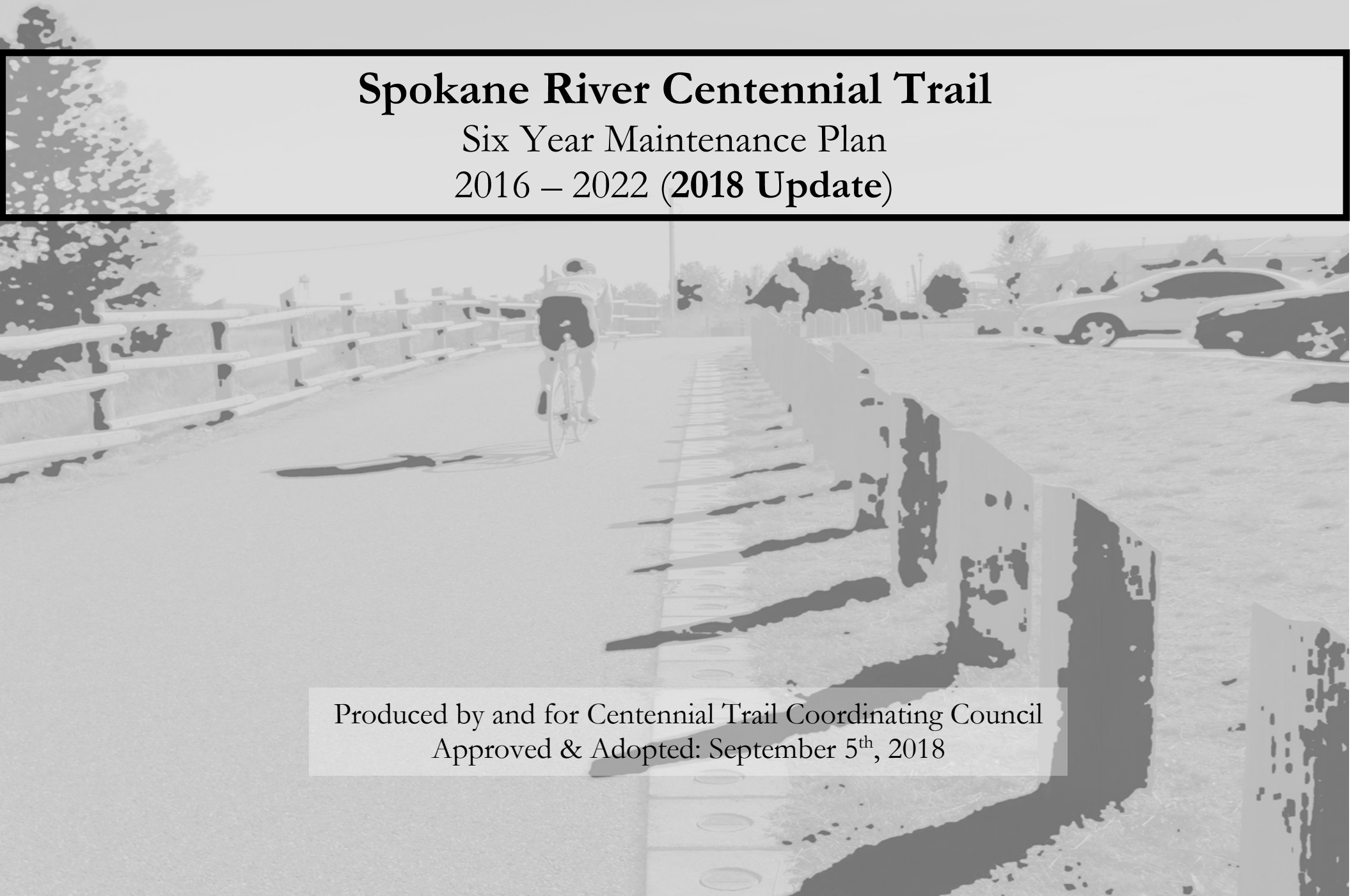
Spokane River Centennial Trail

Six Year Maintenance Plan

2016 – 2022 (**2018 Update**)



Produced by and for Centennial Trail Coordinating Council

Approved & Adopted: September 5th, 2018

Contents

Introduction

The Spokane River Centennial Trail is a 39-mile, east to west major trail that serves as the "backbone" of Spokane County's regional trail system. As its name implies, the trail's inception was in 1989 on Washington State's Centennial, when local residents and government agencies worked together to develop the region's first major trail. Today, this paved trail extends from the Idaho state line to Sontag Park / Nine Mile with imminent plans to extend to the Nine Mile Resort.

Most of the Centennial Trail was constructed between 1990 and 1995 and has experienced not only tremendous use by the public, but decades of this region's temperamental weather. As one might expect, heat, repeated freeze and thaw events, tree roots and the Spokane River have had an impact on the condition of the trail.

In 1992, Spokane County, Washington State Parks and Recreation Commission and the City of Spokane entered into the Spokane River Centennial Trail Interagency Cooperative Agreement to lay the foundation for cooperative management and maintenance of a trail that threads through several jurisdictions. In 2014, that agreement was updated to include the City of Spokane Valley, which incorporated in 2003. The 2014 update and renewal of the agreement also established the Centennial Trail Maintenance-Joint Board Fund ("653") and the Coordinating Council, which includes all parties to the Agreement, to oversee and manage the fund.

The Six Year Maintenance Plan (Maintenance Plan) will guide the Coordinating Council's decisions for pursuing and funding current and futures issues along the entire Spokane River Centennial Trail.

Chapter 1 – Development History of the Centennial Trail

Borrowing from Guadalupe Flores' history of the Centennial Trail paper, the Spokane River Centennial Trail started as a project in Spokane Valley, when in 1986, a committee formed by the Spokane Valley Chamber of Commerce proposed a 10.5-mile trail running along the Spokane River. As more agencies got involved, the project's vision expanded to include 39 miles of trail in Spokane County and another 20 miles in Idaho to Coeur D'Alene.

Land Acquisition

In 1987, the Washington State Parks and Recreation Commission and Inland Empire Paper Company (IEP) agreed to a land swap that involved trading land on Mount Spokane owned by State Parks for land along the Spokane River owned by IEP. That land along the Spokane River would provide the route for nine miles of the Centennial Trail through Spokane Valley. The remainder of the trail's 39-mile route was planned to travel through existing public lands (State Parks, City of Spokane, and Spokane County) and right-of-way.

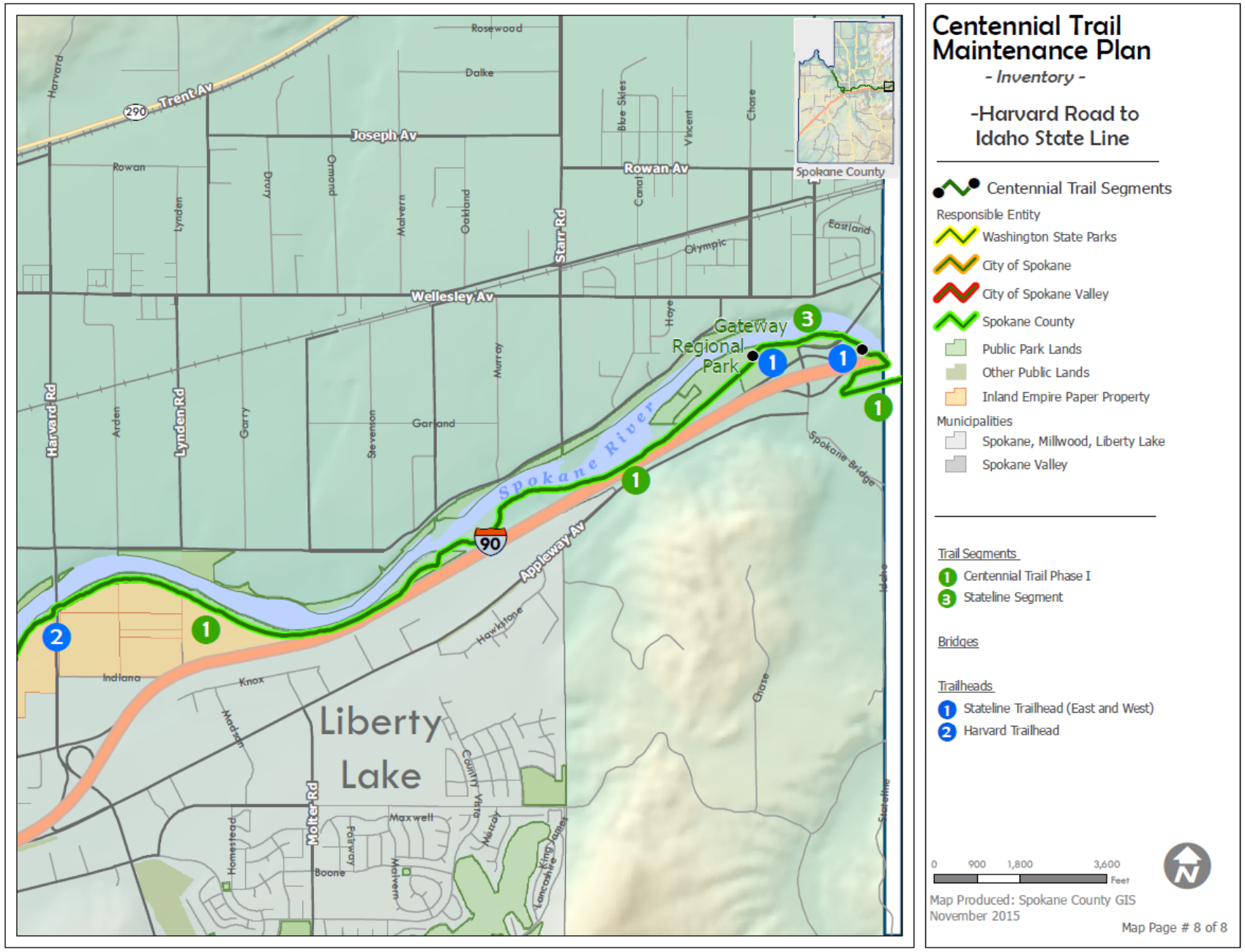
The Trail's Development History and Facility Inventory

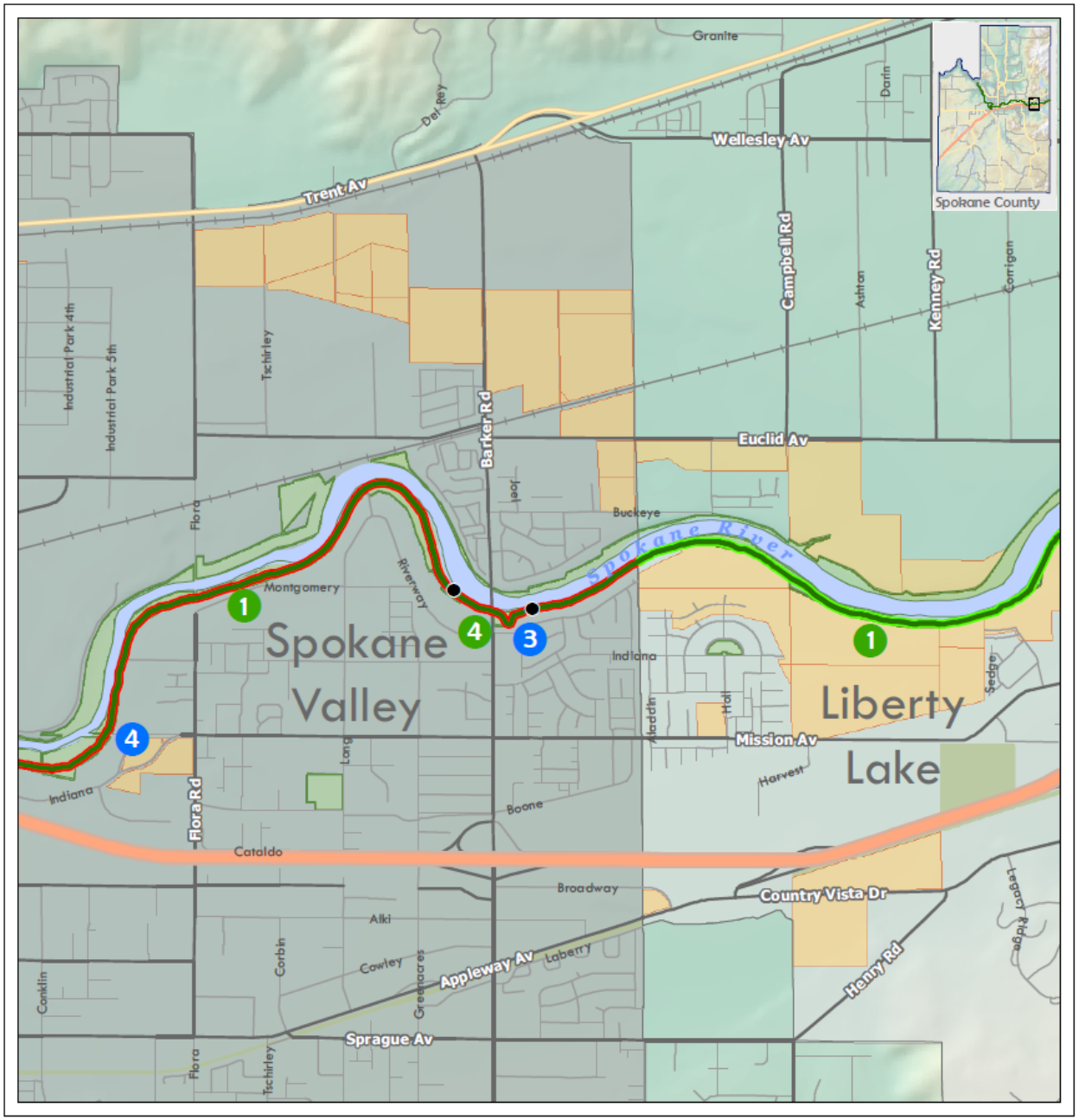
A majority of construction occurred between 1989 and 1993 with smaller "gap completion" projects occurring as funding and opportunity has allowed. The major development phases of the Centennial occurred with a federal allocation of $7.2 million and over $6 million in donated labor and equipment. Other trail development / improvement projects have occurred as funding has been available.

Map Index #	Trail Segment/ Facility Name	Year(s) Built	Managing Agency	Description / Notes
Trail Segments				
1	**Centennial Trail Phase I**	**1989 - 1992**	**Multiple**	First phase of major construction on the Centennial Trail. Spokane Valley to Stateline.
2	**Centennial Trail Phase II**	**1991 - 1994**	**Multiple**	Second phase of major construction of the Centennial Trail. City of Spokane and west to Sontag Park.
3	**Stateline Segment**	**2012**	**Spokane County**	Approximately 1/2 mile of realignment under the recently reconstructed Appleway Bridge.
4	**Barker Segment**	**1995**	**Spokane Valley**	Completed after initial Phase II construction wrapped up.
5	**Kendall Yards - Veterans Park Segment**	**2013**	**City of Spokane**	Completed as part of a developer agreement between Greenstone and the City of Spokane
6	**Bridge - Boone Avenue Segment**	**2014**	**City of Spokane**	Follows abandoned rail bed below summit avenue.
7	**Convention Center Segment**	**2014**	**City of Spokane**	This section was completely rebuilt and enhanced as part of the Convention Center Expansion.
8	**Sontag - Nine Mile Resort Extension**	**2015**	**State Parks**	Two mile extension of the trail set for completion in 2015.

Map Index #	Trail Segment/ Facility Name	Year(s) Built	Managing Agency	Description / Notes
Bridges				
1	**Denny Ashlock Bridge**	**1995**	**Spokane County**	Bridge constructed solely for the Centennial Trail.
2	**Hamilton Overpass Bridge**	**1991**	**City of Spokane**	Bridge constructed solely for the Centennial Trail.
3	**Don Kardong Bridge**	**1994**	**City of Spokane**	Older renovation of an old railroad bridge between WSU Riverpoint Campus and Gonzaga.
4	**Post Street Bridge**	**1909**	**City of Spokane**	One of the oldest bridges in Spokane, the Post Street bridge is planned to be replaced in the coming years. Currently reduced to one way vehicular traffic and trail traffic.
5	**TJ Meenach Bridge**	**1994**	**City of Spokane**	Bridge designed to accommodate the trail on one side. Narrow.
6	**Deep Creek Bridge**	**?**	**State Parks**	

Map Index #	Trail Segment/ Facility Name	Year(s) Built	Managing Agency	Description / Notes
Trailheads				
1	**Stateline Trailheads (East and West)**	**1989**	**Spokane County (Parks)**	Gravel / Asphalt
2	**Harvard Trailhead**	**1995**	**Spokane County (Parks)**	Asphalt
3	**Barker Trailhead**	**1994**	**City of Spokane Valley**	Gravel
4	**Old Mission Trailhead**	**2014**	**City of Spokane Valley**	Asphalt
5	**Sullivan Park Trailhead**	**1989**	**City of Spokane Valley**	Asphalt
6	**Mirabeau Trailheads (North & South)**	**1989**	**City of Spokane Valley**	Asphalt
7	**Islands Trailhead**	**1995**	**Spokane County (Parks)**	Asphalt
8	**Maringo ("Donkey Islands") Trailhead**	**2009**	**Spokane County (Parks) / WA State Parks**	Asphalt
9	**Boulder Beach Trailhead**	**1989**	**City of Spokane**	Asphalt
10	**John T. Shields Park Trailhead**	**1989**	**Spokane County (Parks)**	Asphalt
18	**Greene Street Trailhead**	**1989**	**City of Spokane (Parks)**	Asphalt
11	**Mission Park Trailhead**	**1989**	**City of Spokane (Parks)**	Asphalt
12	**Military Cemetery Trailhead**	**1989**	**WA State Parks**	Gravel
13	**Morin Trailhead**	**1989**	**WA State Parks**	Asphalt
14	**Wilbur Trailhead**	**1989**	**WA State Parks**	Asphalt and gravel
15	**McLellan Trailhead**	**1989**	**WA State Parks**	Asphalt
16	**Carlson Trailhead**	**2005**	**WA State Parks**	Asphalt
17	**Sontag Park Trailhead**	**1989**	**Spokane County (Parks)**	Gravel and asphalt


Centennial Trail Maintenance Plan
- Inventory -
-Harvard Road to Idaho State Line
Centennial Trail Segments
Responsible Entity
Washington State Parks
City of Spokane
City of Spokane Valley
Spokane County
Public Park Lands
Other Public Lands
Inland Empire Paper Property
Municipalities
Spokane, Millwood, Liberty Lake
Spokane Valley
Trail Segments
1 Centennial Trail Phase I
3 Stateline Segment
Bridges
Trailheads
1 Stateline Trailhead (East and West)
2 Harvard Trailhead
0 900 1,800 3,600 Feet
Map Produced: Spokane County GIS
November 2015
Map Page # 8 of 8
Spokane County
Rosewood
Dalke
Trent Av
Joseph Av
Rowan Av
Wellesley Av
Gateway Regional Park
Spokane River
Appleway Av
Liberty Lake
Indiana
Knox
Maxwell
Boone
Harvard Rd
Lynden Rd
Molter Rd
Garland
Stateline
Idaho



Centennial Trail Maintenance Plan

- Inventory -

-Conklin Road to Harvard Road

Centennial Trail Segments

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

Trail Segments

- 1 Centennial Trail Phase I
- 4 Barker Segment

Bridges

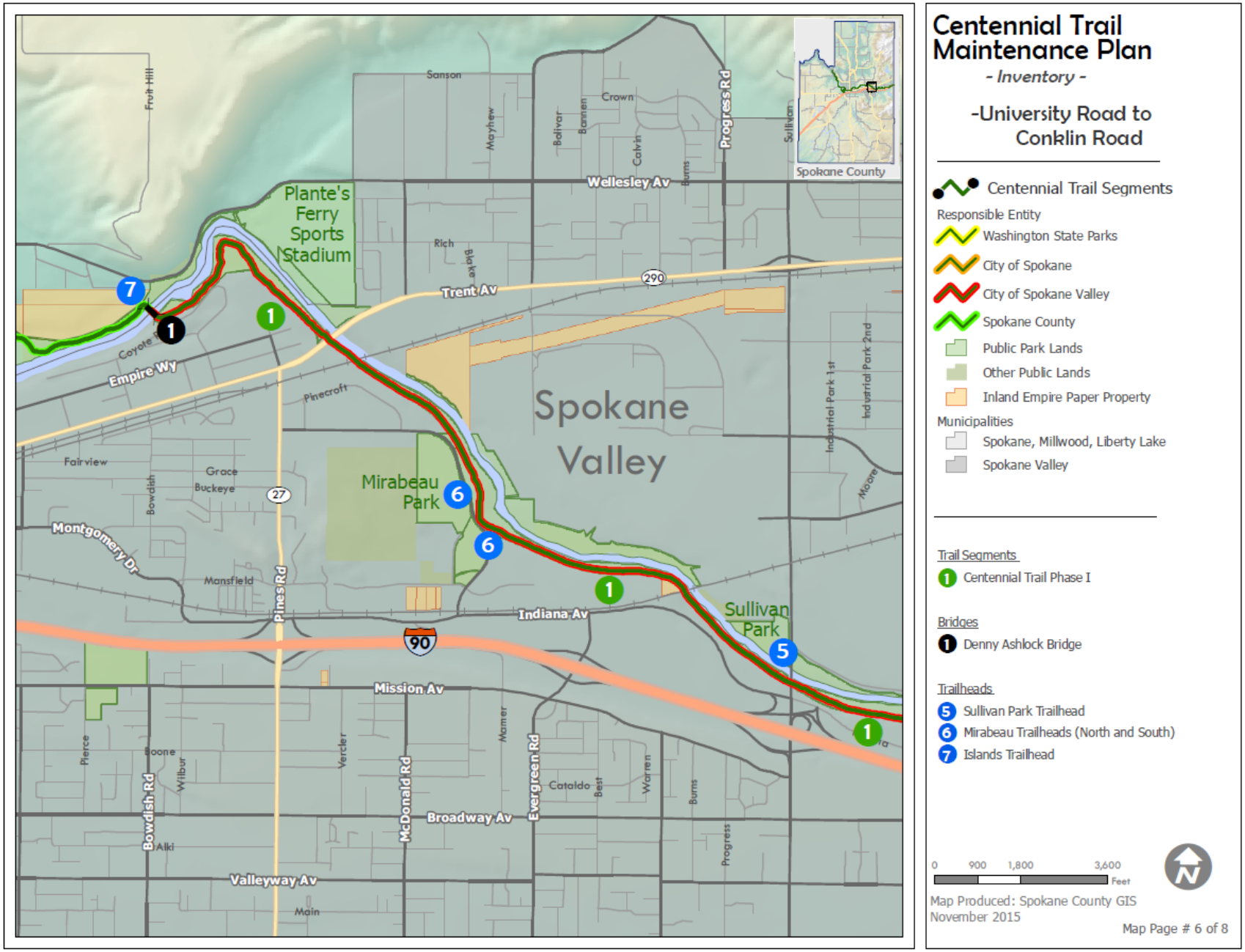
Trailheads

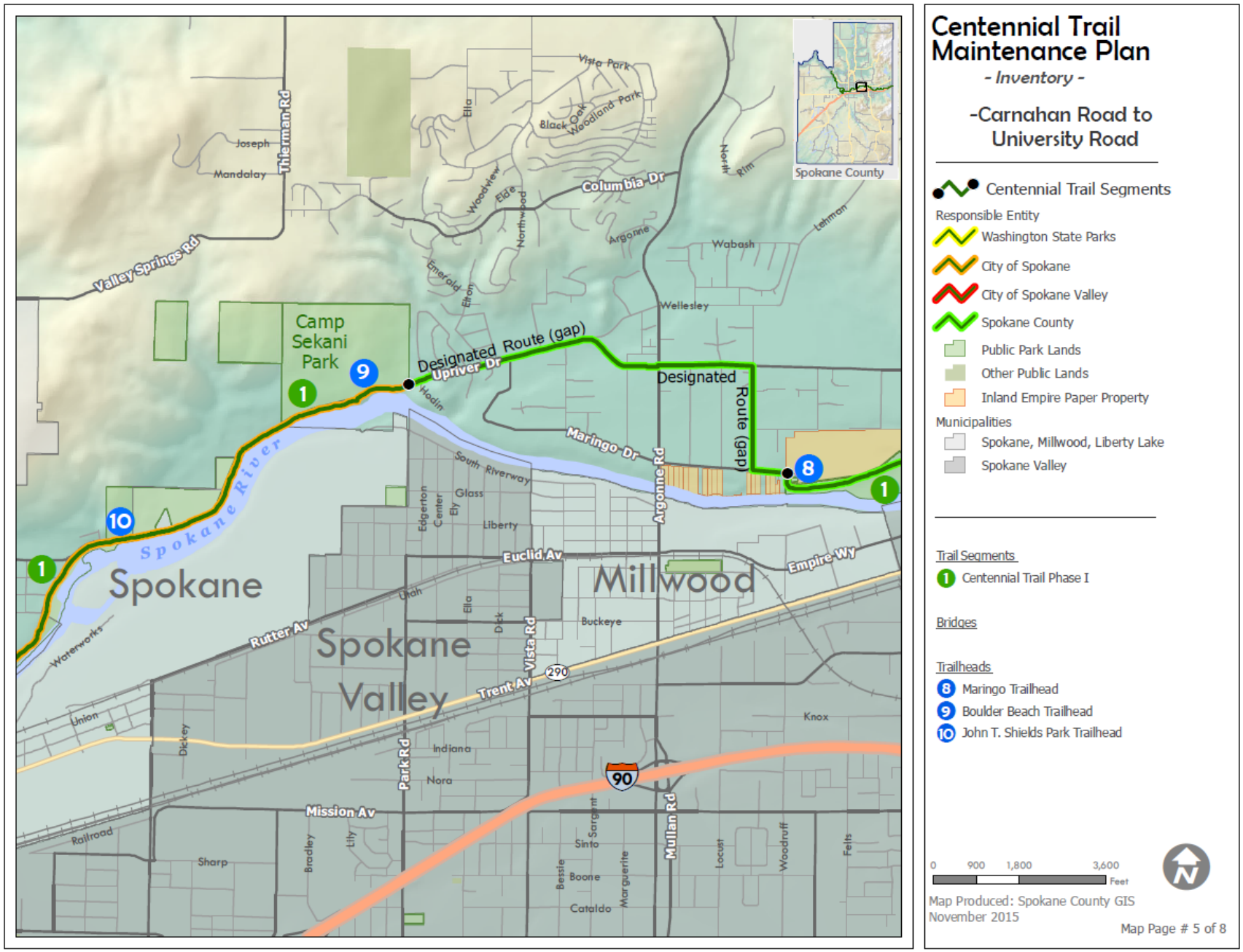
- 2 Harvard Trailhead
- 3 Barker Trailhead
- 4 Old Mission Trailhead

