

## 1 Introduction

This document outlines the evaluation methodology for each design option under various assessment factors. The sections that follow evaluate each design for the Mobility Spine cross section, the Leitrim-Ramsayville realignment, Anderson-Piperville realignment, Thunder-Farmers realignment, Anderson-Thunder realignment, and the Mobility Spine holistically. As a preface to the rest of this appendix, this is not an Environmental Assessment. Rather, this appendix seeks to ensure that future roadway modifications are not precluded. Given the Transportation Master Plan results, the recommendation for all the options evaluated is the 'do nothing' scenario.

## 2 Definitions of Factors for Evaluation

This sections briefly defines the factors used in the evaluation tables that follow.

*Table 1: Factors of Evaluation*

Category	Evaluation Criteria for Alternative Community Design Strategies	Definition
Development & Land Use	Plan and design to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living framework (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	Refers to providing ample support to forms of sustainable transportation, especially cyclists and pedestrians. Furthermore, sustainable infrastructure such as green spaces and encouraging biodiversity; designs prioritize mobility based on user needs.
	Create vibrant mixed-use centres that are a focus for community activity	Conducive to user interaction and multimodality. Encourages placemaking and fosters community engagement.
	Accommodate a mix of land uses that support convenient access to a range of services and amenities	Conducive to multimodality. Supports traffic toward amenities and other services.
	Integrate with existing homes and businesses	Provides access and travel options for existing residential and commercial.
Transportation & Mobility	Create a transportation network that facilitates efficient transit operation and coverage	Conducive to various modes of transportation, especially public transit and active transportation. Broad and interconnected network.
	Support complete streets and active mobility, including pedestrian and cycling connectivity	Conducive to active transportation and implements measures such as traffic calming to facilitate shared streets and connection to a broader transportation network.

Natural System, Parks, Recreation & Open Spaces	Centre the Tewin community on natural systems including watercourses, wetlands, trees and plants	Conducive toward the flourishing and protection of Tewin's existing ecosystem. Does not conflict with existing natural formations.
	Support a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	Conducive toward establishing connective tissue between residential areas and park network, as well as future infrastructure in or to be developed.
	Allow for watercourse naturalization to support a resilient natural system	Conducive toward establishing watercourses in support of the natural ecosystem.
	Deliver parks and community facilities that are highly usable, accessible and activated	Self-evident.
	Enhance the natural environment and ecological system for future generations	Conducive toward and/or directly beneficial to the natural environment.
Servicing	Optimize stormwater management techniques that contribute to the character of the Tewin Community	Aids or works in tandem with stormwater management infrastructure that enhance and reinforce the spirit, values, and aesthetic.
	Support the efficient delivery of servicing	Self-evident.
Phasing & Implementation	Reduce capital costs	Self-evident.
	Reduce operating costs	Self-evident.
	Optimize the phased delivery of infrastructure and amenities, including in the early phases	Accommodates project delivery, such as construction and demolition, optimizing for the completion of each phase of the project.

### 3 Mobility Spine Cross-Section Analysis and Evaluation

The Mobility Spine is designed to be the central main street connecting the community's various neighborhoods. It will be animated by higher densities, a greater mix of uses, and support a broad range of mobility (transit, walking, cycling, and cars). The Mobility Spine's location was determined during Public Meeting #2 and is summarized in Section 8. The Mobility Spine cross-section alternatives were presented in Public Meeting #3. All Mobility Spine options demonstrated a complete multi-modal street, with sidewalks, cycling tracks, and transit lanes. All options had the same width for pedestrians and cyclists right of way. Option 1 included trees and bus shelters on the outer edge of the right-of-way, while Options 2 and 3 included sidewalks on the outer edge of the right-of-way. Options 1 and 2 had curbside peak hour bus-only lanes, whereas Option 3 included centre transit lanes with adjacent bus shelters. Option 1, Option 2, and Option 3 can be seen in Figure 1, Figure 2 and Figure 3, respectively. The detailed analysis and evaluation of these options is provided in Table 2 below.

