

The Road Inventory of Trempealeau National Wildlife Refuge Trempealeau, WI



Prepared By:
Federal Highway Administration
Central Federal Lands Highway Division
December 2009



TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
I.	<u>INTRODUCTION</u>	1 - 1
II.	<u>SUMMARY INFORMATION</u> Summaries by Condition, Surface Type and Functional Class	2 - 1
III.	<u>REFUGE ROUTE LOCATION MAPS</u>	3 - 1
IV.	<u>ROUTE IDENTIFICATION LIST</u>	4 - 1
V.	<u>ROUTE CONDITION RATING SHEETS</u>	5 - 1
VI.	<u>PARKING LOT CONDITION RATING SHEETS</u>	6 - 1
VII.	<u>BRIDGE INVENTORY INFORMATION</u>	7 - 1
VIII.	<u>PHOTOGRAPHIC SHEETS</u>	8 - 1
IX.	<u>ACCIDENT SUMMARY</u>	9 - 1
	<u>APPENDIX</u>	
	Functional Classification Table	i
	Description of Rating System	ii

INTRODUCTION

The Transportation Equity Act for the 21st 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 22nd 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.

Trempealeau

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	1.05	19.9%	3.18	60.4%	1.03	19.6%	0.00	0.0%	0.00	0.0%	5.26
II	3.05	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	3.05
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	2.08	25.6%	6.02	74.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	8.10
Total	6.17	37.6%	9.20	56.1%	1.03	6.3%	0.00	0.0%	0.00	0.0%	16.41

*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 Type	Excellent		Good		Fair		Poor		Failed		Total
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	Miles
AS	0.00	0.0%	0.00	0.0%	1.03	100.0%	0.00	0.0%	0.00	0.0%	1.03
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Total	0.00	0.0%	0.00	0.0%	1.03	100.0%	0.00	0.0%	0.00	0.0%	1.03

Unpaved Condition Rating [Condition(RSL)]

Surface Type	Excellent		Good		Fair		Poor		Failed		Total
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	Miles
GR	6.17	48.7%	6.51	51.3%	0.00	0.0%	0.00	0.0%	0.00	0.0%	12.68
NA	0.00	0.0%	1.66	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.66
PR	0.00	0.0%	1.04	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	1.04
Total	6.17	40.2%	9.20	59.8%	0.00	0.0%	0.00	0.0%	0.00	0.0%	15.37

Square Footage (Parking Areas) Condition Rating

Surface Type	Excellent		Good		Fair		Poor		Failed		Total
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft
AS	0	0.0%	29,970	100.0%	0	0.0%	0	0.0%	0	0.0%	29,970
CO	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
GR	0	0.0%	33,453	45.0%	40,824	55.0%	0	0.0%	0	0.0%	74,277
NA	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Total	0	0.0%	63,423	61.0%	40,824	39.0%	0	0.0%	0	0.0%	104,247

Trempealeau Summaries

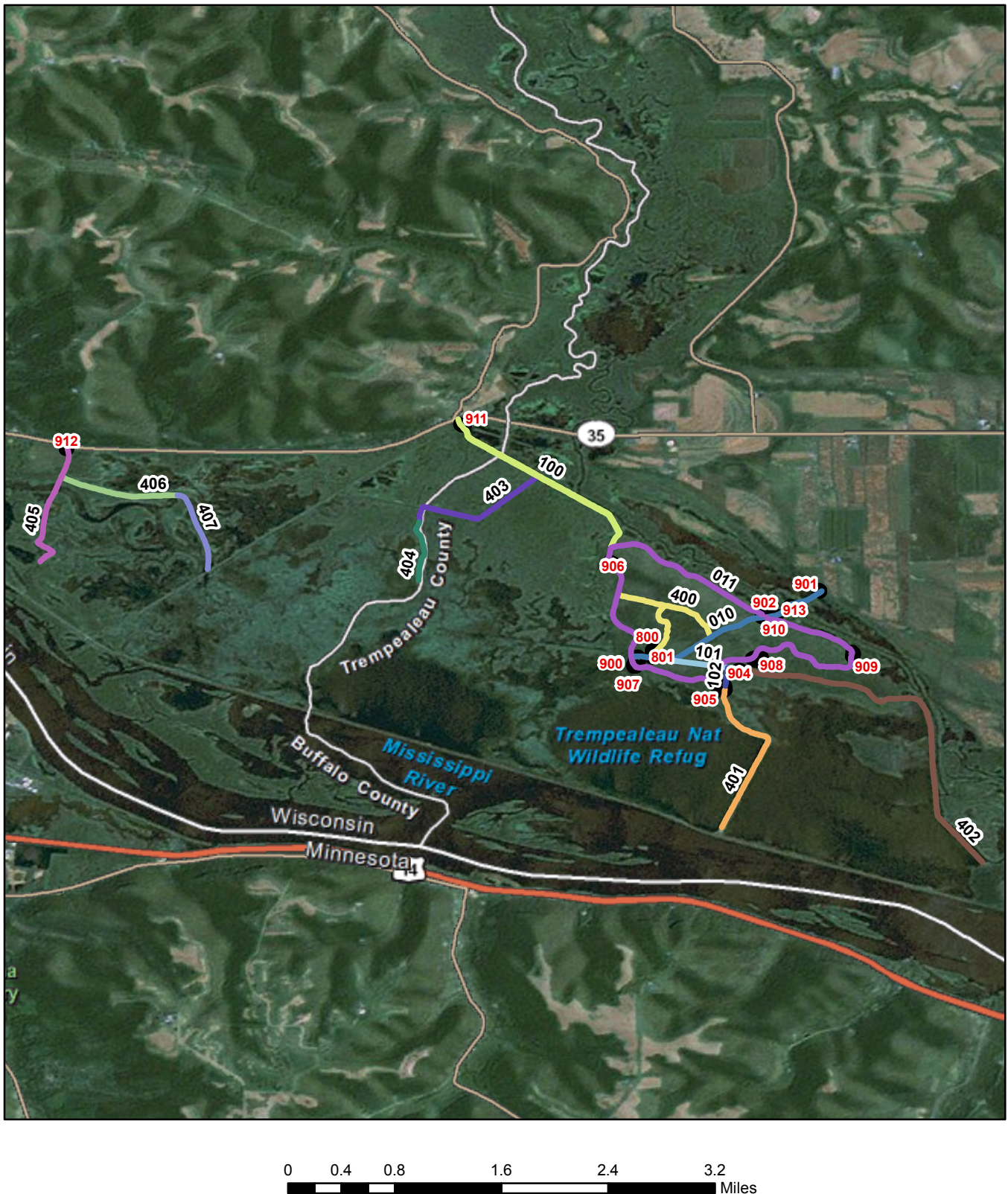
Route Miles and Percentages by Use Type and Condition
Road Condition Rating: Public/Administrative Use

Use Type	Excellent		Good		Fair		Poor		Failed		Total
	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	Miles
Admin	2.08	25.6%	6.02	74.4%	0.00	0.0%	0.00	0.0%	0.00	0.0%	8.10
Public	4.10	49.3%	3.18	38.3%	1.03	12.4%	0.00	0.0%	0.00	0.0%	8.31
Total	6.17	37.6%	9.20	56.1%	1.03	6.3%	0.00	0.0%	0.00	0.0%	16.40

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
Admin	0	0.0%	22,178	100.0%	0	0.0%	0	0.0%	0	0.0%	22,178
Public	0	0.0%	41,245	50.3%	40,824	49.7%	0	0.0%	0	0.0%	82,069
Total	0	0.0%	63,423	60.8%	40,824	39.2%	0	0.0%	0	0.0%	104,247

Trempealeau ROUTE LOCATION MAP



Trempealeau - 32578 - ROUTE IDENTIFICATION LIST (NUMERIC)

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
010	10011914	Entrance Road	1.21	From Prairie Road to Wildlife Drive (Route 011)	1.03	0.17	2	1
011	10011887	Wildlife Drive	4.06	From Kiosk Parking (Route 902) to Entrance Road (Route 010)	0.00	4.06	1	1
100	10011891	Marshland Road	2.54	From State Route 35 to Wildlife Drive (Route 011)	0.00	2.54	1	2
101	10043750	Dike Road	0.37	From Entrance Road (Route 010) to Dike Road Parking (Route 904)	0.00	0.37	1	2
102	10011896	Keips Island Road	0.13	From Dike Road (Route 101) to Boat Landing Parking (Route 905)	0.00	0.13	1	2
400	10059069	Fire Break Road	1.04	From Shop Parking North (Route 801) to Entrance Road (Route 010)	0.00	1.04	1	5
401	10011917	Keips Island Dike Road	1.19	From Boat Landing Parking (Route 905) to end of route	0.00	1.19	1	5
402	10059062	Lower Diversion Dike Road	2.33	From Dike Road Parking (Route 904) to end of route	0.00	2.33	1	5
403	10011920	Delta Dike Road	0.88	From Marshland Road (Route 100) to Delta Point Trail (Route 404)	0.00	0.88	1	5
404	10011890	Delta Point Trail	0.46	From Delta Dike Road (Route 403) to end of route	0.00	0.46	1	5
405	10044399	River Bottoms Access Road	0.94	From River Bottoms Parking (Route 405) to problem area	0.00	0.94	1	5
406	10011922	Ox Bow Dike Road	0.65	From River Bottoms Access Road (Route 405) to East End Ox Bow Dike Road (Route 407)	0.00	0.65	1	5
407	10011892	East End Ox Bow Dike Road	0.60	From Ox Bow Dike Road (Route 406) to end of route	0.00	0.60	1	5

