



The Corporation of the District of Saanich

## Supplemental Report

**To:** Mayor and Council  
**From:** Sharon Hvozdanski, Director of Planning  
**Date:** September 22, 2015  
**Subject:** Shelbourne Valley Action Plan – Implementation Analysis of Mobility Actions  
**File:** 2310-20

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### PURPOSE

The purpose of this report is to:

- Provide information on options for mobility improvements in the Shelbourne Valley;
- Provide information on implementation timeline and funding considerations; and
- Seek Council direction on the next steps in the project process.

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### COUNCIL DIRECTION

The Proposed Shelbourne Valley Action Plan was presented to Council at the June 9, 2014, Committee of the Whole (COTW) meeting. At that meeting, Council endorsed the following:

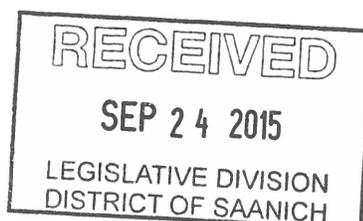
*“That a Public Hearing be called to further consider amendments to the Official Community Plan to include the Shelbourne Valley Action Plan, as outlined in the report of the Director of Planning dated May 30, 2014.”*

At the same meeting, Council made the following motion:

*“That a supplemental report providing additional information on the timelines and funding for implementation, in response to the comments raised at this meeting, be provided for the Public Hearing.”*

Key themes of comments received from both the public and Council at the June 9, 2014 COTW meeting were:

- Support for/desire to accelerate short-term mobility actions;
- Need for more detailed financial analysis and timelines;
- More urgency needed for pedestrian and cycling improvements; and
- Focus more on mobility actions on Shelbourne Street.



## BACKGROUND

The Proposed Shelbourne Valley Action Plan (SVAP) is a comprehensive vision and action plan that will guide environment, land use, mobility, and urban design decisions in the Shelbourne Valley over the next 30 years.

### Process to Date

The Proposed Plan was developed through a multi-phased process (see Figure 1) that included significant technical analysis and community consultation. The process is currently in the fifth and final phase, with a Public Hearing required before formal plan adoption.



**Figure 1: Planning Process Overview**

### Public Engagement

The creation of the SVAP was based on an extensive consultation process with residents, landowners, business owners, neighbourhood associations, community stakeholders, developers, and Committees of Council. Highlights of the engagement process included:

- Community mapping completed by over 1300 people;
- Three community surveys (vision, plan options, draft plan) completed by 1490 people;
- 33 meetings with the Shelbourne Valley Stakeholders Committee;
- Nine open houses attended by approximately 1800 people;
- Three flyer mailouts that reached 11,000 businesses and residences in the study area; and
- 23 focus groups and presentations to community groups.

The Draft Plan, which was presented to the public in November 2013, included a public survey that was completed by 359 people. Table 1 indicates the level of support for various components of the Plan.

**Table 1: Results of 2013 Public Survey on Draft Shelbourne Valley Action Plan**

Plan Section	Agree with Plan Directions	Neutral	Disagree with Plan Directions
Environment	78%	16%	6%
Land Use	75%	14%	11%
Mobility	79%	11%	10%
Urban Design and Accessibility	73%	20%	7%

**DRAFT PLAN – MOBILITY DIRECTIONS**

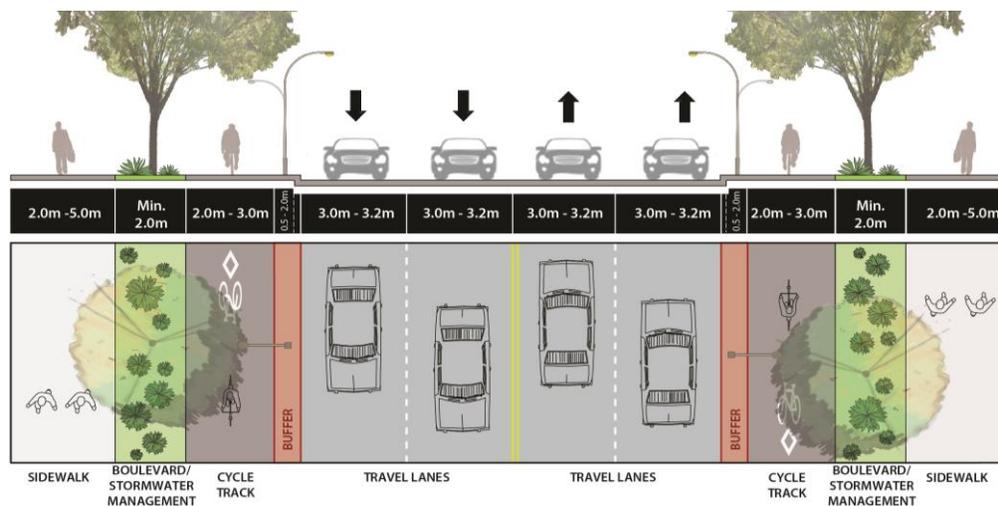
**Shelbourne Valley Action Plan Objectives**

The Proposed Plan outlines a comprehensive set of policies to create a balanced transportation network in the Shelbourne Valley that is safe, comfortable, and connected for all modes and users. Mobility objectives in the Proposed Plan are:

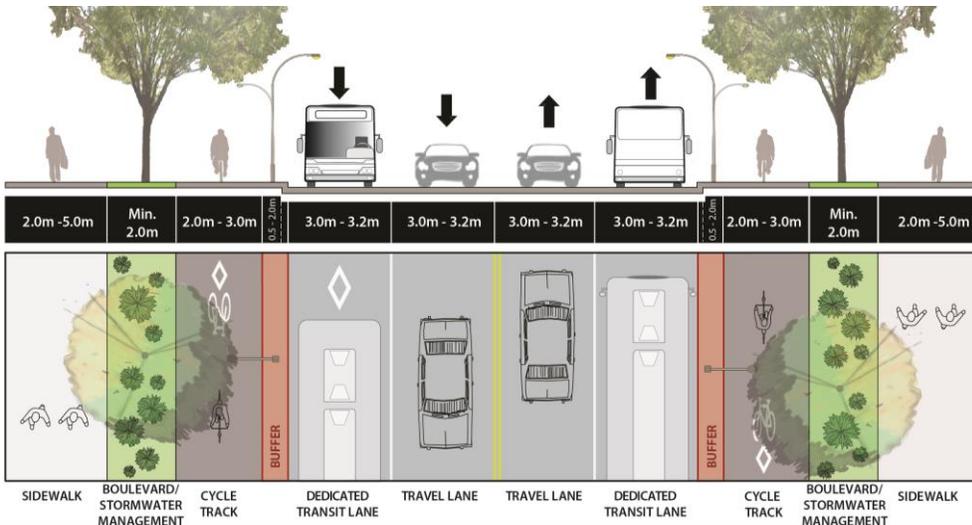
1. Increase pedestrian and cycling connectivity;
2. Improve the design of streets as a space for community enjoyment and activity;
3. Reduce transportation related greenhouse gas emissions and energy consumption;
4. Improve safety and comfort for all users;
5. Enhance access to businesses by all modes;
6. Improve transit efficiency and accessibility;
7. Provide a cycling network suited to all ages and abilities; and
8. Strengthen linkages between land use and transportation.

**Shelbourne Street Vision**

The Proposed Plan identifies mid-term and long-term Shelbourne Street design concepts within an expanded right-of-way (see Figures 2 and 3) that accommodates pedestrians, cyclists, transit and motorists while contributing to the vision of Shelbourne Street as a “Great Street” where people want to live, work, and play.



**Figure 2: Shelbourne Street Right-of-Way Mid-Term Ultimate Design Concept**



**Figure 3: Shelbourne Street Right-of-Way Long-Term Ultimate Design Concept**

### Implementation of Ultimate Design Concept

Implementing the Ultimate Design Concept requires expanding the right-of-way from its current 20-23 metres to 28-30 metres, a process that affects almost every property fronting Shelbourne Street. The dedication of additional right-of-way through redevelopment along the extent of Shelbourne Street could take a significant amount of time. The only alternative to obtaining the necessary dedication through redevelopment is to purchase the required land, which would be cost prohibitive. That being said, there are improvements that can be made on Shelbourne Street and in the Shelbourne Valley in advance of the re-development of properties fronting Shelbourne Street.

### Short-Term Mobility Action Program

The Proposed Plan includes a short-term action program that seeks to bridge the gap between longer term mobility improvements that are dependent on redevelopment or property acquisition and interim improvements that can be implemented under current conditions. The short-term action program includes an interim cycle track and new sidewalks on parts of Shelbourne Street, pedestrian and transit improvements in University and Shelbourne Valley Centres, and bikeway improvements on other routes in the Shelbourne Valley. These improvements include the retention of four general purpose travel lanes along the full extent of Shelbourne Street.