Figure 1: Mobility Spine Cross-section Option 1

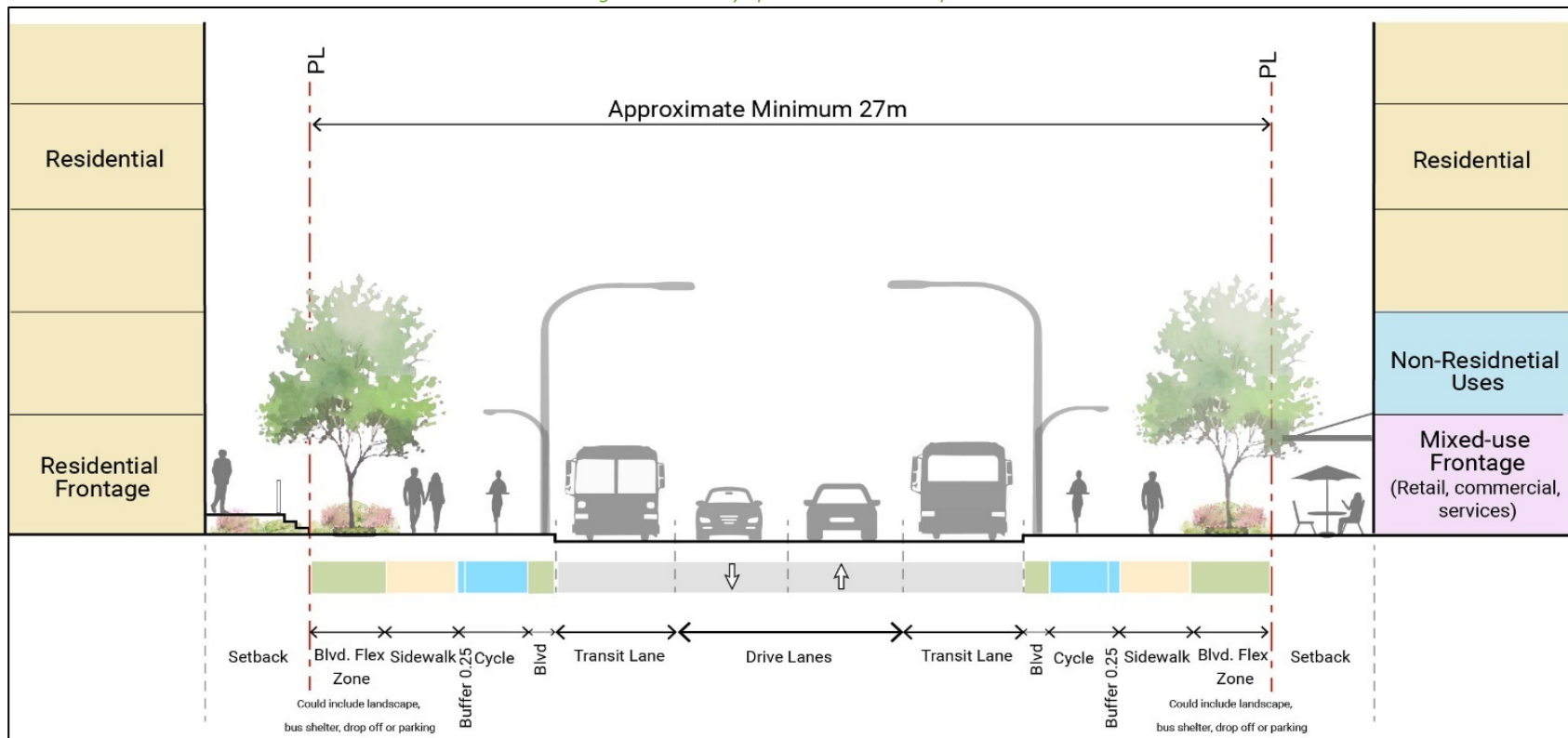


Figure 2: Mobility Spine Cross-section Option 2

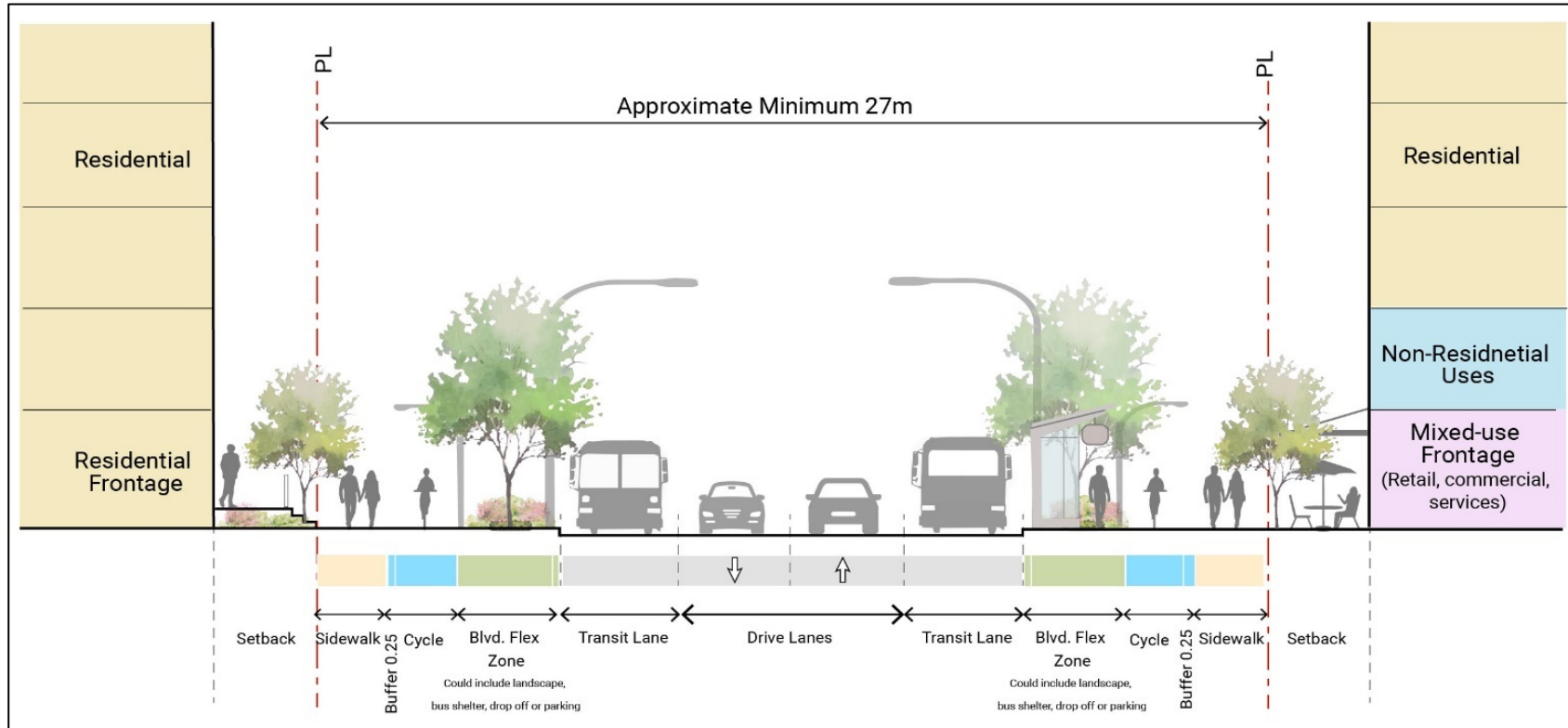


Figure 3: Mobility Spine Cross-section Option 3

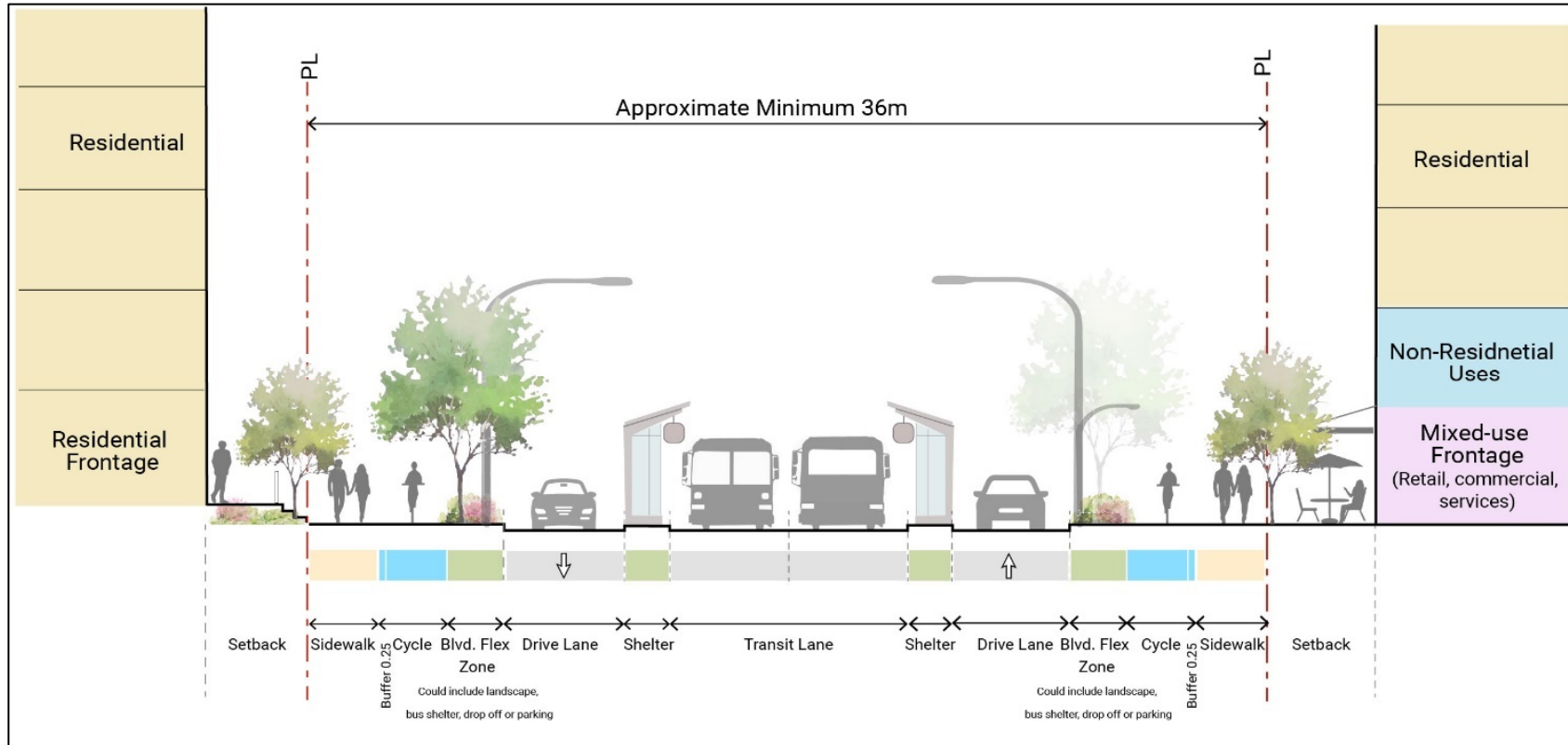
































Table 2: Mobility Spine Detailed Analysis and Evaluation

Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2	Option 3
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	The location of trees along the edge of the ROW brought autos and vulnerable road users closer, resulting in a poorer experience for pedestrians and cyclists.	The location of trees along the edge of the street increased the emphasises on landscape and reduced the perceived scale of the street which helped to calm traffic.  The trees separated pedestrians and cyclists from vehicles which resulted in an improved pedestrian and cycling experience that helped to encourage greater travel by more sustainable modes for people of all ages.	A larger ROW requirement resulted in longer crossing distances which can impact people with mobility issues. The transit platform at the centre of the street had the potential to reduce the comfort and perception of safety for transit users.
				
	Created vibrant mixed-use centres that are a focus for community activity	The narrower ROW supported a more pedestrian-scaled environment with shorter crossing distances.  The time-specific bus-only lane arrangement allowed for flexibility during off-peak periods and weekends for street parking which can help to support local business.	The narrower ROW supported a more pedestrian-scaled environment with shorter crossing distances.  The time-specific bus-only lane arrangement allowed for flexibility during off-peak periods and weekends for street parking which can help to support local business.	The wider street and ROW impact development and resulted in longer crossing distances for pedestrians.  The fixed center lane transit arrangement and roadway design limited the ability to repurpose the street during off-peak periods for uses such as street parking which could support local business.
				
	Accommodated a mix of land uses that support	Narrower Streets with shorter crossing distances can help to	Narrower Streets with shorter crossing distances can help to	Wider streets with greater crossing distances can impact

	convenient access to a range of services and amenities	support a more vibrant retail environment.  Transit stops adjacent to existing uses can help to increase local business and street life.	support a more vibrant retail environment.  Transit stops adjacent to existing uses can help to increase local business and street life.	the success of locally serving retail.  Less potential for synergies between waiting transit users and local businesses.
				
	Integrated with existing homes and businesses	Narrower ROW may have reduced impacts to existing properties at crossing points along Piperville Road and Thunder Road	Narrower ROW may have reduced impacts to existing properties at crossing points along Piperville Road and Thunder Road	Wider ROW may have increased impacts to existing properties at crossing points along Piperville Road and Thunder Road
	Overall			
Transportation & Mobility	Created a transportation network that facilitates efficient transit operation and coverage	This option can provide efficient transit operation contingent on turn lane restrictions for autos and Advanced Signal Priority along the Mobility Spine corridor. Easier to maintain, monitor, and make adjustments to transit services.	This option can provide efficient transit operation contingent on turn lane restrictions for autos and Advanced Signal Priority along the Mobility Spine corridor. Easier to maintain, monitor, and make adjustments to transit services.	This option can provide efficient transit operation contingent on Advanced Signal Priority along the Mobility Spine corridor.
				

