# **STA Moving Forward**

Memo 1.03 – HPT Corridor Screening Results

**Prepared for:** Planning and Development Committee

Final

6/21/2012



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# Introduction

The purpose of this memo is to detail the screening criteria, process, and results for the twenty High Performance Transit (HPT) corridor segments that were identified in Memo 1.02 HPT Corridor Refinement and approved by the Planning and Development Committee.

# Background

Spokane Transit is conducting a planning process to identify investments in public transportation that could be made during the next 15 years as funding opportunities arise. The central element of these investments is the High Performance Transit Network as identified in STA's long range plan, *Connect Spokane*. Spokane Transit envisions a network of HPT corridors providing all-day, two-way frequent service that is more attractive and effective than basic fixed-route service.

This planning process, referred to as HPT Network Development or more simply, STA Moving Forward, has three major phases:

**Phase I: Initiation and Scoping.** The outcome of this phase will be the identification of the purpose and goals for the planning process, a list of projects that will be studied in greater detail, the analysis approach, and the public involvement plan for later phases. We are currently in this phase.

**Phase II: Conceptual Project Development and Evaluation:** During this phase each project will be developed to a conceptual level to determine costs, benefits and other implementation considerations that are necessary to fully evaluate the merits of the possible projects.

**Phase III: Scenario Development and Selection:** In this phase the projects that have been developed will be combined into implementation scenarios for evaluation as a system of investments. Based on agreed upon criteria, these scenarios will be evaluated, refined and re-evaluated, both through public input (as provided by the general public, key stakeholders, STA employees and STA Board members) and technical analysis. The outcome of this scenario will be a prioritization of transit investments, including HPT corridors that are ready for implementation as funding opportunities arise.

# Summary of Screening Rankings

The following is a ranking of the corridor segments by service type (Blue, Red and Green) that was conducted by staff using the screening criteria as approved by the Planning and Development Committee. Please see the Screening Process and Methodology and Results sections for more details about the scoring process and resulting ranking.

### **Blue Lines**

Rank	Corridor	Segment Name
1	B1-A	Downtown to Cheney
2	B2	Spokane Airport to Coeur d'Alene
3	B1-AB	SCC to Cheney
4	B1-B	Downtown to Hastings
5	B1	Cheney to Hastings

#### **Red Lines**

Rank	Corridor	Name
1	R1-A	North Division to Downtown
2	R3-A	Shadle Park to SCC
3	R2	Liberty Lake to Downtown
4	R4-B	Lincoln Heights to SCC
4	R1-B	Airway Heights to Downtown
6	R4-A	SCC to Holland/Division
7	R3-B	SCC to Sprague/Sullivan

#### **Green Lines**

Rank	Corridor	Name			
1	G2	Browne's Addition to SCC*			
2	G1	Five Mile to Moran Prairie			
2	G3	Downtown to Valley Transit Center			
4	G5-A	Empire/Cook to 14th/Lincoln			
5	G6-A	Five Mile to Riverpoint via Hamilton			
6	G4	Indian Trail to Lincoln Heights			
7	G7	SFCC to SCC			
8	G8	Millwood SR27 & E 32 <sup>nd</sup> Ave			

\*2/3 of this corridor was studied during the Central City Transit Alternatives Analysis

# **Next Steps**

Staff will use the outcomes of this screening process to begin to develop a draft work program for Phase II of the *STA Moving Forward* HPT planning effort.

# **Screening Process and Methodology**

During the beginning of Phase I, the STA Board of Directors approved a "Long List of Conceptual Projects" found in Memo 1.01 Long List of Conceptual Projects. The Level I screening was applied to all 14 HPT corridors to identify whether any corridors could be separated into reasonable segments. Staff considered the following criteria:

- There are logical terminal options for the corridor where high density or major transit facilities could exist in the planning horizon.
- There is existing public right-of-way that can be reasonably assumed as serviceable by the investment for nearly the entire length of the corridor.
- Major physical barriers (railroad crossings, rivers, canyons, freeways) can be crossed using existing infrastructure.
- Is there a reasonable segmentation of the corridor to reflect diverging land use patterns and/or implementation strategies?

The application of the Level I screening resulted in 20 HPT segments to be moved forward. These segments were identified in Memo 1.02 HPT Corridor Refinement, presented at the May 2, 2012 Planning and Development Committee meeting and slightly modified by the members of the Planning and Development Committee.

Level II of the HPT Corridor Screening focused on ranking of the corridors. The measures were divided into two categories, Travel Demand Measures and Opportunity Measures. The Travel Demand Measures evaluated the corridors based on technical analysis of Existing Ridership and Travel Density. The Opportunity Measures evaluated the corridors based on Development Support and Grant Opportunities.

# **Travel Demand Measures**

#### Existing Ridership (30% of Score)

Analyzing existing ridership is a reliable predictor of baseline ridership for a particular corridor. To arrive at the results of this measure, staff used data from the farebox system as well as passenger counts collected which record passenger activity of boardings and alightings at each stop. Not all of the HPT corridor segments align with existing routes; however, staff worked to ensure that reasonable ridership was calculated for all portions of the segment that does have an existing route or a segment that serves the same destinations. Ridership was then divided by the number of route miles in the HPT Corridor segment to arrive at a ridership per mile. Ridership per mile takes length into account when measuring the intensity of ridership. To arrive at a score for each HPT corridor segment, all of the corridors were ranked based upon existing ridership trip density per mile from 1 to 20. Staff divided the twenty corridors into five even groups. The top four routes received 30 points, the second group of four routes received 24 points, the third group of four routes received 18 points, the fourth group of four routes received 12 points and the bottom group received 6 points.

### Travel Density (30% of Score)

The purpose of the Travel Density measure is to take into account the forecast for future development and activity that will occur around probable stops for each HPT segment by the year 2030. Spokane Transit staff worked closely with Spokane Regional Transportation Council (SRTC) staff to produce the forecast Trip Density per Acre. SRTC staff used their regional travel demand model forecast for the year 2030 and Geographic Information System tools to calculate the trip density within ½ mile of each estimated location for stops of the twenty HPT corridor segments. The total trip origins and destinations within the capture area were calculated and divided by the total acreage of the capture area created by the ½ mile buffer.

To arrive at a score for each HPT corridor segment, all of the corridors were ranked based upon the 2030 projected travel density around each estimated location of the stop or station. In the same way that the Existing Ridership score was calculated, the top four routes received 30 points, the second group of four routes received 24 points, the third group of four routes received 18 points, the fourth group of four routes received 12 points and the bottom group received 6 points.

