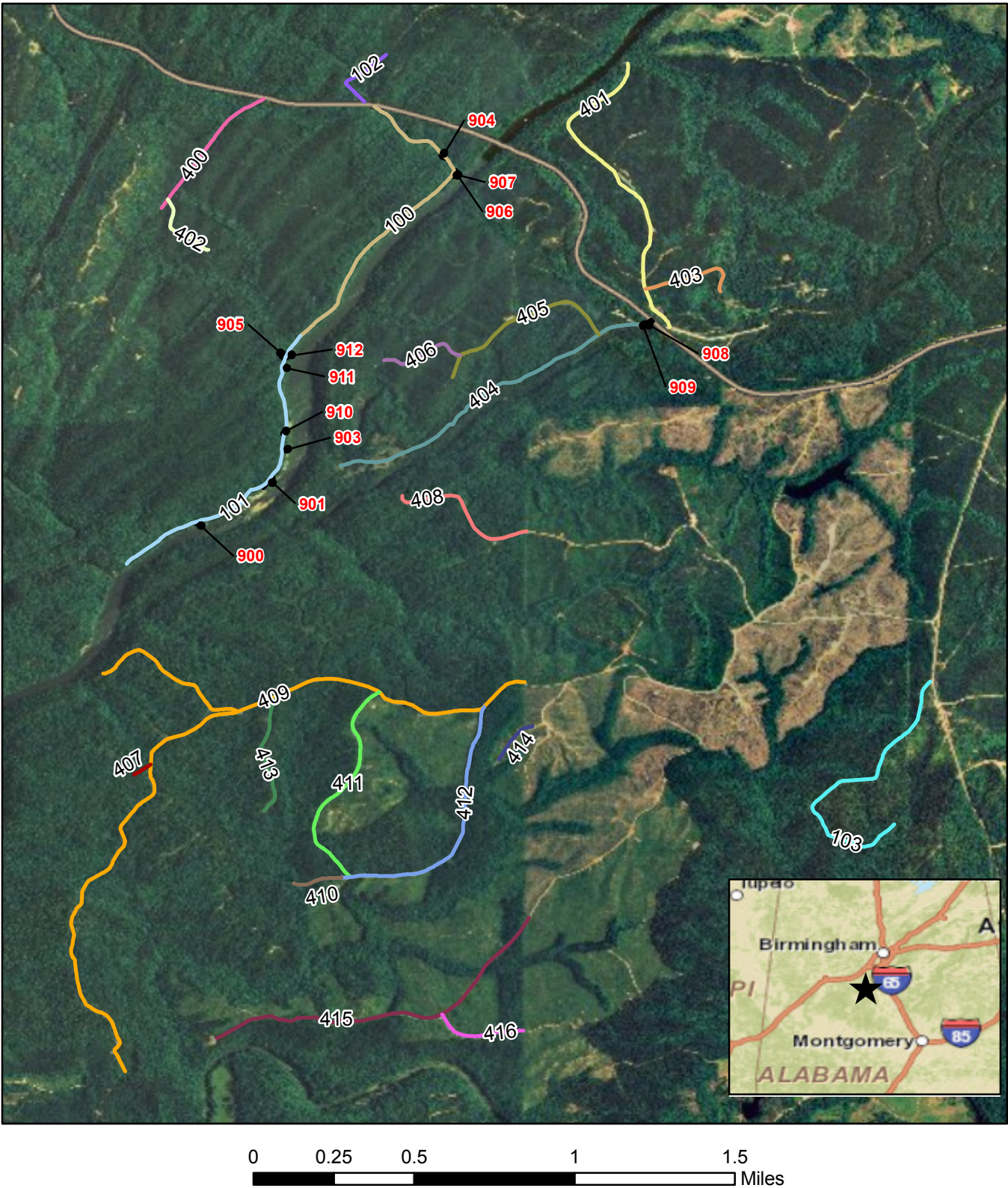
USE TYPE	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
Public (FC I-III)	0.00	0.0%	0.21	7.2%	2.77	92.8%	0.00	0.0%	0.00	0.0%	2.98
Admin (FC IV-V)	3.02	29.6%	5.72	56.0%	1.23	12.1%	0.00	0.0%	0.24	2.3%	10.21
Totals	3.02	22.9%	5.93	45.0%	4.00	30.3%	0.00	0.0%	0.24	1.8%	13.19

#### Parking Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		Total Sq Ft
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	
Public	0	0.0%	10,707	40.9%	14,019	53.6%	1,429	5.5%	0	0.0%	26,155
Admin	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Totals	0	0.0%	10,707	40.9%	14,019	53.6%	1,429	5.5%	0	0.0%	26,155

# Cahaba River National Wildlife Refuge

## ROUTE LOCATION MAP





## Cahaba River National Wildlife Refuge - 43665

### Route Identification List

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
100	10051649	River Road A	0.97	From County Road 24 to River Road B (Route 101)	-	0.97	2	2
101	10051650	River Road B	0.94	From River Road A (Route 100) to Cahaba River	-	0.94	1	2
102	10051652	North Road	0.21	From County Road 24 to northern boundary	-	0.21	1	2
103	-	Fullman Road	0.86	From County Road 65 to end of route	-	0.86	1	2
400	-	Rail Road	0.44	From County Road 24 to western boundary	-	0.44	1	5
401	10056516	Old Bridge Road	0.99	From County Road 24 to northern boundary	-	0.99	1	5
402	10051653	Lower Road	0.22	From Rail Road (Route 400) to end of route	-	0.22	1	5
403	10056518	School Road	0.28	From Old Bridge Road (Route 401) to end of route	-	0.28	1	5
404	10051647	Cahaba Overlook Road	0.94	From Overlook Trail Parking (Route 908) to Cahaba River	-	0.94	1	5
405	10056514	Loblolly Road A	0.54	From Cahaba River Overlook Road (Route 404) to end of route	-	0.54	1	5
406	10056515	Loblolly Road B	0.24	From Loblolly Road A (Route 405) to end of route	-	0.24	1	5
407	10051643	East Cahaba Road	0.05	From Belcher Road (Route 409) to end of route	-	0.05	1	5
408	10051646	Cliff Road	0.42	From eastern boundary to end of route	-	0.42	1	5
409	10051641	Belcher Road	2.71	From eastern boundary to southern boundary	-	2.71	1	5
410	10051640	West Road	0.14	From Forest Road Loop East (Route 412) to end of route	-	0.14	1	5
411	10051662	Forest Road Loop West	0.68	From Belcher Road (Route 409) to Forest Road Loop East (Route 412)	-	0.68	1	5
412	10051644	Forest Road Loop East	0.78	From Belcher Road (Route 409) to West road (Route 410)	-	0.78	1	5
413	10051645	Hill Top Road	0.38	From Belcher Road (Route 409) to end of route	-	0.38	1	5
414	-	South Belcher Road	0.14	From eastern boundary to end of route	-	0.14	1	5
415	10051146	Little Cahaba Road	1.01	From eastern boundary to end of route	-	1.01	1	5
416	10056519	Southeast Road	0.26	From Little Cahaba Road (Route 415) to eastern boundary	-	0.26	1	5

## Cahaba River - 43665 - ROUTE IDENTIFICATION LIST (PARKING)

**Shading Color Key:**

White = Paved Parking Lots
Green = Unpaved Parking Lots

RTE #	Asset Number	ROUTE NAME	RTE SQFT	ROUTE DESCRIPTION	PAVED SQFT	UNPAVED SQFT
900		River Road B Parking #5	1,105		0	1,105
901		River Road B Parking #4	3,985		0	3,985
903		River Road B Parking # 2	1,429		0	1,429
904		River Road Parking #1	2,071		0	2,071
905		River Road A End Parking	2,922		0	2,922
906		River Road A Boat Ramp Parking Area	3,094		0	3,094
907		River Road A Boat Ramp Handicapped Parking	838		838	0
908		Overlook Trail Parking	6,072		0	6,072
909		Overlook Trail Handicapped Parking	402		402	0
910		River Road Parking #6	1,137		0	1,137
911		River Road Parking #7	1,557		0	1,557
912		River Road Parking #8	1,543		0	1,543



# CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT

## Cahaba River

Routes added to previous inventory:		
Rte #	Rte Name	Reason for Addition
103	Fullman Road	New Public Route
400	Rail Road	New Administrative Route
401	Old Bridge Road	New Administrative Route
402	Lower Road	New Administrative Route
403	School Road	New Administrative Route
404	Cahaba Overlook Road	New Administrative Route
405	Loblollye Road A	New Administrative Route
406	Loblollye Road B	New Administrative Route
407	East Cahaba Road	New Administrative Route
408	Cliff Road	New Administrative Route
409	Belcher Road	New Administrative Route
410	West Road	New Administrative Route
411	Forest Road Loop West	New Administrative Route
412	Forest Road Loop East	New Administrative Route
413	Hill Top Road	New Administrative Route
414	South Belcher Road	New Administrative Route
415	Little Cahaba Road	New Administrative Route
416	Southeast Road	New Administrative Route
910	River Road Parking #6	New Public Route
911	River Road Parking #7	New Public Route
912	River Road Parking #8	New Public Route