	Supports complete streets and active mobility, including pedestrian and cycling connectivity	The location of trees brought autos and vulnerable road users closer, resulting in a poorer experience for pedestrians and cyclists.	This option created an attractive, boulevard-separated pedestrian and cyclist realm.	The location of transit stops always required crossing traffic lanes for pedestrians and cyclists, including students of 11 schools located along the Mobility Spine.
				
	Overall			
Natural System, Parks, Recreation & Open Spaces	Centred the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major differences are expected between the options.	No major differences are expected between the options.	No major differences are expected between the options.
				
	Support a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	No major differences are expected between the options.	No major differences are expected between the options.	No major differences are expected between the options.
				
	Allows for watercourse naturalization to support a resilient natural system	No major differences are expected between the options.	No major differences are expected between the options.	No major differences are expected between the options.
				



	Delivers parks and community facilities that are highly usable, accessible and activated	No major differences are expected between the options.	No major differences are expected between the options.	No major differences are expected between the options.
		●	●	●
	Enhances the natural environment and ecological system for future generations	The smallest ROW option that meets the Mobility Spine objectives.	The smallest ROW option that meets the Mobility Spine objectives.	A larger ROW requirement resulted in a larger impact on natural environment and ecological system.
		●	●	▴
	Overall	●	●	▴
Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	No major differences are expected between the options.	No major differences are expected between the options.	No major differences are expected between the options.
		●	●	●
	Supports the efficient delivery of servicing	Boulevard location resulted in an easier access for servicing and repair	Boulevard location resulted in a more challenging access for servicing and repair	Boulevard location resulted in a more challenging access for servicing and repair
		●	☹	☹
	Overall	●	☹	☹
Phasing & Implementation	Reduces capital costs	This option resulted in fewer capital costs as a result of narrower ROW and less physical infrastructure supporting transit.	This option resulted in fewer capital costs as a result of narrower ROW and less physical infrastructure supporting transit.	This option resulted in additional capital costs as a result of a larger ROW and more physical infrastructure supporting transit.
		●	●	☹

























	Reduces operating costs	This option resulted in fewer transportation operating costs as a result of less physical infrastructure supporting transit within the ROW.	This option resulted in fewer transportation operating costs as a result of less physical infrastructure supporting transit within the ROW.	This option resulted in additional transportation operating costs as a result of more physical infrastructure supporting transit within the ROW.
				
