



# Technical Memorandum

To: Colin Haskin, Hugo Lalonde – Caivan Date: 2022-11-24

Cc:

From: John Kingsley, Christopher Gordon – CGH Project Number: 2021-117

## Re: Perth Golf Course Access Options

### 1 Context

The Infrastructure Master Plan (IMP) for the Western Annexed Lands of the Town of Perth, prepared by JP2G Consultants Inc (2019) outlined options and selected a preferred alternative among them for access to the planned Golf Course Community which is separated from the town by the Tay River, all of which included the use of the existing Peter Street Bridge.

For community access, the IMP considered three scenarios.

- The first was that all traffic use the Peter Street Bridge, which was deemed not acceptable due to emergency access requirements, without examining the suitability of the existing bridge for the purpose of conveying traffic
- The second was the construction of a second bridge to the County Office, providing a second site access to Christie Lake Road/Sunset Boulevard
- The third scenario was the creation of a one-way couplet with Peter Street and North Street, by constructing a second bridge as an extension of North Street, and was not preferred partly due to the fact that a high traffic volume would be using North Street which is classified as a local road, and that a signal would need to be installed at the intersection of North Street at Wilson Street West

The IMP's recommendation was somewhat unclear about how much traffic could be accommodated on the Peter Street bridge before a second crossing is constructed. As such, further examination of the Peter Street Bridge options is warranted and documented herein.

The memo additionally discusses traffic impacts and traffic calming options for the surrounding neighbourhoods to the east of the planned development, both in the context of the proposed access options and for general consideration for the proposed development. As well, the second crossing preliminary concept is also developed in order to compare it to the preferred Peter Street Bridge alternative.

#### 1.1 Tying Into the Existing Network

An area context map east of the Peter Street Bridge and noting approximate property parcels is illustrated in Figure 1. A description of the potentially implicated network elements for access and a discussion on the use of each follows.

Figure 1: Peter Street Bridge Area Context and Property Map



### 1.1.1 Lanark County Administration Building Access

In addition to requiring a second bridge, access to the Lanark County Administration Building driveway would require County agreement, road upgrades to bring the driveway to public road standards, and coordination between Tay Valley Township, Drummond Township, Lanark County, and the Town of Perth, given the property impacts, as stated by Julie Stewart representing Lanark County at a meeting with the development team on September 16, 2022.

Alternative crossing locations to this access on the north of the planned Golf Course Community may be considered, including to the planned Tayview community to the northwest, however for the purposes of this memo, all alternative crossing locations beyond those hereafter explicitly discussed will be treated equally.

### 1.1.2 Peter Street

All access arrangements within this memo and the IMP consider the use of Peter Street via the existing bridge connection. This bridge has a narrow deck which, while comprising two travel lanes, will not permit collector road traffic, or local road traffic in excess of approximately 300 vehicles per peak hour. The shoulder-less rural cross-section of Peter Street pinches down to 5.5 metres of pavement width, and transitions to an urban cross-section of 7.5 metres pavement at Lustre Lane with a sidewalk on the north side of the road, and sidewalks are present on both sides of the road east of Rogers Road. In addition to the narrow right of way and narrow pavement width, building setbacks are unusually narrow on Peter Street as well, and this sensitive context contributes to the concerns for the increase of traffic of the roadway from the proposed development.

Immediately west of Lustre Lane, the roadway departs the protected right of way for the alignment across the Tay River, as illustrated in Figure 1. The right of way is still reserved south of this departure, however.

### 1.1.3 Lustre Lane

North Street terminates at a 90-degree bend and becomes Lustre Lane, which spans only between North Street and Peter Street. Lustre Lane's intersection with Peter Street is offset approximately 30 metres from roadway crown to roadway crown, which is considered too close for safe operations beyond minor traffic volumes. This offset distance may require mitigation generally, but especially in the event that additional volumes be added to Lustre Lane. Lustre Lane has an urban cross-section including 8.0 metres of pavement width.

### 1.1.4 North Street

All access arrangements can make use of North Street via Lustre Lane, but the one-way couplet option per the IMP proposes the extension of the road across the river to meet the unopened allowance of its extension west of the river. The Carolina Suites retirement complex property includes a parking lot west of the current terminus of North Street at the 90-degree bend to Lustre Lane. These features are illustrated in Figure 1.

## 1.2 Traffic Calming for the Existing Neighbourhood

Multiple options were explored for traffic calming within the neighbourhood surrounding the Peter Street bridge. The following elements were those with the most applicability to the context, and have implications for the crossing alternatives.

### 1.2.1 Mini Roundabout

A mini roundabout at the intersection of Lustre Lane and Peter Street was considered but discounted partly due to the footprint of such a treatment, especially in the context of limited property (parcel 0285). Compliance issues with control measures at a mini roundabout and appropriate configurations for active modes are also difficulties inherent to this type of treatment. However, if property constraints were alleviated, the treatment would improve the conditions for the Peter Street, Lustre Lane, and North Street interface, and provide traffic calming for Peter Street and is deserving of consideration should conditions change.

### 1.2.2 Peter Street Speed Treatments

Various options for reducing speeds on Peter Street may be employed. While the existing narrow pavement width will reduce the opportunity for speeding, flexible post centreline treatments may further augment this effect. Speed humps may also be explored, and provide calming effect year-round, unlike the seasonal flexible post installation. Bulb-outs at Rogers Road, Thom Street, and/or Lewis Street may additionally be included to narrow the pavement width to 7.0 metres to reduce speeds at these locations. In accordance with the recommendations from the Golf Course community Traffic Review by CGH, it is recommended that any such measures be explored on an as-needed basis through monitoring of the conditions as the subject development builds out.

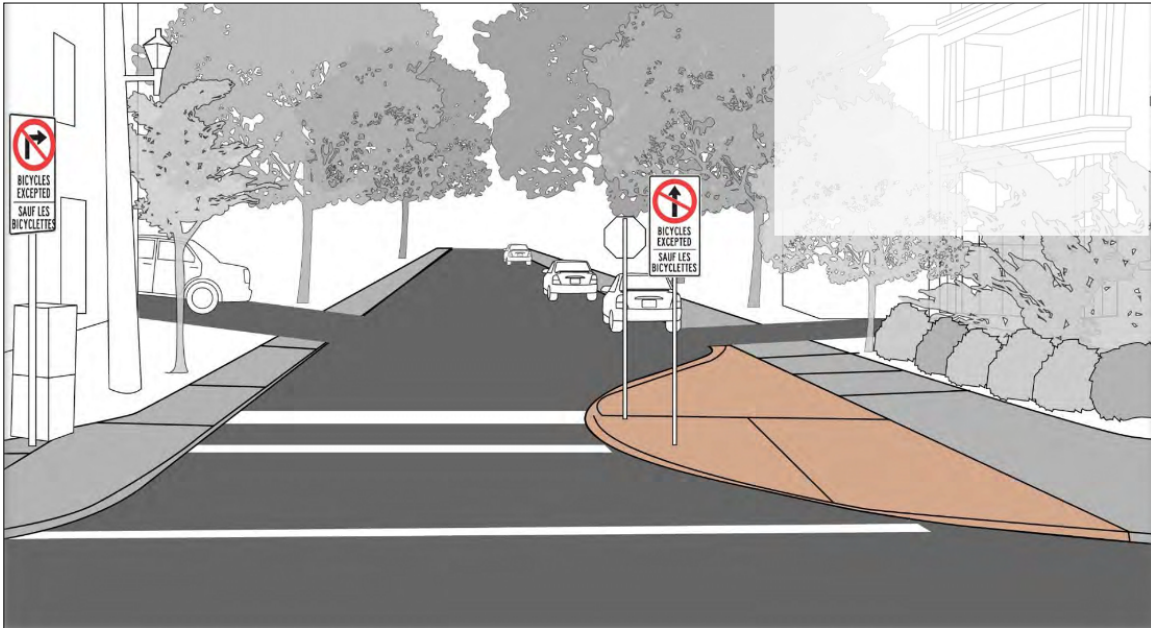
### 1.2.3 Directional Restriction and Functional One-Way Couplet

