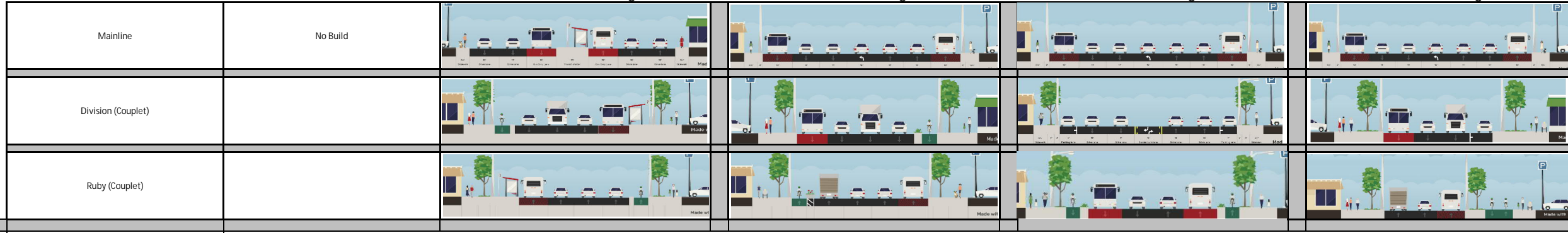


APPENDIX F
Alternatives Evaluation Matrix



Overall notes

No Build Center Running Side Running A Side Running B Side Running C

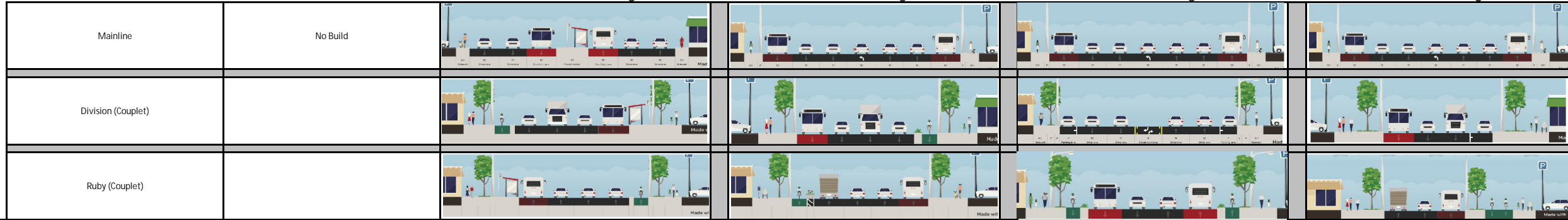


METRICS		No Build	Center Running	Side Running A	Side Running B	Side Running C	
Current Corridor Transit Ridership (pre-COVID)		930,000 (2018 annual ridership)					Source: State of the Corridor memo
Ridership Potential (Households/Employment)		Population: 15,362 Households: 6,092 Total Jobs: 20,758 Daily Boardings: 4,200 Ridership for the No Build on Route 25 is expected to operate at existing headways. The 2040 No Build boardings are an increase of approximately 35% over existing year boardings.	Population: 15,362 Households: 6,092 Total Jobs: 20,758 Daily Boardings: 5,350 Ridership for C1 on Route 25 is expected to increase approximately 28% above the No Build condition.	Population: 15,362 Households: 6,092 Total Jobs: 20,758 Daily Boardings: 5,350 Ridership for C1 on Route 25 is expected to increase approximately 28% above the No Build condition.	Population: 15,362 Households: 6,092 Total Jobs: 20,758 Daily Boardings: 5,550 Ridership for C1 on Route 25 is expected to increase approximately 32% above the No Build condition.	Population: 15,362 Households: 6,092 Total Jobs: 20,758 Daily Boardings: 5,325 Ridership for C1 on Route 25 is expected to increase approximately 28% above the No Build condition.	Source: 2019: U.S. Census Bureau, ACS 5-Year Estimates U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2018) 1/4 mile study area buffer
Speed and Reliability Improvement		PM Peak Hour Southbound Travel Time = 29.1 Min. PM Peak Hour Northbound Travel Time = 31.0 Min. 2040 No Build travel times nearly identical to existing year travel times. Transit reliability will continue to be impacted by current congestion levels, most notably traffic in the downtown area, the Y, and at major signalized intersections on the mainline.	PM Peak Hour Southbound Travel Time = 29.2 Min. PM Peak Hour Northbound Travel Time = 31.3 Min. Travel times consistent with No Build, adding less than 1 minute travel time in each direction in the PM peak hour. Highest level of potential transit reliability increase, due to protected center BRT running-way and use of BAT lanes on one way streets in the Division/Ruby couplet. Transit signal priority and/or queue jump treatments in the couplet will be instrumental in improving transit speed and reliability.	PM Peak Hour Southbound Travel Time = 29.3 Min. PM Peak Hour Northbound Travel Time = 31.1 Min. Travel times consistent with No Build, adding less than 1 minute travel time in each direction in the PM peak hour. Significant potential for transit reliability increase, due to use of BAT lanes on the Mainline and on one way streets in the Division/Ruby couplet. Transit signal priority and/or queue jump treatments will be instrumental in improving transit speed and reliability.	PM Peak Hour Southbound Travel Time = 29.5 Min. PM Peak Hour Northbound Travel Time = 32.5 Min. Travel times consistent with No Build, adding less than 1 minute travel time in the southbound direction, but adding more than a minute in the northbound direction in the PM peak hour. Moderate potential for transit reliability increase, due to use of BAT lanes on the Mainline and Ruby street. Higher levels of congestion and two-way operations on Ruby street may impact transit speeds if not counteracted with transit priority measures. Transit signal priority and/or queue jump treatments will be instrumental in improving transit speed and reliability.	PM Peak Hour Southbound Travel Time = 29.4 Min. PM Peak Hour Northbound Travel Time = 31.4 Min. Travel times consistent with No Build, adding less than 1 minute travel time in each direction in the PM peak hour. Significant potential for transit reliability increase, due to use of BAT lanes on the Mainline and on one way streets in the Division/Ruby couplet. Transit signal priority and/or queue jump treatments will be instrumental in improving transit speed and reliability.	