	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Easier to make dynamic adjustments to transit services and routing in real time and over longer periods.	Easier to make dynamic adjustments to transit services and routing in real time and over longer periods.	The transit route parameters were predominantly fixed as a result of physical infrastructure proposed within this ROW option.
				
	Overall			

Table 3 below provides a summary of the analysis and criteria evaluation.

*Table 3: Mobility Spine Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2	Option 3
Development & Land Use			
Transportation & Mobility			
Natural System, Parks, Recreation & Open Spaces			
Servicing			
Phasing & Implementation			

Based on the analysis and evaluation above, Option 2 became the preferred Mobility Spine cross-section option.

## 4 Leitrim Road at Ramsayville Road Realignment Analysis and Evaluation

Currently, Leitrim Road in proximity to Ramsayville Road has disjointed segments around the perimeter of Tewin. Considering the anticipated urbanization of Tewin's adjacent lands, Leitrim Road needed to be realigned to better integrate the transportation network and urban growth.

Realignment Option 1 realigned Leitrim Road within the Tewin study area boundary. Option 2 realigned Leitrim Road within Greenbelt. Option 3 prioritized the flow of vehicles from the Mobility Spine to and from the north. Option 4 was a peanut roundabout that tied the intersection of Leitrim Road and Ramsayville Road together using existing road alignment. Option 5 was a larger roundabout and like Option 4. Figure 4 illustrates all the alignment options. The detailed analysis and evaluation of these options is provided in Table 4 below.

Figure 4: Leitrim Road Realignment Options

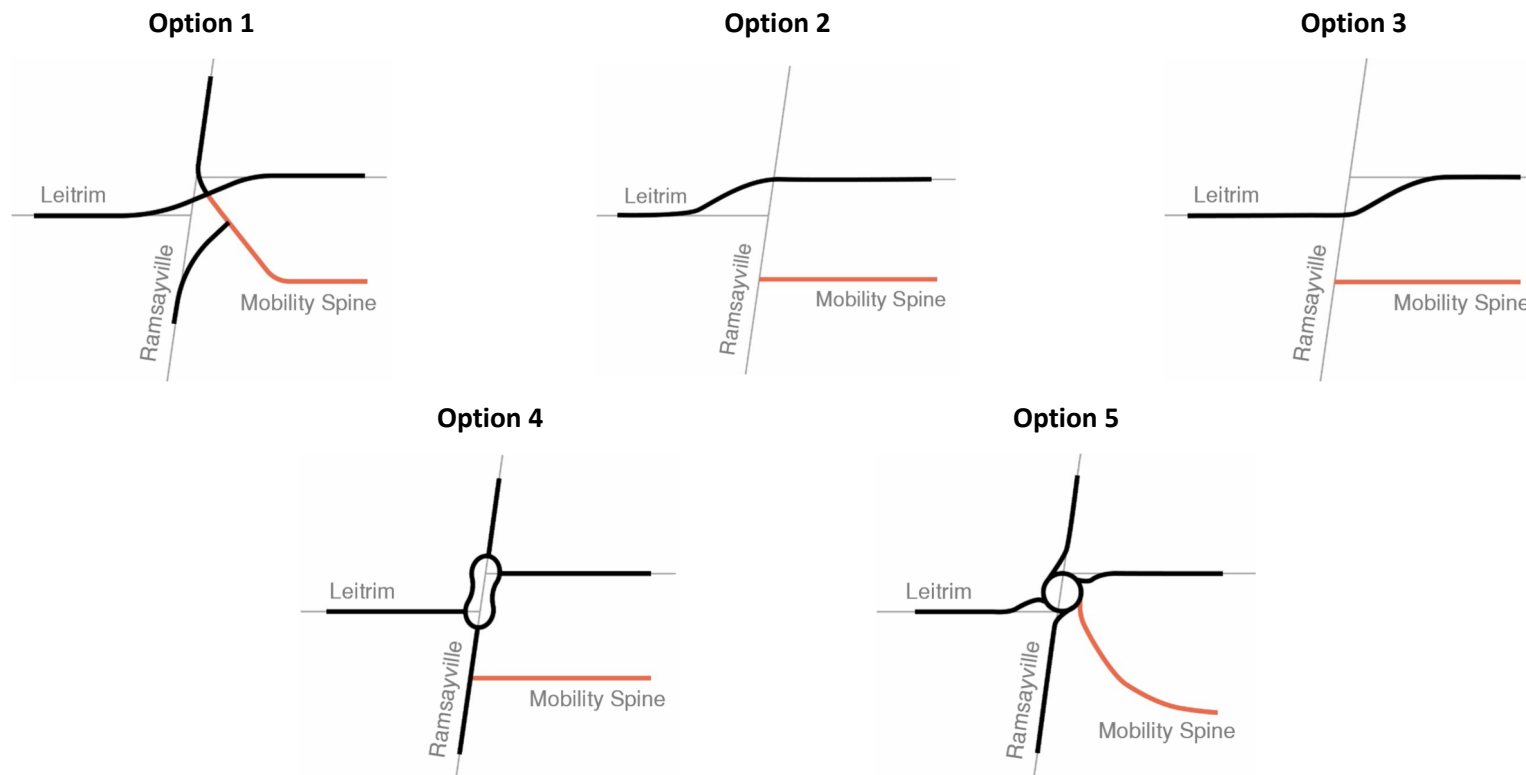

























































Table 4: Leitrim Road Realignment Detailed Analysis and Evaluation

Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2	Option 3	Option 4	Option 5
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	This option impacted the Greenbelt.	This option resulted in the highest impact to the Greenbelt.	This option minimized impact on Greenbelt.	This option impacted the Greenbelt.	This option resulted in a large impact to the Greenbelt.
						
	Creates vibrant mixed-use centres that are a focus for community activity	The convergence of streets within the site had the potential to support a more vibrant node of activity.	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.	The priority given to automobiles in this option, given the scale of the roundabout, would have made it more challenging to integrate alongside new mixed-use development.	The priority given to automobiles in this option, given the scale of the roundabout, would have made it more challenging to integrate alongside new mixed-use development.
						





