As part of the analysis undertaken for the supplemental report, the cost and technical feasibility of the SVAP's proposed short-term actions were analyzed.

## TECHNICAL CONSIDERATIONS

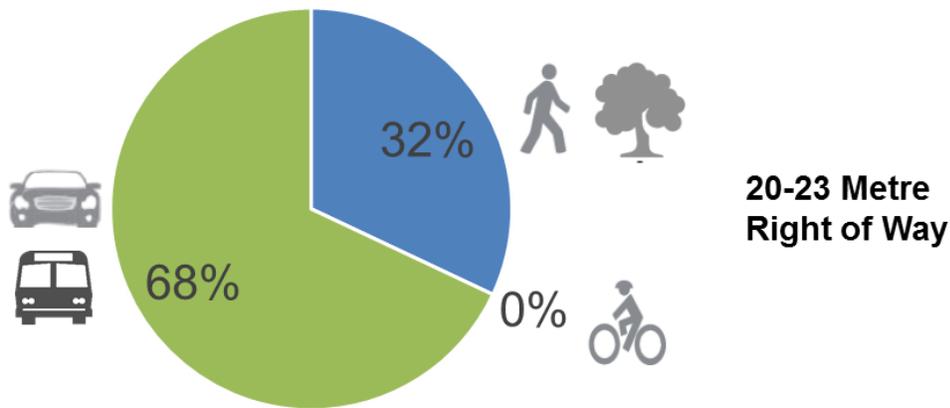
There are several constraints/limitations to consider regarding the implementation of mobility improvements on Shelbourne Street based on the existing right-of-way, including:

- A narrow 20-23 metre right-of-way;
- Limited parallel route options for transit, motor vehicles, pedestrians, and bikes;
- An average of 25,000 vehicles a day on Shelbourne Street between North Dairy Road and McKenzie Avenue and 21,000 between McKenzie Avenue and Feltham Road;
- Over 300 street trees within or in close proximity to the Shelbourne Street right-of-way;
- Over 150 driveway crossings on Shelbourne Street;

- A high number of utility poles;
- Shelbourne Street’s role as a Frequent Transit Route; and
- Required renewal of existing sanitary sewers, storm drains, and water mains within the Shelbourne Street right-of-way.

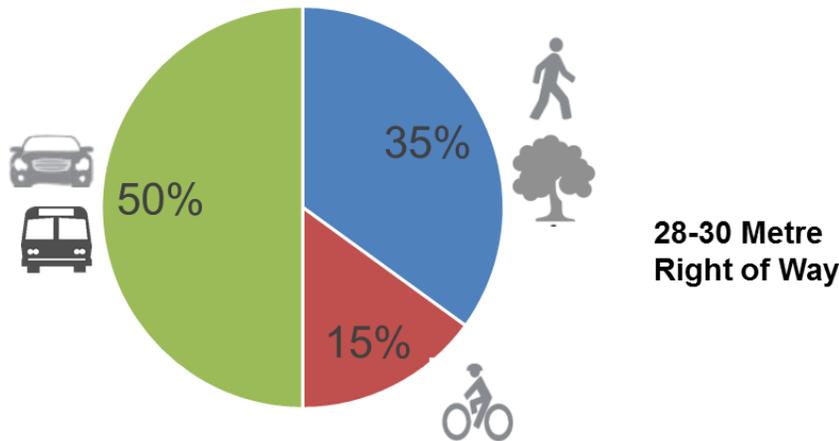
**Shelbourne Street Right-of-Way**

The existing Shelbourne Street right-of-way contains a variety of features. Within the roadway there are turn lanes, medians, and variable lane widths. Sidewalks exist on both sides of the street but there are no dedicated cycling facilities. There are also over 300 trees within or in close proximity to the right-of-way, with a range of species and sizes and no regular planting pattern, as well as above and below ground utilities. Currently, approximately two-thirds of the right-of-way is allocated to space for vehicles, with the remainder dedicated to sidewalks and landscaping (see Figure 4).



**Figure 4: Existing Shelbourne Street Right-of-Way Allocation**

The space needed to accommodate the pedestrian, cycling, transit, motor vehicle, and landscape features of the Ultimate Design Concept for Shelbourne Street is greater than the space available within the street’s existing right-of-way, which generally ranges from 20-23 metres. The Ultimate Design Concept, based on the acquisition of additional right-of-way, would transition Shelbourne Street to a more complete street with a desired right-of-way ranging from 28-30 metres. Figure 5 shows the allocation of right-of-way space under this future, expanded Ultimate Design Concept.



**Figure 5: Ultimate (Expanded) Shelbourne Street Right-of-Way Allocation**



appropriate grade change to driveways; and installing retaining/landscaping walls where necessary without affecting private property. Therefore, an extra 1.0 m has been included in the minimum design width to ensure this design can be implemented.

- The **utility buffer area** between the road edge and start of the cycle track **should be expanded from 0.5 m to 0.8 m**. This is a more realistic width to accommodate hydro poles and other above-ground utilities.

### **Street Tree Inventory**

An inventory of street trees was undertaken on Shelbourne Street to ascertain the health, condition, species composition, and precise location of each of the street trees within or in close proximity to the right-of-way. In total, 308 trees were surveyed. Based on the inventory results, it was determined that 90% of the trees were in good health and over 50 species existed along the corridor. The tree analysis was also able to provide information that indicated that any improvements along Shelbourne Street that involved the addition of a cycle track would require the removal of a vast majority of the trees.

### **Underground Utilities**

The Shelbourne Valley's sanitary sewers, storm drains, and water mains are reaching the end of their service life. Location of underground utilities and estimated cost for replacement is as follows:

- Sanitary Sewer: New trunk sewer and removal of pump stations – North Dairy Road to Garnet Road (\$8.6 Million);
- Water: Replace water main McRae Avenue to Cedar Hill Cross Road (\$2.4 million); and
- Storm Sewer: Wood stave replacement – Blair Road to Torquay Drive (\$1.2 million).

The extent and timing of the mobility improvements could potentially influence the timing of underground utility replacements along the corridor. If short-term improvements are chosen for Shelbourne Street that require significant road reconstruction, there would be a strong rationale to coordinate work with utility upgrades.

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## **COMMUNITY CONSULTATION**

In the time since the Proposed SVAP was presented to Council, staff have not undertaken any formal consultation with the public or stakeholder groups. However, during this period two motions related to Shelbourne Street were made by the Bicycle and Pedestrian Mobility Advisory Committee.

On February 19, 2015, the Committee made the following motion:

*“That the Bicycle and Pedestrian Mobility Advisory Committee feels that future cross sections of Shelbourne Street presented in the Shelbourne Valley Action Plan should reflect the fact that walking and cycling are accepted as priority modes of transportation in Saanich and the region.”*

Additionally on April 16, 2015, the Committee made the following motion:

*“Bicycle lanes along Shelbourne Street were first identified 25 years ago, and the need for safe, protected cycling infrastructure has significantly increased since. Shelbourne Street provides a level and direct north-south route that connects more important cycling*

*destinations than any other route within Saanich. The Bicycle and Pedestrian Mobility Advisory Committee wants to ensure that safe, direct, level cycling infrastructure entirely along Shelbourne Street is a component of any initial Shelbourne Street construction.”*

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## **ALTERNATIVES EXPLORED**

As part of the technical analysis, a number of potential designs were explored at a conceptual level and are elaborated upon below. While none of these options are recommended, they are presented to give Council a broad sense of potential courses of action and associated implications.

### **Immediate Implementation of Ultimate Concept**

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This option involves full implementation of the ultimate design concept for the entire length of Shelbourne Street within an expanded 28-30 metre right-of-way. This option would provide a cycle track, sidewalk, and landscape area consistent with the ultimate vision for Shelbourne Street (see Figure 2).

The implementation of this option would involve acquiring land from virtually every property (159 of 161 properties) fronting onto Shelbourne Street. The proposed acquisition required for an expanded right-of-way would impact and likely require demolition of approximately 28 existing buildings. Preliminary cost estimates for this option are at over \$40 million plus property acquisition and underground utility costs.

### **Shelbourne Interim Cycle Track Focus**

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This concept involves working largely within the existing right-of-way to deliver new sidewalks adjacent to one-way cycle tracks on each side of the street along the full extent of Shelbourne Street. This option focuses exclusively on Shelbourne Street and prioritizes cycling facilities above other considerations.

This option would require removal of over 200 street trees within the Shelbourne Street right-of-way and provide limited opportunities for landscaping. Several constraints exist along the corridor and would necessitate significant property acquisition. While in many instances only a small portion of each property is required to install a minimum standard sidewalk and cycle track, up to half of the properties fronting Shelbourne Street could require some level of acquisition.