Improves STA Network Connectivity		Connections to the existing STA network would remain the same	Bus stops spacing/location would be the same for all alternatives thus no anticipated differences associated with network connectivity				
Traffic/Corridor Mobility Impacts		Congestion: The corridor operates at LOS A and B in the AM and PM peak hour. The congestion in the 2040 No Build is slightly less than or equal to the existing 2015 congestion, primarily due to the completion of NSC, reducing north-south vehicular trips throughout the region. One system bottleneck exists at the Maple Street bridge, identical to existing conditions.	Congestion: The majority of the corridor operates at LOS A and B conditions, similar to the No Build condition, with a small segment operating at LOS C between Lincoln and Wellesley near the "Y". Parallel north-south arterials operate similar to the No Build condition, and no new bottlenecks (LOS E or F) are introduced into the system. All alternatives provide for pedestrian facilities in the mainline and bicycle facilities in the couplet. Non-motorized mobility is anticipated to be the same across all alternatives Bus stops spacing/location would be the same for all alternatives. Transit mobility is greatest based on improvements to speed and reliability	Congestion: The corridor operates at LOS A and B conditions, identical to the No Build condition. Parallel north-south arterials operate similar to the No Build condition, and no new bottlenecks (LOS E or F) are introduced into the system. All alternatives provide for pedestrian facilities in the mainline and bicycle facilities in the couplet. Non-motorized mobility is anticipated to be the same across all alternatives Bus stops spacing/location would be the same for all alternatives. Transit mobility is significantly better than no build based on improvements to speed and reliability	Congestion: The majority of the corridor operates at LOS A and B conditions, similar to the No Build condition. However, Ruby Street experiences congestion levels between C and E throughout. Parallel north-south arterials operate similar to the No Build condition, with only a small LOS D introduced on Washington Street north of Spokane River. All alternatives provide for pedestrian facilities in the mainline and bicycle facilities in the couplet. Non-motorized mobility is anticipated to be the same across all alternatives Bus stops spacing/location would be the same for all alternatives. Transit mobility is better than no build but is less than other alternatives based on improvements to speed and reliability	Congestion: The majority of the corridor operates at LOS A and B conditions, similar to the No Build condition, with small sections of LOS C located on Ruby south of Indiana. Parallel north-south arterials operate similar to the No Build condition, and no new bottlenecks (LOS E or F) are introduced into the system. All alternatives provide for pedestrian facilities in the mainline and bicycle facilities in the couplet. Non-motorized mobility is anticipated to be the same across all alternatives Bus stops spacing/location would be the same for all alternatives. Transit mobility is significantly better than no build based on improvements to speed and reliability	
		Bicycles not currently allowed on Division Street	For all scenarios: All ages and abilities bicycle facility options for the mainline segment and in the "Y" route are in parallel corridors with connections to destinations on Division				