# **Opportunity Measures**

#### **Development Support (30% of Score)**

The Development Support measure score considered the support of local and regional land use plans and opportunities to create transit and pedestrian oriented places that would support HPT service. The land use plans throughout the region generally outline where more intensive development has taken place as well as generally outline where the cities and county want development to take place in the future. A higher Development Support score implies that the HPT corridor segment supports existing development intensity and will support future development over time.

# Grant Opportunities (10% of Score)

One project's ability to win grant money over another project could affect the timing of HPT implementation. The Grant Opportunities score is a reflection of various factors which may make a particular HPT corridor segment more attractive for competitive grants. Ridership, regional mobility improvements and jurisdictional partnership opportunities are some of the criteria considered for this score. Additionally, grant programs like the Federal Transit Administration's Very Small Starts program has some easily measured requirements (i.e. 3000 existing riders in the corridor) to be eligible for the grant. These factors were also considered during the assignment of the Grant Opportunities score.



# **Blue Lines**

## Ridership

Designation	Segment Name	Segment Length	Existing Ridership	Boardings per Route Mile	Score
B1	Cheney to Hastings	31.8	3,475	109	18
B1-A	Downtown to Cheney	17	3,295	194	24
B1-AB	SCC to Cheney	20.9	3,295	158	18
B1-B	Downtown to Hastings	14.8	180	12	6
B2	Spokane Airport to Coeur d'Alene	40.6	992	24	6

## **Travel Density**

Designation	Segment Name	Total Trips in Buffer	Acreage	Trip Density Per Acre	Score
B1	Cheney to Hastings	539,464.7	5,302	101.76	12
B1-A	Downtown to Cheney	364,229.8	2,795	130.33	24
B1-AB	SCC to Cheney	487,430.1	3,794	128.49	18
B1-B	Downtown to Hastings	456,982.1	3,009	151.88	24
B2	Spokane Airport to Coeur d'Alene	560,931.2	3,290	170.50	30

#### **Development Support**

Designation	Segment Name	Development Support Rationale	Score	
B1	Cheney to <b>Positives</b> : Serves two major population destinations,			
	Hastings	Cheney and Spokane; development opportunities.		
		Challenges: Large segments with rural character.		
B1-A	<b>B1-A</b> Downtown to <b>Positives</b> : Serves two major population destinations,			
	Cheney	Cheney and Spokane, development opportunities.		
		Challenges: Large segments with rural character.		
B1-AB	SCC to Cheney	Positives: Serves two major population destinations,	18	
		Cheney and Spokane.		
		Challenges: Large segments with rural character.		
B1-B	Downtown to	Positives: Serves Downtown Spokane and North Spokane.	12	
	Hastings	Challenges: Large segments with rural/suburban		
		character.		



Designation	Segment Name	Development Support Rationale	Score
В2	Spokane Airport to Coeur d'Alene	<b>Positives:</b> Serves Spokane Airport to Downtown Spokane and other regional destinations with development opportunities. Liberty Lake, Post Falls, and Coeur d'Alene all have some features of transit supportive land uses. <b>Challenges:</b> Large segments with rural/suburban character. No existing mechanism for cross-state cooperation for transit funding.	18

#### Grants

Designation	Segment Name	Grants Rationale	Score
B1	Cheney to Hastings	More than 3,000 existing boardings but significantly lower ridership per mile, capital cost to implement within next 5-10 years would outweigh benefit.	4
B1-A	Downtown to Cheney	More than 3,000 existing boardings and currently high frequency. Agency partnership opportunities. Route exists today.	10
B1-AB	SCC to Cheney	More than 3,000 existing boardings and currently high frequency. Agency partnership opportunities. Direct route does not exist today.	8
B1-B	Downtown to Hastings	Lower existing boardings. Reliant upon other capital investments.	6
B2	Spokane Airport to Coeur d'Alene	Regional partnership opportunities, route does not exist today.	6

### **Total Blue Line Scores**

Rank	Corridor	Segment Name	Ridership	Density	Development	Grant	Total
1	B1-A	Downtown to Cheney	24	24	18	10	76
2	B2	Spokane Airport to Coeur d'Alene	6	30	18	6	60
3	B1-AB	SCC to Cheney	18	18	12	8	56
4	B1-B	Downtown to Hastings	6	24	18	6	54
5	B1	Cheney to Hastings	18	12	18	4	52



#### Ridership

Designation	Segment Name	Segment Length	Existing Ridership	Boardings Per Route Mile	Score
R1-A	North Division to Downtown	7.3	2,894	396	30
R1-B	Airway Heights to Downtown	10.5	1,007	96	12
R2	Liberty Lake to Downtown	16.7	1,068	64	12
R3-A	Shadle Park to SCC	5.8	1,749	302	24
R3-B	SCC to Sprague/Sullivan	9.7	763	79	12
R4-A	SCC to Holland/Division	6.8	628	92	12
R4-B	Lincoln Heights to SCC	3.6	712	198	24

## **Travel Density**

Designation	Name	Total Trips in Buffer	Acreage	Trip Density per Acre	Score
R1-A	North Division to Downtown	877,260.2	4,803	182.65	30
R1-B	Airway Heights to Downtown	418,865.5	5,396	77.63	12
R2	Liberty Lake to Downtown	1,050,083.5	9,955	105.49	12
R3-A	Shadle Park to SCC	278,524.1	3,943	70.64	12
R3-B	SCC to Sprague/Sullivan	368,561.1	5,621	65.57	6
R4-A	SCC to Holland/Division	336,229.9	4,850	69.33	6
R4-B	Lincoln Heights to SCC	168,418.9	2,569	65.57	6

# **Development Support**

Designation	Name	Development Support Rationale	Score
R1-A	<ul> <li>North Division to Downtown</li> <li>Positives: Commercial corridor with strong anchors, high level of multifamily; passes by a designated employment center.</li> <li>Challenges: The area has not been prioritized for urban landfill and design-based walkability improvements</li> </ul>		24
R1-B	Airway Heights to Downtown	<b>Positives</b> : Strong anchors, several development opportunities. <b>Challenges</b> : Areas of low density land use. Airport Encroachment Zone will limit land uses that can effectively be supported by transit	18



