A. Recommendations

THAT Council receive Staff Report CSOPS.20.049, entitled “Victoria St. S. and Louisa St. W. Reconstruction Design Options Update”;

AND THAT Council provide direction on the number of sidewalks that will be constructed on Victoria Street South between Alfred Street West and Arthur Street West and direct Staff to advance the preliminary design with ___ sidewalks.

AND THAT Council direct Staff to develop a capital project sheet for the design and reconstruction of Victoria Street South between Alfred Street West and Napier Street West for consideration as part of the 2021 Town Budget.

AND THAT Council select a cross-section from the 2 alternatives for Louisa Street West between Bruce Street South and Elma Street South and direct Staff to advance the preliminary design with Alternative # __.

Overview

The purpose of this report is to follow up and provide an update to CSOPS.20.040 “Victoria Street S and Louisa Street W Reconstruction Design Options” dated August 11, 2020.

Attachment #1 provides a map of the Project Area discussed in this report.

B. Background

Staff Report CSOPS.20.040 “Victoria Street S and Louisa Street W Reconstruction Design Options” (Attachment #2) was presented to Committee of the Whole on August 11, 2020 and sought direction on 5 design options for Louisa Street West between Bruce Street South and Elma Street South. The report also included a staff recommendation to include 2 sidewalks on Victoria Street South between Arthur Street West and Alfred Street West. Following discussion of the options, Council requested staff report back on:
A modified version of Alternative 3 that eliminates the existing parking and the need for a new retaining wall; and,

• An estimated cost of 1 or 2 sidewalks on Victoria Street South between Arthur Street West and Alfred Street West and between Alfred Street West and Napier Street West.

C. Analysis

Victoria Street Cross-section and the Number of Sidewalks

Victoria Street South between Alfred Street West and Louisa Street West is listed in the 2019 Development Charges Background Study as a collector road. The Town does not have a collector road cross-section to provide guidance on what design elements should be included. The Town’s Official Plan does not list this section of Victoria Street South as a local road.

With the shopping and restaurants at Arthur Street and recreational and community facilities at Alfred Street this route may benefit from an enhanced level of service for active transportation.

The scope of these projects includes complete reconstruction of underground and surface infrastructure. The inconsistent road cross section of Victoria Street (which currently has sections of sidewalk on one side and ditches on the other as well as sections with no sidewalks) will be reconstructed with full storm sewers and urban boulevards. The approximate reconstruction cost for Victoria Street is $3 million. The boulevards will be created, and the choice is between installing a sidewalk or grass in the boulevard.

A recent competitive bid for sidewalk work suggests a 1.5m sidewalk is approximately $115.00/m. Victoria Street South between Alfred Street and Arthur Street is approximately 550m in length. An estimated cost of one sidewalk is $63,250 and two sidewalks $126,500. A second sidewalk represents approximately 2% of the construction budget.

Victoria Street Sidewalks South of Alfred Street

The addition of a new sidewalk on Victoria Street South between Alfred Street and Napier Street presents some challenges and is more complicated than simply grading, gravel and concrete. The Development Charges Background Study suggests this section of Alfred Street is a Collector Road to be reconstructed in the same fashion as the rest of Victoria Street north of Alfred Street. The study estimates the reconstruction cost of this section of Victoria Street is $1.53 million. Adding this value of work to the current project would require approval through the Town’s annual budget process.

The current road cross-section along this stretch of Victoria Street does not allow for simple grading of the boulevard and installation of a sidewalk. The ditches would have to be replaced by storm sewers so that urban boulevards could be created where a sidewalk would be installed. Water mains and sanitary sewers may have to be extended and or replaced as part of the work. A preliminary engineering assignment would be required to fully understand the details of the required works. At a minimum, the road would have to be reconstructed to facilitate the anticipated infrastructure changes.
There may be some way to construct a sidewalk as a temporary installation with stop gap measures to accommodate the ditch flows while a sidewalk is constructed above it. A unique design of this nature is not readily apparent to staff. The cost of such work is hard to quantify without some consideration of how it might work and what the scope would be. It would be difficult to integrate this type of installation into a future road reconstruction project and therefore the cost of the temporary sidewalk and boulevard preparation would not draw from the Town’s Development Charges funds.