Routes removed from previous inventory:		
Rte #	Rte Name	Reason for Removal

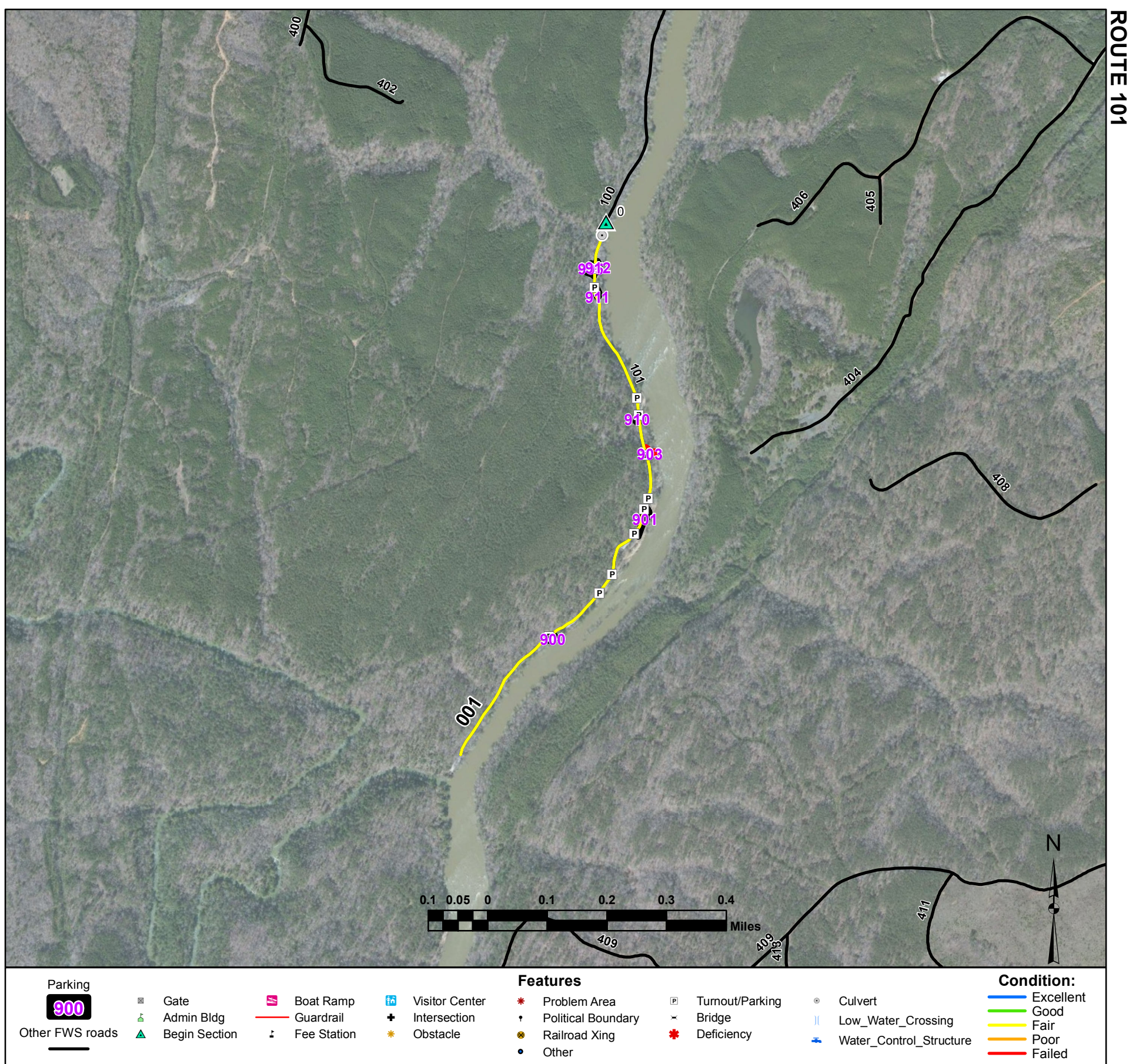
Routes modified from previous inventory:			
Rte #	Rte Name	Type of Modification	Description of Modification
100	River Road A	New GPS Trace to re-section	
101	River Road B	New GPS Trace to re-section	
900	River Road B Parking #5	Surface Change	
901	River Road B Parking #4	Geometry Change and Surface Change	
905	River Road A End Parking	Geometry Change	

### Comments:









## River Road B

### From River Road A (Route 100) to Cahaba River

Route Number: 101

Total Route Mileage: 0.94

<b>Asset Number</b>	10051650				
<b>Section Number</b>	001				
<b>Section Length (miles)</b>	0.94				
<b>Inspection Date</b>	06-21-2011				
<b>Surface Type</b>	Gravel				
<b>Number of Lanes</b>	1				
<b>Roadway Width (feet)</b>	14				
<b>Condition</b>	Fair				
<b>Remaining Service Life (years)</b>	4				
<b>Estimated Cost to Repair</b>	\$3,100				
<b>Current Replacement Value</b>	\$595,100				

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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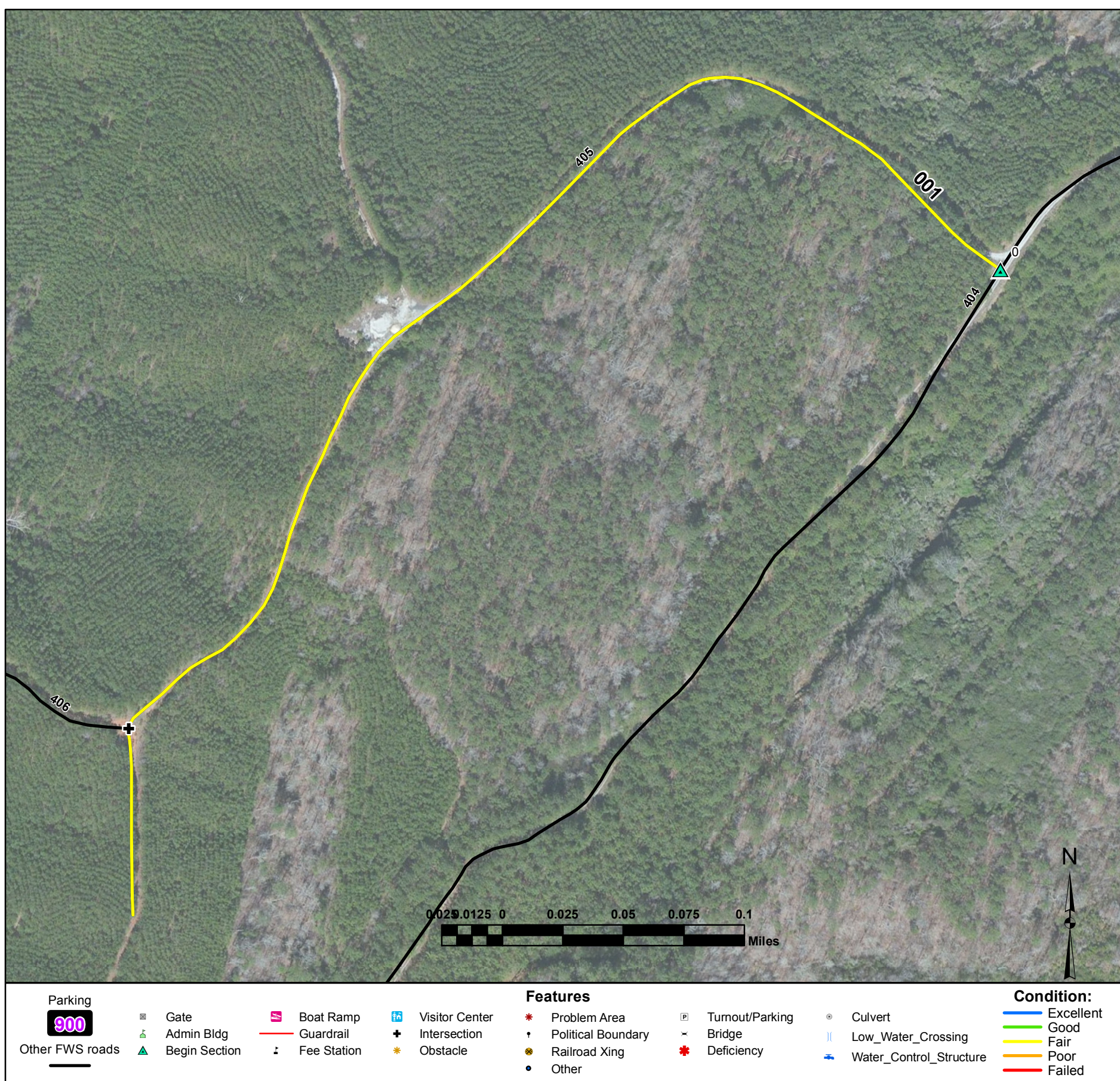