Trempealeau - 32578 - 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
800	10011888	Shop Parking South	11,287		11,287.00	0
801	10011888	Shop Parking North	10,891		0.00	10,891
900	10035868	Headquarters Parking	8,616		8,616.00	0
901	10035869	Entrance Parking	2,749		2,749.00	0
902	10011903	Kiosk Parking	8,182		0.00	8,182
904	10043751	Dike Road Parking	2,952		0.00	2,952
905	10011886	Boat Landing Parking	21,769		0.00	21,769
906	10043752	Prarie View Parking	4,817		0.00	4,817
907	10043753	Observation Deck Parking	3,590		0.00	3,590
908	10043754	Overlook Parking	11,224		0.00	11,224
909	10043755	Trempealeau River Parking	3,773		0.00	3,773
910	10011889	Entrance Road Turnaround	2,433		2,433.00	0
911	10011908	Marshland Parking	4,885		4,885.00	0
912	10044399	River Bottoms Parking	4,796		0.00	4,796
913	10011924	Entrance Road Boat Ramp Parking	2,283		0.00	2,283

CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT

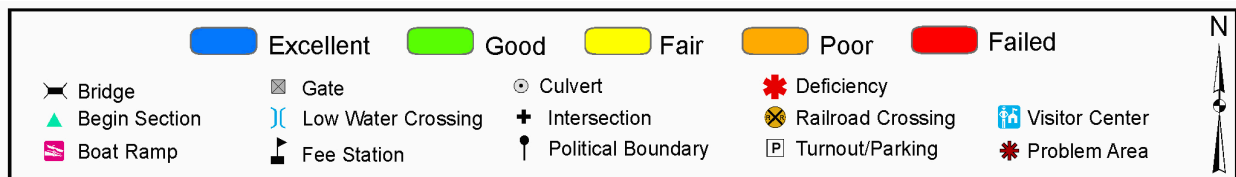
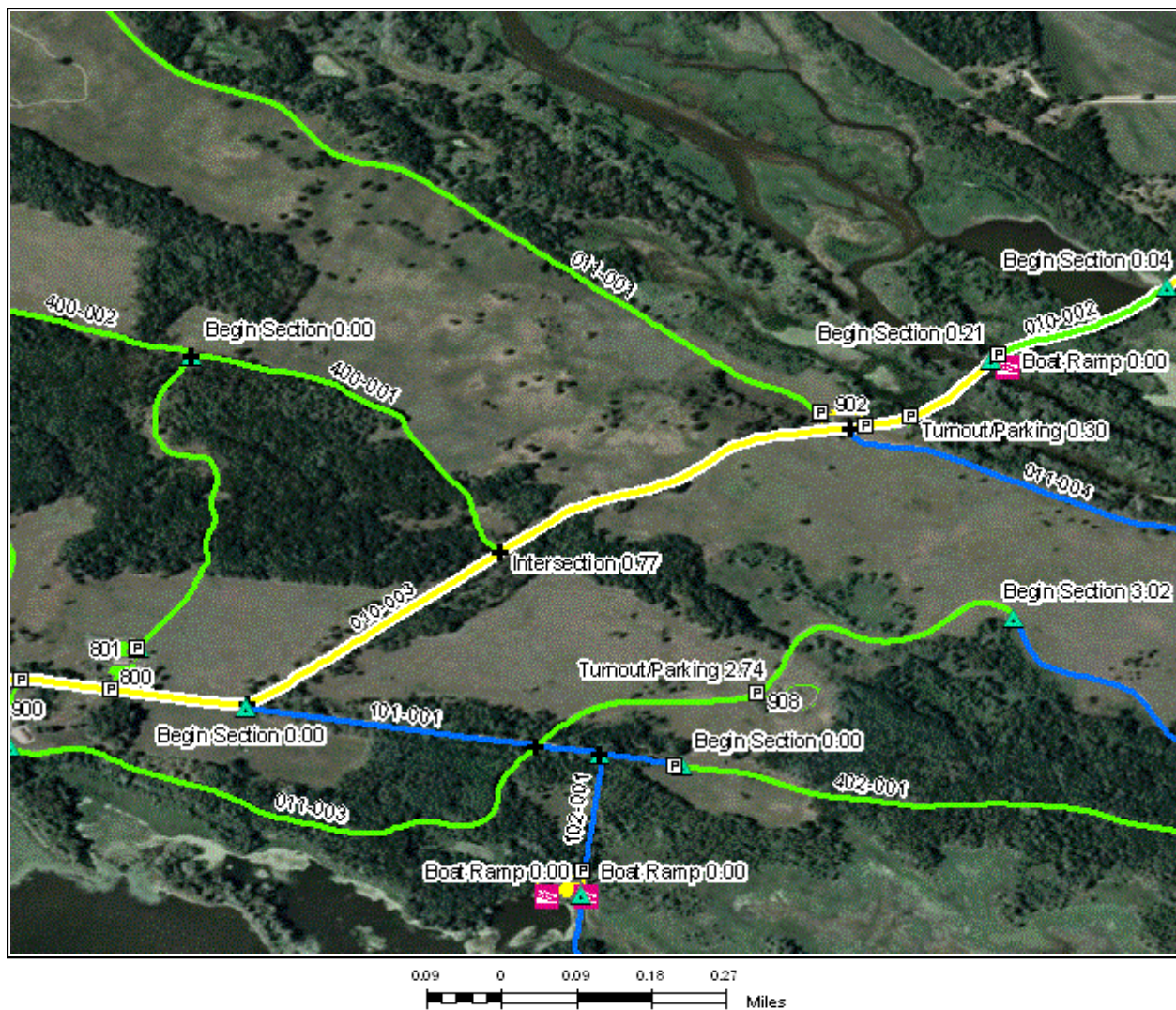
Trempealeau

Routes added to previous inventory*:		
Rte #	Rte Name	Reason for Addition
100	Marshland Road	New public route
400	Fire Break Road	Service
401	Keips Island Dike Road	Service
402	Lower Diversion Dike Road	Service
403	Delta Dike Road	Service
404	Delta Point Trail	Service
405	River Bottoms Access Road	Service
406	Ox Bow Dike Road	Service
407	East End Ox Bow Dike Road	Service
800	Shop Parking	Service
906	Prarie View Parking	New public route
913	Entrance Road Boat Ramp Parking	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

Comments:

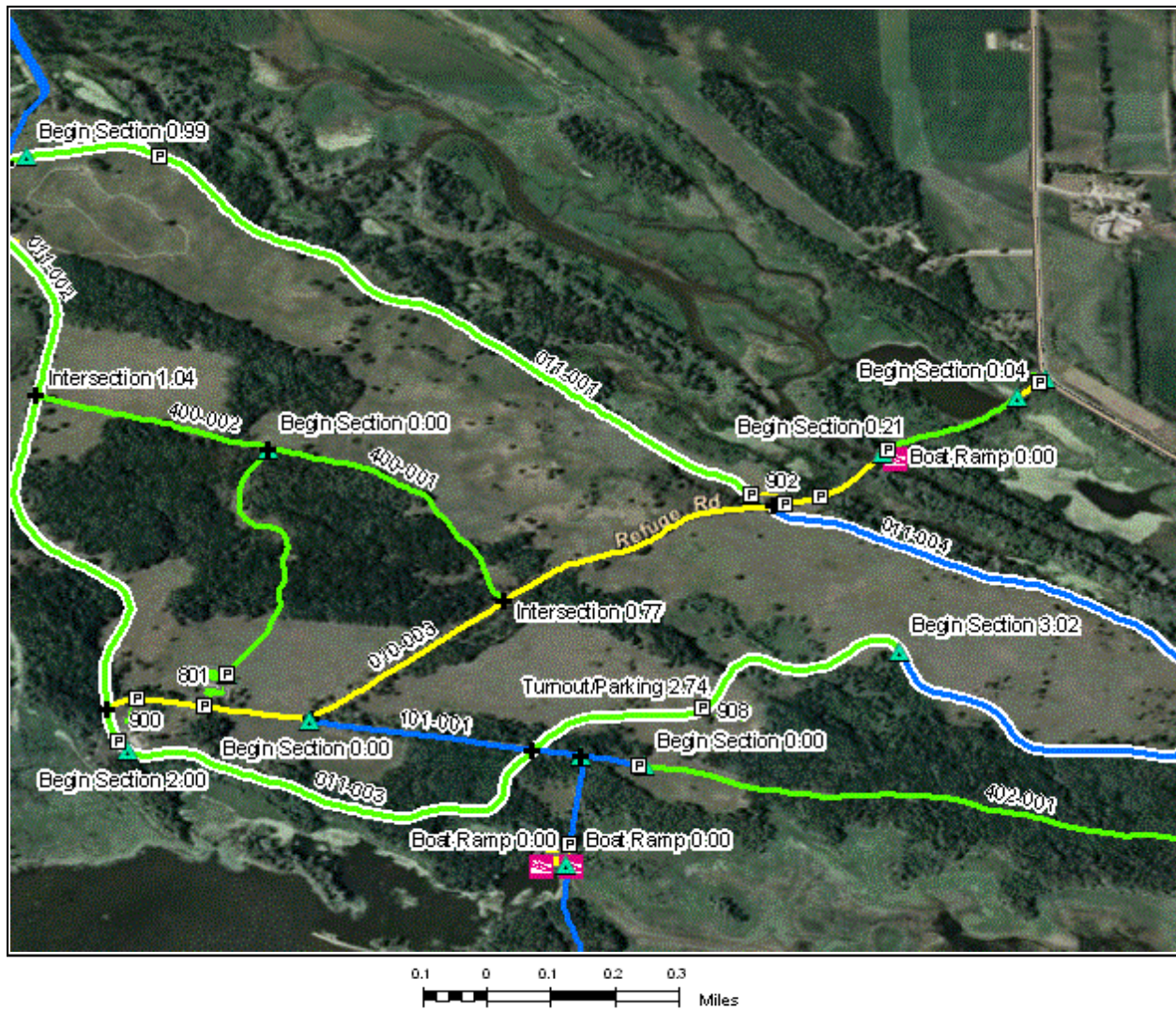


Route: 010 Entrance Road

Total Route Length: **1.21 Miles**

Route Description: From Prairie Road to Wildlife Drive (Route 011)

