

**DISCUSSION PAPER #2
PHASE 2 - 2018-06-19**



**University
of Victoria**

Campus Planning
& Sustainability

**The University of Victoria
Campus Cycling Plan**



NETWORK UPGRADES FOUR KEY LOCATIONS

UNIVERSITY DRIVE PATHWAY

Intersection improvements to be determined based on preferred option for Ring Road

Tree Impact = None

Options for University Drive Pathway:

- Boulevard
- 1.5m Pedestrian Pathway
- 1.0m Grass
- 3.0m Two-Way Bike Lane
- Boulevard

Do you support this option? Please rate your level of support:

★ ★ ★ ★ ★

ENGINEERING PATHWAY

Do you support this option? Please rate your level of support:

★ ★ ★ ★ ★

**Engagement Summary,
Proposed Network Upgrades,
and Policy Direction**

URBAN
systems



This page has been intentionally left blank.

CONTENTS

1	Introduction.....	1
1.1	Planning Process	1
1.2	Public Engagement	2
1.3	Bicycle Planning Principles	2
2	Policy Options and Recommendations	3
2.1	Overarching Policy Directions	3
2.2	Reversed Priority Pyramid	3
2.3	Key Policy Directions.....	5
3	Major Network Improvements – Options Development and Evaluation.....	8
3.1	Ring Road Network Improvements	8
3.2	University Drive Options	12
3.3	McGill Road Options	16
4	Network Upgrades – Options Development and Evaluation.....	18
4.1	University Drive Connection Pathway	19
4.2	Engineering Pathway	19
4.3	Midgard Avenue Connection	20
4.4	Gabriola and Ring Road	20
4.5	Network Upgrades	21
5	Other Network Improvements	24



This page has been intentionally left blank.

1 INTRODUCTION

The University of Victoria's Gordon Head campus is located on the traditional territory of the WS'ANEC' (Saanich), Lkwungen (Songhees), and Wyomilth (Esquimalt) peoples of the Coast Salish Nation. The campus straddles the municipalities of Saanich and Oak Bay and is surrounded primarily by low-density residential neighbourhoods and small commercial centres.

The campus is a significant regional destination, with approximately 21,000 students, 900 faculty, 1,700 sessional instructors and specialist/instructional staff, and 3,600 administrative, professional and support staff, in addition to members of neighbouring communities who frequent the campus for the various community events, benefits, activities and other learning opportunities.

The University is committed to making cycling a safe, comfortable and convenient transportation choice for students, faculty, staff, and visitors to the campus. To help improve cycling on campus, as well as access to campus, the University of Victoria with Urban Systems Ltd. is developing its first-ever Campus Cycling Plan. The Campus Cycling Plan will provide a framework to guide the development of future cycling infrastructure, including bicycle parking, and end-of-trip facilities on campus. The Plan will also provide policy direction and strategies improve cyclist-pedestrian and cyclist-vehicle interactions. Importantly, this initiative is also in support of the 70% sustainable mode share target for transportation on campus, as stated in the Sustainability Action Plan for Campus Operations 2014-2019 and Campus Plan.

This is the second Discussion Paper developed as part of the Campus Cycling Plan. The first Discussion Paper provided a comprehensive summary of existing conditions for cycling on the UVic campus today. This second Discussion Paper provides a comprehensive overview of the second phase of the Campus Cycling Plan's development, which include developing bicycle network improvements, end-of-trip facility guidelines, and policy options and recommendations. This overview is based on engagement activities, including in-person events and an on-line survey, as well as technical analysis completed by Urban Systems. The findings of this Discussion Paper will inform the development of the final Campus Cycling Plan.

1.1 [Planning Process](#)

The Campus Cycling Plan is being developed in three phases. This Discussion Paper summarizes the findings of Phase 2. The process was launched in the fall of 2017 and is anticipated to be complete by the end of 2018. The key elements of three phases are described as follows (see **Figure 1.1**):

1. Phase 1 - initial engagement, on-line survey, establishing advisory committee and stakeholder groups, background data collection;
2. Phase 2 - ongoing engagement and meetings with advisory and stakeholder groups, review of initial findings, network development, policy options and recommendations; and
3. Phase 3 – prepare draft plans, implementation plan, final meetings and engagement, final plan.



Figure 1.1 – Campus Cycling Plan Process



1.2 Public Engagement

The Campus Cycling Plan is being developed based on extensive input from students, faculty, staff, and visitors to the campus. Public engagement is, and will continue to be, occurring throughout the development of the Campus Cycling Plan.

Engagement in Phase 1 included a series of pop-ups and classroom presentations, a campus-wide launch event, and an online survey attracting over 2,000 participants. The goal of the second phase of public engagement was to build on the feedback provided in Phase 1. Phase 2 of the engagement process took place in the winter of 2018 and was designed to obtain input on preliminary possibilities for the Campus Cycling Plan. This round of engagement focused on gathering feedback on:

- Proposed bicycle network
- Proposed support policies
- End-of-trip facility recommendations

Approximately 1,200 members of the campus community participated in the second round of engagement and a full summary of engagement activities in Phase 2 can be found in **Appendix A**.

1.3 Bicycle Planning Principles

1. To create a campus where students, staff, faculty and visitors can safely ride their bike no matter where they are headed on campus.
2. To create a bike-friendly campus that will help achieve the transportation goals set out in the Campus Plan and the Sustainability Action Plan; notably working towards increasing the use of transit, cycling, walking and carpooling to 70% of the transportation modal split.
3. To work towards the development of an All Ages and Abilities (AAA) cycling network by creating new and enhanced cycling infrastructure on campus, including bicycle parking, cycling paths and end of trip facilities.
4. To plan cycling network and facility improvements in a way that supports a balanced and connected multi-modal transportation system.
5. To improve levels of safety and comfort for pedestrians and cyclists on shared pathways across campus.

2 POLICY OPTIONS AND RECOMMENDATIONS

Paramount to the implementation of the Campus Cycling Plan is a supportive policy framework to improve access to bicycle parking and end-of-trip facilities as well as cyclist safety and cyclist behaviour on campus. This policy framework will also help to guide the implementation of the plan's recommended physical improvements, as well as supporting infrastructure such as signage and wayfinding. Providing infrastructure is always a balance between modes in a constrained space and policy is necessary to balance positive aspects of each mode, while mitigating the negative effects of that mode.

This section provides a set of recommended policy actions to be included in the final plan, which can be applied throughout campus to assist the University in enhancing the safety and effectiveness of its cycling network, by providing students and staff with more options.

2.1 Overarching Policy Directions

Overall, policy and design changes must focus on safety and not making conditions worse for the most vulnerable road users, such as pedestrians and cyclists. Further, when transportation decisions are being made, the safety of each group of road users should be considered in priority order. Therefore, a recommended approach going forward is the application of a transportation hierarchy (reversed priority pyramid) that puts pedestrians and active modes of transportation at the top. This reversed priority pyramid should be used as a decision tool to guide policy decisions and the prioritization of transportation projects on campus (see Figure 2.1).

2.2 Reversed Priority Pyramid

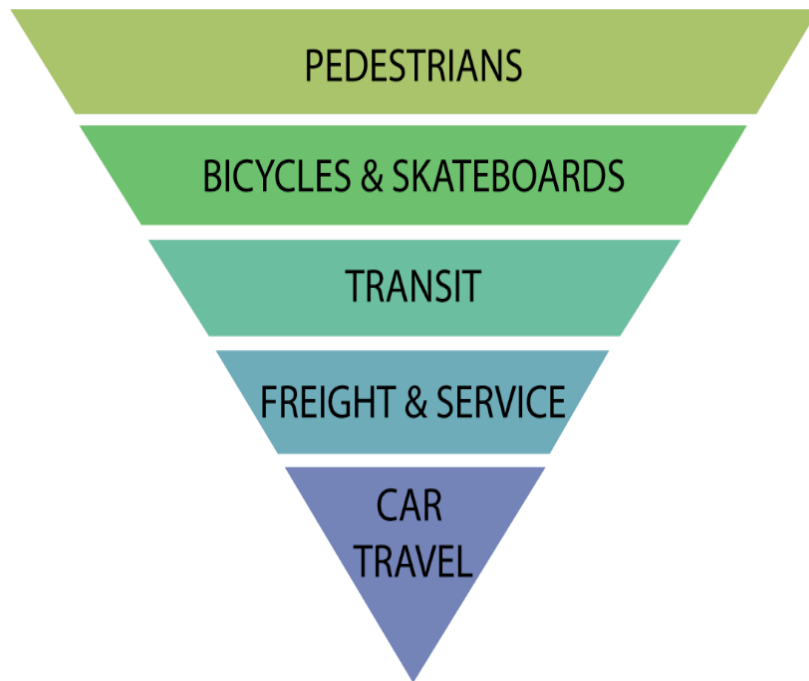
The reverse Priority Pyramid is designed to help the University prioritize all transportation projects on campus using the approach of ensuring future projects do not make travel on campus more dangerous for the most vulnerable road users. This would encourage all transportation projects on campus to look at infrastructure improvements and policy actions through the lens of the most vulnerable road users starting with pedestrians, then cyclists, transit users, service vehicles and finally motor vehicle drivers.

Moving forward, the reversed priority pyramid should be seen as the overarching policy direction for the Plan and used as a decision tool to guide policy decisions on campus.

In the application of the reversed priority pyramid, one of the most challenging aspects is integrating modes successfully and determining which tools and strategies are most context appropriate. The difficulties facing cyclists on campus are varied and different areas of campus face different issues. These differences are especially notable between areas of campus that are inside of Ring Road versus those on the outside of Ring Road. Different approaches are needed for these two areas of campus.



Figure 2.1 – Hierarchy of Transportation Priorities



Outside Ring Road, most pathways and roadways are focused on accessing the campus interior and core destinations. The key challenge in these areas is balancing the needs and safety concerns for each mode on the pathways and roadways accessing the campus where pedestrians, cyclists, transit and vehicles are sharing space and often interacting with each other. Moving forward, the recommendation for these areas is focussing on having greater separation of modes through hard and soft infrastructure treatments supported by signage, wayfinding and education.

In contrast, the approach for areas of campus inside Ring Road should be very different as the interactions are primarily between pedestrians and cyclists, and the travel patterns are irregular with many key destinations spread-out within the campus core. Therefore, the recommendation for the interior of Ring Road is a Shared Space policy approach that focuses less on separation and developing dedicated cycling facilities, and more on policy, signage, speed mitigation and education.

Though policy will be important for implementing changes in both areas of campus, it will be especially critical for supporting changes in travel behaviour and safe travel within Ring Road where the introduction of separate bike lanes is not an option due to the high volumes of pedestrians and the diversity of travel patterns.

2.3 Key Policy Directions

Based on the overarching policy direction explored above, four key policy directions have been developed for consideration in the Draft Plan. These include:

- **Bike Parking and End-of-Trip Guidelines** to ensure convenient options exist for growing numbers of cyclists;
- **Separation of Active Transportation Modes** to improve safety and comfort for both pedestrians and cyclists outside of Ring Road;
- **Shared Spaces Policy** that promotes appropriate active transportation etiquette and awareness within Ring Road;
- **Bicycle Sharing** guidelines and policies to manage the introduction of a paid bike-share system on campus; and
- **Transportation Surveys and Metrics** recommendations to better understand the travel patterns of the campus community.

These four policy areas represent key areas of consideration for the implementation of the Campus Cycling Plan. They also speak to key issues brought forward by the community through the first two rounds of engagement. The section below elaborates on these policy areas and provides some high-level policy recommendations for each one with the intention of carrying forward these policies into the final Master Cycling Plan.

2.3.1 Bicycle Parking and End-of-Trip Guidelines

The campus currently has a variety of bicycle parking facilities, including short and long-term facilities. End-of-trip facilities such as showers and clothing lockers are also available throughout campus, although the quality of those facilities can vary from building to building. End-of-trip facilities are not present in all buildings on campus.

Bicycle parking and end-of-trip facilities have been a key area of discussion throughout the Campus Cycling Plan process. Feedback from the community indicates that there are opportunities for additional end-of-trip facilities throughout the campus. Notably, bicycle parking facilities in many areas of campus are full at peak times, which demonstrates the need for improved end-of-trip facility policies and standards associated with significant capital projects. Existing policies should also be reviewed and updated.

Based on the comments received from the online survey and public engagement sessions, a lack of bike parking overall as well as a lack of sheltered bike parking, and showers and change facilities were identified as important barriers to cycling on campus. Moving forward, policies should be developed to ensure new and existing buildings provide these amenities in a consistent fashion. New buildings should, where possible, be required to have showers and change facilities, as well as sufficient bicycle parking. Opportunities should also be reviewed to add these amenities to existing buildings, especially those that could be considered key destinations.

Key policies recommended for bicycle parking and end-of-trip guidelines can be found in **Appendix B** and recommended locations for new bike parking and end-of-trip facilities can be found in **Appendix C**.