As part of road reconstruction, utility work would need to be coordinated, increasing the cost and complexity of the project. The estimated cost of this option would be \$33.5 million plus property acquisition and underground utility costs.

### **Reduction to Two Travel Lanes**

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Options for a reduction to two or three travel lanes was explored extensively throughout the SVAP planning process. The reduction to two travel lanes, or two travel lanes with a central turning lane, would provide additional space for cycling and pedestrian facilities and landscaping, but have significant impacts on transit and motor vehicle travel.

The existing role of Shelbourne Street as a commercial corridor, major traffic artery, and Frequent Transit Route means that any major reduction in vehicle carrying capacity would have significant impacts. As noted previously, these include:

- The diversion of 6,000 to 9,000 vehicles a day onto parallel residential and collector streets, such as Richmond Road and Cedar Hill Road;
- A reduction in the efficiency of existing transit service and the likely inability of Shelbourne Street to function as a Frequent Transit Route as designated in BC Transit's Strategic Plan 2030;
- A reduced level of service for vehicles on Shelbourne Street, resulting in congestion at key intersections; and,
- A reduced ability to accommodate additional transit and motor vehicle trips, including commercial and emergency vehicles, generated by future population and employment growth in the Valley.

The cost associated with this option varies significantly depending on the exact configuration. However, any changes consistent with long-term vision of cycle tracks would require significant expenditures for implementation.

### **Dedicated Bus or Bus/Bike Lanes**

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In this concept, outside lanes would be converted to bus or bus/bike lanes to prioritize transit travel. This is consistent with the long-term concept for Shelbourne Street, which includes dedicated transit lanes. However, at the present time, limitations exist that detract from their implementation feasibility. Ridership and bus frequency are not currently sufficient to warrant a dedicated lane. While ridership numbers are relatively high along the corridor, they are not consistent with routes where dedicated bus lanes would be provided.

In addition, reducing the number of general traffic lanes from 4 to 2 would result in many of the impacts identified above, including the diversion of 6,000 to 9,000 vehicles a day from Shelbourne Street onto parallel streets. The dedication of a shared bus/bike lane on Shelbourne Street would provide a low comfort cycling facility that would not likely attract a broader range of cyclists. At best, it would be an incremental improvement over shared travel lanes. Further, the narrow travel lanes on Shelbourne Street would not enable buses to pass cyclists in the lane, potentially slowing transit speeds.

### **Status Quo (Implementation Through Redevelopment)**

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In this option, limited short-term resources would be dedicated to improving conditions on Shelbourne Street. Sidewalk improvements would be completed as prioritized by the District-wide pedestrian priority program or through opportunities presented at the time of redevelopment. Cycle track implementation would be dependent on redevelopment and associated right-of-way acquisition, with uncertain implementation timelines. Projects identified in the Engineering Capital Program would continue to be implemented such as McKenzie Avenue and Feltham Road bike lanes. There would be no immediate cost implications associated with this option.

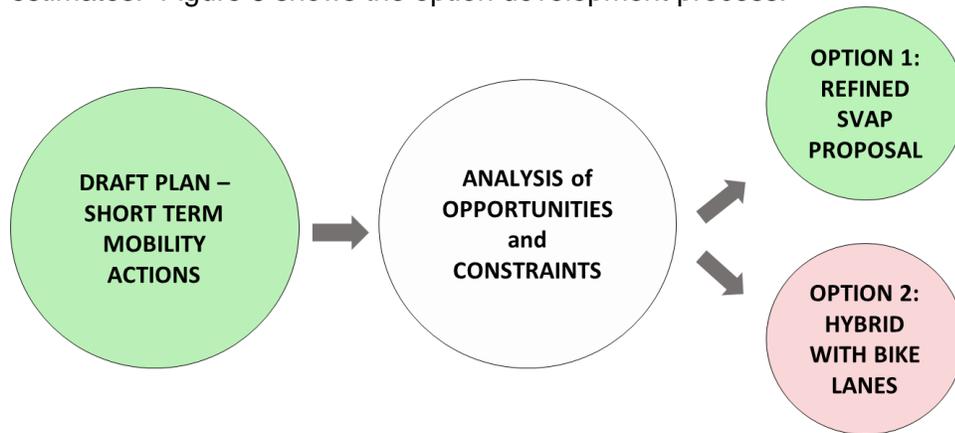
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## **MOBILITY IMPROVEMENT OPTIONS (WITHIN EXISTING RIGHT-OF-WAY)**

The central question regarding short-term implementation is: What are the most appropriate set of mobility implementation actions that can be taken to improve current conditions while moving towards the long-term vision for the Shelbourne Valley?

While implementation of the Ultimate Design Concept within an expanded Shelbourne Street right-of-way is the long-term goal, the focus of this report is on assessing potential improvements that can be completed in the short-term on Shelbourne Street and within the

Shelbourne Valley. The technical analysis was used to test the implementation proposal in the SVAP, inform the development of two potential options and allow the development of cost estimates. Figure 8 shows the option development process.



**Figure 8: Option Development Process**

Two mobility improvement options are identified for Council's consideration: Option 1 - Refined SVAP; and Option 2 - Hybrid. Both these options would be achievable within the next five years and have similar implementation costs. A key distinction between the options is the extent and type of cycling facilities and the treatment of travel lanes on Shelbourne Street. It is possible to combine elements of each option to create a third option.

## Option 1 – Refined SVAP

Option 1 is largely representative of what was presented in the Proposed Plan, but includes some modifications in response to the technical analysis and comments received at the June 9, 2014 Council meeting.

Option 1 maintains four general purpose travel lanes along the full extent of Shelbourne Street, incorporates pedestrian improvements at key locations, and introduces a cycle track on approximately 25% of the corridor (see Figure 9). Improvements on adjacent routes would support Shelbourne Street improvements.

Key Option 1 mobility actions include:

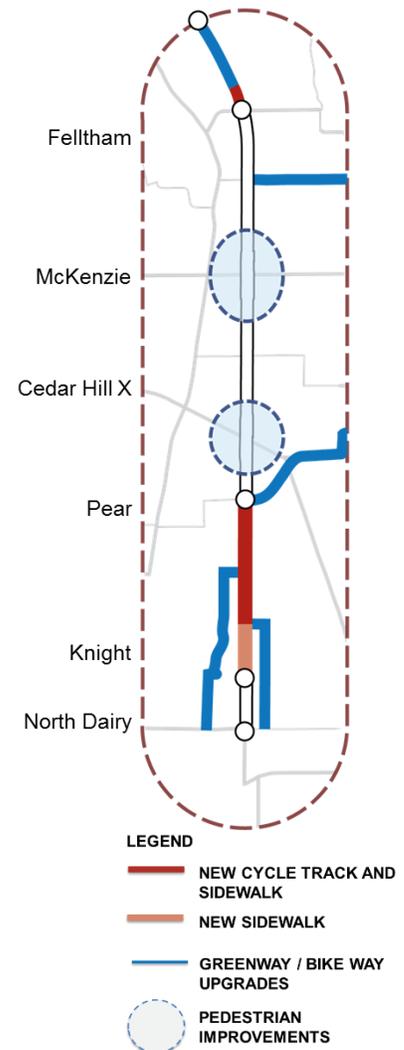
- A new cycle track and sidewalk (see Figure 10) on Shelbourne Street from:
  - Knight Avenue to Pear Street; and,
  - Torquay Drive to Feltham Road;
- Pedestrian and transit improvements in University Centre and Shelbourne Valley Centre;
- Improvements to UVIC and Blair Bike Connectors; and
- Upgrades to Bowker Creek Greenway and Kingsley Bike Connector.

The actions are all consistent with the long-term plan for the Shelbourne Valley mobility network and the Ultimate Design Concept for Shelbourne Street.

The total cost of Option 1 improvements would be approximately \$10.8 million. As far as impacts on the existing streetscape, approximately 50 trees would be lost on Shelbourne Street between Knight Avenue and Pear Street. The only property acquisition associated with this option would be between Torquay Drive and Feltham Road. The following text identifies details of the specific improvements proposed in Option 1 for each segment of the Valley.