Asset Number	10011914	10011914	10011914
Section Number	001	002	003
Section Length (miles)	0.04	0.17	0.99
Inspection Date	08/19/2009	08/19/2009	08/19/2009
Section Information			
Surface Type	Asphalt	Gravel	Asphalt
Number of Lanes	2	2	2
Roadway Width (feet)	18.00	16.00	18.00
Roadway Condition Information			
Condition	Fair	Good	Fair
Remaining Service Life (years)	12	7	10
Cost Estimate	4,900	300	115,300
CRV	53,800.00	127,700.00	1,277,200.00

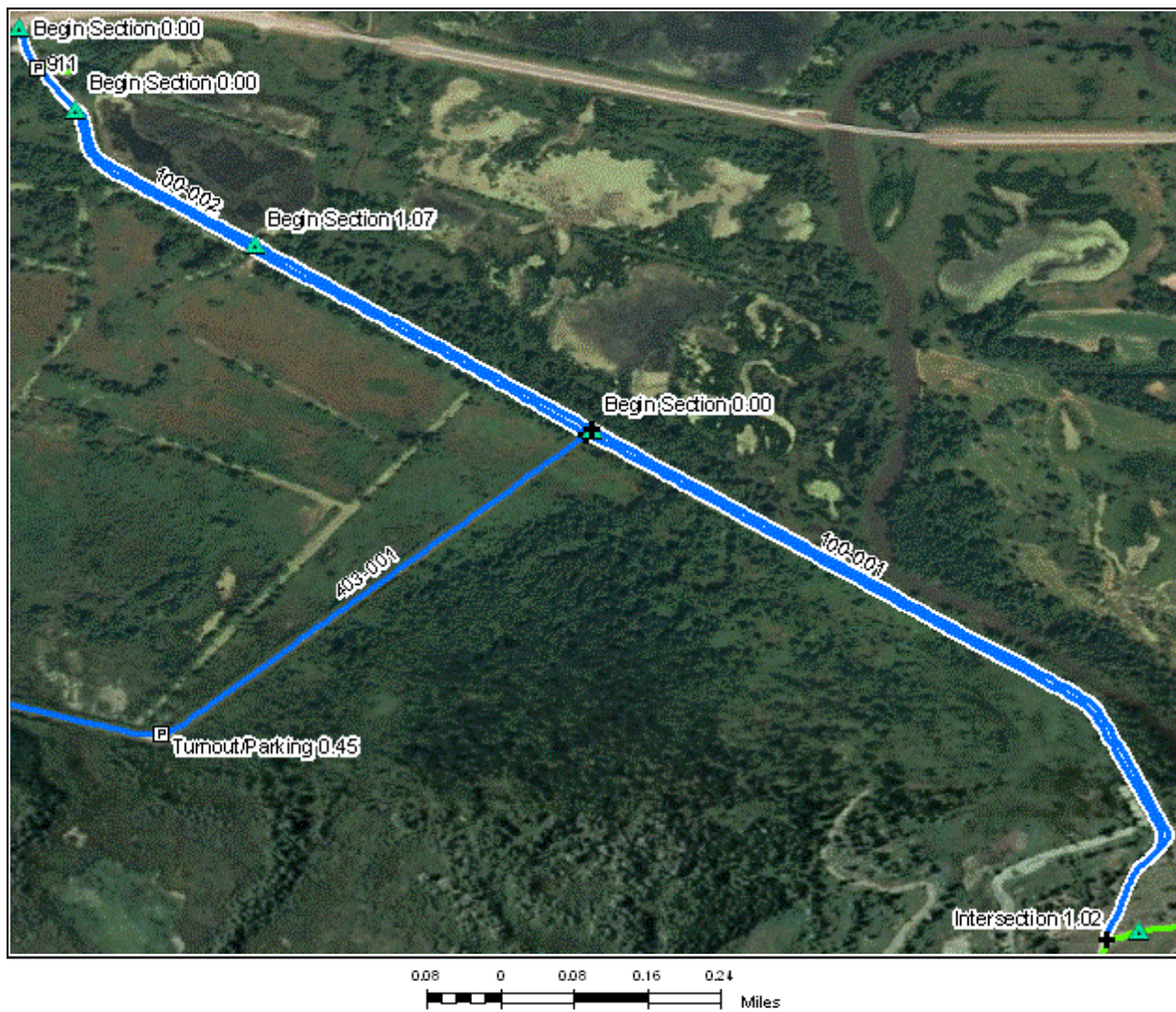


Route: 011 Wildlife Drive

Total Route Length: **4.06 Miles**

Route Description: From Kiosk Parking (Route 902) to Entrance Road (Route 010)

Asset Number	10011887	10011887	10011887	10011887
Section Number	001	002	003	004
Section Length (miles)	0.99	1.01	1.02	1.05
Inspection Date	08/19/2009	08/19/2009	08/19/2009	08/19/2009
Section Information				
Surface Type	Gravel	Gravel	Gravel	Gravel
Number of Lanes	1	1	1	1
Roadway Width (feet)	12.00	12.00	12.00	12.00
Roadway Condition Information				
Condition	Good	Good	Good	Excellent
Remaining Service Life (years)	7	7	7	9
Cost Estimate	1,700	1,800	1,800	0
CRV	733,800.00	746,200.00	754,100.00	778,500.00

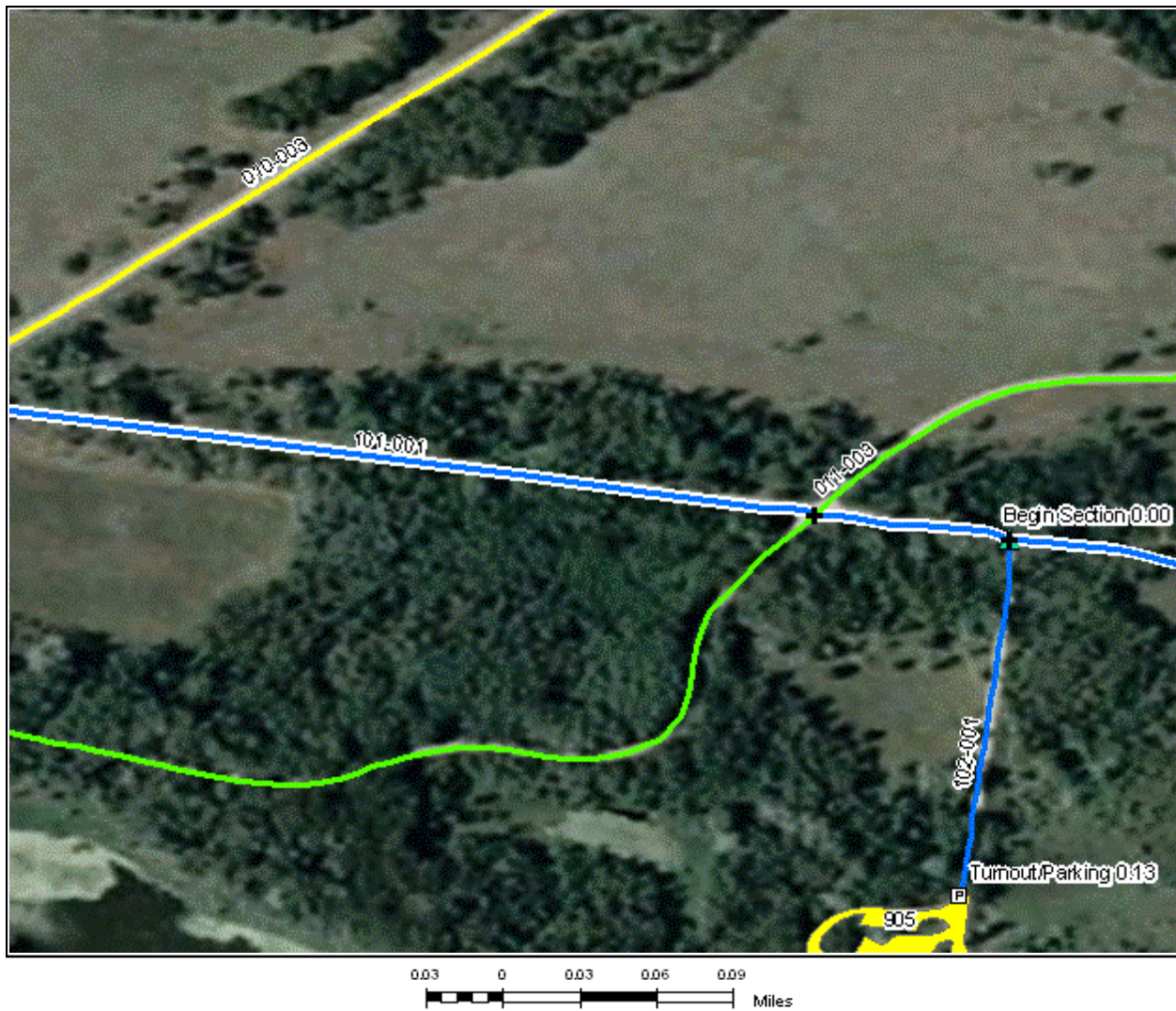


Route: 100 Marshland Road

Total Route Length: **2.54 Miles**

Route Description: From State Route 35 to Wildlife Drive (Route 011)