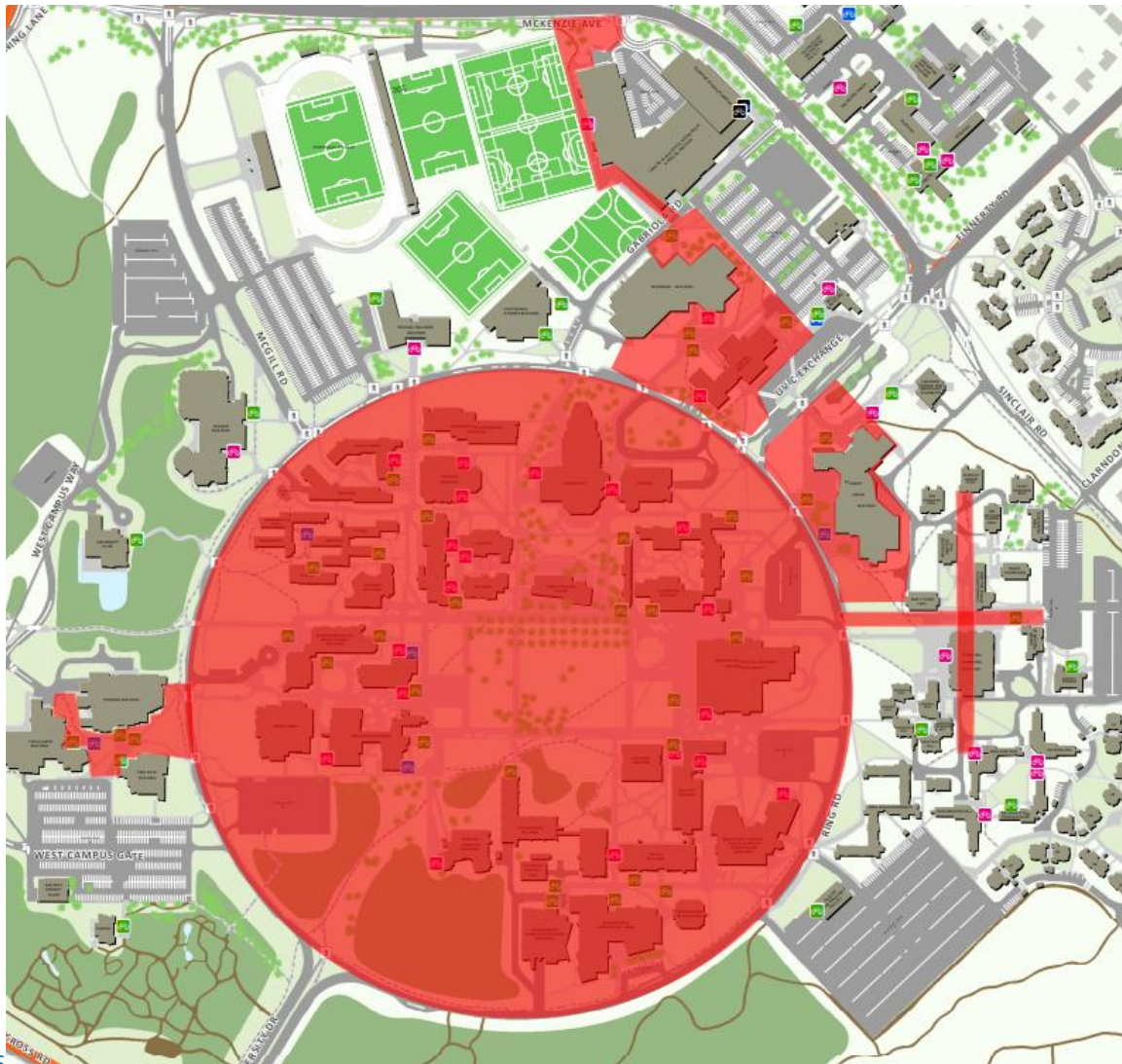
2.3.2 Shared Spaces Strategy

A key concern identified by the campus community was traffic congestion as well as vehicle-cyclist- pedestrian conflicts. Notably, multi-use pathways and high traffic areas within the interior of Ring Road showed a large potential for negative pedestrian-cyclist interactions. Therefore, as discussed, a strategy is required to improve pedestrian-cyclists interactions on campus.

For areas outside Ring Road, the separation of pedestrian and cycling paths is recommended. Improvements to signage and pavement markings is also recommended to improve consistency in movement of both modes. For areas within Ring Road where vehicle movements are highly restricted (service vehicles only) and pedestrian-oriented spaces are widely valued, the implementation of a shared space policy is recommended. This shared space policy would apply primarily within Ring Road, especially the Quadrangle area, but also in a few select areas outside of the Ring; notably around CARSA, the Student Union Building and McKinnon Building / transit exchange (as shown in Figure 2.2).

Key policies recommended for a shared space strategy can be found in **Appendix B**.

Figure 2.2 - Shared Space Policy Application Area



6



2.3.3 Bicycle Sharing

The two main types of bike share systems are: docked (parked at stations) or free-standing (or dock-less). Both of these charge by user-time. A third type of bike-share is volunteer-based, and generally free for users; the SPOKES Bike Loan program provides an example of the latter. Currently, both the District of Saanich and the City of Victoria have permitted a bike-share organization to operate within their municipalities. The free-standing (or dock-less) bike share program will likely become more common on University of Victoria Campus and, therefore, guidelines and policies should be developed to manage the introduction of paid bike-share systems on campus.

Key policies recommended for bicycle sharing can be found in **Appendix B**.

2.3.4 Ongoing Transportation Initiatives, Surveys and Metrics

The University of Victoria currently undertakes a Campus Travel Surveys every two years. The surveys incorporate traffic counts based on automatic tube, transit and manual counts. Survey results indicate the mode split has remained relatively consistent over the last six to eight years (one notable trend indicates steady growth in travel by foot over the last four surveys). Moving forward, it will be important for the University to measure the impacts of changes to the cycling network and the implementation of new cycling policies. Therefore, it is recommended that Campus Cycling Plan provide key measures and actions that should be undertaken over the next 10 years, including: advancing conversations with the District of Saanich and District of Oak Bay, ongoing travel surveys, conducting pedestrian counts in high traffic areas, etc.

Key policies recommended for ongoing initiatives, surveys and metrics can be found in **Appendix B**.



3 MAJOR NETWORK IMPROVEMENTS – OPTIONS DEVELOPMENT AND EVALUATION

Phase 2 focused on the review of options to support the development of a cycling network on campus. These cycling infrastructure options were identified based on input from the first round of the public engagement process to address some of the most significant issues for cycling on campus. Improvement options have been developed for three locations: Ring Road, University Drive and McGill Road (highlighted in Red in Figure 3.1):

Figure 3.1 – Major Network Improvements Areas



3.1 Ring Road Network Improvements

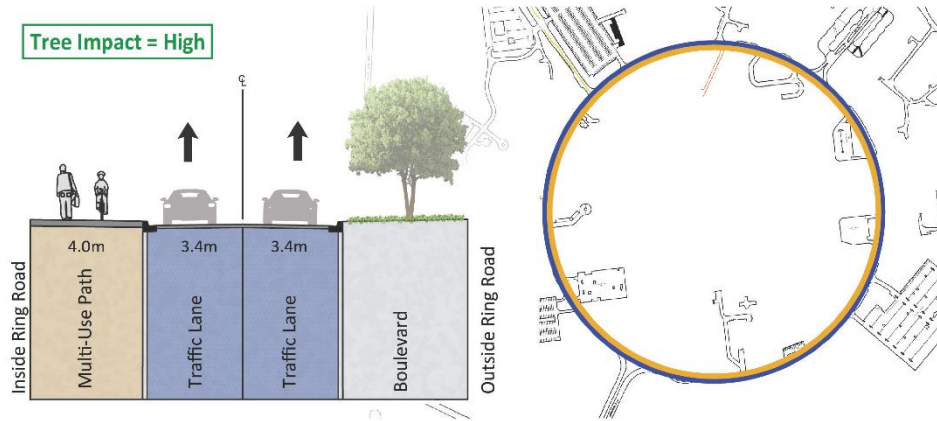
The following section outlines proposed concepts for cycling improvements to Ring Road. These options were presented for feedback in the second round of consultation. This feedback will be used to develop the final concept, which could include all or some of the elements of each options presented below.

3.1.1 Concept Development

Four improvement options were developed and shared with the public for Ring Road. Options range from maintaining the status quo to removing a motor vehicle travel lane to create a bi-directional protected bicycle lane.

3.1.2 Option 1: Multi-Use Pathway on the inside of Ring Road

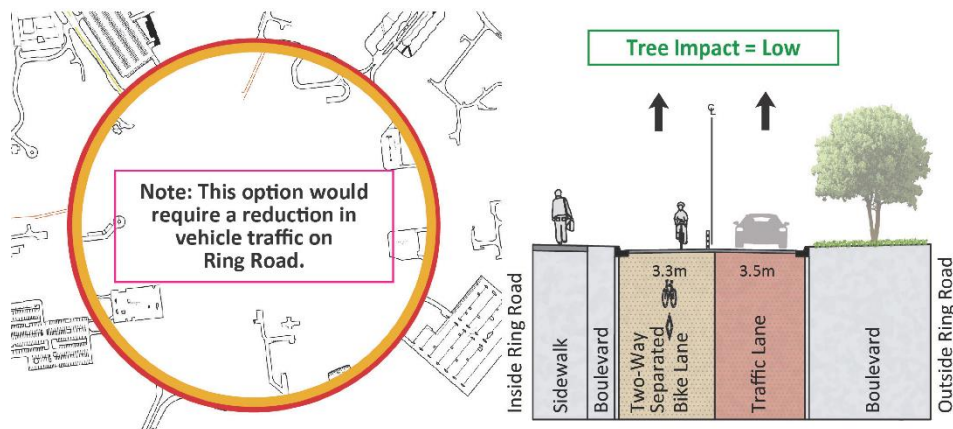
Figure 3.2 – Ring Road Option 1



This option maintains both motor vehicle travel lanes on Ring Road and adds a 4.0 metre wide multi-use pathway on the inside of Ring Road. The shared pathway will require significant tree removal but will allow vehicle traffic to remain unaffected.

3.1.3 Option 2: Continuous Two-Way Separated Bike Lane

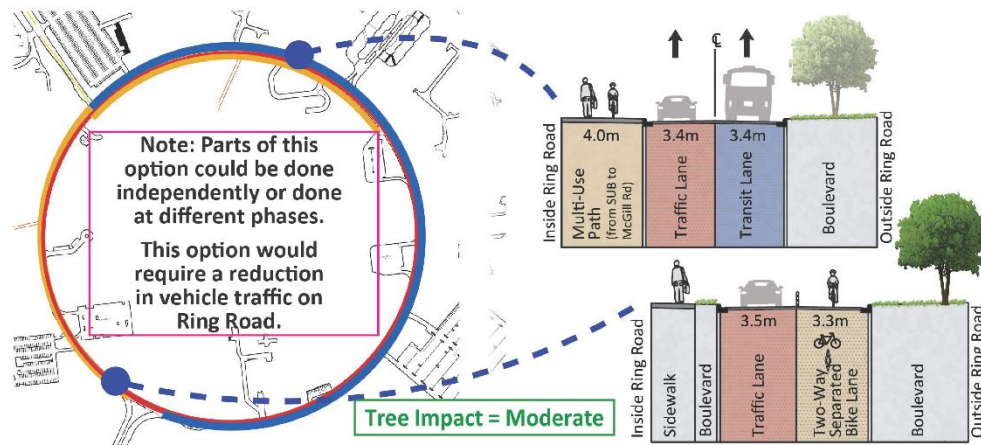
Figure 3.3 – Ring Road Option 2



This option would add a two-way protected bicycle lane within the existing inside travel lane of Ring Road, reducing motor vehicle travel to one lane for the entire length of Ring Road.

3.1.4 Option 3: Two-Way Separated Bike Lane and Transit Priority Lane

Figure 3.4 – Ring Road Option 3



This option is a hybrid of the first two options and consists of a two-way protected bicycle lane in the outside lane from McGill Road to University Drive, a multi-use path on the inside of Ring Road from McGill Road to the Student Union Building, and a transit priority lane from University Drive to McGill Road. The transit priority lane is reserved for the exclusive use of transit vehicles. Tree impacts would be moderate due to the multi-use path running from McGill Road to the SUB. Motor vehicle traffic would be reduced to one travel lane for the entire length of Ring Road for this option.

3.1.5 Option 4: No Changes to Ring Road

Figure 3.5 – Ring Road Option 4



Option 4 is to keep the design and operation of Ring Road in the current state. This option does not address the concerns heard about bike travel on Ring Road in Phase 1.

3.1.6 What We Heard

The feedback from both the survey and in-person engagement show that the preferred option is the multi-use path along the inside of Ring Road. However, strong support was also shown for Option 3 the Hybrid option during the public engagement labs, which provided several options for cycling connections both within and outside the Ring Road Right-of way. Importantly, there was also focussed discussion on the need to improve crossings on Ring Road to better facilitate efficient movement of transit and motor vehicles during peak periods. A detailed evaluation of these concepts can be found in **Appendix D**.

Table 3.1 – Summary Feedback on Ring Road Options

	In-Person	On-Line
Option 1 Shared pathway	3.76	3.25
Option 2 Two-way protected bike lane	3.46	2.73
Option 3 Two-way bike lane / transit priority	3.67	2.54
Option 4 No change	2.25	2.53

3.1.7 Preferred Option

Based on the results of the options analysis, the preferred option is Option 1 to develop a continuous multi-use pathway on the inside of Ring Road. This option provides a safe and comfortable facility that is physically separated from motor vehicle traffic, but which would not impact motor vehicle operations. However, this option also has the largest impact on trees and would be the most expensive to develop. It is recommended that in the short-term, UVic should prioritize pathway improvements at locations that provide important connections to destinations on campus. These connections will be located adjacent to Ring Road as to not impede vehicle traffic and include two key routes:

1. McGill Road to the Student Union Building along the outside of Ring Road; and
2. University Drive pathway to the Engineering building along the inside of Ring Road.

Over the long-term, UVic should continue to pursue opportunities to reduce vehicle traffic on Ring Road and consider options to reallocate road space from single occupancy vehicles to transit, cycling or a combination of these modes.

The improvement of crossing points along Ring Road will also be important for improving safety. Busy crossing points, such as crosswalks in front of the SUB, Fraser Building, Transit Exchange and Parking Lot 1, would benefit from greater management and timing of pedestrian and cyclist crossings.

There is currently a dependence on Ring Road to access several parking areas on campus. Thus, in the near-term the University should look to reduce vehicle traffic on Ring Road by shifting parking lot access points away from Ring Road; notably by creating an alternative access to Parking Lot #1 using the Oak Bay

owned Haro Road right-of-way to connect to Cedar Hill Cross Road. Access management should also be considered in the future development or redevelopment of parking lots and parkades on campus. Further, the use of controlled pedestrian crossing in key locations, such as in front of the Student Union Building, will improve traffic flow on Ring Road during peak periods of travel on campus. Moving forward, a significant reduction in traffic and more traffic management is required before the University should consider a reduction of vehicle capacity on Ring Road, however, significant steps can be made through policy in the meantime.

3.2 University Drive Options

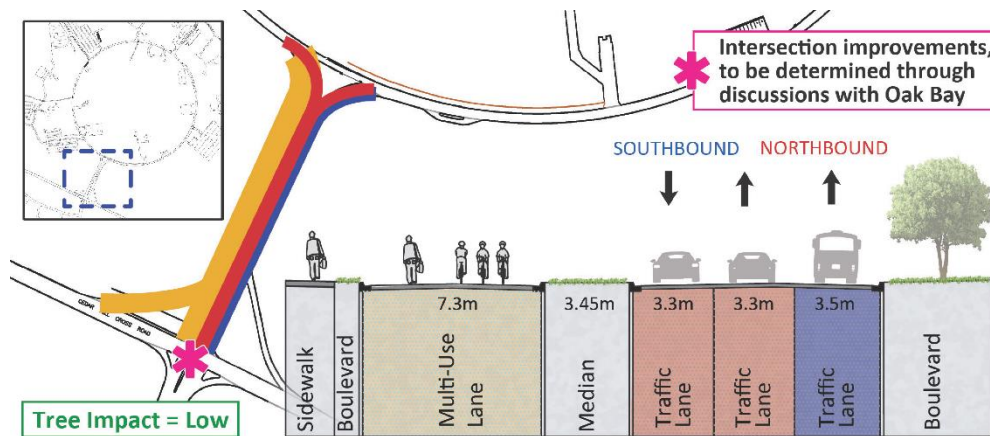
The following section outlines proposed concepts for cycling improvements to University Drive. These options were presented for feedback in the second round of consultation. This feedback will be used to develop the final University Drive concept, which could include all or some of the elements of each option presented below. However, the redesign of University Drive will ultimately be heavily influenced by the preferred option for Ring Road, as well as critical safety improvements required for the intersection of University Drive and Ring Road, as identified through the first round of engagement. Additionally, discussions will be required with the District of Oak Bay to confirm intersection treatments for preferred options

3.2.1 Options Development

Four options were developed for University Drive running from the intersection of Cedar Hill Cross Road and Henderson Road to Ring Road.