# Loblolly Road A

From Cahaba River Overlook Road (Route 404) to end of route

Route Number: 405

Total Route Mileage: 0.54

<b>Asset Number</b>	10056514				
<b>Section Number</b>	001				
<b>Section Length (miles)</b>	0.54				
<b>Inspection Date</b>	06-21-2011				
<b>Surface Type</b>	Gravel				
<b>Number of Lanes</b>	1				
<b>Roadway Width (feet)</b>	10				
<b>Condition</b>	Fair				
<b>Remaining Service Life (years)</b>	3				
<b>Estimated Cost to Repair</b>	\$1,800				
<b>Current Replacement Value</b>	\$341,900				

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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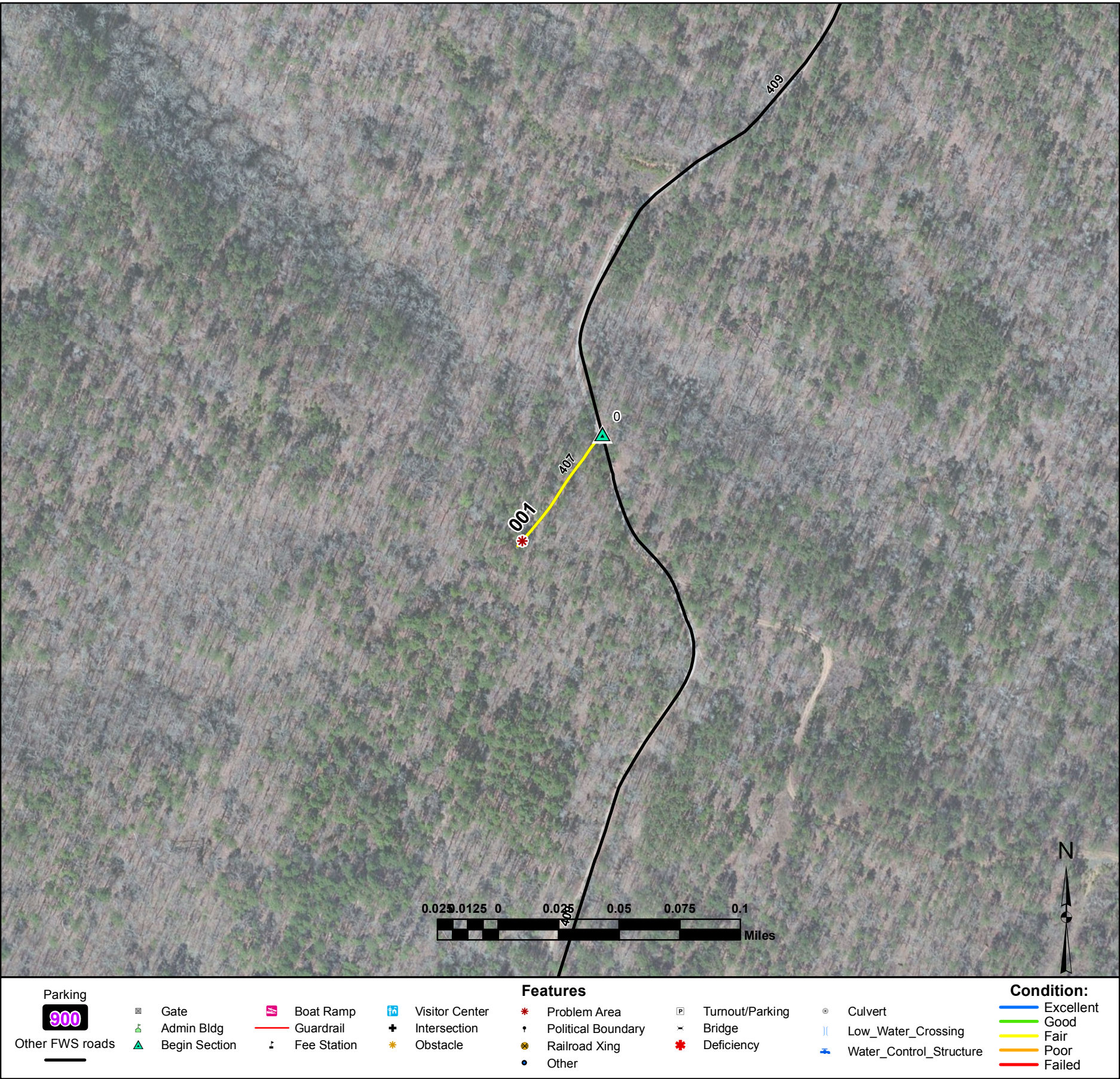
From Loblollye Road A (Route 405) to end of route

Route Number: 406

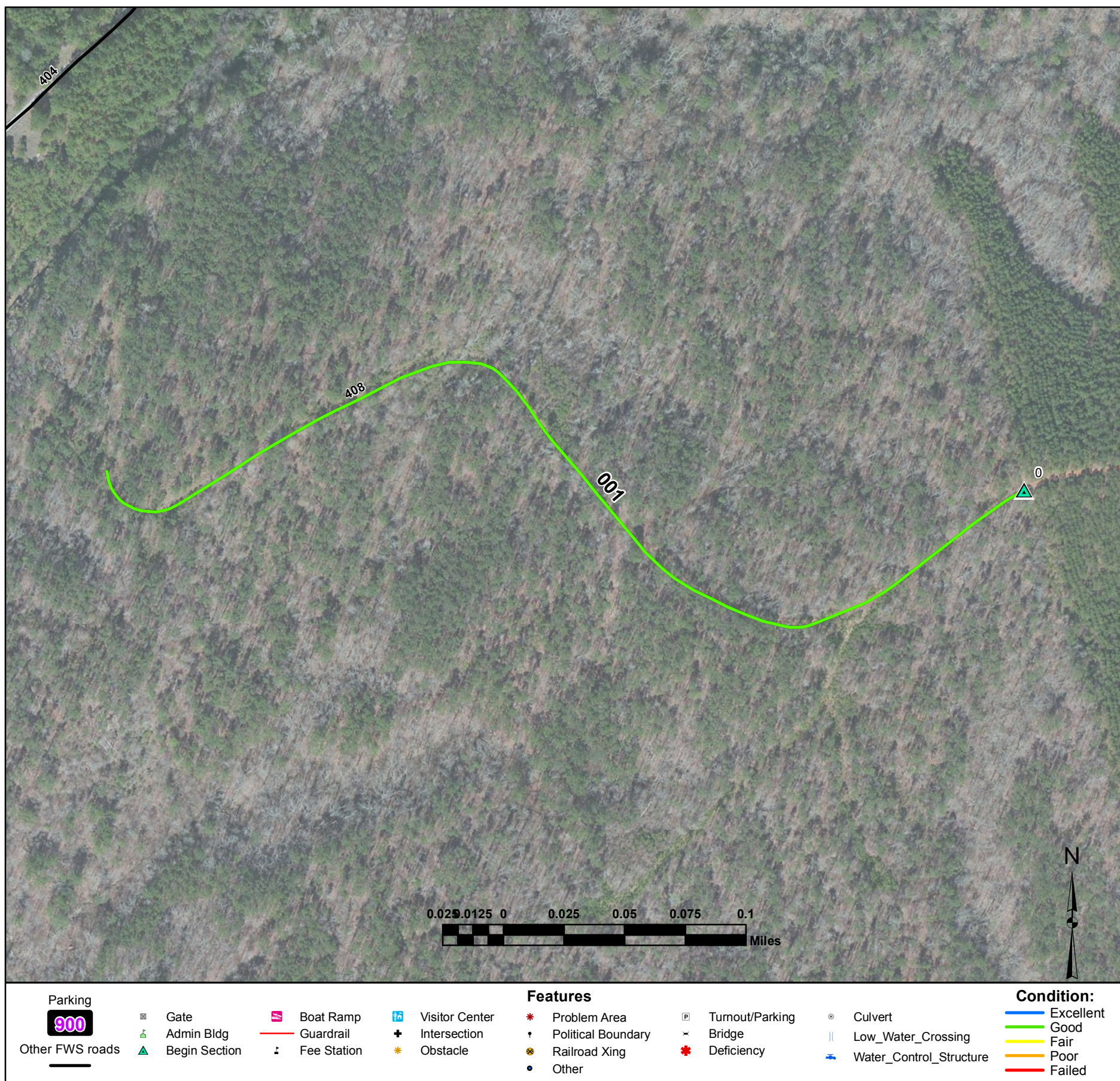
Total Route Mileage: 0.24

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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## Cliff Road