Asset Number	10011891	10011891	10011891
Section Number	001	002	003
Section Length (miles)	1.07	0.30	1.17
Inspection Date	08/19/2009	08/19/2009	08/19/2009
Section Information			
Surface Type	Gravel	Gravel	Gravel
Number of Lanes	1	1	1
Roadway Width (feet)	12.00	12.00	12.00
Roadway Condition Information			
Condition	Excellent	Excellent	Excellent
Remaining Service Life (years)	9	9	9
Cost Estimate	0	0	0
CRV	794,900.00	225,100.00	866,700.00



Route: 101 Dike Road

Total Route Length: **0.37 Miles**

Route Description: From Entrance Road (Route 010) to Dike Road Parking (Route 904)

Asset Number	10043750
Section Number	001
Section Length (miles)	0.37
Inspection Date	08/19/2009
Section Information	
Surface Type	Gravel
Number of Lanes	1
Roadway Width (feet)	12.00
Roadway Condition Information	
Condition	Excellent
Remaining Service Life (years)	9
Cost Estimate	0
CRV	277,200.00



Route: 102 Keips Island Road

Total Route Length: **0.13 Miles**

Route Description: From Dike Road (Route 101) to Boat Landing Parking (Route 905)

Asset Number	10011896
Section Number	001
Section Length (miles)	0.13
Inspection Date	08/19/2009
Section Information	
Surface Type	Gravel
Number of Lanes	1
Roadway Width (feet)	12.00
Roadway Condition Information	
Condition	Excellent
Remaining Service Life (years)	9
Cost Estimate	0
CRV	100,100.00



Route: 400 Fire Break Road

Total Route Length: **1.04 Miles**

Route Description: From Shop Parking North (Route 801) to Entrance Road (Route 010)

Asset Number	10059069	10059069
Section Number	001	002
Section Length (miles)	0.77	0.27
Inspection Date	08/19/2009	08/19/2009
Section Information		
Surface Type	Primitive	Primitive
Number of Lanes	1	1
Roadway Width (feet)	8.00	8.00
Roadway Condition Information		
Condition	Good	Good
Remaining Service Life (years)	7	7
Cost Estimate	400	100
CRV	0.00	0.00

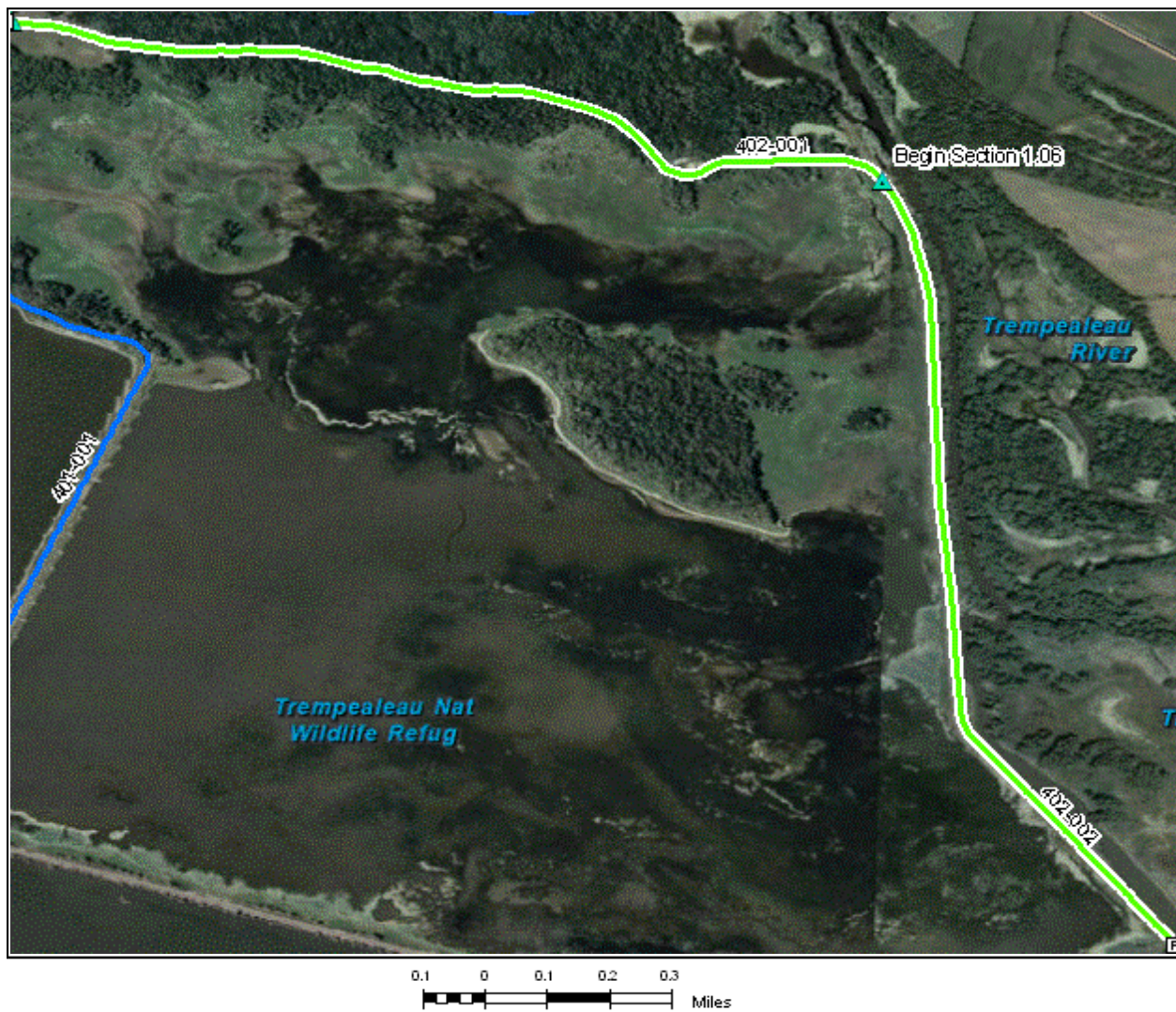


Route: 401 Keips Island Dike Road

Total Route Length: **1.19 Miles**

Route Description: From Boat Landing Parking (Route 905) to end of route

Asset Number	10011917
Section Number	001
Section Length (miles)	1.19
Inspection Date	08/19/2009
Section Information	
Surface Type	Gravel
Number of Lanes	1
Roadway Width (feet)	12.00
Roadway Condition Information	
Condition	Excellent
Remaining Service Life (years)	9
Cost Estimate	0
CRV	884,900.00

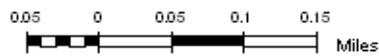
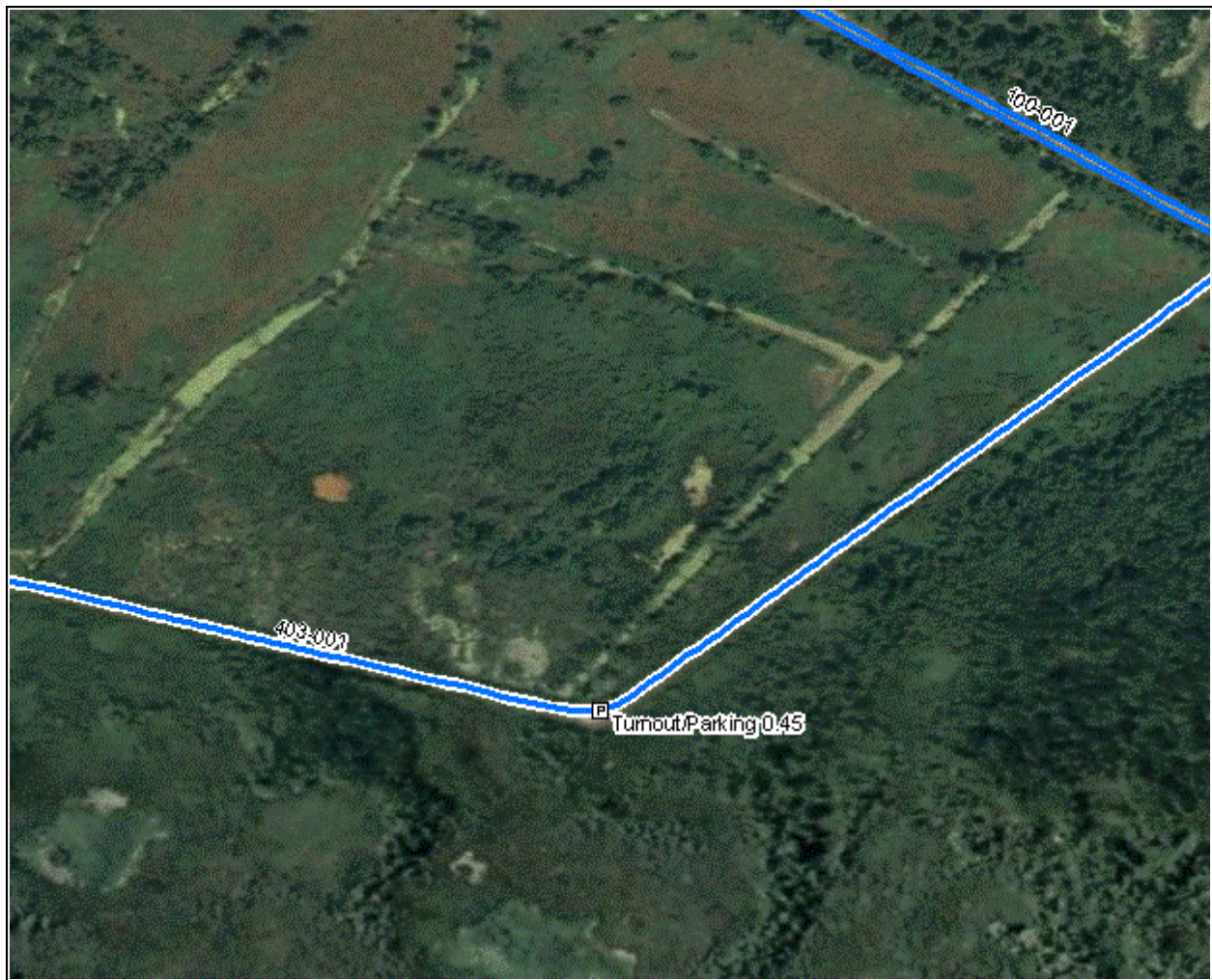