	Accommodates a mix of land uses that support convenient access to a range of services and amenities	This option resulted in an irregular street and block pattern that could complicate the ability to deliver viable mixed-use development blocks.	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.	The priority given to automobiles in this option, given the scale of the roundabout, would have made it more challenging to integrate alongside new mixed-use development.	The priority given to automobiles in this option, given the scale of the roundabout, would have made it more challenging to integrate alongside new mixed-use development.
						
	Integrates with existing homes and businesses	This option impacted several existing lots.	This option would have minimized impacts on existing homes and businesses	This option impacted one existing lot.	This option impacted several existing lots.	This option impacted several existing lots.
						
	Overall					
						

Transportation & Mobility	Creates a transportation network that facilitates efficient transit operation and coverage	This was a less efficient option as some delay is inherent to signalized operations of intersections. Regional transit vehicles need to turn left at one location (NBL at Leitrim and Ramsayville).	This was a less efficient option as some delay is inherent to signalized operations of intersections. Regional transit vehicles need to turn left at two locations (NBL at Leitrim and Ramsayville and SBL at Ramsayville and Mobility Spine).	This was a less efficient option as some delay is inherent to signalized operations of intersections. Regional transit vehicles need to turn left at two locations (NBL at Leitrim and Ramsayville and SBL at Ramsayville and Mobility Spine).	This was a less efficient option as some delay is inherent to signalized operations of intersections. Regional transit vehicles need to turn left at one location (SBL at Ramsayville and Mobility Spine).	This option reduced transit delay at Leitrim and Ramsayville, however it relocated the bottleneck with conflicting transit and auto movements into the community just before the Mobility Spine becomes a bus only lane. The bend in the Mobility Spine also reduced the transit coverage for residents living south of the Mobility Spine.
						

	Supports complete streets and active mobility, including pedestrian and cycling connectivity	This option deviated from a perpendicular grid, which is not preferred from pedestrian and cyclist connectivity standpoint.	This option most closely resembled a grid, which is preferred from pedestrian and cyclist connectivity standpoint.	This option most closely resembled a grid, which is preferred from pedestrian and cyclist connectivity standpoint.	The priority given to automobiles in this option, given the scale of the roundabout; would have moderately impeded pedestrian and cyclist connectivity.	The priority given to automobiles in this option, given the scale of the roundabout; would have moderately impeded pedestrian and cyclist connectivity.
						
	Overall					
Natural System, Parks, Recreation & Open Spaces	Centres the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
						
	Supports a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
						

	Allows for watercourse naturalization to support a resilient natural system	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
		●	●	●	●	●
	Delivers parks and community facilities that are highly usable, accessible and activated	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
		●	●	●	●	●
	Enhances the natural environment and ecological system for future generations	This option impacted the Greenbelt.	This option resulted in a large impact to the Greenbelt	This option minimized impact on Greenbelt.	This option impacted the Greenbelt.	This option resulted in a large impact to the Greenbelt
		☹	☹	●	☹	☹
	Overall	☹	☹	●	☹	☹



Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	The proposed alignment did not impact stormwater management.	The proposed alignment did not impact stormwater management.	The proposed alignment resulted in a usable area in the northwest corner of Tewin study area that can be used for stormwater management.	The proposed alignment did not impact stormwater management.	The proposed alignment did not impact stormwater management.
						
	Supports the efficient delivery of servicing	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
						
	Overall					
Phasing & Implementation	Reduces capital costs	This option was associated with moderate infrastructure costs, moderate land acquisition costs, and high costs associated with the loss of the net developable area.	This option was associated with moderate infrastructure costs, and high land acquisition costs.	This option was associated with moderate infrastructure costs, and some land acquisition costs.	This option was associated with moderate infrastructure costs, moderate land acquisition costs, and some costs associated with the loss of the net developable area.	This option was associated with moderate infrastructure costs, high land acquisition costs, and high costs associated with the loss of the net developable area.
						









































	Reduces operating costs	This option had higher operating costs.	This option had higher operating costs.	This option had higher operating costs.	This option had the lowest operating costs.	This option had the lowest operating costs.
						
	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Based on capital costs, this option is not preferred from phased implementation perspective.	Based on capital costs, this option is not preferred from phased implementation perspective.	Based on capital costs, this is a more favourable option, from phased implementation perspective.	Based on capital costs, this is a more favourable option, from phased implementation perspective.	Based on capital costs, this option is not preferred from phased implementation perspective.
						
	Overall					

Table 5 below provides a summary of the analysis and criteria evaluation:

*Table 5: Leitrim Road Realignment Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2	Option 3	Option 4	Option 5
Development & Land Use					
Transportation & Mobility					
Natural System, Parks, Recreation & Open Spaces					
Servicing					
Phasing & Implementation					

Based on the analysis and evaluation above, Option 3 became the preferred Leitrim Road realignment option.

## 5 Anderson Road at Piperville Road Realignment Analysis and Evaluation

Anderson Road in proximity to Piperville Road has disjointed segments around the perimeter of Tewin. Considering the anticipated urbanization of the Tewin's adjacent lands, Anderson Road needs to be realigned to better integrate transportation network and urban growth.















Realignment Option 1 realigns Anderson Road within the Tewin study area boundary. Option 2 realigns Anderson Road outside the Tewin study area. Figure 5 illustrates all of the alignment options. The detailed analysis and evaluation of these options is provided in Table 6 below.

*Figure 5: Anderson Road Realignment Options*



*Table 6: Anderson Road Realignment Detailed Analysis and Evaluation*

Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	No major differences were expected between the options.	No major differences were expected between the options.
		●	●

	Creates vibrant mixed-use centres that are a focus for community activity	This option could be connected to a flexible street and block network, but may moderately impact the mixed-use node land efficiency.	This option could be connected to a flexible street and block network supporting a mix of uses.
			
	Accommodates a mix of land uses that support convenient access to a range of services and amenities	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.
			
	Integrates with existing homes and businesses	This option would minimize impacts on existing homes and businesses.	This option would impact a subdivision south of Piperville
			
	Overall		
Transportation & Mobility	Creates a transportation network that facilitates efficient transit operation and coverage	No major differences are expected between the options.	No major differences are expected between the options.
			
	Supports complete streets and active mobility, including pedestrian and cycling connectivity	No major differences were expected between the options.	No major differences were expected between the options.
			