Overall notes

No Build Center Running Side Running A Side Running B Side Running C



METRICS		No Build	Center Running	Side Running A	Side Running B	Side Running C
Corridor Mobility	Bicycle and Pedestrian Impacts	between Buckeye Avenue and the North Division "Y" Alternate north-south corridors are beyond 1/3 miles from corridor Division Street and alternative bicycle routes higher stress facilities Sidewalks are present but some segments are in poor condition Curb ramps present at many intersections	Crossing distance to transit stops is reduced in the mainline Right side buffered bike lanes do not conflict with transit or left turning vehicles in the couplet More crossing upgrades compared to other scenarios due to center running BAT lanes in the mainline Potential for crossing against signal if bus approaching/is at median transit stop Connecting to transit requires bicycle users to cross street in the couplet Easy to connect bike lanes to rest of the network	Fast and fearless riders can use side running BAT lanes Side running BAT lanes provide separation from GP travel lanes Bike lanes do not conflict with transit in the couplet Left side bike lanes in the couplet are challenging to connect with rest of network Left side bike lanes in the couplet conflict with left turning vehicles	Fast and fearless riders can use side running BAT lanes Side running BAT lanes provide separation from GP travel lanes Cycle track in the couplet reduces out of direction travel and ROW needs Cycle track on Ruby requires special treatments at driveways and intersections Cycle track on Ruby corridor with high density of intersections/driveways and two vehicle travel not recommended Cycle track on Ruby challenging to connect to rest of network	Fast and fearless riders can use side running BAT lanes Side running BAT lanes provide separation from GP travel lanes Cycle track on Ruby reduces out of direction travel and ROW needs Cycle track on Ruby all ages and abilities facility in corridor with one-way travel Cycle track on Ruby requires special treatments at driveways and intersections
	Freight Impacts	Freight access to properties is primarily limited to signalized intersections in the mainline south of Francis Freight access to properties is less restricted north of Francis due to the presence of a two-way center turn lane Freight has unlimited access to properties within the couplet The No Build alternative would not impact freight	Center running would reduce opportunities for left turns along the corridor except at signalized intersections, primarily impacting access north of Francis Large freight vehicles would be unable to make left turns at intersections, requiring modified routing	No anticipated impacts to freight along the mainline Cycle track/protected bike lane in the couplet may result in minor delays for ingress/egress at driveways	No anticipated impacts to freight along the mainline Cycle tracks on Ruby may result in minor delays for ingress/egress at driveways Congestion along Ruby may impact goods movement	No anticipated impacts to freight along the mainline Cycle tracks on Ruby may result in minor delays for ingress/egress at driveways
	Business Access Impacts	Business access is primarily limited to signalized intersections in the mainline south of Francis Business access is less restricted north of Francis due to the presence of a two-way center turn lane Business access is unlimited within the couplet The No Build alternative would not impact business access	Center running would eliminate opportunities for left turns along the corridor except at signalized intersections Drivers may be reluctant to make U-turns at intersections and double back to businesses Inclusion of bicycle facilities in the couplet could encourage additional business patronage by non-motorized users	No anticipated impacts to businesses along the mainline or in the couplet Cycle track/protected bike lane in the couplet may result in minor delays for ingress/egress at driveways Inclusion of bicycle facilities in the couplet could encourage additional business patronage by