Designation	Name	Development Support Rationale	Score
R2 Liberty Lake to Downtown		<ul> <li>Positives: Redevelopment opportunities in the Spokane Valley. Greenfield development opportunities in Liberty Lake (i.e. River District).</li> <li>Challenges: There is not a cohesive walkable urban form in the corridor; zoning code does not incorporate transit as means to facilitate development patterns, particularly through the Spokane Valley.</li> </ul>	24
R3-A	Shadle Park to SCC	<ul> <li>Positives: Corridor travels through two designated</li> <li>Centers and Corridors, crosses several commercial corridors.</li> <li>Challenges: Outside of key intersections the landscape most adjoining uses and zoning is single family residential.</li> </ul>	12
R3-B	SCC to Sprague/Sullivan	<b>Positives</b> : Intensification of land uses in the Mirabeau area is expected to continue. <b>Challenges</b> : Extensive industrial uses and rights of way limit re-development opportunity for much of the corridor.	18
R4-A	SCC to Holland/Division	<b>Positives</b> : Travels through three designated Center and Corridors, strong anchors. <b>Challenges</b> : The identified Centers do not represent current priorities of the City of Spokane.	12
R4-B	Lincoln Heights to SCC	<b>Positives</b> : Travels through a designated Center and Corridor, strong anchors. <b>Challenges</b> : Limited re-development opportunity at this time outside of the Lincoln Heights terminal.	12

#### Grants

Designation	Name	Grants Rationale	Score
R1-A	North Division to Downtown	More than 3,000 existing boardings, on a state highway, priority for city gateway, high frequent route today.	10
R1-B	Airway Heights to Downtown	On a state highway, but lower ridership per mile.	4
R2	Liberty Lake to Downtown	Corridor of significance for Spokane Valley. Serves regional employment centers.	8
R3-A	Shadle Park to SCC	Connects key retail locations but limited partnership opportunities.	4
R3-B	SCC to Sprague/Sullivan	Limited partnership opportunities, currently not a high frequency corridor.	2
R4-A	SCC to Holland/Division	+ + + + + + + + + + + + + + + +	
R4-B	Lincoln Heights to SCC	Route exists today as a high frequency route but limited partnership opportunities.	4



## **Total Red Line Scores**

Rank	Corridor	Name	Ridership	Density	Development	Grant	Total
1	R1-A	North Division to Downtown	30	30	18	10	94
2	R3-A	Shadle Park to SCC	24	12	18	4	58
3	R2	Liberty Lake to Downtown	12	12	24	8	56
4	R4-B	Lincoln Heights to SCC	24	6	12	4	46
4	R1-B	Airway Heights to Downtown	12	12	18	4	46
6	R4-A	SCC to Holland/Division	12	6	12	2	32
7	R3-B	SCC to Sprague/Sullivan	12	6	12	2	32



#### Ridership

Designation	Name	Segment Length	Boardings per Route Mile	Existing Ridership	Score
G1	Five Mile to Moran Prairie	11.4	402	4,583	30
G2	Browne's Addition to SCC	5.9	356	2,103	30
G3	Downtown to Valley Transit Center	7.5	436	3,273	30
G4	Indian Trail to Lincoln Heights	12.1	121	1,469	18
G5-A	Empire/Cook to 14th/Lincoln	6	293	1,761	24
G6-A	Five Mile to Riverpoint via Hamilton	6.2	144	895	18
G7	SFCC to SCC	5.5	45	248	6
G8	Millwood to SR27 & E 32nd Ave	6.8	43	295	6

## **Travel Density**

		Total		Trip	
Designation	Name	Trips in	Acreage	Density	Score
		Buffer		per Acre	
G1	Five Mile to Moran Prairie	919,016.6	7,436	123.59	18
G2	Browne's Addition to SCC	606,109.4	3,514	172.50	30
G3	Downtown to Valley Transit Center	728,233.4	5,369	135.65	24
G4	Indian Trail to Lincoln Heights	889,443.9	7,637	116.46	18
G5-A	Empire/Cook to 14th/Lincoln	692,392.8	4,243	163.20	30
G6-A	Five Mile to Riverpoint via				24
GO-A	Hamilton	798,878.8	5,462	146.27	24
G7	SFCC to SCC	373,045.4	3,251	114.75	18
G8	Millwood to SR27 & E 32nd Ave	331,168.9	4,855	68.22	6

# **Development Support**

Designation	Name	Development Support Rationale	Score
G1	Five Mile to Moran Prairie	<ul> <li>Positives: Travels through seven Centers and Corridors in addition to Downtown Spokane that are priority redevelopment opportunities identified by the City of Spokane.</li> <li>Several development opportunities exist.</li> <li>Challenges: Single-family residential development exists on segments of the corridor.</li> </ul>	30
Browne's G2 Addition to SCC		<b>Positives</b> : Dense residential, Downtown, two Centers and Corridors, development opportunities.	30



Designation	Name	Development Support Rationale	Score
G3	Downtown to Valley Transit Center	<ul> <li>Positives: Existing commercial and industrial activity, travels through one Center and Corridor.</li> <li>Challenges: In-fill opportunities constrained by I-90 to the south and active railroads to the north; low-density commercial and light industrial dominates the eastern half of the corridor.</li> </ul>	24
G4	Indian Trail to Lincoln Heights	<ul> <li>Positives: Travels through five Centers and Corridors in addition to Downtown Spokane.</li> <li>Challenges: Single-family residential land uses dominate northern 1/3 of corridor, geography to the south limits redevelopment opportunities.</li> </ul>	18
G5-A	Empire/Cook to 14th/Lincoln	<b>Positives</b> : Travels through one Center and Corridor in addition to Downtown Spokane. High density housing. <b>Challenges</b> : Weaker anchors that are not designated centers or corridors.	24
G6-A	Five Mile to Riverpoint via Hamilton	<ul> <li>Positives: Travels through three Centers and Corridors and several mini centers.</li> <li>Challenges: Single-family residential land uses characterize much of the corridor with limited priority given by the City of Spokane to most of the centers.</li> </ul>	18
G7	SFCC to SCC	<b>Positives</b> : Travels through three Centers and Corridors. <b>Challenges</b> : Segment near river (west of West Central Neighborhood) without any re-development opportunity.	18
G8	Millwood to SR27 & E 32nd Ave	<b>Positives</b> : Supported by commercial and office land uses. <b>Challenges</b> : No regional or municipal priority for land use intensification along corridor.	12