All alternatives for access may include the introduction of a directional restriction via the installation of a bulb-out on Peter Street between Lustre Lane and Rogers Road. This treatment would functionally create a one-way couplet of Peter Street and North Street for site traffic, permitting two-way traffic for most of the existing neighbourhood. The majority of outbound site traffic would be anticipated use Peter Street, and all inbound site traffic would be required to use North Street. As with the one-way couplet scenario from the IMP, the signalization of the intersection of North Street and Wilson Street West would need to be investigated for this treatment. Additionally, inbound traffic that would otherwise use Rogers Road would either divert east on Peter Street, north on Lewis Street, and then west on North Street, or divert through the downtown area.

Conceptually, at the end of the first phase of development during the PM peak hour, this treatment would reduce site-generated traffic on Peter Street from an average of approximately six two-way vehicles per minute to

approximately two, by shifting the balance to North Street. During the AM peak hour, this reduction would be from approximately ten two-way vehicles every two minutes on Peter Street to approximately seven every two minutes. A conceptual implementation of this treatment is illustrated in Figure 2.

Figure 2: Directional Closure Treatment



#### 1.2.4 Rogers Road Speed Treatments

As discussed within the TMP, speeding on Rogers Road is a consistent phenomenon. The pavement width of the road averages approximately 9.0 metres, and especially when on-street parking is not utilized, this width and the straightness of the travelled path are suspected to contribute to the high operating speeds, which may be a concern for residents.

Rogers Road is a direct path to/from the site from/to South Street/Scotch Line Road to the south, which a portion of site traffic may use, bypassing the downtown by using Rogers Road to do so. As such, it is anticipated that speeding concerns will be applicable to site traffic, and therefore speeding treatments may be accordingly investigated. Recommended treatments include electronic driver feedback speed display signs (“Your Speed” signs), or the installation of an automated speed enforcement device (speed trap). This latter treatment, however, is noted to impact area residents most frequently and should be considered through consultation with the potentially impacted communities.

## 2 Peter Street Bridge Alternatives

### 2.1 List of Access Alternatives

The following layouts present the conceptual alternatives explored through this memo, including a description of features, elements, costs, and phasing considerations.



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**1 - Do Nothing**

- Existing bridge would need to assume a local classification
- Absence of active transportation connection to the community will not be accepted by Town as anything other than an interim condition, and would have special monitoring and signage requirements
- Lack of secondary emergency access would limit development to approximately 200 units
- No costs at present; future rehabilitation costs, as previously summarized in HP report, will still apply

WIDEN EXISTING ROAD TO 7.5m

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			



**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

CLIENT: Caivan Communities  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

SITE: Caivan Perth

TITLE: Option 1

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
PROJECT NO:	DRAWING NO:	REVISION:	
2021-117	000	02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**2A - Construct a Separate MUP Bridge (3m)**

- MUP bridge (3m) to be constructed primarily to serve pedestrian traffic in the first phase of development
- Second bridge would need to be constructed after the first 200 or so units
- Will need to widen the existing bridge to permit collector after 300 units' traffic and this cost cannot be bundled with that work
- A sidewalk connection on the one side of the bridge will be included on a future widened deck, but no active transportation facilities will be on the other side, given the presence of the separate MUP bridge
- Costs based on the preliminary drawings, a bridge length of 30m may be required (although further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints); assuming a 30m total bridge x 3m wide

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV: DESCRIPTION:		BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

**CLIENT:** Caivan Communitites  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

**ARCHITECT:**

**SITE:** Caivan Perth

**TITLE:** Option 2A

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
<b>PROJECT NO:</b>	<b>DRAWING NO:</b>	<b>REVISION:</b>	
2021-117	001	02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**2B - Construct a Separate MUP Bridge (3m)**

- MUP bridge (3m) to be constructed primarily to serve pedestrian traffic in the first phase of development
- Second bridge would need to be constructed after the first 200 or so units
- Will need to widen the existing bridge to permit collector after 300 units' traffic and this cost cannot be bundled with that work
- A sidewalk connection on the one side of the bridge will be included on a future widened deck, but no active transportation facilities will be on the other side, given the presence of the separate MUP bridge
- Costs based on the preliminary drawings, a bridge length of 30m may be required (although further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints); assuming a 30m total bridge x 3m wide

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV: DESCRIPTION:		BY:	DATE:
STATUS:			