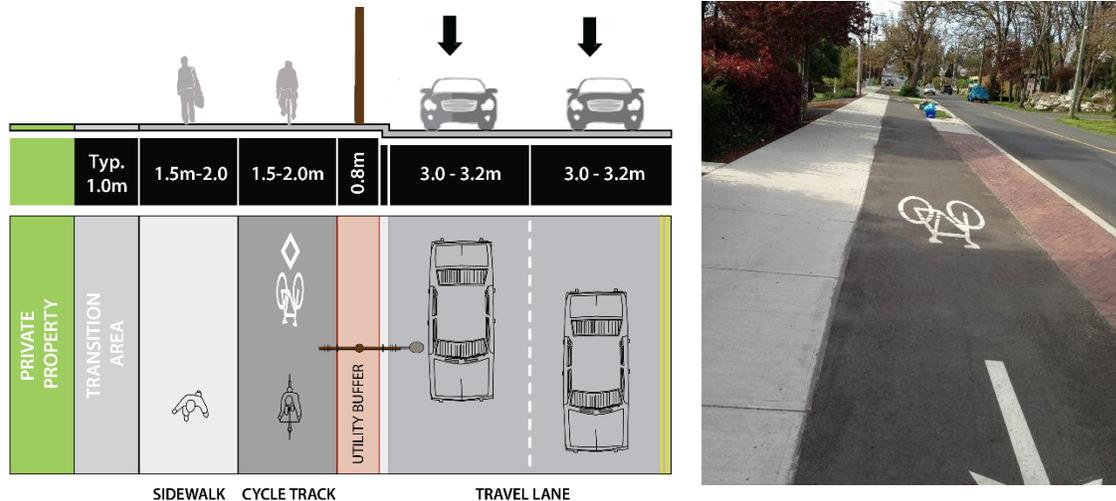
### Shelbourne Valley South

The southern end of the Valley is proposed to be subject to the most extensive improvements as part of this option. In the Draft Plan, a cycle track was identified on Shelbourne Street from North Dairy Road to Pear Street. However, technical analysis has indicated that the first two blocks from North Dairy Road to Knight Street would be extremely challenging and expensive due to the narrow 20 metre right-of-way, offset road alignment and presence of a high number of trees, utility poles, and driveways. Therefore, a proposed adjustment to the short-term SVAP proposal is to shorten the area of cycle track improvements by excluding the southerly two blocks of Shelbourne Street.



**Figure 9: Option 1 Overview**

The design that would be utilized on Shelbourne Street between Knight Avenue and Pear Street is shown in Figure 10 and would include a minimum standard 1.5 metre sidewalk, 1.5 metre cycle track, 0.8 metre utility strip, and a 1.0 metre transition strip on both sides of the street.



**Figure 10: Option 1 Shelbourne Street Design Concept**

In order to support the improvements on Shelbourne Street and provide better linkages to the overall network, a number of other improvements are recommended. These are:

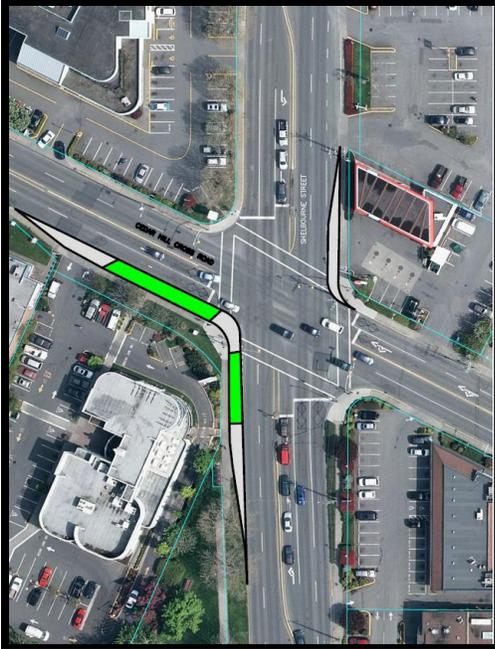
- Pedestrian and cycling upgrades to the Bowker Creek Greenway from North Dairy Road to Derby Road;
- The addition of a Bike Connector on Kingsley Street, including a new pedestrian/cyclist signal at Knight Street and Shelbourne Street;
- Upgrades to the UVic Bike Connector, including the addition of buffered bike lanes on Poplar Avenue; and
- An upgraded sidewalk on the west side of Shelbourne Street from McRae Avenue to Knight Avenue.

### **Shelbourne Valley Central**

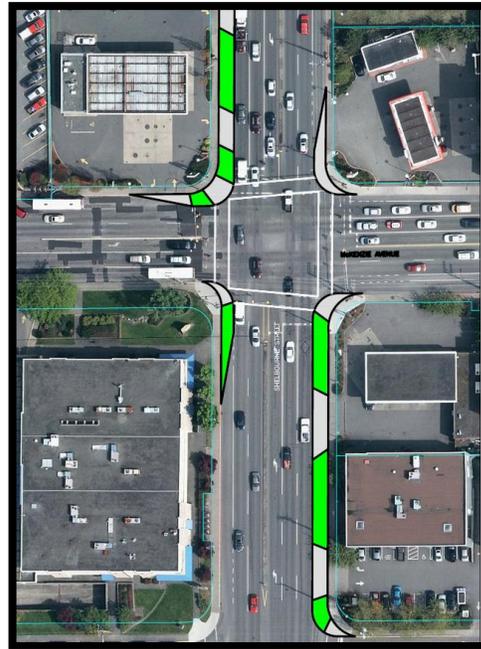
In the central segment of the Shelbourne Valley, Option 1 focuses on enhancing pedestrian facilities, public realm conditions, and the experience for transit users. Recommended improvements are focused on the most heavily walked intersections in the Shelbourne Valley: Shelbourne Street at McKenzie Avenue and Shelbourne Street at Cedar Hill Cross Road.

Figures 11 and 12 provide an overview of pedestrian improvements at these major intersections, highlighting the additional pedestrian space that would be gained from removing bus bays and right turn lanes and adding curb extensions. Overall these improvements would allow for the widening of sidewalks in key locations, enable improvements to transit waiting areas, and shorten crossing distances at major intersections.

In addition to the changes at the major intersections, it is proposed that bus bays are removed on Shelbourne Street at Mortimer Street and at Blair Avenue to widen sidewalk areas, improve transit priority, and prepare for a transition to the Shelbourne Street Ultimate Design Concept.



**Figure 11: Concept of Shelbourne Street at Cedar Hill X Road Pedestrian/Transit Improvements**



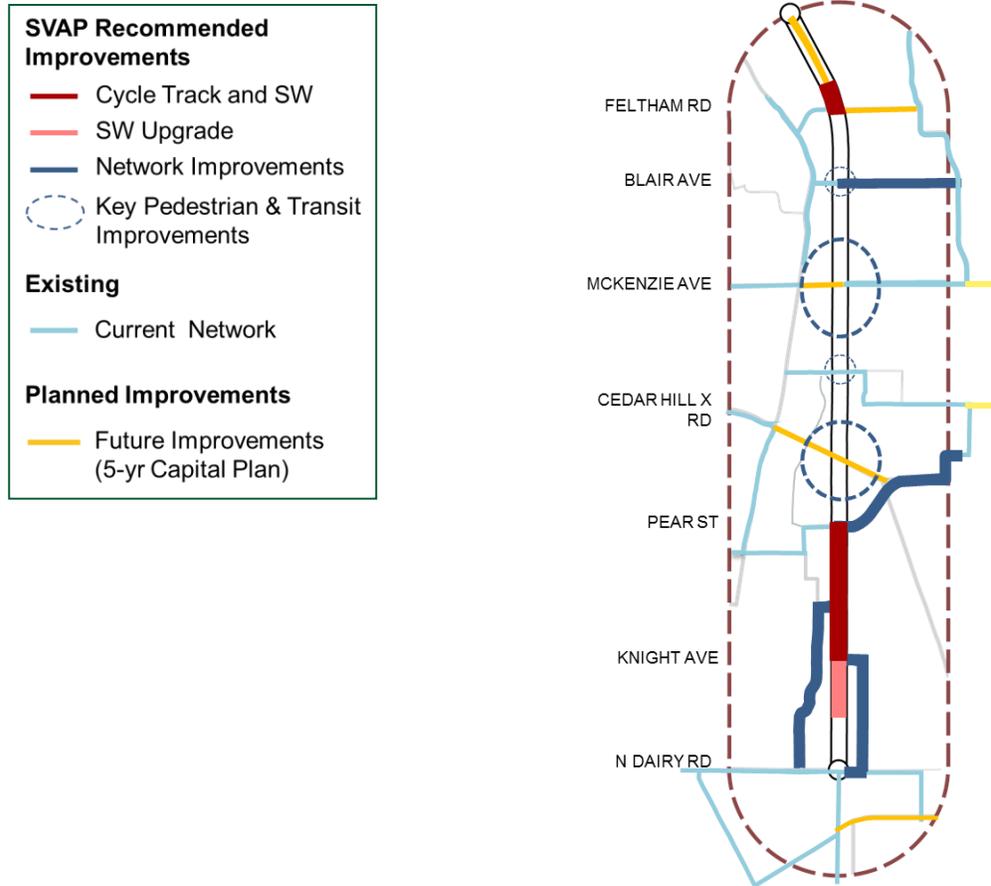
**Figure 12: Concept of Shelbourne Street at McKenzie Avenue Pedestrian/Transit Improvements**

### **Shelbourne Valley North**

In the north segment of the Shelbourne Valley, Option 1 focuses on adding critical segments of the cycling network to connect existing and soon to be constructed facilities. A cycle track and new sidewalk is proposed on Shelbourne Street from Feltham Road to Torquay Drive that would connect with existing and proposed bike lanes to the north. While this connection is relatively short and expensive, it represents a key link in the network, including to the University of Victoria. Additionally, enhancements to the Blair Avenue Bike Connector would connect the cycling path between Cedar Hill Road and Shelbourne Street to the Larchwood Greenway.