#### Grants

Designation	Name	Grants Rationale	Score
G1	Five Mile toMore than 3,000 existing boardings. Primarily served by aG1Morancombination of high frequency routes today. An investmenPrairieHPT service would be supportive of land use plans and goal		10
G2	Browne's Addition to SCC	Opportunities for public/private partnership. Identified in several regional plans. Adopted Locally Preferred Alternative (LPA) for the densest 2/3 of the Corridor.	8
G3	Downtown to Valley Transit Center	More than 3,000 existing transit boardings along corridor. Study area of priority for City of Spokane. Opportunities for partnerships with developers, University District and businesses.	10
G4	Indian Trail to Lincoln Heights	Supports land use plans, strong existing routes but limited partnership opportunities.	4
G5-A	Empire/Cook to 14th/Lincoln	High density of riders, making corridor grant competitive. Strong existing routes.	6



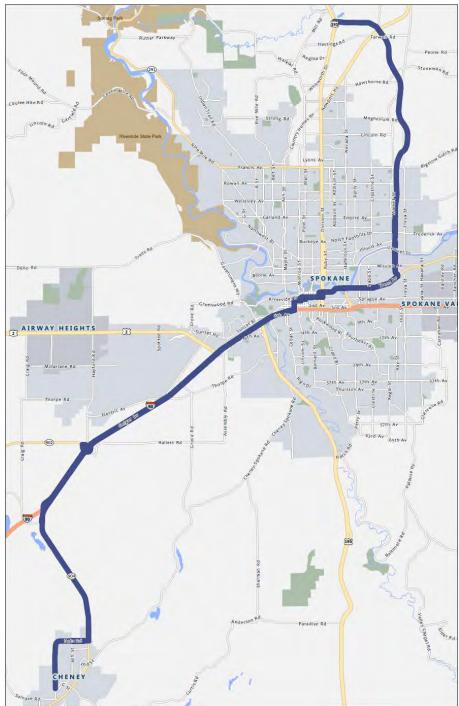
Designation	Name	Grants Rationale	Score
G6-A	Five Mile to Riverpoint via Hamilton	Connection to universities could be helpful in preparing successful grant applications.	4
G7	SFCC to SCC	Provides necessary crosstown traffic for overall HPT Network. Partnership opportunities with community colleges possible.	2
G8	Millwood to SR27 & E 32nd Ave	Travels through center of Spokane Valley, but existing low ridership and land uses limit grant opportunities.	2

#### **Total Green Line Scores**

Rank	Corridor	Name	Ridership	Density	Development	Grant	Total
1	G2	Browne's Addition to SCC	30	30	30	8	98
2	G1	Five Mile to Moran Prairie	30	18	30	10	88
2	G3	Downtown to Valley Transit Center	30	24	24	10	88
4	G5-A	Empire/Cook to 14th/Lincoln	24	30	24	6	84
5	G6-A	Five Mile to Riverpoint via Hamilton	18	24	18	4	64
6	G4	Indian Trail to Lincoln Heights	18	18	18	4	58
7	G7	SFCC to SCC	6	18	18	2	44
8	G8	Millwood SR27 & E 32 <sup>nd</sup> Ave	6	6	12	2	26

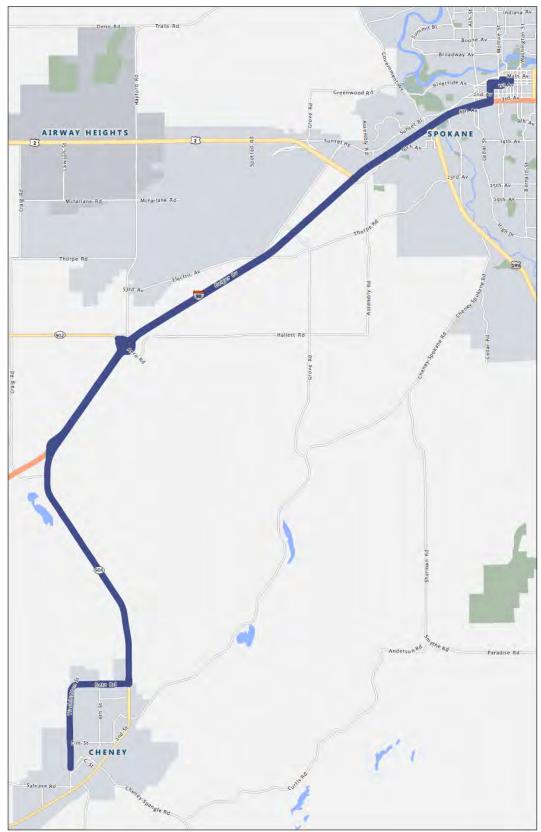
Rank	Corridor	Name	Length	Ridership	Density	Development	Grant	Total
1	G2	Browne's Addition to SCC	5.9	30	30	30	8	98
2	R1-A	North Division to Downtown	7.3	30	30	18	10	88
2	G1	Five Mile to Moran Prairie	11.4	30	18	30	10	88
2	G3	Downtown to Valley Transit Center	7.5	30	24	24	10	88
5	G5-A	Empire/Cook to 14th/Lincoln	6	24	30	24	6	84
6	B1-A	Downtown to Cheney	17	24	24	18	10	76
7	G6-A	Five Mile to Riverpoint via Hamilton	6.2	18	24	18	4	64
8	B2	Spokane Airport to Coeur d'Alene	40.6	6	30	18	6	60
9	R3-A	Shadle Park to SCC	5.8	24	12	18	4	58
9	G4	Indian Trail to Lincoln Heights	12.1	18	18	18	4	58
11	R2	Liberty Lake to Downtown	16.7	12	12	24	8	56
11	B1-AB	SCC to Cheney	20.9	18	18	12	8	56
13	B1-B	Downtown to Hastings	14.8	6	24	18	6	54
14	B1	Cheney to Hastings	31.8	18	12	18	4	52
15	R4-B	Lincoln Heights to SCC	3.6	24	6	12	4	46
15	R1-B	Airway Heights to Downtown	10.5	12	12	18	4	46
17	G7	SFCC to SCC	5.5	6	18	18	2	44
18	R4-A	SCC to Holland/Division	6.8	12	6	12	2	32
18	R3-B	SCC to Sprague/Sullivan	9.7	12	6	12	2	32
20	G8	Millwood to SR27 & E 32nd Ave	6.8	6	6	12	2	26