CGH Transportation  
6 Plaza Court  
Ottawa, ON  
K2H 7W1  
(343) 999-9117

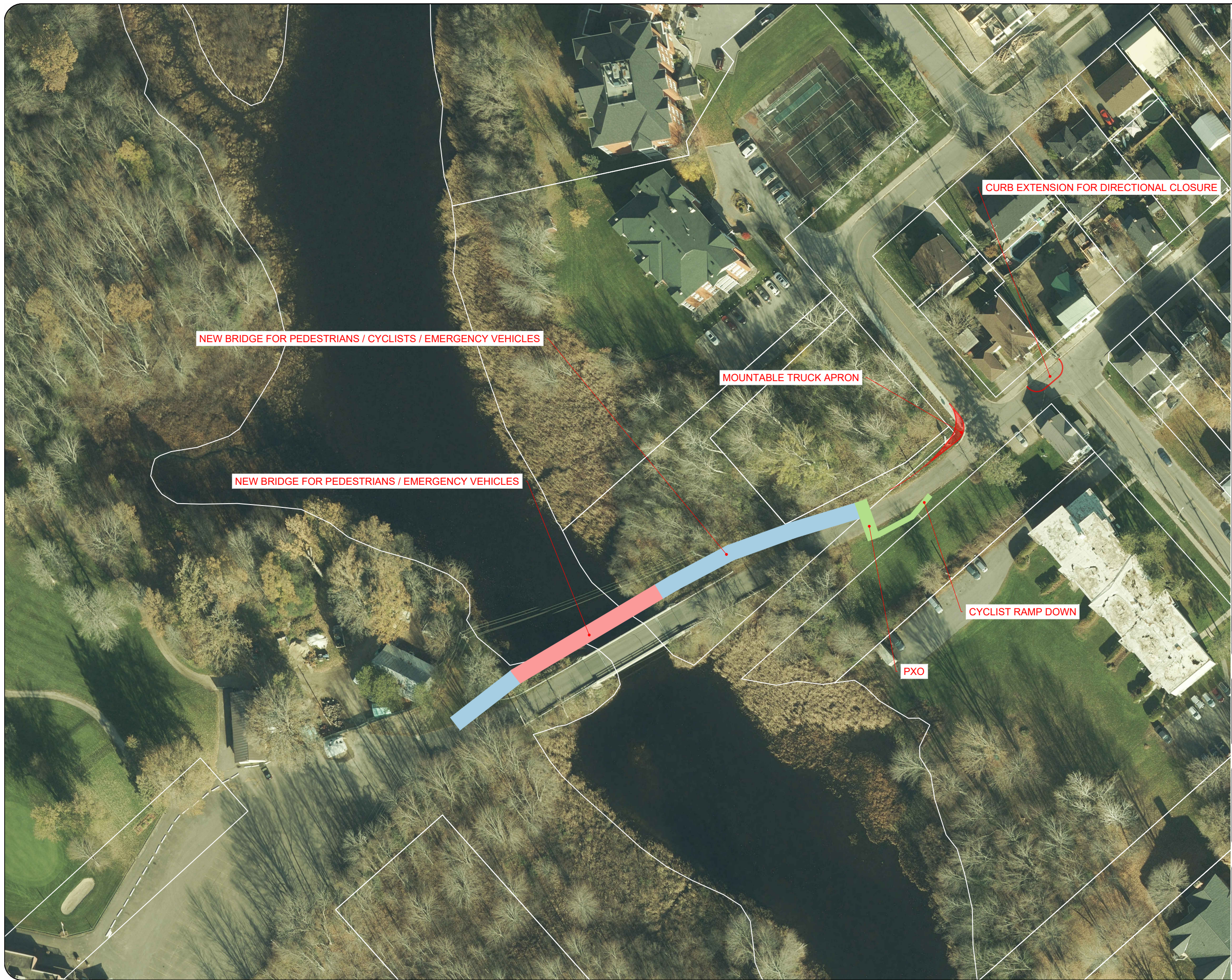
CLIENT: Caivan Communities  
2934 Baseline Road, Suite 302  
Ottawa, ON  
K2H 1B2

ARCHITECT:

SITE: Caivan Perth

TITLE: Option 2B

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
PROJECT NO:	DRAWING NO:	REVISION:	
2021-117	002	02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**3 - Construct a Separate MUP Bridge (4.5m)**

•MUP/sidewalk bridge (4.5m) to be constructed to serve active modes, but also functioning as a secondary emergency access

•Will ultimately need to widen the existing bridge to permit collector traffic (beyond 300 units) and this cost cannot be bundled with that work

•Costs based on the preliminary drawings, a bridge length of 30m may be required (although further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints); assuming a 30m total bridge x 4.5m wide (suitable to accommodate emergency vehicles)

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

CLIENT: Caivan Communities  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

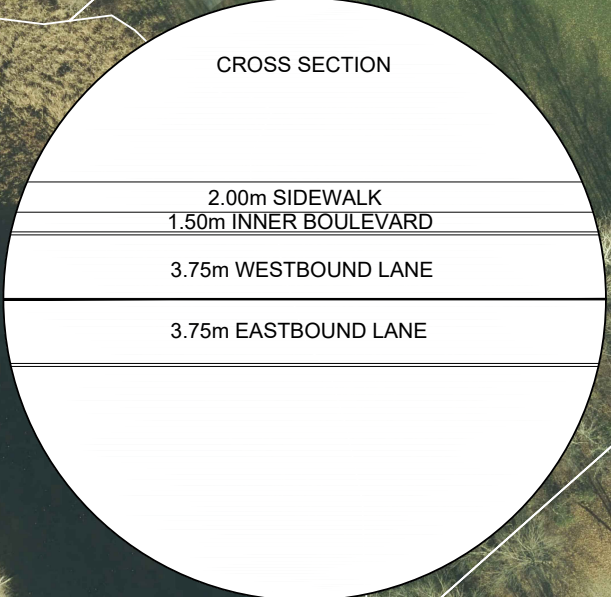
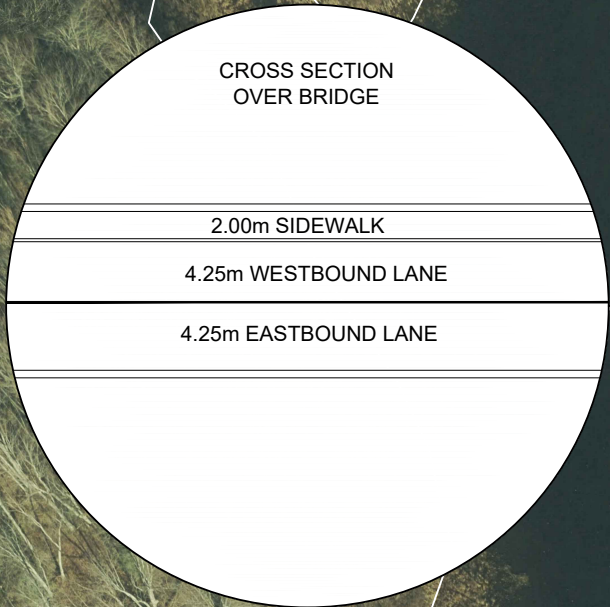
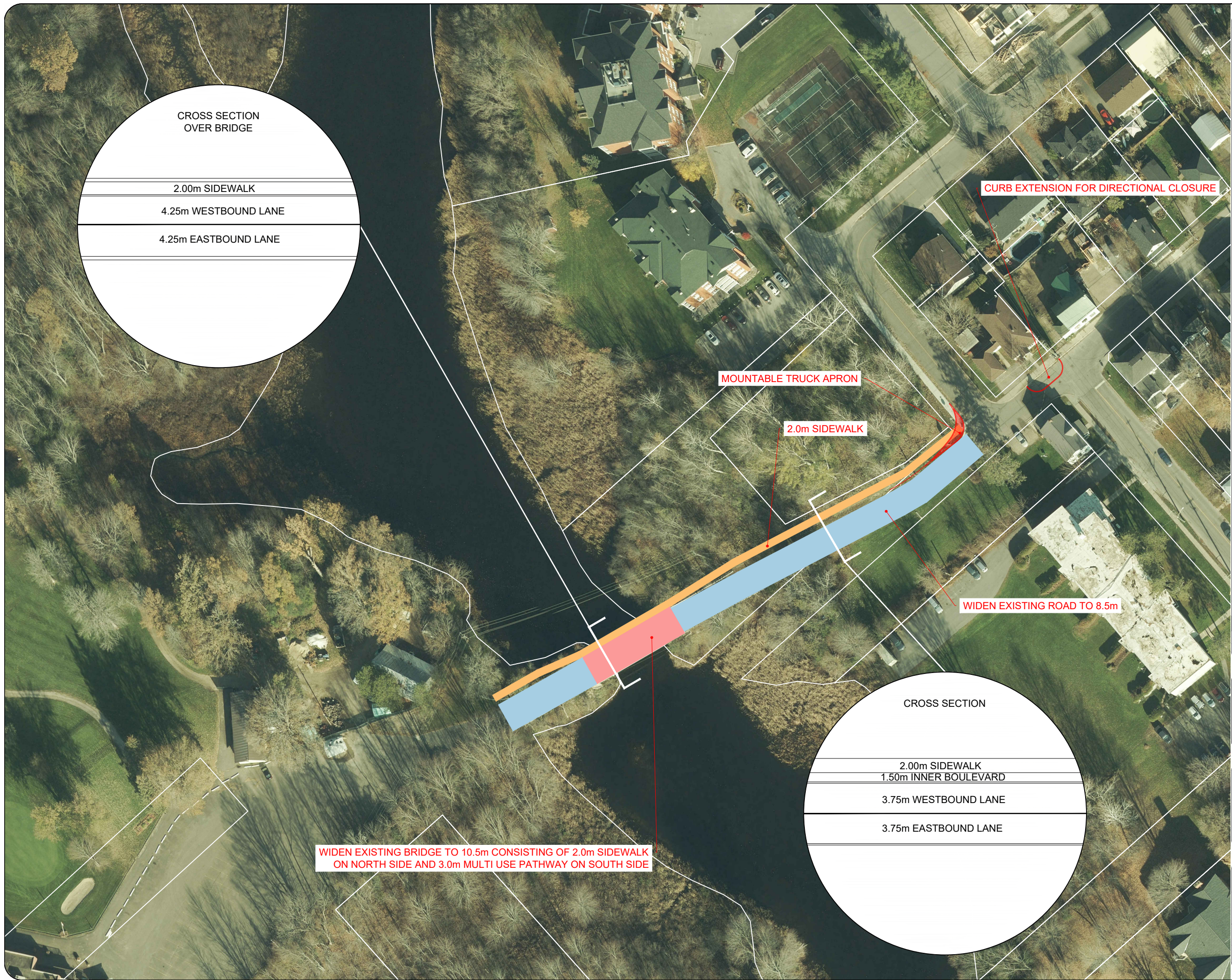
ARCHITECT:

SITE: Caivan Perth

TITLE: Option 3

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
PROJECT NO:	DRAWING NO:	REVISION:	
2021-117	003	02	





Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**4 - Widen Deck for Collector Traffic, Sidewalk (One Side)**

- Single construction project option that is triggered by the need for pedestrian facilities
- Satisfies all present and future pedestrian connectivity requirements on the east side of the community
- May be implemented if local road justification is not accepted by the Town
- Does not create a second access for emergency servicing capping development at 200 units and requiring second bridge down the line
- Discontinuous cycling facility
- For the widened bridge, a similar span length (e.g., approx. 20m) could likely be achieved; widened bridge would be 10.5m compared to existing 7.5m

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

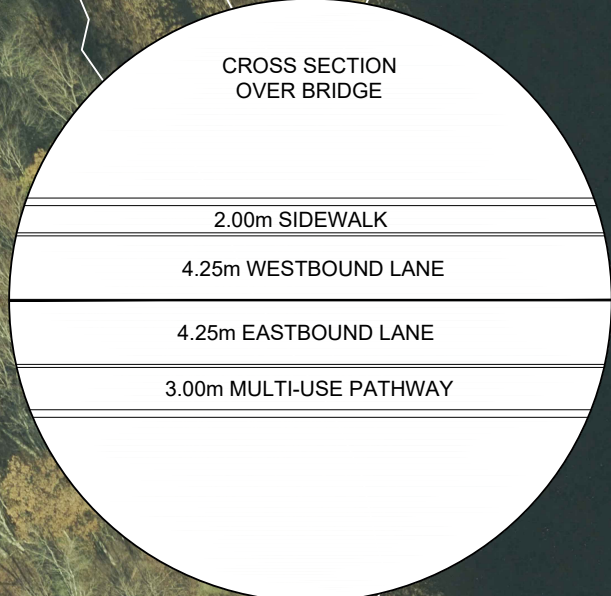
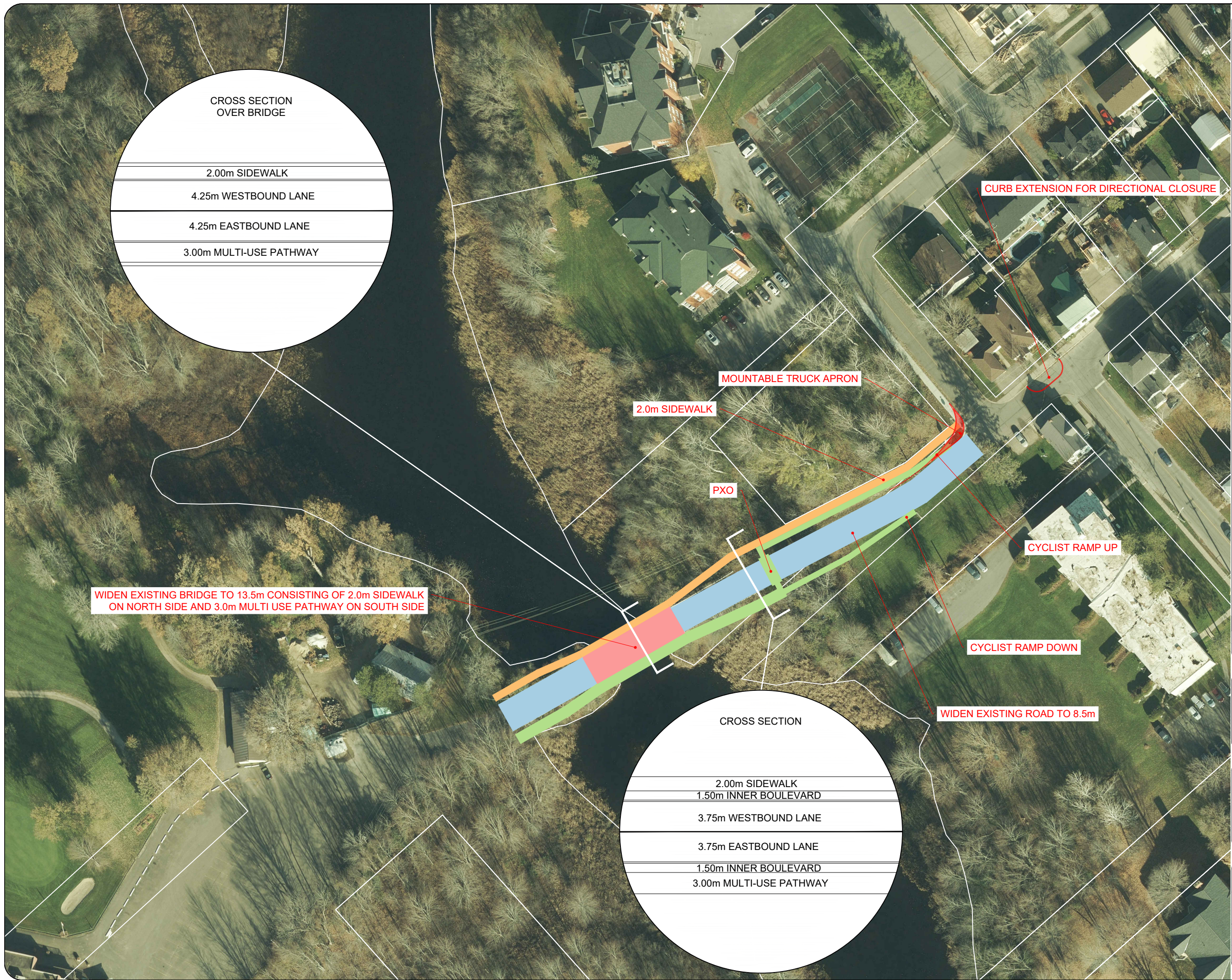
**CLIENT:** Caivan Communities  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