**Option 1 Summary in context of Existing and Planned Improvements**

Option 1 strategically addresses areas of concern and improves connections between key destinations. Figure 13 shows Option 1 improvements in the context of the existing and planned mobility network. Table 2 provides a summary of improvements and associated costs.



**Figure 13: Summary Map of Recommended Short Term Improvements**

**Table 2: Option 1 Cost Estimates**

IMPROVEMENT	ESTIMATED COST
Shelbourne Street – cycle track & sidewalk – Knight Ave. to Pear St	\$6,200,000
Shelbourne Street – new sidewalk – McRae Ave. to Knight Ave.	\$800,000
Bowker Creek Greenway Upgrades	\$200,000
Kingsley Bike Connector	\$400,000
Uvic and Blair Bike Connectors	\$600,000
Pedestrian and Transit Improvements – University Centre and Shelbourne Valley Centre	\$1,000,000
Shelbourne Street – cycle track and new sidewalk – Torquay Drive to Feltham Road.	\$1,600,000
<b>Total</b>	<b>\$10,800,000</b>

## Option 2 – Hybrid

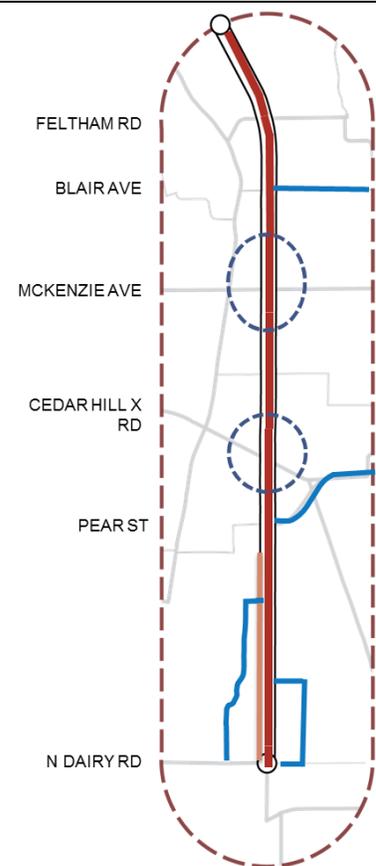
Option 2 utilizes two, three, and four lane configurations to provide pedestrian improvements and a continuous bike lane along the full extent of Shelbourne Street. This option is largely achieved through reallocation of existing curb to curb space.

Option 2 reduces vehicle carrying capacity on Shelbourne Street, but maintains a four-lane cross-section at major intersections in an effort to minimize impacts on the operational efficiency of the street and traffic diversions to parallel routes. This option would have a significant impact on transit service and introduce delays of between one and three minutes in peak periods.

This option includes many of the pedestrian improvements associated with Option 1, including shortening crossing distances at major intersections, increasing areas where sidewalks are separated from traffic, and improving transit waiting areas.

Figure 14 provides a summary of Option 2 improvements. Key elements include:

- A bike lane on the entirety of Shelbourne Street, with a buffered bike lane from Rowan Street to Feltham Road;
- Replacement of the poorest sections of sidewalk on Shelbourne Street south of Pear Street;
- Pedestrian and transit improvements in University Centre and Shelbourne Valley Centre;
- Improvements to UVIC and Blair Bike Connectors; and
- Upgrades to Bowker Creek Greenway and Kingsley Bike Connector.



**Figure 14: Option 2 Overview**

Option 2 involves minimal street tree loss, with only the addition of bus bays and sidewalk improvements having limited impacts. Property acquisition would only be required near North Dairy Road to maintain optimal operation of that intersection and still accommodate a bike lane.

The transition to the ultimate design would be somewhat challenging in this scenario, as a full block would be required to create a functional transition between cycle track and bike lane treatments and/or reintroduce travel lanes.

As noted above, a multi-faceted approach to Shelbourne Street is utilized in Option 2. In the south portion of the corridor where the right-of-way is narrowest and the curb to curb space is limited to four narrow travel lanes, the only option for incorporating a bike facility between the curbs is a reduction in travel lanes. Therefore, Option 2 incorporates a cross-section of two travel lanes and a centre turn lane from just north of North Dairy Road to Rowan Street (see Figure 15). In areas near major intersections, a four lane cross-section is maintained, however some right turn lanes and the central turn lane from Pear Street to Cedar Hill Road are removed to enable the inclusion of buffered bike lanes (see Figure 16). Finally, for the segments between Christmas Avenue and Garnet Road and north of McKenzie Avenue, a three-lane cross-section – two southbound and one northbound - would be used accommodate bike lanes

(see Figure 17). This configuration is similar to what exists on McKenzie Avenue east of Shelbourne Street.

