APPENDIX H DivisionConnects: Active Transportation Technical Memo

# TECHNICAL MEMORANDUM

DATE:	January 20, 2021
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SUBJECT:	Division Connects Active Transportation Technical Memo
CC:	

# INTRODUCTION

The Division Street Corridor Study evaluates the future of transportation and land use along this important corridor in Spokane. The Study is a coordinated effort between the Spokane Regional Transportation Council (SRTC), Spokane Transit Authority (STA), the City of Spokane, Spokane County, and the Washington State Department of Transportation (WSDOT). STA, SRTC, and WSDOT provided funding for the project. Today, the corridor serves local and regional traffic, has the second highest-ridership bus route in the system, and provides access to a diverse mix of land uses: from urban downtown Spokane to auto-oriented retail and growing communities on the northern edge of Spokane. With the North Spokane Corridor highway project anticipated to be complete by 2029, agency partners, businesses, residents, and the broader community are looking to evaluate the future of the Division Street corridor. The key elements of this Study are:

- Examine opportunities and identify a preferred concept for rubber-tired high performance transit in the corridor as identified in STA's Transit Development Plan as Bus Rapid Transit (BRT);
- Develop options for all modes of travel in the corridor;
- Recommend capital projects and implementation plans;
- Identify land use opportunities.

This memo, documents all forms of active transportation in the study area, including bicycles, pedestrians, and scooters. Goals and policies that guide the development of active transportation facilities in the City and that will inform the facilities to be implemented as part of the preferred concept are also described. This document establishes the active transportation conditions and describes the active transportation infrastructure proposed in and near the Division Street corridor.

## **Corridor Description**

The study area is located along Division Street/US Highway 2 (US 2) in the City of Spokane and parts of unincorporated Spokane County. The corridor extends north through US 395 and the Newport Highway past the 'Y' and will extend south to and through downtown to the medical district. The highway is a National Highway of Significance, a State Highway of Significance, and a major state freight corridor. The corridor roughly follows the current Bus Route 25 whose southern terminus is the STA Plaza in downtown Spokane and northern terminus at the Hastings Park & Ride, providing access to the following neighborhoods:

- Shiloh Hills
- North Hill
- Nevada Heights
- Emerson/Garfield

- Logan
- Riverside
- East Central

The study corridor includes the area within  $\frac{3}{4}$  mile of either side of Division Street, which encompasses Hamilton Street to the east and Monroe Street to the west as shown in Figure 1. STA Route 25 runs the entire length of the corridor. The study area is purposely broad to understand the function, role, and interactions of adjacent streets, highways, land uses, and community character.



Figure 1. Division Street Corridor Study Area

# ACTIVE TRANSPORTATION GOALS AND POLICIES

Division Street has historically been an auto-oriented corridor. The roadway is wide with multiple lanes of heavy volume, higher speed traffic. This environment is generally uncomfortable for most active transportation users. However, recent local planning efforts have highlighted the importance of providing for and accommodating pedestrian-powered transportation options through multiple adopted plans within the Greater Spokane area. The following documents guide bicycle and pedestrian planning and design:

- Spokane Pedestrian Plan 2015 City of Spokane
- Bicycle Master Plan 2017 City of Spokane
- Horizon 2040 Spokane Regional Transportation Council
- Division Street Gateway Project 2015 City of Spokane
- WSDOT Active Transportation Plan 2019 (To be completed in 2021)
- Spokane County Comprehensive Plan, Chapter 5 Transportation
- City of Spokane Comprehensive Plan Chapter 4 Transportation
- Spokane Regional Pedestrian Plan 2009 Spokane Regional Transportation Council
- WSDOT Design Guidelines (WSDOT, NACTO, et. al.)

The goals and policies in these adopted documents reflect the needs and desires of the community confirmed during the public participation periods for each of the planning efforts. During each of the public participation processes, active transportation goals and priorities have included the desire to provide connectedness, safety and security, sustainability, accessibility, comfort, convenience, and invitation. Table 1 summarizes how each of these goals and priorities are included in the various plans.