## All Corridor Segments in Order of Score

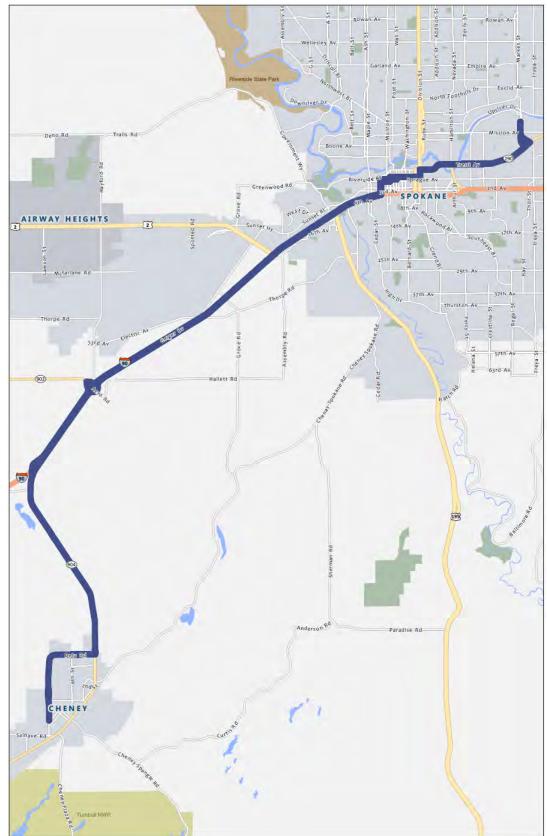


## **B1: Cheney to Hastings**

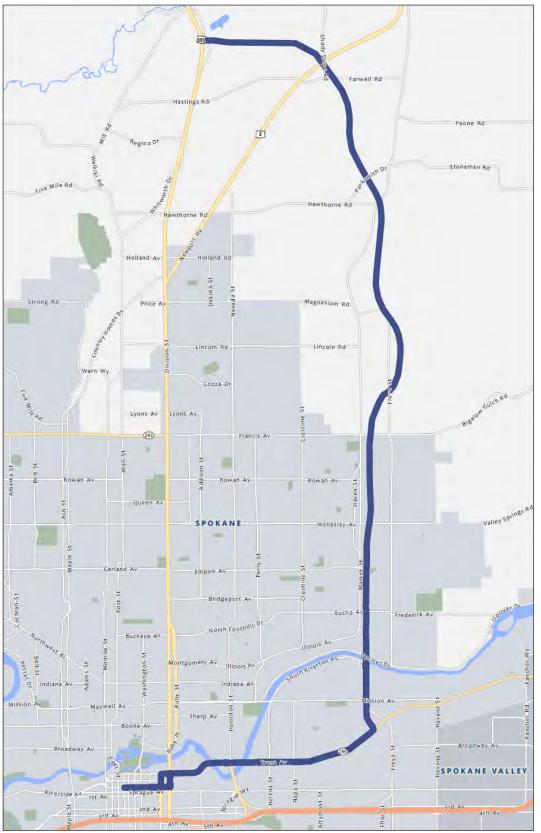
# **B1-A: Downtown to Cheney**



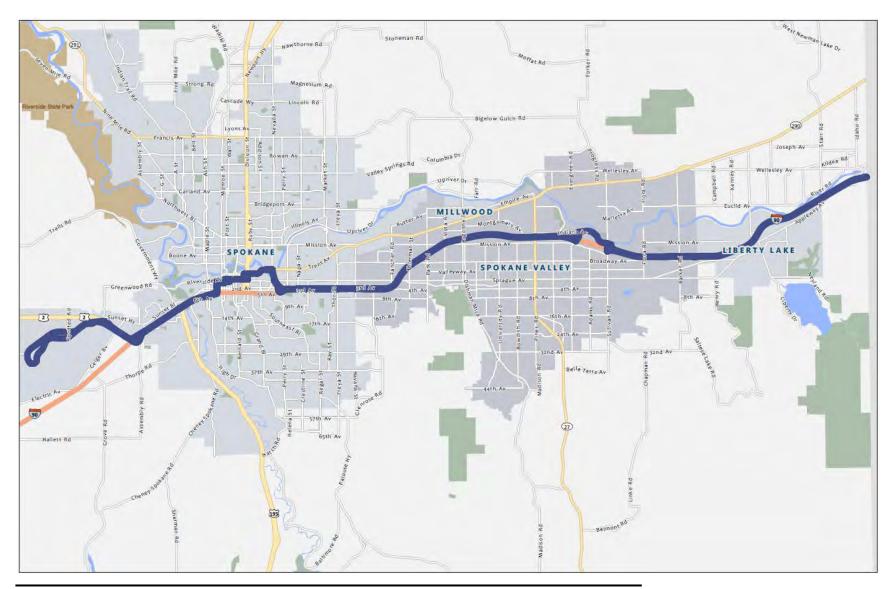
# **B1-Ab: Cheney to SCC**

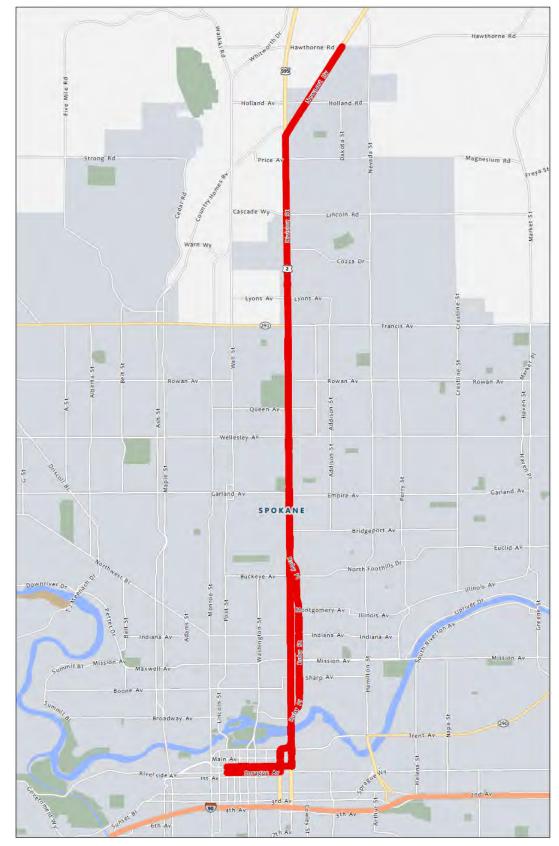


## **B1-B: Downtown to Hastings**



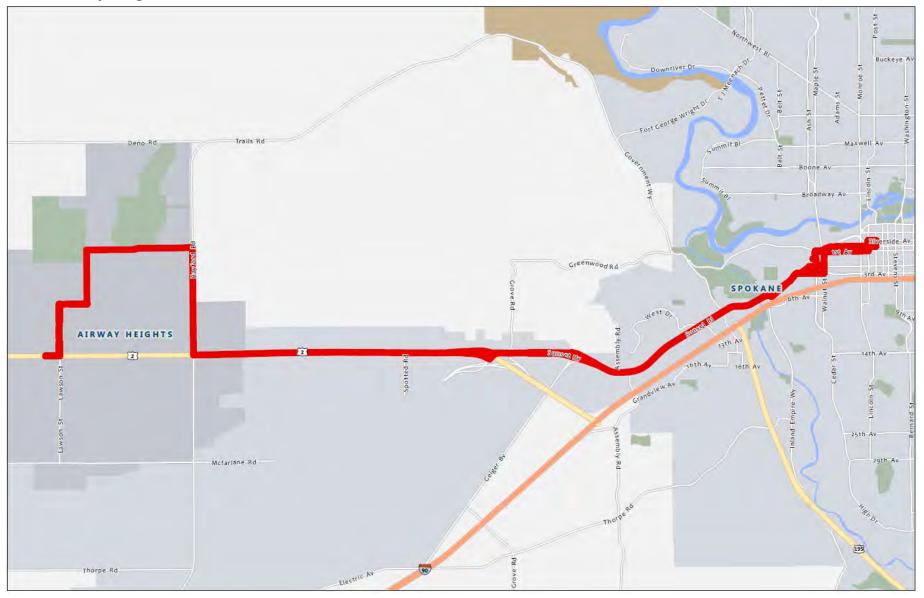