	Overall		

Natural System, Parks, Recreation & Open Spaces	Centres the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Supports a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Allows for watercourse naturalization to support a resilient natural system	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Delivers parks and community facilities that are highly usable, accessible and activated	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Enhances the natural environment and ecological system for future generations	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Overall	●	●
Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Supports the efficient delivery of servicing	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Overall	●	●

Phasing & Implementation	Reduces capital costs	This option was associated with lower land acquisition costs.	This option was associated with high land acquisition costs.
		●	■
	Reduces operating costs	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Based on capital costs, this was the most favourable option, from phased implementation perspective.	Based on capital costs, this option was not preferred from phased implementation perspective.
		●	■
	Overall	●	■

Table 7 below provides a summary of the analysis and criteria evaluation:

*Table 7: Anderson Road Realignment Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2
Development & Land Use	●	■
Transportation & Mobility	●	●
Natural System, Parks, Recreation & Open Spaces	●	●
Servicing	●	●
Phasing & Implementation	●	■

Based on the analysis and evaluation above, Option 1 became the preferred Anderson Road realignment option.

## 6 Farmer's Way at Thunder Road Realignment Analysis and Evaluation

Currently, Farmer's Way in proximity to Thunder Road has disjointed segments around the perimeter of Tewin. Considering the anticipated urbanization of the Tewin's adjacent lands, Farmer's Way needs to be realigned to better integrate the transportation network and urban growth.

Realignment Option 1 realigns Farmer's Way within the Tewin study area boundary. Option 2 realigns Farmer's Way both within the Tewin study area boundary and on the mature wooded areas to the southeast. Option 3 realigns Farmer's Way on the mature wooded areas to the South-East. Option 4 is a roundabout that ties the intersection of Farmer's Way and Thunder Road together using existing road alignment. Figure 6 illustrates all of the alignment options. The detailed analysis and evaluation of these options is provided in Table 8 below.

Figure 6: Farmer's Way Realignment Options

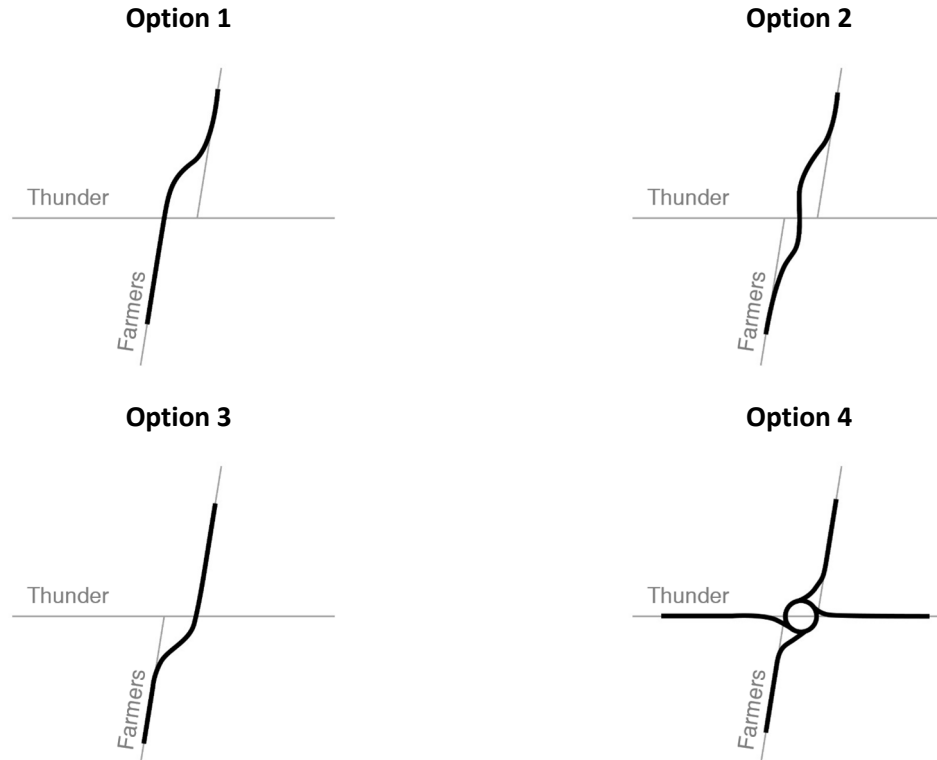























Table 8: Farmer's Way Realignment Detailed Analysis and Evaluation Summary





















Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2	Option 3	Option 4
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design	This option did not prohibit the community from being planned and designed	This option did not prohibit the community from being planned and designed	This option did not prohibit the community from being planned and designed	This option did not prohibit the community from being planned and designed



	Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	in accordance with AOO values.	in accordance with AOO values.	in accordance with AOO values.	in accordance with AOO values.
					
	Creates vibrant mixed-use centres that are a focus for community activity	This option disturbed a proposed mixed-use block.	This option partially disturbed a proposed mixed-use block.	This option could be easily connected to a flexible street and block network supporting a mix of uses.	The option disturbed a proposed mixed-use block.
					
	Accommodates a mix of land uses that support convenient access to a range of services and amenities	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.	The priority given to automobiles in this option given the scale of the roundabout would have made it more challenging to integrate alongside new mixed-use development.
					
	Integrates with existing homes and businesses	This option impacted one existing lot.	This option would have minimized impacts on existing homes and businesses.	This option impacted one existing dwelling.	This option impacted one existing lot and one existing dwelling.
					
	Overall				

Transportation & Mobility	Creates a transportation network that facilitates efficient transit operation and coverage	No transit was planned to pass through the analysed intersection.	No transit was planned to pass through the analysed intersection.	No transit was planned to pass through the analysed intersection.	No transit was planned to pass through the analysed intersection.
		●	●	●	●
	Supports complete streets and active mobility, including pedestrian and cycling connectivity	This option resembles a grid, which was preferred from pedestrian and cyclist connectivity standpoint.	This option resembles a grid, which was preferred from pedestrian and cyclist connectivity standpoint.	This option resembles a grid, which was preferred from pedestrian and cyclist connectivity standpoint.	The priority given to automobiles in this option, given the scale of the roundabout; would have moderately impeded pedestrian and cyclist connectivity.
		●	●	●	●
	Overall	●	●	●	●

Natural System, Parks, Recreation & Open Spaces	Centres the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Supports a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Allows for watercourse naturalization to support a resilient natural system	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Delivers parks and community facilities that are highly usable, accessible and activated	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Enhances the natural environment and ecological system for future generations	This option avoids impact on mature wooded areas in South-East quadrant.	This option minimizes impact on mature wooded areas in South-East quadrant.	This option impacts mature wooded areas in South-East quadrant.	This option impacts mature wooded areas in South-East quadrant.
					
	Overall				

Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	The proposed alignment resulted in a usable area in the northwest corner of the Tewin study area that can be used for stormwater management.	The proposed alignment did not impact stormwater management.	The proposed alignment did not impact stormwater management.	The proposed alignment did not impact stormwater management.
					