**ARCHITECT:**

**SITE:** Caivan Perth

**TITLE:** Option 4

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
PROJECT NO:	DRAWING NO:	REVISION:	
2021-117	004	02	



Notes:

**LEGEND**

<span style="color: green;">█</span>	MULTI USE PATHWAY
<span style="color: orange;">█</span>	SIDEWALK
<span style="color: blue;">█</span>	ROAD WIDENING/NEW ROAD
<span style="color: red;">█</span>	BRIDGE WIDENING / NEW BRIDGE

**5 - Widen Deck for Collector Traffic, Sidewalk, MUP**

- Single construction project option that is triggered by the need for pedestrian facilities during the first phase
- Satisfies all present and future connectivity requirements on the east side of the community, but not emergency services requirements, capping the development at 200 units
- For the widened bridge, a similar span length (e.g., approx. 20m) could likely be achieved; widened bridge would be 13.5m compared to existing 7.5m

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

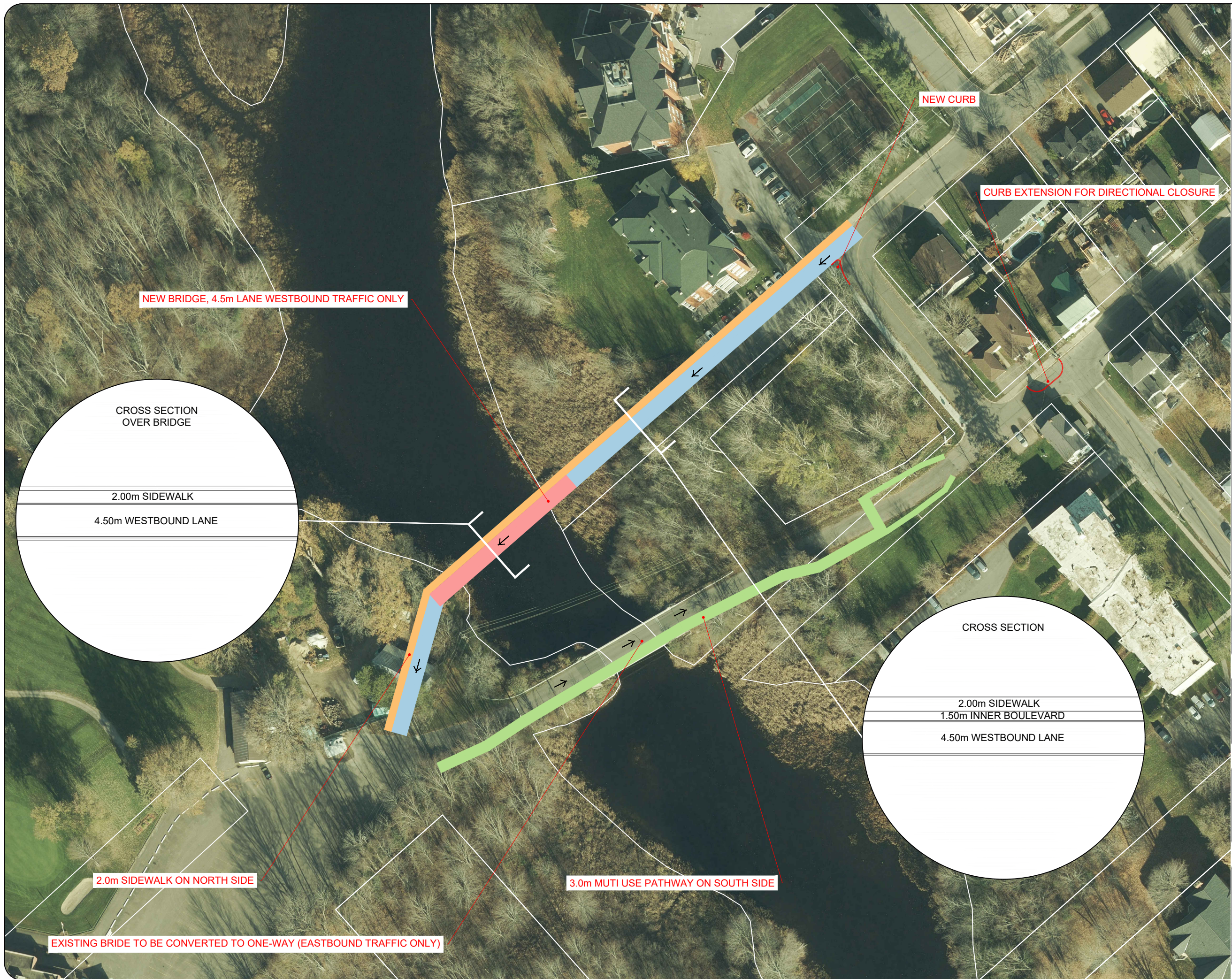
**CLIENT:** Caivan Communitites  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

**ARCHITECT:**

**SITE:** Caivan Perth

**TITLE:** Option 5

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
PROJECT NO:	DRAWING NO:	REVISION:	
2021-117	005	02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**6 - Construct New Bridge North of Existing, Sidewalk and Westbound Travel Lane**

- Bridge to be located between discontinuous North Street ROWs
- Will require property from Carolina Suites, in the location of an existing parking lot
- New bridge to include westbound (inbound lane) and sidewalk
- Existing bridge to be converted to eastbound (outbound) lane and MUP
- New bridge will provide secondary access point for emergency transportation
- Assuming no widening is required and based on the preliminary drawings, a bridge length of 35m may be required (although further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints); assuming a 35m total bridge (with a roadway width of 6.5m)

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV: DESCRIPTION:		BY:	DATE:
STATUS:			