non-motorized users	No anticipated impacts to businesses along the mainline On-street parking on Division may provide for additional business access Cycle tracks in the couplet may result in minor delays for ingress/egress at driveways Inclusion of bicycle facilities in the couplet could encourage additional business patronage by non-motorized users	No anticipated impacts to businesses along the mainline or in the couplet On-street parking on Division may provide for additional business access Cycle tracks on Ruby may result in minor delays for ingress/egress at driveways Inclusion of bicycle facilities in the couplet could encourage additional business patronage by non-motorized users
	Safety Impacts	Access management along the mainline would remain for vehicles under the No Build alternative Pedestrians must cross seven lanes of traffic in the mainline There are limited options for mid-block crossings in the mainline. Outside designated crossings, islands can be used for pedestrian refuge for jaywalkers. They are not ADA accessible. There would be no changes to channelization in the couplet under the No Build alternative Pedestrians must cross four lanes of traffic on couplet streets Pedestrian crossings are limited to signalized crossings in the couplet There are no opportunities for mid-block crossings in the couplet and no islands for pedestrian refuge by jaywalkers There are no dedicated facilities for bicycles in the mainline or couplet and cycling is not permitted on the sidewalks The No Build alternative would not impact safety. Increased traffic volumes could result in additional	Center running would reduce the length of pedestrian crossings to access the station Center running could increase the potential for jay walking, as riders may be more inclined to cross one direction of traffic (as opposed to both directions) when they see a bus coming Center running would eliminate center two-way left turn lane, reducing the potential for head-on and T-bone collisions Center running would eliminate opportunities for left turns along the corridor except at signalized intersections, reducing the potential for T-bone collisions BAT lanes in the couplet provide space for right-turning vehicles to accelerate/decelerate outside the flow of traffic Cycle tracks/protected bike lanes in the couplet match the direction of travel for vehicles	Mainline crossing is wide resulting in longest crossing times for pedestrians BAT lanes in the mainline and couplet provide space for right-turning vehicles to accelerate/decelerate outside the flow of traffic Cycle tracks/protected bike lanes in the couplet match the direction of travel for vehicles	Mainline crossing is wide resulting in longest crossing times for pedestrians BAT lanes in the mainline and on Ruby provide space for right-turning vehicles to accelerate/decelerate outside the flow of traffic Two-way cycle track on a two-way street is considered less safe than other alternatives, as it requires drivers to watch for cyclists in both directions Two-way center left turn lane on Division in the couplet could increase the potential for head-on and T-bone collisions Narrower cross-section on Ruby would reduce crossing times for pedestrians	Mainline crossing is wide resulting in longest crossing times for pedestrians BAT lanes in the mainline and couplet provide space for right-turning vehicles to accelerate/decelerate outside the flow of traffic Two-way cycle track on a one-way street may be less safe than bicycle facilities that match the flow of traffic, as it requires drivers to watch for cyclists in both directions

Transit-Dependent Populations Served	<p>Population Over 65: 13.4%</p> <p>Population Under 16: 17.4%</p> <p>Population with a Disability: 15.8%</p> <p>Households Below 80% AMI: 55.0%</p> <p>Households Below 50% AMI: 34.8%</p> <p>Households Below 30% AMI: 20.9%</p> <p>Workers Over 16 with No Vehicle Available: 4.8%</p>
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Source: 2019: U.S. Census Bureau, ACS 5-Year Estimates
AMI based on Spokane County
1/4 mile study area buffer