Route: 402 Lower Diversion Dike Road

Total Route Length: **2.33 Miles**

Route Description: From Dike Road Parking (Route 904) to end of route

Asset Number	10059062	10059062
Section Number	001	002
Section Length (miles)	1.06	1.27
Inspection Date	08/19/2009	08/19/2009
Section Information		
Surface Type	Gravel	Gravel
Number of Lanes	1	1
Roadway Width (feet)	10.00	10.00
Roadway Condition Information		
Condition	Good	Good
Remaining Service Life (years)	7	7
Cost Estimate	1,800	2,200
CRV	788,100.00	944,800.00

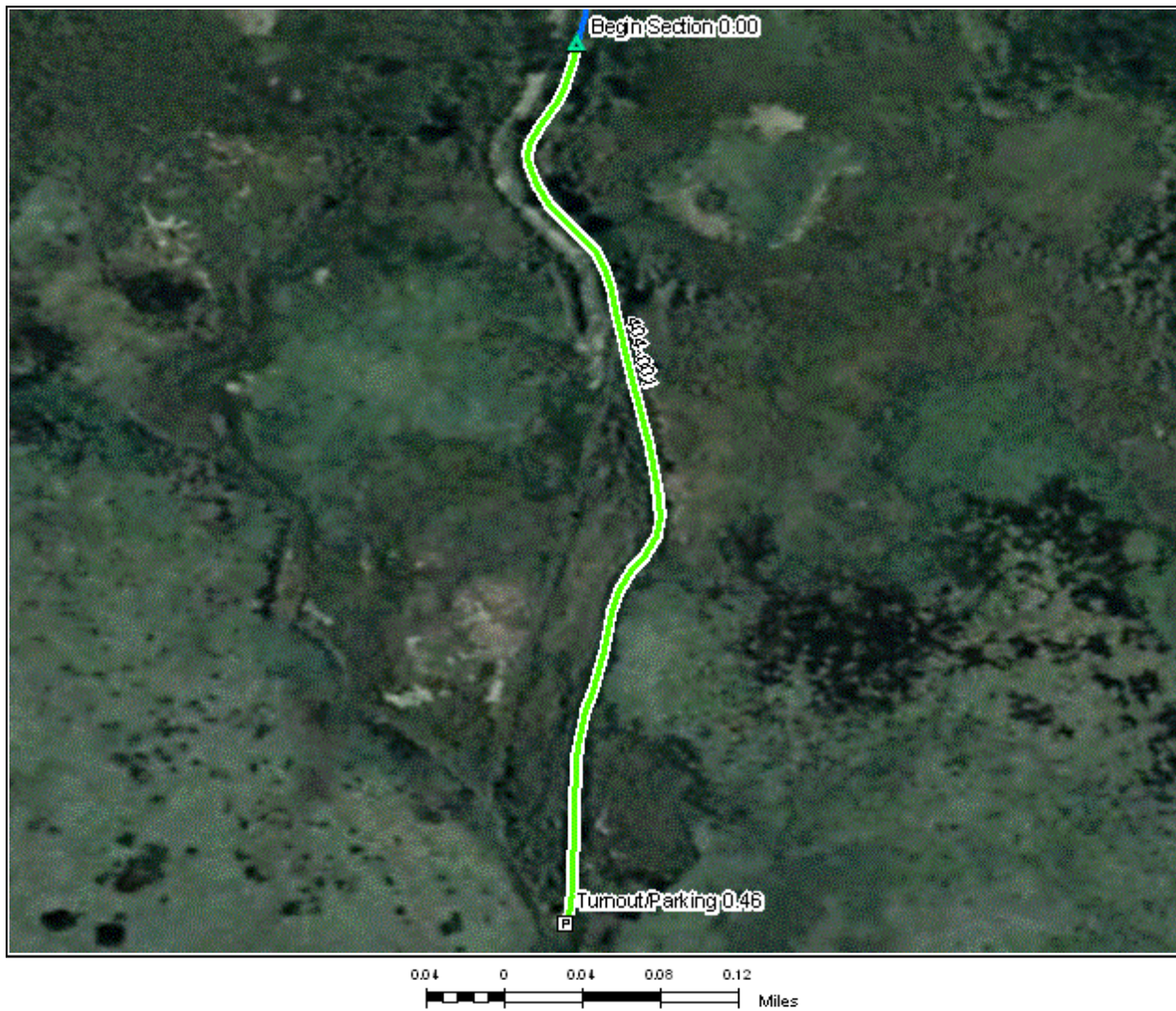


Route: 403 Delta Dike Road

Total Route Length: **0.88 Miles**

Route Description: From Marshland Road (Route 100) to Delta Point Trail (Route 404)

Asset Number	10011920
Section Number	001
Section Length (miles)	0.88
Inspection Date	08/19/2009
Section Information	
Surface Type	Gravel
Number of Lanes	1
Roadway Width (feet)	12.00
Roadway Condition Information	
Condition	Excellent
Remaining Service Life (years)	9
Cost Estimate	0
CRV	656,700.00



Route: 404 Delta Point Trail

Total Route Length: **0.46 Miles**

Route Description: From Delta Dike Road (Route 403) to end of route

Asset Number	10011890
Section Number	001
Section Length (miles)	0.46
Inspection Date	08/19/2009
Section Information	
Surface Type	Native
Number of Lanes	1
Roadway Width (feet)	10.00
Roadway Condition Information	
Condition	Good
Remaining Service Life (years)	7
Cost Estimate	800
CRV	174,900.00

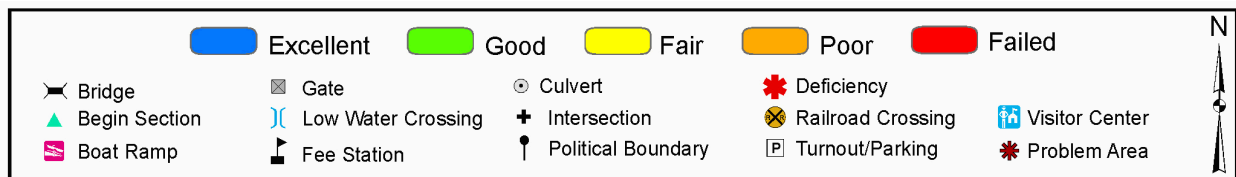
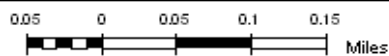
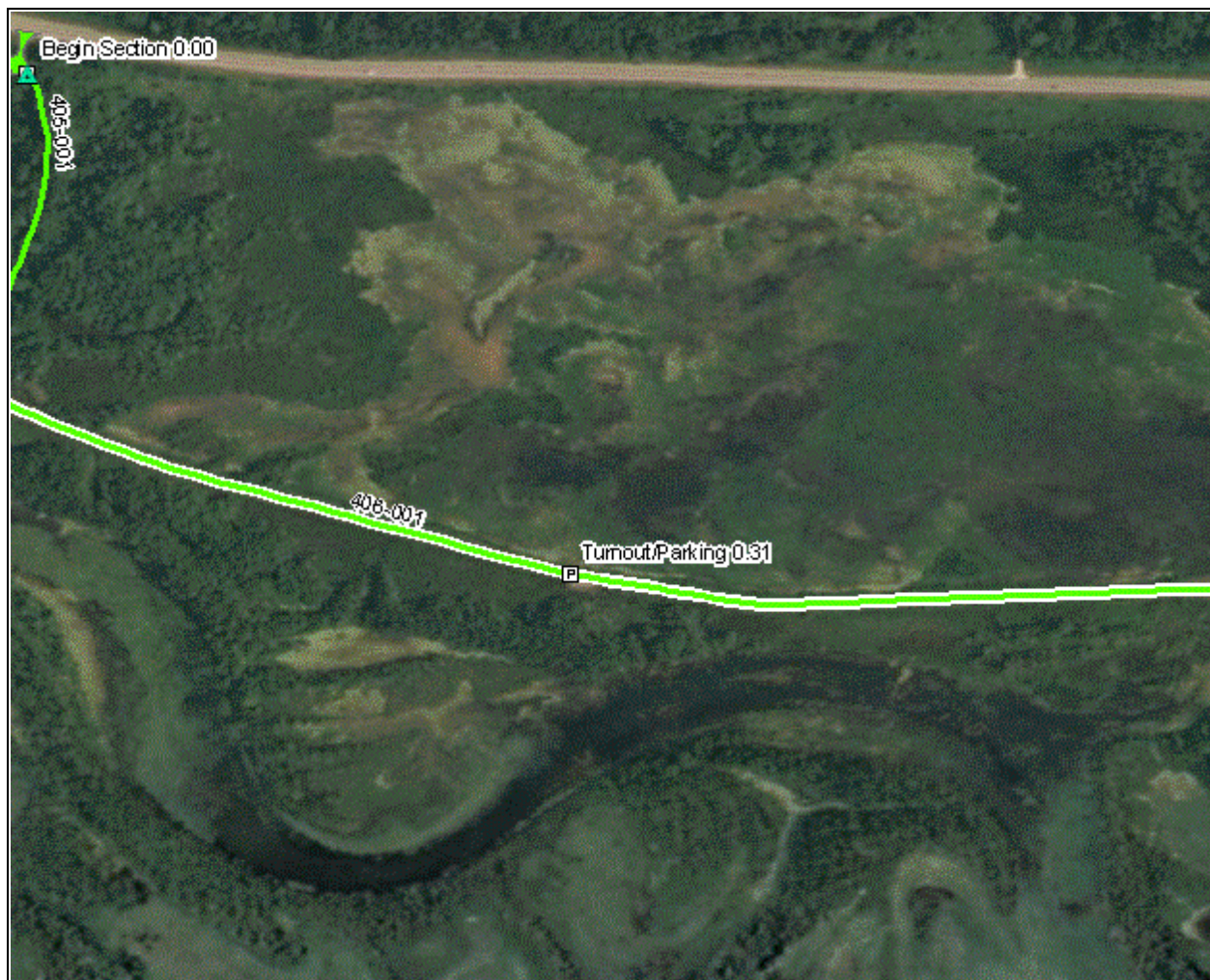