CGH Transportation  
6 Plaza Court  
Ottawa, ON  
K2H 7W1  
(343) 999-9117

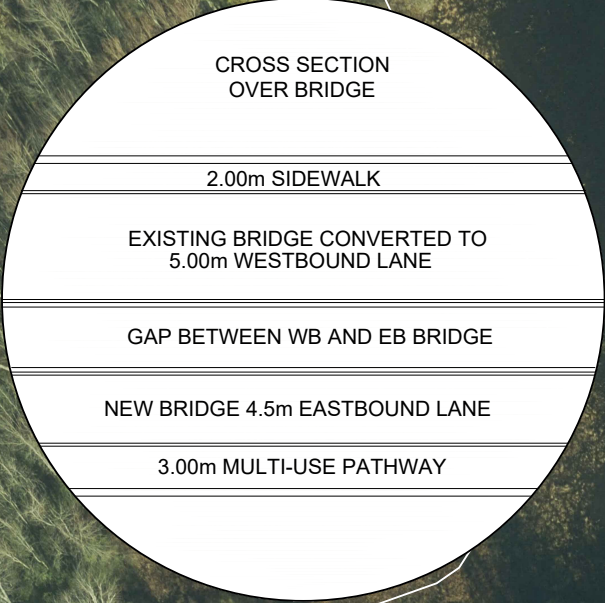
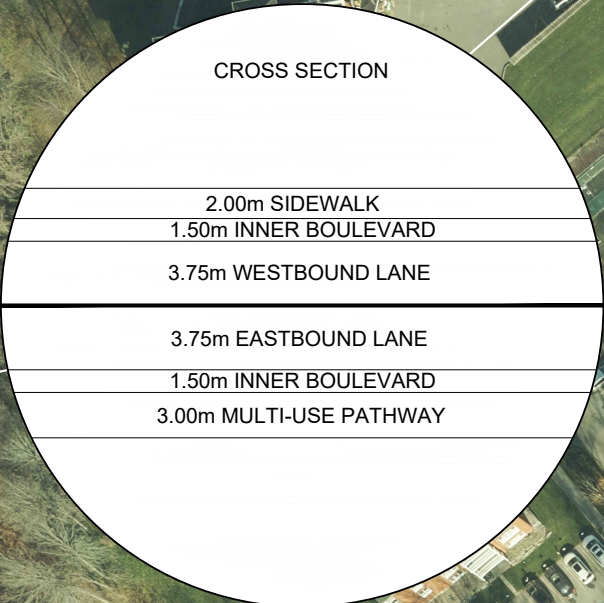
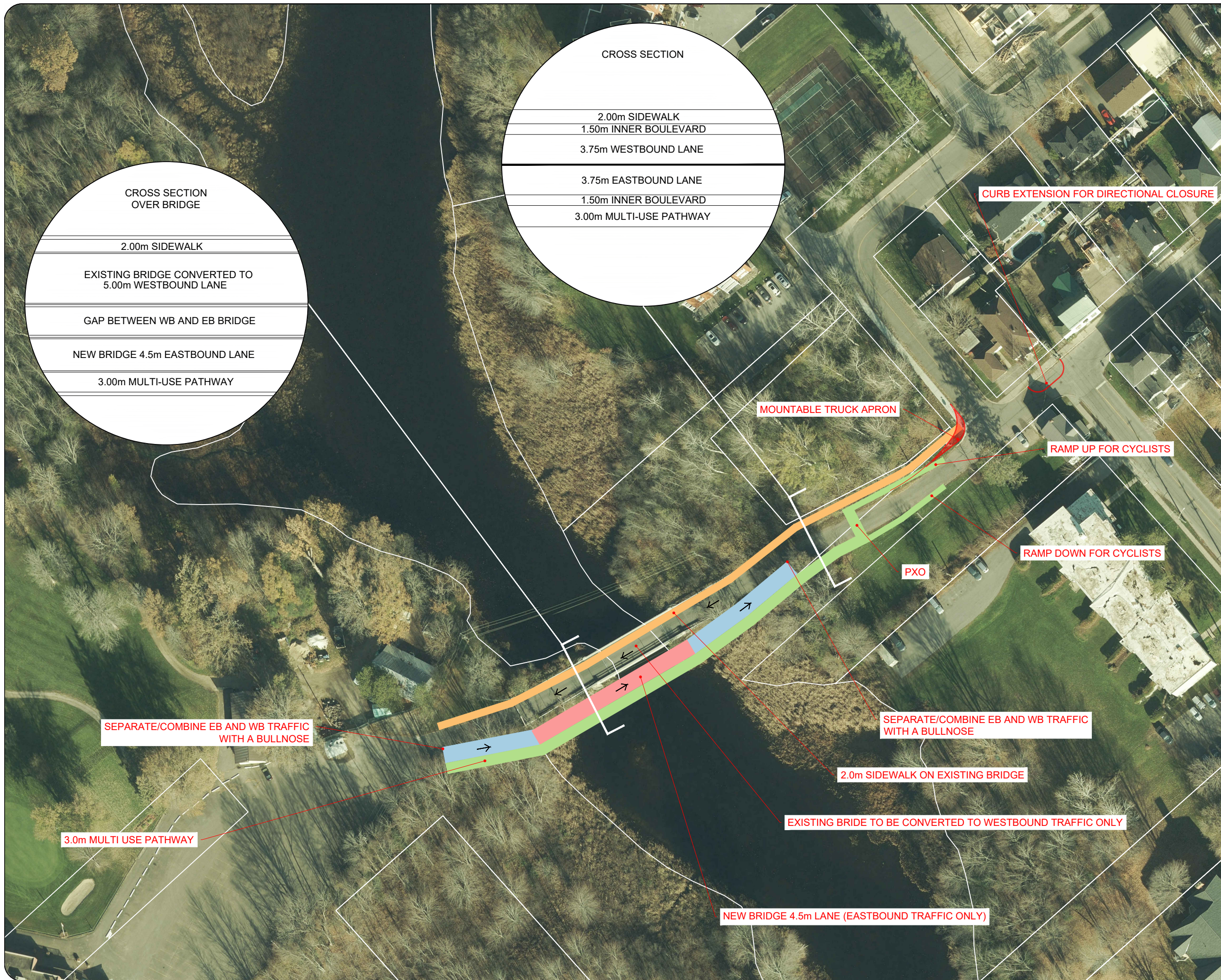
**CLIENT:** Caivan Communitites  
2934 Baseline Road, Suite 302  
Ottawa, ON  
K2H 1B2

**ARCHITECT:**

**SITE:** Caivan Perth

**TITLE:** Option 6

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-11-21	BB	CG
<b>PROJECT NO:</b>	<b>DRAWING NO:</b>	<b>REVISION:</b>	
2021-117	006	02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**7 - Construct New Bridge South of Existing, MUP, Eastbound Travel Lane**

- New bridge to be located within original Peter Street ROW
- New bridge to include eastbound (outbound lane) and MUP
- Existing bridge to be converted to westbound (inbound) lane and sidewalk
- New bridge will provide secondary access point for emergency transportation

•Assuming no widening is required and based on the preliminary drawings, a bridge length of 40m may be required (although further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints) so this would probably require a multi-span bridge; assuming a 40m total bridge (with a roadway width of 7.5m)

02	Issued for Review	BB	2022-11-21
01	Issued for Review	BB	2022-11-03
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