	Supports the efficient delivery of servicing	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Overall				
Phasing & Implementation	Reduces capital costs	This option was associated with moderate infrastructure costs, some land acquisition costs, and high costs associated with the loss of the net developable area.	This option was associated with moderate infrastructure costs, and some costs associated with the loss of the net developable area.	This option was associated with moderate infrastructure costs, and high land acquisition costs.	This option was associated with high infrastructure costs, high land acquisition costs, and high costs associated with the loss of the net developable area.
					
	Reduces operating costs	This option had higher operating costs.	This option had higher operating costs.	This option had higher operating costs.	This option had the lowest operating costs.
					













	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Based on capital costs, this was a less favourable option, from a phased implementation perspective.	Based on capital costs, this option was most preferred from a phased implementation perspective.	Based on capital costs, this option was moderately preferred from a phased implementation perspective.	Based on capital costs, this was the least favourable option, from a phased implementation perspective.
					
	Overall				

Table 9 below provides a summary of the analysis and criteria evaluation:

*Table 9: Farmer's Way Realignment Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2	Option 3	Option 4
Development & Land Use				
Transportation & Mobility				
Natural System, Parks, Recreation & Open Spaces				
Servicing				
Phasing & Implementation				

Based on the analysis and evaluation above, Option 2 became the preferred Farmer's Way realignment option.

## 7 Anderson Road at Thunder Road Realignment Analysis and Evaluation

Anderson Road in proximity to Thunder Road has disjoined segments around the perimeter of Tewin. Considering the anticipated urbanization of the Tewin's adjacent lands, Anderson Road needs to be realigned to better integrate transportation network and urban growth.

Realignment Option 1 and Option 2 are both similar and outside the Tewin study area boundary, however Option 1 affects the Southern property more where Option 2 affects the Northern property more. Figure 7 illustrates all of the alignment options. The detailed analysis and evaluation of these options is provided in Table 10 below.

Figure 7: Anderson Road Realignment Options

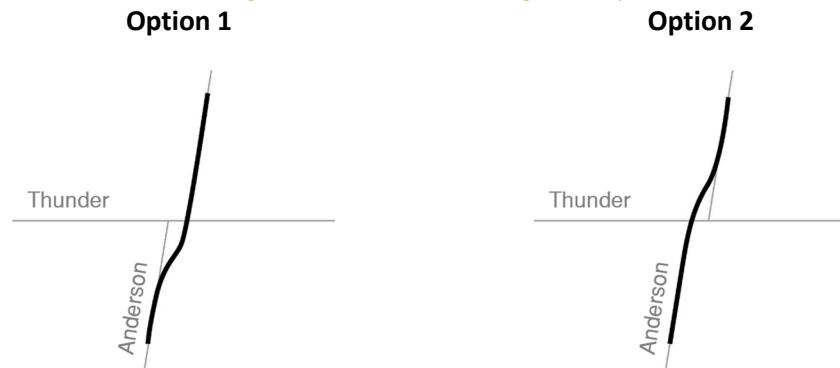


















Table 10: Anderson Road Realignment Detailed Analysis and Evaluation

Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	No major differences were expected between the options.	No major differences were expected between the options.
		●	●

	Creates vibrant mixed-use centres that are a focus for community activity	No major differences were expected between the options.	No major differences were expected between the options.
			
	Accommodates a mix of land uses that support convenient access to a range of services and amenities	This option could be connected to a flexible street and block network supporting a mix of uses.	This option could be connected to a flexible street and block network supporting a mix of uses.
			
	Integrates with existing homes and businesses	This option would have had a moderate impact on existing homes and businesses.	This option would have had a moderate impact on existing homes and businesses.
	Overall	 	 
Transportation & Mobility	Creates a transportation network that facilitates efficient transit operation and coverage	No major differences were expected between the options.	No major differences were expected between the options.
			
	Supports complete streets and active mobility, including pedestrian and cycling connectivity	No major differences were expected between the options.	No major differences were expected between the options.
			
	Overall		
Natural System, Parks, Recreation & Open Spaces	Centres the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major differences were expected between the options.	No major differences were expected between the options.
			
		No major differences were expected between the options.	No major differences were expected between the options.

	Supports a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	●	●
	Allows for watercourse naturalization to support a resilient natural system	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Delivers parks and community facilities that were highly usable, accessible and activated	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Enhances the natural environment and ecological system for future generations	No major differences were expected between the options.	No major differences were expected between the options.
	Overall	●	●
Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Supports the efficient delivery of servicing	No major differences were expected between the options.	No major differences were expected between the options.
		●	●
	Overall	●	●
Phasing & Implementation	Reduces capital costs	This option was associated with low land acquisition costs.	This option was associated with low land acquisition costs.
		●	●
	Reduces operating costs	No major differences were expected between the options.	No major differences were expected between the options.
		●	●



	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Based on capital costs, this was a favourable option from phased implementation perspective.	Based on capital costs, this was a favourable option from phased implementation perspective.
		●	●
	Overall	●	●

Table 11 below provides a summary of the analysis and criteria evaluation:

*Table 11: Anderson Road Realignment Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2
Development & Land Use	●	●
Transportation & Mobility	●	●
Natural System, Parks, Recreation & Open Spaces	●	●
Servicing	●	●
Phasing & Implementation	●	●

Based on the analysis and evaluation above, both Options had similar impacts outside the Tewin Study Area and are subject to further study to determine the preferred option.

## 8 Mobility Spine Alignment Analysis & Evaluation

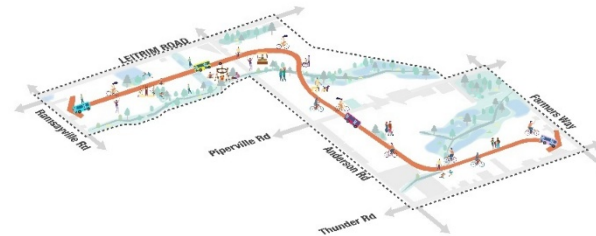
The Mobility Spine is designed to be the main street that connects multiple neighbourhoods of Tewin. Along the Mobility Spine, the design features a higher density of developments, a higher level of mixed uses, and supports multi-modal mobility needs, including transit, cycling, cars, and walking. Several alignment options were developed and evaluated to identify one that best fulfills the mobility demands and best aligns with the guiding principles.