### From eastern boundary to end of route

Route Number: 408

Total Route Mileage: 0.42

<b>Asset Number</b>	10051646				
<b>Section Number</b>	001				
<b>Section Length (miles)</b>	0.42				
<b>Inspection Date</b>	06-21-2011				
<b>Surface Type</b>	Primitive				
<b>Number of Lanes</b>	1				
<b>Roadway Width (feet)</b>	8				
<b>Condition</b>	Good				
<b>Remaining Service Life (years)</b>	7				
<b>Estimated Cost to Repair</b>	\$200				
<b>Current Replacement Value</b>	\$0				

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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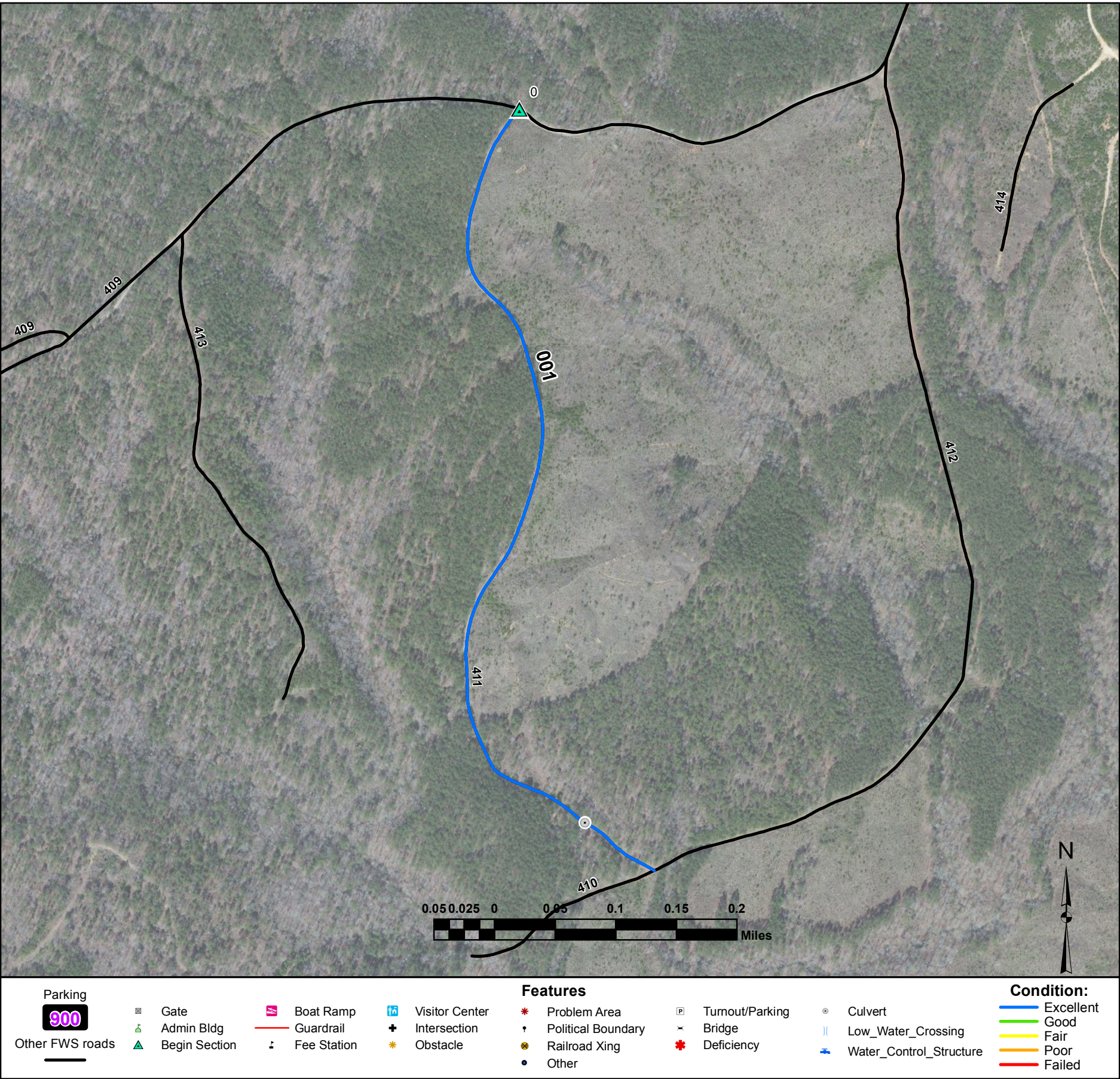
<b>Asset Number</b>	10051641	10051641	10051641		
<b>Section Number</b>	001	002	003		
<b>Section Length (miles)</b>	1.16	1.08	0.47		
<b>Inspection Date</b>	06-22-2011	06-22-2011	06-22-2011		
<b>Surface Type</b>	Gravel	Gravel	Native		
<b>Number of Lanes</b>	1	1	1		
<b>Roadway Width (feet)</b>	12	12	10		
<b>Condition</b>	Good	Good	Good		
<b>Remaining Service Life (years)</b>	7	7	5		
<b>Estimated Cost to Repair</b>	\$1,700	\$1,600	\$700		
<b>Current Replacement Value</b>	\$735,000	\$684,300	\$153,300		

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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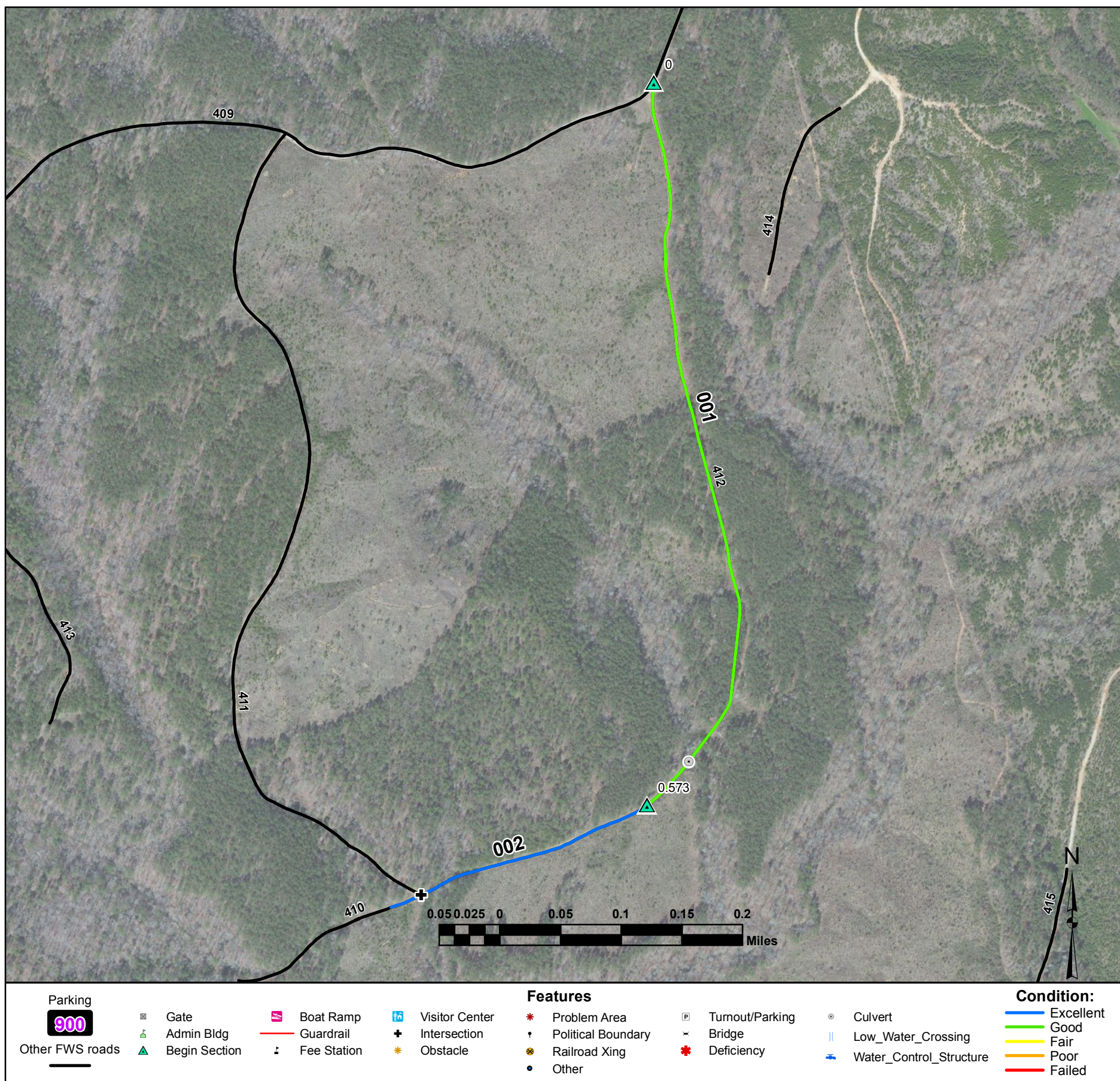