## 2 Lane with Centre Turn Lane

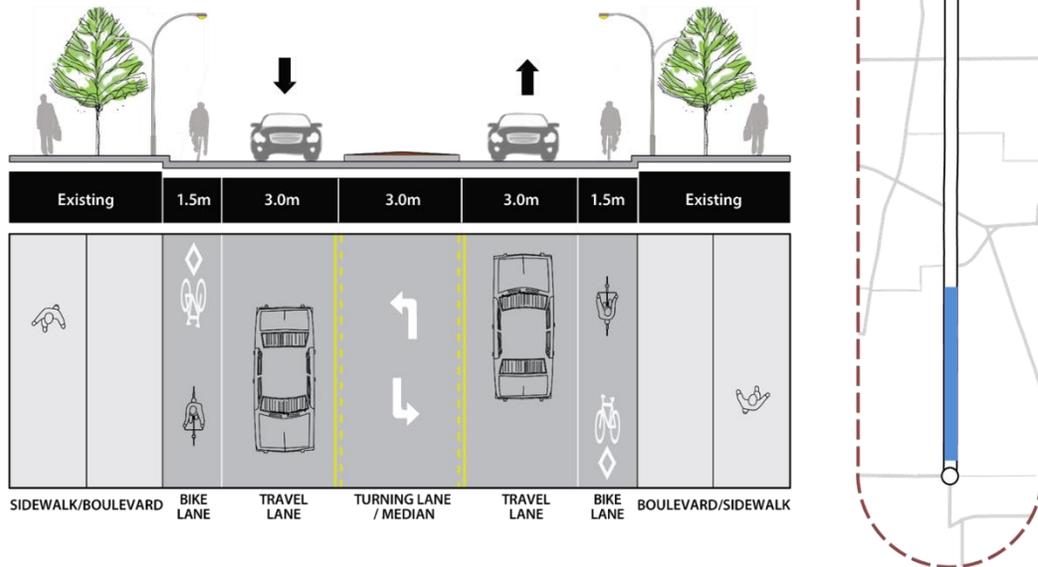


Figure 15: Cross-Section and Key Map of Two-Lane Component of Option 2

## 4 Lanes

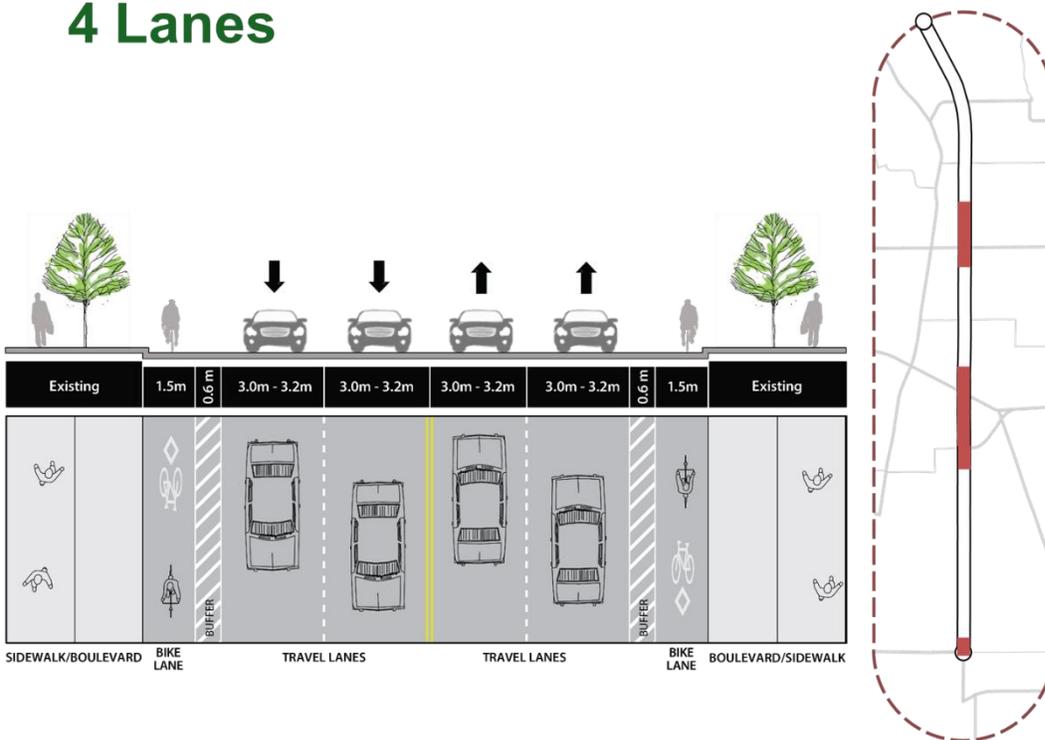
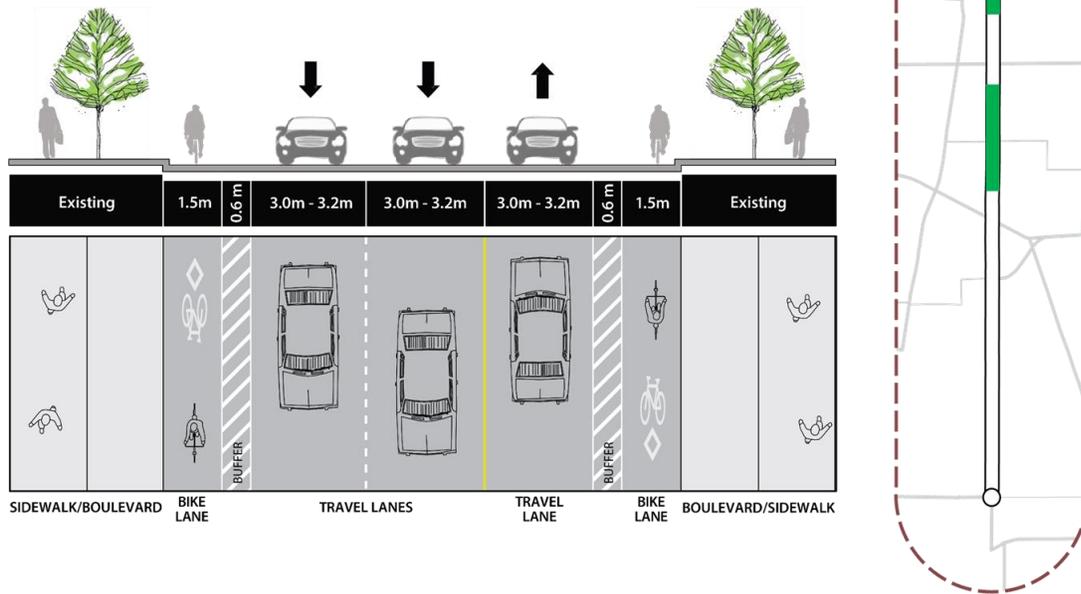


Figure 16: Cross-Section and Key Map of Four-Lane Component of Option 2

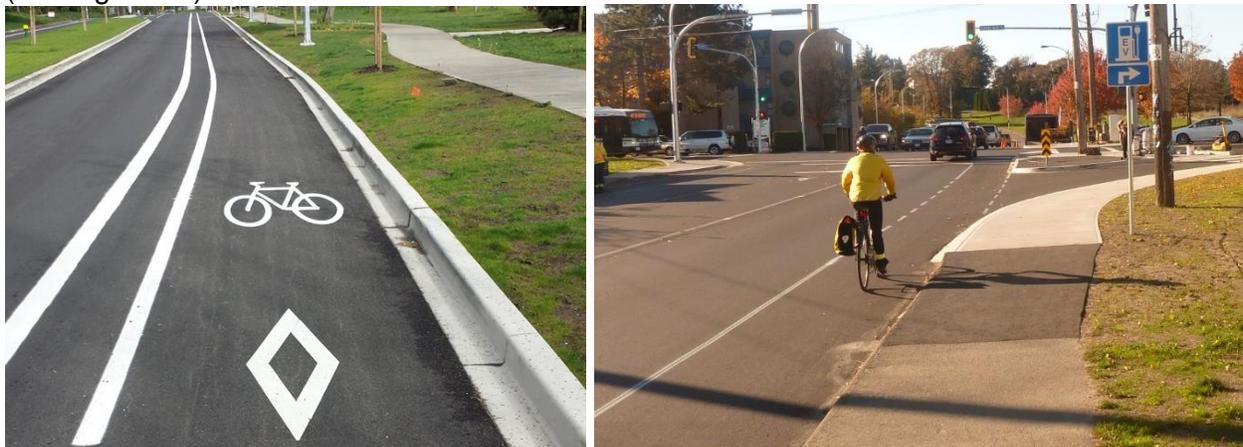
# 3 Lanes 2 Southbound, 1 Northbound



**Figure 17: Cross-Section and Key Map of Three-Lane Component of Option 2**

Option 2 provides a continuous bike lane along the full extent of Shelbourne Street, which has been identified as a vital regional cycling corridor. Ideally, a protected bike lane or cycle track would be installed, as this type of facility is most conducive to attracting cyclists of all ages and abilities. However, given the constraints on Shelbourne Street, Option 2 represents the best option to implement a complete cycling facility in the short-term in a cost-effective manner that minimizes impacts on transit and motor vehicle travel and the pedestrian realm.

For Option 2, from North Dairy Road to Rowan Street a minimum standard 1.5 metre bike lane would be implemented, while north of Rowan Street a buffered bike lane would be implemented (see Figure 18).



**Figure 18: Examples of Buffered and Un-buffered Bike Lanes**

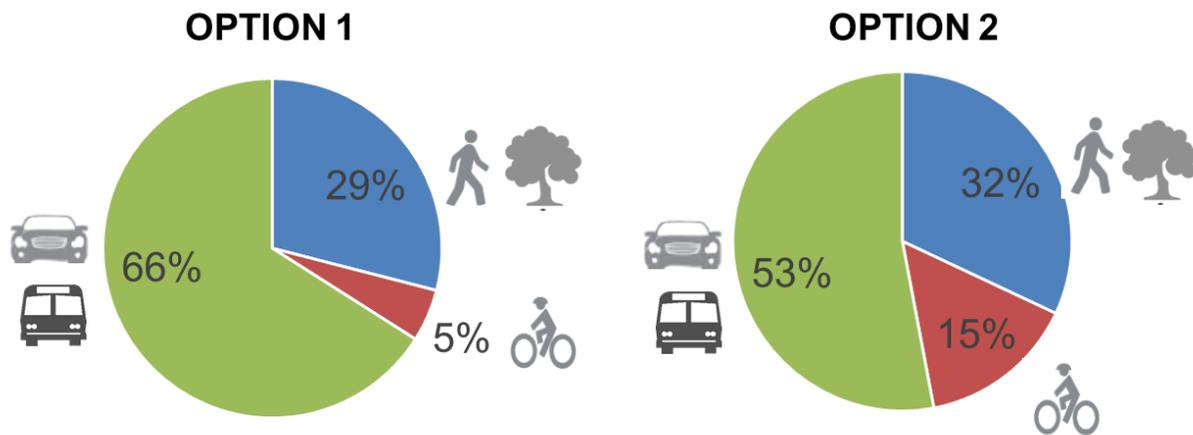
Table 3 indicates the overall costs of Option 2, with significant components of the total budget being the introduction of new sidewalks, the removal of turn lanes, and repaving of the street.