The length of the temporary sidewalk would be approximately 400m. Based on the suggested cost per metre of a 1.5m wide sidewalk shown above, the construction of the sidewalk on a suitable sub-base would be $46,000. The cost of the work to produce a suitable sub-base for the sidewalk and accommodate storm water and road structure drainage that is currently accommodated by the roadside ditch is unknown at this time. Staff have not considered how the sub-base required to support the sidewalk could be prepared. This section of road is outside the scope of the preliminary design assignment for Victoria St. South and Louisa St. West Reconstruction Project and therefore, the geotechnical analysis and topographical survey information is not available to understand the existing conditions.

### Alternatives for Reconstruction of Louisa Street between Bruce Street and Elma Street

During the discussion of CSOPS.20.040 “Victoria Street S and Louisa Street W Reconstruction Design Options”, Council asked for a cost comparison between Alternative 3 and a modification of this alternative which eliminates the need for a retaining wall and dedicated street parking. For this report the modified alternative will be called 3A.

**Alternative #3 (key is one-way traffic to reduce cross-section width and retain existing parking with the smallest retaining wall)**

The discussion on August 11, 2020 seemed to indicate that Council was comfortable with the staff recommendation to change the traffic flow on Louisa Street West between Bruce Street and Elma Street from two-way to one-way west bound. The benefits to this traffic flow are:

- Elimination of an un-desirable turning movement from Louisa Street onto Bruce Street both north bound and south bound; and,
- A traffic flow pattern that takes vehicles away from Bruce Street.

Parallel parking on this section of Louisa Street will be left wheel to curb which complies with the Town’s Parking By-law 2003-47. This alternative would have approximately 27 parking dedicated parking spaces for Downtown Thornbury. The existing parking spaces are not well defined but, there are around 20 existing spaces.

Attachment #3 shows what a one-way 6.0m road with parallel parking left wheel to curb would look like. This alternative will result in the smallest retaining wall of the options presented in CSOPS.20.040.
Attachment #4 shows the plan view of Alternative #3, a one-way road with 6.0m width of asphalt and dedicated parallel parking, left wheel to curb.

**Alternative #3A (key is elimination of dedicated parking along with the retaining wall)**

Alternative 3A was suggested by Council at the August 11, 2020 Committee of the Whole meeting. Council was concerned about having a retaining wall in this road section as it could change the aesthetic feel of the road. The only way to eliminate the retaining wall is to reduce the width of the works. In order to reduce the width of the works to the extent that a retaining wall is not required the dedicated parking would have to be eliminated.

Attachment #5 shows what a one-way 6.0m road with the dedicated parking removed, a barrier curb on the north side of the road and a 1.0m wide nominally flat boulevard for winter snow storage. The barrier curb gains elevation of the boulevard so that the slope south of the road is as shallow as possible.

The road will have to be signed no parking because the 6.0m width of the road is the minimum required for emergency vehicles and must always be clear. All existing parking that the businesses are familiar with on Louisa Street will no longer be available.

Attachment #6 shows the plan view of Alternative #3A, a one-way road with 6.0m width of asphalt and no dedicated parking.

**Existing Retaining Wall at South Edge of Right of Way**

There is a discontinuous retaining wall along the south edge of the Louisa Street Right of Way (ROW). Sections of the wall are on private property and one section of the wall is in the ROW. All sections of the wall are in some state of disrepair and failure. The reconstruction options discussed here and in CSOPS.20.040 suggest this wall will not be reconstructed by the Town, the bench below the wall sections would be filled in and the slope extended to match the existing elevations along the edge of the ROW. The property owners would have the opportunity to reconstruct the wall sections that are on their property at their expense. The reconstruction of services to the property line will mean that sections of the walls will be removed. It will likely prove difficult to reconstruct these wall sections and tie into failing walls and therefore, Staff suggest the wall can be made redundant by filling in the bench.

**Comparison of Cost between Alternative 3 and Alternative 3A**

The difference between alternative 3 and 3A is the dedicated parking lane and the retaining wall. An estimate of the cost of these 2 items is difficult based on 1 cross-section and the preliminary nature of the design. The existing conditions vary widely along the south side of
Louisa Street detailed cross-sections need to be developed at approximately 5m intervals to understand the specific requirements of a retaining wall.