Route: 405 River Bottoms Access Road

Total Route Length: **0.94 Miles**

Route Description: From River Bottoms Parking (Route 405) to problem area

Asset Number	10044399	10044399
Section Number	001	002
Section Length (miles)	0.34	0.60
Inspection Date	08/19/2009	08/19/2009
Section Information		
Surface Type	Gravel	Native
Number of Lanes	1	1
Roadway Width (feet)	12.00	10.00
Roadway Condition Information		
Condition	Good	Good
Remaining Service Life (years)	7	7
Cost Estimate	600	1,100
CRV	249,200.00	231,900.00



Route: 406 Ox Bow Dike Road

Total Route Length: **0.65 Miles**

Route Description: From River Bottoms Access Road (Route 405) to East End Ox Bow Dike Road (Route 407)

Asset Number	10011922
Section Number	001
Section Length (miles)	0.65
Inspection Date	08/19/2009
Section Information	
Surface Type	Gravel
Number of Lanes	1
Roadway Width (feet)	10.00
Roadway Condition Information	
Condition	Good
Remaining Service Life (years)	7
Cost Estimate	1,100
CRV	486,000.00



Route: 407 East End Ox Bow Dike Road

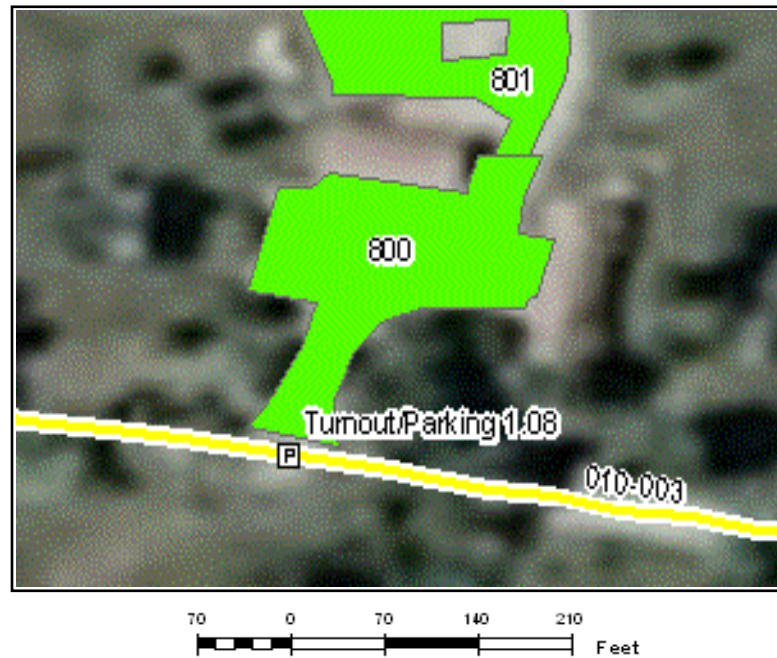
Total Route Length: **0.60 Miles**

Route Description: From Ox Bow Dike Road (Route 406) to end of route

Asset Number	10011892
Section Number	001
Section Length (miles)	0.60
Inspection Date	08/19/2009
Section Information	
Surface Type	Native
Number of Lanes	1
Roadway Width (feet)	8.00
Roadway Condition Information	
Condition	Good
Remaining Service Life (years)	5
Cost Estimate	1,100
CRV	230,200.00

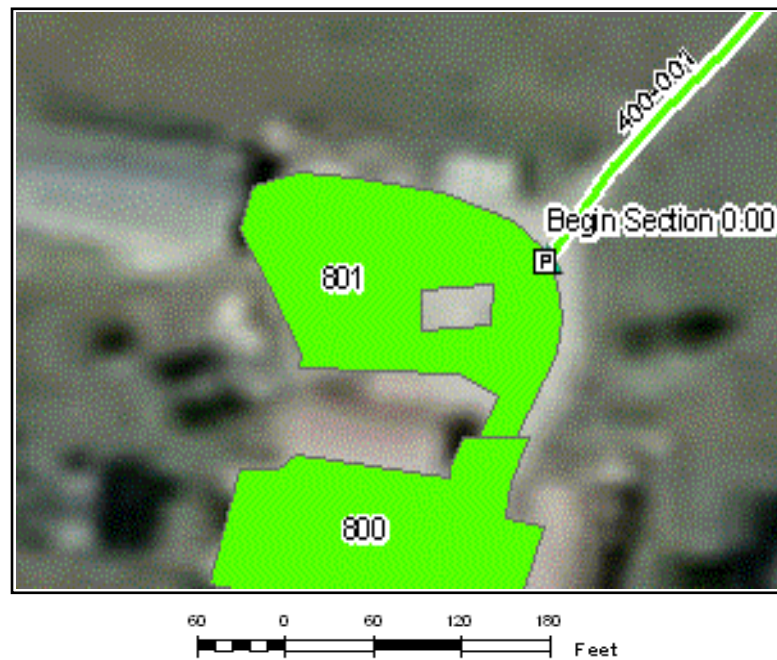
800: Shop Parking South

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011888	08/19/2009	Asphalt	11,287	Good	2,300



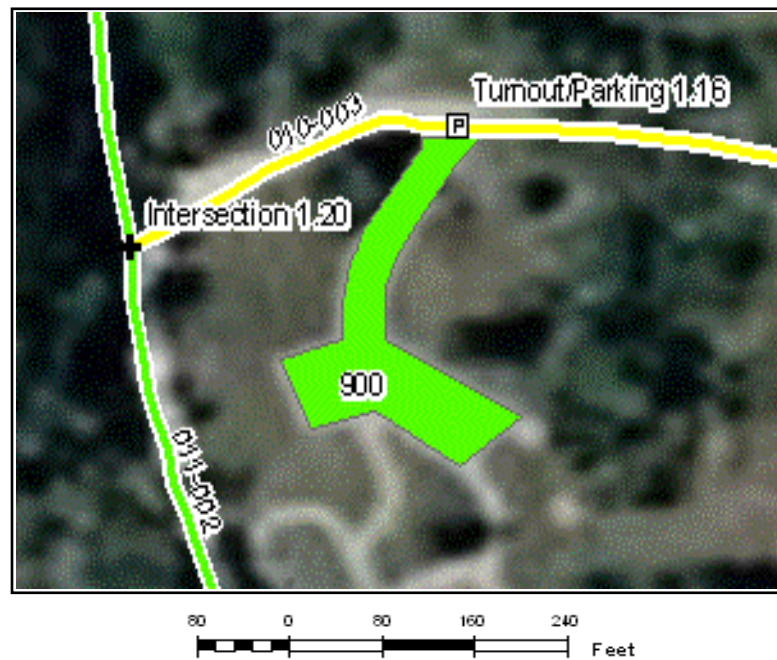
801: Shop Parking North

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011888	08/19/2009	Gravel	10,891	Good	1,800