Adopted Goals and Policies	City of Spokane Bicycle Master Plan	SRTC Horizon 2040	City of Spokane Pedestrian Plan	Spokane County Comprehensive Plan	City of Spokane Comprehensive Plan	City of Spokane Division Street Gateway Project	SRTC Pedestrian Plan
Connectedness (trails, transit, centers & corridors, neighborhoods, etc.)	х	Х	х		X	Х	X
Safety and Security	х		х	х	х	х	х
Sustainability						Х	Х

## Table 1. Active Transportation Goals in Greater Spokane Area Plans

Provide Year- round Barrier- Free Accessibility		Х	х		Х		x
Comfortable, Inviting, and Convenient	х		х	х		х	х

For the Division Street Corridor Study, active transportation is guided by the following overarching goal: Provide well-defined, north/south multi-modal route(s) along and/or adjacent to Division Street as well as east-west connectivity and safe crossings to facilitate all non-vehicular commuters and recreational users now and in the future while fulfilling adopted goals and policies. Additional goals and policies guiding the development of active transportation improvements are summarized below.

## Connectedness

The need for connected facilities appears in multiple Spokane area planning documents. The following considerations are critical in ensuring that this is achieved:

- Implement facilities near populations and destinations with a particular focus on equity
- Ensure facilities intersect with other routes, trails, and pedestrian facilities, including both north-south and east-west corridors
- Minimize distances between signalized crossings
- Provide facilities near to and connected with transit stops
- Ensure that facilities include clear termini and do not end mid-route
- Provide wayfinding

## Safety and Security

The following factors improve the safety and security of proposed active transportation facilities, consistent with local planning documents:

- Encourage lower levels of Bicycle Level of Traffic Stress and Pedestrian Level of Stress<sup>1</sup> by separating facilities from high-speed traffic, implementing facilities along routes with lower traffic volumes and speeds, and providing wider nonmotorized facilities with adequate protection from moving vehicles, including through the use of parking lanes as buffers
- Encourage controlled crossings of arterial streets with signalization that is pedestrian actuated with adequate crossing times for all mobility levels and provide pedestrian refuge islands on wide streets

<sup>&</sup>lt;sup>1</sup> Bicycle Level of Traffic Stress and Pedestrian Level of Service are ratings given to a road segment or crossing that indicates the level of stress a cyclist or user will experience while using that facility, based on characteristics such as level of separation, traffic volumes, and traffic speeds.

- Locate facilities on corridors with minimal driveways; driveways should be defined and isolated for commercial businesses and residential areas should orient driveways away from the main travel way to side yards and alleys
- Maintain facilities in a state of good repair with smooth surfaces free of root damage, cracks, and uneven surfaces
- Reduce obstructions and surface obstacles such as storm drains/curb inlets, utility valves, and parked cars
- Ensure that facilities are well-lit and implemented in populated corridors to create sense of security
- Ensure year-round maintenance best practices, including plowing of nonmotorized facilities in winter and removal of gravel and debris in summer
- Design facilities using best practices to ensure appropriate widths, separation and sight distances

#### Sustainability

Sustainability will ensure that active transportation facilities can be easily maintained and corridors should be considered that have the flexibility to accommodate changing needs in the future. The following considerations will allow for the implementation of sustainable active transportation facilities:

- Select corridors for improvements that can accommodate changing needs in the future, including the potential to accommodate for new modes of transportation
- Evaluate future land uses and development when implementing facilities
- Integrate economically and environmentally sustainable design practices

#### Year-Round Barrier-Free Accessibility

The climate in the Spokane area requires that the impacts of different types of weather and encroachments can be addressed, such as snow, ice, flooding, debris, and vegetation, so that active transportation facilities can be usable year-round. The following allow for the network to maintain usability throughout different weather and seasonal conditions:

- Implement accessible curb ramps
- Ensure year-round maintenance best practices, including plowing of nonmotorized facilities in winter and removal of gravel and debris in summer
- Maintain facilities in a state of good repair with smooth surfaces free of root damage, cracks, and uneven surfaces
- Reduce obstructions and surface obstacles such as storm drains/curb inlets, utility valves, and parked cars
- Ensure that routes are clearly designated for all roadway users

#### Comfortable, Inviting, and Convenient

Active transportation facilities should be comfortable and inviting for all users, which can be achieved through consideration of the following:

- Encourage lower levels of Bicycle Level of Traffic Stress and Pedestrian Level of Stress by separating facilities from high-speed traffic, implementing facilities along routes with lower traffic volumes and speeds, and providing wider nonmotorized facilities with adequate protection from moving vehicles, including through the use of parking lanes as buffers
- Ensure that facilities are well-lit and implemented in populated corridors to create sense of security
- Design facilities so they are easily identifiable by active transportation users as well as other roadway users
- Strive to select routes that follow the primary desire line for nonmotorized travel
- Provide user comforts and amenities, including wayfinding and bicycle parking
- Consider the corridor context and integrate facilities appropriately
- Encourage controlled crossings of arterial streets with signalization that is pedestrian actuated with adequate crossing times for all mobility levels and provide pedestrian refuge islands on wide streets

# CORRIDOR EXISTING CONDITIONS

The corridor existing conditions are summarized in this report and included in detail in the Division Street Project State of the Corridor Report (April 2020). Figure 2 shows the active transportation network in the Study Area.

## **Bicycle Conditions**

Division Street is currently not a designated bike route within the study area; in fact, bicycles are prohibited on the corridor between Buckeye Avenue and the North Division 'Y'. There are corridors parallel to Division Street that provide bicycle facilities, such as bicycle lanes or shared roadway designations. However, many of the north-south bicycle corridors are beyond a 1/3 of a mile from Division Street, which limits direct access to the corridor. The Spokane River crossing is also challenging for cyclists; riders must use off-street bridges to the east or west or must ride on the sidewalk of the Division Street bridge. Figure 3 shows the bicycle routes adjacent to the Division Street corridor. The City of Spokane also completed a Bicycle Level of Traffic Stress analysis for bicycle facilities in the City, shown on Figure 4. Division Street is identified as a Very High Stress facility with many of the parallel north-south routes as well as east-west connecting routes identified as Moderate, Higher Stress, or Very High Stress facilities. There are also few bicycle parking opportunities along the corridor.

## **Pedestrian Conditions**

Sidewalks are present on at least one side of most streets within the study area. Sidewalk coverage decreases in the northern end of the corridor in unincorporated Spokane County. Although most of Division Street has sidewalks, the pedestrian environment is relatively high stress due to few crossing opportunities, a high density of driveways, narrow sidewalks with few landscape buffers, faster-moving vehicles and high traffic volumes. Sidewalks in the corridor are in need of repair, with areas of cracks, unevenness, and obstructions, such as utility cabinets and poles. It should be noted that curb ramps are present at many intersections along the corridor and many appear to have been recently upgraded in compliance with the Americans with Disabilities Act (ADA).



Figure 2. Existing Active Transportation Network



Figure 3. Existing Bicycle Routes in the Study Area



Figure 4. Existing Bicycle Level of Traffic Stress

## **Scooter Conditions**

Motorized scooters are available within the study area, provided by Lime. Lime also provides electric-assist bikeshare options in the study area. Data provided by Lime helps to establish context for scooter- and bikeshare use and travel patterns in the study area:

- On average, scooters were ridden nine minutes per trip, for about one mile. Lime bike trips averaged six minutes, and about a half-mile.
- About 643,000 miles were traveled over 581,000 scooter share and bikeshare rides from May 2019 through mid-November 2019. The vast majority of rides were on scooters, with 630,000 miles ridden on scooters. The remaining 13,000 miles were on electric-assist bikes.
- About 24 percent of riders used Lime rather than a car. Almost 27 percent used Lime to get to or from public transit. Nearly 37 percent live in households that have access to one or no cars, according to a the 2019 Lime Spokane Survey.
- About 25 percent of riders used Lime to commute to or from work or school, almost 28 percent used Lime to travel to or from dining or entertainment, and 13 percent used Lime to travel to or from shopping or errands.
- More than half of riders used Lime because it was a fun way to get to their destination.
- About 47 of riders in the survey identified as female, and 51 percent identified as male.
- A barrier to riding was insufficient bikeway infrastructure. More than 17 percent of riders said lack of a safe place to ride would dissuade them from riding again.
- Sidewalk riding, which is illegal, continues to be a problem for pedestrians, the City and Lime. The city surveyed riding on the sidewalk for all people, not just those on Lime vehicles, and found that of all the bikes and scooters counted, about half were on the sidewalk. About 7 in 10 people riding on the sidewalk were on a scooter.

Figure 5 shows study area trips on Lime scooters and bikes.



Figure 5. Existing Lime Scooter and Bikeshare Trips

## Safety

Collision data was collected for the 5-year period from 2015 through 2019. In total, there were 2,129 crashes recorded. Bicycle and pedestrian related crashes accounted for just five percent of total crashes, but 64 percent of severe and fatal crashes involved nonmotorized users along Division Street. This indicates the need to focus on reducing the potential for crashes involving nonmotorized users in the corridor, which often lead to severe injuries or fatalities. Most of the crashes involving nonmotorized users occurred at intersections or driveways.

The perception of safety in the corridor can also be a major influence on nonmotorized travel in the study area. Some factors along the Division Street corridor that may diminish perceived safety include:

- Vehicle speeds (both posted and actual) in excess of 30 MPH.
- Significant vehicle volumes (greater than 45,000 on weekdays and greater than 35,000 on weekends). Sidewalks along most of the corridor lack buffers from traffic (no landscape, hardscape, or parked vehicles).
- Signalized crossings are spaced far apart (on average 1200 to 2000 feet).
- Some access driveways are wider than necessary, including some slip-lanes onto intersecting streets.
- Many retail buildings are set back from the roadway requiring people walking to navigate large parking areas and access lanes to patronize businesses.

Division Street has two primary hot spots of crime, just west of the corridor in downtown Spokane and between Wellesley Avenue and Francis Avenue. The crimes are varied but include aggravated assault and robbery. These types of crimes could have a significant impact on the comfort of all users of the roadway, particularly those on foot or bicycle.

Awareness of crime hot spots and additional security features such as monitored security cameras and use of crime prevention through environmental design (CPTED) can reduce risks and improve community safety.

# PROPOSED ACTIVE TRANSPORTATION IMPROVEMENTS

Active transportation improvements are a critical part of each of the scenarios under evaluation. These improvements facilitate access to transit and encourage safe, nonmotorized travel in the corridor. Each of the scenarios includes a set of proposed active transportation improvements that allow for nonmotorized travel along and/or adjacent to Division Street. Each scenario is described in the following sections.

## Mainline Division Street Proposed Improvements and Constraints

All of the scenarios include pedestrian spot improvements, such as portions of sidewalk near stations and crossing improvements, along the mainline portion of Division Street; however, no dedicated bicycle facilities would be provided along this portion of the corridor. The right-of-way for Division Street north of the one-way couplet varies between 94 and 97 feet and currently includes a 5- to 6-foot sidewalk on either side, six general purpose travel lanes and a center median or two-way-left-turn lane. The existing right-of-way property line is consistently just outside of the sidewalk for most of the corridor, limiting the ability to widen for expanded sidewalks or to include dedicated bicycle or other modal facilities. Introducing a bike lane in each direction at even minimal