With Alternative 3 many of the large trees near the toe of the existing slope would be lost due to the construction of a retaining wall. Alternative 3A, which eliminates the dedicated parking would not require tree loss for a retaining wall. However, some trees would still be lost to the replacement and correction of services and the general construction work. The Arborist’s Report has not been completed. Based on a discussion with the Arborist many of the mature trees in this road section are reaching end of life.

The estimated cost of the dedicated parking lane is $40,000 to $50,000. Without a more refined design the scope of the retaining wall is difficult to understand in order to provide an estimated cost. Retaining walls higher than 600mm will also require some type of guard to prevent people from falling off the wall. The retaining wall might be in the order of $100,000 to $200,000 and the guard might be $50,000 to $100,000. That means the difference in cost between Alternative 3 and Alternative 3A may be between $190,000 and $350,000.

The reconstruction of Louisa Street could also reshape the slope to a maximum of 2:1. This is not as steep as a few sections of the existing slope. This action could see the amount of retaining wall required reduced significantly. However, likely all of the existing trees would be lost and a planting plan to re-create the urban canopy would be required.

**Conclusion and Recommendations**

**Victoria Street Sidewalks**

**Recommendation**
Staff recommend Victoria Street South between Alfred Street and Arthur Street be reconstructed with 2 sidewalks.

**Victoria Street Sidewalk South of Alfred Street**

**Recommendation**
Given the unknown infrastructure changes and design requirements as noted above, Staff recommend the development of a Capital Project Sheet for the design and reconstruction of Victoria Street S between Alfred Street and Napier Street for consideration as part of the 2021 Town Budget.

**Louisa Street between Bruce Street and Elma Street**

**Recommendation**
Staff recommend Council direct Staff to advance the preliminary design of Louisa Street West between Bruce Street South and Elma Street South with Alternative 3.

D. The Blue Mountains Strategic Plan

Goal #1: Create Opportunities for Sustainability
Objective #1 Retain Existing Business
Objective #2 Attract New Business

Goal #3: Support Healthy Lifestyles
Objective #3 Manage Growth and Promote Smart Growth

Goal #4: Promote a Culture of Organizational & Operational Excellence
Objective #5 Constantly Identify Opportunities to Improve Efficiencies and Effectiveness

Goal #5: Ensure Our Infrastructure is Sustainable
Objective #2 Avoid Unexpected Infrastructure Failure and Associated Costs and Liability
Objective #3 Implement Best Practices in Sustainable Infrastructure
Objective #4 Ensure that Infrastructure is Available to Support Development

E. Environmental Impacts

The construction activities will release greenhouse gases.

F. Financial Impact

The Victoria and Louisa Street Reconstruction budget was approved in the 2019 Capital Budget for a total of $6,559,700.

During the preparation of this budget considerations were not given to the parking issue on Louisa Street or having a second sidewalk on Victoria Street. Both of these additions could come with Development Charge funding as they are growth related. At this time staff are not requesting an increase to the capital budget until more work has been done to get better cost estimates.

G. In Consultation With

Shawn Everitt, CAO
Shawn Carey, Director of Operations
Sam Dinsmore, Deputy Treasurer/Manager of Accounting and Budgets
Allison Kershaw, Manager of Water and Wastewater Services
Jim McCannell, Manager of Roads and Drainage
H. Public Engagement

The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. Comments regarding this report should be submitted to Michael Campbell, cc@thebluemountains.ca.

I. Attached

1. Attachment #1 Map of Project Area
2. Attachment #2 CSOPS.20.040 “Victoria Street S and Louisa Street W Reconstruction Design Options”
3. Attachment #3 & #4 Alternative #3 Cross-section & Plan
4. Attachment #5 & #6 Alternative #3A Cross-section & Plan

Respectfully submitted,

Michael Campbell  
Construction Coordinator

Shawn Carey  
Director of Operations

For more information, please contact:  
Michael Campbell  
cc@thebluemountains.ca  
519-599-3131 extension 275
This map is intended for reference purposes only. Information shown on this map has been compiled from numerous sources and may not be complete or accurate and may be subject to change without notice. The Town of The Blue Mountains is not responsible for any errors, omissions or deficiencies in this drawing. No part of this map may be reproduced, modified or transmitted to others in any way without the written permission of © The Corporation of the Town of The Blue Mountains (2019)