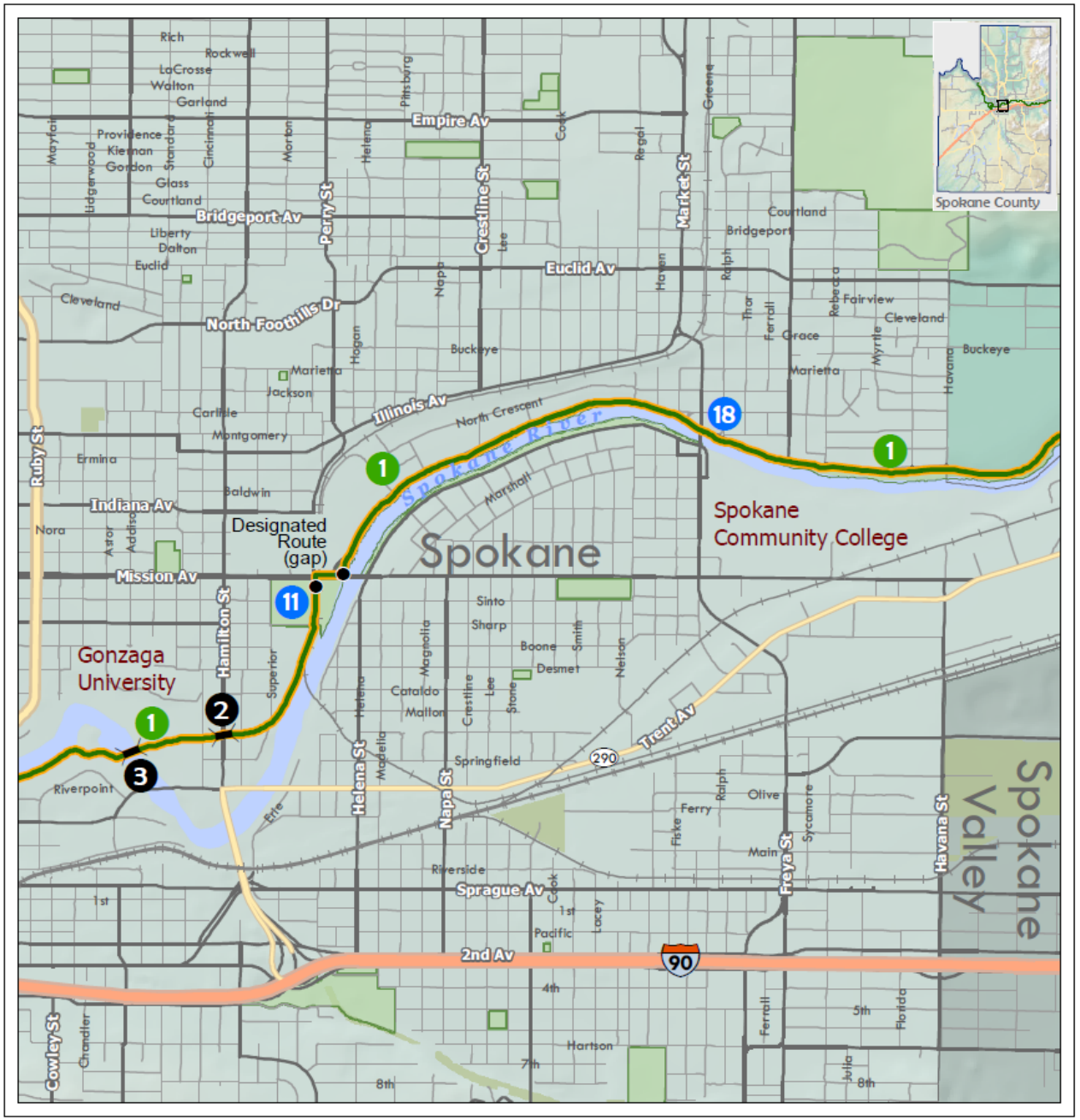
0 900 1,800 3,600 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 7 of 8


Centennial Trail Maintenance Plan
- Inventory -
-University Road to Conklin Road
Spokane County
Centennial Trail Segments
Responsible Entity
Washington State Parks
City of Spokane
City of Spokane Valley
Spokane County
Public Park Lands
Other Public Lands
Inland Empire Paper Property
Municipalities
Spokane, Millwood, Liberty Lake
Spokane Valley
Trail Segments
1 Centennial Trail Phase I
Bridges
1 Denny Ashlock Bridge
Trailheads
5 Sullivan Park Trailhead
6 Mirabeau Trailheads (North and South)
7 Islands Trailhead
0 900 1,800 3,600
Feet
Map Produced: Spokane County GIS
November 2015
Map Page # 6 of 8
Spokane Valley
Plante's Ferry Sports Stadium
Mirabeau Park
Sullivan Park
Wellesley Av
Trent Av
Empire Wy
Pinecroft
Indiana Av
Mission Av
Broadway Av
Valleyway Av
Montgomery Dr
Mansfield
Fairview
Grace
Buckeye
Pines Rd
McDonald Rd
Evergreen Rd
Bowdish Rd
Progress Rd
Sanson
Crown
Rich
Cataldo
Alki
Main
290
27
90


Centennial Trail Maintenance Plan
- Inventory -
-Carnahan Road to University Road
Spokane County
Centennial Trail Segments
Responsible Entity
Washington State Parks
City of Spokane
City of Spokane Valley
Spokane County
Public Park Lands
Other Public Lands
Inland Empire Paper Property
Municipalities
Spokane, Millwood, Liberty Lake
Spokane Valley
Trail Segments
1 Centennial Trail Phase I
Bridges
Trailheads
8 Maringo Trailhead
9 Boulder Beach Trailhead
10 John T. Shields Park Trailhead
0 900 1,800 3,600
Feet
Map Produced: Spokane County GIS
November 2015
Map Page # 5 of 8
Camp Sekani Park
Designated Route (gap)
Upriver Dr
Designated Route (gap)
Maringo Dr
Columbia Dr
Valley Springs Rd
Thierman Rd
Joseph
Mandalay
Vista Park
Black Oak
Woodland Park
Ella
Woodview
Elde
Northwood
Argonne
Wabash
Lehman
North Rim
Wellesley
Emerald
Elton
Hoolin
South Riverway
Glass
Liberty
Edgerton
Center
Ely
Argonne Rd
Euclid Av
Empire Wy
Millwood
Buckeye
Spokane River
Spokane
Waterworks
Rutter Av
Utah
Ella
Dick
Vista Rd
Spokane Valley
Trent Av
290
Union
Dickey
Park Rd
Indiana
Nora
90
Mission Av
Railroad
Sharp
Bradley
Lily
Sinto
Sargent
Boone
Bessie
Cataldo
Marguerite
Mullan Rd
Locust
Woodruff
Felts
Knox



Centennial Trail Maintenance Plan

- Inventory -

-Division Street to Carnahan Road

Centennial Trail Segments

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

Trail Segments

- 1 Centennial Trail Phase I

Bridges

- 2 Hamilton Overpass Bridge
- 3 Don Kardong Bridge

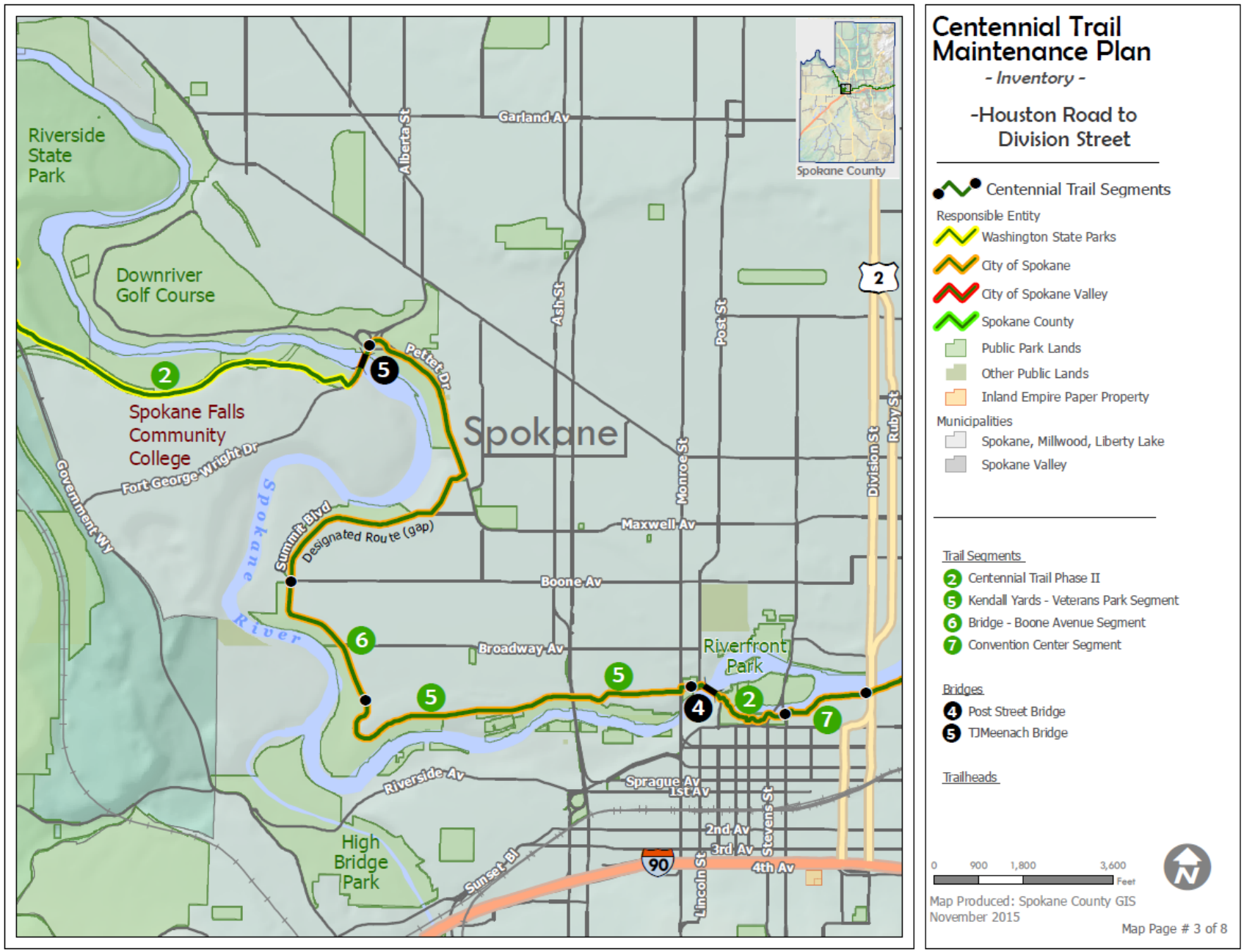
Trailheads

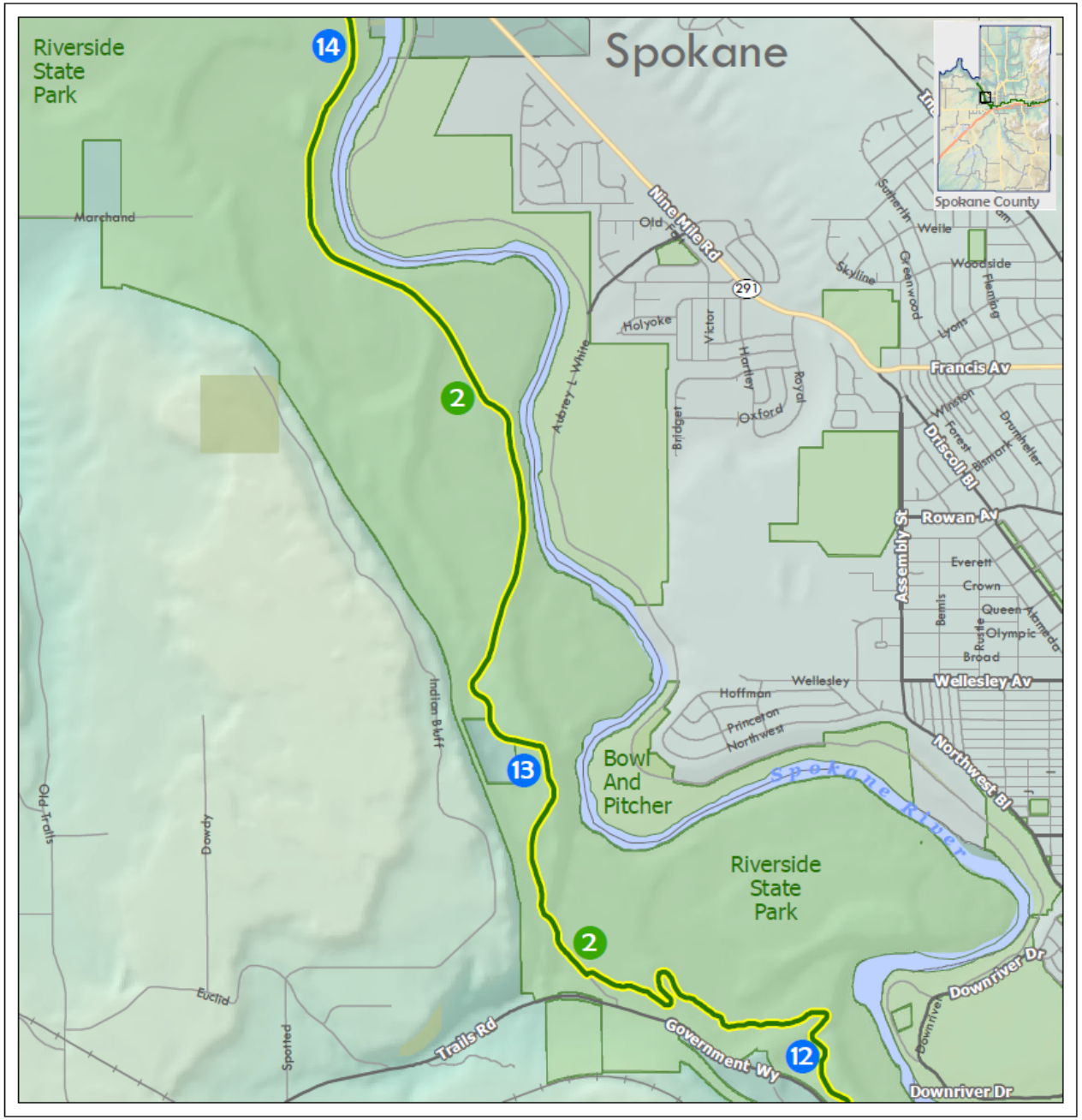
- 11 Mission Park Trailhead
- 18 Greene St. Trailhead

0 900 1,800 3,600 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 4 of 8


Centennial Trail Maintenance Plan
- Inventory -
-Houston Road to Division Street
Centennial Trail Segments
Responsible Entity
Washington State Parks
City of Spokane
City of Spokane Valley
Spokane County
Public Park Lands
Other Public Lands
Inland Empire Paper Property
Municipalities
Spokane, Millwood, Liberty Lake
Spokane Valley
Trail Segments
2 Centennial Trail Phase II
5 Kendall Yards - Veterans Park Segment
6 Bridge - Boone Avenue Segment
7 Convention Center Segment
Bridges
4 Post Street Bridge
5 TJMeenach Bridge
Trailheads
0 900 1,800 3,600 Feet
Map Produced: Spokane County GIS
November 2015
Map Page # 3 of 8
Riverside State Park
Downriver Golf Course
Spokane Falls Community College
Fort George Wright Dr
Government Wy
Spokane River
Summit Blvd
Designated Route (gap)
Pettet Dr
Spokane
Garland Av
Alberta St
Ash St
Post St
Monroe St
Division St
Ruby St
Maxwell Av
Boone Av
Broadway Av
Riverfront Park
Riverside Av
High Bridge Park
Sunset Bl
Sprague Av
1st Av
2nd Av
3rd Av
4th Av
Stevens St
Lincoln St
90
Spokane County



Centennial Trail Maintenance Plan

- Inventory -

-Wenger Road to Houston Road

Centennial Trail Segments

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

Trail Segments

- 2 Centennial Trail Phase II

Bridges

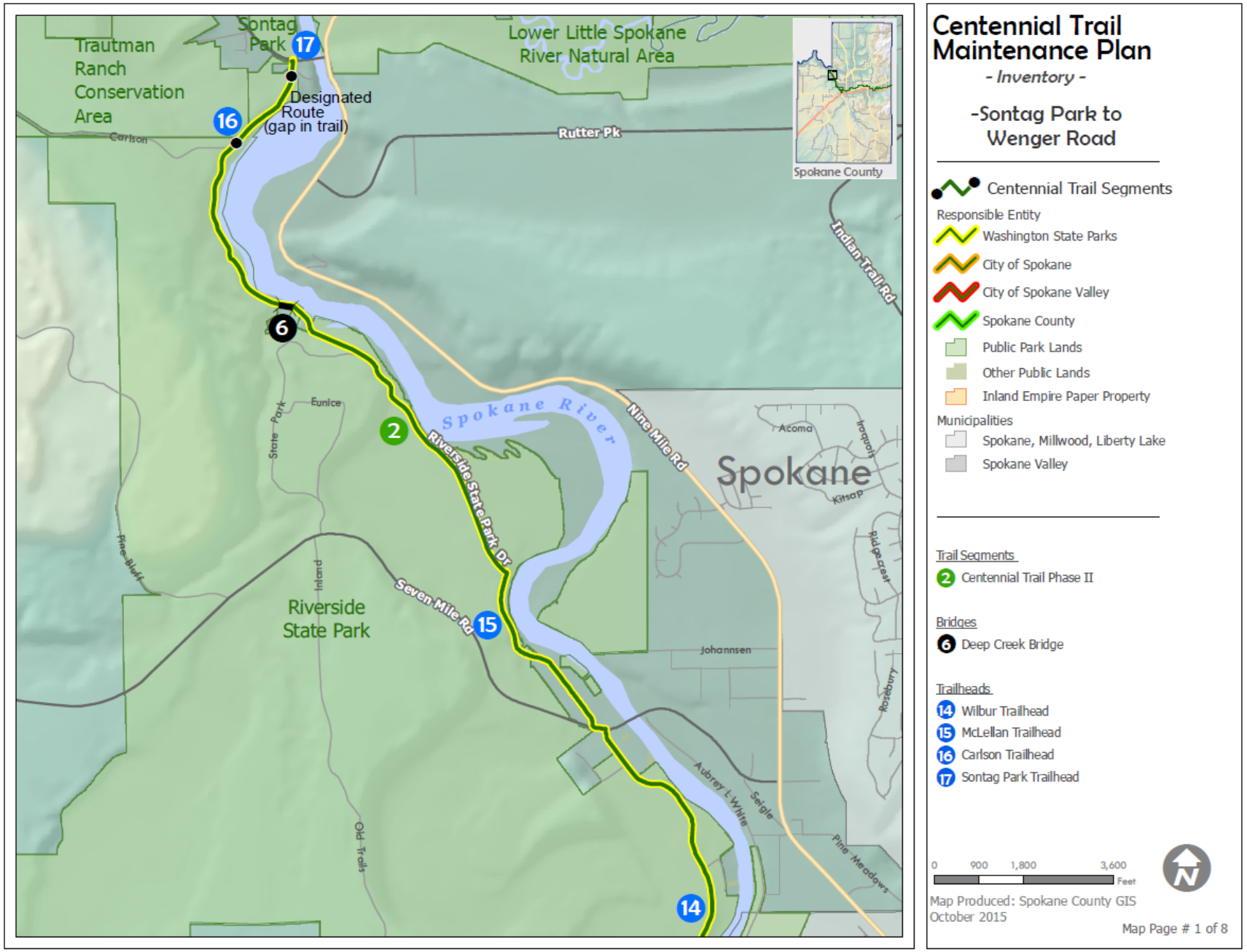
Trailheads

- 12 Military Cemetery Trailhead
- 13 Morin Trailhead
- 14 Wilbur Trailhead

0 900 1,800 3,600 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 2 of 8


Centennial Trail Maintenance Plan
- Inventory -
-Sontag Park to Wenger Road
Sontag Park
17
Trautman Ranch Conservation Area
Lower Little Spokane River Natural Area
Designated Route (gap in trail)
16
Carlson
Rutter Pk
Spokane County
Indian Trail Rd
6
Eunice
State Park
2
Spokane River
Riverside State Park Dr
Nine Mile Rd
Acoma
Iroquois
Spokane
Kitsap
Ridgecrest
Pine Bluff
Inland
Seven Mile Rd
15
Riverside State Park
Johannsen
Rosebury
Aubrey L White
Seigle
Pine Meadows
Old Trails
14
Centennial Trail Segments
Responsible Entity
Washington State Parks
City of Spokane
City of Spokane Valley
Spokane County
Public Park Lands
Other Public Lands
Inland Empire Paper Property
Municipalities
Spokane, Millwood, Liberty Lake
Spokane Valley
Trail Segments
2 Centennial Trail Phase II
Bridges
6 Deep Creek Bridge
Trailheads
14 Wilbur Trailhead
15 McLellan Trailhead
16 Carlson Trailhead
17 Sontag Park Trailhead
0 900 1,800 3,600
Feet
N
Map Produced: Spokane County GIS
October 2015
Map Page # 1 of 8

Chapter 2 - Goals and Policies of the Centennial Trail Coordinating Council

Goal 1 – Maintain the Centennial Trail in a safe, sustainable condition for trail users to use and enjoy.