3.2.2 Option 1: Shared Walking and Cycling Promenade

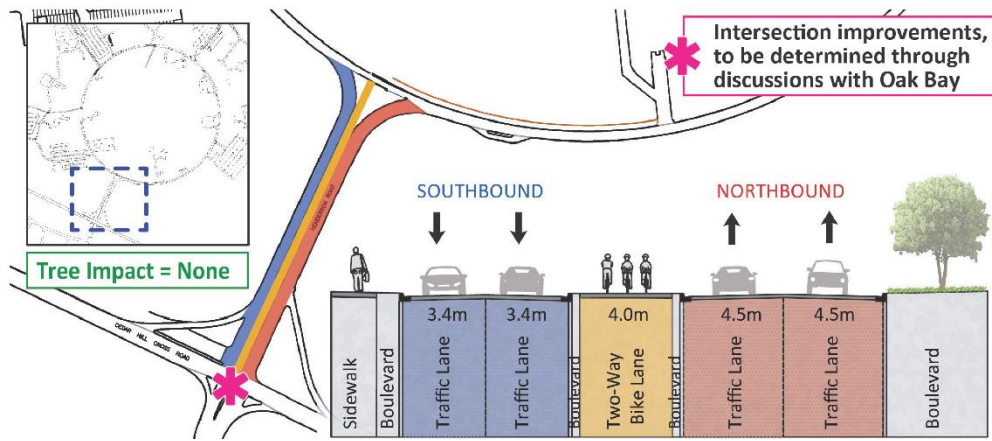
Figure 3.6 – University Drive Option 1



Option 1 would involve moving the southbound motor vehicle travel lanes to the east side of the existing median to make space for a shared cycling and walking promenade on the west side of the median. This option would reduce the southbound travel on University Drive to one lane.

3.2.3 Option 2: Two-Way Median Bike Path

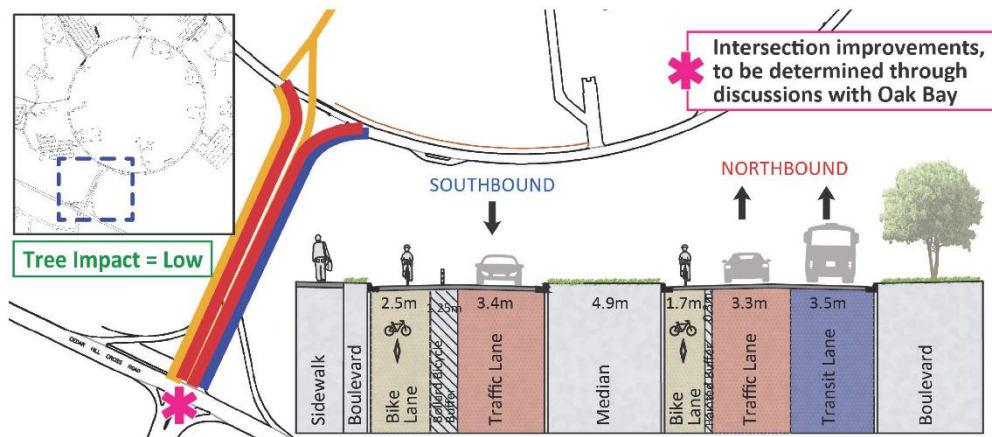
Figure 3.7 – University Drive Option 2



Option 2 would use the existing centre median to house a 4.0 metre wide two-way bicycle path. This option does not impact travel lanes or trees adjacent to the roadway but would create some challenges at the intersections at both ends.

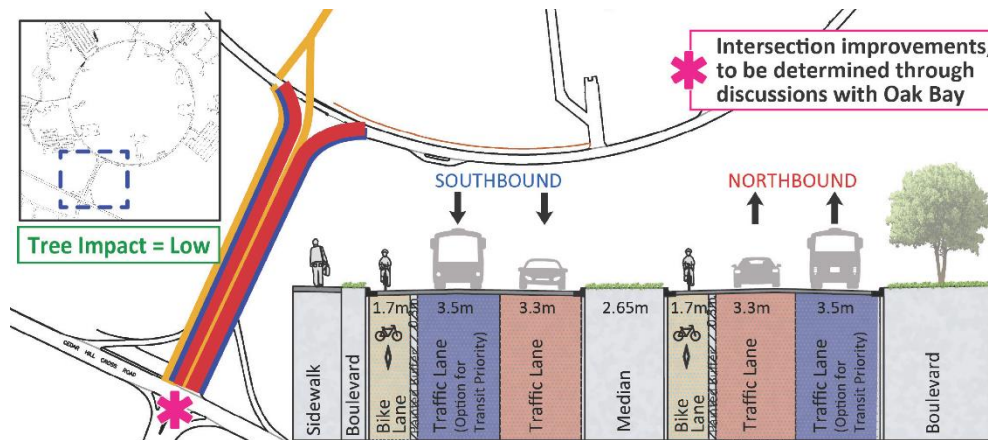
3.2.4 Option 3: Buffered Bike Lanes

Figure 3.8 – Ring Road Option 3a



Option 3a adds a protected bike lane to the southbound travel lane, removing one southbound motor vehicle lane, although it should be noted that a dedicated southbound left turn lane could still be provided. The existing northbound bicycle lane would remain on the west side of the travel lanes with a transit priority lane replacing the eastern lane. This option does not require any changes to the existing median.

Figure 3.9 – Ring Road Option 3b



Option 3b uses a similar configuration to option 3a, but maintains two southbound travel lanes by reducing the width of the buffer and reducing the width of the centre median. This option could be further adapted to shift the northbound bike lane to the east side (or right side) of Ring Road and moving the existing bus stop past University Drive to the existing lay way on Ring Road. The option to use a travel lane of both the southbound and northbound lanes as a transit priority lane can also be explored further if this is the selected option.

3.2.5 Option 4: No Change

Figure 3.10 – University Drive Option 4



The final option is to make no changes to the existing configuration of University Drive. This option does not address the concerns that were heard in phase 1 engagement.

3.2.6 What We Heard

The results from the in-person engagement and online surveys differed. Overall, the ratings from the on-line survey were substantially lower than what was seen from the in-person engagement where any questions were answered by the project team. With this information in mind, the preferred option is the option that adds buffered bike lanes both north and southbound while maintaining two travel lanes in both directions. This suggests that Option 3b with the bike lane on either the left or right side of the north bound lane is preferred. However, other issues were also identified for this infrastructure beyond those impacting cyclists. It was frequently noted that the intersections of University Drive and Ring Road, and University Drive and Cedar Hill Cross Road were also problematic for drivers, bus, pedestrians. Therefore, there should be wider consideration for a larger redesign of University Drive to reduce speeds, improve access to campus and improve crossings for both pedestrians and cyclists. A detailed evaluation of these concepts can be found in **Appendix D**.

Table 3.3 – Summary Feedback on University Drive Options

	In-Person	On-Line
Option 1 Shared pathway	2.87	2.61
Option 2 Median path	3.81	3.13
Option 3a Bike lanes	3.95	2.89
Option 3b Bike lanes	4.61	2.81
Option 4 No change	1.90	2.31

Through discussions with stakeholders, it should also be noted that a hybrid option was identified for Option 3, which would include the southbound bicycle lanes proposed in Option 3, but which would involve shifting the northbound bicycle lane to the right side of University Drive. Having the bicycle lane on the right side poses a potential conflict with transit at the existing bus stop on University Drive; however, the option was considered to relocate the existing bus stop to northeast corner of Ring Road and University Drive. This option would improve connectivity for transit users by relocating the bus stop closer to key destinations and would also help to mitigate the issues with the transition to the left side bicycle lane at Cedar Hill Cross Road.

3.2.7 Preferred Options

Based on discussions with stakeholders, it is recommended that the hybrid option 3b described above be explored further with special consideration for shifting the bike lane to the right side of the road and moving the bus stop to the existing lay way near the northeast corner of Ring Road and University Drive.



Again, this option should not be looked at in isolation, but rather as part of a broader redesign and reconfiguration of University Drive. Further, this option and any redesign of University Drive should be further developed along with the recommended approach for Ring Road as described above.

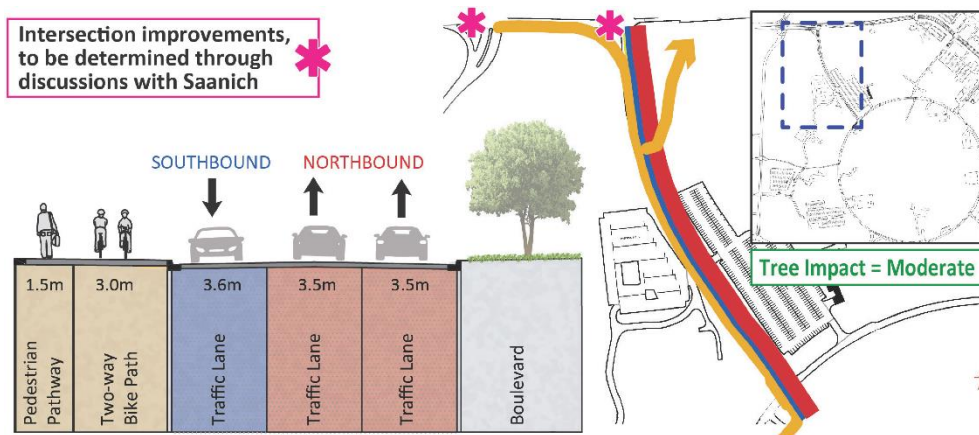
3.3 McGill Road Options

3.3.1 Options Development

Two concepts were explored for McGill Road between McKenzie Avenue and Ring Road.

3.3.2 Option 1: Multi-Use Path Parallel to McGill Road

Figure 3.11 – McGill Option 1



The first concept explored was to create a new 3.0 metre bike path and 1.5 metre pedestrian path on the west side of McGill Road connecting to the intersection at Gordon Head Road and McKenzie Avenue. The multi-use path would delineate sections for pedestrians and cyclists to minimize conflict. Existing trees along McGill Road would be impacted by the construction of a new path. A new crosswalk and path would be added south of McKenzie to connect the path to the existing multi-use path that runs east of McGill along McKenzie.

3.3.3 Option 2: No Change

The second concept is to maintain the existing configuration of McGill Road. This option does not address the concerns that were heard during phase 1 engagement.

3.3.4 What We Heard

The feedback from both the survey and in-person engagement showed that the preferred option by a significant margin was the multi-use path along the south side of McGill Road connecting Ring Road to the Gordon Head Road and McKenzie Avenue intersection. A detailed evaluation of this concept can be found in Appendix D.

Table 3.5 – Summary Feedback on McGill Road Options

	In-Person	On-Line
Option 1 Multi-Use Pathway	4.45	3.60
Option 2 No Change	1.67	2.34

3.3.5 Preferred Option

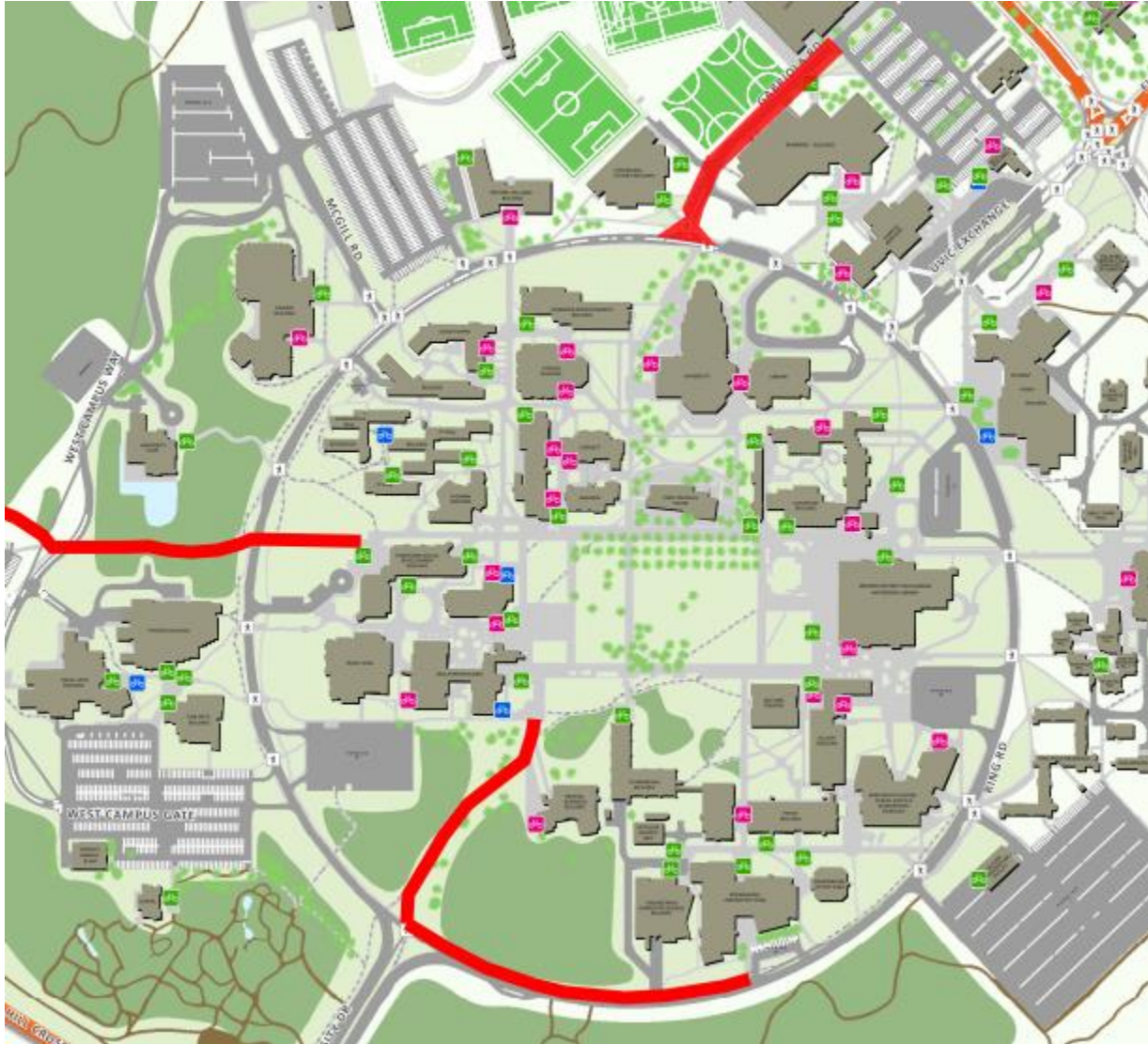
Based on the results of the options evaluation, the preferred option is Option 1 to develop a separate bicycle path and pedestrian path on the west side of McGill Road. The option to shift these lanes on the road to reduce costs, however, because of the narrow road widths in some area it would be just as costly to move curbs.