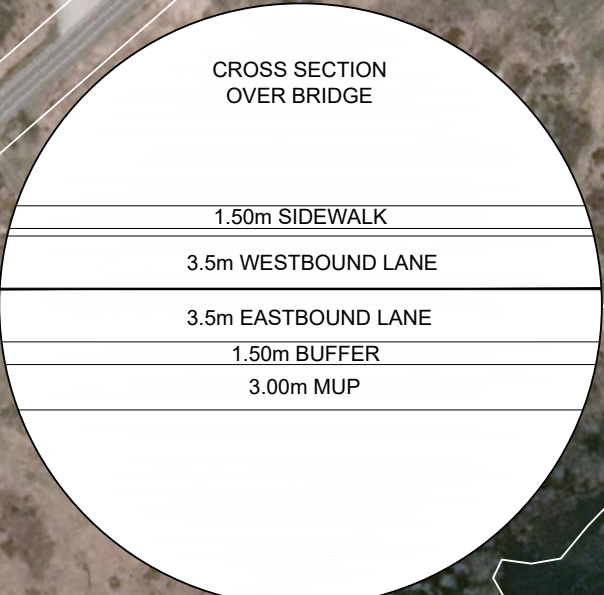
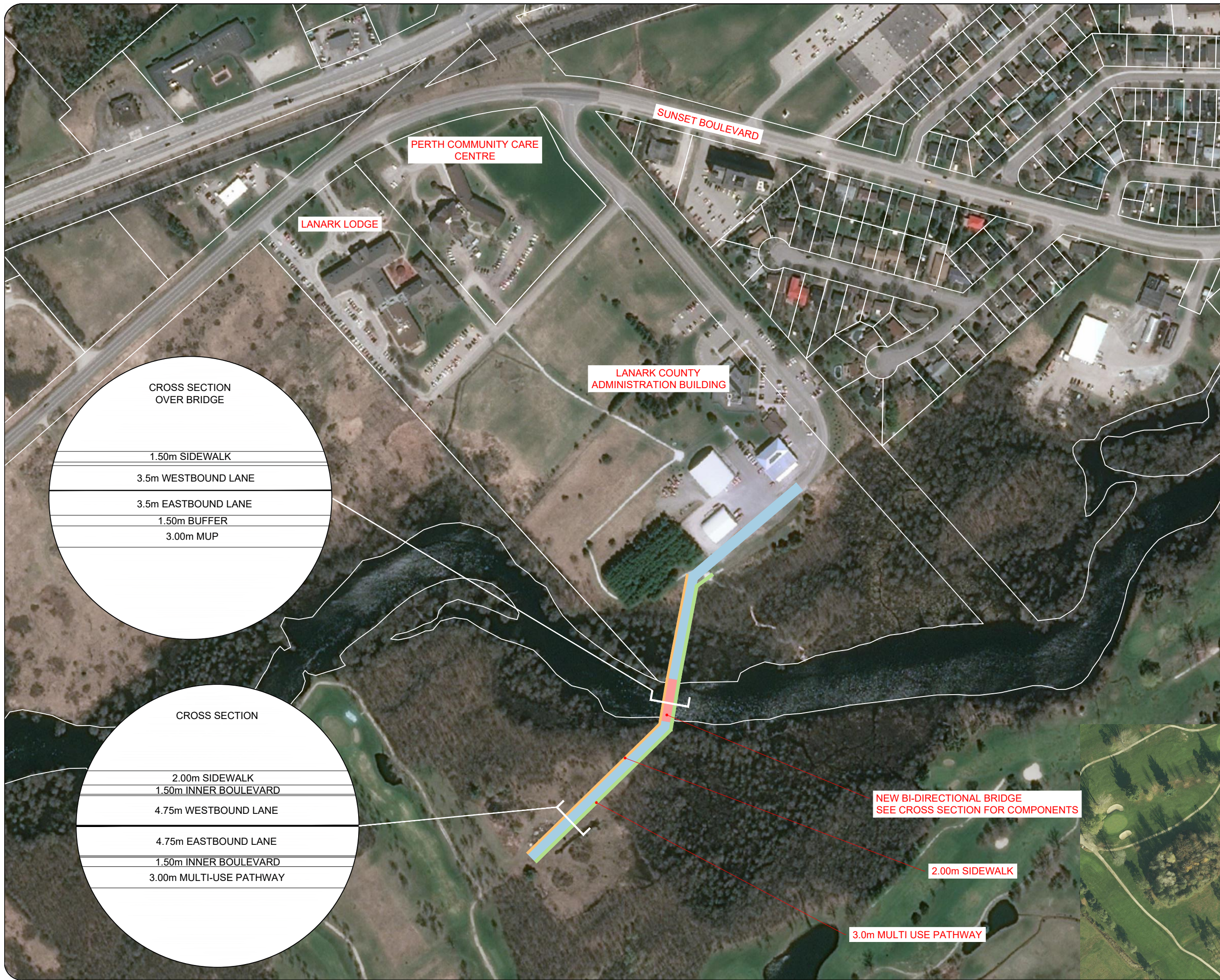
**CLIENT:** Caivan Communitites  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

**ARCHITECT:**

**SITE:** Caivan Perth

**TITLE:** Option 7

SCALE AT A3: NTS	DATE: 2022-11-21	DRAWN: BB	CHECKED: CG
PROJECT NO: 2021-117	DRAWING NO: 007	REVISION: 02	



Notes:

**LEGEND**

- MULTI USE PATHWAY
- SIDEWALK
- ROAD WIDENING/NEW ROAD
- BRIDGE WIDENING / NEW BRIDGE

**8 - Construct New Bridge to the County Administration Building**

- No modifications to the existing Peter Street Bridge assumed
- New bridge to include two lanes of traffic, a sidewalk, and a MUP
- Active facilities tie into trail network
- Additional collector road length required to reach crossing, and to the County Administration drive aisle
- New bridge will provide secondary access point for emergency transportation
- Assuming a bridge length of 40m based on the ability to add fill (further study of the site will need to be carried out first to figure out the optimal length versus environmental constraints, may be up to an 80m span ultimately required); assuming 13.5m deck width

02	Issued for Review	BB	2022-11-21
REV:	DESCRIPTION:	BY:	DATE:
STATUS:			

**CGH Transportation**  
 6 Plaza Court  
 Ottawa, ON  
 K2H 7W1  
 (343) 999-9117

CLIENT: Caivan Communities  
 2934 Baseline Road, Suite 302  
 Ottawa, ON  
 K2H 1B2

ARCHITECT:

SITE: Caivan Perth

TITLE: Option 8

SCALE AT A3: NTS	DATE: 2022-11-21	DRAWN: BB	CHECKED: CG
PROJECT NO: 2021-117	DRAWING NO: 008	REVISION: 02	

## 3 Evaluation

The evaluation will score the alternatives as either having relatively positive outcomes, relatively negative outcomes, or as having relatively neutral outcomes.

### 3.1 Criteria Definitions

The following definitions provide the methodology of ranking various bridge alternatives using multiple transportation and structural criteria presented below.

#### 3.1.1 Pedestrian Needs

- Facilities with separated pedestrian infrastructure within the cross-section will result in a high Pedestrian Level of Service (PLOS) as people who are walking will experience a higher degree of comfort and safety
- In cases where the pedestrian facility is not physically separated from other traffic lanes but delineated (with painted lane markings/crosswalks) pedestrians will experience a moderate level of safety
- Where there are no pedestrian facilities whatsoever in the cross-section, pedestrians will experience a lower/moderate/higher degree of comfort and safety

#### 3.1.2 Cyclist Needs

- Facilities with separated cyclist infrastructure within the cross-section will result in a high Bicycle Level of Service (BLOS) as people who are walking will experience a higher degree of comfort and safety
- In cases where the cyclist facility is not physically separated from other traffic lanes but delineated (with painted lane markings/crosswalks) cyclist will experience a moderate level of safety
- Where there are no cyclist facilities whatsoever in the cross-section, cyclist will experience a lower/moderate/higher degree of comfort and safety

#### 3.1.3 Auto Needs

- Alternatives that provide a high degree of capacity across the river, using industry standard lane widths will be ranked higher
- Alternatives where the cross-sections will not provide adequate capacity will be ranked low

#### 3.1.4 Emergency Vehicles

- Alternatives with secondary emergency vehicle access using roadway infrastructure will be ranked high
- Alternatives where emergency vehicles can cross the river using active mode infrastructure will be ranked moderate
- Alternatives that do not provide a secondary emergency access will be ranked low

#### 3.1.5 Peter Street Traffic

Peter Street connects the new subdivision to the village of Perth's historic downtown area. Recognising this local street will experience additional golf course subdivision traffic. Traffic calming features will be implemented to mitigate the impact. All bridge options can accommodate the preferred Peter/Rodger traffic calming improvement.