Policy 1.1 – The Coordinating Council shall utilize the Six Year Maintenance Plan to prioritize and implement trail repair and enhancement projects.

Policy 1.2 – Trail conditions deemed an imminent safety concern by a Coordinating Council member and inspected, verified and confirmed by the member's Risk Manager or similar position should be prioritized for immediate repair, pending adequate funds.

Policy 1.3 – The Coordinating Council should assess the entire Centennial Trail's condition every three (3) to five (5) years or as deemed necessary by the Council.

Policy 1.4 – The Coordinating Council should utilize public input to assist in guiding repairs and the design of trail repairs and/or enhancements.

Policy 1.5 – The Coordinating Council should consider trail use (e.g. trail counter data) when prioritizing trail repair and enhancement projects.

Policy 1.6 – To keep long-term maintenance of the trail sustainable for the Coordinating Council, any overlay should be phased in over several (3-5) years to avoid needing to overlay the entire trail at the same time in the future as funding for an overlay project would conceivably be available over several years.

Policy 1.7 – The Coordinating Council, when appropriate, shall provide input and advocate for improvements to the trail, including "gap completions" that will enhance safety and enhance user experience.

Policy 1.8 – The Friends of the Centennial Trail are a vital component to the health and well-bring of the Centennial Trail. The Coordinating Council members shall support and work with the Friends where resources allow and where a member's role is appropriate.

Goal 2 – Sustain the Centennial Trail Maintenance-Joint Board Fund (Fund) to effectively repair and enhancement the Centennial Trail.

Policy 2.1 – The Coordinating Council should strive to maintain a reserve within the Centennial Trail Maintenance-Joint Board Fund (Fund) including, but not limited to assist in completing unforeseen trail repairs, to help obtain outside grant funding

(through providing matching funds) to complete repairs/enhancements, and to help Coordinating Council members complete larger, more expensive substantial repairs and enhancements.

Policy 2.2 – The Coordinating Council should encourage members to pursue outside grant funding when possible to help lessen the financial impact of projects to the Fund.

Policy 2.3 – When considering alternatives for repairing a particular trail condition, the Coordinating Council should consider a long-term solution if the condition is perennial or semi-perennial. Example:the trail is located near a cut bank on the Spokane River where the potential for future erosion is high. A reroute, while more expensive initially, may be more cost-effective in the long-run.

Policy 2.4 – As a condition of approval for a development/subdivision, the Coordinating Council may advocate for / request trail enhancements, additional public access points or other improvements if the development/subdivision as proposed affects the Centennial Trail.

Policy 2.5 – Encourage jurisdictions benefitting from the Centennial Trail to join the Centennial Trail Interagency Cooperative Agreement and/or contribute to the Joint Board Fund

Goal 3 – Enhance the user-experience on the Centennial Trail to benefit residents and visitors, and to increase the positive economic impact the Trail has on the regional economy.

Policy 3.1 –Support efforts and projects to improve, enhance, and make consistent signage along the Centennial Trail and wayfinding signage to the trail.

Policy 3.2 –Support efforts and projects to improve access to the Centennial Trail. Examples could include improvements to existing trailhead parking areas, improvements to maps, spur trails that connect adjacent neighborhoods and business centers to the Centennial Trail and connecting other regional trails with the Centennial Trail.

Policy 3.3 – Support projects and/or efforts that raise awareness of the Centennial Trail locally, regionally and nationally.

Policy 3.4 – Coordinating Council shall approve all site furniture (e.g. benches) and signage installed along the Centennial Trail to ensure a consistent, quality experience for trail users.

Policy 3.5 – Landscape and habitat enhancements (beautification), where appropriate, should be considered as part of trail repair and enhancement projects.

Goal 4 – Foster the connection between the Centennial Trail, the community, the Spokane River, and Spokane County's quality of life.

Policy 4.1 – Where resources allow, consider adding elements to the Centennial Trail to educate and connect the community with the Spokane River and Spokane County's quality of life.

Policy 4.2 – When considering art installations along the Centennial Trail, a consistent theme should be consider that highlights Spokane County's quality of life, the Spokane River, and the Centennial Trail.

Policy 4.3 – The Coordinating Council should encourage and support volunteer activities that help maintain and enhance the Centennial Trail and Spokane River while promoting the community's involvement in the trail.

Chapter 3 – Six Year Maintenance Investment Plan

In 2014, Spokane County Engineering and Roads staff assessed the entire 37 miles of the Spokane River Centennial Trail. The assessment "highlighted" specific issues by mile post needing repair in the near future to enhance safety and prolong the life of the pavement. The assessment did not assess trail gaps. Engineering and Roads scored the trail condition for alligator features, longitudinal cracking, transverse cracking, needed patches, corrugations and trail edge issues.

Surface Repair and Asphalt Overlay Projects

Utilizing this assessment, six "umbrella" surface repair projects were identified (further described on the following pages) that address maintenance issues identified by the Engineering and Roads' assessment as needing immediate repairs.. In 2017, all six projects were completed along the entire trail with an asphalt overlay over a section of the trail which utilized an aging concrete road bed near Stateline.

The surface repair projects were prescribed by Spokane County Public Works and timed in the Maintenance Investment Plan (MIP) to prepare the trail for an asphalt overlay. The asphalt overlay has been split into three phases of 12 miles each, excluding newer portions of the trail such as the Nine Mile extension, Kendall Yards and Convention Center segments. The asphalt overlay is designed to extend the surface life of the trail for another 15+ years and includes a 1.5" asphalt overlay with additional gravel brought in to raise the elevation of the shoulders accordingly.

Centennial Trail Six Year Maintenance Investment Plan*

Plan Year	2016	2017	2018	2019	2020	2021
Projects	**Repair Projects* 1 - 6**	**Repair Projects 1-6**	**No projects specified**	**No projects specified**	**No projects specified**	**No projects specified - Phase 1 Asphalt Overlay in 2022**
***Repair Project 1-6 Detail**	**Project 1; MP .86 - 1.17. Details: Crack seal concrete panels.** **Completed**	**Project 2; MP 3.6 - 5.6 Details: Repair corrugations and bulges.** **Completed**	**Project 3; MP 3.8 - 6.8. Details: Repair tree root damage, eliminate debris / rock washouts onto trail, repair corrugations, and repair several washouts along the trail.** **Completed**	**Project 4; MP 10.6 - 12.7. Details: Repair bulges, humps, and tree root damage on the trail. Joint fill on Denny Ashlock Bridge. Eliminate rocks washing onto trail.** **Completed**	**Project 5; MP 16.8 - 20.1. Details: Repair corrugations, waves, and humps along the entire section.** **Completed**	**Project 6; MP 29.1-31.9. Details: Repair large surface gaps in the trail from previous failed crack repair project.** **Completed**

*****To implement this schedule, the Coordinating Council would pursue taking out a short-term loan from Spokane County Treasurer's Office for each phase of the asphalt overlay work beginning in 2017 unless alternative unanticipated funding sources materialize. See next page for more detail.

Joint Board Fund Financing Plan - "Alternative A"*

Year	Beginning JBF Balance + interest accrued (1/1)	Anticipated Revenue	Additional Revenue (e.g. allocation / grant)	Treasurer's Loan Amount	*Incurred* or Anticipated Expenses**	End of Year JBF Balance	Notes
2015	**$0**	**$80,000**			**$0**	**$80,000**	
2016	**$81,752**	**$80,000**	**$250,000**		**$0**	**$411,752**	Special Capital Allocation from State Parks
2017	**$413,504**	**$80,000**			***$352,734***	**$140,770**	Surface Repairs Along the Entire Trail
2018	**$143,853**	**$80,000**				**$223,853**	
2019	**$228,755**	**$100,000**				**$328,755**	
2020	**$335,955**	**$100,000**				**$435,955**	
2021	**$445,503**	**$100,000**				**$545,503**	
2022	**$557,449**	**$100,000**			**$600,000**	**$57,449**	Phase 1 Overlay - 12 miles of trail 1.5" Asphalt Overlay with shoulder work - $600,000***
2023	**$58,707**	**$100,000**				**$158,707**	
2024	**$162,183**	**$100,000**				**$262,183**	
2025	**$267,925**	**$100,000**				**$367,925**	
2026	**$375,982**	**$100,000**				**$475,982**	

*Subject to approval by Spokane County Board of County Commissioners Resolution. This is an "alternative option" and may be deviated from by the Coordinating Council should other options and alternatives be favored.

**Anticipated Expenses includes interest payments.

Centennial Trail Maintenance Plan

Maintenance Repairs Projects 1 & 2

Maintenance Project Extent

Centennial Trail

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

Maintenance Project

1 Project 1 MP .86 - 1.17

Crack seal concrete panels.

Estimated Cost:

2 Project 2 MP 3.6 - 5.6

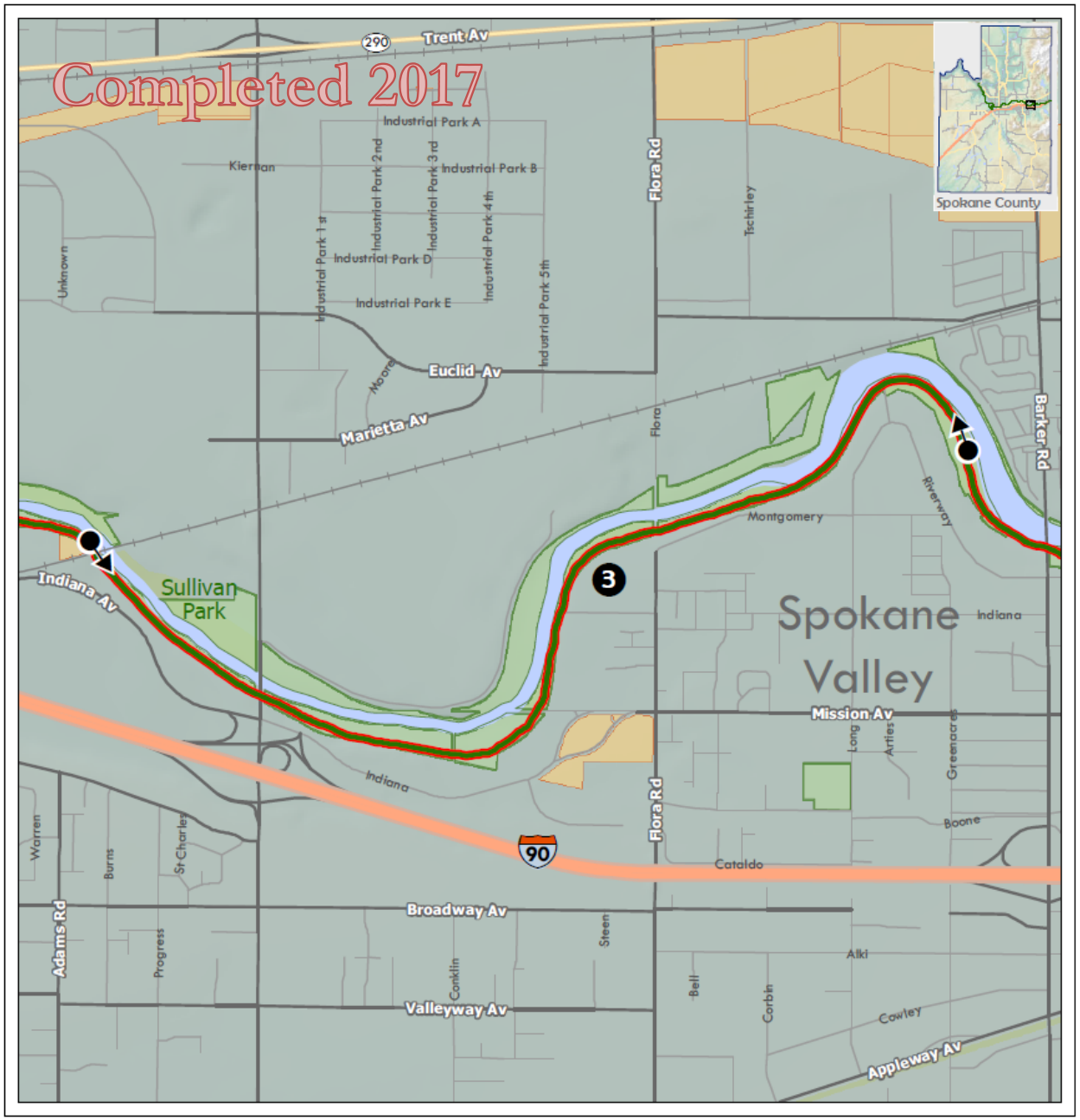
Repair corrugations and bulges.

Estimated Cost:

0 1,125 2,250 4,500 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 5 of 5



Centennial Trail Maintenance Plan

Maintenance Repairs Project 3

Maintenance Project Extent
Centennial Trail Segments

Responsible Entity
- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities
- Spokane, Millwood, Liberty Lake
- Spokane Valley

Maintenance Project

3 Project 3 MP 6.8 - 9.8

Repair tree root damage, eliminate debris/rock wash out on trail, repair corrugations, and repair several washouts.

Estimated Cost:

0 700 1,400 2,800 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 4 of 5

Centennial Trail Maintenance Plan

Maintenance Repairs Project 4

- Maintenance Project Extent
- Centennial Trail Segments

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

Maintenance Project

4 Project 4 MP 10.6 - 12.7

Repair bulges, humps, and tree root damage on trail. Joint fill on Denny Ashlock Bride. Eliminate rocks washing onto trail.

Estimated Cost:

0 700 1,400 2,800 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 3 of 5

Centennial Trail Maintenance Plan

Maintenance Repairs Project 5

- Maintenance Project Extent
- Centennial Trail Segments

Responsible Entity
- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities
- Spokane, Millwood, Liberty Lake
- Spokane Valley

Maintenance Project

5 Project 5 MP 16.8 - 20.1

Repair corrugations, waves, and humps along entire section.

Estimated Cost:

0 900 1,800 3,600 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 2 of 5

Centennial Trail Maintenance Plan

Maintenance Repairs Project 6

Maintenance Project Extent
Centennial Trail Segments

Responsible Entity
- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities
- Spokane, Millwood, Liberty Lake
- Spokane Valley

Maintenance Project

6 Project 6 MP 29.1 - 31.9

Repair large surface gaps in trail from previous failed crack repair project.

Estimated Cost:

0 700 1,400 2,800 Feet

Map Produced: Spokane County GIS
November 2015

Map Page # 1 of 5

Centennial Trail Maintenance Plan

MP 1 - 12
Phase 1
Asphalt Overlay Project

- Maintenance Project Extent
- Centennial Trail

Responsible Entity
- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities
- Spokane, Millwood, Liberty Lake
- Spokane Valley

1 Asphalt Overlay Project Phase 1

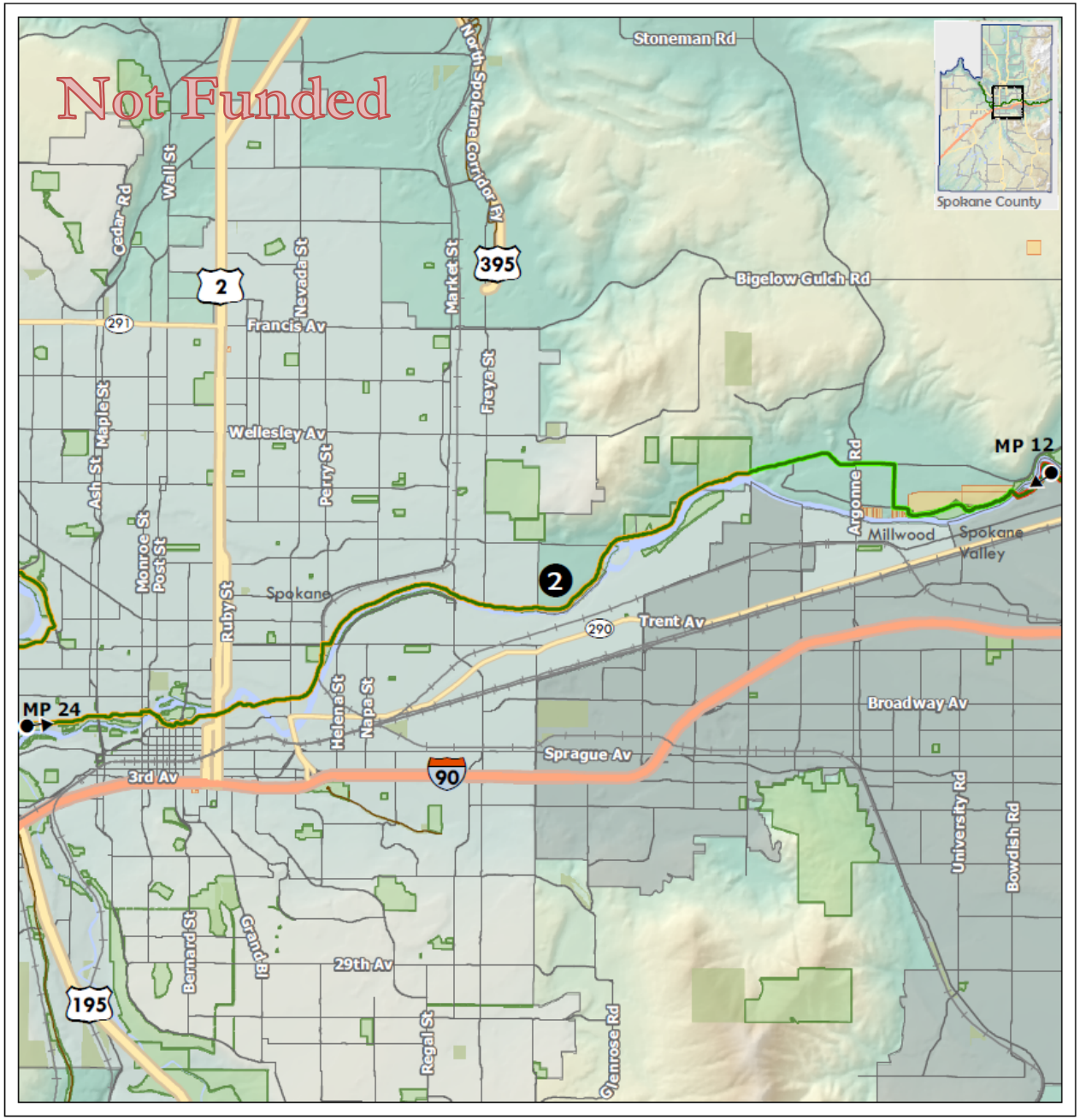
Detail: 1.5” Overlay

Estimated Cost: $600,000

0 0.5 1 2 Miles

Map Produced: Spokane County GIS
December 2015

Map Page # 1 of 3



Centennial Trail Maintenance Plan

MP 12 - 24
Phase 2
Asphalt Overlay Project

Asphalt Overlay Extent

Centennial Trail

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

2 Asphalt Overlay Project Phase 2

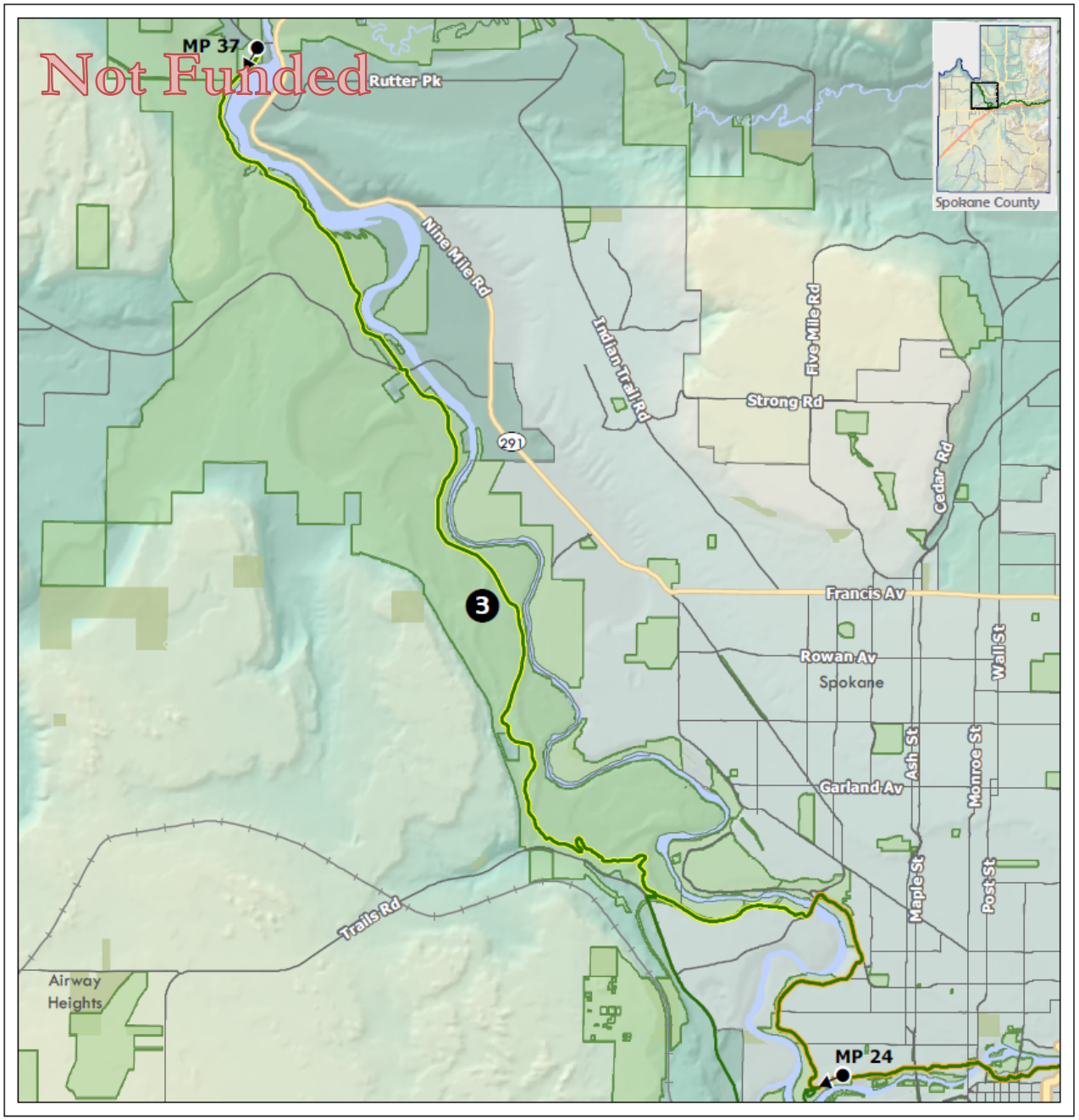
Detail: 1.5” Overlay

Estimated Cost: Unknown

0 0.5 1 2 Miles

Map Produced: Spokane County GIS
December 2015

Map Page # 2 of 3



Centennial Trail Maintenance Plan

MP 24 - 36
Phase 3
Asphalt Overlay Project

Asphalt Overlay Extent

Centennial Trail

Responsible Entity

- Washington State Parks
- City of Spokane
- City of Spokane Valley
- Spokane County
- Public Park Lands
- Other Public Lands
- Inland Empire Paper Property

Municipalities

- Spokane, Millwood, Liberty Lake
- Spokane Valley

3 Asphalt Overlay Project Phase 3

Detail: 1.5” Overlay

Estimated Cost: Unknown

0 0.5 1 2 Miles

Map Produced: Spokane County GIS
December 2015

Map Page # 3 of 3

Implementation of Six Year Maintenance Investment Plan

The Coordinating Council, utilizing this plan and schedule found on page 18, shall: review the Joint Board Fund Balance and take the identified steps below to implement maintenance projects:

Step 1: Review the Joint Board Fund Balance and determine if the project scheduled in the current year can be completed given existing resources. The Coordinating Council may choose to pursue additional projects if the fund balance is sufficient or adjust the Maintenance Investment Plan to more effectively and efficiently utilize existing funds. If available funds are insufficient to fund said project, the Coordinating Council may investigate and pursue additional funding.