4 NETWORK UPGRADES – OPTIONS DEVELOPMENT AND EVALUATION

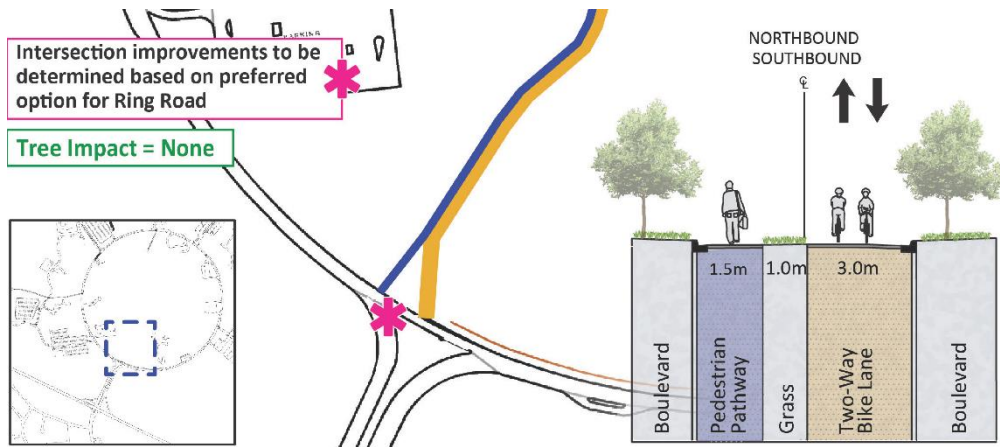
In addition to the major network improvements described above, concepts were developed for four of the other key access points identified during Phase 1. The operation of these access points is less complicated than the major network concepts due to minimal or no vehicle traffic allowing the concepts to be refined to a single option for each. These are highlighted in red in Figure 4.1 below.

Figure 4.1 – Network Upgrade Options



4.1 University Drive Connection Pathway

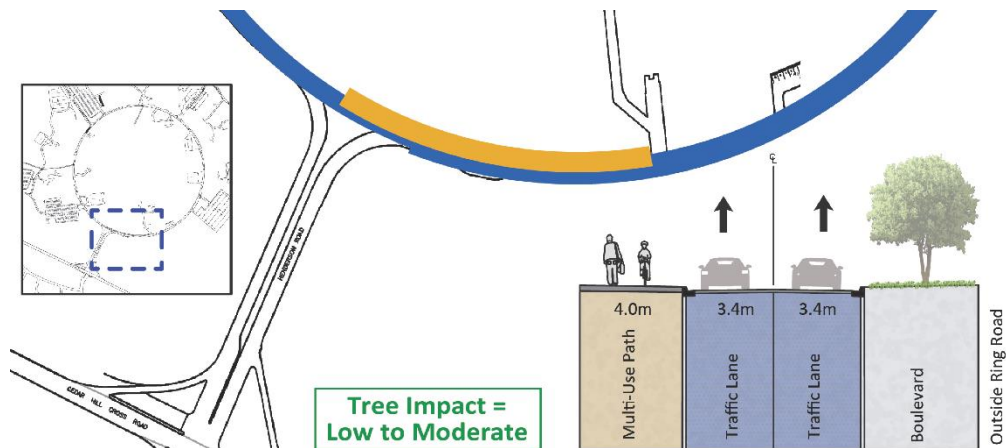
Figure 4.2 – University Drive Pathway



A new two-way bike path is recommended to connect cyclists from University Drive to the centre of campus. The 3.0 metre path would run adjacent to the existing pathway, separated by landscaping, preventing pedestrian-cyclist conflicts from occurring. The existing pathway was identified as a high traffic area for both cyclists and pedestrians. Configuration of the crossings will be determined once concepts for both University Drive and Ring Road are finalized.

4.2 Engineering Pathway

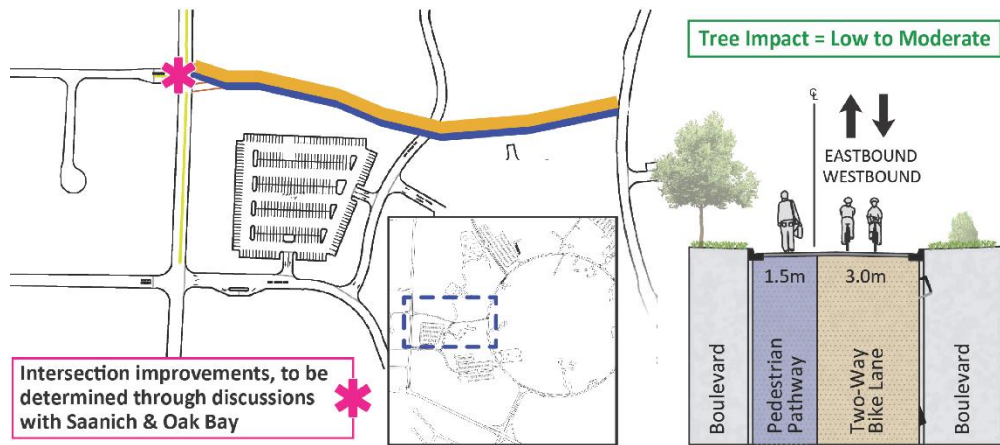
Figure 4.3 – Engineering Pathway



For this concept, the existing pathway connecting the Engineering and Computer Science building to University Drive would be widened to a 4.0 metre shared use pathway. Some existing trees and foliage would likely need to be removed to create space for this pathway. This concept could be integrated into the concept selected for Ring Road.

4.3 Midgard Avenue Connection

Figure 4.4 – Midgard Avenue Multi-Use Path

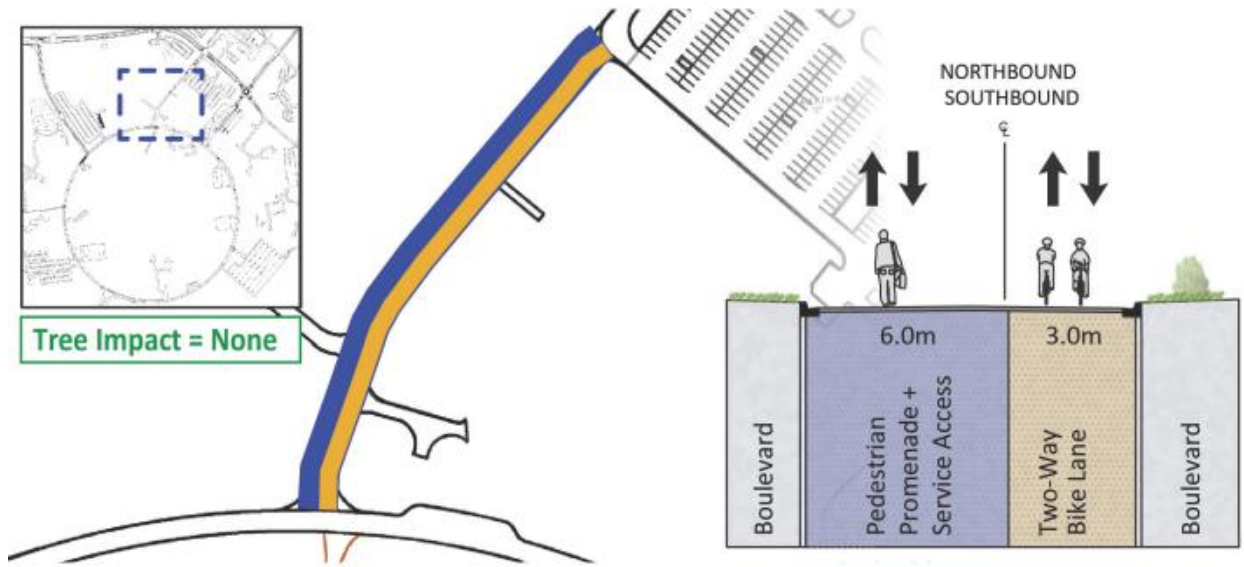


The concept developed for the connection to Midgard Avenue involves widening the existing pathway to 4.5 metres and separating the walking and cycling paths. This pathway improves the connection to the centre of campus from the Shelbourne neighbourhood west of campus via the Saanich cycling route on Midgard Avenue. Intersection treatments would need to be coordinated with both Saanich and Oak Bay. Additionally, crossing improvements are recommended at both West Campus Way and Ring Road.

4.4 Gabriola and Ring Road

This concept would create a cycling and pedestrian promenade on Gabriola Road south of Parking Lot 2 to Ring Road. All non-service vehicle movement would be restricted, and pavement marking is to be used to delineate cycling lanes from the walkway. Traffic analysis indicates that closing this section of Gabriola will have minimal impact on overall traffic flow, while improving the cycling connection to and from CARSA. This would also improve safety for both pedestrians and cyclist at the Gabriola Road and Ring Road intersection, which was identified as being problematic in all phases of consultation. Additionally, this road closure could be designed in a way that would allow it to be reopened during special events at CARSA or during snow days to allow to exit from Parking Lot 2 behind the McKinnon Building. Crossing improvement at the intersection of Gabriola Road and Ring Road would also be required to ensure safe and comfortable travel to and from the centre of campus.

Figure 4.5 – Gabriola Road Closure



4.4.1 What We Heard

Overall, the support for all of the options was high, with the highest support for the pathway connecting University Drive to the centre of campus and improvements to the path connecting to Midgard Avenue.

4.5 Network Upgrades

Table 4.1 – Summary Feedback on Network Upgrade Options

	In-Person	On-Line
University Drive Pathway	4.53	4.15
Engineering Pathway	3.92	3.38
Midgard Avenue	4.44	3.94
Gabriola and Ring Road	3.23	3.27

During the consultation process improved access and travel between student Housing areas (both sides of McKenzie) was also discussed. This will continue to be an issue as housing units increases, and Saanich improves cycling access around Lam Centre. Therefore, a couple recommendations have also made for addressing future cycling needs in this area, including:

1. **CARSA Pedestrian Connection** - A reconfiguration of how pedestrians and cyclists access the bus stop, crosswalk and light at the intersection of Vikes Way and McKenzie Avenue to avoid having people cut through the parking lot at the back of CARSA (shown in **Figure 4.6** below); and
2. **Dawn Crescent Pathway** - Creating a new paved pedestrian and cycling pathway with a similar design to the Midgard Avenue Multi-Use Path, from the Vikes Way McKenzie Avenue intersection to the cut-through accessing Dawn Crescent. This would then connect into the CARSA Pedestrian connection south of McKenzie (shown in **Figure 4.7** below).

Figure 4.6 – CARSA Pedestrian Connection

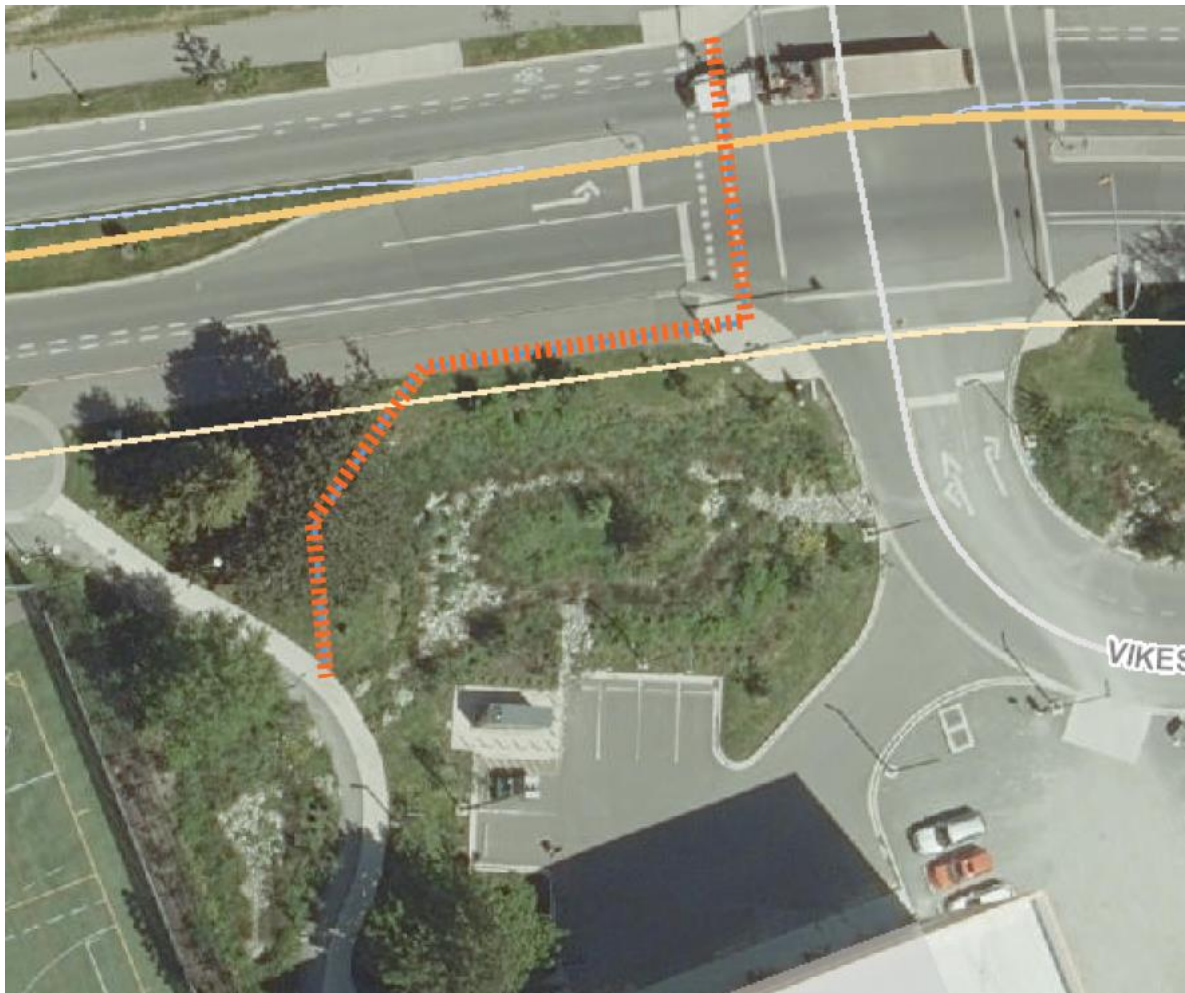
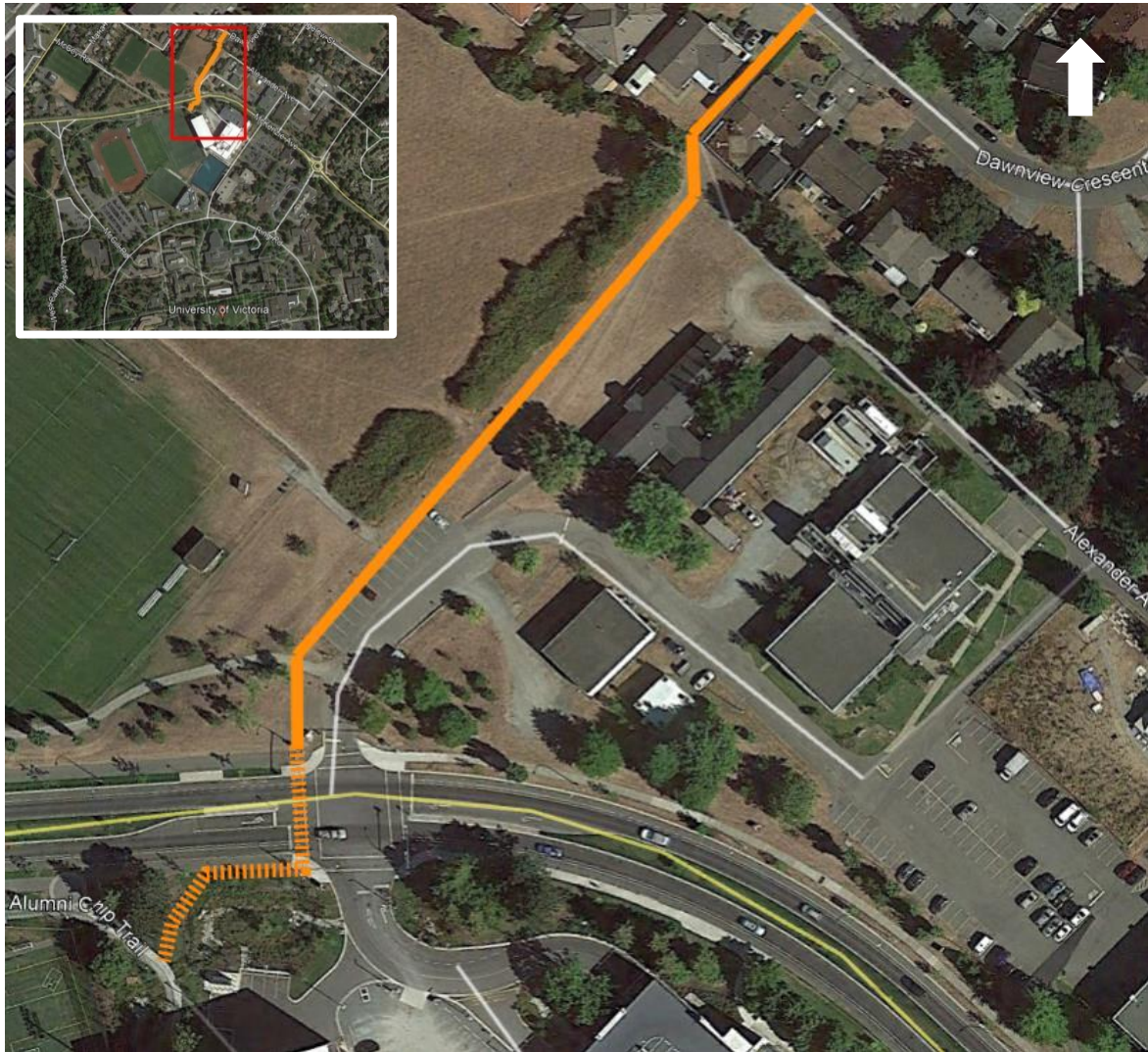