Overall notes

No Build Center Running Side Running A Side Running B Side Running C

Mainline	No Build					
Division (Couplet)						
Ruby (Couplet)						

METRICS						
Equitable and Inclusive Access to Transit	Access to Employment	<p>Total Jobs: 20,758 By Salary: \$1,250 or less/month: 22.7% \$1,251 to \$3,333/month: 36.4% More than \$3,333/month: 40.9% By Industry (top 5): Health Care and Social Assistance: 23.7% Retail Trade: 20.1% Accommodation and Food Services: 15.7% Educational Services: 10.0% Professional, Scientific, and Technical Services: 9.1%</p>				
	Access to Healthcare, Education, and Social Services	<p>Schools (3): Evergreen Elementary Garfield Elementary Madison Elementary Parks/Recreation (5): B A Clyde Park Byrne Park Franklin Park Ruth Park Franklin Sports Complex Hospitals (2): Holy Family Hospital MultiCare Deaconess North Emergency Center Emergency Response/Law Enforcement (1): Fire Station 18</p>				
	Accessibility Improvements	Under the No Build alternative, accessibility at or to stops may be improved in conjunction with other public or private modifications to the right-of-way.	All stations will be developed to meet ADA standards Accessibility is anticipated to be similar across all alternatives			
Responsiveness to Community Goals	Neighborhood/Residents Impacts	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen
	Business Community Impacts	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen
	Corridor Traveler/Commuter Impacts	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen
	Impact on Institutions and Other Stakeholders	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen
	Compatibility with Community Growth and Land Use Vision	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen

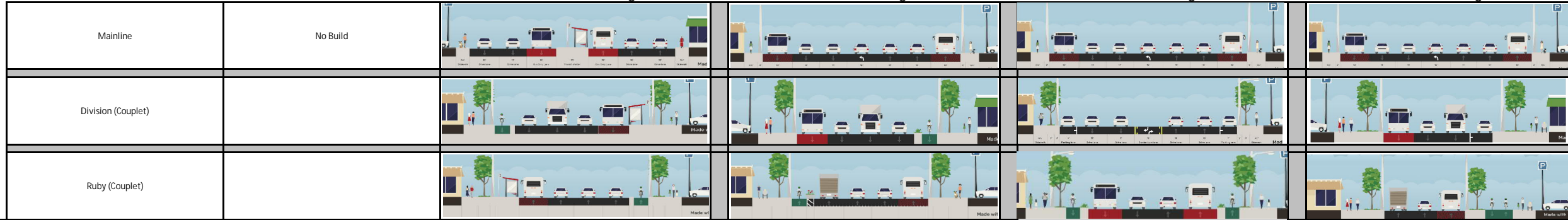
Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2018)
1/4 mile study area buffer

Source: City of Spokane/Spokane County



Overall notes

No Build Center Running Side Running A Side Running B Side Running C



METRICS						
	Complementary Community Improvement Opportunities	n/a	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen	STA/SRTC/Shireen