Step 2: The Coordinating Council may utilize Spokane County Public Works or other mutually agreed up service provider to have the selected project area's maintenance issues physically marked on the trail and quantities for the project calculated. Bid documents will be developed based on this work.

Step 3: Selected project(s) will be bid out, awarded, and completed by the selected contractor.

Step 4: The Coordinating Council will review the Joint Board Fund Balance and determine if additional work can be completed in the year and pursue additional projects as resources allow.

Chapter 3 Long-term Projects

Projects designated as "long-term priorities" are projects which are capital improvements - typically new construction or the addition of functional elements to the trail such as signage. Some of these projects may be funded or partially funded through the Joint Board Fund if they are determined to be maintenance or repair work of an existing facility. . .

Access / Parking Improvements

The Centennial Trail has 18 trailheads through the 39 miles of trail. Each of these trailhead parking areas varies in quality and size. Following improvement projects were identified by the Coordinating Council member staff:

Stateline Trailhead – Asphalt parking lot and add restrooms.
Harvard Trailhead – Install larger restroom / flush toilet.
Barker Trailhead - Asphalt parking lot and add flush toilet.
East Mission Trailhead – Nothing at this time.
Sullivan Trailhead - Nothing at this time.

Mirabeau Trailheads (North & South) - Install year-round restroom facilities.
Islands Trailhead – Asphalt patching of lot.
Maringo Trailhead - Nothing at this time.
Boulder Beach Trailhead - Nothing at this time.
John T. Shields Park Trailhead - Nothing at this time.
Mission Park Trailhead - Nothing at this time.
Military Cemetery Trailhead - Nothing at this time.
Bowl and Pitcher Trailhead - Nothing at this time.
Wilbur Trailhead - Nothing at this time.
McLellan Trailhead - Nothing at this time.
Carlson Trailhead - Nothing at this time.
Sontag Park Trailhead - Nothing at this time.

The Spokane River Centennial Trail at Gateway Regional Park (Spokane County Parks)

Gap Completion

The following Centennial Trail gaps have been identified by the Coordinating Council and ordered from east to west starting with the Argonne Road / Maringo Drive Gap. The Nine Mile extension project is not included because it is an extension to the original trail, not a gap completion project.

Argonne Road / Maringo Drive Gap

This gap in the trail extends from Maringo Drive Trailhead in the east to Boulder Beach Trailhead on Upriver Drive to the west. Currently, through trail users head onto Maringo Drive, take a ride on Farr Road, then a left on Upriver Drive. The challenge with this section is volume of traffic on both Upriver Drive and Argonne Road.

The most current, favored solution is to route the trail along Maringo Drive, under Argonne Bridge, and back onto Maringo Drive to Upriver Drive. This would keep the trail on a relatively quiet street and avoid at-grade crossings with busy arterials. Some preliminary planning has been completed by Spokane County Department of Engineering and Roads. Project completion is pending adequate funding to acquire additional property and construct the trail and widened shoulder along Maringo Drive.

Mission Avenue Gap

This challenging gap exists at the confluence of busy arterials and active railroad lines. The Spokane City Council recently authorized utilizing excess red light camera funds to bond out for $1,000,000 from the City's investment pool to utilize as match to obtain outside funding to create a separated, safe trail through the busy intersection of Upriver Drive and Mission Avenue. Funding has yet to be secured as of the date of this plan's adoption.

Summit Boulevard to TJ Meenach Bridge Gap

This long-standing gap has recently been shrunk by the construction of the Kendall Yards section of trail and the extension of that section to Boone Street. However, a large gap remains. There are plans by the City of Spokane to renovate Petit Drive that would involve shrinking the lane widths and creating a 12' wide, separated asphalt trail on the south side of the street. Other alternatives have been examined, including two options that would involve building a new or renovating an existing bridge near the San Souci Trailer Park, the former site of Natatorium Park. This, however, would involve acquiring significant private property and incurring significant bridge construction costs.

Carlson Road Gap

This is a short gap in the Nine Mile area that begins at the junction of the Centennial Trail with Carlson Road and ends more or less at Sontag Park. With the recent acquisition of the Trautman Ranch by Spokane County through the Conservation Futures Program, Spokane County Engineering and Roads submitted for and received funding from the Spokane Regional Transportation Council (SRTC) to fund the construction of the new route through a portion of the Trautman Ranch and Riverside State Park to Sontag Park, thereby completing this gap. The project is scheduled for construction in 2018-2020.

Signage

The Centennial Trail plays host to over 25 years of signs. Washington State Parks and Recreation Commission maintains guidelines on trail signage that can be used sign the Centennial Trail. As described in Andrew Kienast's 2015 report, "Centennial Trail Wayfinding Report (2015)," There are signage inconsistencies throughout the trail – much of it due to the age of the trail and the different agencies involved. As stated earlier in this report, Goal 3 and Policy 3.1. of the Coordinating Council is to:

"Enhance the user-experience on the Centennial Trail to benefit residents and visitors, and to increase the positive economic impact the Trail has on the regional economy" and to "Support efforts and projects to improve, enhance, and make consistent signage along the Centennial Trail and wayfinding signage to the trail."

Example of a dated trailhead entrance sign needing replacement.

The report focuses its recommendations on key signage elements:

1. Install wayfinding signage directing visitors to the trailhead parking areas
2. Install and update trailhead entrance signage and access point signage seen from the road to identify the parking area as a trailhead
3. Consistent and uniform signage in areas that are confusing – this appears to be particularly in need in the "gap" locations.
4. Replace dated, inconsistent signage to align with current standards.

The Coordinating Council may take a phasing approach to updating all signage as resources allow. One method could be to break the phasing by section of trail. A sample schedule for sign updates / replacements could be as follows:

2016 – Idaho Stateline to Sullivan Road
2017 – Nine Mile to TJ Meenach Bridge
2018 – Sullivan Road to Argonne Road
2019 – TJ Meenach Bridge to Veterans Park
2018 – Argonne Road to Hamilton Road
2019 – Hamilton Road to Riverfront Park
2020 – Riverfront Park

In this scenario, Riverfront Park would be the last to have signage installed / updated due to its planned renovation. This scenario would involve comprehensive signage updates for each section of trail, to include: all trailhead entrance signs (where needed), trail information signage (mileage signs, etc.) and access point signage. Wayfinding signage outside of the Centennial Trail guiding visitors to the trail should also be considered.

Trail users crossing the Denny Ashlock Bridge over the Spokane River.

Appendix

Complete Trail Condition Assessment

Centennial Trail Wayfinding Report 2015

Spokane River Centennial Trail Gaps Study 2007

Trail users at Islands Trailhead.

Aubrey L White from State Park Sign to Rifle Club Rd

BMP	EMP	LANE	PSC	DATE	Alligator LOW	Alligator MED	Alligator HIGH	Longitudinal LOW	Longitudinal MED	Longitudinal HIGH	Transverse LOW	Transverse MED	Transverse HIGH	Patch LOW	Patch MED	Patch HIGH	Edge Low	Edge Med	Edge High	Corrugations Low	Corrugations Med	Corrugations High	Comments
0.000	0.100	L1	23	2015	359	74	11	0	90	0	0	16	5	11	11	0	0	0	10	0	0	0	
0.000	0.100	R1	34	2015	317	0	0	0	153	0	0	26	5	0	11	0	250	0	0	0	0	0	
0.100	0.200	L1	32	2015	285	0	0	0	174	0	0	32	5	116	0	0	0	20	45	0	0	0	
0.100	0.200	R1	54	2015	137	0	0	0	53	0	0	16	5	106	0	0	40	0	0	0	0	0	
0.200	0.300	L1	24	2015	454	0	0	0	100	0	0	16	0	0	0	0	0	36	45	0	0	0	
0.200	0.300	R1	52	2015	211	0	0	0	69	0	0	16	0	0	0	0	10	0	0	0	0	0	
0.300	0.400	L1	17	2015	401	0	11	0	11	0	0	32	5	222	0	0	0	450	0	0	0	0	
0.300	0.400	R1	48	2015	74	0	0	0	100	0	0	42	5	158	0	0	0	0	0	0	0	0	
0.400	0.500	L1	14	2015	517	0	0	0	0	0	0	37	5	53	0	0	0	520	0	0	0	0	
0.400	0.500	R1	35	2015	348	0	0	0	53	0	0	21	0	21	0	0	0	0	0	0	0	0	
0.500	0.600	L1	58	2015	0	0	0	11	0	0	11	16	0	232	0	0	0	165	0	0	0	0	
0.500	0.600	R1	44	2015	0	0	0	11	11	0	11	16	0	380	0	0	0	0	0	0	0	0	
0.600	0.700	L1	49	2015	190	0	11	26	58	0	26	5	0	74	0	0	20	110	0	0	0	0	
0.600	0.700	R1	68	2015	21	0	11	32	11	0	26	5	0	84	0	0	0	0	5	0	0	0	
0.700	0.800	L1	29	2015	338	0	11	0	100	0	0	32	5	42	0	0	0	15	0	0	0	0	
0.700	0.800	R1	15	2015	433	0	0	0	137	0	0	26	5	137	53	0	0	50	0	0	0	0	
0.800	0.900	L1	37	2015	317	0	11	0	11	0	0	16	5	11	0	0	0	125	10	0	0	0	
0.800	0.900	R1	46	2015	222	0	0	0	63	0	0	21	5	53	0	0	60	5	17	0	0	0	
0.900	1.000	L1	13	2015	496	0	11	0	5	0	0	58	0	11	0	0	0	65	11	0	0	0	
0.900	1.000	R1	38	2015	275	0	11	0	58	0	0	37	0	21	0	0	90	0	12	0	0	0	
1.000	1.100	L1	37	2015	190	21	11	0	84	0	0	53	5	53	11	0	0	60	26	0	0	0	
1.000	1.100	R1	23	2015	422	0	0	0	48	0	0	37	5	32	0	0	5	85	0	0	0	0	
1.100	1.200	L1	52	2015	95	0	11	0	42	0	0	48	5	11	11	0	0	520	0	0	0	0	
1.100	1.200	R1	54	2015	95	0	0	0	69	0	0	48	5	11	0	0	0	450	0	0	0	0	
1.200	1.300	L1	40	2015	158	0	11	0	116	0	0	48	5	106	0	0	0	350	0	0	0	0	
1.200	1.300	R1	19	2015	433	0	0	0	58	0	0	42	5	95	0	0	50	450	0	0	0	0	
1.300	1.400	L1	40	2015	180	0	0	0	90	0	0	42	5	95	11	11	40	180	1	0	0	0	
1.300	1.400	R1	0	2015	803	0	0	0	58	0	0	32	0	84	0	0	0	0	5	0	0	0	
1.400	1.500	L1	37	2015	285	21	11	0	63	0	0	0	0	116	0	0	0	215	0	0	0	0	
1.400	1.500	R1	42	2015	211	0	11	0	63	0	0	21	5	106	0	0	60	10	10	0	0	0	
1.500	1.520	L1	19	2015	99	0	4	0	15	0	0	0	0	4	0	0	0	0	0	0	0	0	
1.500	1.520	R1	0	2015	201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
average pavement surface condition:			36																				

Bowl and Pitcher Road to Gate House

0.000	0.100	L1	82	2015	0	0	0	5	11	0	5	5	0	53	0	0	0	25	7	0	0	0	
0.000	0.100	R1	83	2015	0	0	0	0	0	0	0	5	0	53	0	0	45	0	0	0	0	0	
0.100	0.200	L1	74	2015	0	0	11	0	21	0	0	11	5	11	0	0	20	15	0	0	0	0	
0.100	0.200	R1	89	2015	0	0	0	0	21	0	0	5	0	0	0	0	0	0	0	0	0	0	
0.200	0.210	L1	86	2015	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
0.200	0.210	R1	77	2015	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	
average pavement surface condition:			82																				

Centennial Trail

0.000	0.100	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	10	0	0	
0.100	0.200	A2	64	2015	0	0	42	0	0	0	5	5	5	0	0	0	0	0	0	40	0	0	
0.200	0.300	A2	88	2015	0	0	0	0	5	0	5	5	0	11	0	0	2	0	0	0	0	0	
0.300	0.400	A2	81	2015	0	0	11	5	0	0	5	5	0	0	0	0	0	0	0	5	0	0	
0.400	0.500	A2	84	2015	0	0	11	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	Newer Pavement
0.500	0.600	A2	82	2015	0	0	11	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	Newer Pavement
0.600	0.700	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Newer Pavement
0.700	0.800	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Newer Pavement
0.800	0.860	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Newer Pavement
1.170	1.200	A2	79	2015	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	IP 0.86-1.17 concrete panels not rated. Need crack sealin
1.200	1.300	A2	78	2015	0	0	11	0	0	0	5	0	5	0	0	0	0	0	0	5	0	0	
1.300	1.400	A2	77	2015	0	0	11	0	0	0	0	5	5	0	0	0	0	0	0	1	0	0	
1.400	1.500	A2	71	2015	0	11	11	0	11	0	0	11	5	21	0	0	50	0	0	0	0	0	
1.500	1.600	A2	68	2015	0	0	0	0	0	0	0	5	5	0	0	32	60	0	0	0	0	0	
1.600	1.700	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	20	0	0	0	0	0	
1.700	1.800	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	20	0	0	0	0	0	
1.800	1.900	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	
1.900	2.000	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	15	0	0	
2.000	2.100	A2	76	2015	0	0	11	0	0	0	5	5	5	0	0	0	20	0	0	15	0	0	
2.100	2.200	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
2.200	2.300	A2	73	2015	0	0	21	0	0	0	5	0	5	0	0	0	0	0	0	40	0	0	
2.300	2.400	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	

2.400	2.500	A2	85	2015	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	
2.500	2.600	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
2.600	2.700	A2	85	2015	0	0	0	0	0	0	0	5	0	42	0	0	0	0	0	0	0	0	
2.700	2.800	A2	86	2015	0	0	0	0	0	0	0	5	0	32	0	0	10	0	0	0	0	0	
2.800	2.900	A2	71	2015	0	0	32	0	0	0	5	5	0	0	0	0	0	0	0	35	0	0	
2.900	3.000	A2	76	2015	0	0	11	11	0	0	5	5	5	0	0	0	20	0	0	10	0	0	
3.000	3.100	A2	67	2015	0	0	32	0	0	0	5	5	5	0	0	0	50	0	0	50	0	0	
3.100	3.200	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
3.200	3.300	A2	80	2015	0	0	0	0	0	0	0	11	5	0	0	0	50	0	0	0	0	0	
3.300	3.400	A2	70	2015	0	0	21	0	0	0	0	11	5	0	0	0	40	0	0	50	0	0	
3.400	3.500	A2	72	2015	0	0	21	0	0	0	0	5	5	0	0	0	0	0	0	30	0	0	
3.500	3.600	A2	63	2015	0	0	53	0	0	0	0	5	0	0	0	0	0	0	0	50	65	0	
3.600	3.700	A2	76	2015	0	0	11	0	0	0	5	5	5	0	0	0	0	0	0	20	0	0	Dangerous corrugations
3.700	3.800	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	20	0	0	0	0	0	
3.800	3.900	A2	89	2015	11	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
3.900	4.000	A2	77	2015	0	0	11	0	0	0	0	5	5	0	0	0	0	0	0	30	0	0	
4.000	4.100	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.100	4.200	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.200	4.300	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.300	4.400	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
4.400	4.500	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.500	4.600	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.600	4.700	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
4.700	4.800	A2	90	2015	0	0	0	0	0	0	0	5	0	11	0	0	0	0	0	0	0	0	
4.800	4.900	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
4.900	5.000	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
5.000	5.100	A2	77	2015	0	0	21	0	0	0	0	0	0	11	0	0	20	0	0	30	20	0	Dangerous bulges
5.100	5.200	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	Bulges on trail edge are dangerous
5.200	5.300	A2	82	2015	0	0	0	0	0	0	5	5	5	0	0	0	10	0	0	0	0	0	
5.300	5.400	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	10	20	0	Depression around manhole needs to be repaired
5.400	5.500	A2	77	2015	0	0	11	0	0	0	0	5	5	0	0	0	0	0	0	20	0	0	
5.500	5.600	A2	81	2015	0	0	11	0	0	0	0	5	0	11	0	0	0	0	0	0	30	0	Dangerous bulges
5.600	5.700	A2	82	2015	0	0	11	0	0	0	0	5	0	0	0	0	0	0	0	10	10	0	
5.700	5.800	A2	82	2015	0	0	11	5	0	0	0	5	0	0	0	0	0	0	0	30	0	0	
5.800	5.900	A2	77	2015	0	0	11	5	0	0	0	5	5	0	0	0	0	0	0	10	0	0	
5.900	6.000	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	20	0	0	0	0	0	
6.000	6.100	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	40	0	0	0	0	0	
6.100	6.200	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	100	0	0	0	0	0	
6.200	6.300	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	20	0	0	0	0	0	
6.300	6.400	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
6.400	6.500	A2	78	2015	0	0	0	0	48	0	5	0	0	84	0	0	10	50	0	0	0	0	
6.500	6.600	A2	90	2015	0	0	0	90	0	0	5	0	0	0	0	0	0	80	0	0	0	0	
6.600	6.700	A2	79	2015	0	0	0	26	0	0	0	0	0	84	11	0	0	0	0	0	0	0	
6.700	6.800	A2	84	2015	0	0	11	0	0	0	0	0	0	0	0	0	5	0	0	10	0	0	
6.800	6.900	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	10	0	15	0	0	0	Washout on North side needs immediate repair
6.900	7.000	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
7.000	7.100	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
7.100	7.200	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
7.200	7.300	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	5	0	0	0	0	0	
7.300	7.400	A2	78	2015	0	0	11	0	0	0	0	5	0	42	0	0	0	0	0	0	30	0	shout on North side of trail. Corrugations need to be repai
7.400	7.500	A2	76	2015	0	0	21	0	0	0	0	5	0	0	0	0	10	0	0	40	0	0	
7.500	7.600	A2	91	2015	0	0	0	42	21	0	5	0	0	0	0	0	20	0	0	0	0	0	
7.600	7.700	A2	88	2015	0	0	0	0	32	0	0	5	0	0	0	0	0	0	0	0	0	0	
7.700	7.800	A2	82	2015	11	0	0	0	0	0	0	5	0	53	0	0	0	0	0	0	0	0	Tree root causing damage
7.800	7.900	A2	82	2015	0	0	11	0	0	0	0	5	0	0	0	0	0	0	0	5	0	0	
7.900	8.000	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.000	8.100	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	Washout on North side of trail.
8.100	8.200	A2	83	2015	11	0	11	5	0	0	0	0	0	0	0	0	0	0	0	0	10	0	
8.200	8.300	A2	83	2015	0	0	11	0	0	0	5	0	0	0	0	0	10	0	0	10	0	0	
8.300	8.400	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
8.400	8.500	A2	86	2015	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	
8.500	8.600	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.600	8.700	A2	84	2015	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.700	8.800	A2	91	2015	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8.800	8.900	A2	79	2015	0	11	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	
8.900	9.000	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
9.000	9.100	A2	82	2015	11	0	0	0	0	0	5	0	5	21	0	0	0	0	0	0	0	0	Embankment washed out on to trail
9.100	9.200	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	Embankment washed out on to trail
9.200	9.300	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Tree root causing damage
9.300	9.400	A2	83	2015	0	0	11	0	0	0	5	0	0	0	0	0	0	0	0	30	0	0	Tree root causing damage
9.400	9.500	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
9.500	9.600	A2	97	2015	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
9.600	9.700	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	Debris washout