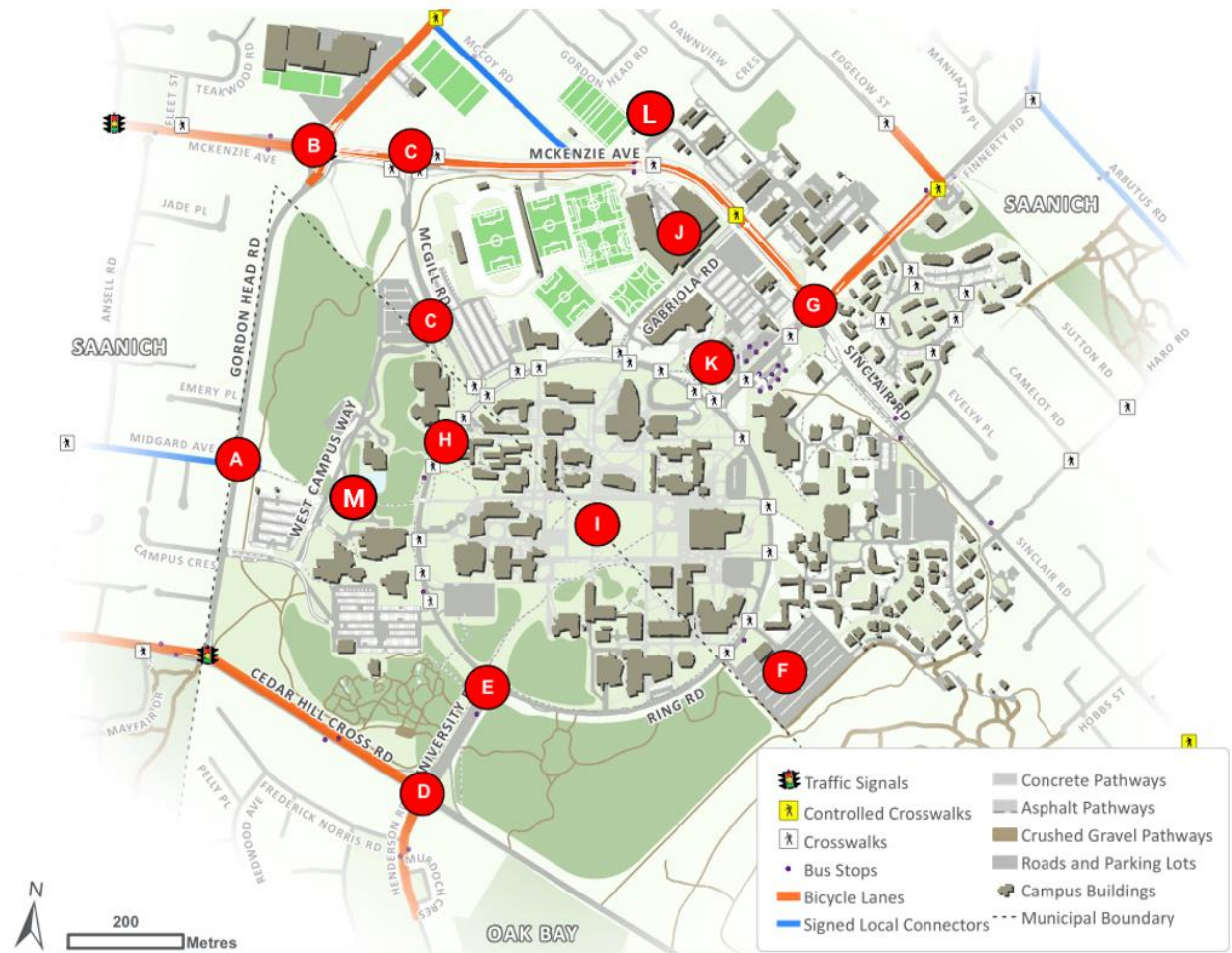
Figure 4.7 – Dawn Crescent Pathway with CARSA Pedestrian Connection



5 OTHER NETWORK IMPROVEMENTS

Understanding the primary use of campus infrastructure outside of Ring Road led to a focus on developing design concepts that create separation for people on bikes from other travel modes. The development of these concepts was focused on problem areas identified during the Phase 1 public engagement and online survey. The review of background information, online survey responses, feedback from engagement sessions (launch event, pop-ups and campus bike tour), and an analysis of current traffic conditions has yielded a significant amount of information regarding cycling issues and opportunities on UVic campus. Therefore, the following section provides a brief overview of these issues as well as some high-level recommendations for infrastructure adaptation and safety improvements.

Figure 5.1 – Problem Locations



Several problem locations identified in the first round of engagement have been reviewed and supporting interventions and network improvements have been outlined below using letter corresponding to the map above (Figure 5.1).

Point A - Midgard and Gordon Head

Traveling to/from campus via Midgard is a very popular route. Safety concerns regarding crossing Gordon Head Road is a major issue. Alongside the suggested cycling facility improvements explored in Section 4.3 some suggestions include:

- installing a traffic signal to allow for easy crossing (in coordination with Oak Bay and Saanich);
- improving crossings at both West Campus Way and Ring Road; and
- installing signage to encourage cyclists to reduce speed when entering the centre of campus.

Point B - McKenzie and Gordon Head

McKenzie Avenue serves as one of the main arterial roads to and from the UVic Campus. One issue with the McKenzie Avenue and Gordon Head Road intersection is the safety of cyclists traveling westbound on the east side of the intersection. As there is no green paint on the bike lane, drivers are not as aware of cyclists. Thus, it is recommended that UVic work with the District of Saanich to have the bike lane be painted green in conflict zones. Further, this area can be dark at night, so more lighting is also recommended.

Point C - McGill and McKenzie and Ring Road

The first vehicle entrance to campus from McKenzie Avenue (eastbound) is along McGill Road. There is potential for vehicle-cyclist conflict for cyclists turning left onto and off of McKenzie Avenue. Further, there is potential vehicle-cyclist conflict on the right turn on to McGill Road and along McGill Road itself. A multi-use pathway along McGill Road has been recommended in Section 3.3 to alleviate this conflict/safety concern and the University should use signage and education to encourage cyclists to proceed along the multi-use pathway to the Gordon Head / McKenzie intersection to exit campus. Further, a crosswalk along McGill Road for pedestrians and cyclists has been recommended.

Point D - Henderson/University Drive and Cedar Hill Crossing

Henderson Road/University Drive and Cedar Hill X Road is another challenging intersection. Currently, cyclists heading north are required to switch into the left-hand lane, which has the potential for conflicts between vehicles and cyclists. As discussed, in Section 3.2 several upgrades are required to improve cyclist and pedestrian safety on University Drive; notably the addition of buffered bike lanes and better crossing points. To support these changes to University Drive and this intersection there is a need to install better signage, better pavement markings, and a painting the bike lane through the intersection. In addition, to reduce safety concerns, a green painted box should be added to the recommended southbound bike lane where vehicles turn right. Cyclists trip sensor for this light should also be installed to facilitate expedite crossing. Finally, increased lighting has been suggested for the paths near this intersection that lead into campus.

Point E - University Drive and Ring Road

As discussed, the intersection at University Drive and Ring Road has been flagged as a source of confusion. It is unclear which mode is supposed to yield, and motor vehicle drivers get confused due to the multitude of crosswalks and stop signs within a short distance. A full re-design of this intersection is recommended over



the long-term to reduce uncertainty between modes and slow down vehicle traffic. In addition to the recommended improvements to this intersection better signage and lighting in this area is recommended.

Point F - Parking Lot 1 and Student Housing Area

Parking Lot 1 is the main parking lot for the Engineering and Sciences buildings and is also one of the student housing parking lots. Unlike many of the other parking lots on campus, it can only be accessed from Ring Road. Having no external exit/entrance contributes to large volumes of traffic within Ring Road. In addition, the closest exit out of Ring Road from Parking Lot 1 is after the SUB; the crosswalks between Parking Lot 1 and the SUB are very busy during class changes, which causes a safety issue and major back-ups around Ring Road. If the vehicle were required to the exit campus to Cedar Hill X Road via the Oak Bay owned Haro Road right-of-way, the traffic volumes and congestion on Ring Road would be reduced significantly. The option of the creating this alternative access to Parking Lot 1 using the Haro Road right-of-way should continue to be discussed with the District of Oak Bay.

Point G - Finnerty and Sinclair/McKenzie

The roundabout at Finnerty Road and Sinclair Road / McKenzie Avenue is a safety concern for cyclists as not everyone is aware of the etiquette for pedestrian-cyclist-vehicle interaction/cohesion within a roundabout. Clearer signage and more public education is suggested. Sinclair Road is also identified as part of the long-term cycling network by Saanich and the CRD and forthcoming improvements are expected to include designated on-street cycling facilities.

Point H - Ring Road

One of the major suggestions to improve the safety along Ring Road is to establish managed pedestrian / cyclist crossing points to reduce ambiguous crossing conditions and clearly define crossing priorities. Having a designated lane on crosswalks for bikes has been suggested to reduce the cyclists-pedestrian conflicts that occur when crossing the ring. Signaling more of the crosswalks on Ring Road is also a recommendation to reduce pedestrian/cyclist-vehicle conflicts.

Point J - CARSA

CARSA is home to the majority of the athletic activities on campus and is, therefore, very busy. The paths between CARSA and the sports fields are widely used but are narrow and contain blind corners. This area should be reviewed to determine what treatments could be applied to avoid collisions or encourage cyclists to slow down. There is also a safety concern for both pedestrians and cyclists traveling through the parking lots around CARSA (i.e. parking lots 2 and 3) and increased signage and/or or an alternative travel path is recommended.

Point K - Other/General Items

Some additional problematic locations and safety concerns are list below:

- The paths around the SUB are too narrow and have the potential for pedestrian-cyclists conflict any shared spaces policies implemented should also apply to this area of campus.

- There are safety concerns for cyclists / pedestrians accessing or exiting campus through the transit exchange on Finnerty Road – this will be addressed through the addition of a proposed bike lane in the transit exchange upgrade and highlighted in the final Campus Master Cycling Plan.
- Crosswalk improvements are recommended at many locations around campus. Improved crosswalks should have curb letdowns as wide as the connecting pathway, cross orthogonal to the roadway, and elephant's feet paint markings delineating cycling and pedestrian crossings. Additional flashing lights or signals should be considered at busy locations, notably:
 - The crosswalk in front of the SUB is very congested and should be considered a key location for the installation of a pedestrian crossing signal – this could potentially be tested to determine the impact to transit and vehicles.
 - The crosswalk on Ring Road in front of the Fraser building near the intersection of Ring Road and McGill Road is also of concern and improvements, such as signalization and more signage are encouraged.

Point L- Dawnview Crescent Pathway

Many students travelling from Gordon Head to the north of campus cross McKenzie Avenue at Vikes Way. There is currently a cut through to Dawnview Crescent and an existing dirt pathway from the Dawnview Crescent cut-through to the intersection of McKenzie Avenue at Vikes Way. This path is currently an unmaintained dirt track, therefore, to improve this connection, it is recommended that a new paved pedestrian and cycling pathway with a similar design to the Midgard Avenue Multi-Use Path be constructed.

Point M – West Campus Way

West Campus Way is currently very narrow and windy, which makes it difficult to cycle alongside vehicles. Therefore, it is recommended that bike sharrows be painted on West Campus Way and signage be added to encourage vehicles and cyclists to travel single file.