widths would require that all travel lanes be narrowed to widths that are not compliant with WSDOT standards. The bike lanes would also likely be high stress facilities considered uncomfortable for all but the most fearless cyclists. It would be difficult to achieve low stress facilities even if buffers or other separation were provided because of high speeds and traffic volumes on Division Street. The WSDOT Design Manual provides guidance on bicycle facility selection with consideration to roadway characteristics (speed and average daily traffic) and the type of cyclist to be accommodated (from the Strong and Fearless to the Interested, but Concerned), which can inform bicycle facility selection on the mainline portion of Division Street. Within just a few blocks to the east or west, there are parallel streets to Division Street that can accommodate lower stress nonmotorized facilities. The east option could include facilities along N Mayfair Street/N Lidgerwood Street. The west option could include facilities along N Mayfair Street. The potential east and west options are shown on Figure 6 through Figure 10. These corridors have lower traffic volumes and speeds, making them safer and more suitable for integration with active transportation. Connecting from these corridors to Division Street would require limited travel deviation and users originating from adjacent neighborhoods would benefit from nearby, dedicated active transportation facilities. Potential parallel corridors are described in the sections below.



#### Legend



Figure 6. Parallel Nonmotorized Corridors Segment 1



Figure 7. Parallel Nonmotorized Corridors Segment 2



Figure 8. Parallel Nonmotorized Corridors Segment 3



Figure 9. Parallel Nonmotorized Corridors Segment 4



Figure 10. Parallel Nonmotorized Corridors Segment 5

## Alternative Center Running

This scenario includes center running BRT lanes along the mainline of the Division Street corridor with left running BAT lanes through the couplet portion of the corridor, as shown on Figure 11. Active transportation facilities would include the following:

- Spot improvements such as portions of sidewalk near stations and crossing improvements along Division Street
- Through the mainline portion of the Division Street corridor, dedicated bicycle facilities would be provided on a parallel corridor either to the east or west of Division Street.
- In the couplet, protected bicycle lanes would be included on the right side of the street in the direction of travel



Figure 11. Scenario Center Running Cross Section

## Alternative Side Running A

Scenario Side Running A includes side running BAT lanes along the mainline of the Division Street corridor with right running BAT lanes through the couplet portion of the corridor, as shown on Figure 12. Active transportation facilities would include the following:

- Spot improvements such as portions of sidewalk near stations and crossing improvements along Division Street
- Through the mainline portion of the Division Street corridor, dedicated bicycle facilities would be provided along either an east or west parallel corridor as described for Center Running
- In the couplet, protected bicycle lanes would be included on the left side of the street in the direction of travel along with street tree buffers for sidewalks



Figure 12. Scenario Side Running A Cross Section

## Alternative Side Running B

Scenario Side Running B includes side running BAT lanes along the mainline of the Division Street corridor. The couplet portion of the corridor would be converted to two-way operations with side running BAT lanes consolidated on Ruby Street. Division Street through the couplet would not include transit or active transportation facilities. Figure 13 shows the roadway configuration for Scenario Side Running B. Active transportation facilities would include the following:

- Spot improvements such as portions of sidewalk near stations and crossing improvements along Division Street
- Through the mainline portion of the Division Street corridor, dedicated bicycle facilities would be provided along either an east or west parallel corridor as described for Scenario Center Running
- In the couplet, sufficient space exists for either a two-way cycle track on the left side of Ruby Street along with street tree buffers for sidewalks, or for separate, one-way protected bicycle lanes.
- No dedicated bicycle facilities would be included on Division Street through the couplet, street tree buffers for sidewalks added where possible.



#### Figure 13. Scenario Side Running B Cross Section

#### Scenario Side Running C

This scenario includes side running BAT lanes along the mainline of the Division Street corridor with right running BAT lanes through the couplet portion of the corridor, as shown on Figure 14. Active transportation facilities would include the following:

- Spot improvements such as portions of sidewalk near stations and crossing improvements along Division Street
- Through the mainline portion of the Division Street corridor, bicycle facilities would be provided along either an east or west parallel corridor as described for Center Running
- In the couplet, a two-way cycle track would be provided on the right side of Ruby Street along with street tree buffers for sidewalks
- No dedicated bicycle facilities would be included on Division Street through the couplet, street tree buffers for sidewalks
- Note that the narrowing of Ruby and Division in the couplet could provide space for additional urban design, outdoor retail activities, landscaping, and/or green stormwater infrastructure.