THIS IS NOT A PLAN OF SURVEY.
A. Recommendations

THAT Council receive Staff Report CSOPS.20.040, entitled “Victoria St. S. and Louisa St. W. Reconstruction Design Options”;

AND THAT Council provide direction on the number of sidewalks that will be constructed on Victoria Street South between Alfred Street West and Arthur Street West and direct Staff to advance the preliminary design with ___ sidewalks.

AND THAT Council select a cross-section from the 5 alternatives for Louisa Street West between Bruce Street South and Elma Street South and direct Staff to advance the preliminary design with Alternative ___.

B. Overview

The purpose of this report is to present a review of design options for the reconstruction of Victoria St. S. between Alfred Street and Arthur Street and Louisa St. W. between Bruce Street and Victoria Street.

Due to the time sensitivity of this project, the Transportation Committee members have not been involved in this report, however members of the committee have been copied directly.

Attachment #1 provides a map of the Project Area discussed in this report.

C. Background

Victoria Street Cross-section and the Number of Sidewalks

Victoria Street South between Alfred Street West and Louisa Street West is a hybrid mix of urban and rural cross-section elements. The 2019 Development Charges Background Study (DCBS) suggests the road would be reconstructed as a collector road. Because the Town does not have collector road cross-section approved by Council in the Town Engineering Standards, the DCBS defaults to the Town’s Standard Cross-section to define the design elements to be included in the reconstruction. The DCBS recommended improvements are as follows:
• Improvement Type: reconstruct with storm sewers (urban section)
• Road Width: 8.5m
• Pedestrian Route: 1.5m sidewalk on one side of the street (east side)
• Streetlight: standard streetlight
• Street Tree: 20m spacing both sides

Victoria Street Sidewalks South of Alfred Street

Following years of ongoing development in Thornbury, Staff are now trying to provide connected sidewalks. The pending Transportation Master Plan will identify deficiencies in the active transportation system including sidewalk connectivity. This project provided the example of the sidewalk on Napier Street at Victoria Street that provides no connection.

The current project as approved in the 2019 budget will see Victoria Street reconstructed between Arthur Street and Alfred Street. The work will include at least 1 sidewalk. When Victoria Street is reconstructed there will be a gap in the sidewalk connectivity along Victoria Street between Alfred Street and Napier Street. A sidewalk to fill this gap would produce an alternate and additional pedestrian route between the Beaver Valley Community School and Moreau Park. In addition, the sidewalk will enhance active transportation in Thornbury.

Since the sidewalk is outside the original scope of work for the current project, the sidewalk connection has not been considered at this time unless Council directs Staff to include these works.

Louisa Street between Bruce Street and Elma Street

Louisa Street West between Bruce Street South and Elma Street South is a unique cross-section that Staff suggest may have been developed as a best fit to accommodate the terrain. Staff have identified a number of challenges that will be highlighted through the design alternatives.

The grade differential from the north side of the Right of Way (ROW) to the south side provides a particular challenge that is not often encountered. There will have to be some compromises in achieving a cross-section for the reconstruction of this road section.

D. Analysis

Victoria Street Cross-section and the Number of Sidewalks

Victoria Street South between Alfred Street West and Louisa Street West is listed in the 2019 Development Charges Background Study as a collector road. The Town does not have a collector road cross-section to provide guidance on what design elements should be included. The Town’s Official Plan does not list this section of Victoria Street South as a local road.

With the shopping and restaurants at Arthur Street and recreational and community facilities at Alfred Street this route may benefit from an enhanced level of service for active transportation.
Based on the decisions regarding sidewalks on Elma Street, Staff recommend 2 sidewalks on Victoria Street between Arthur Street and Alfred Street.

**Alternatives for Reconstruction of Louisa Street between Bruce Street and Elma Street**

The reconstruction of Louisa Street will have some challenges typical of projects in the older developed areas of the Town. A unique cross-section may need to be developed at the direction of Council. Several design options are discussed below.