Implementation Feasibility	Construction Feasibility	n/a	Center running BRT lanes may require additional coordination with WSDOT to complete approvals process May require additional ROW at boarding islands Potential intersection modifications to accommodate boarding islands may trigger roundabouts Center-running construction is often more complex and challenging due to maintaining traffic on both sides of the construction zone, lay-down, materials and workers must cross travel lanes to access the construction zone	Side running BAT lanes are more common, which may simplify approvals process Typical construction zone access and traffic control easier than center-running	Side running BAT lanes are more common, which may simplify approvals process Converting roadway to two-way operations may require additional coordination Typical construction zone access and traffic control easier than center-running	Side running BAT lanes are more common, which may simplify approvals process Typical construction zone access and traffic control easier than center-running
	Phasing Options and Implementation Flexibility	n/a	Phasing could be more challenging along mainline portion with center running BAT lanes	Phasing is possible and implementation is straightforward	Phasing is possible, couplet may be more challenging to implement	Phasing is possible, couplet may be more challenging to implement
	Construction Impacts on Stakeholders	n/a	Construction would require partial roadway closures Construction area in center of the roadway will require additional safety considerations for construction crew Business access and left-turns could be restricted	Construction would require partial roadway closures There could be impacts to business access in active construction zones, likely focused on one side of street Construction is typically phased by block	Construction would require partial roadway closures There could be impacts to business access in active construction zones, likely focused on one side of street Construction is typically phased by block Cycle track construction may result in additional impacts to sidewalk in active construction areas	Construction would require partial roadway closures There could be impacts to business access in active construction zones, likely focused on one side of street Construction is typically phased by block Cycle track construction may result in additional impacts to sidewalk in active construction areas
	Potential Environmental Impacts (NEPA/SEPA)	n/a	Center running BAT lanes would require greater acquisitions and project footprint outside of existing right-of-way, which could result in additional environmental impacts, and may have greater utility and construction impacts.		Converting the couplet from existing one-way to two-way may have greater impacts than the one-way couplet, because changing from the existing one-way configuration would require greater modification to the existing environment.	

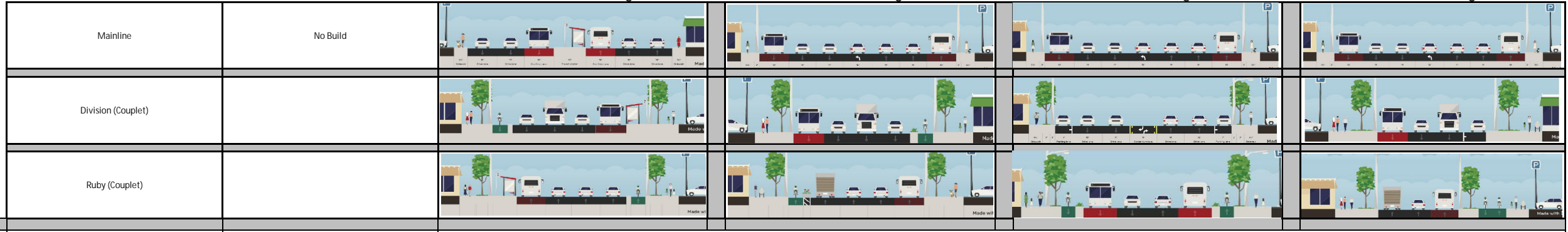
The potential feasibility of each alternative depends on how much of the project will be constructed outside of existing right-of-way, whether the project will affect any 4(f) properties, and whether the project will affect any hazardous materials sites.

Capital and Operating Costs	Capital Cost for Transit Alternative	n/a	Total project cost: \$117 million Center running BAT lanes would require greater acquisitions and project footprint outside of existing right-of-way, and may have greater utility and construction impacts.	Total project cost: \$105 million	Total project cost: \$121 million Revising couplet to two-way traffic likely to cost more revising signalized intersections.	Total project cost: \$114 million Narrower roadway section on Ruby could preserve existing features and save on capital costs.
	Capital Cost of Total Corridor Improvements	n/a				
	Annual Operations	Neutral - consistent with current STA Moving Forward vision for service provision in the Division Corridor	Higher operations and maintenance costs compared to the baseline, due to the increase in Revenue Service Hours provided, increased fleet size, and facilities maintenance of dedicated transit running way, enhanced stations, and technology.	Higher operations and maintenance costs compared to the baseline, due to the increase in Revenue Service Hours provided, increased fleet size, and facilities maintenance of dedicated transit running way, enhanced stations, and technology.	Higher operations and maintenance costs compared to the baseline, due to the increase in Revenue Service Hours provided, increased fleet size, and facilities maintenance of dedicated transit running way, enhanced stations, and technology.	Higher operations and maintenance costs compared to the baseline, due to the increase in Revenue Service Hours provided, increased fleet size, and facilities maintenance of dedicated transit running way, enhanced stations, and technology.