*Figure 8: Mobility Spine Alignment Options*

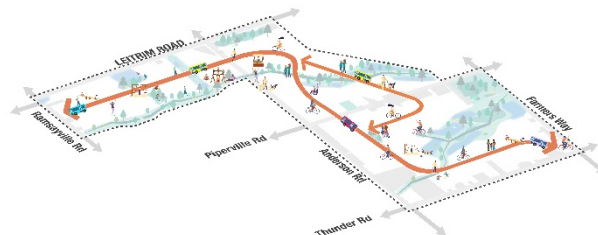
**Option 1**



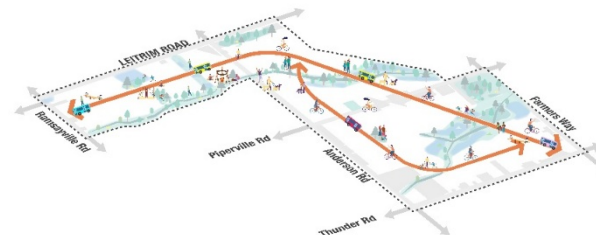
**Option 2**



**Option 3**



















**Option 4**























































Option 1 leveraged the capacities of existing arterial roads adjacent to Tewin, namely Leitrim Road, Anderson Road, Thunder Road, and Piperville Road, and designated them as the spine of the new developments. Option 2 proposed a new corridor being built almost parallel to the Option 1 roadways, but going through Tewin instead. Option 3 followed a corridor similar to Option 2, but with an additional loop that crossed Piperville Road near the centre of the community. Option 4 also maintained a corridor similar to that of Options 2 and 3. However, the segments parallel to Anderson Road and Thunder Roads were served by an auxiliary spine instead, while the main corridor extended diagonally through the community.

*Table 12: Mobility Spine Alignment Detailed Analysis and Evaluation*

Category	Evaluation Criteria for Alternative Community Design Strategies	Option 1	Option 2	Option 3	Option 4
Development & Land Use	Planned and designed to support a sustainable future in accordance with AOO values and Design Guidelines as well as One Planet Living Principles (built form, land use, transit, densities, biodiversity, health and wellbeing, etc.)	This option did not prohibit the community from being planned and designed in accordance with AOO values.	This option did not prohibit the community from being planned and designed in accordance with AOO values.	This option did not prohibit the community from being planned and designed in accordance with AOO values.	This option did not prohibit the community from being planned and designed in accordance with AOO values.
		●	●	●	●
	Creates vibrant mixed-use centres that are a focus for community activity	This option did not provide access to a proposed mixed-use block.	This option could be easily connected to a flexible street and block network supporting a mix of uses.	This option could be easily connected to a flexible street and block network supporting a mix of uses.	This option could be easily connected to a flexible street and block network supporting a mix of uses.
		◐	●	●	●

	Accommodates a mix of land uses that support convenient access to a range of services and amenities	This option could not be connected to a flexible street and block network supporting a mix of uses, as access frequency is discouraged along concession roads.	The scale of the roadways would have created some challenges to integrate alongside new mixed-use development due to fragmentation.	The scale of the roadways would have created some challenges to integrate alongside new mixed-use development due to fragmentation.	The scale of the roadways would have created some challenges to integrate alongside new mixed-use development due to fragmentation.
					
	Integrates with existing homes and businesses	This option impacted existing properties.	This option would have minimized impacts on existing homes and businesses.	This option impacted existing properties.	This option impacted existing properties.
					
	Overall				
Transportation & Mobility	Creates a transportation network that facilitates efficient transit operation and coverage	No transit was planned to pass through Tewin core.	Transit was able to pass through Tewin core.	Transit was able to pass through Tewin core with expanded neighbourhood reach.	Transit was able to pass through Tewin core with expanded neighbourhood reach.
					
	Supports complete streets and active mobility, including pedestrian and cycling connectivity	This option utilized corridors that are car-centric.	This option provided adequate pedestrian and cyclist connectivity in the Tewin core.	This option provided adequate pedestrian and cyclist connectivity in the Tewin core with expanded coverage by neighbourhood loops.	This option provided adequate pedestrian and cyclist connectivity in the Tewin core with expanded coverage by neighbourhood loops.

					
	Overall				
Natural System, Parks, Recreation & Open Spaces	Centres the Tewin community on natural systems including watercourses, wetlands, trees and plants	No major impacts on watercourses.	Moderately affected watercourses with some water crossings.	Higher impacts on watercourses with additional water crossings along loops.	Higher impacts on watercourses with additional water crossings along loops.
					
	Supports a connected network of parks and natural areas that provide access for residents, protects wildlife habitat and connects future Algonquin Natural Land Trust east of the site	This option reduced connectivity to parks and recreational spaces within Tewin.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Allows for watercourse naturalization to support a resilient natural system	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Delivers parks and community facilities that are highly usable, accessible and activated	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Enhances the natural environment and ecological system for future generations	This option avoided impact on mature wooded areas.	This option minimized impact on mature wooded areas.	This option impacted mature wooded areas in South-East quadrant.	This option impacted mature wooded areas in South-East quadrant.
					
	Overall				

Servicing	Optimizes stormwater management techniques that contribute to the character of the Tewin Community	Major utility lines were unable to go through the Tewin core	Major utility lines were able to go through the Tewin core	Enhanced utility coverage with the loops reaching inside neighbourhoods.	Enhanced utility coverage with the loops reaching inside neighbourhoods.
					
	Supports the efficient delivery of servicing	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.	No major differences were expected between the options.
					
	Overall				
Phasing & Implementation	Reduces capital costs	This option was associated with moderate infrastructure costs, some land acquisition costs, and high costs associated with the loss of the net developable area.	This option was associated with moderate infrastructure costs, and some costs associated with the loss of the net developable area.	This option was associated with high infrastructure costs, high land acquisition costs, and high costs associated with the loss of the net developable area.	This option was associated with high infrastructure costs, high land acquisition costs, and high costs associated with the loss of the net developable area.
					
	Reduces operating costs	This option had moderate operating costs.	This option had moderate operating costs.	This option had moderate operating costs.	This option had moderate operating costs.
					
	Optimizes the phased delivery of infrastructure and amenities, including in the early phases	Based on capital costs, this was the least favourable option, from a phased implementation perspective.	Based on capital costs, this option was most preferred from a phased implementation perspective.	Based on capital costs, this option was moderately preferred from a phased implementation perspective.	Based on capital costs, this option was moderately preferred from a phased implementation perspective.





























					
	Overall				

Table 13 below provides a summary of the analysis and criteria evaluation:

*Table 13: Mobility Spine Alignment Detailed Analysis and Evaluation Summary*

Category	Option 1	Option 2	Option 3	Option 4
Development & Land Use				
Transportation & Mobility				
Natural System, Parks, Recreation & Open Spaces				
Servicing				
Phasing & Implementation				

Based on the analysis and evaluation above, Option 2 became the preferred Mobility Spine alignment option.