# Forest Road Loop East

From Belcher Road (Route 409) to West road (Route 410)

# Route Number: 412

Total Route Mileage: 0.78

<b>Asset Number</b>	10051644	10051644			
<b>Section Number</b>	001	002			
<b>Section Length (miles)</b>	0.57	0.21			
<b>Inspection Date</b>	06-22-2011	06-22-2011			
<b>Surface Type</b>	Native	Gravel			
<b>Number of Lanes</b>	1	1			
<b>Roadway Width (feet)</b>	10	12			
<b>Condition</b>	Good	Excellent			
<b>Remaining Service Life (years)</b>	5	10			
<b>Estimated Cost to Repair</b>	\$900	\$0			
<b>Current Replacement Value</b>	\$187,700	\$131,000			

<b>Features</b> No Features	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>	<b>Features</b>	<b>Mile Post</b>
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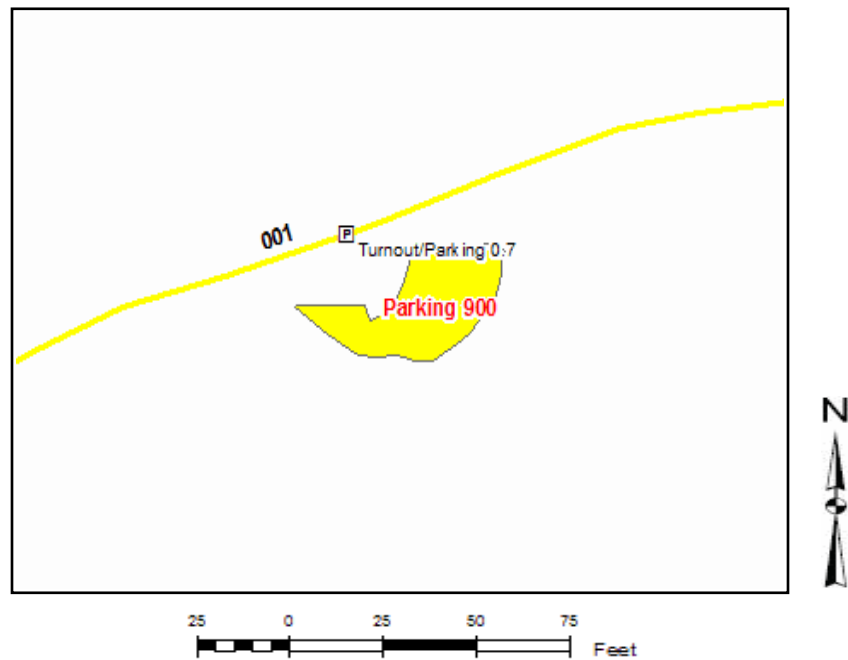






### 900: River Road B Parking #5

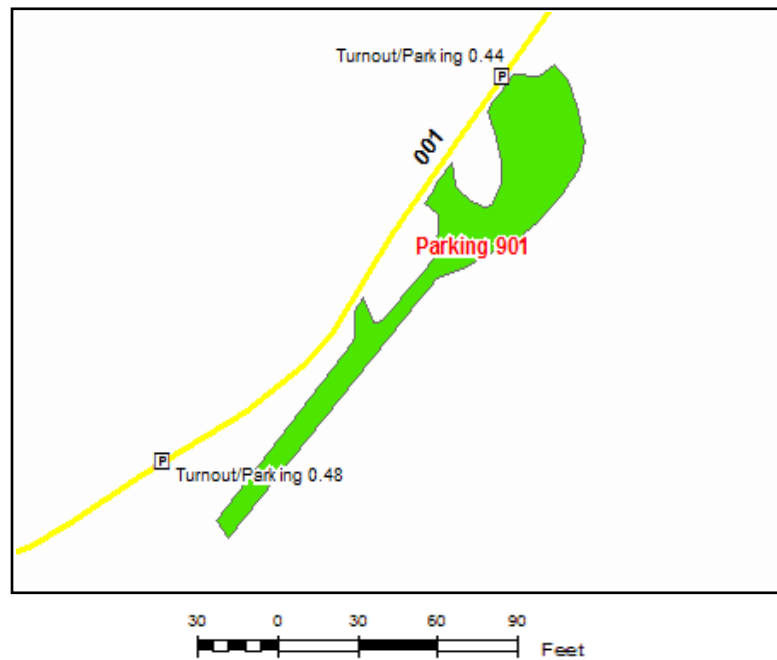
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	1,105	Fair	300





### 901: River Road B Parking #4

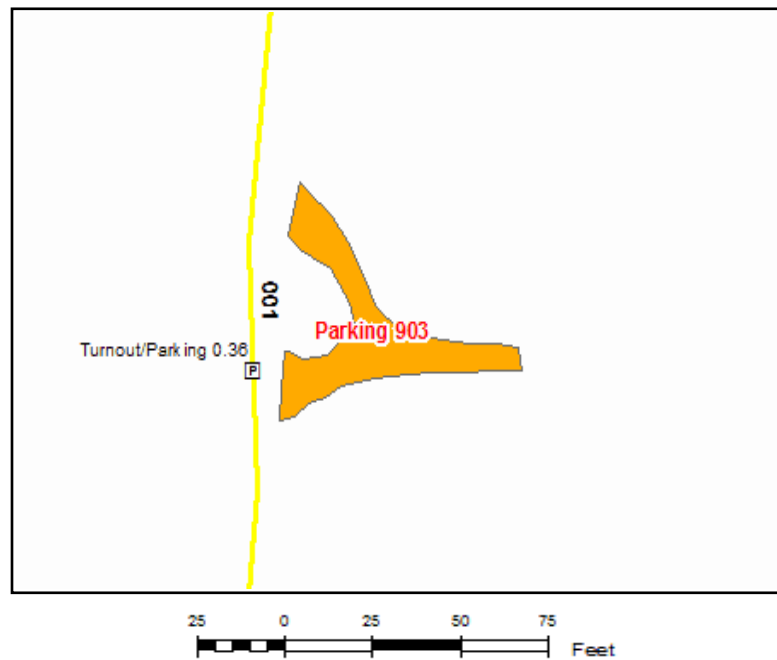
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	3,985	Good	500





### 903: River Road B Parking # 2

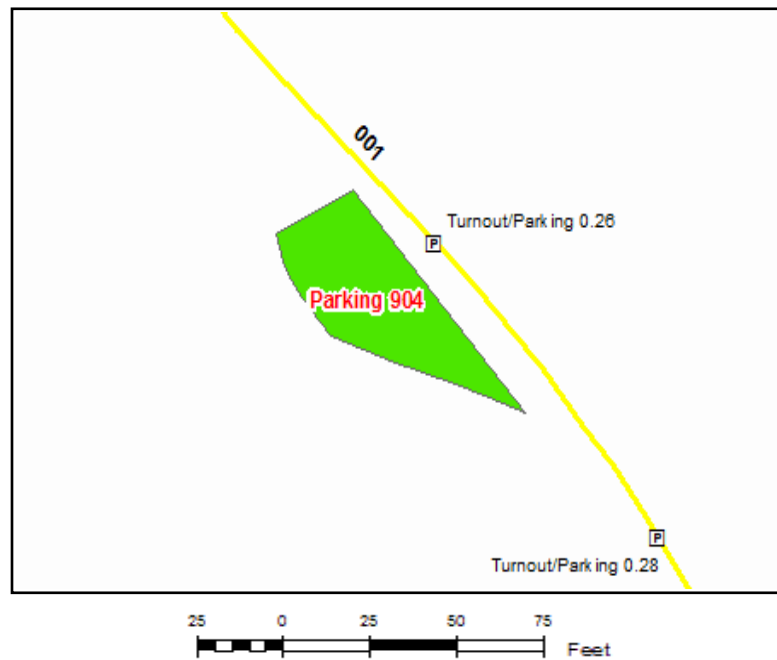
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/28/2006	Native	1,429	Poor	1,100