# B2: Spokane Airport to Coeur d'Alene



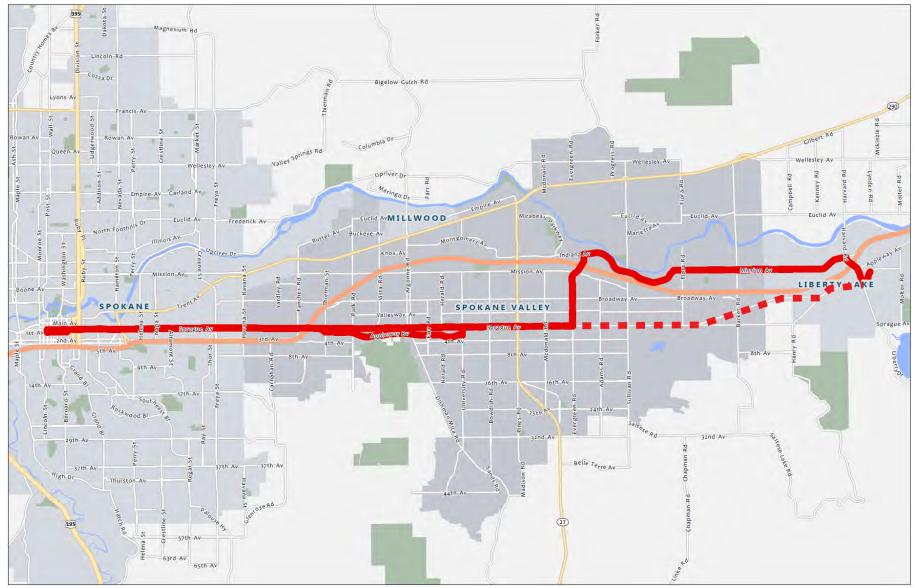


**R1-A: North Division to Downtown** 

# R1-B: Airway Heights to Downtown

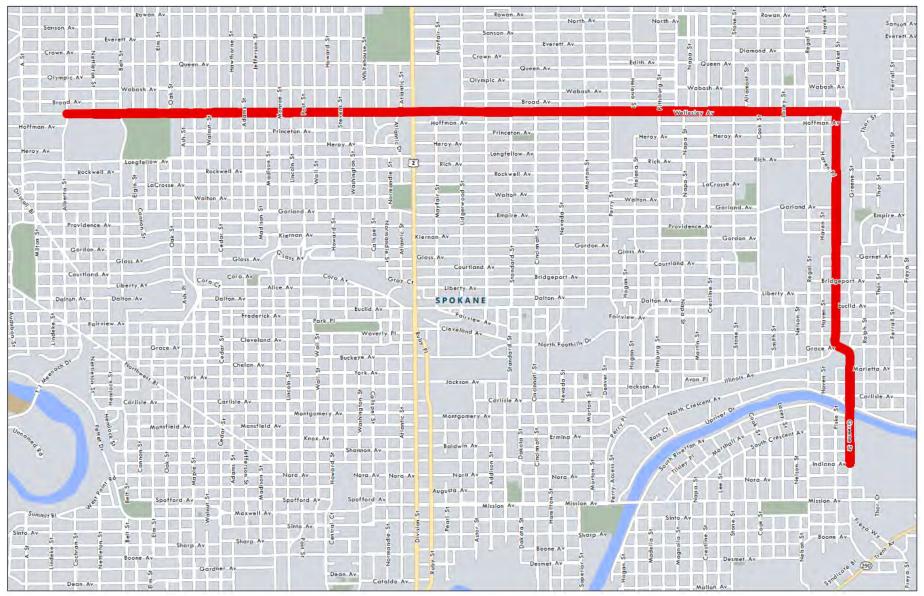




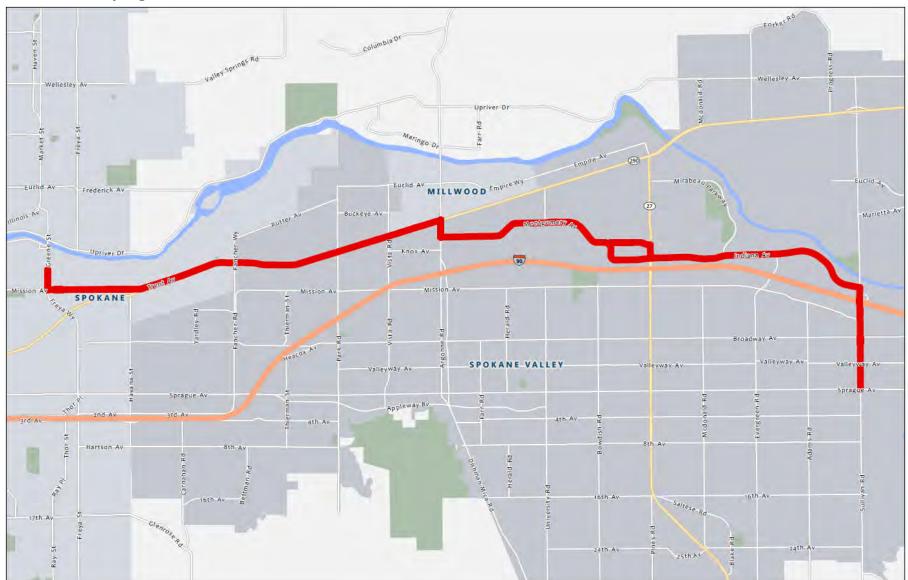


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#### **R3-A: Shadle Park to SCC**