**Alternative #1 (key is possible reduction of existing Downtown Thornbury parking)**
Attachment #2 shows the current Town Standard Cross-section centered in the ROW with a minimal boulevard on the south side of the road for snow storage. This option would require a significant retaining wall along with utility relocations and tree loss. This option does not include dedicated street parking. The loss of street parking in Thornbury would be a negative result even with the Town’s recent acquisition on Arthur Street West.

Attachment #3 shows a plan view of Alternative #1, the Town Standard Cross-section centered in the ROW. This would be the proper design of the local street in Thornbury if the topography were not an issue.

**Alternative #2 (key is retaining existing parallel parking with standard two-way traffic)**
Attachment #4 shows the current Town Standard Cross-section shifted to the north within the ROW such that the north curb is at the same location as the current curb. This option also shows 2.75m wide parallel parking stalls with 1.25m space to open a passenger side door.

Two-way traffic on Louisa Street to accommodate vehicles and cyclists having a width of 8.5m would be a design minimum. The width of the works will require a significant retaining wall due to the 8.5m of road, curbs and retention of parking facilities on the south side of the street.

Attachment #5 shows a plan view of Alternative #2, the Town Standard Cross-section with the centerline of the asphalt shifted north and a row of dedicated parallel parking.

**Alternative #3 (key is one-way traffic to reduce cross-section width, retain existing parking with smallest retaining wall)**
The only option for making the road width smaller would be to eliminate two-way traffic. One-way traffic, from Bruce Street to Elma Street, has some interesting opportunities. Some of these are:

- Elimination of an un-desirable turning movement from Louisa Street onto Bruce Street both north bound and south bound;
- A traffic flow pattern that takes vehicles away from Bruce Street;
- 6m width of one-way traffic is suitable for emergency vehicles; and,
- Reduced width provides better opportunity to retain or add municipal parking.
When considering parallel parking on Louisa Street one might first think that the parking would be right wheel to curb like parallel parking on a two-way street. Right wheel to curb parking would see a reduction in the number of parking stalls due to the existing entrances. However, The Town’s Parking By-law 2003-47 suggests the norm for parking on one-way streets is left wheel to curb. This means a similar number of new parallel parking stalls could be reconstructed compared to what exists.

Attachment #6 shows what a one-way 6.0m road with parallel parking left wheel to curb would look like. This alternative will result in the smallest retaining wall.

Attachment #7 shows the plan view of Alternative #3, a one-way road with 6.0m width of asphalt and dedicated parallel parking, left wheel to curb.

**Alternative #4 (key is 45° angle parking to increase parking spaces over existing parallel parking spaces)**
While the Parking By-law does not clearly suggest angle parking on one-way streets, it might be considered here. The Town currently has angle parking, left wheel to curb on the one-way section of Hester Street. Angle parking would increase the number of stalls by approximately 80%. Due to the width of this option a tall retaining wall would be required.

Attachment #8 shows what a one-way 6.0m road with angle parking left wheel to curb would look like.

Attachment #9 shows the plan view of Alternative #4, a one-way road with 6.0m width of asphalt and dedicated 45° angle parking, left wheel to curb.

Another parking stall arrangement is perpendicular parking. This arrangement occupies approximately the same width of the right of way as 45° angle parking but achieves approximately 20% more spaces. This arrangement is not permitted by the current Town By-law and for that reason may be eliminated for consideration.

**Alternative #5 (key is use of another form of parallel parking without a curb to define the parking area)**
Attachment #10 shows a simplified version of Alternative #3. The 3.0m wide parallel parking is not separated from the one-way 6.0m wide road by a curb.

By eliminating the mountable curb between the traveled portion of the road and the parking stalls might look like a two-way road and confuse visitors to the Town.

Attachment #11 shows the plan view of Alternative #5, a one-way road with 3.0m of parallel parking painted out, left wheel to curb.
All the options for reconstructing Louisa Street between Bruce Street and Elma Street will require a retaining wall, tree removal and utility relocation. The wider the works; the taller the wall. The effect of the retaining wall will be the loss of pedestrian access from the lots to Louisa Street. It is not known how this would be received by the landowners.