### 904: River Road Parking #1

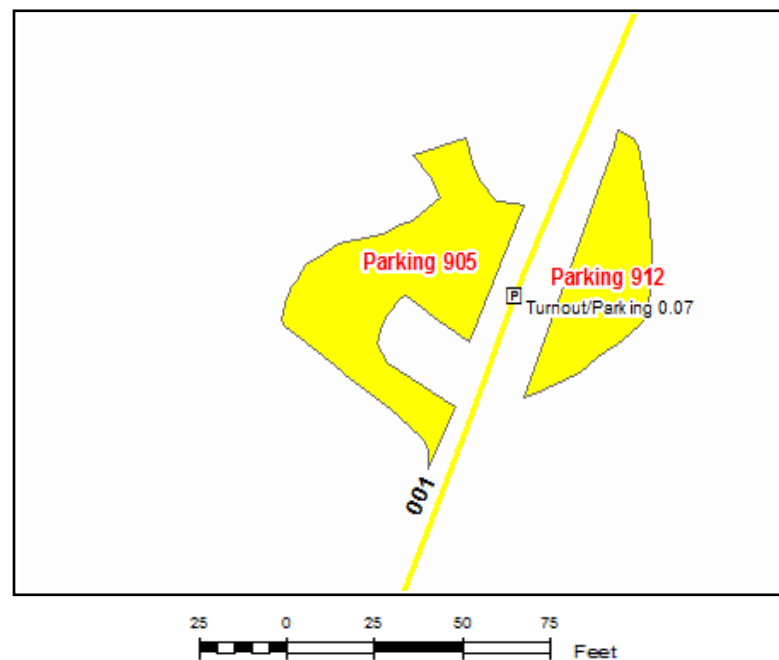
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	2,071	Good	300





### 905: River Road A End Parking

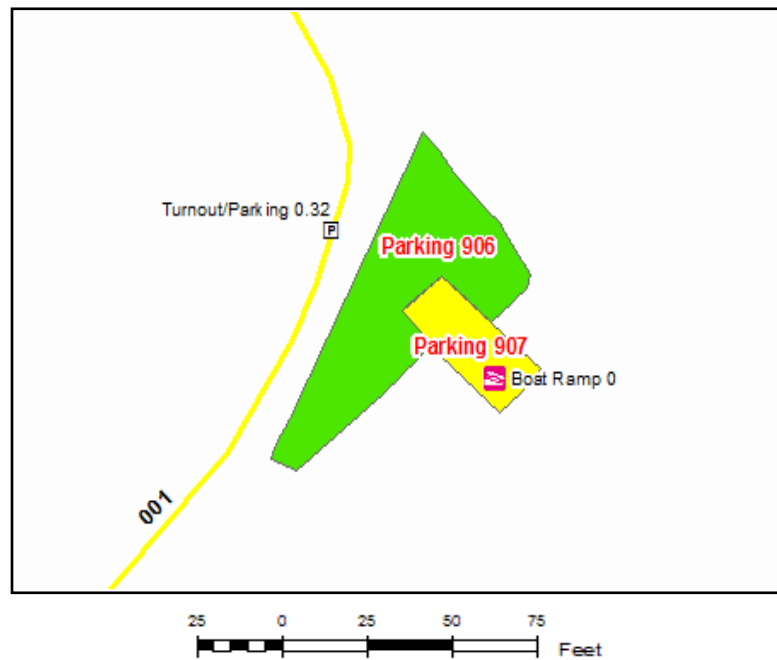
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	2,922	Fair	700





### 906: River Road A Boat Ramp Parking Area

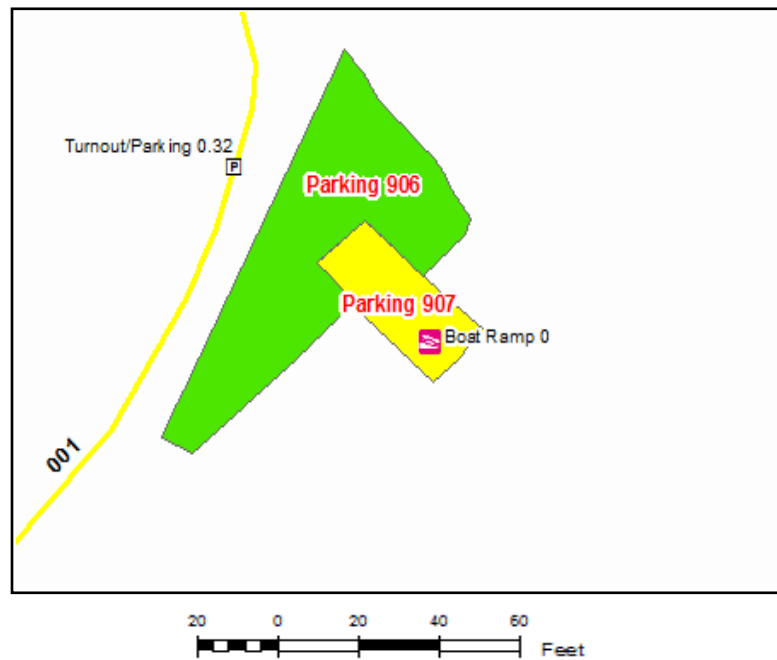
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	3,094	Good	400





### 907: River Road A Boat Ramp Handicapped Parking

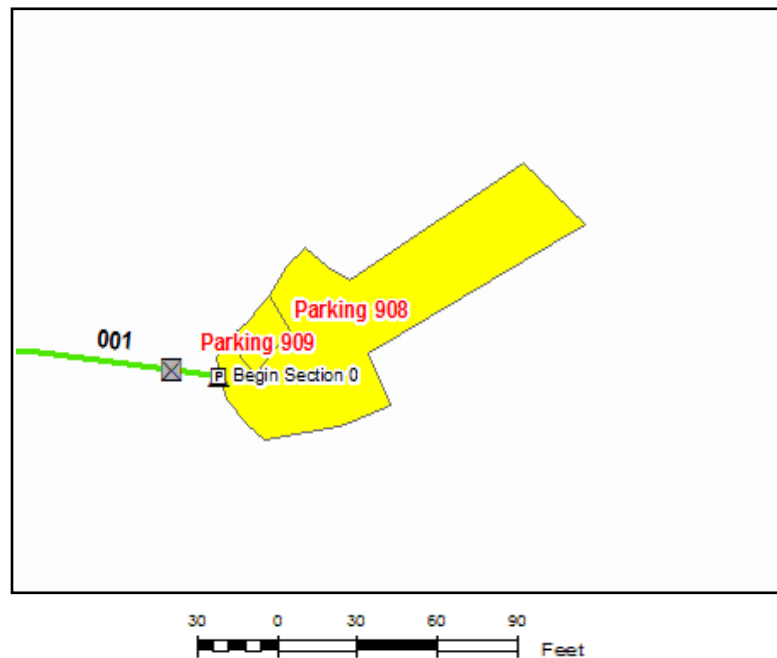
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Asphalt	838	Fair	700





### 908: Overlook Trail Parking

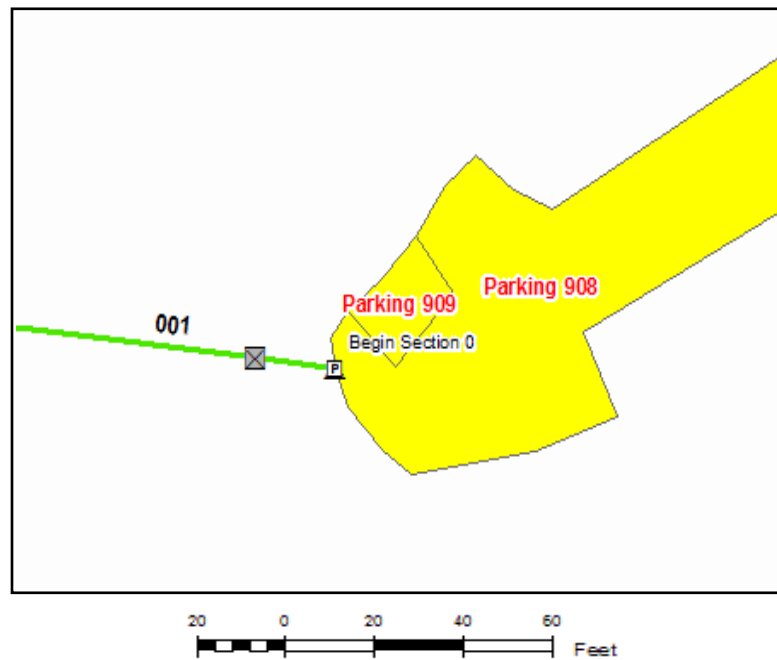
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	6,072	Fair	1,500