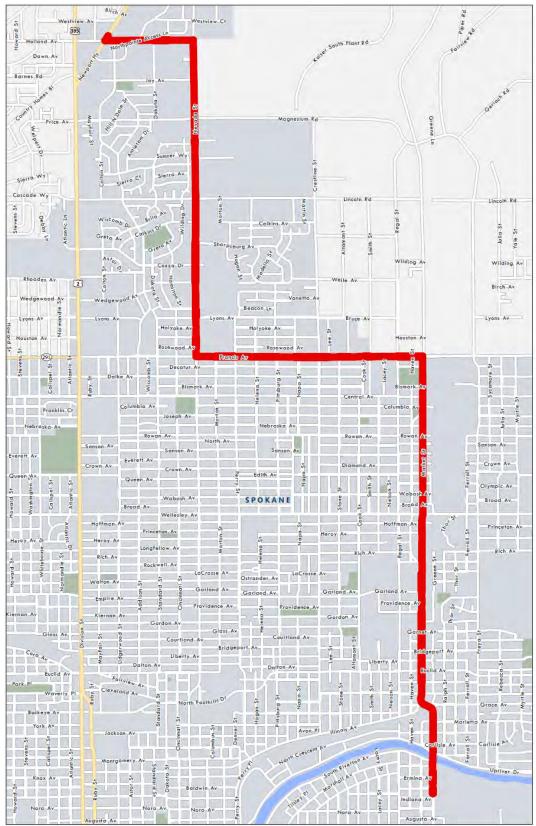
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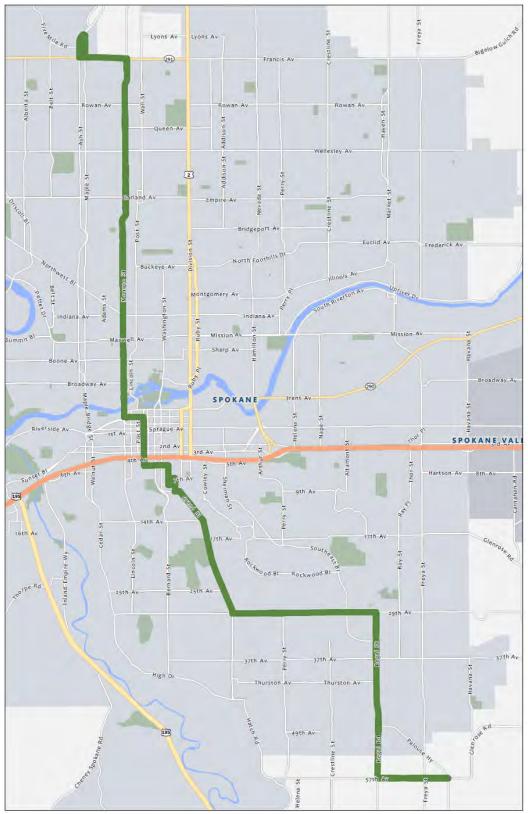
#### R4-A: SCC to Holland/Division