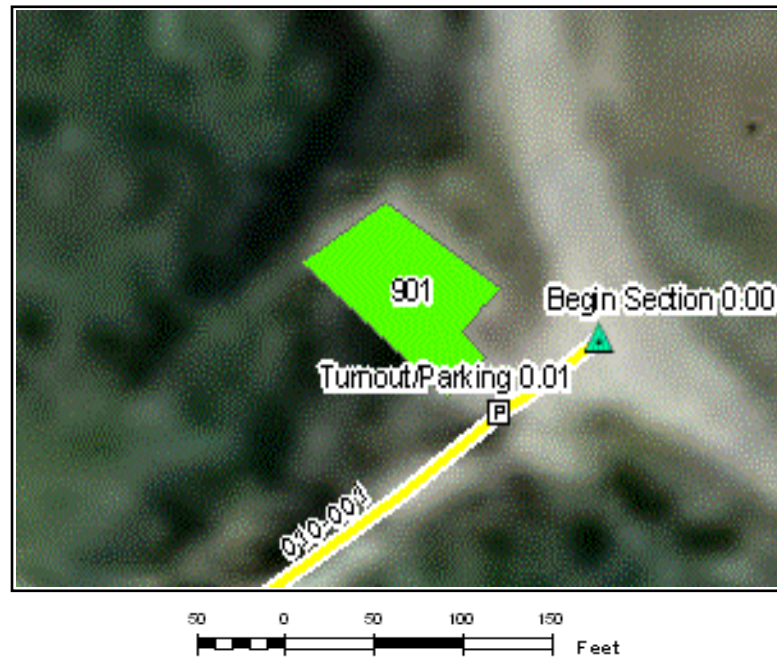
900: Headquarters Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10035868	08/19/2009	Asphalt	8,616	Good	1,700



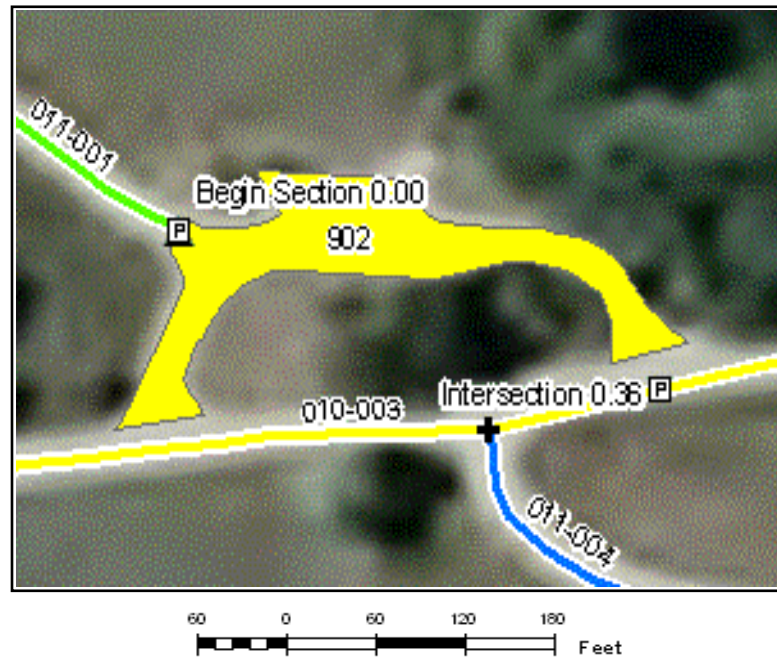
901: Entrance Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10035869	08/19/2009	Asphalt	2,749	Good	500



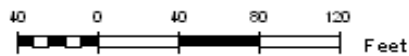
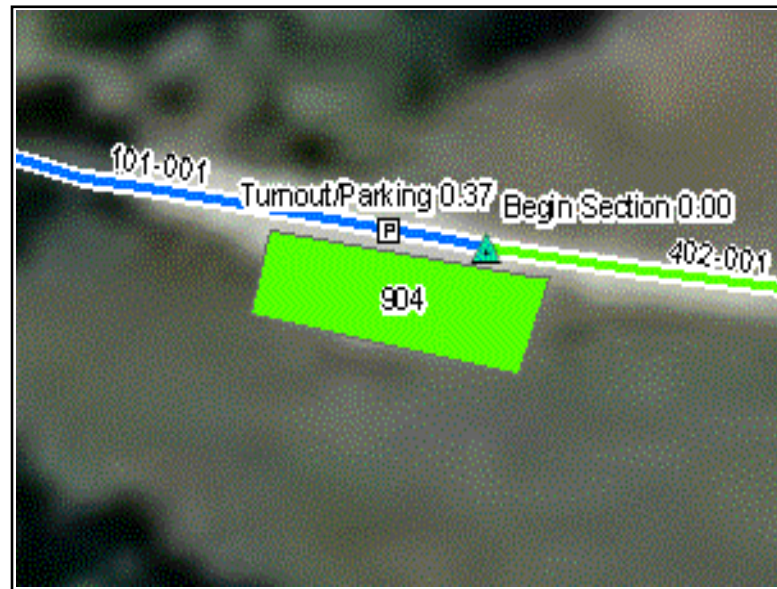
902: Kiosk Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011903	08/19/2009	Gravel	8,182	Fair	2,300



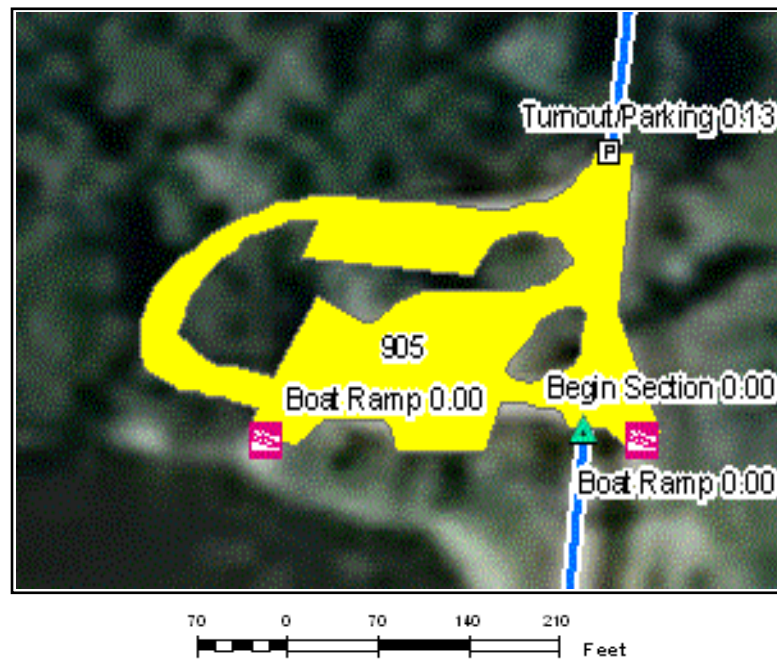
904: Dike Road Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10043751	08/19/2009	Gravel	2,952	Good	500



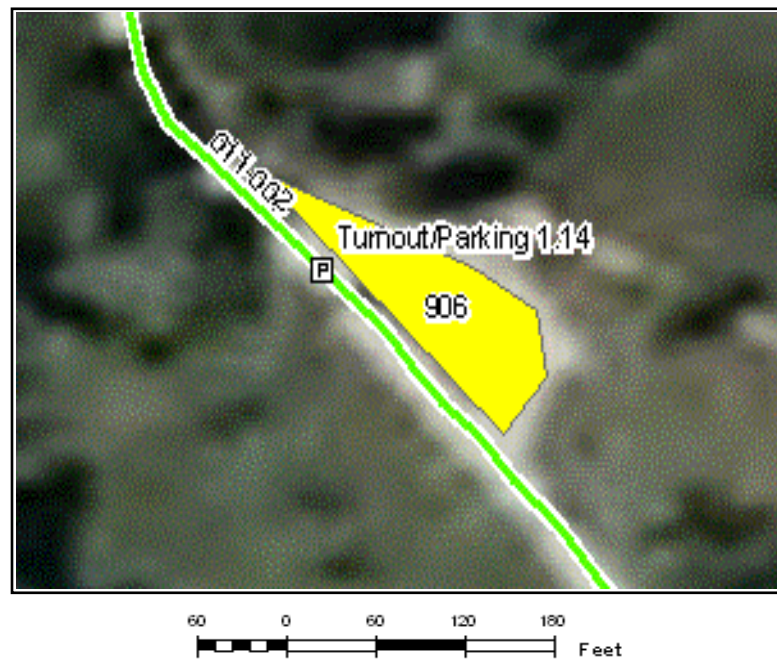
905: Boat Landing Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011886	08/19/2009	Gravel	21,769	Fair	6,200



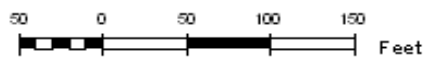
906: Prarie View Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10043752	08/19/2009	Gravel	4,817	Fair	1,400



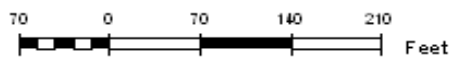
907: Observation Deck Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10043753	08/19/2009	Gravel	3,590	Good	600



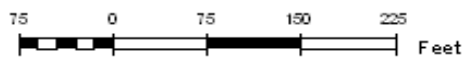
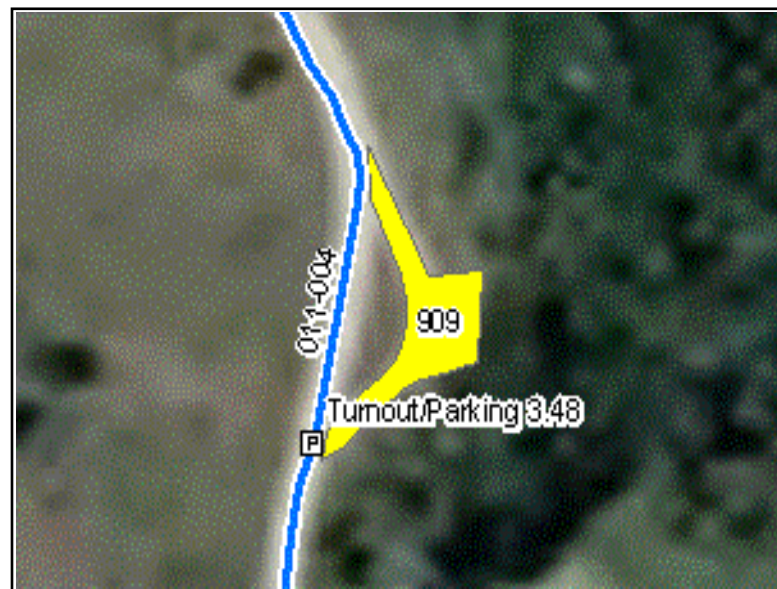
908: Overlook Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10043754	08/19/2009	Gravel	11,224	Good	1,800



