Your Cycling Connection

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June 16, 2023

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City of Surrey

Re: Feedback on Phase 1 Design

The 20 Avenue design as presented is not friendly to people cycling. The design forces people cycling to take a lane when travelling eastbound over the overpass or choose to cross the road twice (and wait for 2 additional traffic lights) to use the new pathway on the north side of 20 Avenue but then they still need to take the lane at Croydon Drive anyway to carry on eastbound. The design doesn't provide a way for people cycling to access the traffic light at Croydon Drive to return to 20 Avenue nor any dedicated space to wait for the traffic light to change (such as a bike box). The design doesn't allow people cycling to easily merge with traffic to continue westbound at 160 Street though we are anticipating that this will be improved with Phase 2.

This design does not fit well with the Transportation Plan's goal of balancing equity as it doesn't consider the needs of people cycling until the roadway is extended eastbound or with development of properties on the south side of 20 Avenue.

We strongly recommend that the right eastbound lane is closed to vehicle traffic until a pathway is constructed on the south side of 20 Avenue so that people cycling eastbound do not need to decide whether to make unnecessary crossings of 20 Avenue to use the multi-use pathway or stay in traffic and take the lane. The eastbound right traffic lane can easily be blocked with temporary barriers. The design provides two eastbound traffic lanes and it is likely that only one lane is warranted at this time until development adds additional traffic and further widening east of 164 Street is also required. Providing the temporary space for cycling and walking would eliminate the need for a slip lane at the 160 Street intersection. We note that slip lanes are prone to an increase in collisions and injuries with vulnerable road users.

We strongly urge the city to build high quality infrastructure that is easy to use for all modes of transportation. We urge the city to adopt cycling friendly designs that allow people cycling to easily travel to and from separated infrastructure back into existing infrastructure without having to dismount their bicycles. We urge the city to build cycling infrastructure that is comfortable, safe and attractive to use not only for when a person is using a facility like a pathway but also going to and from existing infrastructure. We strongly urge the city to listen to respondents of the Transportation Plan Feedback that stated that the city should prioritize cycling and walking so that cycling and walking can be a viable alternative to driving. Forcing active transportation users to travel extra distances and cross the roadway multiple times (and wait for those traffic light cycles) goes against feedback received from respondents. We urge the city to use temporary facilities to provide cycling facilities that are safe and convenient to use and to not provide unneeded road space for vehicle transportation.

Prioritize Active Transportation and Adopt Cycling Friendly Design Principles

We urge the city to prioritize active transportation to align with their transportation goals. Providing the ultimate road design capacity for vehicles while only providing limited infrastructure for people walking and cycling that forces people cycling to cross the road twice, take the lane and dismount to traverse intersections provides a poor

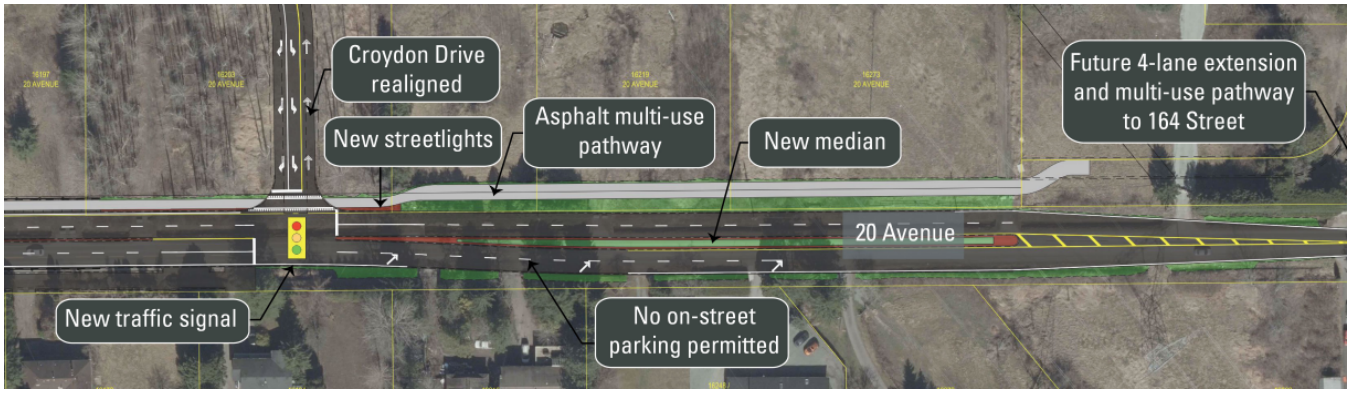
user experience that is unsafe and will not attract people to choose active transportation. We urge the city to adopt these design principles[1] for cycling:

1. Cohesion - Cohesion is about the possibility of getting somewhere by bicycle, whether it is a single-mode trip by bicycle or a multi-modal trip that involves using a bicycle to access public transport hubs. Cycle friendly infrastructure should "form a cohesive whole and link all origins and destinations that cyclists may have".
2. Directness - Directness means offering the cyclist as direct a route as possible with detours kept to a minimum. This would mean providing cycling facilities on both sides of 20 Avenue.
3. Safety - Infrastructure, including bicycle infrastructure, should guarantee the safety of all road users. For bicycle infrastructure to adhere to the safety design principle, it should strive to avoid differences in speed and mass as much as possible by separating users. At intersections and at the project boundary people cycling should have space to legally enter traffic and be provided space to merge into the traffic lane if required, much like vehicles have merging areas.
4. Comfort - Comfortable bicycle infrastructure should ensure that people cycling experience minimal stops or nuisance (such as dismounting, bumps or turns).
5. Attractiveness - Cycling facilities should be inviting to users or potential users. Facilities should be well maintained and well designed and ideally on quiet streets or away from traffic.

Croydon Drive Intersection

People cycling eastbound will need to cross back to 20 Avenue at this intersection and take a lane until a future 4 lane extension is made east of Croydon. There do not appear to be any facilities provided for people cycling to perform this action. Has the project considered how people cycling are to perform this action? Should a bike box be provided and the stop lines pulled back or should a bike crossing be provided? Will people cycling be able to trigger the traffic light? The pathway on the north side becomes a dead end east of Croydon Drive and doesn't appear to be even connected to the roadway for people cycling westbound.

Figure 1: Design of roadway near realigned Croydon Drive:



160 Street Intersection

It is unclear how a person cycling is supposed to enter the pathway or leave the pathway at the 160 Street intersection. The intersection pavement markings appear to force people cycling to have to dismount their bicycles, which isn't good design for people cycling. How is a person cycling supposed to continue west? Are they

1 https://dtvcapacitybuilding.com/blog/5-design-principles-for-successful-bicycle-infrastructure/#:~:text=The%20famous%20Dutch%20CROW%20Bike,design%20principles%20is%20the%20transferability.

supposed to merge into traffic from the crosswalk while cycling? Do they leave the path and then proceed into the westbound travel lane during the north south traffic operation and then wait in front of vehicles waiting for the traffic light to change? There is a right turn slip lane provided for traffic accessing the overpass from 160 Street. We recommend that the slip lane is removed from the design. Slip lane turns prioritize traffic movement over the safety of people walking and cycling and often allow turning vehicles to travel at high speed around the corner. The design shown appears to provide a wide turning radius allowing vehicles to turn at a high rate of speed. A recent Global News article interviewing the City of Surrey cited safety improvements after eliminating slip lanes at King George and 64 Avenue. In light of these improvements it doesn't make sense why a new slip lane is being constructed. The BC Active Active Transportation Guide recommends that slip lane turns are considered for elimination as they do not meet safety criteria such as:

- Reducing speed at conflict points
- Ensuring clear sightlines
- Making intersections compact (e.g. reducing turn radii, removing channelized turn lanes - e.g slip lanes)

Figure 2: Design at 160 Street

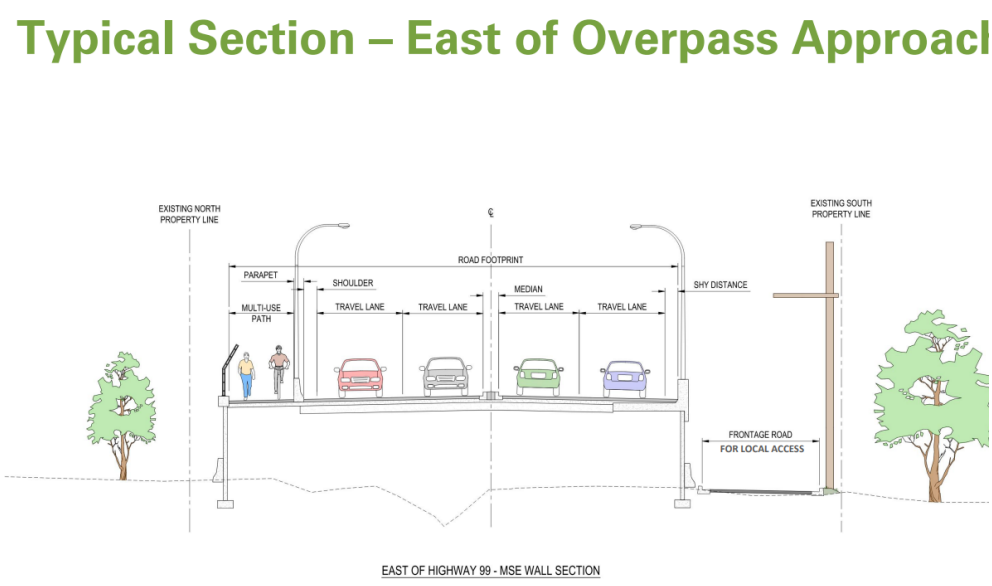
Future Pathway on the South Side of 20 Avenue

At our meeting with city staff in 2022 we were told that there will be a pathway on the south side of 20 Avenue and that the overpass could be expanded with a cantilevered section. The cross section designs do not show this and instead show a frontage road and drainage. Forcing people cycling to cross roads multiple times is not cycling friendly and goes against the Transportation Plan's goal of providing equitable transportation as cycling and walking is not prioritized.

Typical Section

The typical section at the overpass is planned to be 2.5 m wide which is less than the minimum width for a multi-use pathway according to Transportation Association of Canada guidelines which recommend a minimum width of 2.7 m with no horizontal clearance restrictions. As there are barriers on both sides of the pathway horizontal clearances should be considered for when two people cycling pass each other. The operating envelope of a person cycling is 1.4m so considering horizontal clearance the pathway should be at minimum 3.8 m wide. Note that the BC Active Transportation Guidelines[2] recommend a minimum width of 2.7m for constrained pathways with a horizontal clearance of 0.6m. This would mean that the minimum width should be 3.9 m wide. The project only seems to constrain the width of the path due to budget concerns as it is not constrained by the property boundary. We note that the roadway is constructed for vehicles with horizontal clearance between the barriers and the travel lanes but horizontal clearance for pathway users is not considered. Why is the City following guidelines when it comes to building for vehicles but ignores those same guidelines when it comes to constructing facilities for people walking and cycling? The fence shown also leans into the pathway space and doesn't appear to follow the vertical clearance guideline either. Due to the lack of width people cycling are at a risk of striking the lamp post or fence when passing another person cycling. Will the design include a bicycle railing to prevent handlebar striking of the fence and lamp posts?