9.700	9.800	A2	90	2015	0	0	0	21	32	0	5	0	0	0	0	0	0	0	0	0	0	0	Shoulder drop off under railroad tracks
9.800	9.900	A2	83	2015	0	0	11	0	0	0	5	0	0	0	0	0	2	0	0	25	0	0	
9.900	10.000	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	10	0	0	
10.000	10.100	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	20	0	0	
10.100	10.200	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	15	0	0	0	0	0	
10.200	10.300	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
10.300	10.400	A2	82	2015	0	0	11	0	0	0	0	5	0	0	0	0	10	0	0	30	0	0	
10.400	10.500	A2	76	2015	0	0	21	0	0	0	0	5	0	0	0	0	0	0	0	40	0	0	
10.500	10.600	A2	85	2015	0	0	0	37	0	0	0	11	0	0	0	0	0	0	0	0	0	0	
10.600	10.700	A2	92	2015	0	0	0	48	5	0	5	0	0	0	0	0	0	0	0	0	0	0	
10.700	10.800	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	Depression around manhole needs to be repaired
10.800	10.900	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	10	0	0	0	0	0	Washouts
10.900	11.000	A2	81	2015	0	0	0	0	0	0	5	5	0	63	0	0	0	0	0	0	0	0	
11.000	11.100	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	5	0	0	
11.100	11.200	A2	87	2015	0	0	0	0	11	0	0	5	0	21	0	0	0	0	0	0	0	0	
11.200	11.300	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	
11.300	11.400	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	10	0	0	0	0	0	Rocks washing out on to trail.
11.400	11.500	A2	87	2015	0	0	0	0	0	0	0	5	0	0	11	0	0	0	0	0	0	0	Rocks washing out on to trail.
11.500	11.600	A2	63	2015	0	11	0	0	0	0	0	11	5	148	11	0	0	0	0	0	20	0	Concrete pad sunken, need to be repaired
11.600	11.700	A2	81	2015	0	0	11	0	0	0	5	5	0	0	0	0	0	0	0	20	0	0	
11.700	11.800	A2	82	2015	0	0	11	0	0	0	0	5	0	0	0	0	0	0	0	30	0	0	
11.800	11.900	A2	67	2015	0	0	32	0	0	0	5	5	5	0	0	0	0	0	0	40	0	50	
11.900	12.000	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	
12.000	12.100	A2	81	2015	0	0	11	32	0	0	0	5	0	0	0	0	5	20		30	0	0	Bulges on trail.
12.100	12.200	A2	81	2015	0	0	0	0	0	0	0	5	5	0	11	0	0	0	0	120	0	0	
12.200	12.300	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	20	0	0	Sag and hump needs to be repaired.
12.300	12.400	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	30	0	0	0	0	0	
12.400	12.500	A2	90	2015	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
12.500	12.600	A2	88	2015	0	0	0	0	32	0	0	5	0	0	0	0	5	0	0	0	0	0	Tree root causing damage
12.600	12.700	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	Joints on either side of bridge need to be filled in.
12.700	12.800	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	
12.800	12.900	A2	77	2015	0	0	11	0	0	0	0	5	5	0	0	0	0	0	0	30	0	0	
12.900	13.000	A2	75	2015	0	0	21	0	0	0	0	5	0	11	0	0	0	0	0	50	0	0	
13.000	13.100	A2	78	2015	0	0	0	0	42	0	0	11	5	11	0	0	0	0	0	0	0	0	
13.100	13.200	A2	71	2015	0	0	11	11	16	0	0	11	5	42	0	0	0	0	0	0	0	0	
13.200	13.300	A2	80	2015	0	0	0	0	32	0	0	5	0	63	0	0	0	0	0	0	0	0	
13.300	13.400	A2	89	2015	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	
13.400	13.500	A2	63	2015	11	0	0	0	32	0	0	11	5	158	0	0	0	0	0	0	0	0	
13.500	13.600	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	
13.600	13.700	A2	80	2015	0	0	0	0	0	0	0	5	5	32	0	0	0	0	0	0	0	0	
16.000	16.100	A2	86	2015	0	0	0	26	0	0	0	11	0	0	0	0	10	0	0	0	0	0	MP 13.70-16.00 public road, not rated
16.100	16.200	A2	98	2015	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16.200	16.300	A2	94	2015	0	0	0	0	21	0	0	0	0	0	0	0	10	0	0	0	0	0	
16.300	16.400	A2	82	2015	11	0	11	0	11	5	0	0	0	0	0	0	0	0	0	0	0	0	
16.400	16.500	A2	77	2015	11	0	0	11	32	0	5	11	5	0	0	0	0	0	0	0	0	0	
16.500	16.600	A2	69	2015	0	0	0	0	180	0	0	16	5	0	0	0	0	0	0	0	0	0	
16.600	16.700	A2	89	2015	0	0	0	16	21	0	0	5	0	0	0	0	0	0	0	0	0	0	
16.700	16.800	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	
16.800	16.900	A2	77	2015	0	0	11	5	53	16	0	5	0	0	0	0	0	0	0	0	0	0	Tree root causing damage
16.900	17.000	A2	80	2015	0	0	0	0	11	0	0	11	5	0	0	0	0	0	0	0	0	0	
17.000	17.100	A2	85	2015	0	0	0	0	11	0	0	0	5	0	0	0	5	0	0	0	0	0	
17.100	17.200	A2	80	2015	0	0	0	0	0	0	0	11	5	0	0	0	25	0	0	0	0	0	Overhanging brush
17.200	17.300	A2	87	2015	0	0	0	0	16	0	0	5	0	21	0	0	0	0	0	0	0	0	
17.300	17.350	A2	81	2015	0	0	0	0	11	0	3	3	3	0	0	0	0	0	0	0	0	0	MP 17.35-19.27 public road, not rated
19.270	19.300	A2	68	2015	0	0	0	5	0	0	0	2	0	51	0	0	0	0	0	0	0	0	
19.300	19.400	A2	89	2015	0	0	0	0	11	0	5	5	0	0	0	0	0	0	0	0	0	0	
19.400	19.500	A2	74	2015	0	0	0	0	0	32	0	16	5	0	0	0	0	0	0	0	0	30	Corrugations and Waves need to be repaired.
19.500	19.600	A2	82	2015	0	0	0	11	11	0	5	5	5	0	0	0	0	0	0	0	20	0	Severe hump needs to be repaired.
19.600	19.700	A2	89	2015	0	0	0	0	16	0	0	5	0	0	0	0	0	0	0	0	0	0	
19.700	19.800	A2	59	2015	0	11	42	0	26	0	0	16	5	0	0	0	0	0	0	0	40	0	Severe corrugations and waves need to be repaired.
19.800	19.900	A2	83	2015	0	0	0	0	5	0	0	5	5	0	0	0	90	0	0	0	0	0	
19.900	20.000	A2	52	2015	32	21	63	0	58	0	0	5	5	0	0	0	0	0	0	0	20	40	Severe corrugations and waves need to be repaired.
20.000	20.100	A2	83	2015	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	Severe hump need to be repaired.
20.100	20.200	A2	80	2015	0	11	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	
20.200	20.260	A2	91	2015	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	MP 20.26-20.7 public road, not rated
20.700	20.800	A2	69	2015	84	0	0	0	0	0	5	11	5	0	0	0	0	0	0	10	0	0	
20.800	20.900	A2	85	2015	0	0	0	0	5	0	5	11	0	0	0	0	0	0	0	0	0	0	
20.900	21.000	A2	84	2015	0	0	0	0	5	0	11	11	0	0	0	0	0	0	0	0	0	0	
21.000	21.100	A2	82	2015	0	0	0	0	5	0	5	5	5	0	0	0	0	0	0	0	0	0	
21.100	21.200	A2	76	2015	0	0	11	0	16	0	0	5	5	0	0	0	0	0	0	20	0	0	
21.200	21.300	A2	78	2015	0	0	0	0	42	21	5	5	5	0	0	0	0	0	0	0	0	0	
21.300	21.400	A2	81	2015	11	0	0	0	26	0	0	5	5	0	0	0	0	0	0	0	0	0	Bridge not rated
21.400	21.500	A2	75	2015	11	0	0	0	5	0	0	11	5	53	0	0	0	0	0	0	0	0	Bridge not rated

21.500	21.600	A2	77	2015	11	0	0	0	37	0	5	11	5	11	0	0	0	0	0	0	0	0	
21.600	21.700	A2	80	2015	0	0	0	5	48	0	0	5	5	11	0	0	0	0	0	0	0	0	Bridge not rated
21.700	21.800	A2	70	2015	0	11	11	0	58	0	5	5	5	11	11	0	0	0	0	0	0	0	Bridge not rated
21.800	21.900	A2	62	2015	11	0	21	26	48	5	11	16	11	0	0	0	0	0	0	0	0	0	
21.900	22.000	A2	80	2015	11	0	0	0	16	0	11	5	5	0	0	0	0	0	0	0	0	0	
22.000	22.100	A2	79	2015	0	0	0	16	11	0	5	11	5	11	0	0	0	0	0	0	0	0	
22.100	22.200	A2	81	2015	0	0	0	26	16	0	5	5	5	0	0	0	0	0	0	0	0	0	
22.200	22.300	A2	87	2015	0	0	0	0	32	0	5	5	0	0	0	0	0	0	0	0	0	0	
22.300	22.400	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22.400	22.500	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22.500	22.600	A2	86	2015	11	0	0	0	26	0	5	5	0	0	0	0	0	0	0	0	0	0	
22.600	22.700	A2	65	2015	74	0	11	0	48	0	5	11	5	11	0	0	0	0	0	0	0	0	Bridge not rated
22.700	22.800	A2	81	2015	11	0	0	5	0	0	5	5	5	11	0	0	0	0	0	0	0	0	
22.800	22.900	A2	76	2015	0	0	11	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	Concrete walkway and bridge not rated
22.900	23.000	A2	86	2015	0	0	0	0	48	0	0	5	0	0	0	0	0	0	0	0	0	0	Concrete walkway and bridge not rated
23.000	23.100	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.100	23.200	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.200	23.300	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.300	23.400	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.400	23.500	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.500	23.600	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.600	23.700	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.700	23.800	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.800	23.900	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
23.900	24.000	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.000	24.100	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.100	24.200	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.200	24.300	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.300	24.400	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.400	24.500	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.500	24.600	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.600	24.700	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.700	24.800	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.800	24.900	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
24.900	25.000	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
25.000	25.100	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
25.100	25.125	A2	100	2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	New pavement
27.000	27.100	A2	62	2015	0	0	11	190	0	0	5	5	0	63	63	0	0	0	0	0	0	0	Road from MP 25.125-27.00 not rated
27.100	27.200	A2	82	2015	32	0	0	48	21	0	5	5	0	0	0	0	150	0	0	0	0	0	Some cracks are sealed.
27.200	27.300	A2	78	2015	21	0	0	58	0	0	5	5	0	63	0	0	50	0	0	0	0	0	
27.300	27.400	A2	89	2015	0	0	0	5	0	0	5	5	0	0	0	0	70	0	0	0	0	0	
27.400	27.500	A2	89	2015	0	0	0	26	0	0	5	5	0	0	0	0	10	0	0	0	0	0	Some cracks are sealed.
27.500	27.600	A2	77	2015	0	0	11	0	0	0	0	5	5	0	0	0	10	0	0	15	0	0	
27.600	27.700	A2	80	2015	11	0	11	11	21	0	0	5	0	0	0	0	0	0	0	5	0	0	
27.700	27.800	A2	91	2015	0	0	0	0	0	0	0	5	0	0	0	0	10	0	0	0	0	0	
27.800	27.900	A2	93	2015	0	0	0	5	16	0	5	0	0	0	0	0	0	0	0	0	0	0	Some cracks are sealed.
27.900	28.000	A2	89	2015	0	0	0	5	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
28.000	28.100	A2	72	2015	0	0	21	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0	
28.100	28.200	A2	61	2015	42	0	32	21	21	0	5	5	11	0	0	0	20	0	0	0	30	0	
28.200	28.300	A2	55	2015	53	32	32	5	16	0	11	16	5	0	0	0	40	0	0	0	0	30	
28.300	28.400	A2	79	2015	21	0	0	21	0	0	5	16	0	11	0	0	20	0	0	0	0	0	
28.400	28.500	A2	77	2015	0	0	0	0	0	0	5	5	11	11	0	0	40	0	0	0	0	0	
28.500	28.600	A2	73	2015	0	0	11	0	0	0	5	0	5	11	0	11	0	0	0	10	0	0	
28.600	28.700	A2	82	2015	0	0	0	0	0	0	0	5	5	11	0	0	0	0	0	0	0	0	
28.700	28.800	A2	78	2015	0	0	11	5	0	0	0	0	5	11	0	0	20	0	0	10	0	0	
28.800	28.900	A2	80	2015	0	0	0	0	0	0	0	11	5	11	0	0	15	0	0	0	0	0	
28.900	29.000	A2	87	2015	0	0	0	0	0	0	11	5	0	11	0	0	15	0	0	0	0	0	
29.000	29.100	A2	79	2015	0	0	0	0	0	0	5	11	5	11	0	0	10	0	0	0	0	0	
29.100	29.200	A2	87	2015	0	0	0	0	0	0	16	0	0	21	0	0	20	0	0	0	0	0	
29.200	29.300	A2	81	2015	0	0	0	0	0	0	11	0	0	21	0	11	0	0	0	0	0	0	
29.300	29.400	A2	80	2015	0	0	0	0	0	0	5	5	0	21	0	11	0	0	0	0	0	0	
29.400	29.500	A2	80	2015	0	0	11	0	0	0	5	5	0	11	0	0	0	0	0	10	0	0	
29.500	29.600	A2	86	2015	0	0	0	111	5	0	5	5	0	0	0	0	0	0	0	0	0	0	
29.600	29.700	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	two lane road.
29.700	29.800	A2	92	2015	0	0	0	21	21	0	5	0	0	0	0	0	0	0	0	0	0	0	
29.800	29.900	A2	85	2015	0	0	0	132	0	0	16	0	0	0	0	0	70	0	0	0	0	0	
29.900	30.000	A2	92	2015	0	0	0	0	5	0	11	0	0	0	0	0	20	0	0	0	0	0	
30.000	30.100	A2	71	2015	11	0	0	158	58	0	26	16	0	0	0	0	150	0	0	0	0	0	
30.100	30.200	A2	69	2015	11	0	11	180	21	0	16	11	5	0	0	0	160	0	0	0	0	0	
30.200	30.300	A2	76	2015	11	0	11	148	0	0	11	5	0	0	0	0	290	0	0	0	0	0	
30.300	30.400	A2	72	2015	42	0	0	0	0	0	26	11	5	0	0	0	400	0	0	0	0	0	
30.400	30.500	A2	85	2015	0	0	0	0	0	0	26	0	0	0	0	0	100	0	0	0	0	0	Cracks are sealed.
30.500	30.600	A2	82	2015	0	0	0	48	0	0	26	5	0	0	0	0	20	0	0	0	0	0	

30.600	30.700	A2	83	2015	0	0	0	32	11	0	21	5	0	0	0	0	0	0	0	0	0	0	Cracks are sealed.
30.700	30.800	A2	95	2015	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	Cracks are sealed.
30.800	30.900	A2	89	2015	0	0	0	21	0	0	16	0	0	0	0	0	20	0	0	0	0	0	Cracks are sealed.
30.900	31.000	A2	87	2015	0	0	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	0	Cracks are sealed.
31.000	31.100	A2	80	2015	11	0	0	111	0	0	16	11	0	0	0	0	30	0	0	0	0	0	Dangerous tree roots in road
31.100	31.200	A2	79	2015	0	0	0	48	0	0	37	5	0	0	0	0	20	0	0	0	0	0	
31.200	31.300	A2	82	2015	0	0	0	48	0	0	26	5	0	0	0	0	20	0	0	0	0	0	
31.300	31.400	A2	81	2015	0	0	0	16	0	0	11	5	5	0	0	0	0	0	0	0	0	0	
31.400	31.500	A2	73	2015	0	0	21	5	0	0	21	5	0	0	0	0	30	0	0	0	0	0	
31.500	31.600	A2	76	2015	0	0	0	222	11	0	5	5	5	0	0	0	0	0	0	0	0	0	
31.600	31.700	A2	70	2015	0	0	0	259	79	0	11	11	5	0	0	0	0	0	0	0	0	0	
31.700	31.800	A2	85	2015	0	0	0	111	0	0	11	5	0	0	0	0	0	0	0	0	0	0	
31.800	31.900	A2	66	2015	0	0	21	137	32	0	16	11	5	0	0	0	0	0	0	0	0	0	Large area of tree roots damaging road
31.900	32.000	A2	83	2015	0	0	0	121	0	0	16	5	0	0	0	0	0	0	0	0	0	0	
32.000	32.100	A2	86	2015	0	0	0	0	0	0	16	5	0	0	0	0	0	0	0	0	0	0	
32.100	32.200	A2	86	2015	0	0	0	58	0	0	11	5	0	0	0	0	0	0	0	0	0	0	
32.200	32.300	A2	88	2015	0	0	0	48	0	0	5	5	0	0	0	0	0	0	0	0	0	0	
32.300	32.400	A2	92	2015	0	0	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	
32.400	32.500	A2	81	2015	0	0	11	32	0	0	5	5	0	0	0	0	0	0	0	5	0	0	
32.500	32.600	A2	77	2015	0	0	0	148	48	0	26	5	0	0	0	0	0	0	0	0	0	0	
32.600	32.700	A2	92	2015	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	
32.700	32.800	A2	83	2015	0	0	0	0	0	0	26	5	0	0	0	0	15	0	0	0	0	0	
32.800	32.900	A2	90	2015	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	
32.900	33.000	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	
33.000	33.100	A2	94	2015	0	0	0	26	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
33.100	33.200	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	15	0	0	0	0	0	
33.200	33.240	A2	94	2015	0	0	0	11	0	0	2	0	0	0	0	0	0	0	0	0	0	0	
34.700	34.800	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
34.800	34.900	A2	92	2015	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	
34.900	35.000	A2	88	2015	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	
35.000	35.100	A2	87	2015	0	0	0	5	0	0	21	0	0	0	0	0	0	0	0	0	0	0	
35.100	35.200	A2	88	2015	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	
35.200	35.300	A2	74	2015	0	0	21	0	0	0	16	5	0	0	0	0	0	0	0	20	0	0	
35.300	35.400	A2	90	2015	0	0	0	11	0	0	16	0	0	0	0	0	0	0	0	0	0	0	
35.400	35.500	A2	90	2015	0	0	0	5	0	0	16	0	0	0	0	0	0	0	0	0	0	0	
35.500	35.600	A2	88	2015	0	0	0	48	0	0	16	0	0	0	0	0	0	0	0	0	0	0	
35.600	35.700	A2	88	2015	0	0	0	0	0	0	11	5	0	0	0	0	0	0	0	0	0	0	
35.700	35.800	A2	91	2015	0	0	0	32	0	0	11	0	0	0	0	0	5	0	0	0	0	0	
35.800	35.900	A2	95	2015	0	0	0	11	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
35.900	36.000	A2	92	2015	0	0	0	5	0	0	11	0	0	0	0	0	0	0	0	0	0	0	
36.000	36.100	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	Bridge deck not rated.
36.100	36.200	A2	95	2015	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	Cracks are sealed.
36.200	36.300	A2	90	2015	0	0	0	100	0	0	5	0	0	0	0	0	10	0	0	0	0	0	
36.300	36.400	A2	84	2015	0	0	0	158	0	21	0	0	0	0	0	0	0	0	0	0	0	0	
36.400	36.500	A2	81	2015	63	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
36.500	36.600	A2	86	2015	0	0	0	190	0	0	5	0	0	0	0	0	0	0	0	0	0	0	
36.600	36.700	A2	95	2015	0	0	0	11	0	0	5	0	0	0	0	0	10	0	0	0	0	0	
36.700	36.822	A2	94	2015	0	0	0	19	0	0	6	0	0	0	0	0	0	0	0	0	0	0	
average pavement surface condition:			84																				
				Totals:	694	119	1,154	3,790	1,701	105	1,297	1,167	433	1,451	118	65	2,764	150	15	1,186	315	150	

CENTENNIAL TRAIL WAYFINDING REPORT

2015

EASTERN WASHINGTON UNIVERSITY
start something big

Prepared for the Friends of the Centennial Trail by Andrew Kienast

TABLE OF CONTENTS

Contents

The mission of this project is to make the Centennial Trail easier to access and navigate for the residents of Spokane and visitors by evaluating and making recommendations on signage and wayfinding.

INTRODUCTION

Introduction

The Spokane River Centennial Trail is one of the top visitor attractions in the region, and with the newest gap completions the Centennial Trail stands to be a vital transportation route heading into the future. However, some Centennial Trail directional signs are over 20 years old, and many signs are faded, missing or have been defaced by graffiti over the years. Also, in areas where gaps have recently been completed, or have yet to be completed, it is difficult to find the Centennial Trail; this causes confusion and frustration for both residents and tourists. The users of the Centennial Trail need and deserve upgraded, clear directional signs. The purpose of this report is to aid in the ongoing development of the Centennial Trail by evaluating the existing signage and offering suggestions for improvements.

The Centennial Trail is unique in that it traverses rural land, park land, suburban neighborhoods, and a dense urban core. It also changes from a grade separated path to a shared use street and back again. Traditional urban wayfinding is simply not sufficient to navigate the trail effectively; instead, innovative wayfinding solutions are needed to meet the diverse nature of the trail. While consistency in style is important to create a unified image for the trail, one size fits all approaches should be avoided. Each section of the trail should be treated differently in regards to its signage and wayfinding needs. This report will highlight some of the specific areas in need of new or revamped signage and present possible alternatives.

I would like to thank The City of Spokane and SRTC for providing GIS data; Spokane County Parks Recreation and Golf and Eastern Washington University's Geology Department for allowing me to use their GPS units; the professors in EWU's Urban and Regional Planning Program for offering guidance and assistance; and finally the Friends of the Centennial Trail and it's board members for this opportunity.

Methodology

This project essentially took on three phases. Phase 1 consisted of mapping all existing signage along the trail and leading to the trail using a Garmin GPS device and Geographic Information Systems (GIS). Phase 2 consisted of analyzing the findings, identifying areas of concern, and making the data functional for future use. Phase 3 consisted of researching wayfinding alternatives, generating recommendations, and exploring trail counting methodology.

Phase 1

The first phase of the study was to map all existing signage. The trail was broken into four sections for the sake of the inventory.

- Mirabeau Park to State Line
- Mission Park to Mirabeau Park
- Military Cemetery Trailhead to Mission Park
- Nine Mile to Military Cemetery Trailhead

I rode each of these sections in both directions to capture every sign along the trail to the best of my abilities. I also traveled to each trailhead by car and took each freeway off-ramp between Spokane and Spokane Valley in both directions to capture all auto-oriented wayfinding signs. Each sign was assigned a general type (gen_type), a specific type (spec_type), a condition ranking (condition), and any additional comments (comments). The GPS data was then converted into shapefiles which can be manipulated, edited, or updated in GIS. Below is an example of what the data looks like within GIS. Each FID number represents a specific sign.

FID	gen_type	spec_type	condition	comments
144	logo	old logo	poor	
145	mile marker	MM 12	fair	damage on east side
146	rules/safety	trail narrows	needs replace	vandalized
147	mile marker	MM 11	good	
148	logo	mph 15, dog leash, logo	poor	

METHODOLOGY

In addition to mapping signs, areas in need of attention such as sections that were difficult to navigate, confusing decision points, and unsigned trail access points were mapped.

Phase 2

Because there was no GIS data-set specific to the Centennial Trail before beginning this project, a good deal of time was spent creating useful map layers for future use. There are now specific layers (i.e. shapefiles) for the Centennial Trail, the southern alternative route along Government Way, The Fish Lake Trail, the Liberty Lake State Line Trail, signs (both along the trail and on-street), map kiosks, mile markers, and "points of concern." In addition, the existing trailhead layer and SRTC's regional bike map layer were included to create a consolidated data set that can be utilized by future Centennial Trail projects.

From an analysis of the data and my experience in the field, I created a list of the areas that present the most difficulty to users on the trail and to drivers attempting to find the trail. Maps were produced for the five most critical areas.

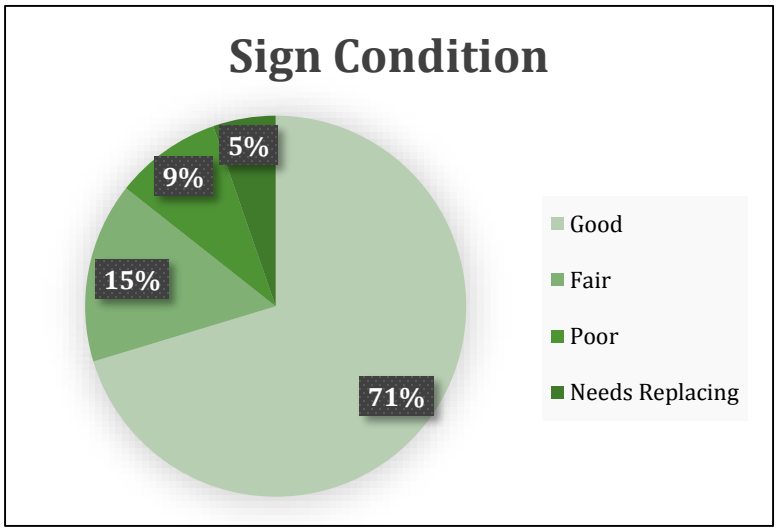
Phase 3

In order to generate alternatives I looked to wayfinding examples used by other cities and to the Centennial Trail itself. From my experience as a new user of the Centennial Trail and as an experienced user of other urban trail systems around the state, I generated a set of recommendations for future signage updates and improvements. Some of the recommendations are general and subjective, while others are more detailed which reference the MUTCD (Manual on Uniform Traffic Control Devices) and the AASHTO (American Association of State Highway and Transportation Officials) guide to bicycle facilities.

For the trail count, I partnered with WSDOT Eastern Region to use their infrared bicycle/pedestrian counters. Counters were mounted in Riverfront Park, underneath the Monroe St. Bridge, in Kendall Yards, and at the trail's intersection with Summit and Boone. Trail count data collected by State Parks was also analyzed.

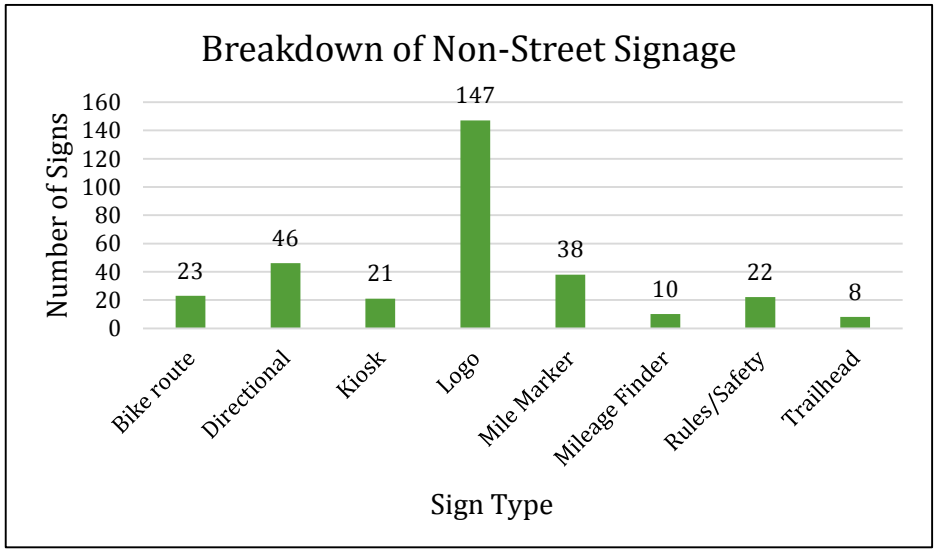
Sign Inventory

Over 300 signs in total were mapped during the course of this project; this includes all Centennial Trail signs and all bike route signs along the Centennial Trail. Overall, the existing signs are in good shape. Of the 320 mapped signs, only 17 need immediate replacement or removal, 29 are in poor condition, and the rest are perfectly functional (with 49 signs having slight fading or minor damage). Below is a breakdown of signs by type and by condition. The methodology for sign condition and type is included in the following pages.