This page has been intentionally left blank.

Appendix A – Engagment Summary

1 PUBLIC ENGAGEMENT SUMMARY

The Campus Cycling Plan is being developed based on extensive input from students, faculty, staff, and visitors to the campus. Public engagement is, and will continue to be, occurring throughout the development of the Campus Cycling Plan.

Engagement in Phase 1 included a series of pop-ups and classroom presentations, a campus-wide launch event, and an online survey. Over 2000 people participated in Phase 1 engagement with key take-aways including:

- Desire to make it easier to walk and cycle on campus
- Ring Road is a top priority for improvements
- Majority of cycling and pedestrian congestion occurs near or inside Ring Road
- Connections to campus remain a safety concern
- New or improved cycling facilities are needed at key access points
- Need for more end-of-trip facilities

With the findings from Phase 1, the project team developed concepts to improve the safety and connectivity of the cycling network. Feedback was also used to identify locations with high demand for improved end-of-trip facilities such as bicycle parking, lockers and showers.

The second phase of the engagement process took place in the winter of 2018 and was designed to obtain input on preliminary possibilities for the Campus Cycling Plan. This round of engagement focused on gathering feedback on:

- Proposed bicycle network
- Proposed support policies
- End-of-trip facility recommendations

Through the second round of engagement, we interacted with approximately 1,200 members of the campus community through the following engagement activities:

- **Interactive On-Line Survey** - An interactive survey was available on-line between February 26 and March 29, 2018. The survey consisted of five different screen types designed to obtain feedback on the planning principles and policy directions being considered for shared space; obtain input on end-of-trip facility guidelines being considered; and to understand preferences for various preliminary bicycle network improvements being considered. Five-hundred and eighty-seven (587) responses to the survey were received.



☞ Campus Pop-Up Engagement - The project team hosted three promotional pop-up booths over three days on February 27th, 28th, and March 1st. The pop-up booths were held in visible, high-foot-traffic spaces on campus and were designed to spread awareness for the project, and more specifically, the opportunities to provide input. Project team members were also equipped with tablets to allow students, staff and faculty to participate in the on-line survey while visiting the booths. Locations included the McPherson Library Lobby, Student Union Building (SUB), and Centre for Athletics, Recreation and Special Abilities (CARSA) Lobby. This activity resulted in over 600 interactions with members of the campus community. The locations and dates are outlined below.

Pop-up Engagement Labs (600 + interactions)

- Tuesday, February 27
 - McPherson Library Lobby (11:00am – 2:00pm)
- Wednesday, February 28
 - Student Union Building (11:00am – 2:00pm)
- Thursday, March 1
 - CARSA lobby (11:00am – 2:00pm)

☞ Campus Cycling Plan Internal Advisory Team Meeting #2 - The second meeting with the Internal Advisory Team was held on January 24, 2018. This team is composed of UVic staff, faculty and student representatives who will be involved in the Campus Cycling Plan from both a feedback and implementation stand point. The purpose of the internal advisory team is to provide feedback on the planning process based on their knowledge of campus as staff representatives from facilities, security and other departments. The purpose of this second meeting was to present what was heard during the first round of engagement as well as findings from the existing conditions analysis. In addition, this meeting was also used to discuss preliminary directions and principles/policies being considered for the Campus Cycling Plan.

☞ Campus Cycling Plan Technical Advisory Team Meeting #2 - The second meeting with the Technical Advisory Team was held on January 24, 2018. This team is composed of staff from the District of Saanich, District of Oak Bay and BC Transit. The purpose of the technical advisory team is to provide feedback and on the planning process based on their technical understanding of different initiatives happening near campus in the surrounding municipalities of Oak Bay and Saanich, as well as regional transportation initiatives being undertaken by BC Transit. The purpose of this second meeting was to present what was heard during the first round of engagement as well as findings from the existing conditions analysis. In addition, this meeting was also used to discuss preliminary directions and principles/policies being considered for the Campus Cycling Plan.

☞ Campus Cycling Plan Internal Advisory Team Meeting #3 - The third meeting with the Internal Advisory Team was held on March 26th, 2018. The purpose of this third meeting was to focus on the plan's



development to date, including the planning principles, cycling network options, end-of-trip facility standards and policy recommendations along with an update on the second round of engagement.

☞ Campus Cycling Plan Technical Advisory Team Meeting #3 - The third meeting with the Technical Advisory Team was held on April 19th, 2018. The purpose of this third meeting was to focus on the plan's development to date, including the planning principles, cycling network options, end-of-trip facility standards and policy recommendations along with an update on the second round of engagement.

☞ Campus Planning Committee – A presentation was made to the Campus Planning Committee following the completion of the second round of engagement on April 19, 2018. The purpose of this meeting was to share findings from the technical analysis and engagement process and to provide an opportunity to receive input on the preliminary findings, to be used in the development of the draft plan.

☞ On-line Engagement - Several on-line tools were used to enhance the public engagement opportunities, allowing members of the campus community and neighbouring residents to participate at their convenience. A project website and email address were established, and Facebook, Instagram and Twitter were also used as other components of the on-line engagement strategy. The summary of these activities is outlined below.

➤ Social Media (OCPS and UVic platforms):

- Facebook (@greenuvic, @universityofvictoria), Twitter (@green_uv, @uvic), Instagram (green_uv, universityofvictoria)
- Applied hashtags #UVicBikes, #UVic, #uvicpix, #yyjbike
- Several webpages with links to the online survey, including the dedicated Campus Cycling Plan Webpage, were used to promote the project and provide updates:
 - [Campus Cycling Plan webpage](#)
 - [Campus Planning homepage billboard](#)
 - [Sustainability homepage billboard](#)
 - [Current Faculty and Staff homepage billboard](#)
 - [Current Student homepage billboard](#)

➤ Newspapers and Newsletters:

- The Ring (¼ page advertisement)
- The Marlet (advertisement - newspaper)
- Campus Checklist

➤ Other Advertisement and Engagement Materials Distributed

- Digicaster – two slides on most digicaster screens across campus
- Events calendar listing (UVic)



- Posters – posted in all units and departments across campus and common spaces
 - Promotion Cards (business card size) – several hundred cards handed out at many of the face-to-face engagement activities.
- Presentation to Staff Sustainability Network, Sustainability Advisory Committee, Campus Planning Committee, Community Association Liaison Committee (twice), and Cycling Advisory Committee (twice).



This page has been intentionally left blank.

Appendix B – Draft Cycling Master Plan Policies

1 KEY POLICYS – BICYCLE PARKING AND END-OF-TRIP FACILITIES

1.1 Bicycle parking

- a. Bicycle parking facilities should be provided as part of all new and renovated buildings, including facilities for both short-term and long-term parking.
- b. Two types of bicycle parking facilities are to be provided for each new and renovated building.
 - i. Long Term: parking is intended for long-term use and may consist of attended facilities, racks in an enclosed and lockable room, indoor or outdoor bicycle lockers, or restricted-access parking facilities.
 - ii. Short Term: parking is intended for short-term use and should consist of racks located with natural surveillance in an accessible outside location, protected from weather, within close proximity of the building entrance, on a concrete surface.
- c. Each building is to provide sufficient Long Term and Short-Term bike storage capacity to address the ratios provided for each land-use category below.

Table B1 – Recommended Minimum Bike Parking Standards

Use	Long-term	Short-term
Institutional or Academic	0.8 spaces per 100m ² of gross floor area	4 spaces per 100m ² of gross floor area
Administration or Office	0.4 spaces per 100m ² of gross floor area.	4 spaces per 100m ² of gross floor area
Student Housing or Residential	25% of building residents	0.25 spaces per bed
Commercial	1 space per 750m ² of gross floor area.	1 space per 750m ² of gross floor area but not less than 4 parking spaces per establishment.

- d. Bicycle parking facilities should be designed to be safe and secure and to maximize storage capacity.
 - i. Bicycle parking facilities should be designed with theft resistant materials and be firmly anchored in the ground or building.
- e. The design of bicycle parking facilities should avoid any protruding bars that could trip or injure cyclists or pedestrians.
- f. The dimension envelope for bicycle parking facilities should be 1.8 metres in length, 0.6 metres in width, and 1.2 metres in height.



- g. Bicycle parking should be placed only in locations that are convenient, maximize cyclist function and utility, do not block pedestrian movements, help to prevent theft and vandalism, and help cyclists to feel more personally secure.
- h. Bicycle parking facilities should only be located near building entrances and other attractions, preferably no more than 15 metres from the building entrance(s).
- i. Bicycle parking facilities should be highly visible to passersby, and be located within clear view of pedestrians, activity, or office windows.
- j. Bicycle parking facilities should not be placed in fire zones, loading zones, bus zones, taxi zones, etc.
- k. The location of the bicycle parking facilities should not present conflicts with pedestrians, other cyclists, or automobiles.
- l. Bicycle parking locations that require cyclists to travel over stairs or hills should be avoided.
- m. Bicycle parking should be in well-lit locations and be easily identifiable by cyclists as they are riding.
- n. Bicycle racks should fit in with the surrounding streetscape and urban environment. Bicycle racks can incorporate unique colours or original designs to match awnings, facades or other street furniture.
- o. To allow ample pedestrian movement and cyclist utility, bicycle racks should be located a minimum of 1.5 metres from obstructions such as building facades, trees, utilities, lights, garbage cans, newspaper racks, sign poles, benches / outdoor furniture, fire hydrants, crosswalks, or driveways.
- p. Enclosed bicycles facilities in buildings and parkades should be located and designed with security and safety considerations; siting and entrances should be broadly visible and accessible; enclosures should well-lit or have daylight openings; and more than one entrance and exit should be provided.
- q. Bicycles must be parked in the designated parking spaces.
- r. Bicycles parked in places that restrict pedestrian movement, access to buildings, or critical infrastructure (i.e. fire hydrants) will be removed

1.2 Hazardous and Abandoned Bicycles

- a. The University of Victoria reserves the right to remove any illegally parked bicycles on campus. Locks will be cut if necessary. The costs of damaged locks will not be reimbursed.
- b. Abandoned bicycles, and those that are not immediately removed due to safety hazards, will be tagged for 7 days prior to removal. Once removed, University of Victoria will store the bicycles for 30 days. If they are not claimed in that time, bicycles can be refurbished, sold, or become part of the bike share program.
- c. Near the end of each semester, the university determines on locations that broken and abandoned bicycles will be removed



- i. The university will mark locations with an announcement of the activities.
 - ii. The weekend following: Bicycles parked in location will be clearly labeled on handlebars.
 - iii. Owners will have three weeks after labeling to remove label.
 - iv. After the three weeks, bicycles still labeled will be considered illegally parked and removed.
- d. University of Victoria will store the bikes for 30/60/90 days. If they are not claimed in that time, bicycles can be refurbished, sold, or become part of the bike loan program.
- e. An administrative fee may be charged to the owner prior to the release of any impounded bicycles. Owners may require proof of ownership; or be registered in the bike registry.

1.3 End-of-Trip Facilities

- a. End-of-trip facilities for cyclists should be increased through the requirement that all new and renovated academic and administrative buildings and mixed-use hubs provide lockers, showers and covered secure bicycle storage in scale with the facility's floorspace.
- i. Change rooms and showers should be conveniently located close to bicycle parking facilities or major building entrances.
 - ii. Separate, individual shower facilities for males and females are preferred gender neutral design of shower facilities may allow for greater accessibility.
 - iii. Facilities should have non-slip surfaces, hooks and/or benches to keep belongings off the floor, along with adequate lighting and ventilation.
 - iv. End-of-trip facilities should be included in regular cleaning and maintenance programs.
 - v. It is preferable for facilities to be lockable and they should not be easily accessed by persons who do not work in the building.
 - vi. Multiple shower and change facilities should be considered for new and renovated buildings based on the table below.

Table B2 – Recommended End-of-trip Facility Standards

Total Building Occupancy (people)	Recommended Minimum Shower Requirements
< 50	One (1) shower
50 - 150	Two (2) showers



150 - 300	Four (4) showers
300 - 600	Six (6) showers
> 600	Additional shower facilities will be required at a rate 2 showers for every 300 occupants.

- b. Lockers should be provided alongside end-of-trip shower and change room facilities.
 - i. There should be one locker for each available long-term bicycle parking space.
 - ii. Lockers should be secure (with robust locking mechanisms) to ensure belongings are adequately protected while stored.
 - iii. Locker facilities should be regularly maintained so that they remain clean and functional.
 - iv. Procedures should be developed to provide for regular audits of the lockers to ensure they are cleaned regularly and available for general use.
- c. Continue to support the Campus Bike Centre and implement bicycle repair and maintenance stations in keys areas of campus.
 - i. Consider opportunities to locate end-of-trip shower and change room facilities at the Campus Bike Centre.
 - ii. Locate bicycle repair and maintenance stations at high traffic locations on campus; potential locations include the McPherson Library and the Engineering buildings, as well as mini cycling hubs in transition zones between shared spaces areas and cycling pathways (i.e. Midgard pathway prior to entering the Grand Promenade and the beginning of the University drive pathway near the David Lam Auditorium).
 - iii. Bicycle repair and maintenance stations should include air pumps and tools.
 - iv. Consider opportunities for a user-pay bicycle repair service on campus.

2 KEY POLICYS – SHARED SPACES POLICY

2.1 Shared Spaces Policy

- a. Further, it is suggested that several areas be reviewed for opportunities to manage cyclist behaviour and speed through design-based mitigation strategies, including speed management, signage and the application of slow zones. The main areas of concerns where speed management should be reviewed include:
 - i. The four main pathway enclosing the Quad;



- ii. The pathway from Clearihue to the SUB;
 - iii. The pathways around the David Turpin and David Strong buildings;
 - iv. The pathway between the University Centre and the First Nation House;
 - v. The pathway from Gabriola Rd. into the Quad;
 - vi. The pathways between CARSA and the athletics fields;
 - vii. The bus exchange on Finnerty Road;
 - viii. The pathways around the SUB which are deemed too narrow and have the potential for pedestrian-cyclists conflict;
 - ix. The pathway between the ECS and Petch; and
 - x. The pathway behind the Medical Sciences building that leads to ECS.
- b. Best practices suggest that as pedestrian volumes increase, cyclists are increasingly unable to operate safely and courteously. Therefore, key components of a Shared Space approach include:
- i. Education and Awareness - Develop an education and awareness campaign around Shared Space norms, including safe and Respectful cyclist and pedestrian behaviour and ongoing monitoring;
 - ii. Signage - Install appropriate signage to support Shared Space norms; and
 - iii. Speed Mitigation - Establish speed mitigation measures (signage, textured surfaces and speed bumps) and pedestrian harbours at key points on campus to facilitate safe and respectful sharing of space - mitigation measures will consider emergency vehicle access and egress.

The following policy recommendations provide a framework for which to implement a shared space policy.