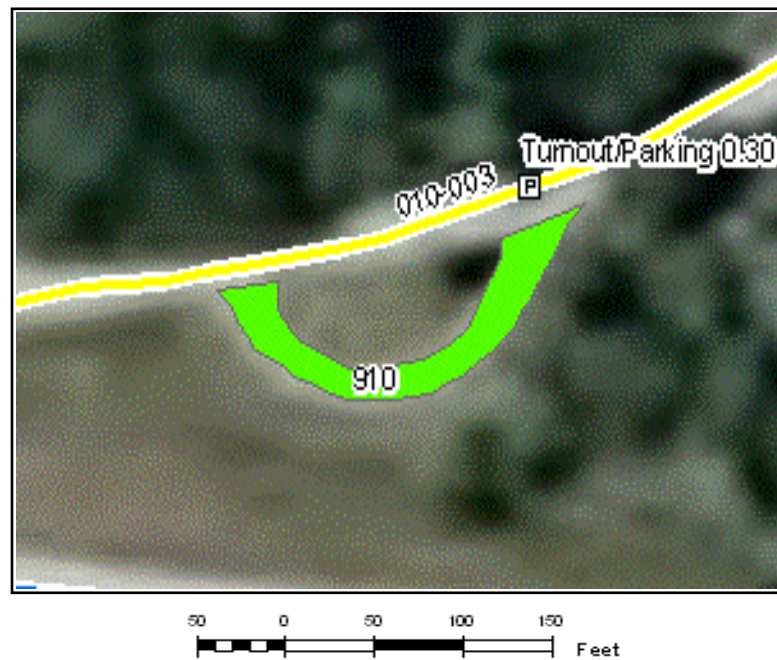
909: Trempealeau River Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10043755	08/19/2009	Gravel	3,773	Fair	1,100



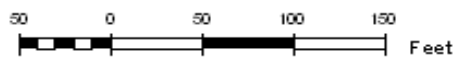
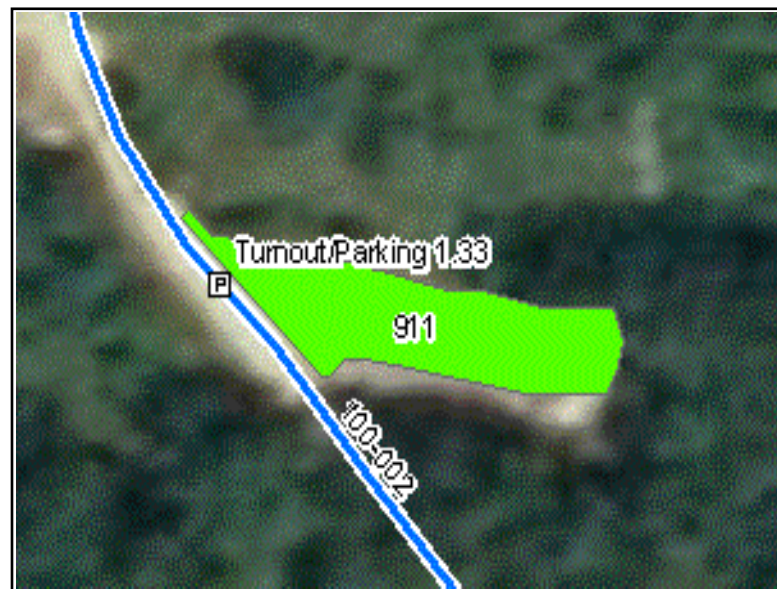
910: Entrance Road Turnaround

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011889	08/19/2009	Asphalt	2,433	Good	500



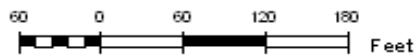
911: Marshland Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011908	08/19/2009	Asphalt	4,885	Good	1,000



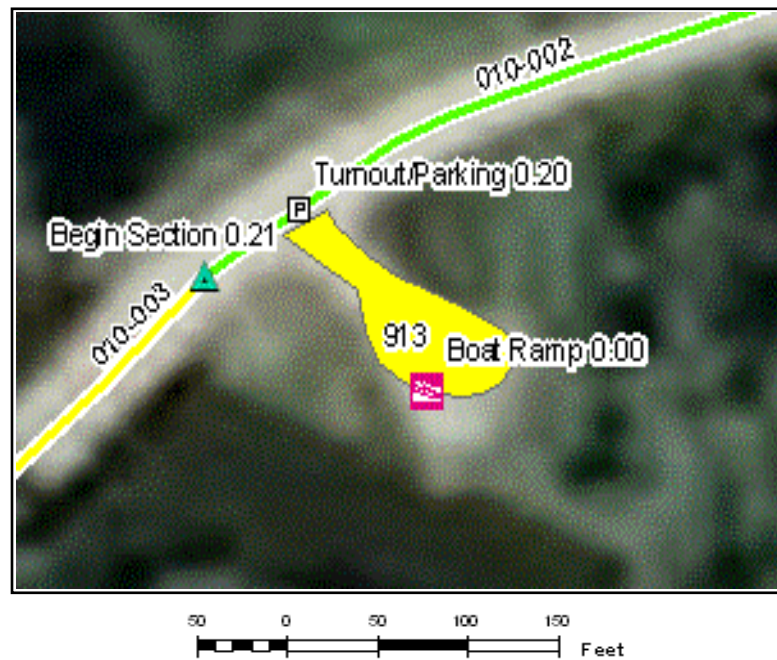
912: River Bottoms Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10044399	08/19/2009	Gravel	4,796	Good	800



913: Entrance Road Boat Ramp Parking

Asset Number	Date Visited	Surface Type	Area (Sq Ft)	Condition	Cost to Improve
10011924	08/19/2009	Gravel	2,283	Fair	700



Trempealeau Bridge Inventory					
Route #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
010	0.20	32578-000	97.9	N	N

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 010 ROUTE NAME: Entrance Road



Photo # TREM_C4_0006 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 010 ROUTE NAME: Entrance Road



Photo # TREM_C4_0007 - MP 0.04 - Begin Section 002

ROUTE NUMBER: 010 ROUTE NAME: Entrance Road



Photo # TREM_C4_0011 - MP 0.21 - Begin Section 003

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 011 ROUTE NAME: Wildlife Drive



Photo # TREM_C4_0015 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 011 ROUTE NAME: Wildlife Drive



Photo # TREM_C4_0017 - MP 0.99 - Begin Section 002

ROUTE NUMBER: 011 ROUTE NAME: Wildlife Drive



Photo # TREM_C4_0021 - MP 2.00 - Begin Section 003

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 011 ROUTE NAME: Wildlife Drive



Photo # TREM_C4_0024 - MP 3.02 - Begin Section 004

ROUTE NUMBER: 100 ROUTE NAME: Marshland Road



Photo # TREM_C4_0057 - MP 0.00 - Begin Section 002

ROUTE NUMBER: 100 ROUTE NAME: Marshland Road



Photo # TREM_C4_0054 - MP 1.07 - Begin Section 002

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 100 ROUTE NAME: Marshland Road



Photo # TREM_C4_0055 - MP 0.00 - Begin Section 003

ROUTE NUMBER: 101 ROUTE NAME: Dike Road



Photo # TREM_C4_0027 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 102 ROUTE NAME: Keips Island Road



Photo # TREM_C4_0030 - MP 0.00 - Begin Section 001

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 400 ROUTE NAME: Fire Break Road



Photo # TREM_C4_0040 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 400 ROUTE NAME: Fire Break Road



Photo # TREM_C4_0042 - MP 0.00 - Begin Section 002

ROUTE NUMBER: 401 ROUTE NAME: Keips Island Dike Road



Photo # TREM_C4_0043 - MP 0.00 - Begin Section 001

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 402 ROUTE NAME: Lower Diversion Dike Road



Photo # TREM_C4_0047 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 402 ROUTE NAME: Lower Diversion Dike Road



Photo # TREM_C4_0048 - MP 1.06 - Begin Section 001

ROUTE NUMBER: 403 ROUTE NAME: Delta Dike Road



Photo # TREM_C4_0060 - MP 0.00 - Begin Section 001

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 403 ROUTE NAME: Delta Dike Road



Photo # TREM_C4_0064 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 404 ROUTE NAME: Delta Point Trail



Photo # TREM_C4_0062 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 405 ROUTE NAME: River Bottoms Access Road



Photo # TREM_C4_0068 - MP 0.60 - Problem Area 001

FEATURES PHOTOGRAPHS

ROUTE NUMBER: 405 ROUTE NAME: River Bottoms Access Road



Photo # TREM_C4_0067 - MP 0.00 - Begin Section 002

ROUTE NUMBER: 406 ROUTE NAME: Ox Bow Dike Road



Photo # TREM_C4_0069 - MP 0.00 - Begin Section 001

ROUTE NUMBER: 407 ROUTE NAME: East End Ox Bow Dike Road



Photo # TREM_C4_0074 - 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

TABLE 1 - GENERAL FWS ROAD FUNCTIONAL CLASSIFICATION	
Class I	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.
Class II	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.
Class III	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
Class IV	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.
Class V	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