Figure 14. Scenario S3 Cross Section

## Active Transportation Improvements Evaluation

Each of the scenarios have different benefits and considerations for active transportation. Table 2 summarizes the differences for each of the scenarios.

Scenario	Benefits	Considerations
Center Running	<ul> <li>Center running BRT lanes reduce the number of lanes riders must cross to get to and from transit stops</li> <li>Center running BRT lanes result in more upgrades to crossings along the corridor</li> <li>Right side bike lanes do not conflict with transit vehicles and transit stops</li> <li>Right side bike lanes remove conflict points with left turning vehicles</li> <li>Right side bike lanes are easy to connect to the rest of the bicycle network</li> </ul>	<ul> <li>Center running BRT lanes may result in crossing against the signal if rider can see bus approaching and they do not have crossing priority</li> <li>Right side bike lanes do not have a direct connection with transit stops; require riders to cross to stops via intersections</li> </ul>
Side Running A	<ul> <li>Side running BAT lanes provide some separation between the sidewalk and general purpose travel lanes</li> <li>Left side bike lanes do not conflict with transit vehicles and transit stops</li> </ul>	<ul> <li>Left side protected bike lanes are more challenging to connect to the rest of the bicycle network</li> <li>Left side bike lanes introduce conflict points with left turning vehicles</li> <li>Left side bike lanes in a one-way corridor are less expected for vehicle drivers</li> <li>The downhill terrain of the roadway results in risker left turns due to faster moving cyclists and vehicles</li> </ul>
Side Running B	<ul> <li>Side running BAT lanes provide some separation between active transportation facilities and general purpose travel lanes</li> <li>Protected bicycle lanes in same corridor reduce out of direction travel for nonmotorized users</li> <li>Protected bicycle lanes considered more attractive to a wide of range of bicyclists</li> </ul>	<ul> <li>Many destinations are on Division Street in the couplet; connections from Ruby Street for nonmotorized users will be required</li> <li>Protected bicycle lanes may result in some users still traveling on Division Street where no designated facilities are provided</li> <li>Protected bicycle lanes may require specialized treatments for bicycles through most intersections</li> <li>Protected bicycle lanes may require special treatments at driveways</li> <li>Protected bicycle lanes may encourage higher travel speeds for nonmotorized users</li> </ul>
Side Running C	<ul> <li>Side running BAT lanes provide some separation between active transportation facilities and general purpose travel lanes</li> <li>Two-way cycle track on a one-way street are generally compatible</li> </ul>	<ul> <li>Two-way cycle track may require signalization for bicycles through most intersections</li> <li>Two-way cycle track may require special treatments at driveways</li> </ul>

## Table 2. Evaluation of Proposed Active Transportation Facilities

Scenario	Benefits	Considerations		
	<ul> <li>Two-way cycle track reduces out of direction travel for nonmotorized users</li> <li>Two-way cycle track minimizes right-of-way needs</li> </ul>	<ul> <li>Two-way cycle track on right side increases distance to connect with Division Street and opposite side of street</li> </ul>		
	<ul> <li>Two-way cycle track considered more attractive to a wide of range of bicyclists</li> </ul>	Two-way cycle track is potentially challenging to connect to the rest of the bicycle network		
		<ul> <li>Two-way cycle track may encourage higher travel speeds for nonmotorized users</li> </ul>		

# NEXT STEPS

The purpose of this high-level analysis of proposed improvements is to outline Active Transportation options at a conceptual level and is not meant to be conclusive. Additional work is needed to further refine safety and mobility improvements that complement the BRT line and provide practical and effective options to connect people and destinations. Tasks anticipated include:

- Station locations including accessibility and connections to the pedestrian and bicycle networks including walkshed analysis
- Proposed safety and comfort improvements for all users
- Coordination with micromobility options
- Routing and recommended treatments for active transportation facilities parallel to the mainline of Division Street