2.2 Education and Awareness

- a. Areas of campus shown in red on Map # are designated as pedestrian zones, including the entirety of campus within the interior of Ring Road.
- b. Bicyclists must yield the right-of-way to pedestrians within marked crosswalks or within unmarked crosswalks at intersections.
- c. The University should partner with bike to work society, local municipalities, the CRD and others to support the provision of adult education and cycling skills training throughout the campus year-round.
- d. Designated bike lanes must be used by bicyclists unless necessity requires changing lanes

- e. A comprehensive signage and education plan should be developed to promote safe cycling on campus, including installing “slow cycling” signage in key areas such as pedestrian priority zones (see map for slow cycling zones).
- f. Opportunities should be provided for the UVic community to engage in cycling skills training and road safety programs provided internally and by external partners.
- g. “Cycling Ambassador” or ‘Bike Guru’ roles should be established to support the implementation of education and awareness initiative and to support positive cycling behaviour.

2.3 Signage, Signals and Lighting

- a. Enhance and expand pedestrian and cycling wayfinding information
 - i. Wayfinding signage should include cycling routes, bike parking and end-of-trip facilities on maps to help direct and orient on-campus cycling travel;
 - ii. ‘Share the space’ messaging should be included in on-site campus maps and signage; and
 - iii. A map should be developed to show the cycling network to, from and around campus.
- b. Signage and pavement markings to encourage attentive travel and slow travel speeds should be continued and extended.
- c. Lighting should be improved in the following areas: within the Quad, the path behind the Medical Sciences building to ECS, the path by the EOW and Bob Wright, McLaurin building, Sedgewick, and the ring road ride of ECS.
- d. The University should implement signage and road markings on Ring Road and areas of campus outside of Ring Road to increase driver awareness of pedestrians and cyclists.
- e. Implement signage and visual cues to help reinforce the changing conditions in transition zones or entry / exits points to ‘shared space areas.’
- f. The University should implement signage and road markings in designated pedestrian areas, identified as shared spaces area to increase cyclist awareness of pedestrians, encourage responsible cycling behaviour and to identify designated slow zone.
- g. Mirrors should be used in areas of campus to avoid collisions and near misses in busy travel corridors where linear sightlines are limited.
- h. Bicycle detection should be applied at actuated signals to alert the signal controller of bicycle crossing demand on all intersections accessing campus.
 - i. bicycle detection should accurately detect bicyclists; and

- ii. provides clear guidance to cyclists on how to actuate detection (e.g., what button to push, where to stand).



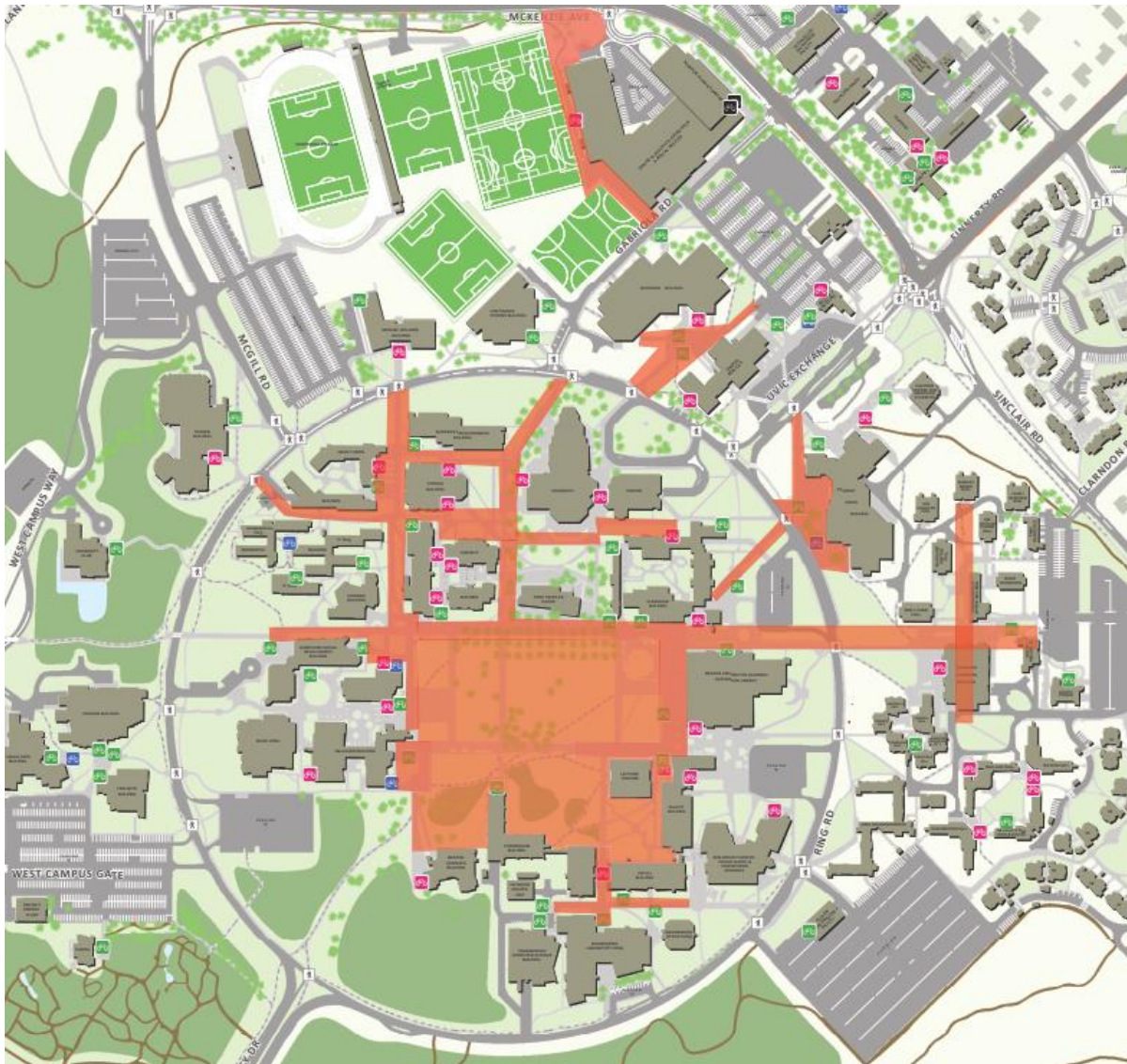
2.4 Speed Mitigation

- a. Moving forward, it is recommended that the University identify areas for speed mitigation actions, which could include slow zones, design interventions (i.e. speed bumps, planters, and other physical barriers) and pedestrian harbours.
- b. Designated “Slow Zones” shall be implemented in the core areas of the campus identified in Figure B1 (below). In these areas, cyclists are asked to travel at slower speeds and give priority to pedestrians.
 - i. No person shall operate a bicycle at a speed greater than is safe under existing conditions.
 - ii. Maximum speed limit in all Slow Zones is 15 km/h, unless otherwise posted.
 - iii. Slow Zone areas, will be shown on all campus maps, on-site wayfinding signs and maps, and in new or temporary signs to introduce the designation.
- c. The University will implement signage and road markings in designated pedestrian areas, identified in Figure B1., to increase cyclist awareness of pedestrians, encourage responsible cycling behaviour and to identify designated slow zones.
- d. Design measures should be implemented to mitigate cyclist speed in the Slow Zone area identified in Figure B1. These could include the use of textured surfaces and speed bumps and pedestrian harbours.
 - i. Design measures used to mitigate cyclist speed should consider the overall function of the space and contribute to a pleasant pedestrian experience.
 - ii. Design interventions should not pose any hazards to pedestrians, cyclists or other vehicles.
 - iii. Special consideration should be given to the design and function of the grand promenade as a central feature of campus.
 - iv. The use of functional design interventions, such as planters, benches and activity areas is strongly encouraged.

- v. Any textured surfaces used for speed mitigation should weather resilient, anti-slip and contribute to the overall campus aesthetic.
- vi. Design interventions shall consider the required movements of emergency vehicles.



Figure B1- Shared Space Policy Speed Mitigation Areas (Slow Zones)



3 KEY POLICIES - BICYCLE SHARING

- a. Basic provisions of a bike-share should include an operator business licence; insurance and liability provisions held by the operator.
- b. Promote bike sharing on UVic campus as a way to increase cycling mode share.
- c. Minimize the impacts of dockless bike sharing by not allowing parking on sidewalks or pedestrian paths and creating preferred bike share drop-off areas.
- d. Prevent free-standing (or dock-less) bike share from occupying spaces in the Campus Bike Centre.
- e. Continue to support the SPOKES Bike Loan program.

4 KEY POLICIES AND ACTIONS - ONGOING TRANSPORTATION INITIATIVES, SURVEYS AND METRICS

- a. Work with the District of Oak Bay and the District of Saanich to ensure route planning for bicycles and pedestrians is supportive and consistent with other routes being planned outside.
- b. Continue to identify and fill-in gaps in the cycling network as land use changes and future development occur.
- c. Future travel surveys should consider the addition of new metrics to better understand travel patterns by members of the campus community, such as identifying travel mode by gender. Understanding travel mode differences by staff, faculty and students may also be valuable to determine policies, guidelines and promotion around sustainable transportation.
- d. Consider conducting pedestrian counts in high traffic areas on campus to better target speed mitigation strategies and inform locations for potential pedestrian harbours.
- e. Review key crossing points along Ring Road and review opportunities to implement controlled crossings for pedestrian and cyclists on Rong Road. Key locations include: in front of the SUB, between Parking Lot 1 and the Engineering Building, between the student housing area and Engineering Building; and the intersections of McGill (in front of Fraser Building), Finnerty, Gabriola and the Midgard Pathway.

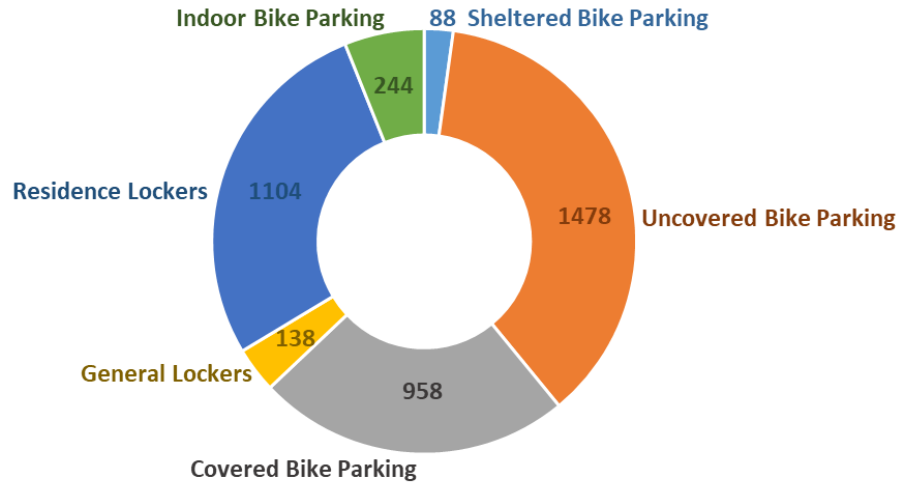


Appendix C – Recommended Locations for new Bike Parking and End-of-Trip Facilities

1 BIKE PARKING AND END-OF-TRIP FACILITIES

There is approximately 4000 bike parking spaces available at UVic, these are widely distributed amongst all academic, administration, student housing and recreation facilities on campus. Figure C1 (below), provides a breakdown of the types of bike parking available.

Figure C1 – Current Bike Parking Supply



The University also recently conducted an inventory of showers and lockers on campus. As shown by Table C1, there are approximately 73 showers on campus. However, many of these are associated with athletic facilities and not all accessible to the general public. Outside of the athletic facilities there are 29 showers total

Table C1 – Current Shower and Locker Inventory

Building	Number of Shower Stalls	Single Room with Shower & change area (Gender Neutral)	Lockers in change area
Engineering/Computer Science	-	1	20
Engineering/Computer Science	-	1	-
Engineering Lab Wing	-	1	-
Medical Sciences - washroom (men)	1	-	-
Medical Sciences - washroom (women)	1	-	-
First Peoples House	-	1	-
David Turpin Building - washroom (men)	2	-	6
David Turpin Building - washroom (women)	2	-	6
David Turpin Building	-	1	-
Continuing Studies - washroom (men)	1	-	0
Continuing Studies - washroom (men)	1	-	0
Continuing Studies - washroom (women)	1	-	0
McKinnon Gym - change room (men)	5	0	Many
McKinnon Gym - change room (women)	5	0	Many
CARSA - Individual change room #1	-	1	-
CARSA - Individual change room #2	-	1	-
CARSA - Individual change room #3	-	1	-
CARSA - Individual change room #4	0	1	-
CARSA - general (women)	13	-	Many
CARSA - general (men)	13	-	Many



Building	Number of Shower Stalls	Single Room with Shower & change area (Gender Neutral)	Lockers in change area
CARSA - Vikes staff (women)	2	-	34
CARSA - Vikes staff (men)	2	-	34
Ian Stewart Complex - referee room	1	-	-
B-Hut	-	1	?
New FGMT Service Building - change room (women)	2	-	?
New FGMT Service Building - change room (men)	2	-	?
Saunders - Shop 1 (men)	2	-	-
Technology Enterprise Facility	0	1	-
Craigdarroch Office Building	-	1	18
Robert Carroll Hall - University Food Services	-	2	-
Ring Road D-Wing - Housekeeping	-	1	52
Michael Williams Building	-	2	12
Total	56	17	182
Total Minus CARSA	16	13	114

During Phase 2 options for expanding bike parking and end-of-trip facilities were reviewed and additional facilities were recommended based of public feedback in Phase 1. These are outlined in the section below (see Figures C2 and C3).