**Table 3: Option 2 Cost Estimates**

IMPROVEMENT	ESTIMATED COST
Shelbourne Street South (North Dairy Road to Rowan Street)	\$3,700,000
Shelbourne Street Central (Rowan Street to Blair Avenue)	\$4,100,000
Shelbourne Street North (Blair Avenue to Torquay Drive)	\$900,000
Kingsley Bike Connector	\$400,000
Bowker Creek Greenway	\$200,000
UVIC and Blair Bike Connectors	\$600,000
<b>Total</b>	<b>\$9,900,000</b>

**Evaluation of Mobility Improvement Options**

The two options for mobility improvements in the Shelbourne Valley enable a progression towards the long-term vision articulated in the Proposed Plan. Ultimately, in the short-term it is a question of trade-offs until additional right-of-way is acquired. As shown in Figure 19, there is a significant distinction in how space is allocated in the options. In Option 1, preservation of transit and motor vehicle capacity is paramount. In Option 2, a higher priority is placed on dedicating space to cycling facilities.



**Figure 19: Right-of-Way Allocation in the Two Options**

Previous engagement on the Shelbourne Street cross-section indicated a strong preference for the retention of four travel lanes. The 2012 ideas and concepts Open House survey showed that 68% of respondents preferred a four lane concept for Shelbourne Street over a two lane concept or a three lane reversible concept. Additional input from business owners and major land owners in the Shelbourne Valley indicated that maintenance of four lanes on Shelbourne Street was a high priority. While Option 2 provides for a reduction in travel lanes, it does so in a much less impactful fashion than the two concepts analyzed previously, including through the

maintenance of capacity at major intersections. However, Option 2 would still have significant impacts on motor vehicle and transit travel times.

Overall, the options have similar implementation costs and utilize many of the same improvements. However, as noted above, there are also some key distinctions. Table 4 provides an overview comparison of the two options.

**Table 4: Comparison of Mobility Improvement Options**

	Option 1: Refined SVAP	Option 2: HYBRID	Comparison
	<ul style="list-style-type: none"> <li>New sidewalks in south</li> <li>improvements in Major Centres</li> <li>New signal at Knight</li> </ul>	<ul style="list-style-type: none"> <li>New sidewalks in south</li> <li>Improvements in Major Centres</li> <li>New signal at Knight</li> </ul>	Similar pedestrian Improvements
	<ul style="list-style-type: none"> <li>Cycle track for 25% of Shelbourne</li> <li>Improvements to other routes</li> </ul>	<ul style="list-style-type: none"> <li>Bike lanes entire length of Shelbourne</li> <li>Improvements to other routes</li> </ul>	Option 1 – better facility, much shorter distance Option 2 – Lower quality facility, complete route
	<ul style="list-style-type: none"> <li>Slight improvements due to bus bay removals</li> </ul>	<ul style="list-style-type: none"> <li>1-3 minute delay in transit travel times in peak period</li> </ul>	Option 1 would have less impacts on transit service
	<ul style="list-style-type: none"> <li>Slight reductions in travel time due to removal of bus bays or turn lanes</li> </ul>	<ul style="list-style-type: none"> <li>Moderate impacts to travel time and diversion to other roads</li> </ul>	Option 1 would have less impacts on traffic flow / diversion
	<ul style="list-style-type: none"> <li>Areas with cycle tracks would require removal of virtually all trees</li> </ul>	<ul style="list-style-type: none"> <li>Limited impacts from sidewalk renewal</li> </ul>	Option 2 would have less impacts on existing street trees
	<ul style="list-style-type: none"> <li>\$10.8 Million</li> </ul>	<ul style="list-style-type: none"> <li>\$9.9 Million</li> </ul>	Similar Costs

### Traffic Impact Analysis

A key consideration of the options is the potential impacts generated through reducing vehicle capacity on Shelbourne Street. The overall traffic impacts of Option 1 would be minimal with only slight impacts from the removal of some bus bays and right turn lanes. Option 2 would have more of an impact due to lane reductions on Shelbourne Street.

As an extension to earlier transportation analysis work, Urban Systems modeled the traffic impacts of Option 2 - Hybrid to assess impacts on the operation of Shelbourne Street and diversion to parallel routes. A technical memo summarizing the impacts of Option 2 - Hybrid can be found as Attachment A to this report. In general, the impacts associated with Option 2's two, three, and four lane configuration are significantly less than previously modeled two-lane and three-lane reversible scenarios. However, Option 2 would result in some travel time delay on Shelbourne Street in peak periods and diversion of vehicles to parallel routes. Of particular note, Option 2 would create transit travel time delays in peak periods on what is identified as a Frequent Transit Route by BC Transit.

Table 5 below provides an overview of key projected traffic outcomes of Option 2 in comparison to the existing situation which is the retention of four lanes (Option 1). Table 6 shows the impacts based on traffic projections to 2038.

**Table 5: Summary of Option 2 Traffic Impacts under Existing Conditions**

Outcome	Option 2 Impact (vs. base case)
Vehicles diverted per hour from Shelbourne Street (peak period)	100-200
% of Shelbourne Street Traffic Diverted (peak period)	8-20%
Shelbourne Street Intersection Level of Service	Same or slightly better at major intersections
Shelbourne Street - Vehicle / Transit Travel Time Delay – Hillside Avenue to Feltham Road (peak period)	AM Southbound – 78 seconds PM Northbound – 156 seconds
% Traffic Increase on Cedar Hill Road (peak period)	10-15%
% Traffic Increase on Richmond Road (peak period)	6-7%
% Traffic Increase on Gordon Head Road (peak period)	15-20%

**Table 6: Summary of Option 2 Traffic Impacts based on 2038 Traffic Forecast**

Outcome	Option 2 Impact (vs. base case)
Vehicles diverted per hour from Shelbourne Street (peak period)	300-400
% of Shelbourne Street Traffic Diverted (peak period)	15-30%
Shelbourne Street Intersection Level of Service	Same or slightly better at major intersections
Vehicle / Transit Travel Time Delay – North Dairy Road to Feltham Road	AM Southbound – 150 seconds PM Northbound – 96 seconds

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## FUNDING OPTIONS

In Council's request for a Supplemental Report, they indicated a desire for information on potential funding sources. A variety of potential funding options are described below and could be considered to finance Shelbourne Valley mobility improvements. It is recommended that Council decisions around specific funding sources for improvements be determined through the Strategic Planning and Financial Planning processes in order that the priority is established within the District's Capital Plan.

### Engineering Capital Program Budget

The majority of the Transportation budget is dedicated to the rehabilitation and maintenance of Saanich roads, transit infrastructure, bridges, street lights, traffic signals, sidewalks, and bikeways. One option for funding Shelbourne Street improvements is to adjust upcoming capital priorities and reassign the funds to Shelbourne Street. Some of the current priorities for the next five years that would need to be considered for deferment include the Glanford Avenue Complete Street, Sinclair Road Complete Street, Completion of the Douglas Local Connector Bike Route, Gorge Road Bike Lanes, Ridgebank Road/Vanalman Avenue Reconstruction, 10 km of new sidewalks, approximately 80 new sidewalk curb ramps, and short-term priorities identified in the Active Transportation Plan.

### Gas Tax Funding

Communities in BC receive annual Gas Tax Community Works funding based on a per capita allocation to fund a range of projects. Previously there was also a portion of the funding that was for regionally significant projects, accessed through an application process. Recent changes have resulted in this application-based component being terminated, with the funds being allocated through the per capita calculation for each municipality. For Saanich, this represents approximately \$1.5 million in additional annual funding. Council has historically applied all Community Works funds to transportation projects which has brought the transportation budget to its sustainability target in 2015. Incremental funding could be allocated to mobility improvements in the Shelbourne Valley to either target small improvements each year or accumulate over several years for a one time major improvement project.

### Borrowing

Long-term borrowing is an option for capital projects. The projected debt level for the general fund in 2015 is \$26.5 million, well below Saanich's policy guideline of \$89 million and the legislated limit of over \$500 million. While borrowing room is available, a number of projects, such as public safety buildings, have been identified as potential priorities for borrowing and could limit available capacity to borrow for Shelbourne Street improvements. Any large scale borrowing decisions must be made with consideration to the requirements of all asset groups, not just transportation.

### Grants

At present, there are a limited number of major grant programs available to fund Shelbourne Street improvements. However, the nature of programs and intake requirements are continually changing, so staff will continue to monitor available programs and make applications wherever possible as a means to partially offset the cost of Shelbourne Street improvements.

### Property Tax Increase

A general property tax increase could be contemplated as a means of financing Shelbourne Street improvements. However, given the project cost of Shelbourne Street improvements, the magnitude of the required increase would be a significant barrier.

### Redevelopment

As properties redevelop along Shelbourne Street, they will be required to dedicate right-of-way consistent with the Ultimate Design Concept of Shelbourne Street, as well as pay for frontage improvements (sidewalk, landscape, cycle track). Redevelopment that occurs within the short-term has the potential to offset costs incurred when implementing interim improvements on Shelbourne Street. While this is not a consideration that can be directly incorporated into budgeting, the potential for future expense offsets exists.