Figure 3: Typical Cross Section:



[2] BC Active Transportation Guideline for Multi-use Facilities
https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_e_rfs.pdf

Figure 4: Transportation Association of Canada Guideline for multi-use pathway widths

Table 5.3.5: Design Domain: Width of Multi-Use Paths

Parameter	Design Domain			
		Recommended Range		
	Practical Lower Limit	Recommended Lower Limit	Recommended Upper Limit	Practical Upper Limit
Width (m), shared multi-use path	2.7	3.0	6.0	6.0

Figure 5: Transportation Association of Canada Horizontal Guideline for horizontal clearance

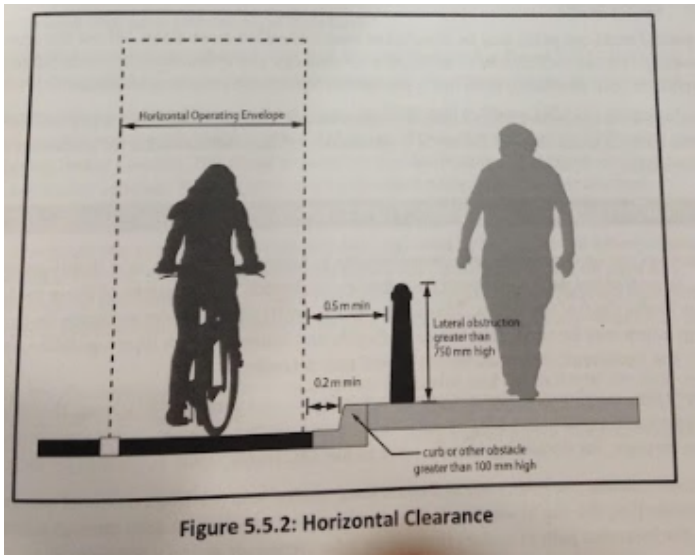


Figure 5.5.2: Horizontal Clearance

Figure 6: Transportation Association of Canada Horizontal Guideline for operating envelope of a person cycling:

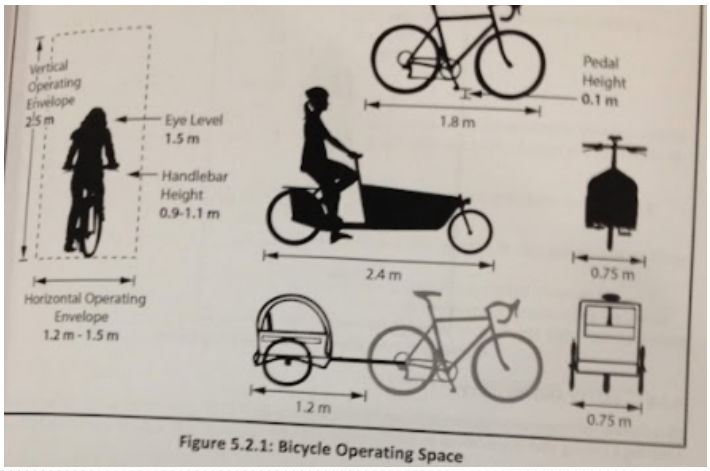


Figure 5.2.1: Bicycle Operating Space

Figure 7: BC Active Transportation Guideline for Multi-use pathways:

TABLE E-20 // MULTI-USE PATHWAY WIDTH GUIDANCE

CONTEXT	DESIRABLE (M)	CONSTRAINED (M)
Highway Corridor		
See **Chapter F.1**		
Roadway Corridor (Arterial and Collector Roads)		
Pathway Width	4.0	3.0
Street buffer Zone Width*	≥ 2.0	0.6
Roadway Corridor (Local Roads)		
Pathway Width	3.0 – 4.0**	3.0
Street Buffer Zone Width*	≥ 1.5	0.6
All Other Contexts		
Pathway Width	3.0 – 4.0**	2.7
Lateral Clearance	0.6***	0.6