Overall notes

No Build Center Running Side Running A Side Running B Side Running C



METRICS						
	Meets Cost/Ridership Warrants for FTA 5309 Small Starts Funding	NA	Extent of transit priority treatment, improvement to speed and reliability quantity and design of station shelters and amenities and branding of fleet are expected to be the same for all alternatives, and that each would comply with Small Starts requirements. All alternatives are expected to meet the FTA 5309 Small Starts Funding criteria.			
	Funding Competitiveness based on Small Starts Criteria	NA	Expected higher cost alternative with similar transit performance outcomes as other alternatives, puts this alternative at a lower cost/benefit ratio than others, therefore a relative medium to low evaluation score in this analysis. Note: this does NOT equate to the FTA rating.	Expected lower cost and still maintains contiguous transit lane treatment to same extent as other alternatives. Even with the slight disbenefit of BAT lanes vs BUS only lanes, this is expected to perform similarly.	Expected higher (highest) cost alternative with similar transit performance outcomes as other alternatives, puts this alternative at a lower cost/benefit ratio than others, therefore a relative medium to low evaluation score in this analysis. Note: this does NOT equate to the FTA rating	Expected lowest cost for treatments in the couplet (needs confirmation) and similar transit performance.
Funding Competitiveness	Local Funding/Financial Impact on STA	Little to no additional impact, slight increase to operations cost if congestion and transit performance worsen over time without intervention.	Expected higher cost requires higher local match. Possible multimodal funding sources for this alternative are potentially lesser than other alternatives without a signature active transportation facility and/or narrowing for shorter crossing distances	Expected lower cost reduces local match relative to other alternatives. Possible multimodal funding sources for this alternative are potentially lesser than other alternatives without a signature active transportation facility and/or narrowing for shorter crossing distances.	Expected higher (highest) cost requires higher local match. Inclusion of signature cycle track facility may improve attractiveness for multimodal funding sources, but this could be offset by widening of Division in couplet portion.	Expected lowest cost reduces local match relative to other alternatives. Inclusion of signature cycle track facility may improve attractiveness for multimodal funding sources, as well as narrowing both Division and Ruby in the couplet section
	Opportunities to Leverage Multimodal Funding Sources	Potential to add signal protected pedestrian crossings on mainline.	Extent of parallel route investments as part of this alternative are undetermined. Inclusion of protected cycle facilities in the couplet section and improved protected crossings of the mainline contribute to competitiveness for multimodal funding sources.	Extent of parallel route investments as part of this alternative are undetermined. Inclusion of protected cycle facilities in the couplet section and improved protected crossings of the mainline contribute to competitiveness for multimodal funding sources.	Extent of parallel route investments as part of this alternative are undetermined. Inclusion of cycle track in the couplet section and improved protected crossings of the mainline contribute to competitiveness for multimodal funding sources.	Extent of parallel route investments as part of this alternative are undetermined. Inclusion of cycle track in the couplet section and potential for shortened pedestrian crossings within the couplet contribute to competitiveness for multimodal funding sources.
	Other Flexible Funding Options		potentially eligible for repavement, safety and stormwater improvement funding sources	potentially less competitive but still eligible for repavement, safety and stormwater improvement funding sources	potentially eligible for repavement (in the widened Division within the couplet), safety and stormwater improvement funding sources	potentially most competitive and eligible of, safety and stormwater improvement funding sources

Methodologies: https://parametrix.sharepoint.com/p:/r/sites/2941-001/_layouts/15/Doc.aspx?sourcedoc=%7B4B428046-88E1-4C54-888C-3831434DCC7B%7D&file=Transit%20Framework%20Criteria2020-05-01.pptx&action=edit&mobileredirect=true
 Alternatives (Slide 22): https://parametrix.sharepoint.com/p:/r/sites/2941-001/_layouts/15/Doc.aspx?sourcedoc=%7B862489D7-17AA-4881-914B-8C82922DA32A%7D&file=Steering%20Cmt%2010621%20presentation.pptx&action=edit&mobileredirect=true