Sign Condition	# of signs	% of signs
Good	225	70%
Fair	49	15%
Poor	29	9%
Needs Replacing	17	5%
Total	**320**	100%

General Sign Type	# of signs	% of signs
Bike route	23	7%
Directional	46	14%
Kiosk	21	7%
Logo	147	46%
Mile Marker	38	12%
Mileage Finder	10	3%
Rules/Safety	22	7%
Trailhead	8	3%
Other	5	2%
Total	**320**	100%



Condition Methodology

Good

Left: An example of a sign classified as good. There is no fading or cracking. The sign is legible and useful.

Right: An example of a sign classified as fair. Slight fading but otherwise still legible and useful.

Fair

Poor

Left: A sign classified as poor. Sign is faded and paint is cracked. Sign still serves a purpose but is not appealing.

Right: A sign classified as needs replace. Sign has lost its functionality and should either be removed or replaced.

Needs Replace

Sign Classification Methodology

Below are examples of the general sign classifications used in the sign inventory. Some poles have more than one sign; for example, a Centennial Trail logo with an I-90 bike route sign. Because this study was focused on the Centennial Trail and not bike routes in general, any pole with a Centennial Trail logo was classified as "logo" in the gen_type category. In addition, any sign that had a directional arrow (whether it was a green and white bike route sign or a Centennial Trail logo) was classified in the gen_type column as "directional." The spec_type category differentiates between the two.

Left: Logo

Right: Kiosk

Left: Bike Route

Right: Trailhead

Left: Mile Marker

Right: Rules/Safety

Left: Directional

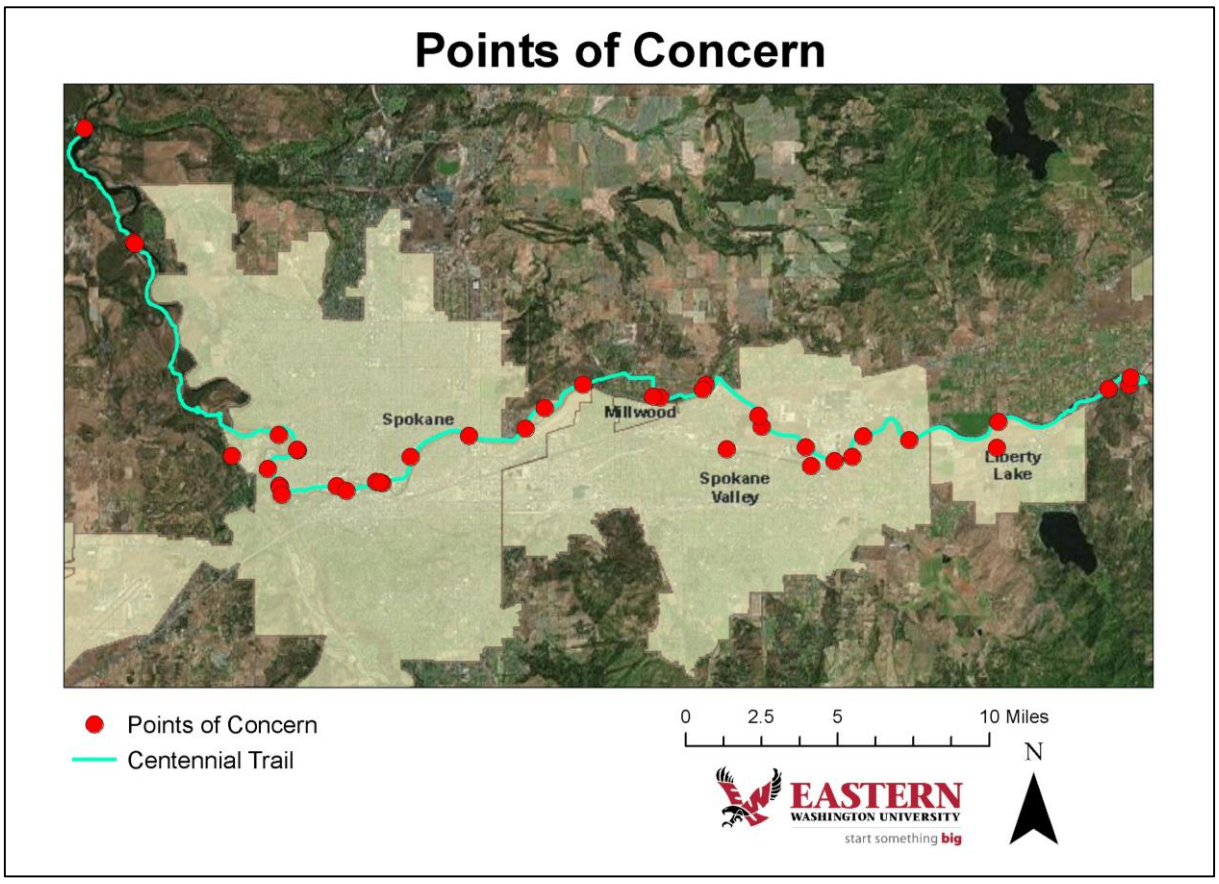
Right: Mileage Finder

Analysis of Results

From the sign inventory a number of "points of concern," or areas that should be given special signage and wayfinding consideration, were identified. I identified what I believe are the top five "critical areas" that are wider in scope and present multiple problems. These five areas are:

- State Line
- Mission St. crossing
- T.J. Meenach to Maxwell Ave.
- Riverfront Park to Riverpoint Campus
- Upriver Dr. to E. Maringo

For each of those areas I have included a map of the area in the appendix that shows existing signage in the area. I also identified several more specific points of concern that are limited to a smaller area; brief descriptions of those areas are provided.



ANALYSIS OF RESULTS

Five Most Critical Areas

State Line

The State Line area is confusing for a variety of reasons. First, the freeway off-ramp signage coming from the west directs Centennial Trail users to the south, but there is also an I-90 bike route sign directing users to the north. The gravel parking area to the south of the freeway doesn't look official, and it's unclear whether it is a trailhead.

Second, the Liberty Lake State Line Trail is easily confused for the Centennial Trail where the two trails intersect. There is nothing to orient a user to the area, and there is no signage designating either trail.

Third, the freeway off-ramp signage coming from Idaho is insufficient. There is no signage designating the Centennial Trail, but there is an I-90 bike route sign directing auto traffic to the right.

Mission St. Crossing

Clearly the Mission St. crossing is one of most difficult and dangerous arterial crossings along the Centennial Trail, and the Mission St. crossing project will drastically change the signage needs of the area. Nevertheless, implementation of new signage should coincide with construction because good signage is crucial to ensure ease of travel during and after construction. There should be no lag period between the completion of the crossing and the implementation of signage. Identifying a safe and friendly detour around construction activity will be crucial.

T.J. Meenach to Summit & Maxwell

The T.J. Meenach Bridge is another difficult portion of the trail to negotiate. Coming from the west, this is the first point that the trail goes onto a high volume arterial, and for a new user that is not entirely clear. New users might expect the trail to continue along the south/west side of the river. There should be a warning to users that they need to cross the bridge to stay on the trail. In areas like these with multiple decision points in a short distance, traditional signage can be confusing. Some other form of wayfinding should be considered for guiding cyclists and pedestrians under and across the bridge (possibly in the form of painted stripes, painted arrows, or pavement markers).

An equally confusing decision point is at Pettet St. and Maxwell Ave. where the trail takes a 90 degree right turn onto Maxwell Ave. There is no signage directing users to the right, and the presence of bike route signs along Pettet adds to the confusion.

Riverfront Park to the University District

Riverfront Park is one of the most highly trafficed sections of the trail, yet it has virtually no Centennial Trail signage. Signage on this section should not only safely and efficienty guide users through the area, but it should also attract people to the trail.

The patined lines near the Don Kardong bridge are faded and in need of repainting. It is also unclear whether the path that wraps around the condominium complex along the river is the official route. This is an area where the triple yellow wavy lines could be implemented to guide users in the desired direction.

Because the "wheels only" paths through Riverfront Park go east to west *and* north to south, it's difficult to tell what the actual route of the Centennial Trail is. Open spaces like Riverfront Park offer so many alternative routes that signage can be confusing or

completely missed. A different colored surfface, pavement markings, or a painted lane might offer the best solution for this section.

The Post St. crossing in front of City Hall has no Centennial Trail designation and causes confusion, especially for cyclists who are traveling faster than pedestrians and need to make decisions quicker. The redesign of Riverfront Park offers a perfect opportunity to incorporate Centennial Trail wayfinding in the dowtown area.

E. Urpiver to E. Maringo

The section between E. Upriver Dr. and the East Maringo Trailhead is another difficult section. Heading east on E. Upriver Dr. it is not entirely clear that the trail takes a right turn onto Farr. Rd. The picture to the left shows that intersection. Although, the arrow is the official indication of a right turn, it is not intutive. A simple single arrow pointing to the right might be more effective.

Heading west from the E Maringo Tralihead, there is no sign indicating that the route takes a right turn onto Farr Rd.; a new user would proably expect to continue traveling straight on E. Maringo.

Other specific points of concern

Nine Mile trailhead access

The parking sign on Charles Rd. just before the ranger station designates parking in both directions, but it isn't clear to a new user where the parking area to the left actually is. A sign should be placed in the parking lot in front of the ranger station to inform users that it is okay to park there. While the Charles Rd. crossing is painted like a cross walk, an alternative should be considered that makes it clear to users and drivers that the trail does in fact cross Charles Rd.

Seven Mile intersection auto wayfinding

Heading west on Seven Mile Rd. from Nine Mile Rd. there is no signage directing drivers to trailheads. It should also be clear to drivers that they are crossing the Centennial Trail.

ANALYSIS OF RESULTS

Rethink Seven Mile Rd. intersection

The existing signage at the Seven Mile Rd. intersection works in theory, but on the ground it is still confusing (especially for first-time users). Intuitively, coming from the east, a user would travel all the way up to the intersection before making a decision about which direction to travel. Cyclists especially don't like to ride against the flow of traffic.

Direct Fort George Wright traffic to Military Cemetery Trailhead

A sign should be placed underneath the signal at the intersection of W Government Way and Fort George Wright to direct Fort George Wright traffic to the right.

Trail's intersection with Summit Blvd. and Boone

For users traveling in both directions, when the separated trail meets Boone, there should be clear guidance. Users traveling toward downtown might intuitively stay on Summit Blvd., while users traveling away from downtown might go left or right on Boone. This would be a great opportunity to utilize pavement markings because of the length of the crossing. A sign placed on either end of the crossing would be too difficult to see from the other side, but some mechanism to guide users on the ground would work well.

Fish Lake Trail Access

The switchback going down to the Fish Lake Trail should be designated especially because, heading west, a user might think the route follows the switchback down to the river.

Sign All Trailheads

Many of the trailheads are not designated (in particular Mission Park, Greene St., John Shields, Boulder Beach, E. Maringo, & E Mission). This makes it unclear to new users whether it is okay to park and whether or not they are near the trail. In addition to a sign designating the trailhead itself, there should always be a sign from the road that directs auto traffic to the trailhead. The Islands Trailhead should be resigned, because the existing sign is not noticeable from the road. The N. Mirabeau trailhead has a sign indicating that it is a

trailhead, but there are no signs directing auto traffic to the trailhead. Likewise, the S. Mirabeau Trailhead has no designation from the road or at the trailhead itself.

Unclear when bike and pedestrian routes diverge just west of the dam by Camp Sekani

Heading east toward Spokane Valley, when bikes and pedestrians are separated, it should be clearer that both the bike route and the pedestrian path are the Centennial Trail. A new user might think the pedestrian path goes somewhere different.

Clarify Route at Islands Trailhead

For users heading east at the Islands Trailhead, it's not entirely clear that the trail continues to the right over the bridge. Intuition would say to continue heading straight.

Unsigned Valley Mall access point

The access path to the Valley Mall is not designated along the trail. This is a major commercial attraction that is easily accessible to trail users. There are signs directing pedestrians from the mall but none directing users to the mall.

Access to Riverpoint campus

The trail passes right through Gonzaga's campus, but it is somewhat hidden from the WSU/EWU Riverpoint campus, even though it is within 100 yards of campus buildings. The Centennial Trail offers the only safe pedestrian bike access to downtown for students, faculty, and staff. Consider signage directing campus-goers to the trail with distances etc. A partnership with the universities could help with the implementation of new signage.

Sign all paved access points

There are several unsigned, paved access points along the trail; one just east of Sullivan St., one at Montgomery and Flora, and one just east of the Harvard Rd. trailhead.

E. Mission trailhead

It should be clearly signed that it is okay to park at the E. Mission trailhead. It looks like the parking spaces could be for apartment residents only.

Surface change just before mile marker 1

Just before mile marker 1 the surface changes from smooth pavement to concrete with wide cracks, which is potentially dangerous for cyclists. There should be some warning to riders at least 30-60 feet in advance.

Roundabout at Harvard. Rd.

The new roundabout at Harvard Rd. should be signed to direct traffic from all directions to the Harvard. Rd. trailhead.

Eastbound Sullivan St. Exit

The eastbound Sullivan St. exit should direct users to the Sullivan Trailhead.

Access to Spokane Community College

Consider signing access to SCC from the trail in both directions (*Eastbound*: from Mission St. onto E. South Riverton Ave. *Westbound*: from E. Upriver Drive, up Ralph St., over Carlisle Ave. and onto Greene St.

I-90 traffic at Pines Rd.

Consider directing I-90 traffic from both directions at the Pines Rd. exit to the Mirabeau trailheads.

Signage Alternatives

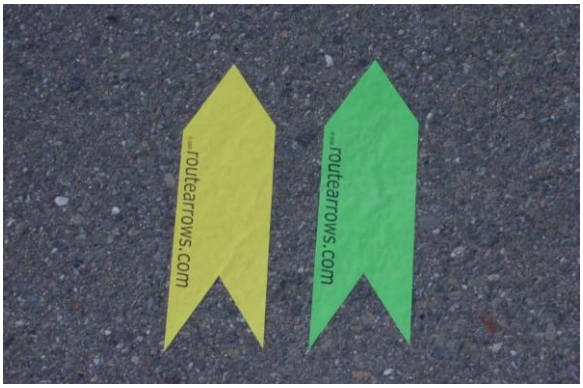
Because the Centennial Trail is unique, it demands unique wayfinding solutions. The Centennial Trail already has a good signage system in place, with logos that confirm to users that they are on the trail and arrows at most 90 degree turns. Closer to Nine Mile Falls, mileage finders are common with multiple destinations and distances listed. Elements of the existing wayfinding system that work well should be implemented elsewhere, but that should not eliminate other, possibly better, alternatives. This section will visually present some wayfinding and signage alternatives, starting with non-traditional wayfinding solutions that don't depend on signs.

Pavement/Ground Level Wayfinding

Above: Users of the Centennial Trail have already seen the utility of pavement wayfinding as these spray-painted directional arrows demonstrate.

Above: Two examples of pavement markers that can be used to confirm to users that they are on the trail.

SIGNAGE ALTERNATIVES



Right: An example of temporary, inexpensive pavement decals that are usually used to mark race courses, which could easily be used to test the effectiveness of ground-level wayfinding

Below: Several examples of permanent pavement decals that could be used to mark the Centennial Trail in open spaces like Riverfront Park where signs may not be as effective. They can also be used before and after decision points to direct users and confirm their choices. Many of these pavement decals are fully customizable, meaning the current logo could be used. They are also simple and inexpensive to apply.

SIGNAGE ALTERNATIVES

Left and Above: A combonation of these painted markings and surfaces could be utlized in select areas along the trail. This type of infrastructure is highly effective in areas where signs may be too ambigus and where users need to make decisions quickly.

Right: The triple yellow wavy lines already in use on the Centennial Trail are a great way to guide users through confusing sections. They could even be extended to cover longer distances to designate an entire section of trail (especially where the trail changes from a seperated to a shared use path).

SIGNAGE ALTERNATIVES

Left: A long term and effective solution would be to paint entire sections of the trail in the difficult to navigate areas (similar to the green paint used in urban bike lanes).

Below: A single stripe improves safety, guides users at decision points, and confirms to users that they are on the trail (with much less paint).

Left: Regular street striping can also be used to improve safety and clearly identify the Centennial Trail.

Right: This pavement stores energy from the sun's UV rays during the day. At night the surface releases the energy, allowing the particles to glow in the dark. This could be a viable long-term solution for nighttime wayfinding in areas that get nighttime use. It would certainly be an attraction and improve safety.

SIGNAGE ALTERNATIVES

Traditional Sign-Based Wayfinding

While ground-level wayfinding has its benefits, it cannot fully replace the functionality of good signage. Instead, a combination of the two should be considered. The Centennial Trail already has some good wayfinding examples to look to.

Left: A great example of wayfinding along the Centennial Trail that catches the eye and displays information effectively. The only shortcoming of this sign is that it doesn't state that the trail that gets you to the destinations is the Centennial Trail.

Right: Another good exmaple of wayfinding. It has a uniform look, and it clearly conveys to the user that they are on the Centennial Trail.

Below: This is a great example of how destinations can be designated along the trail.

SIGNAGE ALTERNATIVES

Above: This wayfinding sign provides distances and time of travel by bike and by foot.

Right: A traditional bike route wayfinding sign with distances and time of travel by bike.

Left: Non-traditional signage indicating distances and time of travel.

Left: Posts like these may be less expensive and just as effective as traditional metal signs on metal posts.

Right: Large, well-designed markers like these help bring an identity to a trail. Markers like these could be highly effective at major access points like Riverfront Park, Kendall Yards, or at State Line.

Suggestions on Signage

- In difficult sections, with multiple decision points, use painted lines, painted arrows, or other pavement markers to guide trail traffic (especially at T.J. Meenach, the trail's intersection with Boone, in front of City Hall, and through Riverfront Park)
- There is a general confusion between bike routes and the Centennial Trail. Centennial Trail signage should look different. Implementation of more green and white bike route signs on the trail should be avoided.
- The Manual on Uniform Traffic Control Devices (MUTCD) says that for bicyclists, a good baseline distance required to read a sign and determine an action is 30 feet from the intersection (obviously vegetation or other obstructions must be taken into account). Any implementation of new signage should take this into consideration.
- Use graffiti film on signs low to the ground.
- Avoid the use of diagonal arrows, which are too ambiguous.
- For destination names that are too long to fit on wayfinding signs, use intuitive abbreviations without periods.
- Confirmation signs at intersections should be between 30-60 feet on the far side of the intersection after the decision point and preferably within sight of the decision point.
- Any notable cross streets should be identified along the trail, especially those that are part of the regional bike map.
- Use signage to alert motorists when they are crossing the Centennial Trail (especially in Spokane Valley and at Mission Park).
- Pavement decals and temporary biodegradable decals can be used to test the effectiveness of ground-level wayfinding.
- For signs in poor condition consider whether it is really necessary to replace. General recommendations say that on a shared road path signs are only needed every ¼ mile to 1 mile. In the valley, logos are spaced every several hundred feet.
- Use mileage finders (possibly in the style of those used on the western portion of the trail) whenever possible, especially at high traffic areas and at trailheads.
- Consider rebranding the centennial trail logo. To visitors the logo itself doesn't have significance, the text needs to be larger (especially for freeway off-ramp signs).

Trail Count Findings

Accurate trail traffic data is important because of its implications for the efficient allocation of resources. Areas of high use can be prioritized for improvements; areas of low use can be identified and strategies can be developed to increase activity in those areas. Basically, meaningful data collected over time is necessary for the future development of the trail.

Currently the only consistent count of users being conducted is by State Parks. There are underground car counters at select Centennial Trail trailheads (Carlson, Marin, Boulder Beach, Islands, Mirabeau S., and State Line) which have been running for about ten years. The data from those counters is collected manually by a State Parks employee. There is also a permanent infrared pedestrian/bike counter at the Don Kardong Bridge. This data is also manually collected by a State Parks employee. That counter has been collecting data for about two years. To the best of my knowledge the data is consistently collected but not analyzed.

WSDOT Eastern Region is getting two "eco-counter" bike/pedestrian counters (which are permanent counters) to place along trails in the region. One is planned to go along the Ben Burr trail, and the other one is planned to go somewhere along the Centennial Trail, most likely in Kendall Yards.

By the end of 2015 SRTC expects to have put together a regional bike and pedestrian count plan. This plan will specify the purpose of the data collection; identify data collection resources; select count locations and determine the count timeframe; consider different methods and technology, all while coordinating with member agencies. This would be a great opportunity to make sure several points along the Centennial Trail are included in the plan.

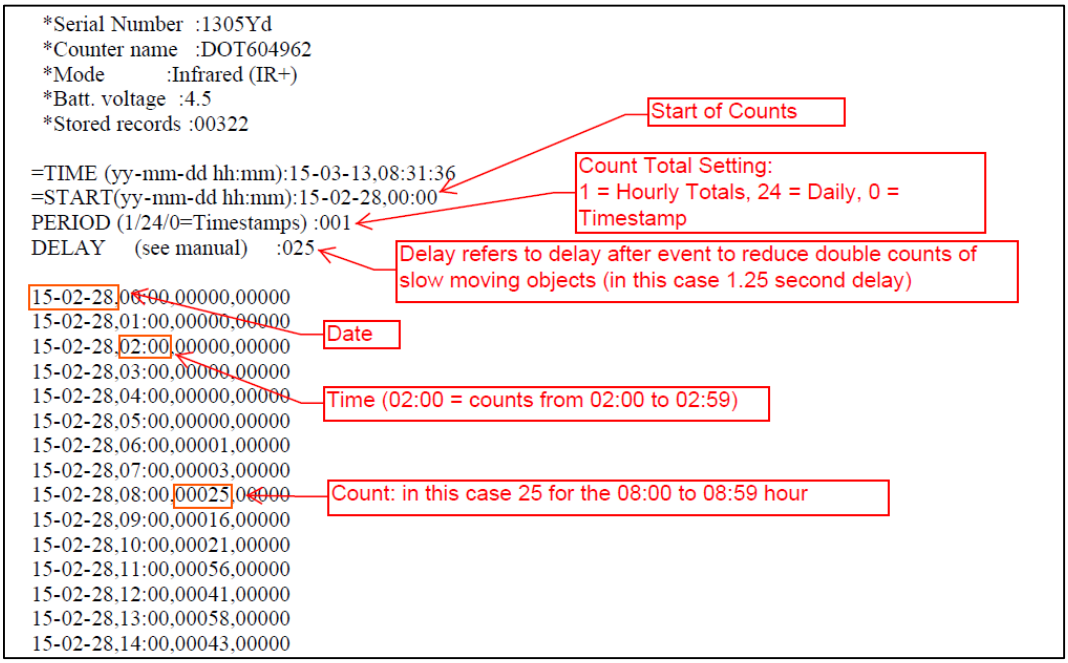
WSDOT Eastern Region also has five "TRAFx" infrared bike/pedestrian counters (more temporary counters). The benefit of these counters is that they can be placed in a variety of locations and be moved easily. WSDOT was happy to lend these counters for the purpose of counting users along the Centennial Trail. One counter was placed in Riverfront Park, one was placed under the Monroe St. Bridge, one was placed in Kendall Yards, and one was placed where the trail intersects with Boone. The counters ran from Friday Feb. 27th to Monday Mar. 9th in order to capture two full weekends. Unfortunately, Riverfront Park maintenance was not notified of our count and removed the counter along the Howard St.