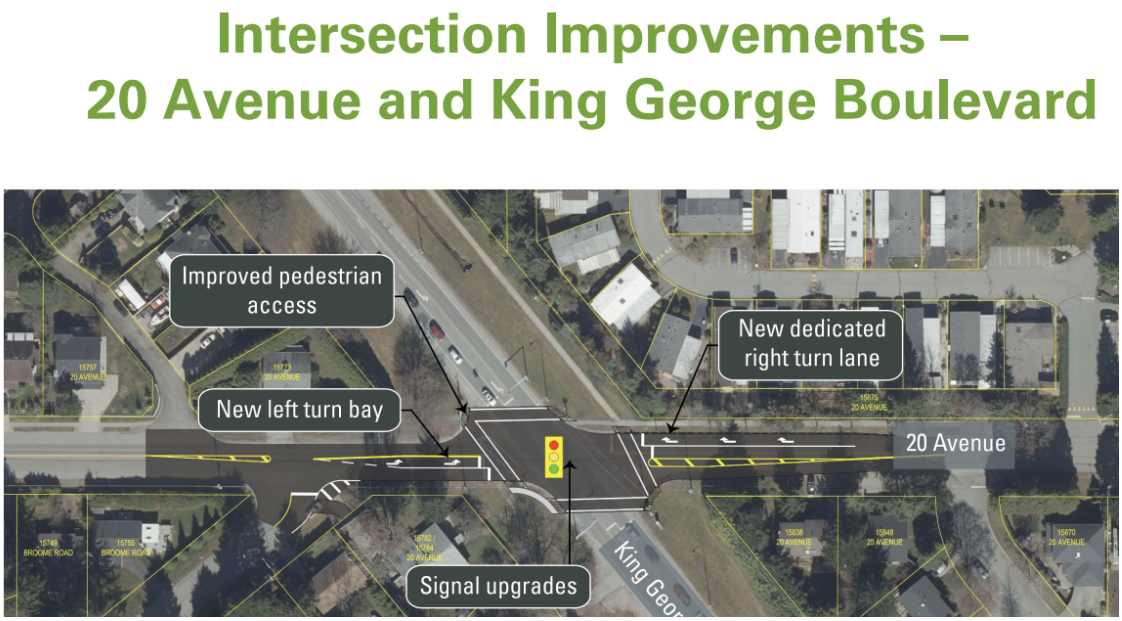
Figure 8: Bicycle Railing on Tynehead Overpass

Note: width of multi-use pathway shown is approximately 3.4 m wide

King George Intersection

The King George intersection does not provide any improvements for cycling. We are assuming that cycling improvements will be conducted in phase 2, however these improvements could be done in Phase 1 if the intersection is being rebuilt. Will there be protected cycling infrastructure built here?

Figure 9: Design at King George:



Sincerely,

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About HUB Cycling

HUB Cycling is a charitable not for profit organization that has spent 25 years removing barriers to cycling in Metro Vancouver, while cultivating the health, environmental, and economic benefits that active transportation can bring. HUB has educated thousands of people, motivated thousands more, and championed improvements that #UnGapTheMap to create a connected cycling network. HUB Cycling's mission is to get more people cycling more often. HUB Cycling has close to 2,500 individual members, more than 44,000 direct supporters and 1,200 plus dedicated volunteers. HUB Cycling has 10 volunteer committees across Metro Vancouver that advocate for cycling for people of all ages and abilities (AAA). For more information, visit bikehub.ca.

About Cross Canada Cycle Club Society (CCCTS).

We are a non-profit organization for active adults of all ages.The Fraser Valley Chapter has 100 plus members who are mainly retired people living in Surrey and White Rock and enjoy recreational cycling in the local community.One of the main purposes of the Society is to encourage and support bicycling for the purposes of transportation,recreation and sport.To achieve this objective we are more than willing to provide liaison and cooperation with governmental agencies on all matters relating to cycling. For more information, visit cccts.org