#### 3.1.6 Phasing

- Alternatives that enable full buildout of the subdivision are ranked high.
- Alternatives that accommodate phase one of the subdivision are ranked moderate.
- Alternatives that are unable to accommodate traffic are ranked low.

### 3.1.7 Structural Costs

The structural costs include various bridge and abutment elements required to span the Tay River. Additional costs associated with the complete access solution beyond the Peter Street area will require further study would be required to properly quantify them.

### 3.1.8 Transportation Costs

The transportation costs include elements within the cross-section that connect the various bridge scenarios to the Peter Street at Lustre Lane intersection and between the community and the Lanark County Administration Building drive aisle.

























































### 3.1.9 Land Requirements

- Alternatives that require no additional private land are ranked high.
- Alternatives that require coordination between multiple jurisdictions to secure access are ranked moderate.
- Alternatives that require private land at unknown cost and availability are ranked low.

## 3.2 Evaluation Scoring

The results of the evaluation are summarized in Table 1 on the following page.

Table 1: Evaluation Matrix

Criterion	Option 1 Do Nothing	Option 2 Construct a Separate MUP Bridge (3m)	Option 3 Construct a Separate MUP Bridge (4.5m)	Option 4 Widen Deck for Collector Traffic, Sidewalk (One Side)	Option 5 Widen Deck for Collector Traffic, Sidewalk, MUP	Option 6 Construct New Bridge North of Existing, Sidewalk, Westbound Travel Lane	Option 7 Construct New Bridge South of Existing, MUP, Eastbound Travel Lane	Option 8 Construct New Bridge at the North End of the Community
Pedestrian Needs	Does not provide a separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Will provide separated pedestrian connection to the downtown 	Does not provide a separated pedestrian connection to the downtown 
Cyclist Needs	Shared use lanes on a narrow bridge deck will reduce cycling trips 	Adding a separated connection will encourage cycling trips 	Adding a separated connection will encourage cycling trips 	Absence of a separated connection will limit cycling trips 	Adding a separated connection will encourage cycling trips 	Adding a separated connection will encourage cycling trips 	Adding a separated connection will encourage cycling trips 	Shared use lanes on a narrow bridge deck will reduce cycling trips 
Auto Needs	Auto connectivity is adequate, but capacity is low and will be limited to first phase traffic 	Auto connectivity is adequate, but capacity is low and will be limited to first phase traffic 	Auto connectivity is adequate, but capacity is low and will be limited to first phase traffic 	Supports increased auto capacity and connectivity past Phase 1 	Supports increased auto capacity and connectivity past Phase 1 	Supports increased auto capacity and connectivity past Phase 1 	Supports increased auto capacity and connectivity past Phase 1 	Supports increased auto capacity and connectivity past Phase 1 
Emergency Vehicles	No secondary access for emergency vehicles typically caps development at 200 units 	MUP bridge will not function as emergency access capping development at 200 units 	MUP bridge may function as a secondary emergency access 	No secondary access for emergency vehicles typically caps development at 200 units 	No secondary access for emergency vehicles typically caps development at 200 units 	New bridge will provide a full secondary emergency access 	New bridge will provide a full secondary emergency access 	New bridge will provide a full secondary emergency access 
Peter Street Traffic	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street but allows for exploration of alternative treatments 	Permits directional diverter on Peter Street 	Permits directional diverter on Peter Street 
Schedule and Phasing	Development limited to 200 units 	Development limited to 200 units 	Development limited to Phase 1 	Development limited to 200 units 	Development limited to 200 units 	May permit all phases of development 	May permit all phases of development 	May permit all phases of development 
Structural Costs	No costs at present; future rehabilitation cost schedule applies, future costs for additional crossing(s)	An estimated construction cost of <b>\$500,000</b> for the MUP bridge, and <b>\$4,900,000-\$9,800,000</b> for the future crossing for full development traffic	An estimated construction cost of <b>\$950,000</b> and <b>\$4,900,000-\$9,800,000</b> for the future crossing for full development traffic	An estimated construction cost of <b>\$750,000</b> and <b>\$4,900,000-\$9,800,000</b> for the future crossing for full development traffic	An estimated construction cost of <b>\$1,200,000</b> and <b>\$4,900,000-\$9,800,000</b> for the future crossing for full development traffic	An estimated construction cost of <b>\$2,100,000</b> which includes modifications to the existing bridge to convert to one-way with MUP	An estimated construction cost of <b>\$2,700,000</b> which include modifications to the existing bridge to convert to one-way with sidewalk	An estimated construction cost of <b>\$4,900,000-\$9,800,000</b>
Transportation Costs	An estimated construction cost of <b>\$995,000</b>	An estimated construction cost of <b>\$1,100,000</b> at the east river crossing, <b>\$2,380,000</b> for the north river crossing	An estimated construction cost of <b>\$1,140,000</b> at the east river crossing, <b>\$2,380,000</b> for the north river crossing	An estimated construction cost of <b>\$1,125,000</b> at the east river crossing, <b>\$2,380,000</b> for the north river crossing	An estimated construction cost of <b>\$1,190,000</b> at the east river crossing, <b>\$2,380,000</b> for the north river crossing	An estimated construction cost of <b>\$1,300,000</b>	An estimated construction cost of <b>\$1,245,000</b>	An estimated construction cost of <b>\$2,380,000</b>
Land Requirements	No additional land required 	Multi-jurisdictional coordination required 	Multi-jurisdictional coordination required 	Multi-jurisdictional coordination required 	Multi-jurisdictional coordination required 	Private land required 	No additional land required 	Multi-jurisdictional coordination required 

Notes:  Relatively Positive  Relatively Neutral  Relatively Negative



## 4 Recommendations

It is recommended that Options 6 and 7 be explored in parallel. Given the potential for these options to constitute the full community access solution, and having a more constrained and known overall cost, it is recommended that these options be provisionally selected as the preferred options.

Additionally, given the magnitude difference in cost, process challenges and constructability, it is recommended that the second crossing to the County Administration Building access be screened out and the accessibility requirements for these lands be accommodated using the Perth Street/North Street corridor and the Option 6 or 7 structure alternative.

## 5 Next Steps

Following the review of the findings of this memo, further work to properly quantify options will be required. As part of this work, an EA will need to be undertaken to determine costs and details associated with community access.