TRAIL COUNT FINDINGS

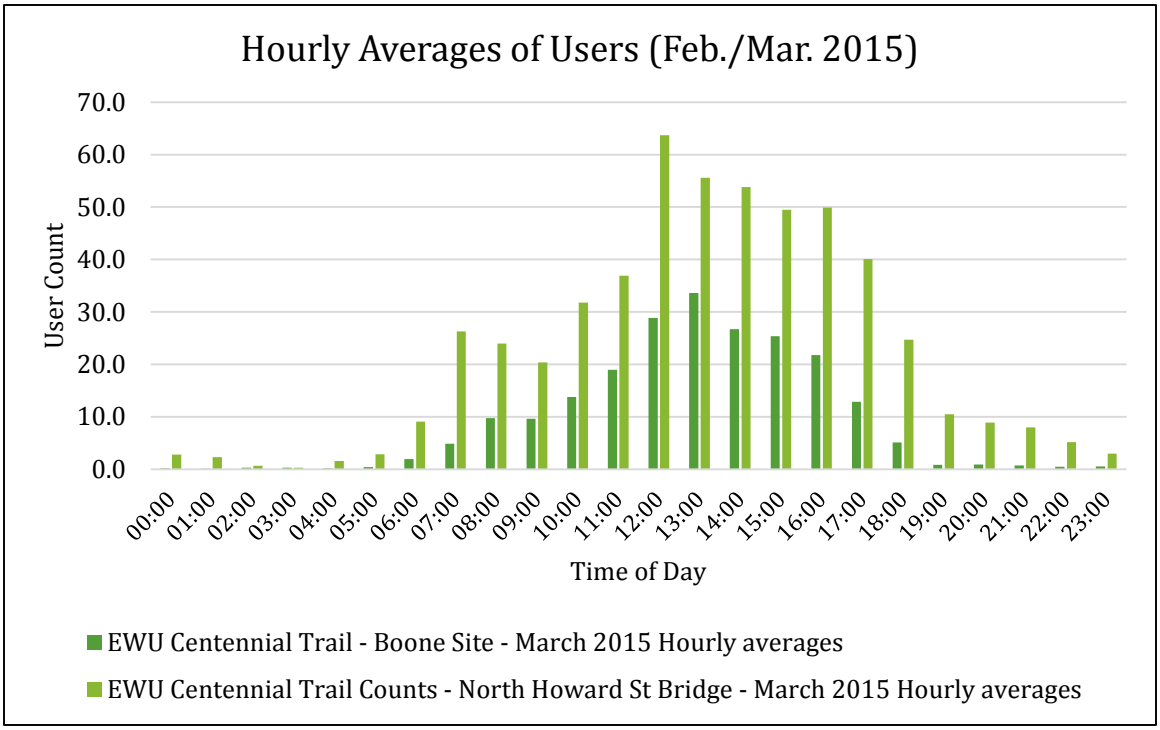
Bridge four days into the count. In addition, the counter under the Monroe St. Bridge and the counter in Kendall Yards malfunctioned, and the data was lost. Therefore, the only accurate count that was captured was at the trail's intersection with Boone. Obviously a two-week-long count in late February/early March at the west end of Kendall Yards doesn't tell much of a story, but the purpose of this count was to show how the counters and data can be used on an ongoing basis.

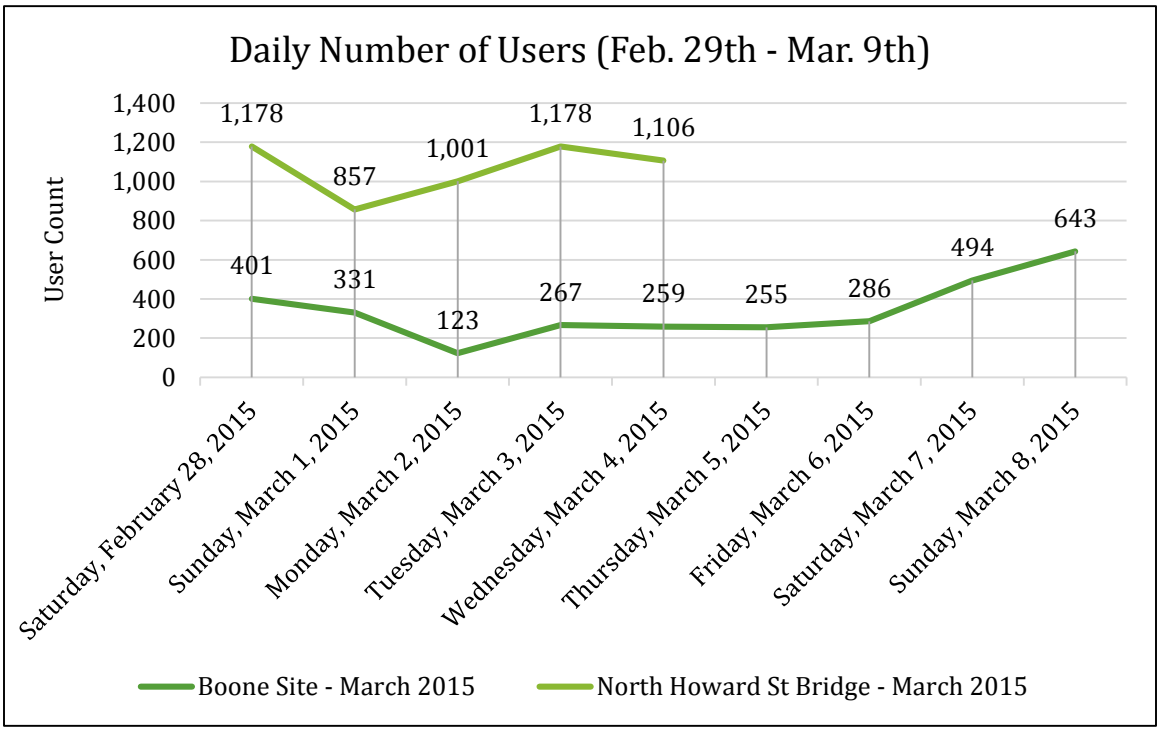
Below: The TRAFx counters can be placed in gray utility-like boxes and attached to poles. They have roughly a 20 foot range.

Below: An example of the raw data the counters generate. The data can be aggregated into daily counts or monthly counts if needed.



TRAIL COUNT FINDINGS

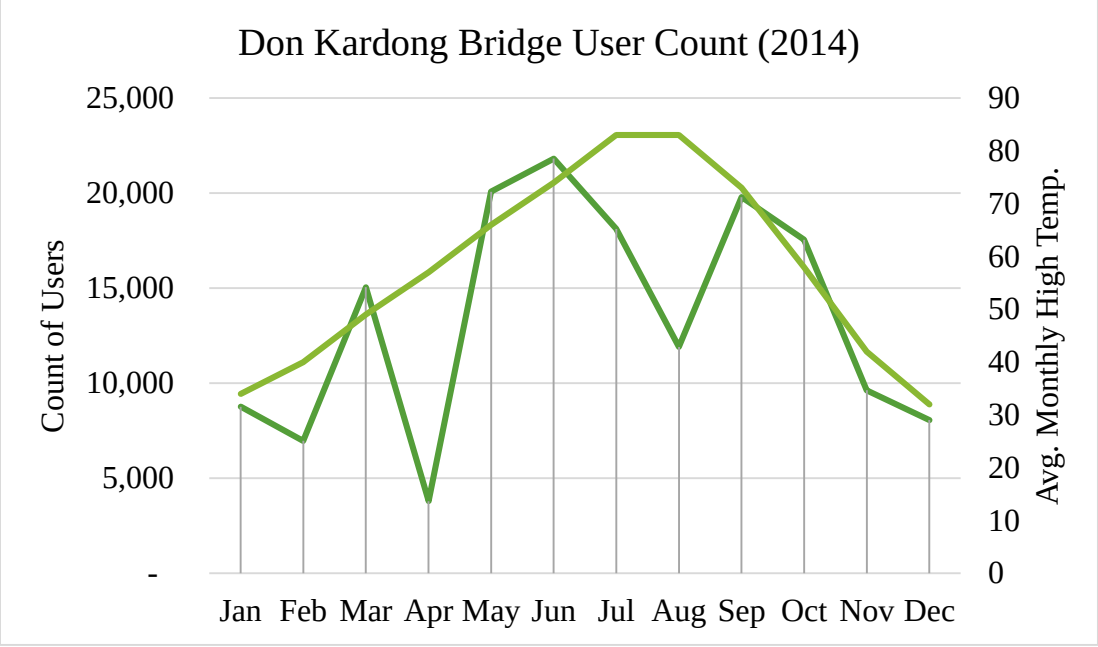




State Park Data from the Don Kardong Bridge

The following user count data was provided by WA State Parks. It is the only full year available for this particular counter at the Don Kardong Bridge (the pedestrian bridge between the Gonzaga campus and the Spokane Riverpoint campus). It is hard to make any definitive statements from a single year, but the data suggests that use is closely correlated to temperature. The anomaly in April is most likely due to a malfunction of the equipment because the average high temperature in April 2014 was normal and there was zero snowfall that month. The big dip in use in August could also be a malfunction in equipment, but it could also be due to very high temperatures. The average high temperature in August 2014 was two degrees above the historic average. High temperatures can certainly discourage use as much as cold weather can. This data set only scratches the surface to the type of analysis that could be done with longitudinal data.

Don Kardong Bridge User Count (2014)													
Year	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	**Total**
2014	8,762	6,968	15,052	3,789	20,076	21,821	18,124	11,908	19,795	17,554	9,629	8,065	**161,543**
Source: WA State Parks													



Suggestions on Trail Counts

The difficulty of getting an accurate count.

Getting an accurate count of users is difficult. Counting the number of automobiles at trailheads is one method that State Parks has been utilizing for the past decade. However, trailhead auto-counts depend on static formulas to predict the number of users in each vehicle. State parks uses the same formula at the Centennial Trail trailheads as they do for camping areas, which is three users per vehicle. While this formula may be accurate at camping areas, it has not been verified to be accurate for Centennial Trail trailheads. Trailhead auto-counts also miss any users that access the trail by foot or by bike, which is especially common in urban areas. In short, counting automobile traffic at trailheads can either under-count or over-count users.

Pedestrian/ bike counters also present problems with accuracy. For activity in a particular area, pedestrian counters can provide valuable information, but for assessing activity on a section of the trail or the entire trail, pedestrian counters can't provide an accurate number. If users travel past more than one counter then they will have been counted more than once and corrupt the accuracy of the data. Infrared counters (which most pedestrian counters are) also have difficulty counting groups of individuals.

In order to make infrared counter data accurate, sample data needs to be collected in person that compares the accuracy of infrared counters to a visual, manual count. The sampling should also look at the percentage of people traveling in groups. Once a predictive formula is generated, it can be applied to adjust the data the counters generate.

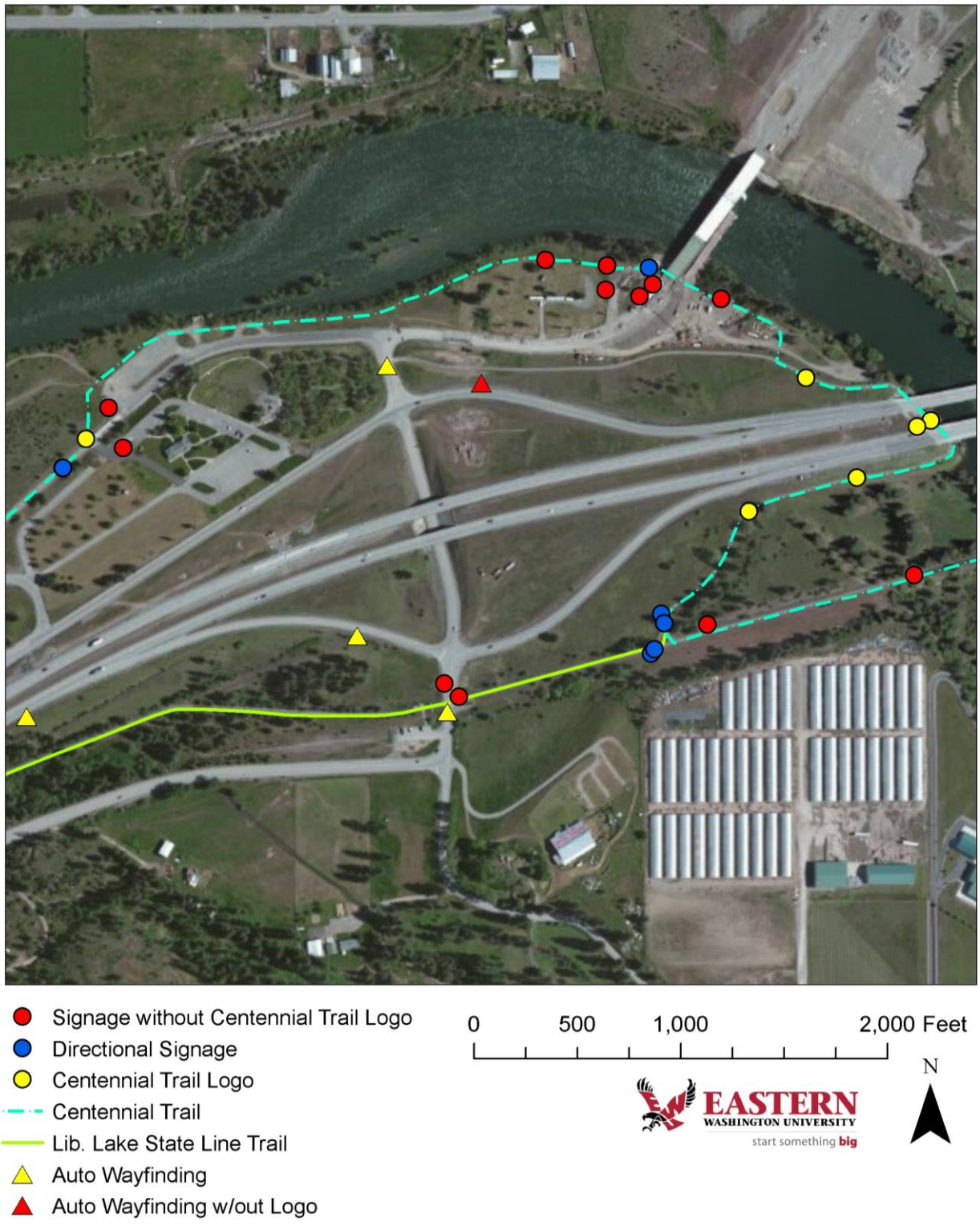
Moreover, longitudinal data is more accurate and more reliable. The larger the data set, the more meaningful the story it can tell. That is why it is important that some method for continual counting be established at several locations along the trail.

Conclusion

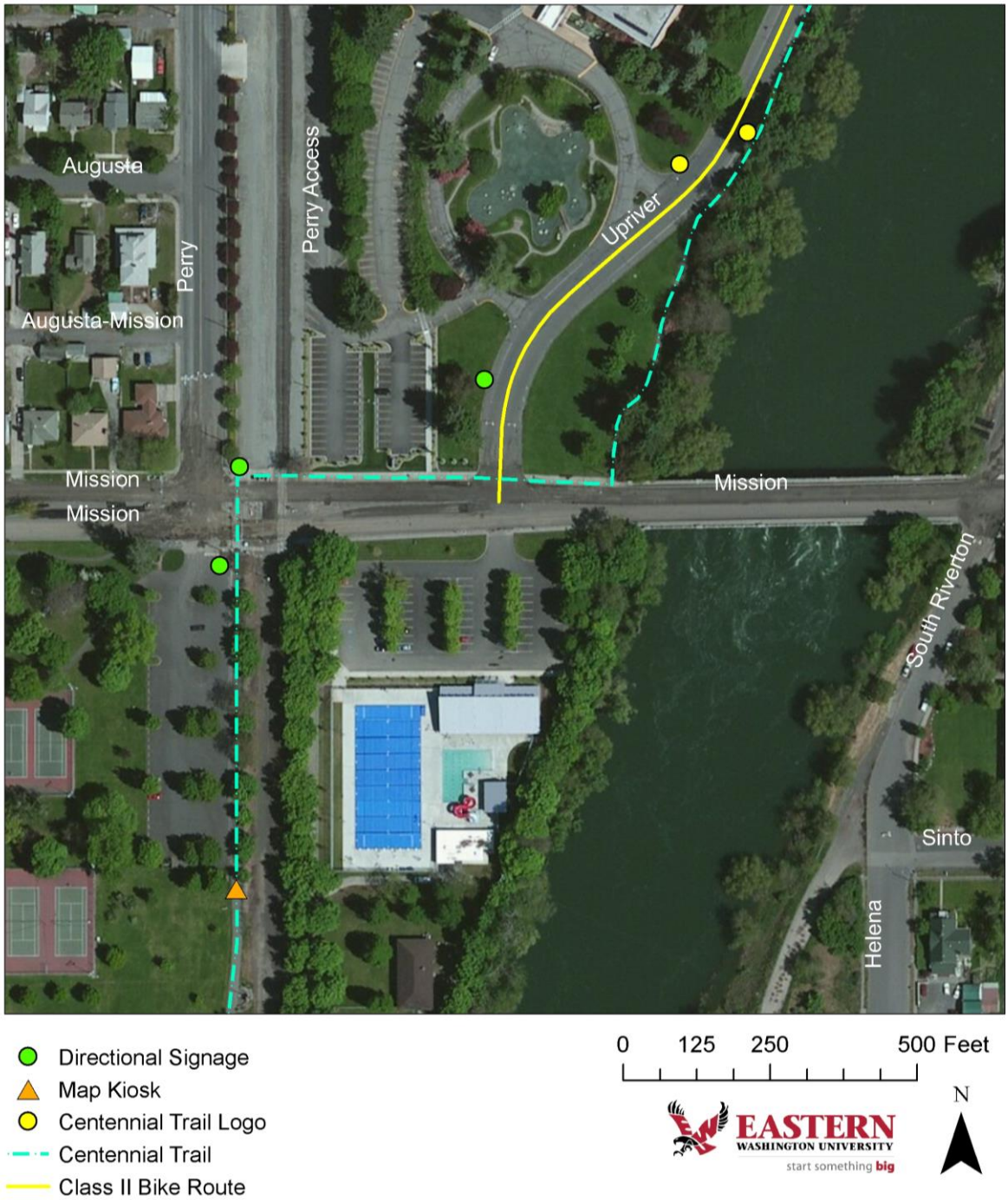
The Centennial Trail is a world-class recreation and transportation asset to the region, and a world-class trail requires world-class signage and wayfinding. A long-range work plan should be developed for the maintenance of existing signage and the implementation of new signage. New, innovative wayfinding solutions are needed in the difficult to navigate areas. Other comparable areas can be looked to for guidance, but keep in mind that no two locations are identical; create solutions that work for the Centennial Trail. While pavement markings may require more ongoing maintenance than traditional signs, in some locations they could be highly effective. The most time and energy pertaining to signage should be focused downtown. The lack of signage in the most highly trafficked section of the trail provides a great opportunity to increase awareness and use of the trail.

APPENDIX

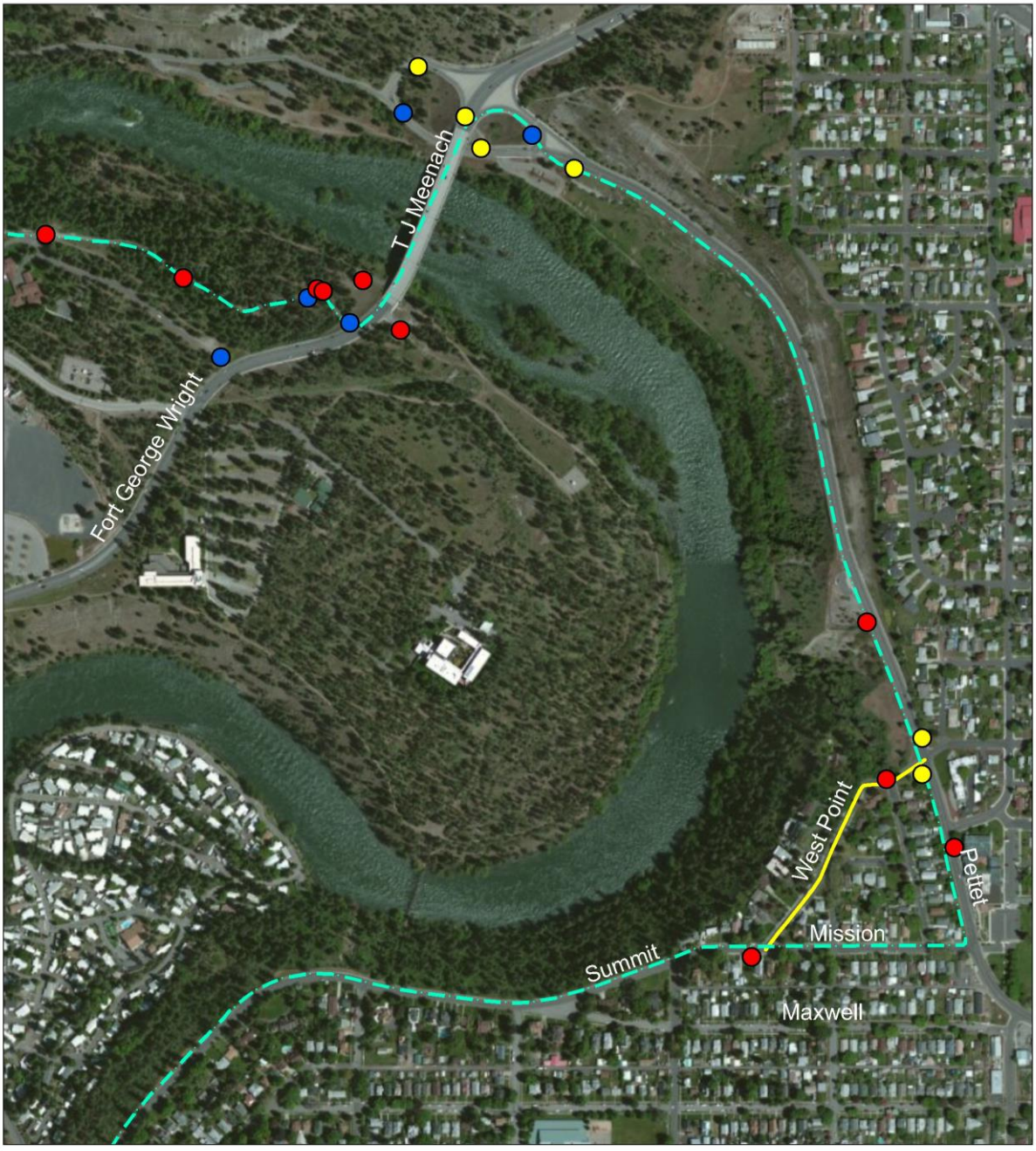
State Line



Mission St. Crossing



T.J. Meenach to Maxwell



Signage without Centennial Trail Logo
Directional Signage
Centennial Trail Logo
Centennial Trail
Class III Bike Route

0 0.125 0.25 0.5 Miles

N

EASTERN WASHINGTON UNIVERSITY
start something big

APPENDIX

Riverfront Park to Riverpoint Campus

- Bike Route
- Map Kiosk
- Mile Marker
- Rules/safety
- Centennial Trail

0 0.125 0.25 0.5 Miles

N

EASTERN WASHINGTON UNIVERSITY
start something big

Upriver Dr. to E. Maringo

Most importantly, this would provide a safe, easy-to-follow Centennial Trail route heading west from downtown Spokane: Trail users would first pass underneath the Monroe Street Bridge. They would head west through the Kendall Yards Development, with vistas of the Spokane River Gorge along the way. Finally, they would utilize the abandoned railroad grade parallel to Summit Avenue. This route would add approximately three miles of beautiful new, Class One trail.

Opportunity:

- Minor improvements needs: ramping down to existing grade from Summit, planting and paving. The costs of completing this section would be minimal.
- Panoramic views throughout.
- Interpretive opportunities: geology, Native American history, early Spokane and railroad storylines.
- This abandoned railroad grade is in the public right of way; therefore there would be no acquisition issues.