Figure C2 – Proposed Additional Bike Parking

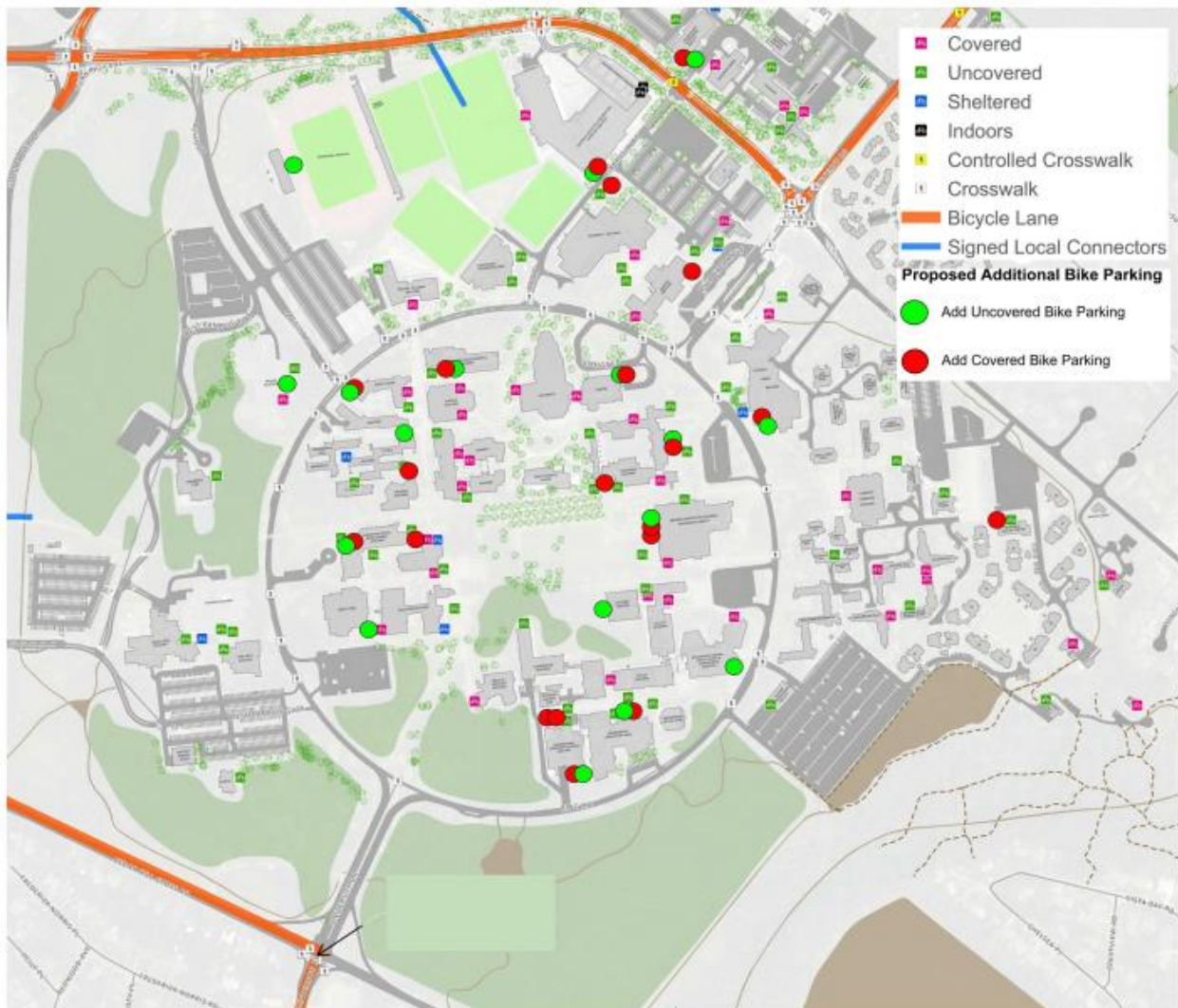
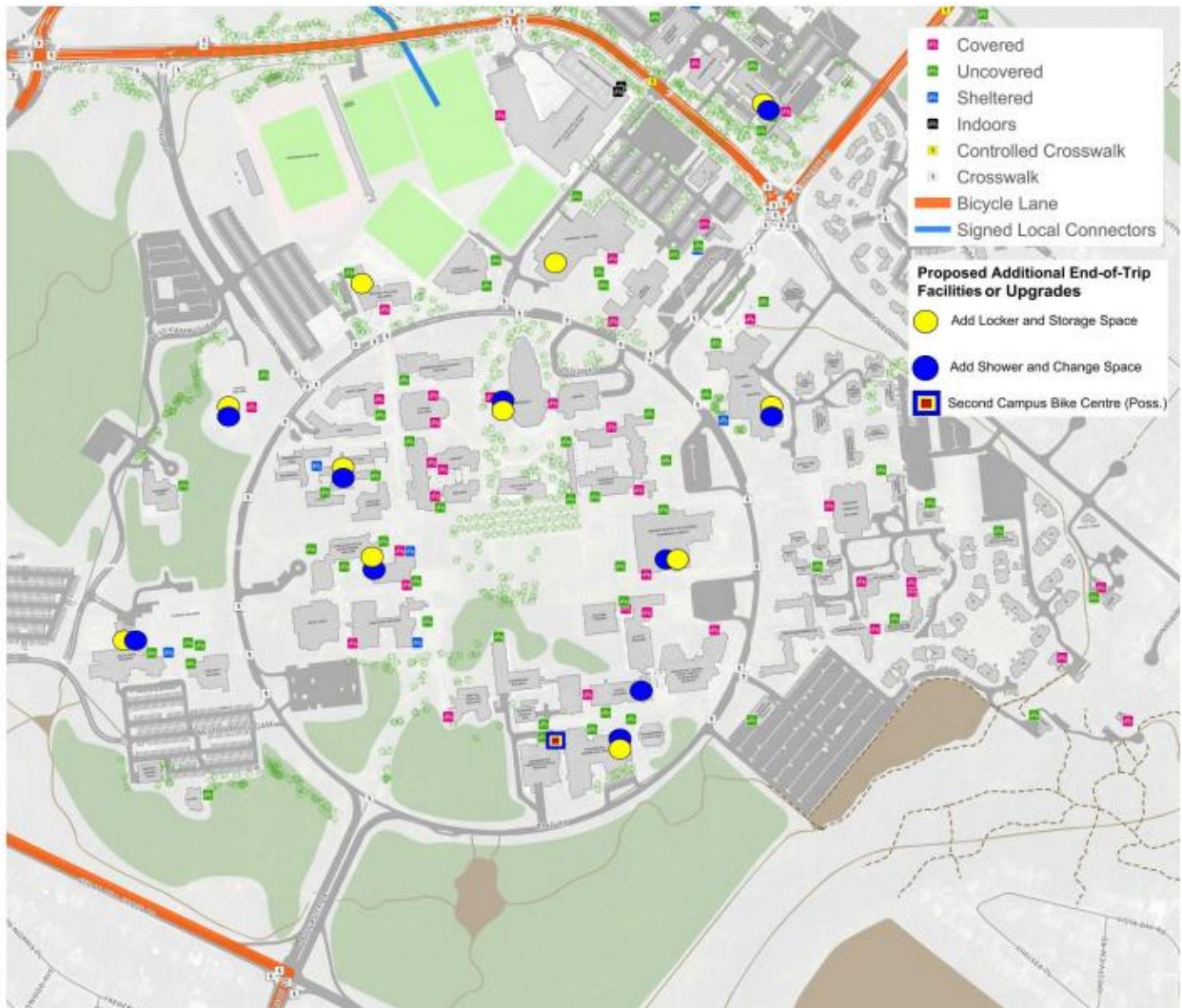


Figure C3 – Proposed Additional End-of-Trip Facilities or Upgrades



Generally, there was strong support for the recommended additional cycling and end-of-trip facilities on campus. During the campus engagement labs support for these additional facilities was near unanimous, with many participants also suggesting even more facilities were required. In particular, there was strong support for increased covered bike parking facilities. Further, it should be noted that the idea of a second campus Bike Centre near the Engineering Building did not receive much support and has therefore not been carried forward. It should also be noted, that the showers and change rooms shown in Figure C2 only represents desire locations a will be pursued only in buildings as space becomes available and whether its possible in these buildings.

Appendix D – Detailed Evaluation of Network Improvements

RING ROAD OPTION EVALUATION

Table D1– Ring Road Option Evaluation

Criteria	Option 1 (Multi-Use Path inside Ring Road)		Option 2 (Continuous 2-Way Separated Bike Lane)		Option 3 (2-Way Separated Bike Lane and Transit Priority)		Option 4 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5
Network Connectivity	Connection to some of the cycling gateways	3	Continuous connection to all gateways.	5	Connection to some of the cycling gateways	3	No cycling connections	1
Safety	Shared bike and pedestrian path	5	Separated and safe bike path	5	Cyclists are separated from pedestrians and vehicles for part of Ring Road	2	Cyclists travel with traffic	1
Bicycle Comfort	Shared bike and pedestrian path	5	Separated and safe bike path	5	Improved cycling comfort for a majority of Ring Road	4	Not comfortable for cyclists	1
Intersection Complexity	N/A		N/A		N/A		N/A	
Pedestrian Comfort	Improved pedestrian connection	5	No change for pedestrians	3	Improved connection for pedestrians for part of ring road	4	No change for pedestrians	3
Motor Vehicles	No impact to motor vehicles	5	Vehicle travel lanes reduced by one	1	Vehicle travel lanes reduced by one	1	No impact to motor vehicles	5
Transit Reliability and Comfort	No impact to transit	3	Transit restricted by one travel lane	2	Transit priority lane improves travel time	4	No impact to transit	3
Tree Impact	Tree removal necessary at multiple locations	1	No tree impact	5	Tree removal may be required between McGill and Finnerty	2	No tree impact	5
Ease of Implementation	Extensive construction required	1	Moderate to extensive construction required depending on protection type	2	Moderate construction required depending on protection type	2	No changes required	5
Maintenance	Moderate additional maintenance required to sweep and clear the multi-use path	2	Additional maintenance required to sweep roadway and maintain protective barriers	1	Additional maintenance required to sweep roadway and multi-use path as well as maintain protective barriers	1	No additional maintenance required	5
Relative Cost	High implementation cost with extensive construction	1	Moderate to high construction costs depending on protection type	2	Moderate construction cost for separation and multi-use path	2	No construction required	5



Criteria	Option 1 (Multi-Use Path inside Ring Road)		Option 2 (Continuous 2-Way Separated Bike Lane)		Option 3 (2-Way Separated Bike Lane and Transit Priority)		Option 4 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5
					from McGill to Finnerty			
Public Input Online	3.25	5	2.73	4	2.54	2	2.53	1
Public Input In-Person	3.76	5	3.46	3	3.67	4	2.25	1
Total	41		38		31		36	



UNIVERSITY DRIVE OPTION EVALUATION

Table D2 – University Drive Option Evaluation

Criteria	Option 1 (Shared pedestrian and bicycle pathway)		Option 2 (Two-Way Median Bike Path)		Option 3a (Hybrid Buffered and Protected Bike Lanes)		Option 3b (Buffered Bike Lanes)		Option 4 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5
Network Connectivity	Challenges connecting to westbound Cedar Hill Cross	3	Improved connection to campus centre	5	Improved southbound connection	4	Improved southbound connection	4	No change to network connectivity	2
Safety	Cyclists protected from motor vehicles, shared space with pedestrians	4	Cyclists separated from both motor vehicles and pedestrians	5	Buffered bike lanes provide space between cyclists and motor vehicles, southbound lane with protected bike lane improves safety further	4	Buffered bike lanes provide space between cyclists and motor vehicles	3	No cycling facilities southbound and minimum facility northbound	1
Bicycle Comfort	Extra space creates high bicycle comfort	5	Grade separated bi-directional facility creates high bicycle comfort	5	Moderate cycling comfort overall with separated bike lane south bound and buffered bike lane northbound	4	Moderate cycling comfort with buffered bicycle lanes both north and southbound	3	Low bicycle comfort with no facilities southbound and un-buffered bike lane northbound	1
Intersection Complexity	Increased intersection complexity at both Ring Road and Cedar Hill Cross Road	1	Increased intersection complexity at only Cedar Hill Cross Road	2	No change from existing operation	3	No change from existing operation	3	No change from existing operation	3
Pedestrian Comfort	Improved pedestrian comfort with extra space allocated to pedestrians	5	Improved pedestrian comfort achieved by keeping bicycles and pedestrians separate at Ring Road crossing	4	No change from existing operation	3	No change from existing operation	3	No change from existing operation	3
Motor Vehicles	One southbound motor vehicle travel lane removed	1	No changes to motor vehicle travel lanes	5	One southbound motor vehicle travel lane removed	1	No changes to motor vehicle travel lanes required	5	No change from existing operation	5



Criteria	Option 1 (Shared pedestrian and bicycle pathway)		Option 2 (Two-Way Median Bike Path)		Option 3a (Hybrid Buffered and Protected Bike Lanes)		Option 3b (Buffered Bike Lanes)		Option 4 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5	Comment	Score out of 5
Transit Reliability and Comfort	Southbound transit impacted by removal of lane	1	No transit impact	4	Opportunity to improve north-bound transit with dedicated lane. Southbound transit impacted by removal of travel lane	3	No transit impact with opportunity to improve transit with dedicated northbound and southbound lanes	5	No impact to transit	4
Tree Impact	N/A		N/A		N/A		N/A		N/A	
Ease of Implementation	Major reconfiguration needed at both Ring Road and Cedar Hill intersections	1	Moderate construction required along centre median. Reconfiguration required at Cedar Hill Cross intersection	2	Pavement marking and protective bollards required. No intersection reconfiguration required	3	Pavement marking required. No intersection reconfiguration required	4	No changes required	5
Maintenance	No additional maintenance required	5	Additional sweeping and clearing required	2	Additional maintenance of bollards and clearing and sweeping of protected bike lane	1	Minimal additional maintenance required	4	No additional maintenance required	5
Relative Cost	High cost for intersection construction required	1	Moderate cost for construction of multi-use path including widening of section of centre median	2	Moderate/low cost for pavement markings and protective bollards or barrier	4	Moderate cost for pavement marking and reconfiguration of centre median to allow two southbound vehicle lanes	2	No cost	5
Public Input In-person	2.87	2	3.81	3	3.95	4	4.61	5	1.9	1
Online Public Input	2.61	2	3.13	5	2.89	3	2.81	3	2.31	1
Total	31		44		37		44		36	



MCGILL ROAD OPTION EVALUATION

Table D3 – McGill Road Option Evaluation

Criteria	Option 1 (Multi-Use Path)		Option 2 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5
Network Connectivity	Improves network connection to westbound and eastbound McKenzie Avenue multi-use path	5	No improvement to network connectivity	1
Safety	Cyclists protected from motor vehicles, delineated shared space with pedestrians	4	Cyclists share the roadway	1
Bicycle Comfort	Delineated multi-use path creates comfortable cycling facility	4	Shared unmarked roadway	1
Intersection Complexity	Multi-use path moves cyclist crossing to McKenzie/Gordon Head intersection	5	Existing inadequate intersections at McKenzie and Ring Road maintained	1
Pedestrian Comfort	Improved pedestrian comfort with delineated space on multi-use path and crosswalk to access east side of McGill Road	5	No pedestrian improvements	1
Motor Vehicles	No impact to motor vehicle operation	5	No impact to motor vehicle operation	5
Transit Reliability and Comfort	N/A		N/A	
Tree Impact	Moderate tree impact at south end of McGill Road	2	No impact	5
Ease of Implementation	Major reconfiguration construction needed along the corridor	1	No changes	5
Maintenance	Moderate additional maintenance required clear and sweep the path	1	No additional maintenance	5
Relative Cost	High cost for intersection construction required	1	No changes	5
Public Input In-person	4.45	5	1.67	1
Online Public Input	3.6	5	2.34	1



Criteria	Option 1 (Multi-Use Path)		Option 2 (No Change)	
	Comment	Score out of 5	Comment	Score out of 5
Total	43		32	