### Combination

The options previously discussed can also be used in combination. For example, the incremental Gas Tax could be accumulated for several years, with the balance funded through borrowing or applied from the core transportation budget to achieve the amount required. This is just one example of how combining funding options could work. It is likely that the viable solution will include a variety of funding sources.

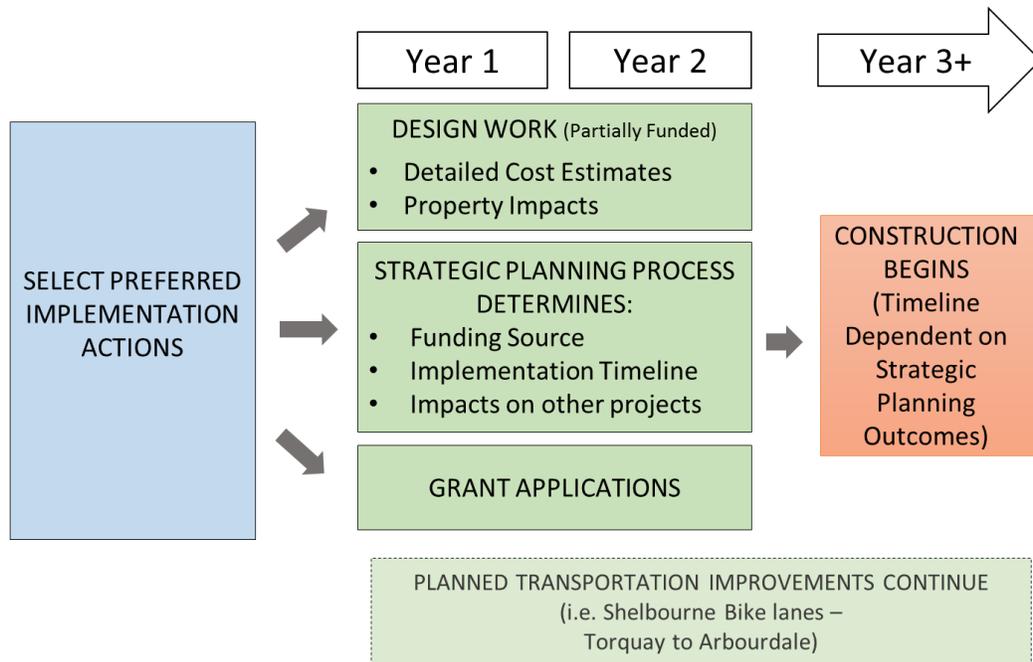
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## **IMPLEMENTATION TIMELINE**

Once direction is provided with respect to implementation priorities, a number of activities can be initiated that are essential precursors to construction of improvements. Firstly, functional

design work can be initiated. A budget of \$200,000 is available within the existing capital program to fund initial work. The work would enable a more detailed cost estimate to be developed and inform the Strategic Planning discussion.

Secondly, through the Strategic Planning process Council will be able to determine the appropriate funding mechanism and timeline for implementation. This deliberation can occur simultaneously with functional design work. Additionally, staff can pursue grant opportunities to offset the potential cost of improvements. Figure 20 illustrates the process for implementation of improvements once a decision is made.



**Figure 20: Timeline for Initiation of Mobility Improvements**

The actions laid out in each of the mobility options could be completed within five years, provided adequate funding and resources are available. Should Council choose, there is also the possibility to pare down the number or extent of proposed improvements or phase them over a longer period of time.

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## PROCESS OPTIONS

This report provides additional technical and financial information regarding implementation and identifies two options for mobility improvements in the Shelbourne Valley. Given the extent of new information provided in this report, it is recommended by staff that the public be engaged to enable a community discussion on potential options and to receive feedback to inform Council decision-making on appropriate implementation actions. With respect to process a number of options are available.

### Process Option A:

#### **Seek Public Feedback on Implementation Options (recommended)**

In this process option, Council would direct staff to undertake public engagement to seek community feedback on implementation options. Public open houses would be held in Fall

2015 and a survey would be utilized to gauge public support for the implementation options. A summary report on public engagement results and recommended amendments to the Proposed Plan would be delivered to Committee of the Whole in early 2016, with a Public Hearing to consider the Proposed Plan adoption potentially happening a short time later.

In this scenario, staff would continue to use the Draft Shelbourne Valley Action Plan for guidance in assessing development applications. This approach reflects the relatively strong support for the long-term directions in the plan, particularly around land use.

**Process Option B:**

**Separate Short-term Mobility Actions from the Shelbourne Valley Action Plan**

In this process option, the Short-Term Mobility Action sections (6.7 and 8.2) of the Proposed SVAP would be removed and the remainder of the Proposed Plan would be forwarded to Public Hearing. This would enable the strongly supported longer-term directions of the Proposed Plan to be adopted in a shorter timeframe, while enabling time for a broader public conversation around implementation priorities. A downside of this option is that it may create confusion in the community, as the Proposed Plan would be considered for adoption prior to a decision on implementation priorities, which many stakeholders see as integral to the overall plan.

In this scenario, a Public Hearing to consider the Proposed Plan adoption would be held in the Fall 2015. Public Feedback on implementation actions would be undertaken with a similar timeline to Option A, with a report back to Council in early 2016.

**Process Option C:**

**Endorse in Principle a Mobility Improvement Option and Proceed to Public Hearing**

In this process option, Council would endorse in principle one of the mobility improvement options. Staff would then incorporate related changes into the Proposed Shelbourne Valley Action Plan and proceed towards the Public Hearing. While this option enables design work for mobility improvements to begin as early as January 2016, it does not allow for public consideration of new information and analysis or provide an opportunity for feedback on proposed options.

In this scenario, a Public Hearing to consider the Proposed Plan adoption would be held in the Fall 2015.

**Process Option D:**

**Endorse in Principle a Mobility Improvement Option and Seek Public Feedback**

In this process option, Council would endorse in principle one of the mobility improvement options. The process involved in this option would mirror Option A, but instead of engaging on two options, the focus of public engagement would be on a proposed option.

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**SUMMARY**

This report identifies two options for mobility improvements that upgrade cycling and walking conditions in the Shelbourne Valley. The constrained conditions on Shelbourne Street provide a challenging context to implement changes, as optimal walking, cycling, transit, motor vehicle, and landscape elements cannot be achieved within the existing right-of-way. In this respect, trade-offs will need to be made in the short-term to balance impacts and arrive at a cost-effective solution.

The first option for mobility improvements, Option 1 - Refined SVAP, includes focused pedestrian improvements, a cycle track for 25% of Shelbourne Street and improvements to the broader network, while maintaining four travel lanes along the corridor. Option 2 - Hybrid includes a bike lane along the full extent of Shelbourne Street, as well as pedestrian and network improvements similar to Option 1. A key feature of Option 2 is the reduction in vehicle lanes, with a combination of two, three, and four lane travel lane cross-sections used in different segments of the corridor.

The options are of a similar cost, but take a different approach in prioritizing modes in the progression towards the ultimate future for Shelbourne Street. While both options provide changes to enhance pedestrian conditions, Option 1 prioritizes transit and motor vehicles, while Option 2 prioritizes cycling investments in the near-term.

Council has a number of options with respect to next steps in the process. Staff recommend that the public be engaged as new information is being presented beyond what was included in the Proposed Plan. The engagement would provide an opportunity to share information on potential improvements options and seek public feedback on a preferred approach. Other options include endorsing a preferred implementation option and proceeding directly to Public Hearing, separating the implementation components from the larger SVAP, or focusing public engagement on one option.

Should Council decide to proceed with public engagement, sessions would be held in Fall 2015, with a report back to Council in early 2016. At that time, Council would determine appropriate revisions to the Proposed Plan and whether to proceed to a Public Hearing.

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## RECOMMENDATION

That Council receive this report for information and direct staff to seek public input on mobility implementation options.

Report prepared by:

  
Cameron Scott, Manager of Community Planning

Report reviewed by:

  
Sharon Hvozdzanski, Director of Planning

CS/SH/jsp/ads

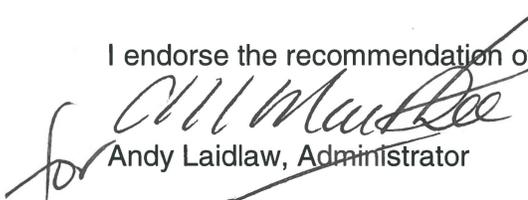
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Attachment: Attachment A – Transportation Analysis – Technical Memorandum

cc: Andy Laidlaw, Administrator  
Harley Machelsie, Director of Engineering  
Valla Tinney, Director of Finance

## ADMINISTRATOR'S COMMENTS:

I endorse the recommendation of the Director of Planning.

  
for Andy Laidlaw, Administrator