Constraint:

- Careful alignment and design required to climb grade up to Boone and Summit intersection.

Summit Avenue and Boone to Spokane Falls Community College

Alternatives

Three potential alignments were studied north from the Boone/Summit intersection to the Centennial Trail at the Riverside State Park/SFCC trailhead. The key component of this segment is crossing the Spokane River. The options include: 1) renovating an existing historic bridge near river level. This bridge has been out of service for decades. At one time it had a deck that may have accommodated a single lane of carriage traffic plus pedestrians, 2) building a new 700 foot long bridge about eighty feet above the river connecting the end of the abandoned Natatorium Park streetcar grade with the edge of the gorge across the river, and 3) running on sidewalks for pedestrians or adjacent to the roadway for cyclists from Summit Boulevard to Pettet Drive then on a multi-use pathway adjacent to Pettet Drive to T.J. Meenach Bridge where bike lanes and sidewalk accommodate trail users.

1) Renovate the Low Level Bridge

Spokane's streetcar network once served Natatorium Park, the area north and west of the Boone/Summit intersection. From 1889 to 1967 Nat Park provided amusements to the Spokane community including a beautiful baseball field, gardens, a heated swimming pool, rides and other diversions. (www.natpark.org).

Natatorium Park was closed in 1967, replaced by San Souci Trailer Park, a private residential community. There are no public roadways through the park and no public access to the river. However, access is not gated.

Opportunity:

- The historic storyline of the streetcar and Natatorium Park are powerful local history items not well told in any venue. Traces of the streetcar line and station, and the setting of Natatorium Park are suitable props for interpretation.

Constraint:

- There is no public access at river level to the end of the existing historic bridge.

The historic, one-lane steel bridge is located downstream of San Souci. The abutments are at the ordinary high water line at both ends of the bridge. There is no deck and although it has in the past carried utility pipelines, there are currently no functioning utilities on the bridge. The south end of the bridge, on the San Souci side of the river is positioned at the base of an extremely steep and erodible slope.

Opportunity:

- Reuse of some of the existing bridge infrastructure could simplify permitting.

Constraint:

- Access to the south end of the bridge from San Souci or the streetcar grade would require structural solutions for the tall erodible slope.
- This bridge location would require an on-road segment along Boone Avenue and private roadways in San Souci.

Existing Low Level Bridge

The existing abandoned bridge near river level lands on park property on the edge of the Sisters of the Holy Names campus 750 feet from their nearest building. The trail alignment from this point would turn east crossing public and private property along the river. The trail would connect with the Centennial Trail where it passes under the west end of the Meenach Bridge.

Constraint:

- Right-of-way acquisition or an agreement for trail use would be necessary with the Sisters of the Holy Names.

Opportunity:

- This alignment has less hill climbing and makes use of the existing Centennial Trail underpass at the west end of the Meenach Bridge.

2) Build a New High Level Bridge

Spokane has several dramatic bridges over the Spokane River. A potential high-level location for a trail bridge from the end of the Natatorium Park streetcar line would provide another opportunity for a signature bridge.

The approach from the south would begin at the Boone/Summit intersection where the faint trace of the abandoned Natatorium Park streetcar line disappears into the forested hillside. The 1800 foot existing abandoned streetcar grade is suitable for conversion to a trail with very little work.

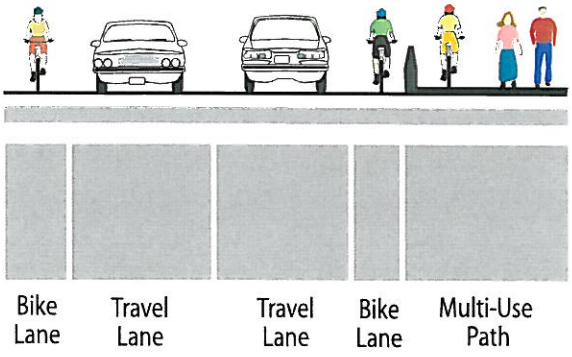
Opportunity:

- This alignment would create a 100% off-road trail from Downtown Spokane to Riverside State Park.
- The streetcar line is on park property and would require very little additional grading to be suitable for a trail access to the high-level bridge.
- There is great interpretive potential in the forested hillside, abandoned streetcar line and the ruins of the Natatorium Park station.
- The shape of the gorge and steep slopes at this location makes a 700 foot span necessary. The bridge would be approximately eighty feet over the Spokane River. A more extensive study is required to establish the feasibility of building this bridge.
- Spectacular views of the river.

Constraint:

- The long span would be an engineering challenge and could be costly. Some right-of-way acquisition may be required for bridge construction.

The new bridge alternative would land on Sisters of the Holy Names property approximately 480 feet from their nearest building. Trail alignments would proceed northwest up the edge of the bluff toward a new underpass of Ft. Wright Parkway and on to Spokane Falls Community College.



Pettet Drive Proposed Section

Opportunity:

- This alignment is the most direct connection to Spokane Falls Community College.

Constraint:

- Right-of-way acquisition or an agreement for trail use would be necessary with the Sisters of the Holy Names and Spokane Falls Community College.
- A crossing of the Ft. Wright Parkway would be required. An overpass could be built at the southeast corner of the campus, or an on-grade crossing could be developed at the traffic light near the center of campus.

Coordination of trail alignment with campus development will be necessary for this option. The alignment provides good campus access, serving faculty and student commuters and visitors. Improvement of the access to the existing Centennial Trail segment on the north border of the campus is necessary.

3) Utilize Pettet Drive and the Existing T.J. Meenach Bridge

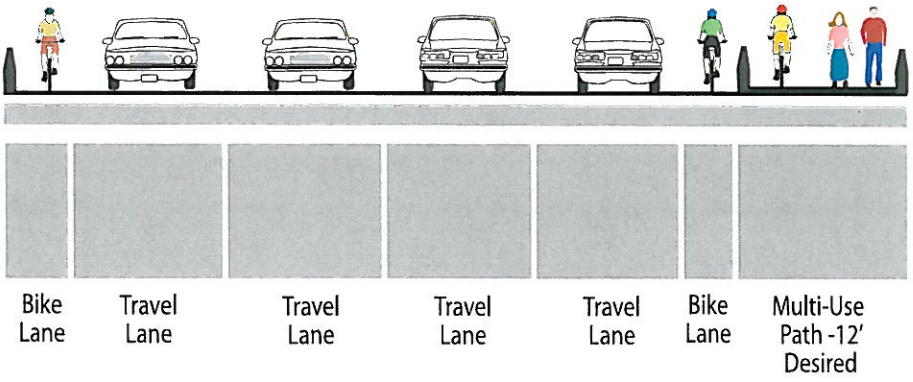
The existing Meenach Bridge carries four lanes of Fort George Wright Parkway over the Spokane River. A narrow sidewalk on the south side of the bridge carries non-motorized traffic. There are 4-foot bike lanes on each side of the roadway. The Centennial Trail resumes at the west end of the Meenach Bridge where an underpass and paved trail connects to the sidewalk and both bike lanes.

a) Boone and Summit to the Meenach Bridge

The approach to the Meenach Bridge from the south is by way of on-road cycling on Summit, Mission, West Point and Pettet Drive. Pettet is a 44 foot wide arterial carrying one traffic lane and narrow bike lanes in each direction. A 5 foot sidewalk on the east side of the roadway is little used and denies pedestrians the dramatic view of the river below.

The apparently excessive width of the lanes on this section of Pettet may be attributable to its use during the annual Bloomsday race. The half-mile section southbound from the Meenach Bridge is known as Doomsday Hill for its brutal reputation in the 7.5 mile event. Doomsday Hill punishes many of the 50,000 annual participants as they slow down and bunch up on the long climb.

Using this alignment without creating an off-road trail on the west side of the roadway would result in an on-road segment for this busy and fast arterial of the Centennial Trail. Some of the roadway is supported by a retaining wall making widening for an off-road trail difficult.



Meenach Bridge Proposed Section

Opportunity:

- Creating an off-road alignment for running, walking and cycling would benefit runners in training and other users 364 days per year.
- Improving the connection from Boone and Summit to the west end of the Meenach Bridge would be the most cost effective and immediate means of connecting the downtown Spokane to the downstream segments of the Centennial Trail.

Constraint:

- Modifying Doomsday Hill could be controversial with Bloomsday runners. Necessary improvements include narrowing the wide travel lanes and building an off-road trail.
- Parking along West Point and Summit Drive may have to be limited.
- A viewpoint on the west side of Pettet Drive provides parking and a panoramic view over the gorge. There are no pedestrian connections to the viewpoint.

b) Meenach Bridge

The non-motorized accommodations on the T.J. Meenach Bridge are sub-standard. A narrow sidewalk on the south side of the bridge is used by pedestrians and though not legal, by many cyclists. There is no room for opposing traffic to pass on this walkway that varies in width down to less than 5 feet. Bicycles are limited to 4 foot bicycle lanes in each direction with no special attention to crossing the merges and lane changes necessary at the on and off-ramps on the east end of the bridge. Cyclists traveling down Pettet Drive from downtown Spokane are expected to pass under T.J. Meenach Bridge and circle around the cloverleaf entrance ramp and merge into westbound traffic next to the bridge railing. There is no sidewalk on this side of the bridge. The route is signed.

c) Meenach Bridge to Spokane Falls Community College

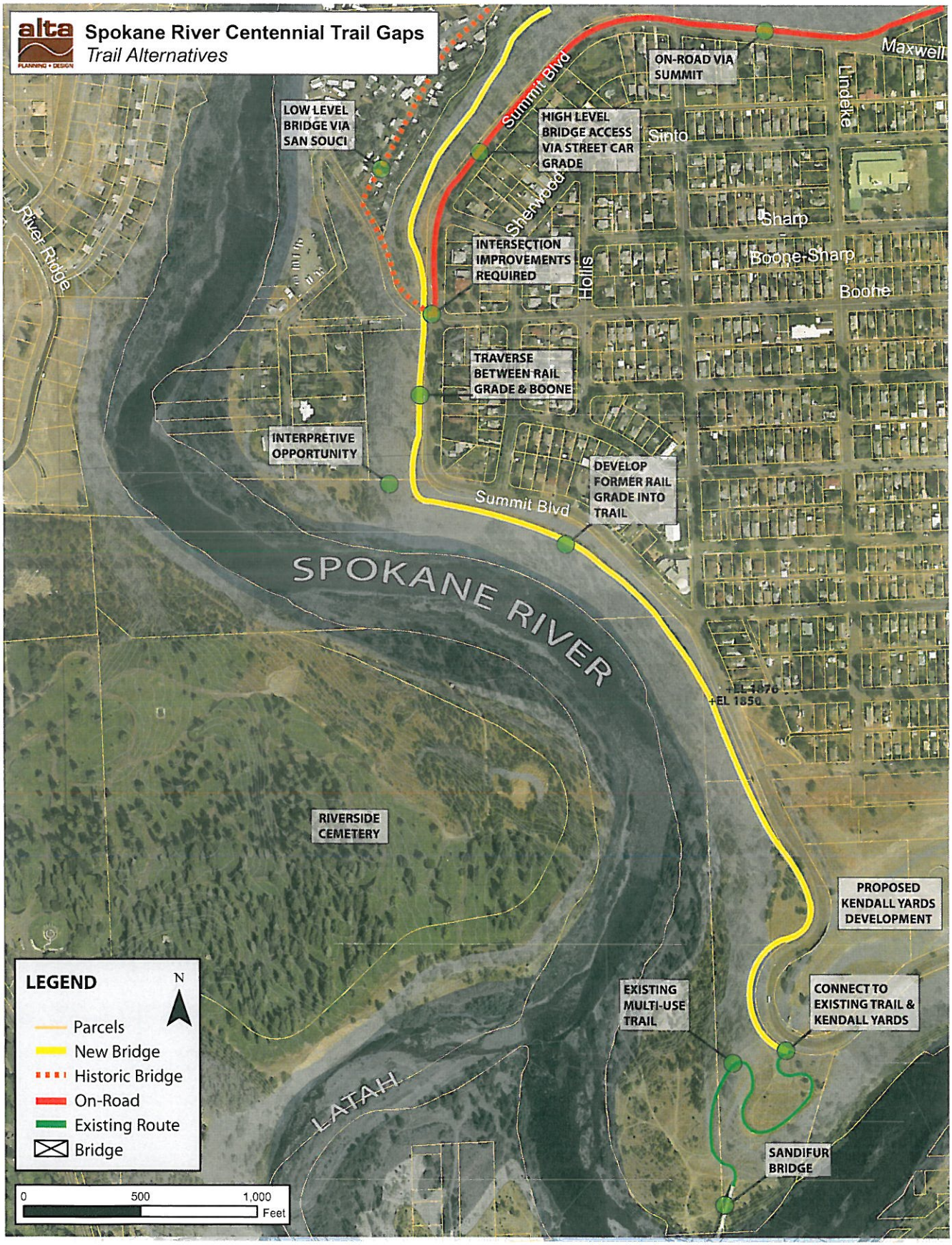
The Summit and Pettet Drive option intersects the existing Centennial Trail at the west end of the Meenach Bridge. A trail connection to campus can be developed at the north end of campus near the Music Annex. The other two bridge options would require access across property owned by the Sisters of the Holy Names convent.

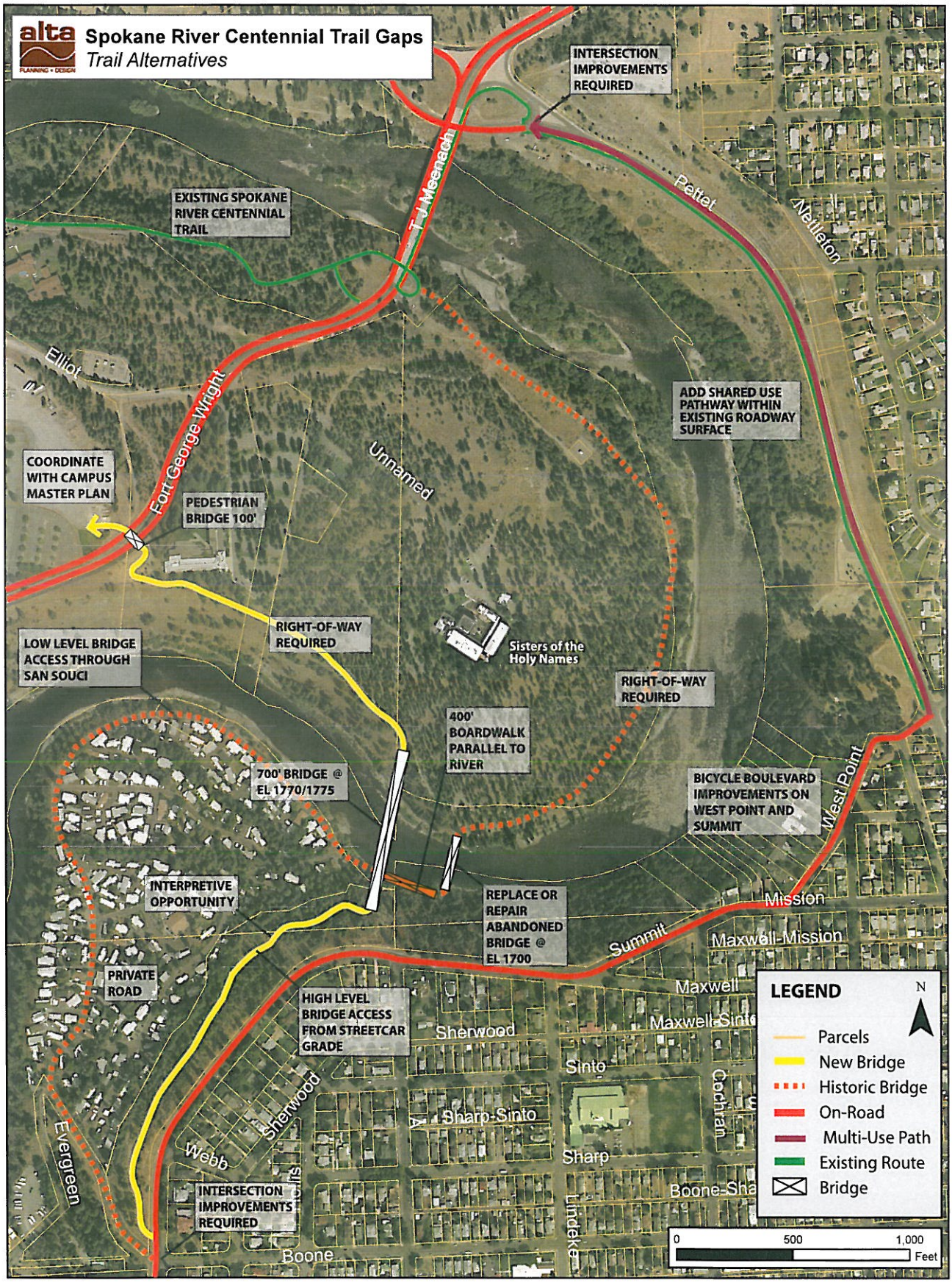
Recommendation

1. Several alignments are possible for the gaps north of Kendall Yards to Riverside State Park/SFCC. A clear and simple alignment is available up to the Boone and Summit intersection mostly on existing abandoned rail grades and entirely on public property. Continuing north, regardless of future bridge improvement possibilities, an on-road bike route should be signed and striped and traffic-calming elements included on Summit, Mission and West Point avenues to Pettet Drive. Sidewalks should be improved throughout this segment on the river side of the roadways. From West Point north to the viewpoint an off-road multi-use trail should be built on the west side of Pettet Drive. North of the viewpoint, the roadway surface should be rearranged to provide for a 14-foot multi-use trail on the west side of the roadway.

2. A new High-Level Bridge should be pursued as a means of extending the off-road multi-use pathway north to Riverside State Park/SFCC. Further feasibility analysis should be made of the high bridge option including geotechnical analysis and preliminary structural engineering evaluation.

3. Finally, regardless of whether a new bridge is built or not, public access to the natural resource and open space amenities of the shoreline and the edge of the bluff should be included in the city's comprehensive plan to establish this connection as a condition of future property redevelopment.


alta
PLANNING + DESIGN
Spokane River Centennial Trail Gaps
Trail Alternatives
LOW LEVEL BRIDGE VIA SAN SOUCI
HIGH LEVEL BRIDGE ACCESS VIA STREET CAR GRADE
ON-ROAD VIA SUMMIT
INTERSECTION IMPROVEMENTS REQUIRED
TRAVERSE BETWEEN RAIL GRADE & BOONE
INTERPRETIVE OPPORTUNITY
DEVELOP FORMER RAIL GRADE INTO TRAIL
RIVERSIDE CEMETERY
PROPOSED KENDALL YARDS DEVELOPMENT
EXISTING MULTI-USE TRAIL
CONNECT TO EXISTING TRAIL & KENDALL YARDS
SANDIFUR BRIDGE
Summit Blvd
Maxwell
Lindeke
Sinto
Sherwood
Sharp
Hollis
Boone-Sharp
Boone
River Ridge
SPOKANE RIVER
LATAH
+EL 1876
+EL 1850
LEGEND
N
Parcels
New Bridge
Historic Bridge
On-Road
Existing Route
Bridge
0
500
1,000
Feet


alta
PLANNING + DESIGN
Spokane River Centennial Trail Gaps
Trail Alternatives
INTERSECTION IMPROVEMENTS REQUIRED
EXISTING SPOKANE RIVER CENTENNIAL TRAIL
T. J. Meenach
Pettet
Nettleton
Elliot
Fort George Wright
ADD SHARED USE PATHWAY WITHIN EXISTING ROADWAY SURFACE
COORDINATE WITH CAMPUS MASTER PLAN
PEDESTRIAN BRIDGE 100'
Unnamed
RIGHT-OF-WAY REQUIRED
LOW LEVEL BRIDGE ACCESS THROUGH SAN SOUCI
Sisters of the Holy Names
RIGHT-OF-WAY REQUIRED
400' BOARDWALK PARALLEL TO RIVER
700' BRIDGE @ EL 1770/1775
BICYCLE BOULEVARD IMPROVEMENTS ON WEST POINT AND SUMMIT
West Point
INTERPRETIVE OPPORTUNITY
REPLACE OR REPAIR ABANDONED BRIDGE @ EL 1700
Mission
Summit
Maxwell-Mission
PRIVATE ROAD
HIGH LEVEL BRIDGE ACCESS FROM STREETCAR GRADE
Maxwell
Sherwood
Sinto
Sherwood
Sharp-Sinto
Cochran
Evergreen
Webb
Sharp
INTERSECTION IMPROVEMENTS REQUIRED
Lindeke
Boone
LEGEND
N
Parcels
New Bridge
Historic Bridge
On-Road
Multi-Use Path
Existing Route
Bridge
0
500
1,000
Feet

Cost Opinion

Kendall Yards - SFCC Gap Kendall Yards to Boone				
Sandifur Trail to Rail Grade connector				
12' Multi-use Trail	1,200	lf	35	42,000.00
Renovate Summit Avenue Rail Grade				
12' Multi-use Trail	2,200	lf	35	77,000.00
Traverse to Boone				
12' Multi-use Trail	650	lf	35	22,750.00
Boone/Summit Intersection	1	lump	15,000	15,000.00
Construction Cost				156,750
Contingency	30%			47,025
Mobilization	10%			20,378
Total Construction				224,153
Permitting, design	15%			33,623
Construction Administration	12%			26,898
Total Segment Cost			***2007 $***	**284,674**

Summit/Pettet Drive/Meenach Bridge	Quantity	Units	Cost per Unit	Total
Summit/West Point				
Improve Sidewalks	4,600	lf	7	32,200.00
Bike Lanes/Striping	9,200	lf	3	27,600.00
Signs	5	ea	240	1,200.00
Improvements on Pettet Drive				
14' Multi-Use Trail	3,400	lf	42	142,800.00
Signs	5	ea	240	1,200.00
Construction Cost				205,000
Contingency	30%			61,500
Mobilization	10%			26,650
Total Construction				293,150
Permitting, design	15%			43,973
Construction Administration	12%			35,178
Total Segment Cost			***2007 $***	**372,301**

High-Level Bridge	Quantity	Units	Cost per Unit	Total
Renovate Streetcar Grade				
Excavate to lower grade	7,407	cy	$ 12	88,889
12' Multi-use Trail	1,800	lf	$ 35	63,000
New High-level Bridge				
Stressed Ribbon Bridge (700' x 14')	10,500	sf	$ 450	4,725,000
Trail to Fort Wright Parkway at SFCC				
12' Multi-use Trail	1,600	lf	$ 35	56,000
Pedestrian Bridge over Fort Wright				
Structure (100 lf x 14'w)	1,400	sf	$ 130	182,000
Construction Cost				5,114,889
Contingency	30%			1,534,467
Mobilization	10%			664,936
Total Construction				7,314,291
Permitting, design	15%			1,097,144
Construction Administration	12%			877,715
Total Segment Cost			***2007 $***	**9,289,150**

Low-Level Bridge (not recommended)	Quantity	Units	Cost per Unit	Total
Boone/San Souci Improvements				
Sidewalk (one side 5000 lf x 6' width)	30,000	sf	$ 7	201,000
Bike Lanes/Striping (two sides 5000 lf)	10,000	lf	$ 3	25,000
Signs	6	ea	$ 240	1,440
Boardwalk to End of Bridge (400 lf x14'w)	5,600	sf	$ 67	375,200
Renovate Low-level Bridge				
Rebuild Deck (400' x 14')	5,600	sf	$ 400	2,240,000
Railings	800	lf	$ 150	120,000
Trail to Fort Wright Parkway at Meenach Bridge				
12' Multi-use Trail	3,350	lf	$ 20	67,000
Construction Cost				3,029,640
Contingency	30%			908,892
Mobilization	10%			393,853
Total Construction				4,332,385
Permitting, design	15%			649,858
Construction Administration	12%			519,886
Total Segment Cost			*2007 $*	5,502,129