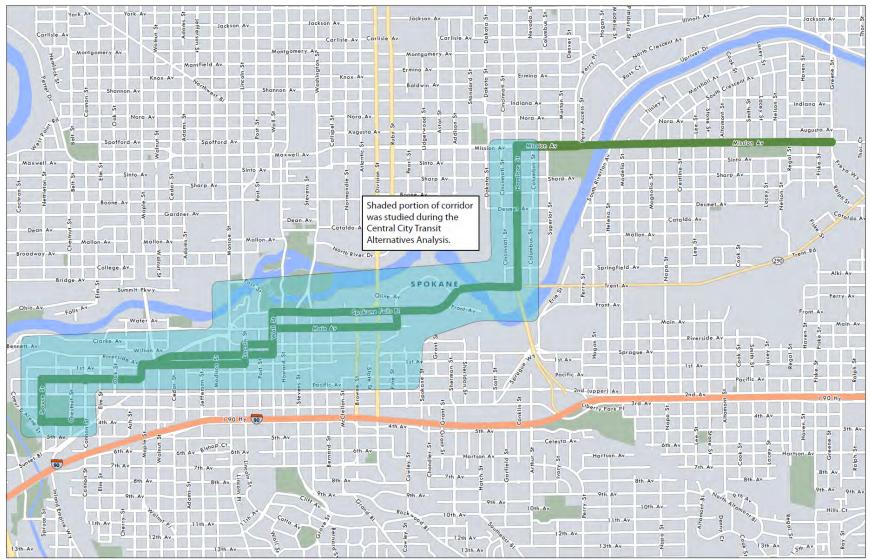
R4-B: Lincoln Heights to SCC



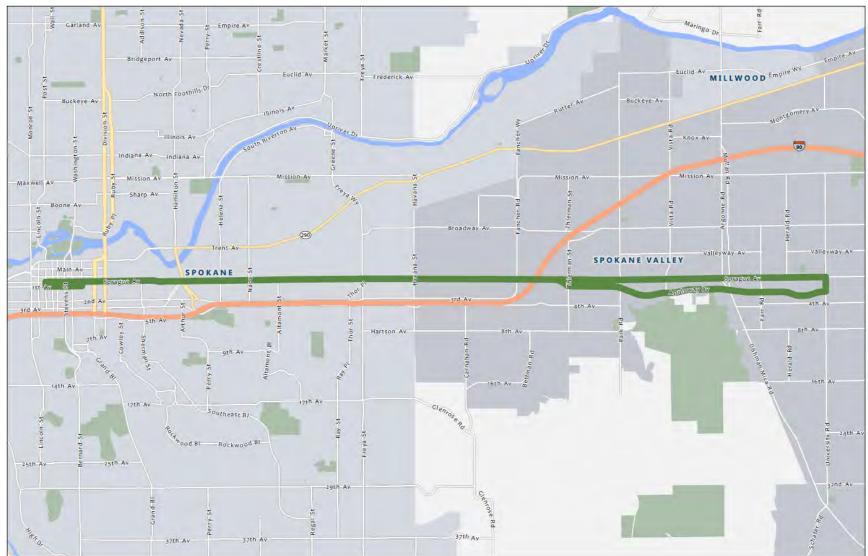
#### G1: Five Mile to Moran Prairie



#### G2: Browne's Addition to SCC



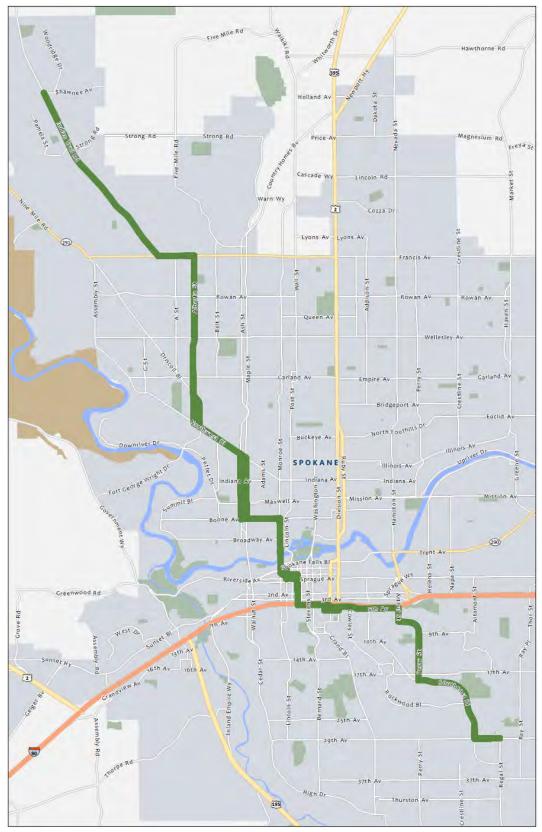
28



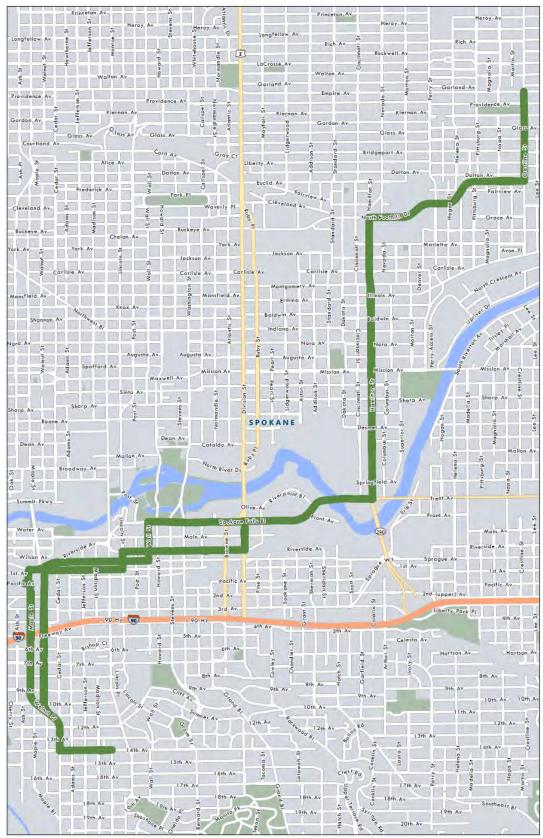
29

#### G3: Downtown to Valley Transit Center

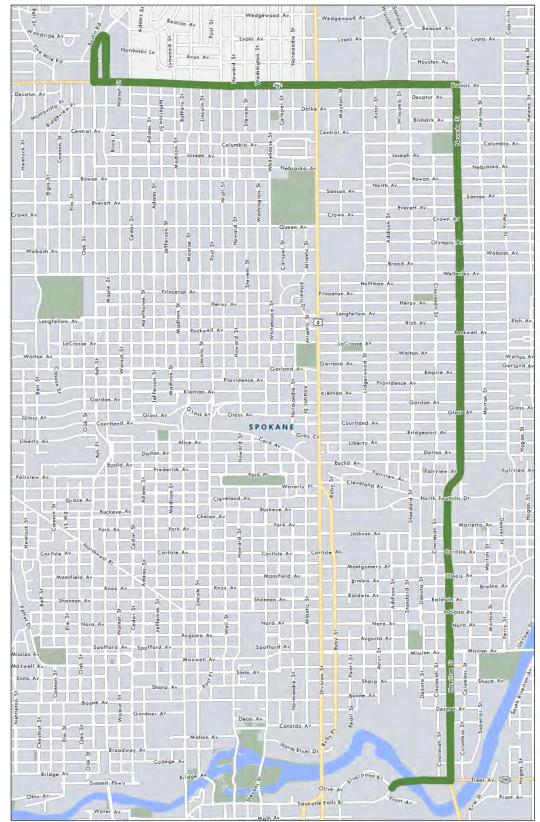
# G4: Indian Trail to Lincoln Heights



G5-A: Empire/Cook to 14<sup>th</sup>/Lincoln

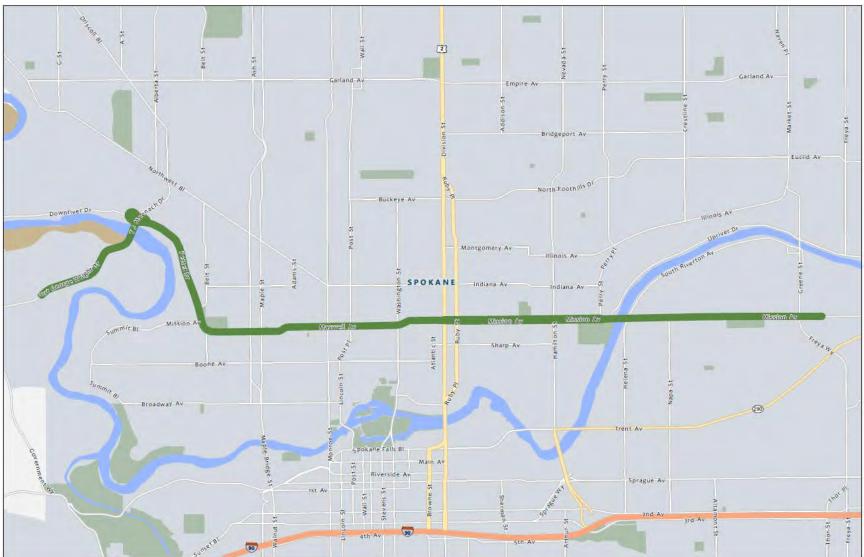


STA Moving Forward Final



**G6-A: Five Mile to Riverpoint via Hamilton** 

#### G7: SFCC to SCC



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# G8: Millwood to SR 27 & E 32<sup>nd</sup> Ave



# **Appendix 2: Evaluated Segments Map**