**Conclusion and Recommendations**

**Victoria Street Sidewalks**

**Recommendation**
Staff recommend Victoria Street South between Alfred Street and Arthur Street be reconstructed with 2 sidewalks (both sides of the road).

**Louisa Street between Bruce Street and Elma Street**

There are a few option combinations to consider for Louisa Street between Bruce Street and Louisa Street. The 2 main considerations are whether to increase parking and change traffic flow to one-way.

Regardless of the road cross-section selected, a retaining wall will be required. The width of the road cross-section and where it is centered within the ROW will dictate the height and cost of the retaining wall. A 6.0m wide one-way road Bruce Street to Elma Street with parallel parking (Alternative #3) would address the turning motion from Louisa onto Bruce and retain the parking spaces in the downtown core.

**Recommendation**
Staff recommend Alternative #3 as the best compromise on the retaining wall, parking and traffic flow.

**E. The Blue Mountains Strategic Plan**

| Goal #1: Create Opportunities for Sustainability |
| Objective #1 Retain Existing Business |
| Objective #2 Attract New Business |

| Goal #3: Support Healthy Lifestyles |
| Objective #3 Manage Growth and Promote Smart Growth |

| Goal #4: Promote a Culture of Organizational & Operational Excellence |
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F. Environmental Impacts

The construction activities will release greenhouse gases.

G. Financial Impact

The Victoria and Louisa Street Reconstruction budget was approved in the 2019 Capital Budget for a total of $6,559,700.

During the preparation of this budget considerations were not given to the parking issue on Louisa Street or having a second sidewalk on Victoria Street. Both of these additions could come with Development Charge funding as they are growth related. At this time staff are not requesting an increase to the capital budget until more work has been done to get better cost estimates.

H. In Consultation With

Shawn Everitt, CAO
Shawn Carey, Director of Operations
Sam Dinsmore, Deputy Treasurer/Manager of Accounting and Budgets
Allison Kershaw, Manager of Water and Wastewater Services
Jim McCannell, Manager of Roads and Drainage

I. Public Engagement

The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. Comments regarding this report should be submitted to Michael Campbell, cc@thebluemountains.ca.

J. Attached

1. Attachment #1 Map of Project Area
2. Attachment #2 & #3 Alternative #1 Cross-section & Plan
3. Attachment #4 & #5 Alternative #2 Cross-section & Plan
4. Attachment #6 & #7 Alternative #3 Cross-section & Plan
5. Attachment #8 & #9 Alternative #4 Cross-section & Plan
6. Attachment #10 & #11 Alternative #5 Cross-section & Plan
Respectfully submitted,

Michael Campbell  
Construction Coordinator

Shawn Carey  
Director of Operations

For more information, please contact:  
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ALTERNATIVE 3: MODIFIED
CROSS-SECTION - 6.0 m ONE-WAY ROAD
3.35 m OFFSET FROM ROW
**ALTERNATIVE 3**

**MODIFIED CROSS SECTION – 6.0 m ONE WAY**

**ROAD 3.35 m OFFSET FROM ROW**

**KEY:** ONE-WAY TRAFFIC TO REDUCE CROSS SECTION WIDTH, RETAIN EXISTING PARKING WITH SMALLEST RETAINING WALL

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**TATHAM ENGINEERING**

**CSOPS.20.049**

**Attachment 4**
ALTERNATIVE 3A: MODIFIED CROSS-SECTION - 6.0 m ONE-WAY ROAD 3.35 m OFFSET FROM ROW

SCALE: 1:100 DATE: JAN/2020 DWG. No. LOUISA-XS-03A

Drawing Name: 119213-APX01-Louisa Street Alternative 3A.dwg, Plotted: Aug 11, 2020
KEY: ONE-WAY TRAFFIC TO REDUCE CROSS SECTION WIDTH – ELIMINATES PARKING AND RETAINING WALLS

ALTERNATIVE 3
MODIFIED CROSS SECTION – 6.0 m ONE WAY ROAD 3.35 m WIDTH OFFSET FROM ROW

TATHAM ENGINEERING

ALTERNA Tl VE 3
MODIFIED CROSS SECTION – 6.0 m ONE WAY ROAD 3.35 m WIDTH OFFSET FROM ROW