### 909: Overlook Trail Handicapped Parking

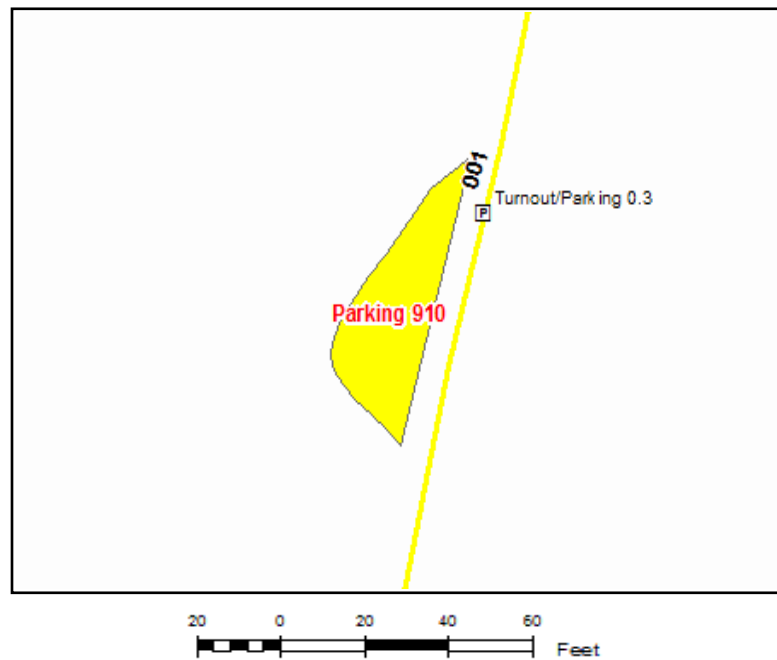
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Asphalt	402	Fair	300





### 910: River Road Parking #6

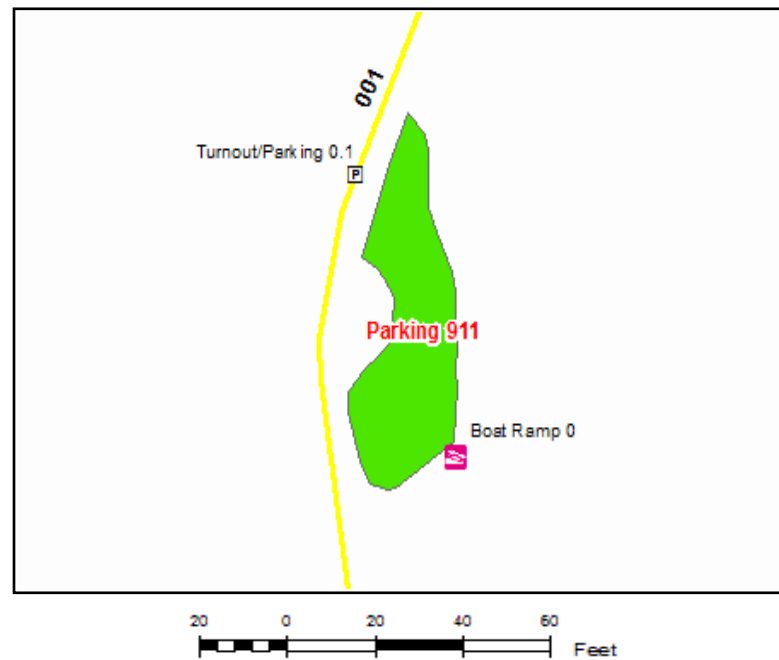
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	1,137	Fair	300





### 911: River Road Parking #7

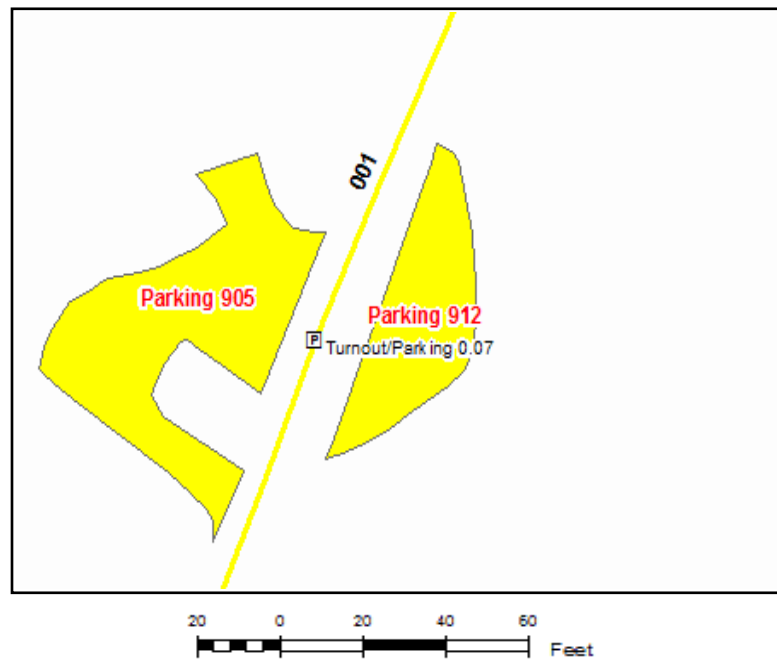
Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	1,557	Good	200





### 912: River Road Parking #8

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
	06/21/2011	Gravel	1,543	Fair	400





Bridge Inventory					
Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
No Bridges to report					



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 100 ROUTE NAME: River Road A



Photo # CARI\_C4\_0020 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 100 ROUTE NAME: River Road A



Photo # CARI\_C4\_0021 - MP 0.08 - Round Culvert Section 001

ROUTE NUMBER: 100 ROUTE NAME: River Road A



Photo # CARI\_C4\_0023 - MP 0.25 - Round Culvert Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 101 ROUTE NAME: River Road B



Photo # CARI\_C4\_0025 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 101 ROUTE NAME: River Road B



Photo # CARI\_C4\_0026 - MP 0.02 - Round Culvert Section 001

ROUTE NUMBER: 102 ROUTE NAME: North Road



Photo # CARI\_C4\_0028 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 102 ROUTE NAME: North Road



Photo # CARI\_C4\_0029 - MP 0.11 - Box Culvert Section 001

ROUTE NUMBER: 103 ROUTE NAME: Fullman Road



Photo # CARI\_C4\_0051 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 103 ROUTE NAME: Fullman Road



Photo # CARI\_C4\_0053 - MP 0.77 - Round Culvert Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 400 ROUTE NAME: Rail Road



Photo # CARI\_C4\_0032 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 401 ROUTE NAME: Old Bridge Road



Photo # CARI\_C4\_0038 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 402 ROUTE NAME: Lower Road

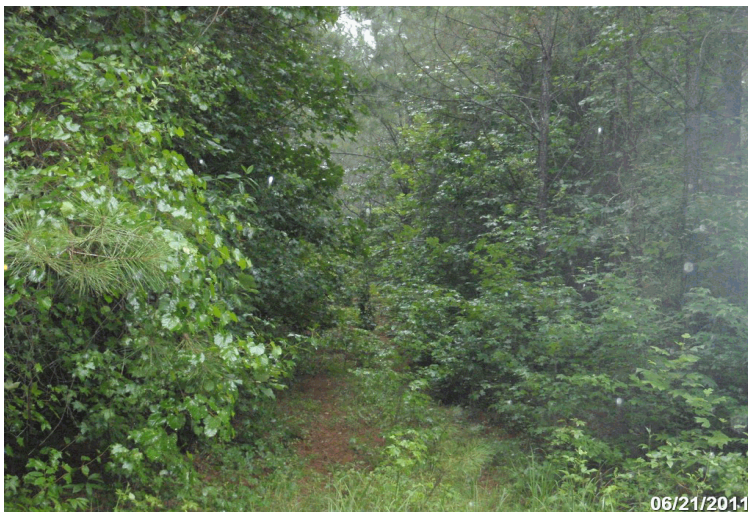


Photo # CARI\_C4\_0033 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 403 ROUTE NAME: School Road



Photo # CARI\_C4\_0039 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 403 ROUTE NAME: School Road



Photo # CARI\_C4\_0040 - MP 0.28 - Problem Area 001

ROUTE NUMBER: 404 ROUTE NAME: Cahaba Overlook Road



Photo # CARI\_C4\_0046 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 405 ROUTE NAME: Loblolly Road A



Photo # CARI\_C4\_0047 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 406 ROUTE NAME: Loblolly Road B



Photo # CARI\_C4\_0048 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 407 ROUTE NAME: East Cahaba Road



Photo # CARI\_C4\_0057 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 407 ROUTE NAME: East Cahaba Road



Photo # CARI\_C4\_0058 - MP 0.05 - Problem Area 001

ROUTE NUMBER: 408 ROUTE NAME: Cliff Road



Photo # CARI\_C4\_0050 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 409 ROUTE NAME: Belcher Road



Photo # CARI\_C4\_0055 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 409 ROUTE NAME: Belcher Road



Photo # CARI\_C4\_0056 - MP 1.16 - Begin Section 002

ROUTE NUMBER: 409 ROUTE NAME: Belcher Road



Photo # CARI\_C4\_0059 - MP 0.85 - Begin Section 003

ROUTE NUMBER: 410 ROUTE NAME: West Road



Photo # CARI\_C4\_0068 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 410 ROUTE NAME: West Road



Photo # CARI\_C4\_0069 - MP 0.06 - Round Culvert Section 001

ROUTE NUMBER: 411 ROUTE NAME: Forest Road Loop West



Photo # CARI\_C4\_0062 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 411 ROUTE NAME: Forest Road Loop West



Photo # CARI\_C4\_0063 - MP 0.61 - Round Culvert Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 412 ROUTE NAME: Forest Road Loop East



Photo # CARI\_C4\_0064 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 412 ROUTE NAME: Forest Road Loop East



Photo # CARI\_C4\_0065 - MP 0.53 - Round Culvert Section 001

ROUTE NUMBER: 412 ROUTE NAME: Forest Road Loop East



Photo # CARI\_C4\_0067 - MP 0.57 - Begin Section 002



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 413 ROUTE NAME: Hill Top Road



Photo # CARI\_C4\_0060 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 414 ROUTE NAME: South Belcher Road



Photo # CARI\_C4\_0071 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 415 ROUTE NAME: Little Cahaba Road



Photo # CARI\_C4\_0072 - MP 0.00 - Begin Section 001



## FEATURES PHOTOGRAPHS

ROUTE NUMBER: 416 ROUTE NAME: Southeast Road



Photo # CARI\_C4\_0073 - MP 0.00 - Begin Section 001



### Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0



## APPENDIX

<b>TABLE 1 - GENERAL FWS ROAD FUNCTIONAL CLASSIFICATION</b>	
<b>Class I</b>	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
<b>Class II</b>	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
<b>Class III</b>	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
<b>Class IV</b>	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
<b>Class V</b>	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

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



## DESCRIPTION OF RATING SYSTEM

Rating Data is collected on four different surface types: Asphalt, Concrete, Gravel, and Native. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

### Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** - Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness** - Evenness of pavement for serviceability.
- **Drainage** - Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has given Remaining Service Life (RSL) values (in years) based on the rating for that particular distress. The distress with the rating resulting in the lowest RSL value is considered to be the governing distress. That value is then assigned as the RSL of the road segment.

### Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** - Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** - Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** - A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** - Faulting and/or cracking localized to individual slabs.



- **Faulting** – Difference in elevation across a crack or joint.
- **Longitudinal Cracking** – Cracks in the pavement running parallel to road.
- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### **Rating Index Formula**

The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

### **Gravel and Native Rating System**

Data is collected on the following distresses and conditions:

- **Cross Section (Crown)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

### **Rating Index Formula**

The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.



## Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

### Asphalt

**Excellent** – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

**Good** – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

**Fair** - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

**Poor** - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

**Failed** - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

### Concrete

**Excellent** - New pavement. No maintenance required. RSL = 19-20 years

**Good** - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

**Fair** – Pavement has joint or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

**Poor** - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

**Failed** - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.



SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

### Gravel and Native

**Note** - Native surfaces do not have a gravel layer.

**Excellent** - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

**Good** - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

**Fair** - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

**Poor** - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

**Failed** - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10



# NATIVE PRIMITIVE/IMPROVED RATING SHEET

## Cross Section (Crown)\*

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

## Rutting

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

## Roadside Drainage\*

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

## Potholes

Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

## Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

## Corrugations

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 3"	1	2	3
	Med 3-6"	4	5	6
	High > 6"	7	8	9

\* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.



# GRAVEL RATING SHEET

## Cross Section (Crown)

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

## Rutting

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

## Roadside Drainage

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

## Potholes

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

## Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

## Corrugations

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 2"	1	2	3
	Med 2-4"	4	5	6
	High > 4"	7	8	9

\* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

## Loose Aggregate

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9



# ASPHALT RATING SHEET

## Fatigue Cracking

Severity	Extent			
	No Defects	Low 1 crack WP	Med 2 cracks WP	High >30% length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Edge Cracking

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	0-6" from curb	1	2	3
	6-18" from curb	4	5	6
	> 18" from curb	7	8	9

## Longitudinal Cracking

Severity	Extent			
	No Defects	Low 1 crack full length	Med 2 cracks full length	High >2 cracks full length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Block Cracking

Severity	Extent (Length)			
	No Defects	Low > 15x15' squares	Med 15-10' squares	High <10x10' squares
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Transverse Cracking

Severity	Extent (ft between cracks)			
	No Defects	Low > 200'	Med 200-50'	High < 50'
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Utility Cuts

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

## Drainage/Roughness/Rutting

Severity	Condition		Description
	No Defects	0	Wide, deep ditches with no obstructions, smooth ride, no rutting, no potholes.
	Minor Defects	1	Drainage may be obstructed, < 1" rutting, minor roughness.
	Moderate Defects	2	Poor drainage, 1-2" rutting, noticeable roughness, potholes < 6" wide.
	Major Defects	3	No drainage; > 2" rutting; potholes 6-12" wide create roughness requiring reduced speeds.



# CONCRETE RATING SHEET

## Spalling of Joints

Extent (% joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low Spalls < 3"	1	2	3
	Med Spalls 3-6"	4	5	6
	High Spalls > 6"	7	8	9

## Broken Slabs

Extent (% slabs)				
No Defects	Low <5%	Med 5-15%	High >15%	
Severity	Low-no more than 3 pieces, no spalling/faulting	1	2	3
	Med-broken into >3 pieces, spalling/faulting <1/4"	4	5	6
	High-4 or more pieces, spalling/faulting >1/4"	7	8	9

## Transverse Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/4"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/4"	7	8	9

## Joint Seal Damage

Extent (%joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low <10% joint length	1	2	3
	Med 10-50% joint length	4	5	6
	High >50% joint length	7	8	9

## Faulting

Extent (Length)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low < 1/2"	1	2	3
	Med 1/2-1"	4	5	6
	High > 1"	7	8	9

## Patch Deterioration

Extent (Area)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low-no fault, no settle at perimeter	1	2	3
	Med-fault & settle <1/4" at perimeter	4	5	6
	High-fault & settle >1/4" at perimeter, cracked patch	7	8	9

## Corner Breaks

Extent (% of slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-corner cracks, no spalling or faulting	1	2	3
	Med-crack slightly spalled & faulted <1/4"	4	5	6
	High-crack highly spalled & faulted >1/4"	7	8	9

## Longitudinal Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/2"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/2"	7	8	9

## Map Cracks

Extent (Area)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-small connected cracks, no spalling	1	2	3
	Med-connected cracks, no spalling	4	5	6
	High-large connected cracks with surface spalling	7	8	9



# Deficiency Ratings With Associated Remaining Service Life

## Asphalt Rating Sheet

Fatigue Cracking		Edge Cracking		Transverse Cracking		Utility Cuts	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20	0	20
1	10	1	12	1	14	1	14
2	8	2	10	2	12	2	12
3	6	3	8	3	10	3	10
4	8	4	10	4	12	4	12
5	6	5	8	5	10	5	10
6	4	6	6	6	8	6	8
7	6	7	8	7	10	7	10
8	2	8	6	8	6	8	6
9	0	9	4	9	2	9	2

Longitudinal Cracking		Block Cracking		Drainage/Roughness/Rutting	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	14	1	12	1	16
2	12	2	10	2	10
3	10	3	8	3	4
4	12	4	10		
5	10	5	8		
6	8	6	6		
7	10	7	12		
8	8	8	6		
9	6	9	2		

## Concrete Rating Sheet

Spalling		Broken Slabs		Transverse Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	15	1	15	1	18
2	12	2	12	2	15
3	10	3	10	3	12
4	12	4	12	4	15
5	10	5	10	5	10
6	8	6	8	6	6
7	10	7	10	7	10
8	6	8	6	8	4
9	0	9	0	9	0

Joint Seal Damage		Faulting		Patch Deterioration	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	18
1	16	1	15	1	16
2	14	2	12	2	14
3	12	3	10	3	12
4	14	4	12	4	12
5	10	5	8	5	10
6	8	6	6	6	8
7	12	7	10	7	10
8	8	8	4	8	6
9	6	9	0	9	0

Corner Breaks		Longitudinal Cracks		Map Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	18	0	20	0	20
1	16	1	18	1	18
2	14	2	15	2	15
3	12	3	12	3	12
4	12	4	15	4	12
5	10	5	10	5	10
6	8	6	6	6	6
7	10	7	10	7	10
8	6	8	4	8	4
9	0	9	0	9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Asphalt & Concrete Roads)

RSL	FAILED 0	POOR 1 - 6	FAIR 7 - 12	GOOD 13 - 18	EXCELLENT 19 - 20
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# Deficiency Ratings With Associated Remaining Service Life

## Native Primitive Improved Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

## Gravel Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Loose Aggregate	
Distress Rating	Remaining Service Life
0	10
1	9
2	8
3	7
4	8
5	7
6	6
7	5
8	3
9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Gravel & Native Roads)

RSL	FAILED	POOR	FAIR	GOOD	EXCELLENT
	0	1 - 2	3 - 4	5 - 7	8 - 10